imkasid 2024 SEOUL

kasid
Korean Association for the Study of Intestinal Diseases

The 7th International Meeting on Intestinal Diseases
in conjunction with
The Annual Congress of the Korean Association
for the Study of Intestinal Diseases

APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

www.imkasid.org

ABSTRACT BOOK

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WELCOME MESSAGE

Dear Colleagues and Friends,

The Korean Association for the Study of Intestinal Diseases [KASID] is pleased to announce that the 7th International Meeting on Intestinal Diseases in conjunction with the Annual Congress of the Korean Association for the Study of Intestinal Diseases [IMKASID 2024] will be held in Seoul, Korea from April 11 to 13, 2024.

KASID has become a world-leading contributor to public health by working on research of intestinal diseases with all its members and suggesting standards in medical care. Over the past 20 years, KASID has achieved remarkable growth under the mission of prioritizing research on intestinal diseases, providing clinical guidelines, and sharing the newest breakthroughs. Under the theme of Shaping the Future of Intestinal Research, IMKASID 2024 will feature expert insights from internationally renowned faculty on the most recent developments related to intestinal diseases, including inflammatory bowel disease and colorectal tumor, offering an unparalleled opportunity to explore the latest innovations coming from around the world.

I am confident that IMKASID 2024 will be a rewarding and unforgettable experience for all our domestic and international participants. In addition, during IMKASID 2024, you are encouraged to discover the many wonders and surprises that Seoul has to offer.

Thank you.

Tae Il Kim, MD, PhD
President of the Korean Association for the Study of Intestinal Diseases

PROGRAM AT A GLANCE

Day_April 11 (Thu)

Date/ Time	Room A Grand Ballroom (3F)	Room B Park Ballroom (5F)	Room C Studio 1-3 (6F)	Meeting Room 1 Studio 6 (6F)	Meeting Room 2 Studio 7 (6F)	Meeting Room 3 Board Room (6F)
13:00-14:00		IMKASID 2024 Education Workshop 1 [13:00-14:15] Endorsed by AOCC			KASID Research Workshop 1 [13:00-13:50]	
14:00-15:00		IMKASID 2024 Education Workshop 2 [14:15-15:30] Endorsed by AOCC		KASID Research Workshop 2 [14:00-14:50]		
15:00-16:00					KASID Research Workshop 3 [15:00-15:50]	
16:00-17:00		IMKASID 2024 Education Workshop 3 [16:00~17:30]		KASID Research Workshop 4 [16:00-16:50]		MOU Ceremony KASID-GAT [16:00-16:15]
17:00-18:00						RAPID Leaders Meeting [16:20-17:30]
18:00-	평의원회 Council Meeting * Invited ONLY					

Pre-registration Required

Day 2_April 12 (Fri)

Date/ Time	Room A Grand Ballroom (3F)	Room B Park Ballroom (5F)	Room C Studio 1-3 (6F)	Studio 8-9 (6F) -
07:30-08:00	Breakfast with Master 2 (Meeting Room 1, Studio 6 (6F)) Pharmbio Korea Inc.	Breakfast with Master 3 (Meeting Room 2, Studio 7 (6F)) TAEJOON	Breakfast with Master 1 (Room C, Studio 1~3 (6F)) GSK	E-Poster Exhibition
08:00-08:30				
08:30-10:00	RAPID Forum	KASID-KAI Joint Symposium (KOR)		
10:00-10:20	Coffee Break & Poster Viewing			
10:20-11:50	Symposium 1 Latest Advances in IBD Treatment	Symposium 2 How to Deal with Troublesome Situations in the Management of Colorectal Neoplasia	IMKASID for 'JUMP'	
11:50-12:00	Break			
12:00-12:40	Luncheon Symposium 1 CELLTRION PHARM CELLTRION	Luncheon Symposium 3 abbvie	Luncheon Symposium 5 SAMSUNG BIOEPIS	
12:40-13:20	Luncheon Symposium 2 janssen	Luncheon Symposium 4 Takeda	Luncheon Symposium 6 DAEWOONG	
13:20-13:50	Coffee Break & Poster Viewing			
13:50-15:20	KASID-WEO Joint Symposium	Symposium 3 Basic and Translational Research: A Deep Dive into the Mechanisms of IBD	KASID-GEST Joint Symposium	
15:20-15:40	Coffee Break & Poster Viewing			
15:40-17:10	Symposium 4 MDT Case Discussion: Multidisciplinary Approach in Challenging Cases		KASID-KSAR Joint Symposium	
17:10-17:30	Booth Stamp Event-Lucky Draw [Friday]			
18:00-	Presidential Dinner (Park Ballroom (5F)) * Invited ONLY			

Pre-registration Required

PROGRAM AT A GLANCE

Day 3_April 13 (Sat)

Date/ Time	Room A Grand Ballroom (3F)	Room B Park Ballroom (5F)	Room C Studio 1-3 (6F)
07:30-08:00		Breakfast with Master 4 (Room B, Park Ballroom (5F)) Takeda	
08:00-08:30			
08:30-10:00	Symposium 5 Cutting-edge Issues in IBD	Symposium 6 Innovations in Artificial Intelligence for Intestinal Research	E-Poster Exhibition
10:00-10:15	Coffee Break & Poster Viewing		
10:15-11:35	Special Session	Symposium 7 Decoding the Connection: Diet and Intestinal Diseases	
11:35-11:40			
11:40-12:20	KASID General Meeting		
12:20-12:25			
12:25-13:05	Luncheon Symposium 7 Bristol Myers Squibb™	Luncheon Symposium 9 FERRING PHARMACEUTICALS	
13:05-13:45	Luncheon Symposium 8 Pfizer Korea	Luncheon Symposium 10 Eisai Eisai Korea Inc.	
13:45-13:55	Coffee Break & Poster Viewing		
13:55-15:15		Nurse and Dietitian Session (KOR)	Poster Oral Presentation
15:15-15:25	Coffee Break		
15:25-17:05	KASID Presidential Plenary Session		
17:05-17:30	Closing Ceremony Booth Stamp Event - Lucky Draw [Saturday]		

Pre-registration Required

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DAILY PROGRAM

- April 11 (Thu)
- April 12 (Fri)
- April 13 (Sat)

DAILY PROGRAM

April 11 (Thu)

13:00-14:15	**IMKASID 2024 Education Workshop (1)** Intestinal Ultrasound (IUS) Lecture Courses *For this session, pre-registration is required.*	Room B
Chairs	**Eun Young Kim** (Daegu Catholic University, Korea) **Chang Hwan Choi** (Chung-Ang University, Korea)	
13:00	**Opening Remarks** Session Chairs	
13:05 EW1-1	**Basics of Intestinal Ultrasound (IUS): Techniques and Interpretation** **Yoon-Kyo An** (The University of Queensland, Australia)	
13:25 EW1-2	**Utilizing IUS to Assess Treatment Response in Ulcerative Colitis** **Shintaro Sagami** (Kitasato University Kitasato Institute Hospital, Japan)	
13:45 EW1-3	**The Dynamic Role of IUS in Small Bowel Crohn's Disease** **Noa Krugliak Cleveland** (University of Chicago, USA)	
14:05	**Discussion**	

14:15-15:30	**IMKASID 2024 Education Workshop (2)** Intestinal Ultrasound (IUS) Hands-on Training *For this session, pre-registration is required.*	Room B
EW2	**IUS Hands-on Training with Instructors** **Yoon-Kyo An** (The University of Queensland, Australia) **Shintaro Sagami** (Kitasato University Kitasato Institute Hospital, Japan) **Noa Krugliak Cleveland** (University of Chicago, USA) **Myung-Won You** (Kyung Hee University, Korea) **Sung Kyoung Moon** (Kyung Hee University, Korea)	

16:00-17:30	**IMKASID 2024 Education Workshop (3)** Case-based Learning for Daily Practice: A Beginner's Course	Room B
Chairs	Jong Hoon Lee (Dong-A University, Korea) Satimai Aniwan (Chulalongkorn University, Thailand)	
16:00 EW3-1	**Optimal Selection of Biologics for IBD Management** Hyuk Yoon (Seoul National University, Korea)	
16:20 EW3-2	**Implementing the Treat-to-Target Strategy in IBD** Eun Soo Kim (Kyungpook National University, Korea)	
16:40 EW3-3	**Best Techniques for Colorectal Polyp Removal** Zhiqin Wong (Pantai Hospital Kuala Lumpur, Malaysia)	
17:00 EW3-4	**Colorectal Endoscopic Submucosal Dissection (ESD): Fundamentals of Techniques and Preparation** Dong Hoon Baek (Pusan National University, Korea)	
17:20	**Wrap-up**	
13:00-13:50	**KASID Research Workshop 1** Toward Better CRC Screening *For this session, pre-registration is required.*	Meeting Room 2
Chairs	Han-Mo Chiu (National Taiwan University Hospital, Taiwan) Chang Mo Moon (Ewha Womans University, Korea)	
13:00 RW1-1	**Learning from a Taiwanese FIT-based Screening Program: Strengths and Blind Spots** Han-Mo Chiu (National Taiwan University Hospital, Taiwan)	
13:20 RW1-2	**Beyond FIT: How about Stool DNA Testing?** Jaeyoung Chun (Yonsei University, Korea)	
13:40	**Discussion**	
14:00-14:50	**KASID Research Workshop 2** Meta-Omics Analysis for Next-Generation IBD Research *For this session, pre-registration is required.*	Meeting Room 1
Chairs	Eun Soo Kim (Kyungpook National University, Korea) Jun Miyoshi (Kyorin University, Japan)	
14:00 RW2-1	**Predicting IBD Treatment Responses: Challenges and Promises of Gut Microbiome Analysis** Gyeol Seong (Eulji University, Korea)	

DAILY PROGRAM

14:20 RW2-2	**Stratifying Crohn's Disease Risk Using Meta-Omics Analysis: Insights from the GEM Project** Williams Turpin (Mount Sinai Hospital, Canada)	
14:40	**Wrap-up**	
15:00-15:50	**KASID Research Workshop 3** With the Master of Colorectal ESD: Sharing Solutions in Difficult Cases *For this session, pre-registration is required.*	Meeting Room 2
Chairs	Sang Wook Kim (Jeonbuk National University, Korea) Hyun Gun Kim (Soonchunhyang University, Korea)	
15:00 RW3-1	**Becoming an Expert: My Know-How and Essential Requirements** Fatih Aslan (Koc University, Türkiye)	
15:25 RW3-2	**Challenging Cases: Discussing Solutions to Overcome Difficulties** Yunho Jung (Soonchunhyang University, Korea)	
	Discussion Fatih Aslan (Koc University, Türkiye) Yunho Jung (Soonchunhyang University, Korea) Dong-Hoon Yang (University of Ulsan, Korea)	
16:00-16:50	**KASID Research Workshop 4** IBD Uncovered: Metabolic Implications and Cancer Prevention *For this session, pre-registration is required.*	Meeting Room 1
Chairs	Won Moon (Kosin University, Korea) Katsuyoshi Matsuoka (Toho University Sakura Medical Center, Japan)	
16:00 RW4-1	**The Emerging Concern: The IBD-Metabolic Disorder Interface** Yehyun Park (Ewha Womans University, Korea)	
16:20 RW4-2	**Cancer Prevention in IBD: Strategies for Optimal Long-term Care** Shu-Chen Wei (National Taiwan University Hospital, Taiwan)	
16:40	**Discussion**	
16:00-16:15	**MOU Ceremony between KASID and GAT**	Meeting Room 3

16:20-17:30	**RAPID Leaders Meeting** Drawing the Future of RAPID	Meeting Room 3
Chairs	Tae Il Kim (Yonsei University, Korea) Somchai Leelakusolvong (Mahidol University, Thailand)	
16:20 RLM-1	**RAPID: From an Objective Point of View, How Far Have We Come?** Than Than Aye (University of Medicine 1, Myanmar)	
16:30 RLM-2	**RAPID, The Playground for Young GI Doctors** Yeong Yeh Lee (Universiti Sains Malaysia, Malaysia)	
16:40 RLM-3	**RAPID, As an International Education Platform** Rabbinu Rangga Pribadi (Cipto Mangunkusumo National General Hospital, Indonesia)	
16:50 RLM-4	**International Collaborative Research in RAPID** Julajak Limsrivilai (Mahidol University, Thailand)	
17:00 RLM-5	**RAPID, A Network Connecting Academic Societies** Luan Minh Dang (University Medical Center, Ho Chi Minh City, Vietnam)	
17:10 RLM-6	**The Future of RAPID** Dong-Hoon Yang (University of Ulsan, Korea)	
17:20	**Open Discussion**	
18:00	**Council Meeting 평의원회** * Invited ONLY	Room A

DAILY PROGRAM

April 12 (Fri)

07:30-08:00	**Breakfast with Master 1** *For this session, pre-registration is required.*	GSK Room C
Chair	Hyun-Soo Kim (Yonsei University, Korea)	
07:30 BM1-1	**Evolving IBD Care - A Deep Dive into Shingles Prevention for IBD Patients** Shin Ju Oh (Kyung Hee University, Korea)	
07:30-08:00	**Breakfast with Master 2** *For this session, pre-registration is required.*	Pharmbio Korea Inc. Meeting Room 1
Chair	Jong Hoon Lee (Dong-A University, Korea)	
07:30 BM2-1	**Optimal Bowel Preparation for the Elderly** Jae Myung Cha (Kyung Hee University, Korea)	
07:30-08:00	**Breakfast with Master 3** *For this session, pre-registration is required.*	TAEJOON Meeting Room 2
Chair	Chang Soo Eun (Hanyang University, Korea)	
07:30 BM3-1	**Mini-OSTs: A Warm Welcome to Bowel Preparation for Colonoscopy!** Jaeyoung Chun (Yonsei University, Korea)	
08:30-10:00	**RAPID Forum** Clinical Challenges in Various Intestinal Diseases	Room A
Chairs	Dong-Hoon Yang (University of Ulsan, Korea) Yeong Yeh Lee (Universiti Sains Malaysia, Malaysia)	
08:30 RF-1	**IBD vs. IBD Mimickers: Clinical Pearls for Differential Diagnosis** Julajak Limsrivilai (Mahidol University, Thailand)	
08:50 RF-2	**Old but Gold- Leveraging Conventional Immunosuppressants in the Biologics Era in IBD Patients** Soo-Kyung Park (Sungkyunkwan University, Korea)	
09:10 RF-3	**Challenges in Diagnosis of Early Colorectal Cancer in Limited Resources Settings** Hang Viet Dao (Hanoi Medical University Hospital, Vietnam)	
09:30 RF-4	**Optimal Approach for Suspected Small Intestinal Bleeding** Seung Wook Hong (University of Ulsan, Korea)	
09:50	**Discussion**	

08:30-10:00	**KASID-KAI Joint Symposium** Immune Mediated Inflammatory Disorders (IMIDs): The Key to Advancing IBD Treatment and Fostering Collaborative Research	Room B Language: Korean
Chairs	Chang Kyun Lee (Kyung Hee University, Korea) Yong Woo Jung (Korea University, Korea)	
08:30 KIJS-1	**The IMIDs Connection: Why IBD Doctors Need to Pay Attention?** Seong-Joon Koh (Seoul National University, Korea)	
08:50 KIJS-2	**Shared Genetic Landscapes between IBD and Other IMIDs** Kwangwoo Kim (National Institutes of Health, USA)	
09:10 KIJS-3	**Role of Microbiota and Nutrients in Gut Immune Regulation** Ye-Ji Bang (Seoul National University, Korea)	
09:30 KIJS-4	**The Microbiome as Pharmabiotics in IMIDs** Ho-Keun Kwon (Yonsei University, Korea)	
09:50	**Discussion**	
10:00-10:20	**Coffee Break & Poster Viewing**	
10:20-11:50	**Symposium 1** Latest Advances in IBD Treatment	Room A
Chairs	Joo Sung Kim (Seoul National University, Korea) Gil Y. Melmed (Cedars-Sinai Medical Center, USA)	
10:20 SY1-1	**Keynote: Tailored Management of Difficult-to-Treat IBD** Gil Y. Melmed (Cedars-Sinai Medical Center, USA)	
10:50 SY1-2 Young Investigator Award	**Clinical Efficacy and Durability of Subcutaneous Infliximab in Patients with Inflammatory Bowel Disease after Switching from Intravenous Infliximab: A Real-world Multicenter Prospective Cohort Study in Korea** Kyuwon Kim (Chung-Ang University Hospital, Korea)	
11:00 SY1-3 Young Investigator Award	**Single-cell RNA Sequencing Reveals Immunological Mechanisms Underlying the Association between ASCA Levels and Impairment of Intestinal Barrier Permeability** Christine Suh-Yun Joh (Seoul National University Graduate School, Korea)	

DAILY PROGRAM

11:10 SY1-4	**'Old' and 'New' Biologics: New Insights** Won Moon (Kosin University, Korea)
11:30 SY1-5	**The Era of Small Molecules: Good Things Come in Small Packages** Katsuyoshi Matsuoka (Toho University Sakura Medical Center, Japan)

10:20-11:50	**Symposium 2** How to Deal with Troublesome Situations in the Management of Colorectal Neoplasia	Room B
Chairs	Jeong-Sik Byeon (University of Ulsan, Korea) Fatih Aslan (Koc University, Türkiye)	
10:20 SY2-1	**Keynote: Preventing Complications Following Endoscopic Resection: Here's the Best Way to Do It** Fatih Aslan (Koc University, Türkiye)	
10:50 SY2-2 Distinguished Investigator Award	**Clinical Efficacy of Snare Tip Precutting Endoscopic Mucosal Resection in 15-20 mm Non-Pedunculated Colorectal Neoplasms: A Prospective Randomized Multicenter Study** Yunho Jung (Soonchunhyang University, Korea)	
11:00 SY2-3 Distinguished Investigator Award	**Outcomes of Colorectal Endoscopic Submucosal Dissection according to the Size of Colorectal Neoplasm: A HASID Multicenter Study** Byung Chul Jin (Jeonbuk National University Medical School, Korea)	
11:10 SY2-4	**Selecting Endoscopic Resection and Surveillance for T1 CRC: What is the Optimal Indication?** Katsuro Ichimasa (Showa University Northern Yokohama Hospital, Japan)	
11:30 SY2-5	**Tips and Tricks for Resecting Locally Recurrent Adenomas** Jun Lee (Chosun University, Korea)	

10:20-11:50	**IMKASID for 'JUMP': Pathway for Rising Stars in Intestinal Research** First Steps as A Researcher	Room C
Chairs	Jae Myung Cha (Kyung Hee University, Korea) Bora Keum (Korea University, Korea)	
10:20 JP-1	**Summary of New Agents for IBD - Filgotinib, Ozanimod** Minjee Kim (Sungkyunkwan University, Korea) Sang Hyun Kim (Korea University, Korea)	

10:38 JP-2	**Risk Factors for the Need of Salvage Treatment in Rectal Neuroendocrine Tumors with Positive Margin after Endoscopic Resection** Hyung-Hoon Oh (Chonnam National University, Korea)
10:56 JP-3	**Inflammatory Bowel Disease (IBD) in Pediatrics and Adults: Commonalities, Differences, Transition** Donghwan Park (Dongguk University Ilsan Hospital, Korea)
11:14 JP-4	**JAK Inhibitors in IBD: From Bench to Bedside** Sang Un Kim (Kyungpook National University Chilgok Hospital, Korea)
11:32 JP-5	**The Use of Clinical Decision Support Tools in the Treatment of Inflammatory Bowel Disease** Kyuwon Kim (Chung-Ang University, Korea)

11:50-12:00	**Break**

12:00-12:40	**Luncheon Symposium 1**	Room A
Chair	Yoon Tae Jeen (Korea University, Korea)	
12:00 LS1-1	**Impact of Subcutaneous Infliximab in IBD Treatment** Byong Duk Ye (University of Ulsan, Korea)	
12:20 LS1-2	**Interim Analysis of Subcutaneous Infliximab Cohort Study in Korea** Chang Hwan Choi (Chung-Ang University, Korea)	

12:40-13:20	**Luncheon Symposium 2** Durable Journey of Ustekinumab in IBD : Think 'Long-term' Outcomes	Room A
Chair	Dong Soo Han (Hanyang University, Korea)	
12:40 LS2-1	**A Step Closer to Durable Remission with Ustekinumab for Patients in UC** Eun Soo Kim (Kyungpook National University, Korea)	
13:00 LS2-2	**Long-term Strategy for Bio-naïve CD Patients with Ustekinumab** Hyuk Yoon (Seoul National University, Korea)	

DAILY PROGRAM

12:00-12:40	**Luncheon Symposium 3**	abbvie	Room B
Chair	Sung-Ae Jung (Ewha Womans University, Korea)		
12:00 LS3-1	**Unveiling New Horizons in Crohn's Disease with Upadacitinib: The First Oral Advanced Therapy** Jae Hee Cheon (Yonsei University, Korea)		
12:20 LS3-2	**Upadacitinib in Focus: First Option for Achieving Mucosal Healing in UC** Chang Kyun Lee (Kyung Hee University, Korea)		
12:40-13:20	**Luncheon Symposium 4** Discovering Optimal Approaches for Lifelong Care in CD	Takeda	Room B
Chair	Young-Ho Kim (Sungkyunkwan University, Korea)		
12:40 LS4-1	**Optimal Approaches in CD : Who Can be the Right Patient for Vedolizumab?** Parambir S Dulai (Northwestern University Feinberg School of Medicine, USA)		
13:00 LS4-2	**Vedolizumab in Ileal and Colonic Crohn's Disease** Sung Noh Hong (Sungkyunkwan University, Korea)		
12:00-12:40	**Luncheon Symposium 5**	SAMSUNG BIOEPIS	Room C
Chair	Tae Il Kim (Yonsei University, Korea)		
12:00 LS5-1	**The Latest Update in Management of IBD** Jong Pil Im (Seoul National University, Korea)		
12:20 LS5-2	**Extraintestinal Manifestation in IBD: Looking Beyond the Tract** Ji Won Kim (Seoul National University, Korea)		
12:40-13:20	**Luncheon Symposium 6**	DAEWOONG	Room C
Chair	Eun Young Kim (Daegu Catholic University, Korea)		
12:40 LS6-1	**Management of Ulcerative Colitis (UC) Flare in Mild-moderate Patients** Sung Wook Hwang (University of Ulsan, Korea)		
13:00 LS6-2	**ASACOL 1,600mg, One Tablet Once Daily to Maintain Remission** Dae Sung Kim (Konyang University, Korea)		
13:20-13:50	**Coffee Break & Poster Viewing**		

13:50-15:20	**KASID-WEO Joint Symposium** Future Directions in CRC Screening: What's Next?	Room A
Chairs	Hyun-Soo Kim (Yonsei University, Korea) Uri Ladabaum (Stanford University, USA)	
13:50 KWJS-1	**Screening for Individuals before 50: What Age Should We Start?** Eun Hyo Jin (Seoul National University, Korea)	
14:10 KWJS-2 Academic Grant	**Using Computer-Aided Polyp Detection System (CADe) to Maintain the High Quality in Adenoma Detection Rate during Community-based Colorectal Cancer Screening in Thailand: A Randomized Trial** Sittikorn Linlawan (Phrachomklao Hospital, Thailand)	
14:20 KWJS-3 Young Investigator Award	**Unveiling piR-37524: A Novel Diagnostic Biomarker in Colorectal Cancer** Jiaxi Li (The University of Hong Kong, Hong Kong, China)	
14:30 KWJS-4	**Colonoscopy as the First-line Screening Test: Everything You Need to Know** Uri Ladabaum (Stanford University, USA)	
14:50 KWJS-5	**Precision Medicine for Screening in the Near Future** Han-Mo Chiu (National Taiwan University Hospital, Taiwan)	
15:10	**Discussion**	
13:50-15:20	**Symposium 3** Basic and Translational Research: A Deep Dive into the Mechanisms of IBD	Room B
Chairs	Dong Il Park (Sungkyunkwan University, Korea) Williams Turpin (Mount Sinai Hospital, Canada)	
13:50 SY3-1	**Host-Microbial Interaction in IBD** Jun Miyoshi (Kyorin University, Japan)	
14:10 SY3-2 Young Investigator Award	**Cellular Complexity and Crosstalk in Murine TNF-dependent Ileitis: Different Fibroblast Subsets Propel Spatially Defined Ileal Inflammation through TNFR1 Signalling** Lida Iliopoulou (Biomedical Sciences Research Center "Alexander Fleming", Greece)	
14:20 SY3-3 Young Investigator Award	**Treg and Human Intestinal Myobroblast-Derived Amphiregulin Promotes Colitis-associated Intestinal Fibrosis through Activation of PI3K/AKT** Xiaojing Zhao (The First Affiliated Hospital with Nanjing Medical University, China)	

DAILY PROGRAM

14:30 SY3-4	**Gut Barrier Dysfunction, Microbiome, and Environmental Factors in the Development of Crohn's Disease** Williams Turpin (Mount Sinai Hospital, Canada)
14:50 SY3-5	**Defining the Role of FMT in IBD Moving Forward** Rupert Leong (University of Sydney, Australia)
15:10	**Discussion**

13:50-15:20	**KASID-GEST Joint Symposium** Practical Strategies for Managing Difficult Clinical Scenarios in IBD	Room C
Chairs	Seung-Jae Myung (University of Ulsan, Korea) Cheng-Tang Chiu (Chang Gung University, Taiwan)	
13:50 KGJS-1	**Infections in IBD: Prevention, Diagnosis, and Management** Puo-Hsien Le (Chang Gung Memorial Hospital, Linkou branch, Taoyuan, Taiwan)	
14:10 KGJS-2	**Acute Severe Ulcerative Colitis: Integrating the Latest Evidence into Clinical Practice** Eun Mi Song (Ewha Womans University, Korea)	
14:30 KGJS-3	**Multidisciplinary Approach to Intraabdominal Abscesses in Crohn's Disease** Yoo Jin Lee (Keimyung University, Korea)	
14:50 KGJS-4	**Endoscopic Management of Crohn's Stricture: Timing, Techniques, and Outcomes** Chen-Wang Chang (MacKay Memorial Hospital, Taiwan)	
15:10	**Discussion**	

15:20-15:40	**Coffee Break & Poster Viewing**

15:40-17:10	**Symposium 4** MDT Case Discussion: Multidisciplinary Approach in Challenging Cases	Room A
Chairs	Bo-In Lee (The Catholic University of Korea, Korea) Rupert Leong (University of Sydney, Australia)	
15:40	**Session Introduction**	
15:45 SY4-1	**Case 1** Ji Eun Kim (Sungkyunkwan University, Korea)	
16:10 SY4-2	**Case 2** Jeongkuk Seo (Chung-Ang University, Korea)	

16:35 SY4-3 **Case 3**
Seo-Hee Kim (Chonnam National University Children's Hospital, Korea)

17:00 **Discussion with 6 Discussants**

- **Gastroenterologist**
  Sang Hyoung Park (University of Ulsan, Korea)
  Joyce Wing Yan Mak (The Chinese University of Hong Kong, Hong Kong, China)
  Luan Minh Dang (University Medical Center, Ho Chi Minh City, Vietnam)
- **Pediatrician**
  Su Jin Jeong (CHA University, Korea)
- **Surgeon**
  Eun Jung Park (University of Ulsan, Korea)
- **Radiologist**
  Hyun Kyung Yang (Yonsei University, Korea)

15:40-17:10 KASID-KSAR Joint Symposium — Room C

Bridging Specialties: Optimizing Diagnosis and Management through GI-Radiology Collaboration

Chairs: Kang-Moon Lee (The Catholic University of Korea, Korea)
Yong Eun Chung (Yonsei University, Korea)

15:40 KRJS-1 **Treat-to-Target of Small Bowel CD: How to Deal with Capsule and Enteroscopy?**
Seong Ran Jeon (Soonchunhyang University, Korea)

16:00 KRJS-2 **A Novel Cost-effective IBD Flare Management Pathway Utilising Rapid Access Intestinal Ultrasound and Nurse-led Triage Reduces Hospitalisation and Emergency Room Presentations**
Distinguished Investigator Award
Jakob Begun (Mater Hospital Brisbane, Mater Research, University of Queensland, Australia)

16:10 KRJS-3 **A Real World Practice of Intestinal Ultrasound in the Monitoring of Disease Activity in Ulcerative Colitis**
Young Investigator Award
Kwang Woo Kim (Seoul Metropolitan Government Seoul National University Boramae Medical Center, Seoul National University College of Medicine, Korea)

16:20 KRJS-4 **Defining Transmural Healing of Crohn's Disease: The Role of Cross-sectional Imaging Modalities**
Myung-Won You (Kyung Hee University, Korea)

16:40 KRJS-5 **MRI for Staging Rectal Cancer: Current Role and Challenges in Clinical Practices**
Nieun Seo (Yonsei University, Korea)

17:00 **Discussion**

DAILY PROGRAM

17:10	**Booth Stamp Event-Lucky Draw** [Friday]	Room A
18:00	**Presidential Dinner** * Invited ONLY	Room B

April 13 (Sat)

07:30-08:00	**Breakfast with Master 4** Discovering Optimal Approaches for Lifelong Care in UC *For this session, pre-registration is required.*	Room B
Chair	Kyu Chan Huh (Konyang University, Korea)	
07:30 BM4-1	**Optimal Position of Advanced Therapies to Improve Long-term Outcomes in UC** Sang Hyoung Park (University of Ulsan, Korea)	
08:30-10:00	**Symposium 5** Cutting-edge Issues in IBD	Room A
Chairs	Jae Hee Cheon (Yonsei University, Korea) Katsuyoshi Matsuoka (Toho University Sakura Medical Center, Japan)	
08:30 SY5-1	**Prevention and Early Detection of IBD** Joyce Wing Yan Mak (The Chinese University of Hong Kong, Hong Kong, China)	
08:50 SY5-2 Young Investigator Award	**Dilatations with Ustekinumab in Stricture Therapy Management in Crohn's Disease, a Multicentre Study** John Chetwood (Concord Repatriation General Hospital, University of Sydney, Australia)	
09:00 SY5-3 Young Investigator Award	**Multimorbidity and Disease Trajectories in Patients with Inflammatory Bowel Disease: Insights from Observational and Genetic Analyses** Fangyuan Jiang (Zhejiang University School of Medicine, China)	
09:10 SY5-4	**Bowel Strictures in Crohn's Disease: How to Prevent and Treat in Clinical Practice** Jun Hwan Yoo (CHA University, Korea)	
09:30 SY5-5	**Caring Women with IBD and Their Children** Shu-Chen Wei (National Taiwan University Hospital, Taiwan)	
09:50	**Discussion**	
08:30-10:00	**Symposium 6** Innovations in Artificial Intelligence for Intestinal Research	Room B
Chairs	Dong Kyung Chang (Sungkyunkwan University, Korea) Kazuo Ohtsuka (Tokyo Medical and Dental University Hospital, Japan)	
08:30 SY6-1	**Development of AI-assisted Colonoscopy in Inflammatory Bowel Disease** Kazuo Ohtsuka (Tokyo Medical and Dental University Hospital, Japan)	

DAILY PROGRAM

08:50 SY6-2 (Academic Grant)
Impact of a Real-Time Computer-aided Polyp Characterization in Screening Colonoscopy Performed by Trainees versus Experienced Endoscopists: A Randomized Controlled Trial
Aniwat Saleepol (Chulalongkorn University and King Chulalongkorn Memorial Hospital, Thai Red Cross Society, Thailand)

09:00 SY6-3 (Young Investigator Award)
Development of Explainable Computer-Aided Diagnosis System for Colonoscopy Optical Diagnosis using Interpretable Features
Youmin Shin (Seoul National University, Korea)

09:10 SY6-4
Expectations and Challenges of Colonoscopies with AI
Sravanthi Parasa (Swedish Medical Center, USA)

09:30 SY6-5
Use of Natural Language Processing for Intestinal Diseases: From Rule-Based Programming to Generative AI
Jung Ho Bae (Seoul National University, Korea)

09:50
Discussion

10:00-10:15 **Coffee Break & Poster Viewing**

10:15-11:35 **Special Session** Room A
Tracing Success: The Evolution and Impact of KASID Guidelines

Chairs
Sung-Ae Jung (Ewha Womans University, Korea)
Tae Oh Kim (Inje University, Korea)

10:15 SS-1
Process of Creating Guidelines: Methodology
Seong-Eun Kim (Ewha Womans University, Korea)

10:30 SS-2
Do's and Don'ts Based on CDI Guidelines
Young-Seok Cho (The Catholic University of Korea, Korea)

10:55 SS-3
Key Points in Treating Intestinal Behcet's Disease: Insights Post-Guideline Creation
Soo-Young Na (The Catholic University of Korea, Korea)

11:20 SS-4
Reflecting on the History and Clinical Impact of KASID's Guidelines
Chang Hwan Choi (Chung-Ang University, Korea)

10:15-11:35	**Symposium 7** Decoding the Connection: Diet and Intestinal Diseases	Room B
Chairs	Eell Ryoo (Gachon University, Korea) Chang Soo Eun (Hanyang University, Korea)	
10:15 SY7-1	**Reappraisal of Diet as a Therapeutic Approach in Adults with IBD** Peter Gibson (Monash University, Australia)	
10:35 SY7-2 Distinguished Investigator Award	**Dietary Modification in Pediatric Crohn's Disease with Concerns of Insufficient Growth Restoration** Jeong Eun Ahn (Seoul National University Children's Hospital, Korea)	
10:45 SY7-3	**Enteral Nutrition for Management of Pediatric IBD** Jin Soo Moon (Seoul National University, Korea)	
11:05 SY7-4 Distinguished Investigator Award	**Omega-3 Intake Linked to Colorectal Adenoma Incidence: A Prospective, Multi-Center Korean Study** Sang Hoon Kim (Chung-Ang University Gwangmyeong Hospital, Korea)	
11:15 SY7-5	**Dietary Supplement Use and Colorectal Cancer Risk** NaNa Keum (Dongguk University, Korea)	
11:40-12:20	**KASID General Meeting**	Room A
12:25-13:05	**Luncheon Symposium 7** Bristol Myers Squibb™	Room A
Chair	Kang-Moon Lee (The Catholic University of Korea, Korea)	
12:25 LS7-1	**ZEPOSIA, a First in Class S1PR Modulator with Proven Clinical Efficacy** Won Moon (Kosin University, Korea)	
12:45 LS7-2	**Practical Guidelines and Long-term Experience on ZEPOSIA in Treatment of UC** Sang-Bum Kang (The Catholic University of Korea, Korea)	
13:05-13:45	**Luncheon Symposium 8** Pfizer Korea	Room A
Chair	Dong Il Park (Sungkyunkwan University, Korea)	
13:05 LS8-1	**Cumulated Knowledge on JAKi–The Data Legacy of Tofacitinib in UC** Sung Hoon Jung (The Catholic University of Korea, Korea)	
13:25 LS8-2	**Optimizing Treatment Options –Right Patient of Tofacitinib** Soo-Young Na (The Catholic University of Korea, Korea)	

DAILY PROGRAM

12:25-13:05	**Luncheon Symposium 9**	FERRING PHARMACEUTICALS	Room B
Chair	Young Sook Park (Eulji University, Korea)		
12:25 LS9-1	**The Practical Application of 5-ASA as the Gold Standard in UC Treatment: Past, Present, and Future Perspectives** Yoon-Kyo An (The University of Queensland, Australia)		
12:45 LS9-2	**Enhancing UC Treatment: Combine PENTASA® Oral +Rectal Suppository for Comprehensive Relief** Seong-Joon Koh (Seoul National University, Korea)		

13:05-13:45	**Luncheon Symposium 10** Therapeutic Approaches for Better Patient Outcome	Eisai Eisai Korea Inc.	Room B
Chair	Hyun Soo Kim (Chonnam National University, Korea)		
13:05 LS10-1	**Reasonable Therapeutic Approach: Role of JAK inhibitors in UC** Bora Keum (Korea University, Korea)		
13:25 LS10-2	**Positioning Filgotinib in the Treatment Algorithm of UC** Kyeong Ok Kim (Yeungnam University, Korea)		

13:45-13:55	**Coffee Break & Poster Viewing**

13:55-15:15	**Nurse and Dietitian Session** Clinical and Nutritional Approaches to IBD: Diet, Care, and Therapies	Room B Language: Korean
Chairs	Geom Seog Seo (Wonkwang University, Korea) Jeong Eun Shin (Dankook University, Korea)	
13:55 ND-1	**The Role of Food and Environmental Factors in the Pathogenesis of IBD** Seung Yong Shin (Chung-Ang University, Korea)	
14:15 ND-2	**Contributions of IBD Nurses to the Field of Gut Microbiome Research** Jaewook Shin (Seoul National University Hospital, Korea)	
14:35 ND-3	**Conventional and Advanced Therapies in IBD** Dong Hyun Kim (Chonnam National University, Korea)	
14:55 ND-4	**Dietary and Nutrition Counseling for IBD Patients** Seokyung Park (Kyung Hee University Medical Center, Korea)	

13:55-15:15	**Poster Oral Presentation**	Room C
15:15-15:25	**Coffee Break**	
15:25-17:05	**KASID Presidential Plenary Session**	Room A
Chairs	Tae Il Kim (Yonsei University, Korea) Kyu Chan Huh (Konyang University, Korea) Young-Eun Joo (Chonnam National University, Korea)	
15:25 PS-1	**Dysregulated Secretory Cell Plasticity by Aberrant CRACD-Actin-Regulon is a Therapeutic Vulnerability of Mucinous Colon Cancer** Jae-Il Park (The University of Texas MD Anderson Cancer Center, USA)	
15:40 PS-2	**Clinical Characteristics of Steroid-Dependent Ulcerative Colitis Patients after Acute Severe Ulcerative Colitis Treatment in East Asia and Australia/New Zealand: AOCC and ANZIBDC Collaboration Study** Dong Hyun Kim (Chonnam National University, Korea)	
15:55 PS-3	**Spatial Transcriptomics of Pre-treatment Biopsies Revealing Chronic Crypt Damage and Upregulated Inflammatory Process, Reflecting Histological Severity, as Predictors of Primary Responsiveness to TNF- Inhibitors in Bio-naive Ulcerative Colitis Patients** So-Woon Kim (Kyung Hee University Hospital, Korea)	
16:10 PS-4	**<Plenary 1> Breaking the Therapeutic Ceiling: Precision Medicine for Personalized Care of IBD** Byong Duk Ye (University of Ulsan, Korea)	
16:35 PS-5	**<Plenary 2> Breaking the Therapeutic Ceiling: Integrating Evidence to Select Biologics and Small Molecules for IBD: What Clinicians Should Know** Parambir S Dulai (Northwestern University Feinberg School of Medicine, USA)	
17:00	**Closing Remarks** Tae Il Kim (Yonsei University, Korea)	
17:05	**Closing Ceremony** * Booth Stamp Event-Lucky Draw [Saturday]	Room A

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2024 SEOUL

The 7th International Meeting on Intestinal Diseases
in conjunction with
The Annual Congress of the Korean Association
for the Study of Intestinal Diseases

APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

POSTERS

- Poster Oral Presentation
- Poster Exhibition

POSTER ORAL PRESENTATION

13:55-15:15	**Basic/Translational/Microbiome**	Room C
Chairs	Chang Soo Eun (Hanyang University, Korea) Eun Soo Kim (Kyungpook National University, Korea)	

PO1-1

Integrated Analysis of Microbiome and Metabolome Reveals Disease-specific Profiles in Inflammatory Bowel Diseases and Intestinal Behcet's Disease

Yehyun Park[1,2], Jae Bum Ahn[2], I Seul Park[2], Mijeong Son[2], Ji Hyung Kim[2], Hyun Woo Ma[2], Seung Won Kim[2], Jae Hee Cheon[2]

[1]Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea
[2]Internal Medicine, Yonsei University College of Medicine, Seoul, Korea

PO1-2

Reduction of Trypsin-degrading Commensals Exacerbates Colitis

Hongsup Yoon[1], Nitsan Maharshak[3],Yosep Ji[5], Donghyun Lee[1], Wilhelm Holzapfel[1,5], Dirk Haller[2], Changkyun Lee[4]

[1]Life Science, Handong University, Pohang, Korea
[2]Nutrition and Immunology, Technical University of Munich, Munich, Germany
[3]Department of Gastroenterology and Liver Diseases, Tel Aviv Medical Center, Tel Aviv, Israel
[4]Department of Gastroenterology, Kyung Hee University College of Medicine, Seoul, Korea
[5]HEM Pharma, Seoul, Korea

PO1-3

Dysbiotic Signatures and Diagnostic Markers of Gut Microbiota Precisely Predict the Subtypes of Inflammatory Bowel Disease: Study of a Cohort with Increasing Prevalence in South Korean Populations

Hyun Sik Kim[1], Shin Ju Oh[2], Jin-Woo Bae[1], Chang Kyun Lee[2]

[1]Biology, Kyung Hee University, Seoul, Korea
[2]Gastroenterology, Kyung Hee University College of Medicine, Seoul, Korea

PO1-4

R. Intestinalis Improves IBD by Preventing Gut Uric Acid Absorption through Inhibiting METTL3 Mediated m6A Modification of SLC2A9

Kai Nie[1], Xiaoyan Wang[1]

[1]Gastroenterology, The Third Xiangya Hospital of Central South University, Changsha, China

PO1-5

Roseburia Faecis Aggravates Acute Colitis in Mice through the Macrophage Polarization to M1 Phenotype and Microbial Dysbiosis

Hyun Taek Hong[3], Hee-Tae Yoon[2], Hyunsun Park[2], Jong Pil Im[1], Joo Sung Kim[1], Seong-Joon Koh[1,2]

[1]Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea
[2]Laboratory of Intestinal Mucosa and Skin Immunology, Seoul National University College of Medicine, Seoul, Korea
[3]Biomedical Sciences Seoul National University Graduate School, Seoul National University College of Medicine, Seoul, Korea

PO1-6 **Investigation of Oral and Intestinal Microbiome of Korean Patients with Crohn's Disease**

Jee Young Yoon[1], Yoon Tae Jeen[1], Jae Min Lee[1], Hyuk Soon Choi[1], Eun Sun Kim[1], Bora Keum[1], Hoon Jai Chun[1]

[1]Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea

PO1-7 **Insights into the Role and Niche-specific Adaptation of Malassezia in Inflammatory Bowel Disease**

Seung Yong Shin[1], Yong-Joon Cho[2], Juan Yang[3], Hyo Keun Kim[4], Piyapat Rintarhat[3], Minji Park[3], Kate Lagree[5,6], David M. Underhill[5,6,7], Chul-Su Yang[4,8], Jung Min Moon[1], Jeongkuk Seo[1], Kyuwon Kim[1], Won Hee Jung[3], Chang Hwan Choi[1]

[1]Department of Internal Medicine, Chung-Ang University College of Medicine, Seoul, Korea
[2]Department of Molecular Bioscience, Kangwon National University, Chuncheon, Korea
[3]Department of Systems Biotechnology, Chung-Ang University, Anseong, Korea
[4]Department of Molecular and Life Science, Hanyang University, Ansan, Korea
[5]Widjaja Inflammatory Bowel and Immunobiology Research Institute, Cedars-Sinai Medical Center, Los Angeles, United States
[6]Department of Biomedical Sciences, Cedars-Sinai Medical Center, Los Angeles, United States
[7]Department of Pathology and Laboratory Medicine, David Geffen School of Medicine, University of California, Los Angeles, United States
[8]Department of Medicinal and Life Science, Hanyang University, Ansan, Korea

13:55-15:15 IBD/Clinical 1 — Room C

Chairs **Jin Soo Moon** (Seoul National University, Korea)
Kyeong Ok Kim (Yeungnam University, Korea)

PO2-1 **Dual Biologic or Small Molecule Therapy in Refractory Pediatric Inflammatory Bowel Disease: A Multicenter Study from the Pediatric IBD Porto Group of ESPGHAN**

Ben Kang[1], Anat Yerushalmy-Feler[2], Christine Olbjorn[3], Kaija-Leena Kolho[4], Marina Aloi[5], Francesca Musto[5], Javier Martin-De-Carpi[6], Ana Lozano-Ruf[6], Dotan Yogev[7], Manar Matar[8], Luca Scarallo[9], Matteo Bramuzzo[10], Lissy De Ridder[11], Christoph Norden[12], David Wilson[13], Christos Tzivinikos[14], Dan Turner[7], Shlomi Cohen[2]

[1]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Pediatrics, Dana-Dwek Children's Hospital, Tel Aviv Sourasky Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel
[3]Pediatrics, Akershus University Hospital, Lorenskog, Norway
[4]Pediatrics, Children's Hospital, Helsinki University Hospital and University of Helsinki, Helsinki, Finland
[5]Pediatrics, Umberto I Hospital, Sapienza University of Rome, Rome, Italy
[6]Pediatrics, Hospital Sant Joan de Deu, Barcelona, Spain

POSTER ORAL PRESENTATION

[7]Pediatrics, Shaare Zedek Medical Center, Hebrew University of Jerusalem, Jerusalem, Israel
[8]Pediatrics, Schneider Children's Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel
[9]Pediatrics, Meyer Children's Hospital, Florence, Italy
[10]Pediatrics, Institute for Maternal and Child Health, IRCCS Burlo Garofolo, Trieste, Italy
[11]Pediatrics, Erasmus Medical Center/Sophia Children's Hospital, Rotterdam, Netherlands
[12]Pediatrics, Copenhagen University Hospital, Hvidovre, Denmark
[13]Pediatrics, Royal Hospital for Children and Young People, Edinburgh, United Kingdom
[14]Pediatrics, Al Jalila Children's Specialty Hospital, Dubai, United Arab Emirates

PO2-2

Comparison of Endoscopic Healing and Durability between Infliximab Originator and CT-P13 in Paediatric Patients with Inflammatory Bowel Disease

Eun Sil Kim[1], Sujin Choi[2], Byung-Ho Choe[2], Sowon Park[3], Yeoun Joo Lee[4], Soon Chul Kim[5], Ki Soo Kang[6], Kunsong Lee[7], Jung Ok Shim[8], Yu Bin Kim[9], Suk Jin Hong[10], Yoo Min Lee[11], Hyun Jin Kim[12], So Yoon Choi[13], Ju Young Kim[14], Yoon Lee[15], Ji-Sook Park[16], Jae Young Kim[17], Dae Yong Yi[18], Ben Kang[2]
[1]Department of Pediatrics, Kangbuk Samsung Hospital, Seoul, Korea
[2]Department of Pediatrics, Kyungpook National University Hospital, Daegu, Korea
[3]Department of Pediatrics, Severance Children's Hospital, Seoul, Korea
[4]Department of Pediatrics, Pusan National University Children's Hospital, Yangsan, Korea
[5]Department of Pediatrics, Jeonbuk National University Hospital, Jeonju, Korea
[6]Department of Pediatrics, Jeju National University Hospital, Jeju, Korea
[7]Department of Pediatrics, Dankook University College of Medicine, Cheonan, Korea
[8]Department of Pediatrics, Korea University Guro Hospital, Seoul, Korea
[9]Department of Pediatrics, Ajou University School of Medicine, Suwon, Korea
[10]Department of Pediatrics, Daegu Catholic University School of Medicine, Daegu, Korea
[11]Department of Pediatrics, Soonchunhyang University Bucheon Hospital, Bucheon, Korea
[12]Department of Pediatrics, Chungnam National University Hospital, Daejeon, Korea
[13]Department of Pediatrics, Kosin University Gospel Hospital, Busan, Korea
[14]Department of Pediatrics, Eulji Medical Center, Daejeon, Korea
[15]Department of Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea
[16]Department of Pediatrics, Gyeongsang National University College of Medicine, Jinju, Korea
[17]Department of Pediatrics, Gyeongsang National University Changwon Hospital, Changwon, Korea
[18]Department of Pediatrics, Chung-Ang University Hospital, Seoul, Korea

PO2-3

Biological Agents in the Treatment of Fistulising Crohn's Disease: a Propensity Score-Matched Analysis from the Prospective Persistence Australian National IBD Cohort (PANIC) Study

John David[1], Yanna Ko[2], Sudarshan Paramsothy[1,3,4], Rupert Leong[1,3,4]
[1]Department of Gastroenterology, Concord Repatriation General Hospital, Australia
[2]Department of Gastroenterology, Canterbury Hospital, Sydney, Australia

[3]Department of Gastroenterology, Macquarie University Hospital, Australia
[4]Faculty of Medicine and Health Sciences, Macquarie University, Sydney, Australia

PO2-4 **The Diagnostic Performance of the DETAIL Questionnaire as a Screening Tool for Spondyloarthritis in Korean Patients with Inflammatory Bowel Disease**

Sihyun Kim[1], Yu Kyung Jun[1,2], Yonghoon Choi[1], Cheol Min Shin[1,2], Young Soo Park[1], Nayoung Kim[1,2], Dong Ho Lee[1,2], You-Jung Ha[3], Hyuk Yoon[1,2]
[1]Division of Gastroenterology, Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea
[2]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea
[3]Division of Rheumatology, Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea

PO2-5 **Risk of Spondyloarthritis in Patients with Inflammatory Bowel Disease under Treatment with Biologics or Janus Kinase Inhibitors**

Young-Eun Kim[1], Sung Wook Hwang[2], Byong Duk Ye[2], Suk-Kyun Yang[2], Seokchan Hong[1], Sang Hyoung Park[2]
[1]Division of Rheumatology, Department of Internal Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea
[2]Division of Gastroenterology, Department of Internal Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

PO2-6 **Rising Prevalence of Overweight Population in Inflammatory Bowel Disease Patients and its associated Clinical Outcome**

Min Kyu Kim[1], Cheol-Hyung Lee[1], Ji Eun Baek[1], June Hwa Bae[1], Jung-Bin Park[1], Seung Wook Hong[1], Sang Hyoung Park[1,2], Dong-Hoon Yang[1], Byong Duk Ye[1,2], Jeong-Sik Byeon[1], Seung-Jae Myung[1], Suk-Kyun Yang[1,2], Sung Wook Hwang[1,2]
[1]Department of Gastroenterology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea
[2]Inflammatory Bowel Disease Center, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

PO2-7 **Effectiveness of Early Thiopurine Use in Korean Patients with Moderate-to-severe Ulcerative Colitis: A Prospective Multicenter Cohort (MOSAIK) Study**

Hye Kyung Hyun[1], Ji Won Kim[2], Jun Lee[3], Yoon Tae Jeen[4], Tae-Oh Kim[5], Joo Sung Kim[6], Jae Jun Park[7], Sungnoh Hong[8], Dong Il Park[9], Hyun-Soo Kim[10], Yoojin Lee[11], Eun Suk Jung[12], Youngdoe Kim[12], Su Young Jung[12], Jae Hee Cheon[7]
[1]Internal Medicine, Yonsei University College of Medicine, Yongin Severance Hospital, Yongin, Korea

POSTER ORAL PRESENTATION

[2]*Internal Medicine, SMG-SNU Boramae Medical Center, Seoul National University College of Medicine, Seoul, Korea*
[3]*Internal Medicine, Chosun University Hospital, Gwangju, Korea*
[4]*Internal Medicine, Korea University Anam Hospital, Seoul, Korea*
[5]*Internal Medicine, Inje University Haeundae Paik Hospital, Busan, Korea*
[6]*Internal Medicine, Seoul National University College of Medicine, Seoul, Korea*
[7]*Internal Medicine, Yonsei University College of Medicine, Severance Hospital, Seoul, Korea*
[8]*Internal Medicine, Samsung Medical Center, Seoul, Korea*
[9]*Internal Medicine, Kangbuk Samsung Hospital, Seoul, Korea*
[10]*Internal Medicine, Yonsei University Wonju College of Medicine, Wonju, Korea*
[11]*Internal Medicine, Keimyung University School of Medicine, Daegu, Korea*
[12]*Medical Affaris, Janssen Korea Ltd, Seoul, Korea*

13:55-15:15	**IBD/Clinical 2**	Room C
Chairs	Sang-Bum Kang (The Catholic University of Korea, Korea) Sang Hyoung Park (University of Ulsan, Korea)	

PO3-1

Risk Factors and Outcomes of Chronic Antibiotic-refractory Pouchitis in Korean Ulcerative Colitis Patients: A Single Center Retrospective Study

Ji Eun Baek[1], Jung-Bin Park[1], June Hwa Bae[1], Min Hyun Kim[2], Seung Wook Hong[1], Sung Wook Hwang[1], Jong Lyul Lee[2], Yong Sik Yoon[2], Dong-Hoon Yang[1], Byong Duk Ye[1], Jeong-Sik Byeon[1], Seung-Jae Myung[1], Chang Sik Yu[2], Suk-Kyun Yang[1], Sang Hyoung Park[1]
[1]*Department of Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea*
[2]*Department of Surgery, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea*

PO3-2

Molecular Remission Potential: Tissue Neutrophil Elastase is Better than Histological Activity for Predicting Long-term Relapse in Patients with Ulcerative Colitis in Clinical and Endoscopic Remission

Yu Kyung Jun[1,2], Ji Ae Lee[3], Yonghoon Choi[1], Cheol Min Shin[1,2], Young Soo Park[1], Nayoung Kim[1,2], Dong Ho Lee[1,2], Hyeon Jeong Oh[3], Hyuk Yoon[1,2]
[1]*Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea*
[2]*Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea*
[3]*Department of Pathology, Seoul National University Bundang Hospital, Seongnam, Korea*

PO3-3 **Comparative Efficacy of Subcutaneous Infliximab in Remission and Non-remission Patients with Inflammatory Bowel Disease after Switching from Maintenance of Intravenous Infliximab: One-year Outcomes from a Multicenter Cohort Study**

Jun Hwa Bae[1], Jung-Bin Park[1], Ji Eun Baek[1], Yoo Jin Lee[3,7], Kyeong Ok Kim[4,7], Eun Soo Kim[5,7], Hyeong Ho Jo[6,7], Seung Wook Hong[1], Sang Hyoung Park[1,2], Dong-Hoon Yang[1], Byong Duk Ye[1,2], Jeong-Sik Byeon[1], Seung-Jae Myung[1], Suk-Kyun Yang[1,2], Eun Young Kim[6,7], Sung Wook Hwang[1,2]

[1]Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea
[2]Inflammatory Bowel Disease Center, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea
[3]Internal Medicine, Keimyung University School of Medicine, Daegu, Korea
[4]Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea
[5]Internal Medicine, School of Medicine, Kyungpook National University, Daegu, Korea
[6]Internal Medicine, Daegu Catholic University School of Medicine, Daegu, Korea
[7]CCAiD, Crohn's and Colitis Association in Daegu-Gyeongbuk, Daegu, Korea

PO3-4 **Edema Index as a More Sensitive Indicator of Nutritional Status with Crohn's Disease**

Academic Grant

Yu Peng[1], Xiaowei Liu[1]

[1]Department of Gastroenterology, Xiangya Hospital Central South University, Changsha, China

PO3-5 **Clinical Outcomes for Ulcerative Colitis Patients Stopping 5-aminosalicylates Starting Biologics and/or Immunomodulator Therapy: A Systematic Review and Meta-analysis**

Jung Rock Moon[1], Ji Eun Na[2], Jung Hyun Ji[3], Hye Sun Lee[4], Jae Jun Park[3]

[1]Internal Medicine, Ilsan Paik Hospital, Inje University College of Medicine, Goyang, Korea
[2]Internal Medicine, Haeundae Paik Hospital, Inje University College of Medicine, Busan, Korea
[3]Internal Medicine, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
[4]Biostatics Collaboration Unit, Yonsei University College of Medicine, Seoul, Korea

PO3-6 **Modification and Application of Simplified Magnetic Resonance Index of Activity (sMaRIA) to MR and CT enterography in Crohn's Disease**

Dong Il Kim[1], Ye Rin Hwang[1], Sung Kyoung Moon[1], Myoung-Won Yoo[1], Seong Jin Park[1], Shin Ju Oh[2]

[1]Radiology, Kyung Hee University Hospital, Seoul, Korea
[2]Gastroenterology, Kyung Hee University Hospital, Seoul, Korea

POSTER ORAL PRESENTATION

PO3-7 **Higher Ustekinumab Trough Levels are associated with Endoscopic Remission in Patients with Crohn's Disease and Ulcerative Colitis**

Makoto Okabe[1], Shuji Yamamoto[1], Kensuke Hamada[1], Hiroki Kitamoto[1], Atsushi Yonezawa[2], Hiroshi Seno[1]

[1]Gastroenterology and Hepatology, Graduate School of Medicine, Kyoto University, Kyoto, Japan

[2]Pharmacology, Keio University, Tokyo, Japan

13:55-15:15 **IBD/Basic/Translational** Room C

Chairs Seong-Joon Koh (Seoul National University, Korea)
Sung Wook Hwang (University of Ulsan, Korea)

PO4-1 **Regulation of miR-338-3p and miR-378a-3p in the Intestinal Mucosa of Crohn's Disease: Potential Targets for Inflammation Modulation**

Jung Min Moon[1], Ki-Uk Kim[2,3], Eunsu Lim[2], Hye Won Hwang[4], Kyuwon Kim[1], Jeongkuk Seo[1], Seung Yong Shin[1], Hyeyoung Min[2], Chang Hwan Choi[1]

[1]Department of Internal Medicine, Chung-Ang University College of Medicine, Seoul, Korea

[2]College of Pharmacy, Chung-Ang University, Seoul, Korea

[3]Department of Biomedical Sciences, Seoul National University College of Medicine, Seoul, Korea

[4]Department of Pathology, Chung-Ang University College of Medicine, Seoul, Korea

PO4-2 **Differentiation of Tonsil-derived Mesenchymal Stem Cells to Intestinal Stem Cells-like Cells for Cell Therapy of Inflammatory Bowel Disease**

Eun Mi Song[1], Yang Hee Joo[1], Ju-Ran Byeon[1], A-Reum Choe[1], Chung Hyun Tae[1], Chang Mo Moon[1], Seong-Eun Kim[1], Hye-Kyung Jung[1], Ki-Nam Shim[1], Sung-Ae Jung[1]

[1]Internal Medicine, College of Medicine, Ewha Womans University, Seoul, Korea

PO4-3 **Serum Metabolomic Biomarkers can Identify Inflammatory Bowel Disease and Characterize associated Subtypes and Phenotypes**

Ji Eun Kim[1], Dong Ho Suh[2], Yu Jin Park[2], Shin Ju Oh[1], Hyeji Kang[2], Yosep Ji[2], Eun Sung Jung[2], Chang Kyun Lee[1]

[1]Gastroenterology, Kyung Hee University College of Medicine, Seoul, Korea

[2]Metabolomics, HEM Pharma Inc., Suwon, Korea

PO4-4 **Two Different Mechanisms of Pathogenic Variants in the Extracellular Domain of IL10RA**

Juhwan Lee[2], Inki Kim[1], Seak Hee Oh[1], Iksoo Chang[2]

[1]Pediatrics, Asan Medical Center, Seoul, Korea

[2]Creative Research Initiatives Center for Proteome Biophysics, DGIST, Daegu, Korea

PO4-5 **Cell-derived Vesicles Extruded from Adipose Mesenchymal Stem Cells Attenuate Intestinal Inflammation and Augment Epithelial Regeneration in a Colitis Model**

Min Kyoung Jo[1,2], Hyeon-Jeong Jeon[1,2], So Hui Kim[1,2], Hye Sun Lee[1,2], Seong-Eun Kim[1], Sung-Ae Jung[1], Hui-Chong Lau[3], Sung-Soo Park[3], Seung Wook Oh[3], Chang Mo Moon[1,2]

[1]Internal Medicine, College of Medicine, Ewha Womans University, Seoul, Korea

[2]Inflammation-Cancer Microenvironment Research Center, College of Medicine, Ewha Womans University, Seoul, Korea

[3]BioDrone Research Institute, MDimune Inc., Seoul, Korea

PO4-6 **Increased S100B in Chronic Colitis is associated with Neuroinflammation**

Doyeon Lee[1], Sihyun Jeong[1], Geunhyung Yang[1], Daehyun Park[1], Youngju Do[1], Yunna Lee[1], Sang Hoon Rhee[2], Eunok Im[1]

[1]Pharmacy, Pusan National University, Busan, Korea

[2]Biological Sciences, Oakland University, Rochester, United States

PO4-7 **Anti-Inflammatory Effect of LMT503, a Modulator of Immune Cell Metabolism, on Murine Adoptive T Cell Transfer-Induced Colitis Model**

Ki Beom Kim[1], Yoojin Shin[1], I Seul Park[1], Ji Hyung Kim[1], Seung Won Kim[1,2], Jae Hee Cheon[1,2]

[1]Department of Internal Medicine and Institute of Gastroenterology, Graduate School of Medical Science, Brain Korea 21 Project, Yonsei University College of Medicine, Seoul, Korea

[2]Sevrance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea

13:55-15:15 Colorectal Neoplasia/Clinical 1 — Room C

Chairs Hyun Gun Kim (Soonchunhyang University, Korea)
Jun Lee (Chosun University, Korea)

PO5-1 **Comparison of Precutting EMR using Snare Tip and ESD Knife for 15-25 mm Non-pedunculated Colorectal Polyps: A Randomized Controlled Trial**

Chang Kyo Oh[1], Young Wook Cho[2], Young-Seok Cho[2]

[1]Division of Gastroenterology, Department of Internal Medicine, Hallym University Kangnam Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea

[2]Division of Gastroenterology, Department of Internal Medicine, Seoul St. Mary's Hospital, The Catholic University of Korea, Seoul, Korea

PO5-2 **Prediction of Lymph Node Metastasis in T1 Colorectal Cancer using Artificial Intelligence with Hematoxylin and Eosin-stained Whole Slide Images of Endoscopically Resected and Surgical Specimens**

Joo Hye Song[1], Yiyu Hong[2], Eun Ran Kim[3], Insuk Sohn[2], Su Min Ahn[4], Seok-Hyung Kim[4], Kee-Taek Jang[4]

POSTER ORAL PRESENTATION

[1]Internal Medicine, Konkuk University Medical Center, Seoul, Korea
[2]R&D Center, Arontier Co., Ltd, Seoul, Korea
[3]Medicine, Samsung Medical Center, Seoul, Korea
[4]Pathology, Samsung Medical Center, Seoul, Korea

PO5-3

Does Urgent Colonoscopic Intervention Improve Outcomes of Post-polypectomy Bleeding? A CHASID Multicenter Study

Seongwoo Choi[1], Yunho Jung[1], Dae Sung Kim[2], Kwang Woo Nam[3], Sung Hyeok Ryou[3], Hoon Sup Koo[2], Hee Seok Moon[4], Sang-Bum Kang[5], Jeong Eun Shin[3], Kyu Chan Huh[2]
[1]Internal Medicine, Soonchunhyang University College of Medicine, Cheonan, Korea
[2]Internal Medicine, Konyang University College of Medicine, Daejeon, Korea
[3]Internal Medicine, Dankook University College of Medicine, Cheonan, Korea
[4]Internal Medicine, Chungnam National University School of Medicine, Daejeon, Korea
[5]Internal Medicine, Daejeon St. Mary's Hospital, College of Medicine, Daejeon, Korea

PO5-4

Impact of Second Examination of the Right Colon with Narrow Band Imaging on Adenoma Detection Rates: Interim Analysis of a Multicenter Randomized Controlled Trial

Jae Gon Lee[1], Sang Pyo Lee[1], In Kyung Yoo[2], Shin Hee Kim[3], One Zoong Kim[4], Jae Yong Park[5], Young Joo Yang[6], Jin Hwa Park[7]
[1]Internal Medicine, Hallym University Dongtan Sacred Heart Hospital, Hallym University College of Medicine, Hwaseong, Korea
[2]Gastroenterology, CHA Bundang Medical Center, CHA University College of Medicine, Seongnam, Korea
[3]Internal Medicine, Soon Chun Hyang University College of Medicine, Bucheon, Korea
[4]Internal Medicine, Uijeongbu Eulji Medical Center, Eulji University School of Medicine, Uijeongbu, Korea
[5]Internal Medicine, Chung-Ang University College of Medicine, Seoul, Korea
[6]Internal Medicine, Hallym University Chuncheon Sacred Heart Hospital, Hallym University College of Medicine, Chuncheon, Korea
[7]Internal Medicine, Hanyang University Hospital, Hanyang University College of Medicine, Seoul, Korea

PO5-5

Academic Grant

Racial Disparities in Early- and Late-onset Colorectal Cancer by State, Stage and Anatomic Site

Jia Xu[1], Jingyuan Liao[1], Qiong Yan[1], Mingming Deng[1], Xiaowei Tang[1]
[1]Department of Gastroenterology, The Affiliated Hospital of Southwest Medical University, Luzhou, China

PO5-6 **Efficacy and Safety of Colorectal Hybrid Endoscopic Submucosal Dissection: A Honam Association for the Study of Intestinal Disease (HASID) Multicenter Study**

Hyo Yeop Song[1], Geom Seog Seo[1], Seong-Jung Kim[2], Jun Lee[2], Byung Chul Jin[3], Sang Wook Kim[3], Dong Hyun Kim[4], Hyun Soo Kim[4], Young Eun Joo[4], Dae Seong Myung[4]

[1]Internal Medicine, Wonkwang University College of Medicine, Iksan, Korea
[2]Internal Medicine, Chosun Univeristy Hospital, Gwangju, Korea
[3]Internal Medicine, Jeonbuk National University Hospital, Jeonju, Korea
[4]Internal Medicine, Chonnam National University Hospital, Gwangju, Korea

PO5-7 **Risk Factors for Local Recurrence after Colorectal Endoscopic Submucosal Dissection: A HASID Multicenter Study**

Seong-Jung Kim[1], Jun Lee[1], Hyo Yeop Song[2], Geom-Seog Seo[2], Byung-Chul Jin[3], Sang-Wook Kim[3], Dong Hyun Kim[4], Hyun-Soo Kim[4], Hyung Hoon Oh[4], Dae-Seong Myung[4], Young-Eun Joo[4]

[1]Department of Internal Medicine, College of Medicine, Chosun University, Gwangju, Korea
[2]Department of Internal Medicine, College of Medicine, Wonkwang University, Iksan, Korea
[3]Department of Internal Medicine, College of Medicine, Jeonbuk National University, Jeonju, Korea
[4]Department of Internal Medicine, College of Medicine, Chonnam National University, Gwangju, Korea

13:55-15:15 Colorectal Neoplasia/Clinical 2 — Room C

Chairs **Ja Seol Koo** (Korea University, Korea)
Jae Jun Park (Yonsei University, Korea)

PO6-1 **Efficacy, Tolerability and Safety of Oral Sulfate Table versus 2L-polyethylene Glycol/ Ascorbate for Bowel Preparation in Elderly Patients: Prospective, Multicenter, Investigator Single-blinded, Randomized Study**

Ho Suk Kang[1], Soo-Young Na[2], Jin Young Yoon[3], Yunho Jung[4], Geom Seog Seo[5], Jae Myung Cha[3]

[1]Department of Internal Medicine, Hallym University Sacred Heart Hospital, Hallym University College of Medicine, Anyang, Korea
[2]Department of Internal Medicine, Incheon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Seoul, Korea
[3]Department of Internal Medicine, Kyung Hee University Hospital at Gangdong, College of Medicine, Kyung Hee University, Seoul, Korea
[4]Department of Internal Medicine, Soonchunhyang University College of Medicine, Cheonan, Korea
[5]Department of Internal Medicine, School of Medicine, Wonkwang University, Iksan, Korea

POSTER ORAL PRESENTATION

PO6-2

Effectiveness of Grab-and-capture Traction using Repositionable Clip in Endoscopic Submucosal Dissection of Large Non-pedunculated Colorectal Polyps

Won Myung Lee[1], Bong Min Ko[1], Moon Sung Lee[1], Yunho Jung[2], Sung Ran Jeon[3], Hyun Gun Kim[3]

[1]Digestive Disease Center and Research Institute, Department of Internal Medicine, SoonChunHyang University School of Medicine, Bucheon, Korea

[2]Digestive Disease Center and Research Institute, Department of Internal Medicine, SoonChunHyang University School of Medicine, Cheonan, Korea

[3]Digestive Disease Center and Research Institute, Department of Internal Medicine, SoonChunHyang University School of Medicine, Seoul, Korea

PO6-4

A Novel Retractable Robotic Device for Colorectal Endoscopic Submucosal Dissection

Sang Hyun Kim[1], Bora Keum[1], Han Jo Jeon[1], Hyuk Soon Choi[1], Eun Sun Kim[1], Yoon Tae Jeen[1], Hoon Jai Chun[1]

[1]Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea

PO6-5

Academic Grant

Utility of the Japan Narrow-band Imaging Expert Team (JNET) Classification with Dual Focus Magnification for Optical Diagnosis of Colorectal Polyp Histology in the Vietnamese Setting

Manh -Tien Huynh[1,2], Quang - Nhan Le[2], Dinh Quang Le[1,2,3], Minh Huy Le[1,2], Trong Duc Quach[1,2]

[1]Internal Medicine, University of Medicine and Pharmacy at Hochiminh City, Ho Chi Minh City, Vietnam

[2]GI Endoscopy, University Medical Center at Hochiminh, Ho Chi Minh City, Vietnam

[3]GI Endoscopy, Nhan Dan Gia Dinh Hosptial, Ho Chi Minh, Vietnam

PO6-6

Outcome of Colorectal Endoscopic Submucosal Dissection in Patients with Chronic Kidney Disease: A HASID Multicenter Study

Byung Chul Jin[1], Dong Hyun Kim[2], Hyung-Hoon Oh[2], Hyo-Yeop Song[3], Seong-Jung Kim[4], Dae-Seong Myung[2], Young-Eun Joo[2], Jun Lee[4], Hyun-Soo Kim[2], Sang-Wook Kim[1], Geom-Seog Seo[3]

[1]Department of Internal Medicine, Jeonbuk National University Hospital, Jeonju, Korea

[2]Department of Internal Medicine, Chonnam National University Medical School, Gwangju, Korea

[3]Department of Internal Medicine and Digestive Disease Research Institute, Wonkwang University School of Medicine, Iksan, Korea

[4]Department of Internal Medicine, Chosun University, Gwangju, Korea

PO6-7

A Re-audit on Bowel Preparation for Colonoscopy in a Surgical Unit of a Tertiary Care Hospital, Sri Lanka

Keddagoda Gamage Vinod Saranga[1], Vihanga Chamod Wickramasinghe[1], Sumudumali Arundathi Piyarathne[1], Jasenthu Kankanamge Ganindu Madhawa[1], Ambawatta Hewage Anil Prashantha[1]

[1]Colombo South Teaching Hospital, Post Graduate Institute of Medicine, Colombo, Sri Lanka

13:55-15:15 Colorectal Neoplasia/Basic/Translational — Room C

Chairs: **Sang Wook Kim** (Jeonbuk National University, Korea)
Chang Mo Moon (Ewha Womans University, Korea)

PO7-1

Systematic Investigation of Plasma and Urinary Metabolites to Discover Potential Interventional Targets for Colorectal Cancer

Jing Sun[1], Jianhui Zhao[1], Siyun Zhou[1], Xinxuan Li[1], Tengfei Li[1], Lijuan Wang[2], Shuai Yuan[3], Dong Chen[4], Philip J Law[5], Susanna C. Larsson[3,6], Susan M Farrington[7], Richard S Houlston[5], Malcolm Dunlop[7,8], Evropi Theodoratou[2,8], Xue Li[1]

[1]Department of Big Data in Health Science School of Public Health, and Center of Clinical Big Data and Analytics of The Second Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, Zhejiang, China

[2]Centre for Global Health, Usher Institute, University of Edinburgh, Edinburgh, United Kingdom

[3]Unit of Cardiovascular and Nutritional Epidemiology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden

[4]Department of Colorectal Surgery, The First Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, China

[5]Division of Genetics and Epidemiology, The Institute of Cancer Research, London, United Kingdom

[6]Unit of Medical Epidemiology, Department of Surgical Sciences, Uppsala University, Uppsala, Sweden

[7]Cancer Research UK Edinburgh Centre, Medical Research Council Institute of Genetics and Cancer, University of Edinburgh, United Kingdom

[8]Colon Cancer Genetics Group, Institute of Genetics and Cancer, University of Edinburgh, Edinburgh, United Kingdom

POSTER ORAL PRESENTATION

PO7-2 **Patient-derived Organoid Model for Prediction of MMR (Mismatch Repair) Gene Function and Cancer Risk in Patients with Germline Variations of MMR Genes**

Youmi Shin[1], Yoojeong Seo[1], Dong Keon Kim[2], Tae Il Kim[1,2]
[1]*Department of Internal Medicine, Institute of Gastroenterology, Yonsei University College of Medicine, Seoul, Korea*
[2]*Department of Gastroenterology, Severance Hospital, Seoul, Korea*

PO7-3 **The Traditional Chinese Medicine Formula Huai-hua-san Exerts Anti-colorectal Cancer Effects through Multiple Mechanisms**

Ruixuan Han[1], Xiaoqi Wang[1], Jingxuan Bai[1], Xiuqiong Fu[1], Zhiling Yu[1]
[1]*Center for Cancer and Inflammation Research, School of Chinese Medicine, Hong Kong Baptist University, Hong Kong, China*

PO7-4 **Neuropeptide Y Deficiency Increases Susceptibility to Colitis-associated Colorectal Cancer**

Yunna Lee[1], Sihyun Jeong[1], Doyeon Lee[1], Geunhyung Yang[1], Eunok Im[1]
[1]*College of Pharmacy, Pusan National University, Busan, Korea*

PO7-5 Academic Grant **Modulation of Chemotherapy-related fatigue (CRF) by Hesperidin Having Colon Cancer via Inhibition of p-AMPK, IL-6 and TNF- expression**

Deepika Singh[1]
[1]*Department of Pharmaceutical Sciences, SHUATS, Prayagraj, India*

PO7-6 Academic Grant **Effect of Alverine Citrate Plus Simethicone in Colonoscopy: A Randomized Controlled Trials**

Chumpon Wilasrusmee[1], Jakrapan Jirasiritham[1], Chairat Supsamutchai[1], Puvee Punmeechao[1], Napaphat Poprom[1]
[1]*Surgery, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand*

PO7-7 **Efficacy of Novel One-step Knife compared to Conventional Knife for Colorectal Endoscopic Submucosal Dissection: A Multicenter, Randomized Controlled Trial**

Su Young Kim[1], Gwang Ho Baik[2], Myeongsook Seo[3], Hyun Il Seo[3], Sung Chul Park[4], Hyunil Kim[1], Hyun-Soo Kim[1], Hong Jun Park[1]
[1]*Division of Gastroenterology, Department of Internal Medicine, Yonsei University Wonju College of Medicine, Wonju, Korea*
[2]*Department of Internal Medicine, Hallym University College of Medicine, Chuncheon, Korea*
[3]*Department of Gastroenterology, Gangneung Asan Hospital, University of Ulsan College of Medicine, Gangneung, Korea*
[4]*Department of Internal Medicine, Kangwon National University School of Medicine, Chuncheon, Korea*

13:55-15:15	**Small Bowel Disease/Nutrition**	Room C
Chairs	Yun Jeong Lim (Dongguk University, Korea) Seong Ran Jeon (Soonchunhyang University, Korea)	

PO8-1 Academic Grant

Role of Wearable Technology and Geo-fencing Device for Celiac Disease in School Adolescents Patients in Jaipur City, India

Vikas Sharma[1], Madhu Gautam[1]
[1]*Applied Sciences, IDAC Reserach Center, Gurugram, India*

PO8-2 Academic Grant

Metabolomic Analysis and Precision Nutrition Interventions: Enhancing Nutrient Absorption and Modulating Microbial Metabolism in Short Bowel Syndrome Patients

Sahnaz Vivinda Putri[1], Ratna Ayu[2], Bella Cantika[3], Andi Nursanti Andi Ureng[4], Elfiany Elfiiany[5,2]
[1]*Health Management Laboratory, International University Semen Indonesia, Gresik, Indonesia*
[2]*Clinical Nutrition, Bantaeng General Hospital, Bantaeng, Indonesia*
[3]*Gastroenterology, Bantaeng General Hospital, Bantaeng, Indonesia*
[4]*Pharmacy, Andini Persada College of Health Sciences, Mamuju, Indonesia*
[5]*Computational Science Laboratory, Bulukumba Muhammadiyah University, Bulukumba, Indonesia*

PO8-3 Academic Grant

How Could the Caregiver Status Increase the Quality of Life and Nutritional Status among Elderly with Colorectal Cancer Disease?

Rosinta Hotmaida Pebrianti Purba[1], Ester Marnita Purba[1], Ni Made Ratih Kusuma Dewi[1]
[1]*Department of Socioeconomics, The Pranala Institute, Yogyakarta, Indonesia*

PO8-4 Academic Grant

Revealed Intermittent Fasting Benefit: How Does the Systematic Review Suggest Patients with Small Bowel Cancer Should Undergo the Most Effective Fasting?

Ester Marnita Purba[1], Rosinta Hotmaida Pebrianti Purba[1], Ni Made Ratih Kusuma Dewi[1], Helen Tryjuni Asti[1,2]
[1]*Department of Socioeconomics, The Pranala Institute, Yogyakarta, Indonesia*
[2]*Department of Public Health, Cendrawasih University, Papua, Indonesia*

PO8-5

Clinical Features of Celiac Disease and Non-celiac Gluten Sensitivity among Children in the Republic of Uzbekistan

Noiba Azimova[1], Altinoy Kamilova[1], Zulkhumar Umarnazarova[1], Dilrabo Abdullaeva[1], Svetlana Geller[1], Gulnoza Azizova[1]
[1]*Gastroenterology and Nutrition, Republican Specialized Scientific Practical Medical Center of Pediatrics, Tashkent, Uzbekistan*

POSTER ORAL PRESENTATION

PO8-6 **Clinical Outcomes of Delayed Capsule Endoscopy in Inpatients with Small Bowel Bleeding: Propensity Score Matching Analysis**

Cheolung Kim[1], Seung Min Hong[1], Dong Hoon Baek[1], Geun Am Song[1], Hyeon Tae Cho[1], Jeong Gil Park[1], Gwang Ha Kim[1], Bong Eun Lee[1], Moon Won Lee[1], Dong Chan Joo[1]

[1]Department of Internal Medicine, Pusan National University School of Medicine and Biomedical Research Institute, Pusan National University Hospital, Busan, Korea

PO8-7 **Total Bilirubin can be a Serologic Predictor of Small Intestinal Bacterial Overgrowth in Diarrhea Predominant Irritable Bowel Syndrome**

Seung-Eun Jung[1], Sang-Hoon Lee[2], Kyu-Nam Kim[1]

[1]Department of Family Practice and Community Health, Ajou University School of Medicine, Suwon, Korea

[2]Department of Family Medicine and Functional Medicine, Greencross I-Med Gangnam Medical Clinic, Seoul, Korea

POSTER EXHIBITION

Inflammatory Bowel Disease

PE1-001

Interleukin-17 Regulates CXCL5 in Gut Mucosa of Inflammatory Bowel Disease: Implications for Inflammation and Neutrophil Recruitment

Jung Min Moon[1], Seong-Joon Koh[2], Hosun Yoo[3,4], Eunsu Lim[5], Hyeyoung Min[5], Seulji Kim[2,6], Kwang Woo Kim[2,7], Yukyung Jun[2,8], Hyun Jung Lee[2], Jong Pil Im[2], Joo Sung Kim[2]

[1]Department of Internal Medicine, Chung-Ang University College of Medicine, Seoul, Korea
[2]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea
[3]Graduate School of Medical Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea
[4]Korea Virus Research Institute, Institute for Basic Science, Daejeon, Korea
[5]College of Pharmacy, Chung-Ang University, Seoul, Korea
[6]Department of Internal Medicine, Korea Institute of Radiological and Medical Sciences, Seoul, Korea
[7]Division of Gastroenterology, Department of Internal Medicine, Seoul National University Boramae Medical Center, Seoul, Korea
[8]Division of Gastroenterology, Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea

PE1-002

Clinical Features and Natural History of Pediatric Patients with Ulcerative Proctitis: A Multicenter Study from the Pediatric IBD Porto Group of ESPGHAN

Ben Kang[1], Noa Tal[2], Christos Tzivinikos[3], Marco Gasparetto[4], Daniela Serban[5], Eyal Zifman[6], Iva Hojsak[7], Oren Ledder[8], Anat Yerushalmy Feler[9], Helena Rolandsdotter[10], Marina Aloi[11], Matteo Bramuzzo[12], Stephan Buderus[13], Paolo Lionetti[14], Lorenzo Norsa[15], Christoph Norden[16], Darja Urlep[17], Claudio Romano[18], Ron Shaoul[19], Dror Shouval[2]

[1]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Pediatrics, Sacker Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel
[3]Pediatrics, Al Jalila Children's Specialty Hospital, Mohammed Bin Rashid University, Dubai Medical College, Dubai, United Arab Emirates
[4]Pediatrics, Barts Health NHS Trust, The Royal London Children's Hospital, London, United Kingdom
[5]Pediatrics, Iuliu Hatieganu University of Medicine and Pharmacy, Emergency Clinical Hospital for Children, Cluj-Napoca, Romania
[6]Pediatrics, Meir Medical Center, Kfar-Saba, Israel
[7]Pediatrics, Children's Hospital Zagreb, Zagreb, Croatia
[8]Pediatrics, Shaare Zedek Medical Center, The Hebrew University of Jerusalem, Jerusalem, Israel
[9]Pediatrics, Dana-Dwek Children's Hospital, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel
[10]Pediatrics, Sweden and Sachs' Children and Youth Hospital, Stockholm, Sweden

POSTER EXHIBITION

[11]Pediatrics, Sapienza University of Rome, Rome, Italy
[12]Pediatrics, Institute for Maternal and Child Health, IRCCS, Trieste, Italy
[13]Pediatrics, St-Marien-Hospital, Bonn, Germany
[14]Pediatrics, University of Florence, Meyer Children's Hospital, Florence, Italy
[15]Pediatrics, ASST Papa Giovanni XXIII, Bergamo, Italy
[16]Pediatrics, Hvidovre University Hospital, Hvidovre, Denmark
[17]Pediatrics, University Children's Hospital of the University Medical Centre Ljubljana, Ljubljana, Slovenia
[18]Pediatrics, University of Messina, Messina, Italy
[19]Pediatrics, Ruth Children's Hospital of Haifa, Rambam Medical Center, Haifa, Israel

PE1-003 **Risankizumab versus Ustekinumab for Patients with Moderate to Severe Crohn's Disease: Results from the Phase 3b SEQUENCE Study**

Laurent Peyrin-Biroulet[1], J. Casey Chapman[2,3,4], Jean-Frederic Colombel[5], Flavio Caprioli[6,7], Geert D'haens[8], Marc Ferrante[9], Stefan Schreiber[10], Raja Atreya[11], Silvio Danese[12], James O. Lindsay[13], Peter Bossuyt[14], Britta Siegmund[15], Peter Irving[16], Remo Panaccione[17], Ezequiel Neimark[18], Kori Wallace[18], Toni Anschutz[18], Kristina Kligys[18], W Rachel Duan[18], Marla C Dubinsky[19]

[1]Department of Gastroenterology, University Hospital of Nancy-Brabois, Vandoeuvre-les-Nancy, France
[2]Department of Internal Medicine, Louisiana State University Health Sciences Center, Baton Rouge, Louisiana, United States
[3]Crohn's and Colitis Center, The Baton Rouge General, Baton Rouge, Louisiana, United States
[4]Gastroenterology, GI Alliance, Baton Rouge, Louisiana, United States
[5]Icahn School of Medicine, Mt. Sinai, New York, United States
[6]Department of Pathophysiology and Transplantation, Universit degli Studi di Milano, Milan, Italy
[7]Unit of Gastroenterology and Endoscopy, Fondazione IRCCS Ca Granda Ospedale Policlinico di Milano, Milan, Italy
[8]Department of Gastroenterology, Amsterdam UMC campus AMC, Amsterdam, Netherlands
[9]Department of Gastroenterology and Hepatology, University Hospitals Leuven, KU Leuven, Leuven, Belgium
[10]Department of Internal Medicine, U University Hospital Schleswig-Holstein, Kiel, Germany
[11]Department of Internal Medicine, Friedrich-Alexander-Universitt Erlangen-Nrnberg, Erlangen, Germany
[12]Gastroenterology and Endoscopy, IRCCS Ospedale San Raffaele and University Vita-Salute San Raffaele, Milan, Italy
[13]Centre for Immunobiology, Barts and The London School of Medicine and Dentistry, Queen Mary University of London, London, United Kingdom
[14]Department of Gastroenterology, Imelda General Hospital, Bonheiden, Belgium
[15]Department of Gastroenterology, Infectious Diseases and Rheumatology, Charit - Universittsmedizin Berlin, Berlin, Germany

[16]*Department of Gastroenterology, Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom*
[17]*Inflammatory Bowel Disease Unit, Division of Gastroenterology and Hepatology, University of Calgary, Calgary, AB, Canada*
[18]*Medical, AbbVie, North Chicago, Illinois, United States*
[19]*Susan and Leonard Feinstein IBD Center, Icahn School of Medicine Mount Sinai, New York, United States*

PE1-004 **Long-term Clinical and Endoscopic Outcomes in True North Week 52 Clinical Remitters over 3 Years of Treatment with Ozanimod: An Interim Analysis of the True North Open-label Extension Study**

Remo Panaccione[1], David T. Rubin[2], Maria T. Abreu[3], Michael V. Chiorean[4], Lucy Akukwe[5], Anjali Jain[5], Annkatrin Petersen[5], Mark T. Osterman[5], Hsiuanlin Wu[5], Silvio Danese[6], Byung Ik Jang[7], Anita Afzali[8]
[1]*Department of Gastroenterology, Inflammatory Bowel Disease Clinic, Calgary, AB, Canada*
[2]*Department of Medicine, Gastroenterology, University of Chicago Medicine, Inflammatory Bowel Disease Center, Chicago, IL, United States*
[3]*Department of Medicine, Digestive Health and Liver Diseases, University of Miami Miller School of Medicine, Miami, FL, United States*
[4]*Department of Medicine, Gastroenterology, Swedish Medical Center, Seattle, WA, United States*
[5]*Clinical Development, Bristol Myers Squibb, Princeton, NJ, United States*
[6]*Department of Medicine, Gastroenterology and Digestive Endoscopy, IRCCS Ospedale San Raffaele and University Vita-Salute San Raffaele, Milan, Italy*
[7]*Department of Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea*
[8]*Division of Digestive Diseases, University of Cincinnati, Cincinnati, OH, United States*

PE1-005 **Therapeutic Drug Monitoring-based Proactive Dosing is Superior to Clinically-based Dosing in Terms of Endoscopic Healing in Pediatric Patients with Crohn's Disease Receiving Maintenance Infliximab: A Randomized Controlled Trial**

Ben Kang[1], Eun Sil Kim[2], Sujin Choi[1], Byung-Ho Choe[1], Jin Soo Moon[3], Jae Sung Ko[3], Sangjun Sohn[4], Yeoun Joo Lee[4], Yiyoung Kwon[5], Mi Jin Kim[6], Yon Ho Choe[6]
[1]*Department of Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea*
[2]*Department of Pediatrics, Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine, Seoul, Korea*
[3]*Department of Pediatrics, Seoul National University College of Medicine, Seoul, Korea*
[4]*Department of Pediatrics, Pusan National University Yangsan Hospital, College of Medicine, Pusan National University, Yangsan, Korea*
[5]*Department of Pediatrics, School of Medicine, Inha University, Incheon, Korea*
[6]*Department of Pediatrics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea*

POSTER EXHIBITION

PE1-006 **Comparative Risk of Serious Infections and Tuberculosis of Vedolizumab/Ustekinumab compared with Anti-TNF- agents: A Nationwide Population-based Study of Korean Patients with Inflammatory Bowel Disease**

Min Jee Kim[1], Hyeon Hwa Kim[1], Ye Jee Kim[2], Dae Hyun Jeong[3], Seonok Kim[2], Seokchan Hong[4], Sang Hyoung Park[5], Kyung Wook Jo[1]

[1]Department of Pulmonology and Critical Care Medicine, Asan Medical Center, Seoul, Korea
[2]Department of Clinical Epidemiology and Biostatistics, Asan Medical Center, Seoul, Korea
[3]Department of Pulmonology, Sahmyook Medical Center, Seoul, Korea
[4]Department of Rheumatology, Asan Medical Center, Seoul, Korea
[5]Department of Gastroenterology, Asan Medical Center, Seoul, Korea

PE1-008 **Association between Efficacy and Long-term Outcomes: Four Year Results from the UNIFI Study of Ustekinumab in Ulcerative Colitis**

Laurent Peyrin-Biroulet[1], Rupert Leong[2], Bruce E. Sands[3], Ye Miao[4], Colleen Marano[4], Silvio Danese[5]

[1]Inflammatory Bowel Disease (IBD) Group at the Gastroenterology Department, Nancy University Hospital, University of Lorraine, Nancy, France
[2]Director of Endoscopy, Head of IBD Services, Concord Repatriation General Hospital, Concord, Australia
[3]Gastroenterology, Icahn School of Medicine at Mount Sinai, New York, United States
[4]Immunology, Janssen Research & Development, LLC, Spring House, United States
[5]Gastroenterology and Endoscopy, IRCCS Ospedale San Raffaele and University Vita-Salute San Raffaele, Milan, Italy

PE1-009 **Comparing the Persistence of Advanced Therapies in the Management of Inflammatory Bowel Disease: A Retrospective Cohort Study in Taiwan**

Horng-Yih Chiu[1], Puo-Hsien Le[2,3], Chia-Jung Kuo[2,3], Ming-Wei Lai[3,4], Ren-Chin Wu[5], Chien-Ming Chen[6], Cheng-Tang Chiu[2,3], Cheng-Hsun Chiu[7], Ming-Yao Su[3,8], Yu-Bin Pan[9]

[1]School of Medicine, Chang Gung University, Taoyuan, Taiwan
[2]Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[3]Taiwan Association of the Study of Small Intestinal Disease, Taoyuan, Taiwan
[4]Division of Pediatric Gastroenterology, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[5]Anatomic Pathology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[6]Medical Imaging and Interventions, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[7]Division of Pediatric Infectious Diseases, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

[8]*Gastroenterology and Hepatology, New Taipei City Municipal Tucheng Hospital, New Taipei City, Taiwan*
[9]*Biostatistical Section, Clinical Trial Center, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan*

PE1-010 **Effectiveness of Fecal Microbiota Transplantation in Treating Clostridioides Difficile Infection among Patients with and without Inflammatory Bowel Disease**

Jing-Han Chen[1], Puo-Hsien Le[2,3,4], Pai-Jui Yeh[4,5], Chien-Chang Chen[4,5], Chia-Jung Kuo[2,3,4], Cheng-Tang Chiu[2,3,4], Cheng-Hsun Chiu[4,6]
[1]*School of Medicine, Chang Gung University, Taoyuan City, Taiwan*
[2]*Department of Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan*
[3]*TASSID, Taiwan Association of the Study of Small Intestinal Disease, Taoyuan City, Taiwan*
[4]*Chang Gung Microbiota Therapy Center, Chang Gung Memorial Hospital, Taoyuan City, Taiwan*
[5]*Division of Pediatric Gastroenterology, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan*
[6]*Division of Pediatric Infectious Diseases, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan*

PE1-011 **Risk Factors of Extraintestinal Manifestations in Inflammatory Bowel Diseases; A CHASID Multicenter Study**

Ju Seok Kim[1], Hee Seok Moon[1], Yunho Jung[2], Sang-Bum Kang[3], Kwangwoo Nam[4], Sunghyeok Ryou[4], Jeong Eun Shin[4], Kyu Chan Huh[5], Hoon Sup Koo[5], Dae Sung Kim[5]
[1]*Internal Medicine, Chungnam National University School of Medicine, Daejeon, Korea*
[2]*Internal Medicine, College of Medicine, Soonchunhyang University, Cheonan, Korea*
[3]*Internal Medicine, Daejeon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Daejeon, Korea*
[4]*Internal Medicine, Dankook University Hospital, Dankook University College of Medicine, Cheonan, Korea*
[5]*Internal Medicine, Konyang University College of Medicine, Daejeon, Korea*

PE1-012 **Multimodal Prehabilitation is associated with Improved Surgical Outcomes in Inflammatory Bowel Disease (IBD)**

Rebecca Wernick[1], Kelly Issokson[1], Andrea Banty[1], Viankail Cedillo-Castellan[1], Colleen Gwarnicki[1], Theodore Solomon[1], Stacey Collins[1], Erin Feldman[1], Christine Scarcello[1], Lilly Martirosyan[1], Brittany Slater-Washington[1], Andrea Wise[1], Pamela Roberts[1], Melissa Hampton[1], Yosef Nasseri[1], Karen Zaghiyan[1], Phillip Fleshner[1], Shervin Rabizadeh[1], Gil Melmed[1]
[1]*Gastroenterology, Cedars-Sinai Medical Center, Los Angeles, United States*

POSTER EXHIBITION

PE1-013 **Clinical Efficacy and Durability of Subcutaneous Infliximab in Patients with Moderate-to-severe Inflammatory Bowel Disease: A Real-world Multicenter Prospective Cohort Study in Korea**

Kyuwon Kim[1], Sung Noh Hong[2], Sang-Bum Kang[3], Kang-Moon Lee[4], Ja Seol Koo[5], Yunho Jung[6], Beom Jae Lee[7], Hyuk Yoon[8], Hyung Wook Kim[9], Yun Jeong Lim[10], Hyun Seok Lee[11], Yoo Jin Lee[12], Jun Lee[13], Chang Kyun Lee[14], Jung Min Moon[15], Seung Yong Shin[15], Jeongkuk Seo[1], Chang Hwan Choi[1]

[1]Gastroenterology, Chung-Ang University Hospital, Seoul, Korea
[2]Gastroenterology, Samsung Medical Center, Seoul, Korea
[3]Gastroenterology, Daejeon St. Mary's Hospital, The Catholic University of Korea, Daejeon, Korea
[4]Gastroenterology, St. Vincent's Hospital, College of Medicine, The Catholic University of Korea, Suwon, Korea
[5]Gastroenterology, Korea University College of Medicine, Ansan, Korea
[6]Gastroenterology, Soonchunhyang University College of Medicine, Cheonan, Korea
[7]Gastroenterology, Korea University Guro Hospital, Korea University College of Medicine, Seoul, Korea
[8]Gastroenterology, Seoul National University Bundang Hospital, Seongnam, Korea
[9]Gastroenterology, Pusan National University Yangsan Hospital, Pusan National University College of Medicine, Yangsan, Korea
[10]Gastroenterology, Dongguk University Ilsan Hospital, Goyang, Korea
[11]Gastroenterology, Kyungpook National University School of Medicine, Daegu, Korea
[12]Gastroenterology, Keimyung University School of Medicine, Daegu, Korea
[13]Gastroenterology, Chosun University College of Medicine, Gwangju, Korea
[14]Gastroenterology, Kyung Hee University School of Medicine, Seoul, Korea
[15]Gastroenterology, Chung-Ang University Gwangmyeong Hospital, Gwangmyeong, Korea

PE1-014 **Associations between Factors at Diagnosis in Pediatric Patients with Crohn's Disease: Results from a Multicenter, Registry-based, Inception Cohort Study**

Ben Kang[1], Seak Hee Oh[2], Eell Ryoo[3], Jin Soo Moon[4], Minsoo Shin[5], Yu Bin Kim[6], Yon Ho Choe[7], Yeoun Joo Lee[8], Hye Ran Yang[9], Hong Koh[10], Yoo Min Lee[11], Soon Chul Kim[12], Ji-Sook Park[13], So Yoon Choi[14], Tae Hyeong Kim[15], Ju Young Chang[16], Yoon Lee[17], Su Jin Jeong[18], Jung Ok Shim[19]

[1]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Pediatrics, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea
[3]Pediatrics, Gachon University Gil Medical Center, Incheon, Korea
[4]Pediatrics, Seoul National University College of Medicine, Seoul, Korea
[5]Pediatrics, Korea University Medical Center Ansan Hospital, Ansan, Korea
[6]Pediatrics, Ajou University School of Medicine, Suwon, Korea
[7]Pediatrics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea

[8]*Pediatrics, Pusan National University Children's Hospital, Pusan National University School of Medicine, Yangsan, Korea*
[9]*Pediatrics, Seoul National University Bundang Hospital, Seongnam, Korea*
[10]*Pediatrics, Yonsei University College of Medicine, Severance Children's Hospital, Seoul, Korea*
[11]*Pediatrics, Soonchunhyang University Bucheon Hospital, Soonchunhyang University College of Medicine, Bucheon, Korea*
[12]*Pediatrics, Jeonbuk National University Hospital, Jeonbuk National University Medical School, Jeonju, Korea*
[13]*Pediatrics, Gyeongsang National University College of Medicine, Jinju, Korea*
[14]*Pediatrics, Kosin University Gospel Hospital, Kosin University College of Medicine, Busan, Korea*
[15]*Pediatrics, Kyung Hee University Hospital at Gangdong, Seoul, Korea*
[16]*Pediatrics, Seoul Metropolitan Government-Seoul National University Boramae Medical Center, Seoul, Korea*
[17]*Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea*
[18]*Pediatrics, CHA Bundang Medical Center, CHA University School of Medicine, Seongnam, Korea*
[19]*Pediatrics, Korea University College of Medicine, Korea University Guro Hospital, Seoul, Korea*

PE1-015 **Persistence Comparison of Ustekinumab and Anti-TNF Agents in Vedolizumab-Experienced IBD Patients: A Retrospective Cohort Study**

Horng-Yih Chiu[1], Puo-Hsien Le[2,3], Pai-Jui Yeh[4], Chia-Jung Kuo[2,3], Ming-Wei Lai[3,4], Ren-Chin Wu[5], Chien-Ming Chen[6], Cheng-Tang Chiu[2,3], Cheng-Hsun Chiu[7], Ming-Yao Su[3,8], Yu-Bin Pan[9]
[1]*School of Medicine, Chang Gung University, Taoyuan, Taiwan*
[2]*Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan*
[3]*Taiwan Association of the Study of Small Intestinal Disease, Taoyuan, Taiwan*
[4]*Division of Pediatric Gastroenterology, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan*
[5]*Anatomic Pathology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan*
[6]*Medical Imaging and Interventions, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan*
[7]*Division of Pediatric Infectious Diseases, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan*
[8]*Gastroenterology and Hepatology, New Taipei City Municipal Tucheng Hospital, New Taipei City, Taiwan*
[9]*Biostatistical Section, Clinical Trial Center, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan*

POSTER EXHIBITION

PE1-016 **Pathogenic Mechanism of XIAP BIR2 Mutant Proteins in XIAP Deficiency**

Juhwan Lee[2], Inki Kim[1], Seak Hee Oh[1], Iksoo Chang[2]
[1]*Pediatrics, Asan Medical Center, Seoul, Korea*
[2]*Creative Research Initiatives Center for Proteome Biophysics, DGIST, Daegu, Korea*

PE1-017 **Superior Treatment Persistence with Ustekinumab in Biologic-Experienced Crohn's Disease: Real-world Registry Data from the Persistence Australian National IBD Cohort (PANIC) Study**

John Chetwood[1,2], Yanna Ko[1,2], Aviv Pudipeddi[1,2], Viraj Kariyawasam[3,4], Sudarshan Paramsothy[1,2,5], Rupert Leong[1,2,5]
[1]*Department of Gastroenterology, Concord Repatriation General Hospital, Sydney, Australia*
[2]*School of Medicine, University of Sydney, Sydney, Australia*
[3]*Department of Gastroenterology, Blacktown and Mount Druitt Hospital, Sydney, Australia*
[4]*School of Medicine, Western Sydney University, Sydney, Australia*
[5]*Department of Gastroenterology, Macquarie University Hospital, Sydney, Australia*

PE1-018 **Forecasting the Future Prevalence of Inflammatory Bowel Disease in Korea through 2048: An Epidemiologic Study Employing Autoregressive Integrated Moving Average Models**

Ji Eun Kim[1], Shin Ju Oh[1], Chang Kyun Lee[1]
[1]*Gastroenterology, Kyung Hee University Hospital, Seoul, Korea*

PE1-020 **Prevalence and Risk Factors of Gallstones and Renal Stones in Patients with Intestinal Behcet's Disease**

Jaewon Song[1], Soo Jung Park[1], Jae Jun Park[1], Tae Il Kim[1], Jae Hee Cheon[1], Jihye Park[1]
[1]*Department of Internal Medicine, College of Medicine, Yonsei University, Seoul, Korea*

PE1-021 **CKD-506, a New Histone Deacetylase 6 Inhibitor, Suppresses Immune Cells and Restores Intestinal Epithelial Function**

Jae-Young Lee[1], Hyun Woo Ma[2], Ji Hyung Kim[2], I Seul Park[2], Mijeong Son[2], Keun Ho Ryu[4], Jieun Shin[4], Won Ho Kim[2], Seung Won Kim[2,3], Jae Hee Cheon[2,3]
[1]*Medicine, Yonsei University College of Medicine, Seoul, Korea*
[2]*Internal Medicine and Institute of Gastroenterology, Graduate School of Medical Science, Brain Korea 21 Project, Seoul, Korea*
[3]*Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea*
[4]*Non-clinical Study, CKD Pharmaceutical Co., Seoul, Korea*

PE1-022 **Predicted Inflammatory Status and Inflammatory Bowel Disease among Korean Adults: A Multicenter Case-control Study**

Dong Hyun Kim[1,10], Akinkunmi Paul Okekunle[2,3], Jioh Kang[2], Hyun-Soo Kim[1], Sang Hoon Kim[4,10], Min Kyu Jung[5,10], Jae Ho Park[6,10], Soo-Young Na[7,10], Jung Eun Lee[2,3], Yun Jeong Lim[8,10], Hoonjai Chun[9,10]

[1]Division of Gastroenterology, Department of Internal Medicine, Chonnam National University Medical School, Gwangju, Korea

[2]Department of Food and Nutrition, College of Human Ecology, Seoul National University, Seoul, Korea

[3]Research Institute of Human Ecology, Seoul National University, Seoul, Korea

[4]Division of Gastroenterology, Department of Internal Medicine, Chung-Ang University Gwangmyeong Hospital, Gwangmyeong, Korea

[5]Division of Gastroenterology and Hepatology, Department of Internal Medicine, Kyungpook National University Hospital, Daegu, Korea

[6]Division of Gastroenterology, Department of Internal Medicine, Chungnam National University Sejong Hospital, Sejong, Korea

[7]Department of Internal Medicine, Incheon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Incheon, Korea

[8]Division of Gastroenterology and Hepatology, Department of Internal Medicine, Dongguk University Ilsan Hospital, Dongguk University College of Medicine, Goyang, Korea

[9]Division of Gastroenterology, Department of Internal Medicine, Korea University Hospital and Korea University College of Medicine, Seoul, Korea

[10]Council of the Nutrition Research, Korean Society of Gastrointestinal Cancer Research, Seoul, Korea

PE1-023 **Achievement of Long-term Treatment Goals with Upadacitinib in Patients with Moderately to Severely Active Ulcerative Colitis: A Post-hoc Analysis of Induction and Maintenance Phase 3 Trials**

Julian Panes[1], Remo Panaccione[2], Marla C Dubinsky[3], Yoh Ishiguro[4], Jacinda Tran[5,6], Dapo Ilo[6], Jason Eccleston[6], Yuri Sanchez Gonzalez[6], Brian Feagan[7]

[1]Hospital Clinic Barcelona, IDIPABS, CIBERehd, Barcelona, Spain

[2]Department of Gastroenterology and Hepatology, University of Calgary, Calgary, AB, Canada

[3]Susan and Leonard Feinstein IBD Center, Icahn School of Medicine Mount Sinai, New York, United States

[4]Department of Clinical Research, National Hirosaki Hospital, National Hospital Organization, Hirosaki, Japan

[5]The Comparative Health Outcomes, Policy, and Economics Institute, University of Washington, Seattle, WA, United States

[6]Medical, AbbVie Inc, North Chicago, United States

[7]Gastroenterology, Western University, London, ON, Canada

POSTER EXHIBITION

PE1-024 **"Totality-of-the-Evidence" of Proposed Ustekinumab Biosimilar SB17**

Byong Duk Ye[1], Alessandro Armuzzi[2], Giampiero Girolomoni[3], Steven Feldman[4], Joao Goncalves[5], Younjin Park[6]

[1]Gastroenterology, Inflammatory Bowel Disease Center, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea
[2]IBD Center, IRCCS Humanitas Research Hospital, Milan, Italy
[3]Dermatology, University of Verona, Verona, Italy
[4]Dermatology, Wake Forest University School of Medicine, Winston Salem, United States
[5]Faculty of Pharmacy, Universidade de Lisboa, Lisbon, Portugal
[6]Medical Affairs, Samsung Bioepis Co., Ltd, Incheon, Korea

PE1-025 **Histological Remission as a Predictor of Reduced Endoscopic Flare-ups in Ulcerative Colitis Patients with Moderate-to-Severe Disease: Insights from a Detailed Retrospective Cohort Analysis**

Zih-Hao Wei[1], Puo-Hsien Le[2,3,4], Horng-Yih Chiu[1], Pai-Jui Yeh[4,5], Cheng-Tang Chiu[2,3,4], Cheng-Hsun Chiu[4,6]

[1]School of Medicine, Chang Gung University, Taoyuan City, Taiwan
[2]Department of Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan
[3]TASSID, Taiwan Association of the Study of Small Intestinal Disease, Taoyuan City, Taiwan
[4]Chang Gung Microbiota Therapy Center, Chang Gung Memorial Hospital, Taoyuan City, Taiwan
[5]Division of Pediatric Gastroenterology, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan
[6]Division of Pediatric Infectious Diseases, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan

PE1-026 **Changes in Cytokine Profiles after 1 Year of Treatment Affecting Infliximab Trough and Antibody Concentration in Pediatric Crohn's Disease : A Follw Up Study**

Seon Young Kim[1], Yiyoung Kwon[2], Eun Sil Kim[3], Yoon Zi Kim[1], Hansol Kim[1], Yon Ho Choe[1], Mi Jin Kim[1]

[1]Pediatrics, Samsung Medical Center, Seoul, Korea
[2]Pediatrics, Inha University Hospital, Incheon, Korea
[3]Pediatrics, Kangbuk Samsung Medical Center, Seoul, Korea

PE1-027 **Analysis of Risk Factors Affecting the Relapse Period after Discontinuation of Biologics in Pediatric Crohn's Disease Who Have Sustained Deep Remission**

Hansol Kim[1], Yoon Zi Kim[1], Seon Young Kim[1], Mi Jin Kim[1], Yon Ho Choe[1]

[1]Pediatrics, Samsung Medical Center, Seoul, Korea

PE1-028 **Clinical Characteristics and Long-term Disease Course in Patients with Crohn's Disease Diagnosed by Video Capsule Endoscopy; A Retrospective Multicenter Matched Case-control Study**

Jun Hwa Bae[1], Su Hyun Park[1], Jung-Bin Park[1], Ji Eun Baek[1], Seung Wook Hong[1], Sung Wook Hwang[1,2], Dong-Hoon Yang[1], Byong Duk Ye[1,2], Jeong-Sik Byeon[1], Seung-Jae Myung[1], Suk-Kyun Yang[1,2], Kyeong Ok Kim[3,5], Byung Ik Jang[3,5], Mi Rae Lee[4], Eun Soo Kim[4,5], Sang Hyoung Park[1,2]

[1]Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea
[2]Inflammatory Bowel Disease Center, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea
[3]Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea
[4]Internal Medicine, School of Medicine, Kyungpook National University, Daegu, Korea
[5]CCAiD, Crohn's and Colitis Association in Daegu-Gyeongbuk, Daegu, Korea

PE1-029 **Comparative Real-world Outcomes between Ustekinumab, Infliximab, and Adalimumab in Bio-nave and Bio-experienced Crohn's Disease Patients: A Retrospective Multicenter Study**

Ji Eun Na[1], Youg Eun Park[1], Jong Ha Park[1], Tae-Oh Kim[1], Su Bum Park[2], Seung Bum Lee[3], Jong Hoon Lee[4]

[1]Internal Medicine, Gastroenterology, Inje University Haeundae Paik Hospital, Busan, Korea
[2]Internal Medicine, Gastroenterology, Pusan National University Yangsan Hospital, Busan, Korea
[3]Internal Medicine, Gastroenterology, Ulsan University Hospital, Ulsan, Korea
[4]Internal Medicine, Gastroenterology, Dong-A University College of Medicine, Busan, Korea

PE1-030 **Histologic Remission is an Important Therapeutic Target in Patients Who Achieve Endoscopic Remission of Ulcerative Colitis**

Minhyeok Lee[1], Jun Lee[1], Soomin Lee[1], Yongjin Jang[1], Jaewoong Kim[1], Seongjung Kim[1]

[1]Internal Medicine, Chosun University School of Medicine, Gwangju, Korea

PE1-031 **Correlations between the SES-CD Score and Fecal Calprotectin in Pediatric Crohn's Disease**

Yiyoung Kwon[1], Seo Hee Kim[2], Yoo Min Lee[3], Eun Sil Kim[4], Eun Hye Lee[5], Sujin Choi[6], Byung-Ho Choe[6], Ben Kang[6]

[1]Pediatrics, Inha University School of Medicine, Incheon, Korea
[2]Pediatrics, Chonnam National University Medical School, Chonnam, Korea
[3]Pediatrics, Soonchunhyang University Bucheon Hospital, Bucheon, Korea
[4]Pediatrics, Kangbuk Samsung Hospital, Seoul, Korea
[5]Pediatrics, Nowon Eulji Medical Center, Seoul, Korea
[6]Pediatrics, Kyungpook National University, Kyungpook, Korea

POSTER EXHIBITION

PE1-032 **Factors associated with a Minus Delta Height Z-score at 1-year Post-diagnosis in Pediatric Patients with Ulcerative Colitis**

Sujin Choi[1], So Yoon Choi[2], Yon Ho Choe[3], Jin Soo Moon[4], Yeoun Joo Lee[5], Hye Ran Yan[6], Eell Ryoo[7], Yu Bin Kim[8], Tae Hyeong Kim[9], Yoo Min Lee[10], Yoon Lee[11], Ji-Sook Park[12], Minsoo Shin[13], Hong Koh[14], Ju Young Chang[15], Jung Ok Shim[16], Ben Kang[1]

[1]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Pediatrics, Kosin University Gospel Hospital, Busan, Korea
[3]Pediatrics, Samsung Medical Center, Seoul, Korea
[4]Pediatrics, Seoul National University College of Medicine, Seoul, Korea
[5]Pediatrics, Pusan National University School of Medicine, Busan, Korea
[6]Pediatrics, Seoul National University Bundang Hospital, Seongnam, Korea
[7]Pediatrics, Gachon University Gil Medical Center, Incheon, Korea
[8]Pediatrics, Ajou University School of Medicine, Suwon, Korea
[9]Pediatrics, Kyung Hee University Hospital at Gangdong, Seoul, Korea
[10]Pediatrics, Soonchunhyang University Bucheon Hospital, Bucheon, Korea
[11]Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea
[12]Pediatrics, Gyeongsang National University Hospital, Jinju, Korea
[13]Pediatrics, Korea University Medical Center Ansan Hospital, Ansan, Korea
[14]Pediatrics, Yonsei University College of Medicine, Seoul, Korea,
[15]Pediatrics, Seoul National University Boramae Medical Center, Seoul, Korea
[16]Pediatrics, Korea University Guro Hospital, Seoul, Korea

PE1-033 **Factors associated with Time-to-perianal Surgery after Diagnosis in Paediatric Patients with Crohn's Disease**

So Yoon Choi[1], Eell Ryoo[2], Jin Soo Moon[3], Seak Hee Oh[4], Yon Ho Choe[5], Yeoun Joo Lee[6], Hye Ran Yang[7], Jung Ok Shim[8], Minsoo Shin[9], Yu Bin Kim[10], Yoo Min Lee[11], Soon Chul Kim[12], Hong Koh[13], Yoon Lee[14], Ju Young Chang[15], Tae Hyeong Kim[16], Ji-Sook Park[17], Byung-Ho Choe[18], Ben Kang[18]

[1]Pediatrics, Kosin University Gospel Hospital, Busan, Korea
[2]Pediatrics, Gachon University Gil Medical Center, Incheon, Korea
[3]Pediatrics, Seoul National University Hopsital, Seoul, Korea
[4]Pediatrics, Asan Medical Center, Seoul, Korea
[5]Pediatrics, Samsung Medical Center, Seoul, Korea
[6]Pediatrics, Pusan National University Children's Hospital, Yangsan, Korea
[7]Pediatrics, Seoul National University Bundang Hospital, Seoul, Korea
[8]Pediatrics, Korea University Guro Hospital, Seoul, Korea
[9]Pediatrics, Korea University Ansan Hospital, Ansan, Korea
[10]Pediatrics, Ajou University School of Medicine, Suwon, Korea
[11]Pediatrics, Soonchunhyang University Bucheon Hospital, Bucheon, Korea
[12]Pediatrics, Jeonbuk National University Medical School, Jeonju, Korea
[13]Pediatrics, Severance Children's Hospital, Seoul, Korea
[14]Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea

[15]Pediatrics, Seoul National University Boramae Medical Center, Seoul, Korea
[16]Pediatrics, Kyung Hee University Hospital at Gangdong, Seoul, Korea
[17]Pediatrics, Gyeongsang National University College of Medicine, Jinju, Korea
[18]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea

PE1-034 **Differential Diagnosis between Crohn's Disease and Intestinal Tuberculosis using an Artificial Intelligence Algorithm**

Cheol-Hyung Lee[1], Min Kyu Kim[1], Ji Eun Baek[1], June Hwa Bae[1], Jung-Bin Park[1], Seung Wook Hong[1], Sung Wook Hwang[1], Sang Hyoung Park[1], Dong-Hoon Yang[1], Byong Duk Ye[1], Seung-Jae Myung[1], Suk-Kyun Yang[1], Kwangbeom Park[2], Namkug Kim[3], Jeong-Sik Byeon[1]
[1]Department of Gastroenterology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea
[2]Department of Internal Medicine, Nowon Eulji Medical Center, Eulji University, Seoul, Korea
[3]Department of Convergence Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

PE1-035 **Deep Learning Model using Stool Pictures Discriminates Patients with Endoscopically Active Ulcerative Colitis from Subjects with Normal Colonoscopy**

O Seong Kweon[1], Eun Soo Kim[1], Dongwon Woo[2], Kyeong Ok Kim[3], Sung Kook Kim[1], Hyun Seok Lee[1], Ben Kang[4], Yoo Jin Lee[5], Byung Ik Jang[3], Eun Young Kim[6], Hyeong Ho Jo[6], Yun Jin Chung[1], Hanjun Ryu[7], Soo-Kyung Park[8], Hosang Yu[2], Sungmoon Jeong[9]
[1]Internal Medicine, Kyungpook National University School of Medicine, Daegu, Korea
[2]Research Center for Artificial Intelligence in Medicine, Kyungpook National University Hospital, Daegu, Korea
[3]Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea
[4]Pediatrics, Kyungpook National University School of Medicine, Daegu, Korea
[5]Internal Medicine, Keimyung University School of Medicine, Daegu, Korea
[6]Internal Medicine, Daegu Catholic University School of Medicine, Daegu, Korea
[7]Internal Medicine, Daegu Fatima Hospital, Daegu, Korea
[8]Internal Medicine, Sungkyunkwan University School of Medicine, Seoul, Korea
[9]Medical Informatics, Kyungpook National University School of Medicine, Daegu, Korea

PE1-036 **The Timing of Anti-TNF Therapy Initiation Has Different Impacts depending on the Type of Inflammatory Bowel Disease**

Shin Ju Oh[1], Ji Eun Kim[1], Hyo Jong Kim[1], Min-Taek Lee[2], Sun-Young Jung[2], Chang Kyun Lee[1]
[1]Gastroenterology, Center for Crohn's and Colitis, Kyung Hee University Hospital, Kyung Hee University College of Medicine, Seoul, Korea
[2]College of Pharmacy, Chung-Ang University, Seoul, Korea

POSTER EXHIBITION

PE1-037 **Clinical Relapse Prevention Effect of Ustekinumab and Immunomodulator Combination Therapy in Crohn's Disease Patients Classified as Low to Intermediate-probability Responders by UST-CDST, Multicenter Cohort Study**

Jongbeom Shin[1], Sung Min Kong[2], Gyeol Seong[3], Boram Cha[1], Ji Taek Hong[1], Kye Sook Kwon[1]

[1]Department of Internal Medicine, Inha University Hospital, Inha University School of Medicine, Incheon, Korea

[2]Department of Internal Medicine, Samsung Changwon Hospital, Sungkyunkwan University School of Medicine, Changwon, Korea

[3]Department of Internal Medicine, Nowon Eulji Medical Center, Eulji University School of Medicine, Seoul, Korea

PE1-038 **Increased Bronchiectasis Risk and Related Risk Factors in Inflammatory Bowel Disease : A 10-year Korean National Cohort Study**

Jun Su Lee[1], Hye Soon Shin[2], Heajung Lee[3], Bumhee Yang[4], Hyun Lee[5]

[1]Division of Gastroenterology, Department of Internal Medicine, Chungbuk National University Hospital, Chungbuk National University College of Medicine, Cheongju, Korea

[2]Department of Internal Medicine, Chungbuk National University Hospital, Chungbuk National University College of Medicine, Cheongju, Korea

[3]Department of Statistics and Data Science, Yonsei University, Seoul, Korea

[4]Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, Chungbuk National University Hospital, Chungbuk National University College of Medicine, Cheongju, Korea

[5]Division of Pulmonary Medicine and Allergy, Department of Internal Medicine, Hanyang University College of Medicine, Seoul, Korea

PE1-039 **Diet and the Risk of Inflammatory Bowel Disease: A Retrospective Cohort Study in Taiwan**

Ming Jung Meng[1,2], Jyun Huang[3], Yung Kuan Tsou[2], Yu Bin Pan[4], Cheng Tang Chiu[1,2], Yan Ting Lin[2], Puo Hsien Le[1,2]

[1]Department of Gastroenterology and Hepatology, Taiwan Association of the Study of Small Intestinal Disease, Taoyuan, Taiwan

[2]Department of Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

[3]Department of Clinical Nutrition Therapy, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

[4]Biostatistical Section, Clinical Trial Center, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

PE1-040 **Characteristics and Outcomes of Portal Vein Thrombosis in Patients with Inflammatory Bowel Disease in Korea**

Ki Jin Kim[1], Subin Song[1], Jung-Bin Park[1], June Hwa Bae[1], Ji Eun Baek[1], Ga Hee Kim[1], Minjun Kim[1], Seung Wook Hong[1], Sung Wook Hwang[1], Dong-Hoon Yang[1], Byong Duk Ye[1], Jeong-Sik Byeon[1], Seung-Jae Myung[1], Suk-Kyun Yang[1], Chang Sik Yu[2], Yong-Sik Yoon[2], Jong-Lyul Lee[2], Min Hyun Kim[2], Sang Hyoung Park[1]

[1]Gastroenterology, Asan Medical Center, Seoul, Korea

[2]Colon and Rectal Surgery, Asan Medical Center, Seoul, Korea

PE1-041 **Optimization of Deep Learning Architectures for Differentiating Cytomegalovirus Infection in Severe Ulcerative Colitis**

A Reum Choe[1], Sung-Ae Jung[1], So-Hyun Ahn[2], Jeong-Heon Kim[3], Ju Ran Byun[1], Yehyun Park[1], Eun Mi Song[1]

[1]Department of Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea

[2]Ewha Medical Research Institute, Ewha Womans University College of Medicine, Seoul, Korea

[3]Department of Medicine, Yonsei University College of Medicine, Seoul, Korea

PE1-042 **Development and Assessment of a Novel Ulcerative Colitisspecific Quality-of-life Questionnaire: A Prospective, Multi-institutional Study**

Jihye Park[1], Hyun-Soo Zhang[2], Chung Mo Nam[2], Joo Sung Kim[3], Young-Ho Kim[4,5], Dong Il Park[6], Byong Duk Ye[7], Yoon Tae Jeen[8], Sehyun Kim[9], Jae Hee Cheon[1]

[1]Department of Internal Medicine, College of Medicine, Yonsei University, Seoul, Korea

[2]Department of Biomedical Systems Informatics, College of Medicine, Yonsei University, Seoul, Korea

[3]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea

[4]Department of Medicine, Samsung Medical Center, Seoul, Korea

[5]Department of Medicine, Sungkyunkwan University School of Medicine, Seoul, Korea

[6]Division of Gastroenterology, Department of Internal Medicine and Inflammatory Bowel Disease Center, Kangbuk Samsung Hospital, School of Medicine, Sungkyunkwan University, Seoul, Korea

[7]Department of Gastroenterology and Inflammatory Bowel Disease Center, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

[8]Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea

[9]Graduate School, Dankook University, Yongin, Korea

PE1-043 **Efficacy of Induction Upadacitinib Therapy in East Asian Patients with Moderately to Severely Active Crohn's Disease**

Minhu Chen[1], Xiang Gao[2], Kenji Watanabe[3], Toshimitsu Fujii[4], Jae Hee Cheon[5], Shu-Chen Wei[6], Dennis Teng[7], Ana P Lacerda[7], Valencia P Remple[7], Hiroshi Nakase[8]

POSTER EXHIBITION

[1]Division of Gastroenterology, The First Affiliated Hospital, Sun Yat-Sen University, Guangzhou, China,
[2]Department of Gastroenterology, The Sixth Affiliated Hospital of Sun Yat-Sen University, Guangzhou, China
[3]Department of Intestinal Inflammation Research, Hyogo Medical University, Nishinomiya, Japan
[4]Department of Gastroenterology and Hepatology, Tokyo Medical and Dental University, Tokyo, Japan
[5]Department of Internal Medicine and Institute of Gastroenterology, Yonsei University, Seoul, Korea
[6]Department of Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan
[7]Medical, AbbVie Inc, North Chicago, Illinois, United States
[8]Department of Gastroenterology and Hepatology, Sapporo Medical University, Sapporo, Japan

PE1-044 **Inflammatory Transcriptomic Signatures and Cell Type Compositions in Inflamed and Non-inflamed Colonic Mucosa of Ulcerative Colitis Short Title: Transcriptomic Signature of Active Ulcerative Colitis**

Eun Mi Song[1], Zehra Ramsha[2], Yang Hee Joo[1], Jahanzeb Saqib[2], Chang Mo Moon[1], Junil Kim[2], Sung-Ae Jung[1]
[1]Internal Medicine, College of Medicine, Ewha Womans University, Seoul, Korea
[2]School of Systems Biomedical Science, Soongsil University, Seoul, Korea

PE1-045 **Prevalence of Sarcopenia, as per the Revised Definition, in Patients with Ulcerative Colitis and its Relationship with Disease Activity**

Pardhu Neelam[1], Vishal Sharma[1], Anupam Singh[1], Pankaj Gupta[1], Jimil Shah[1], Harshal Mandavdhare[1], Harjeet Singh[1], Aravind Sekar[1], Sanjay Bhadada[1], Usha Dutta[1]
[1]Gastroenterology, PGIMER, Chandigarh, India

PE1-046 **A New ROS-resistant Bifidobacterium Longum Strain Protects against Murine Colitis by Enhancing Intestinal Colonization**

Ji Hyung Kim[1], Seung Won Kim[1,2], Yoojin Shin[1], I Seul Park[1], Mijeong Son[1], Ki Beom Kim[1], Hyun Woo Ma[1], Jae Hee Cheon[1,2], Sang Sun Yoon[3,4], Dongeun Yong[5,6]
[1]Internal Medicine and Institute of Gastroenterology, Yonsei University College of Medicine, Seoul, Korea
[2]Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea
[3]Microbiology and Immunology, Yonsei University College of Medicine, Seoul, Korea
[4]Institute for Immunology and Immunological Diseases, Yonsei University College of Medicine, Seoul, Korea
[5]Laboratory Medicine and Research Institute of Bacterial Resistance, Yonsei University College of Medicine, Seoul, Korea
[6]Microbiotix Corporation, Seoul, Korea

PE1-047 **Comparison of Endoscopic Healing and Durability between Combination Therapy of Infliximab Plus Azathioprine and Infliximab Monotherapy in Pediatric Crohn's Disease**

Yoon Zi Kim[1], Eun Sil Kim[2], Yiyoung Kwon[3], Seon Young Kim[1], Hansol Kim[1], Yon Ho Choe[1], Mi Jin Kim[1]

[1]Pediatric, Samsung Medical Center, Seoul, Korea
[2]Pediatric, Kangbuk Samsung Hospital, Seoul, Korea
[3]Pediatric, Inha University Hospital, Incheon, Korea

PE1-048 **Increased Rates of Fractures and Malignancy in Elderly Onset IBD in Singapore**

Chin Kimg Tan[1], Jeannie Ong[1], Tiing Leong Ang[1], Malcolm Tan[2], Chong Teik Lim[2], Ennaliza Salazar[2], Shu Wen Tay[2], Yi Yuan Tan[2], Webber Chan[2]

[1]Department of Gastroenterology and Hepatology, Changi General Hospital, Singapore
[2]Department of Gastroenterology and Hepatology, Singapore General Hospital, Singapore

PE1-049 **Impact of Age at Diagnosis on Long-term Prognosis in Patients with Intestinal Behcet's Disease**

Ji Young Chang[1], Soo Jung Park[2], Jae Jun Park[2], Tae Il Kim[2], Jihye Park Park[2], Jae Hee Cheon[2]

[1]Health Promotion Medicine, Ewha Womans University Seoul Hospital, Seoul, Korea
[2]Internal Medicine, Yonsei University College of Medicine, Seoul, Korea

PE1-050 **Identification of Specific Cell Subsets Related to Treatment Response after Anti-tumor Necrosis Factor Use in Korean Ulcerative Colitis Patients using Single Cell RNA Sequencing: A Preliminary Study**

Se Ram Shin[1], Seong Ran Jeon[1], Yun Ho Jung[2], Hyun Gun Kim[1], Jin-Oh Kim[1], Seongwoo Choi[2], Bong Min Ko[1], Woo Chang Hwang[4]

[1]Institute of Digestive Research, Digestive Disease Center, Soonchunhyang University College of Medicine, Seoul, Korea
[2]Department of Gastroenterology, Soonchunhyang University College of Medicine, Cheonan, Korea
[3]Digestive Disease Center and Research Institute, Department of Internal Medicine, Soonchunhyang University College of Medicine, Bucheon, Korea
[4]Department of Pre Medicine- College of Medicine- Graduate School of Biomedical Science and Engineering, Hanyang University, Seoul, Korea

PE1-051 **Intravenous versus Subcutaneous Infliximab in Inflammatory Bowel Disease: A Systematic Review and Meta-analysis**

John Chetwood[1,2], Yvonne Tran[3], Sreedhar Subramanian[4], Philip Smith[5], Marisa Iborra[6], Anthony Buisson[7], Sudarshan Paramsothy[1,2,8], Rupert Leong[1,2,8]

[1]Department of Gastroenterology, Concord Repatriation General Hospital, Sydney, Australia

POSTER EXHIBITION

[2]Concord Clinical School, University of Sydney, Sydney, Australia
[3]Australian Institute of Health Innovation, Macquarie University, Sydney, Australia
[4]Department of Gastroenterology, Cambridge University Hospitals Foundation Trust, Cambridge, United Kingdom
[5]Department of Gastroenterology, Royal Liverpool Hospital, Liverpool, United Kingdom
[6]Department of Gastroenterology, La Fe University Hospital of Valencia, Valencia, Spain
[7]Service d'Hpato-Gastro Entrologie, Universit Clermont Auvergne, Clermont-Ferrand, France
[8]Faculty of Medicine and Health Sciences, Macquarie University, Sydney, Australia

PE1-052 **Disease Duration is associated with Endoscopic Healing in Pediatric Patients with Crohn's Disease on Treatment with Infliximab**

Sujin Choi[1], So Yoon Choi[2], Yon Ho Choe[3], Jin Soo Moon[4], Yeoun Joo Lee[5], Hye Ran Yang[6], Eell Ryoo[7], Yu Bin Kim[8], Tae Hyeong Kim[9], Yoo Min Lee[10], Yoon Lee[11], Ji-Sook Park[12], Minsoo Shin[13], Hong Koh[14], Ju Young Chang[15], Jung Ok Shim[16], Ben Kang[1]
[1]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Pediatrics, Kosin University Gospel Hospital, Busan, Korea
[3]Pediatrics, Samsung Medical Center, Seoul, Korea
[4]Pediatrics, Seoul National University College of Medicine, Seoul, Korea
[5]Pediatrics, Pusan National University School of Medicine, Busan, Korea
[6]Pediatrics, Seoul National University Bundang Hospital, Seongnam, Korea
[7]Pediatrics, Gachon University Gil Medical Center, Incheon, Korea
[8]Pediatrics, Ajou University School of Medicine, Suwon, Korea
[9]Pediatrics, Kyung Hee University Hospital at Gangdong, Seoul, Korea
[10]Pediatrics, Soonchunhyang University Bucheon Hospital, Bucheon, Korea
[11]Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea
[12]Pediatrics, Gyeongsang National University Hospital, Jinju, Korea
[13]Pediatrics, Korea University Medical Center Ansan Hospital, Seoul, Korea
[14]Pediatrics, Yonsei University College of Medicine, Seoul, Korea
[15]Pediatrics, Seoul National University Boramae Medical Center, Seoul, Korea
[16]Pediatrics, Korea University Guro Hospital, Seoul, Korea

PE1-053 **Machine Learning Analysis of Microbial Dysbiosis in Pediatric Crohn's Disease: Identifying Precise Biomarkers for Early Diagnosis and Prognosis**

Academic Grant

Elfiany Elfiany[1], Burhanuddin Rusadi[2], Sitti Halimah Andriani[2], Sahnaz Vivinda Putri[3], Andi Nursanti Andi Ureng[4], Prihantini Prihantini[5]
[1]Computational Science Laboratory, Bulukumba Muhammadiyah University, Bulukumba, Indonesia
[2]Gastroenterelogy Research Unit, Gowa General Hospital, Gowa, Indonesia
[3]Health Management Laboratory, International University Semen Indonesia, Gresik, Indonesia
[4]Pharmacy, Andini Persada College of Health Sciences, Mamuju, Indonesia
[5]Machine Learning for Medicine Laboratory, Bandung Institute of Technology, Bandung, Indonesia

PE1-054 **Regular Use of a Mobile Application for Patients with Inflammatory Bowel Disease Improves Their Quality of Life**

Yong-Woo Lee[1], Eun Soo Kim[1], Hyun Seok Lee[2], Kyeong Ok Kim[3], Sung Hoon Jung[4], Sang Hyoung Park[5], Chang Hwan Choi[6], Sang-Bum Kang[7], Seong-Joon Koh[8], Dong Hyun Kim[9], Soo Jung Park[10], Yoo Jin Lee[11]

[1]Department of Internal Medicine, Kyungpook National University Hospital, Daegu, Korea
[2]Department of Internal Medicine, Kyungpook National University Chilgok Hospital, Daegu, Korea
[3]Department of Internal Medicine, Yeungnam University Medical Center, Daegu, Korea
[4]Department of Internal Medicine, Eunpyeong St. Mary's Hospital, Seoul, Korea
[5]Department of Internal Medicine, Asan Medical Center, Seoul, Korea
[6]Department of Internal Medicine, Chung-Ang University Hospital, Seoul, Korea
[7]Department of Internal Medicine, Daejeon St. Mary's Hospital, Daejeon, Korea
[8]Department of Internal Medicine, Seoul National University Hospital, Seoul, Korea
[9]Department of Internal Medicine, Chonnam National University Hospital, Gwangju, Korea
[10]Department of Internal Medicine, Severance Hospital, Seoul, Korea
[11]Department of Internal Medicine, Keimyung University Dongsan Hospital, Daegu, Korea

PE1-055 **The Diversity of Food Composition during the Weaning Period is associated with the Decreased Risk of Immune-mediated Inflammatory Diseases: A Nationwide Population-based Cohort Study**

Junhyun Kwon[1], Woo-Jeong Sohn[2], Chanhyung Lee[1], Hyun Jung Lee[1], Jong Pil Im[1], Byeong Gwan Kim[3], Seong-Joon Koh[1,4]

[1]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea
[2]Department of Food and Nutrition, Seoul National University College of Human Ecology, Seoul, Korea
[3]Department of Internal Medicine, Seoul National University College of Medicine, Seoul Metropolitan Government Seoul National University Boramae Medical Center, Seoul, Korea
[4]Laboratory of Intestinal Mucosa and Skin Immunology, Seoul, Korea

PE1-056 **Factors Contributing to the PREFERence of Pediatric Patients with Inflammatory Bowel Disease in Selecting an Anti-tumor Necrosis Factor Agent**

You Jin Choi[1], Yoo Min Lee[2], Hyo-Jeong Jang[3], Sujin Choi[4], Byung-Ho Choe[4], Ben Kang[4]

[1]Department of Pediatrics, Ilsan Paik Hospital, Inje University College of Medicine, Goyang, Korea
[2]Department of Pediatrics, Soonchunhyang University College of Medicine, Bucheon, Korea
[3]Department of Pediatrics, Keimyung University School of Medicine Dongsan Medical Center, Daegu, Korea
[4]Department of Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea

POSTER EXHIBITION

PE1-057 **Evaluating Risk Factors and Clinical Outcomes in Crohn's Disease Patients with Upper Gastrointestinal Tract Involvement: A Comprehensive Retrospective Cohort Study**

Wei-Chun Hsu[1], Puo-Hsien Le[2,3], Chia-Jung Kuo[2,3], Pai-Jui Yeh[4], Ming-Wei Lai[3,4], Ren-Chin Wu[5], Chien-Ming Chen[6], Cheng-Tang Chiu[3,7], Yu-Bin Pan[8]

[1]School of Medicine, Chang Gung University, Taoyuan City, Taiwan
[2]Department of Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan
[3]Taiwan Association of the Study of Small Intestinal Disease, Taoyuan, Taiwan
[4]Division of Pediatric Gastroenterology, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[5]Department of Anatomic Pathology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[6]Department of Medical Imaging and Interventions, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[7]Department of Gastroenterology and Hepatology, New Taipei City Municipal Tucheng Hospital, New Taipei City, Taiwan
[8]Biostatistical Section, Clinical Trial Centre, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

PE1-058 **New Genetic Biomarkers Predicting 5-aminosalicylate-induced Adverse Events in Patients with Inflammatory Bowel Diseases**

Jihye Park[1], I Seul Park[1], Ji Hyung Kim[1], Jung Hyun Ji[1], Soo Jung Park[1], Jae Jun Park[1], Tae Il Kim[1], Seung Won Kim[1], Jae Hee Cheon[1]

[1]Department of Internal Medicine, College of Medicine, Yonsei University, Seoul, Korea

PE1-059 **Genomic Structural Variation and Polygenic Risk Score for Inflammatory Bowel Disease**

Yu Kyung Jun[1,2], Jibin Jeong[3], Byoung Mok Kim[3], Jinho Kim[3], Yonghoon Choi[1], Cheol Min Shin[1,2], Young Soo Park[1], Nayoung Kim[1,2], Dong Ho Lee[1,2], Sejoon Lee[3], Hyuk Yoon[1,2]

[1]Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea
[2]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea
[3]Precision Medicine Center, Seoul National University Bundang Hospital, Seongnam, Korea

PE1-060 **Reinitiation of Ozanimod after Dose Interruption: Assessment of Effect on Heart Rate**

Peijin Zhang[1], Mary Syto[1], Susan Walker[1], Giridhar Tirucherai[1], Bindu Murthy[1], Jeong-eun Park[2], Daniel Tatosian[1]

[1]Research & Development, Bristol Myers Squibb, Princeton, NJ, United States
[2]Medical, Bristol Myers Squibb, Seoul, Korea

PE1-062 **The Efficacy of a Restricted-duration Vedolizumab Therapy in Ulcerative Colitis**

Chen-Wang Chang[1,2,4], Chi-Yu Lee[1], Wei-Chen Lin[1,2,3], Horng-Yuan Wang[1], Ming-Jen Chen[1,2,3]

[1]Gastroenterology and Hepatology, MacKay Memorial Hospital, Taipei, Taiwan
[2]Nursing, MacKay Medicine, Nursing and Management College, Taipei, Taiwan
[3]Medicine, MacKay Medical College, Taipei, Taiwan
[4]TASSID, Taiwan Association for the Study of Small Intestinal Diseases, Taipei, Taiwan

PE1-063 **Paradoxical Reaction to Biologics in Pediatric Inflammatory Bowel Disease : A Single Center, Retrospective Study**

Yoon Zi Kim[1], Seon Young Kim[1], Hansol Kim[1], Yon Ho Choe[1], Mi Jin Kim[1]

[1]Pediatric, Samsung Medical Center, Seoul, Korea

PE1-064 **Assessment of Ulcerative Colitis Intestinal Microbiome using Endoscopic Brush**

Bomee Lee[1], Bora Keum[1], Wonsuck Yoon[2], Sanghyun Kim[1], Hanjo Jeon[1], Yoontae Jeen[1], Hoonjai Chun[1]

[1]Department of Internal Medicine, Korea University Anam Hospital, Seoul, Korea
[2]Department of Allergy Immunology Center, Korea University College of Medicine, Seoul, Korea

PE1-065 **Bio-naïve Patients had Higher Response Rates at Weeks 8 with Ustekinumab: Results from a Single-center Retrospective Study in China**

Yu Peng[1], Xiaowei Liu[1]

[1]Department of Gastroenterology, Xiangya Hospital Central South University, Changsha, China

PE1-066 **Impact of Crohn's Disease on Working Life: Discovering the Truth in Chinese Patients**

Yu Peng[1], Xiaowei Liu[1]

[1]Department of Gastroenterology, Xiangya Hospital Central South University, Changsha, China

PE1-067 **Factors associated with Rescue Therapy in Patients with Acute Severe Ulcerative Colitis: A CHASID Multicenter Study**

Kwangwoo Nam[1], Jeong Eun Shin[1], Yunho Jung[2], Dae Sung Kim[3], Hee Seok Moon[4], Sang-Bum Kang[5]

[1]Gastroenterology, Dankook University Hospital, Cheonan, Korea
[2]Gastroenterology, Soonchunhyang University Cheonan Hospital, Cheonan, Korea
[3]Gastroenterology, Konyang University Hospital, Daejeon, Korea
[4]Gastroenterology, Chungnam National University Hospital, Daejeon, Korea
[5]Gastroenterology, The Catholic University of Korea Daejeon St. Mary's Hospital, Daejeon, Korea

POSTER EXHIBITION

PE1-068 **The Real-world Treatment Patterns and Clinical Outcomes in Daily Dose of 5-aminosalicylic Acid Treatment in Ulcerative Colitis Patients in Korea: A Population-based Retrospective Study**

Soo Jung Park[1], Sang Won Park[2], Jae Hee Cheon[1]
[1]Department of Internal Medicine and Institute of Gastroenterology, Yonsei University College of Medicine, Seoul, Korea
[2]Ferring Pharmaceuticals Korea Co., Ltd., Seoul, Korea

PE1-069 **Antibiotic Usage within the First Year of Life Has a Protective Effect against Ulcerative Colitis in South Korea: A Nationwide Cohort Study**

Yoojoong Jung[1], Jun Seok Park[1], Sungjin Woo[1], Hyun Jung Lee[1], Jong Pil Im[1], Joo Sung Kim[1], Seong-Joon Koh[1]
[1]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea

PE1-070 **Differences of Disease Phenotype at Diagnosis between Patients with Crohn's Disease Diagnosed before and after 17 Years of Age in Korea**

Suk Jin Hong[1], Hyeong Ho Jo[2], Eun Young Kim[2], Kwang-Hae Choi[3], Hyo-Jeong Jang[4], Sujin Choi[5], Byung-Ho Choe[5], Ben Kang[5]
[1]Pediatrics, Daegu Catholic University School of Medicine, Daegu, Korea
[2]Internal Medicine, Daegu Catholic University School of Medicine, Daegu, Korea
[3]Pediatrics, Yeungnam University School of Medicine, Daegu, Korea
[4]Pediatrics, School of Medicine, Keimyung University, Daegu, Korea
[5]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea

PE1-071 **A Modified Crohn's Disease Exclusion Diet in a Multi-ethnic Asian Setting**

Chin Kimg Tan[1], Alvin Wong[2], Ying Xiao Huang[2], Khoon Lin Ling[1], Lai Mun Wang[3], Tiing Leong Ang[1], Jeannie Ong[1]
[1]Department of Gastroenterology and Hepatology, Changi General Hospital, Singapore
[2]Department of Dietetics, Changi General Hospital, Singapore
[3]Department of Laboratory Medicine, Changi General Hospital, Singapore

PE1-072 **Improvement of Work Productivity and Activity Impairment (WPAI) in Patients with Moderate to Severe UC using Biologics Therapy; the MOSAIK Cohort Study**

Gyeol Seong[1], Yehyun Park[2], Kang-Moon Lee Lee[3], Sung-Ae Jung[2], Young Sook Park[1]
[1]Department of Internal Medicine, Nowon Eulji Hospital, Seoul, Korea
[2]Department of Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea
[3]Department of Internal Medicine, St. Vincent's Hospital, Seoul, Korea

PE1-073 **The Role of OR51E2 in the Modulation of Chronic Colitis and Colitis-associated Cancer**

Namjoo Kim[1], Beom Jae Lee[1], Seung Han Kim[1], Moon Kyung Joo[1], Jong-Jae Park[1]
[1]*Gastroenterology, Korea University Guro Hospital, Seoul, Korea*

PE1-074 **Interferon-gamma-Induced Intestinal Epithelial Cell Type-Specific Cytotoxic Responses of Human Enteroids: PANoptosis and the Protective Role of Selective JAK1 Inhibitor**

Sung Noh Hong[1], Chansu Lee[1], Yeo Eun Cha[1], Minjee Kim[1], Ji Eun Kim[1], Eun Ran Kim[1], Dong Kyung Chang[1], Young-Ho Kim[1]
[1]*Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea*

PE1-075 **Dietary Supplement Peonidin from Cranberries Reduces Ulcerative Colitis in Mice Induced by Acetic Acid via Inhibiting NFB and MPO Activity**

Academic Grant

M Singh[1], Deepika Singh[2]
[1]*Department of Computer Sciences, HMFA-MIET, Handia, India*
[2]*Department of Pharmaceutical Sciences, SHUATS, Prayagraj, India*

PE1-076 **Upadacitinib Salvage Therapy for Corticosteroid Refractory Acute Severe Ulcerative Colitis**

Chen-Shuan Chung[1,2,3], Puo-Hsien Le[3,4], Chen-Wang Chang[3,5], Jen-Wei Chou[3,6], Tien-Yu Huang[3,7], Kuan-Yang Chen[3,8], Ming-Yao Su[3,9], Cheng-Tang Chiu[3,4]
[1]*Division of Gastroenterology and Hepatology, Department of Internal Medicine, Far Eastern Memorial Hospital, New Taipei City, Taiwan*
[2]*College of Medicine, Fu Jen Catholic University, New Taipei City, Taiwan*
[3]*Taiwan Association for the Study of Small Intestinal Diseases, TASSID, Taoyuan, Taiwan*
[4]*Department of Gastroenterology and Hepatology, Linkou Chang Gung Memorial Hospital, Taoyuan, Taiwan*
[5]*Department of Gastroenterology and Hepatology, MacKay Memorial Hospital, Taipei, Taiwan*
[6]*Center of Digestive Medicine, Department of Internal Medicine, China Medical University Hospital, Taichung, Taiwan*
[7]*Division of Gastroenterology, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan*
[8]*Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei City Hospital Yang-Ming Branch, Taipei, Taiwan*
[9]*Department of Gastroenterology and Hepatology, New Taipei Municipal TuCheng Hospital, Taipei, Taiwan*

POSTER EXHIBITION

PE1-077 **COVID-19 Infection Risk between Vaccinated Patients with Ulcerative Colitis and Crohn's Disease: A Retrospective Cohort Study in Taiwan**

Jen-Wei Chou[1,2], Yi-Hua Wu[1,2], Po-Ju Huang[1,2], Chu-Ping Wang[1,2], Ken-Sheng Cheng[1,2]
[1]Center for Digestive Medicine, Department of Internal Medicine, China Medical University Hospital, Taichung, Taiwan
[2]Taiwan Association for the Study of Small Intestinal Diseases (TASSID), Taipei, Taiwan

PE1-078 **Current Status and Role of Korean Biobank Specializing in Inflammatory Bowel Disease Research**

Yujin Ko[1], Mihyang Jeon[1], Eunju Kim[1], Jihyeon Lee[1], Daeun Han[1], An Na Seo[1,2]
[1]Biobank, Kyungpook National University Hospital, Daugu, Korea
[2]Department of Pathology, Kyungpook National University Hospital, Korea

PE1-079 **Dietary Intake in Patients with Inflammatory Bowel Disease according to Food Diary**

Min Sook Kang[1], Hyun Joo Song[2], Heung Up Kim[2], Ki Soo Kang[3]
[1]Department of Food & Nutrition Service Team, Jeju National University Hospital, Jeju, Korea
[2]Department of Internal Medicine, Jeju National University College of Medicine, Jeju, Korea
[3]Department of Pediatrics, Jeju National University College of Medicine, Jeju, Korea

PE1-080 **Vedolizumab Long-term Treatment Persistence and Safety Results from a Multinational Extended Access Programme Study**

Silvio Danese[1], Milan Lukas[2], Miroslava Volfova[3], Grazyna Rydzewska[4], Shashi Adsul[5], Dirk Lindner[6], Stephen Jones[6], Severine Vermeire[7], Hyo Jong Kim[8]
[1]Department of Gastroenterology and Digestive Endoscopy, University Vita-Salute, San Raffaele, Milan, Italy
[2]IBD Clinical and Research Centre, ISCARE Clinical Centre, Prague, Czech Republic
[3]Department of Hepatogastroenterology, Institute for Clinical and Experimental Medicine, Prague, Czech Republic
[4]Department of Gastroenterology, Central Clinical Hospital of Ministry of Interior and Administration of Warsaw, Warsaw, Poland
[5]Global Medical Unit, Takeda, Cambridge, United States
[6]Global Medical Affairs, Takeda, Zurich, Switzerland
[7]Department of Gastroenterology and Hepatology, University Hospitals Leuven, Leuven, Belgium
[8]Center for Crohn's and Colitis, Department of Gastroenterology, Kyung Hee University College of Medicine, Seoul, Korea

PE1-081 **Extracellualr ATP Mediates Pyroptosis in the Intestinal Epithelium**

Sihyun Jeong[1], Doyeon Lee[1], Geunhyung Yang[1], Youngju Do[1], Daehyun Park[1], Yunna Lee[1], Sanghoon Rhee[2], Eunok Im[1]
[1]College of Pharmacy, Pusan National University, Busan, Korea
[2]Department of Biological Sciences, Oakland University, Rochester, United States

PE1-082 **Novel Treatment Strategies for Ulcerative Colitis from the Treat to Target Viewpoint**

Kei Moriya[1], Shinsaku Nagamatsu[1], Kohei Ohta[1], Yuya Matsuo[1], Ayana Sueki[1], Chisa Yamamoto[1], Yuya Nishio[1], Yusuke Komeda[1], Shoma Kikukawa[1], Kyohei Matsuura[1], Daisuke Kaya[1], Hideki Matsuo[1], Masakazu Uejima[1]

[1]Gastroenterology, Nara Prefecture General Medical Center, Nara, Japan

PE1-083 **Fecal Calprotectin Changes and Clinical Outcomes in Patients with Crohn's Disease**

Hae Kwang Shin[1], Dongwoo Kim[1], Ja Seol Koo[1]

[1]Gastroenterology, Korea University Ansan Hospital, Ansan, Korea

PE1-085 **Assessment of Disease Activity in Patients with Crohn's Disease: Correlation between Magnetic Resonance Enterography and Intestinal Ultrasound**

Choong-Wui Cho[1], Myung-Won You[1], Sung Kyoung Moon[1], Shin Ju Oh[2], Chang Kyun Lee[2], Seong Jin Park[1]

[1]Radiology, Kyung Hee University Hospital, Seoul, Korea

[2]Gastroenterology, Kyung Hee University Hospital, Seoul, Korea

PE1-086 **Neither Hepatic Steatosis Nor Fibrosis is associated with Clinical Outcomes in Patients with Intestinal Behcet's Disease**

Hye Kyung Hyun[1], Jihye Park[2], Soo Jung Park[2], Jae Jun Park[2], Tae Il Kim[2,4], Jae Seung Lee[2,3], Hye Won Lee[2,3], Beom Kyung Kim[2,3], Jun Yong Park[2,3], Do Young Kim[2,3], Sang Hoon Ahn[2,3], Seung Up Kim[2,3], Jae Hee Cheon[2,4]

[1]Internal Medicine, Yonsei University College of Medicine, Yongin Severance Hospital, Yongin, Korea

[2]Internal Medicine, Yonsei University College of Medicine, Severance Hospital, Seoul, Korea

[3]Internal Medicine, Yonsei Liver Center, Severance Hospital, Seoul, Korea

[4]Brain Korea 21 Project, Graduate School of Medical Science, Yonsei University College of Medicine, Seoul, Korea

PE1-087 **Temporal Trends of Inflammatory Bowel Diseases in Taiwan from 2016 to 2020: A Population-based Study**

Yao-Wei Kuo[1,2], Chia-Jung Kuo[1,2], Puo-Hsien Le[1,2], Chen-Tang Chiu[1,2], Ming-Yao Su[2,3]

[1]Department of Gastroenterology and Hepatology, Linkou Chang Gung Memorial Hospital, Taoyuan, Taiwan

[2]Taiwan Association for the Study of Small Intestinal Diseases, Taipei, Taiwan

[3]Department of Gastroenterology and Hepatology, New Taipei City Municipal Tucheng Hospital, New Taipei City, Taiwan

POSTER EXHIBITION

PE1-088 **Comparison of Ustekinumab and Vedolizumab in the Efficacy for Moderate to Severe Ulcerative Colitis with Prior Failure of Biologics or Small Molecule Drugs**

Seung Min Hong[1], Dong Hoon Baek[1], Geun Am Song[1], Dong Chan Joo[1], Tae In Kim[1], Gwang Ha Kim[1], Bong Eun Lee[1], Cheolung Kim[1], Hyeon Tae Cho[1]

[1]Department of Internal Medicine, Pusan National University School of Medicine and Biomedical Research Institute, Pusan National University Hospital, Busan, Korea

PE1-089 **Perception of Pediatric Gastrointestinal Specialists on Anti-tumor Necrosis Factor Therapy in Patients with Pediatric Crohn's Disease**

Eun Sil Kim[1], Yoon Lee[2], Ben Kang[3]

[1]Department of Pediatrics, Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine, Seoul, Korea

[2]Department of Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea

[3]Department of Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea

PE1-090 **Genotype- Phenotype Correlation in IBD: Unveiling Putative Inhibitors for IL10RA and IRF5 Variants**

Academic Grant

Jeyakumar Natarajan[1], Treesa Bency Evthonis[1]

[1]Dept of Bioinformatics, Bharathiar University, Coimbatore, India

PE1-091 **Pediatric Ulcerative Colitis Presents with a More Severe Phenotype at Diagnosis compared to Adult Ulcerative Colitis in Korea**

Suk Jin Hong[1], Hyeong Ho Jo[2], Eun Young Kim[2], Kwang-Hae Choi[3], Hyo-Jeong Jang[4], Sujin Choi[5], Byung-Ho Choe[5], Ben Kang[5]

[1]Pediatrics, Daegu Catholic University School of Medicine, Daegu, Korea

[2]Internal Medicine, Daegu Catholic University School of Medicine, Daegu, Korea

[3]Pediatrics, Yeungnam University School of Medicine, Daegu, Korea

[4]Pediatrics, School of Medicine, Keimyung University, Daegu, Korea

[5]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea

PE1-092 **Clinical Characteristics and Treatment of Inflammatory Bowel Disease at the Gastroenterology-hepatobiliary Center in Bach Mai Hospital from 2022 to 2023**

Tan Tran Thi[1], Long Nguyen Cong[1,2], Nam Nguyen Hoai[1,2]

[1]Gastroenterology-Hepatology Center, Bachmai Hospital, Hanoi, Vietnam

[2]Internal Gastroenterology Department, University of Medicine and Pharmacy - Hanoi National University, Hanoi, Vietnam

PE1-093 **Clinical Usefulness of Immune Profiling for Differential Diagnosis between Crohns Disease, Intestinal Tuberculosis, and Behcets Disease**

Jae Seung Soh[1], Sung Wook Hwang[2]

[1]Department of Internal Medicine, Hallym University Sacred Heart Hospital, Anyang, Korea

[2]Department of Internal Medicine, Asan Medical Center, Seoul, Korea

PE1-094 **The Impact of Education on Health Beliefs and Pregnancy Knowledge among Patients with Inflammatory Bowel Disease**

Eunsoo Choi[1], Eunsoo Kim[1]
[1]*Gastroenterology, Kyungpook National University Hospital, Daegu, Korea*

PE1-095 **Long-term Seton Drainage as a Definite Treatment in Crohn's Perianal Fistula: A Systematic Review and Meta-anaylsis**

Sunseok Yoon[1], Ja Seol Koo[2], Woong Bae Ji[1], Jun Won Um[1], Kwang Dae Hong[1]
[1]*Colorectal Surgery, Korea University Ansan Hospital, Ansan, Korea*
[2]*Gastroenterology and Hepatology, Korea University Ansan Hospital, Ansan, Korea*

PE1-096 **The Relationship between Inflammatory Bowel Disease and Income Level**

Ock Kim[1], Hosun Yu[1], Hyun Jung Lee[1], Jong Pil Im[1], Byeong Gwan Kim[1], Joosung Kim[1], Seong-Joon Koh[1]
[1]*Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea*

PE1-097 **Optimal Interval for Therapeutic Drug Monitoring in Patients with Inflammatory Bowel Disease Receiving Stable Infliximab Maintenance Treatment**

Sung Noh Hong[1], Yujin Lim[1], Boram Park[1], Ok Soon Jung[1], Dong Kyung Chang[1], Young-Ho Kim[1]
[1]*Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea*

PE1-098 **Correlation of Serum 25-hydroxyvitamin D Value with Disease Activity in Crohn's Disease Patients**

Academic Grant

Roland Helmizar[1], Nana Liana[2], Ruhsyahadati Ajisman[3], Sri Nani Jelmila[4], Rahma Triyana[5], Dian Puspita[6], Melya Susanti[7]
[1]*Internal Medicine, Baiturrahmah University, Padang, Indonesia*
[2]*Pathology Anatomic, Baiturrahmah University, Padang, Indonesia*
[3]*Clinical Microbiology, Baiturrahmah University, Padang, Indonesia*
[4]*Nutrition, Baiturrahmah University, Padang, Indonesia*
[5]*Clinical Parasitology, Baiturrahmah University, Padang, Indonesia*
[6]*Cardiovascular, Baiturrahmah University, Padang, Indonesia*
[7]*Anatomy, Baiturrahmah University, Padang, Indonesia*

PE1-099 **Relationship between Irritable Bowel Syndrome on Sleep Quality, Anxiety, Depression and Quality of Life in among School Going Adolescent**

Academic Grant

Arun Kumar Rao[1], Rohit Rajput[1], Anil Gaur[1]
[1]*Internal Medicine, Shakuntla Hospital and Research Center, Delhi, India*

POSTER EXHIBITION

PE1-100 **Comparison between Pediatric Crohn's Disease Patients Presenting with a Single Perianal Fistula and Multiple Perianal Fistulas at Diagnosis**

Seo-Hee Kim[1], Sangjun Sohn[2], Yeoun Joo Lee[2], Soon Chul Kim[3], Sujin Choi[4], Byung-Ho Choe[4], Ben Kang[4]

[1]Department of Pediatrics, Chonnam National University Medical School, Gwang-ju, Korea
[2]Department of Pediatrics, Pusan National University School of Medicine, Busan, Korea
[3]Department of Pediatrics, Chonbuk National University Medical School, Jeonju, Korea
[4]Department of Pediatrics, Kyungpook National University, Daegu, Korea

PE1-102 **Association of Inflammatory Bowel Disease with the Risk of Parkinson's Disease**

Academic Grant

Salman Hussain[1], Sidra Zayed[2]

[1]Department of Internal Medicine, Jamia Hamdard, New Delhi, India
[2]Department of Pharmacology, Jamia Hamdard, New Delhi, India

PE1-103 **Protective Effect of Resveratrol Mediated Silver Nanoparticles against DSS Induced Colitis in Rodents**

Academic Grant

Ekta Yadav[1]

[1]Shalom Institute of Health and Allied Sciences, Sam Higginbottom University of Agriculture Technology and Sciences, Allahabad, India

PE1-104 **Schistosomal Colitis Mimicking Inflammatory Bowel Disease in a Sudanese Patient: A Case Report**

Academic Grant

Mohamed Alajab[3], Ahmed Rafei[1], Sana Dafaalla[4], Abdelmoneim Abdo[2]

[1]Research, National Center for Gastrointestinal and Liver Diseases, Khartoum, Sudan
[2]The director, National Center for Gastrointestinal and Liver Diseases, Khartoum, Sudan
[3]Internal Medicine, University of Gezira, Wad Madni, Sudan
[4]Histopathology, Histocare Center, Wad Madni, Sudan

PE1-105 **Impact of Early Use of Immunomodulator on the Outcomes of Crohn's Disease: A Systematic Review and Meta-analysis**

Jun Hwan Yoo[1], Jiyoung Yoon[2], Yu Kyung Jun[3], Hye Sun Lee[4], Jae Jun Park[5]

[1]Gastroenterology, CHA Bundang Medical Center, CHA University School of Medicine, Seongnam, Korea
[2]Internal Medicine, Kangdong Sacred Heart Hospital, Seoul, Korea
[3]Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea
[4]Biostatics Collaboration Unit, Yonsei University College of Medicine, Seoul, Korea
[5]Internal Medicine, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea

PE1-106 **Statins Use and the Risk of Colorectal Cancer in Patients with Inflammatory Bowel Disease: A Systematic Review and Meta-analysis**

Byung Wook Jung[1], Won Myung Lee[2], Seoyoon Choi[3], Hye Sun Lee[4], Jae Jun Park[3]
[1]*Internal Medicine - Gastroenterology, Hanyang University Guri Hospital, Hanyang University College of Medicine, Guri, Korea*
[2]*Internal Medicine - Gastroenterology, SoonChunHyang University Hospital, Bucheon, Bucheon, Korea*
[3]*Internal Medicine - Gastroenterology, Severance Hospital, Yonsei University College of -Medicine, Seoul, Korea*
[4]*Biostatics Collaboration Unit, Yonsei University College of Medicine, Seoul, Korea*

PE1-108 **Systemic Lupus Erythematosus Related Small Bowel Diseases: A Case Report**

Nguyen Quynh[1]
[1]*Gastroenterology, 108 Military Central Hospital, Ha Noi, Vietnam*

PE1-109 **Quality of Life of Patients in Inflammatory Bowel Disease Literature Review**

Derizal Derizal[1], Putri Ayu[2], Roland Helmizar[3]
[1]*Tourism, IP Trisakti, Jakarta, Indonesia*
[2]*Economics, Andalas University, Padang, Indonesia*
[3]*Health, Baiturrahmah University, Padang, Indonesia*

PE1-113 **A Prospective Study on the Effects of Ramadan Intermittent Fasting on Inflammatory Markers, Disease Severity, Depression, and Quality of Life in Patients with Inflammatory Bowel Diseases**

Academic Grant

Andi Makkasau[1], Andi Tenrilia[3], Andi Nursanti[2]
[1]*Management of Health, Alami GSB, Polewali Mandar, Indonesia*
[2]*Pharmachy, Andini Persada College of Health Sciences, Mamuju, Indonesia*
[3]*Computer Science, Al Asyaria Mandar University, Polewali Mandar, Indonesia*

PE1-116 **Gastrointestinal Distress was Brought on by a Bacteria Infection and an Event. Inflammatory Bowel Disease: A Comprehensive Analysis**

Balwan Singh[1]
[1]*Department of Pharmacy, KIET School of Pharmacy, KIET Group of Institutions, Delhi-NCR, Ghaziabad, UP, India*

Colorectal Neoplasia

PE2-001 **The Role of Rab Coupling Protein (RCP) in Metastasis and Infiltration of Colorectal Cancer: A CHASID Multicenter Study**

Jieun Ryu[1], Kyu Chan Huh[2], Jeong Eun Shin[3], Yunho Jung[4], Sang-Bum Kang[5]
[1]*Healthcare Center, Konyang University Hospital, Daejeon, Korea*
[2]*Internal Medicine, Konyang University College of Medicine, Daejeon, Korea*
[3]*Internal Medicine, Dankook University College of Medicine, Cheonan, Korea*
[4]*Internal Medicine, Soonchunhyang University College of Medicine, Cheonan, Korea*
[5]*Internal Medicine, Daejeon St. Mary's Hospital, College of Medicine, Daejeon, Korea*

POSTER EXHIBITION

PE2-002 **Risk of Perforation of Self-expandable Metal Stents Who Received Bevacizumab compared to Stent Alone or Non-bevacizumab Chemotherapy in Patients with Advanced Colorectal Cancer: A Systematic Review and Meta-analysis**

Soo-Young Na[1], Seong-Jung Kim[2], Eun Sun Kim[3], Yunho Jung[4]
[1]Internal Medicine, College of Medicine, The Catholic University of Korea, Incheon, Korea
[2]Internal Medicine, College of Medicine, Chosun University, Gwangju, Korea
[3]Internal Medicine, College of Medicine, Korea University, Seoul, Korea
[4]Internal Medicine, College of Medicine, Soonchunhyang University, Cheonan, Korea

PE2-003 **TRAIL Resistance-mediated CD44 Expression Facilitates Cancer Stemness of Colon Cancer Cells and Lung Metastasis of Colon Cancer in Animal Models**

Se Lim Kim[1], Min Woo Shin[1], Seung Young Seo[1], Byung Chul Jin[1], Sang Wook Kim[1]
[1]Department of Internal Medicine Research Institute of Clinical Medicine, Jeonbuk National University Hospital, Jeonbuk National University Medical School, Jeonju, Korea

PE2-004 **Factors Affecting Adherence to National Colorectal Cancer Screening: A 12-year Longitudinal Study using Multi-institutional Pooled Data in Korea**

Dae Sung Kim[1], Jeeyoung Hong[2], Jong-Yeup Kim[3]
[1]Gastroenterology, Konyang University College of Medicine, Daejeon, Korea
[2]Biomedical Research Institute, Konyang University Medical Center, Daejeon, Korea
[3]Department of Biomedical Informatics, Konyang University College of Medicine, Daejeon, Korea

PE2-005 **Association between Colonoscopy and Colorectal Cancer Mortality and All-cause Mortality according to Different Age Group: A Population-based Cohort Study in a South Korea**

Ji Young Lee[1], Jae Myung Cha[2], Su Bee Park[2], Jin Young Youn[2], Min Seob Kwak[2], Hun Hee Lee[3]
[1]Health Screening and Promotion Center, Asan Medical Center, College of Medicine, University of Ulsan, Seoul, Korea
[2]Internal Medicine, Kyung Hee University Hospital at Gangdong, Kyung Hee University School of Medicine, Seoul, Korea
[3]Big Data Center, Kyung Hee University Hospital at Gangdong, Seoul, Korea

PE2-006 **Clinical Outcome of Colorectal Neoplasm with Positive Resection Margin after Endoscopic Submucosal Dissection**

Hyung-Hoon Oh[1], Dong-Hyun Kim[1], Dae-Seong Myung[1], Hyun-Soo Kim[1], Young-Eun Joo[1]
[1]Department of Internal Medicine, Chonnam National University Medical School, Gwangju, Korea

PE2-007 **Detection Rate and Risk Factors of Isolated Terminal Ileal Ulcer during Colonoscopy: A Single-center Cross-sectional Study**

Dongshuai Su[1], Jie Han[1], Rongrong Cao[1], Chengkun Li[1], Yingchao Li[1], Cong Gao[1], Xiaodong Shao[1], Xingshun Qi[1]

[1]Department of Gastroenterology, General Hospital of Northern Theater Command, Shenyang, China

PE2-008 **Sedated Colonoscopy may Not be Beneficial for Polyp/Adenoma Detection**

Jie Han[1], Rongrong Cao[1], Dongshuai Su[1], Yingchao Li[1], Cong Gao[1], Ke Wang[1], Fei Gao[1], Xingshun Qi[1]

[1]Department of Gastroenterology, General Hospital of Northern Theater Command, Shenyang, China

PE2-009 **Risk Factors of Residual Tumors in Histologically Incompletely Resected Rectal Neuroendocrine Tumors**

Jung-Bin Park[1], Seung Wook Hong[1], Sung Wook Hwang[1], Sang Hyoung Park[1], Byong Duk Ye[1], Jeong-Sik Byeon[1], Seung-Jae Myung[1], Suk-Kyun Yang[1], Dong-Hoon Yang[1]

[1]Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

PE2-011 **Association of High Ultra-Processed Food Consumption and Risk of Colorectal Cancer: A Meta-Analysis of Real-world Evidence**

Sidra Zayed[1], Salman Hussain[2]

[1]Department of Pharmacology, Jamia Hamdard, New Delhi, India

[2]Department of Internal Medicine, Jamia Hamdard, New Delhi, India

PE2-012 **Comparison of Synergistic Sedation with Midazolam and Propofol versus Midazolam and Pethidine in Colonoscopies: A Prospective, Randomized Controlled Study**

Yohan Lee[1], Hyun-Soo Kim[1], Seon-Young Park[1], Dong-Hyun Kim[1]

[1]Division of Gastroenterology, Department of Internal Medicine, Chonnam National University Hospital and Medical School, Gwangju, Korea

PE2-013 **Endoscopic Ultrasonography for Submucosal Cushion Measurement to Determine Eligibility for Endoscopic Submucosal Dissection in Ulcerative Colitis-associated Dysplasia: A Case Series**

Kyuwon Kim[1], Seung Wook Hong[2], Sung Wook Hwang[2], Sang Hyoung Park[2], Byong Duk Ye[2], Jeong-Sik Byeon[2], Seung-Jae Myung[2], Suk-Kyun Yang[2], Dong-Hoon Yang[2]

[1]Gastroenterology, Chung-Ang University Hospital, Seoul, Korea

[2]Gastroenterology, Asan Medical Center, Seoul, Korea

POSTER EXHIBITION

PE2-014 **Risk of Developing Metachronous Advanced Colorectal Neoplasia at Follow-up Colonoscopy in Patients with Nonadvanced Adenomas**

Jung Kim[1], Ji Yeon Seo[1], Jung Ho Bae[1]
[1]*Internal Medicine, Healthcare System Gangnam Center, Seoul National University Hospital, Seoul, Korea*

PE2-015 **Enhancing Sensitivity and Efficiency in cfDNA Library Preparation for Improved Detection of ctDNA in Colorectal Cancer Patients**

Sang Hyun Kim[1], Bora Keum[1], Han Jo Jeon[1], Hyuk Soon Choi[1], Eun Sun Kim[1], Yoon Tae Jeen[1], Hoon Jai Chun[1], Hwayeon Jeong[2], Eunyoung Cho[2], Hana Kim[2], Jina Seo[3], Daechan Park[3], Cheulhee Jung[2]
[1]*Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea*
[2]*Department of Biotechnology, Korea University, Seoul, Korea*
[3]*Department of Molecular Science and Technology, Ajou University, Suwon, Korea*

PE2-016 **Optimization of Single-Nucleotide Variant On-Off Discrimination-PCR and Its Clinical Application in Colorectal Cancer Patients**

Sang Hyun Kim[1], Bora Keum[1], Han Jo Jeon[1], Hyuk Soon Choi[1], Eun Sun Kim[1], Yoon Tae Jeen[1], Hoon Jai Chun[1], Heekyung Lee[2], Doyeon Kim[2], Jina Seo[3], Daechan Park[3], Cheulhee Jung[2]
[1]*Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea*
[2]*Department of Biotechnology, Korea University, Seoul, Korea*
[3]*Department of Molecular Science and Technology, Ajou University, Suwon, Korea*

PE2-017 **Sociodemographic Factors and Their Impacts on the Prognosis and Stage of Patients with Colorectal Cancer: A 20-Year Population-based Study**

Academic Grant

Nisrina Nabila[1]
[1]*Basic Science, Universitas Islam Indonesia, Yogyakarta, Indonesia*

PE2-018 **Clinical Outcomes associated with Additional Resection of a Positive Resection Margin after Endoscopic Submucosal Resection with Band Ligation of Small Rectal Neuroendocrine Tumor: A Single-center Retrospective Study**

Min Cheol Kim[1], Kyeong Ok Kim[1], Si Hyung Lee[1], Byung Ik Jang[1]
[1]*Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea*

PE2-019 **Factors of Surgical Complexity in Radical Resection for Colorectal Cancer: A Retrospective Analysis**

Academic Grant

Ximo Wang[1], Yukai Chen[1,2], Linyan Lyu[1], Kehang Guo[1,2], Yongliang Zhao[1,2], Honglei Wang[2]
[1]*Graduate School, Tianjin Medical University, Tianjin, China*
[2]*Department of Gastrointestinal Surgery, Tianjin Hospital of ITCWM, Tianjin, China*

PE2-020 **A Novel Multi-marker NGS Methylation Panel Enhances the Sensitivity of Blood-based Colorectal Cancer Screening**

Hae-Jin Hu[1], Wonsub Kim[1], Gyeong Ryeong Kim[1], Jung-Ho Park[2]

[1]*Endomics, Inc, Seongnam, Korea*

[2]*Internal Medicine, Kangbuk Samsung Hospital, Sungkyunkwan University College of Medicine, Seoul, Korea*

PE2-021 **Anticoagulant as a Risk Factor of Post Colorectal Endoscopic Submucosal Dissection Delayed Bleeding: A HASID Multicenter Study**

Seong-Jung Kim[1], Jun Lee[1], Hyo Yeop Song[2], Geom-Seog Seo[2], Byung-Chul Jin[3], Sang-Wook Kim[3], Dong Hyun Kim[4], Hyun-Soo Kim[4], Hyung Hoon Oh[4], Dae-Seong Myung[4], Young-Eun Joo[4]

[1]*Department of Internal Medicine, College of Medicine, Chosun University, Gwangju, Korea*

[2]*Department of Internal Medicine, College of Medicine, Wonkwang University, Iksan, Korea*

[3]*Department of Internal Medicine, College of Medicine, Jeonbuk National University, Jeonju, Korea*

[4]*Department of Internal Medicine, College of Medicine, Chonnam National University, Gwangju, Korea*

PE2-022 **Prevalence and Risk Factors for Sessile Serrated Lesions: An Australian Experience**

Deloshaan Subhaharan[1], Karan Shukla[1], Roney Shibu[1], Benjamin Mckillen[1], Sneha John[1]

[1]*Department of Digestive Health, Gold Coast University Hospital, Gold Coast, Australia*

PE2-023 **Incidence of Colorectal Neopalasia Incidence in India: A Analysis from Colorectal Cancer Registries**

Academic Grant

Md Sarfaraj Hussain[1]

[1]*Department of Pharmacy, Lord Buddha Koshi Medical College and Hospital, Biajnathpur, Saharsa, Bihar, India*

PE2-025 **The Comparison of Sentinel and Regional Lymph Node Biopsy Procedure to Detect Colorectal Cancer : A Population-based Study**

Academic Grant

Anindya Amanda Damayanti[1]

[1]*Department of Internal Medicine, Universitas Islam Indonesia, Yogyakarta, Indonesia*

PE2-026 **The Impact of Therapeutic Factors in the Occurrence of Death in Colorectal Cancer Patients as: SEER Population-based Study**

Academic Grant

Amany Wardhani[1]

[1]*Basic Science, Universitas Islam Indonesia, Yogyakarta, Indonesia*

POSTER EXHIBITION

PE2-027 Academic Grant

Analysis of Urbanization and Frequency of Colorectal Cancers Disease Association with Heavy Metals Level in River Water Index in Pune District in Rural Population

Ranbir Singh[1], Sumit Rajput[1], Priya Tiwari[1]
[1]*Physiology, B V Deemed University Medical College, Pune, India*

PE2-028

Indications and Spectrum of Lower Gastrointestinal Diseases as Determined by Colonoscopy; Descriptive Cross-sectional Study from a Tertiary Care Hospital in Pakistan

Mian Shah Yousaf[1], Om Parkash[1], Fatima Majid[1], Shameel Shafqat[1]
[1]*Gastroenterology, Aga Khan University Hospital, Karachi, Pakistan*

PE2-029 Academic Grant

SCF-FBXL8 Contributes to Liver Metastasis and Stem-cell-like Features in Colorectal Cancer Cells by Mediating Ubiquitination and Degradation of TP53

Zhengyun Zhang[1]
[1]*Surgery, Shanghai Sixth People's Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, Shanghai, China*

PE2-030 Academic Grant

Enhancing Colorectal Cancer Monitoring: A Comparative Study of Circulating Tumor Cells Isolation Methods

Murdani Abdullah[1,2], Dimas Noor[2], Saskia Nursyirwan[1,2], Ikhwan Rinaldi[2,3], Wifanto Jeo[3,4], Anom Bowolaksono[5], Astari Dwiranti[5], Sovya Salsabila[5], Resica Anastasya[5]
[1]*Department of Internal Medicine, Cipto Mangunkusumo Hospital, Faculty of Medicine, Universitas Indonesia, Division of Gastroenterology, Pancreatobiliary, and Digestive Endoscopy, Jakarta, Indonesia*
[2]*Faculty of Medicine, Universitas Indonesia, Human Cancer Research Center, Indonesia Medical Education and Research Institute, Jakarta, Indonesia*
[3]*Department of Internal Medicine, Cipto Mangunkusomo National General Hospital, Faculty of Medicine, Universitas Indonesia, Division of Hematology and Medical Oncology, Jakarta, Indonesia*
[4]*Department of Surgery, Dr. Cipto Mangunkusumo Hospital, Jakarta, Indonesia, Division of Digestive Surgery, Jakarta, Indonesia*
[5]*Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Indonesia, Jakarta, Indonesia*

PE2-031

The Quality of Colorectal Cancer Screening for First Degree Relatives of Patients with Colorectal Cancer in Thailand

Thippawan Saengnoi[1], Taya Kitiyakara[1]
[1]*Gastrointestinal and Hepatology Department, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand*

PE2-032 **Analysis of Colonoscopic Polypectomy Results in the Family Medical Hospital in Ulaanbaatar, Mongolia**

Buyantogtokh Purevdorj[1], Javkhlan Tsengenbayar[1], Udval Mashbat[1]
[1]*Internal Medicine, Endoscopic Division, Family Medical Hospital, Ulaanbaatar, Mongolia*

PE2-033 **A Case of Colon Cancer Presenting as : Colovesical Fistula (CVF)**

Monika Jain[1], Amar Ranjan[2], Kalpana Panigrahi[1]
[1]*Internal Medicine, Interfaith Medical Center One Brooklyn Health, New York, United States*
[2]*Pathology, AIIMS, Delhi, India*

PE2-034 **The Quality of Life of Colorectal Cancer Patients Post-colostomy: Literature Review**

Derizal Derizal[1], Roland Helmizar[2]
[1]*Tourism, IP of Trisakti, South Jakarta, Indonesia*
[2]*Health, Baiturrahmah University, Padang, Indonesia*

PE2-035 **Ileocecal Intussusception as an Unusual Presentation of Ascending Colon Adenocarcinoma: A Case Report from Sudan**

Ahmed Rafei[1], Nadir Hilal[2]
[1]*Research, National Center for Gastrointestinal and Liver Diseases, Khartoum, Sudan*
[2]*Colorectal Surgery, National Center for Gastrointestinal and Liver Diseases, Khartoum, Sudan*

PE2-036 **Uncommon Ureteric Metastasis from Rectosigmoidal Cancer: A Case Report and Review of Literature**

Ahmed Rafei[1], Muntasir Mukhtar[2], Almigdad Musa[2], Abdulwahab Abdulkarim[3], Hind Hassabelrasoul[5], Mohamed Soud[4]
[1]*Research, National Center for Gastrointestinal and Liver Diseases, Khartoum, Sudan*
[2]*Omdurman Islamic University, Khartoum, Sudan*
[3]*Medicine, Hayatt University College, Khartoum, Sudan*
[4]*Surgery, University of Gezira, Wad Madni, Sudan*
[5]*Iqraa University College, Wad Madni, Sudan*

PE2-037 **Potential of Circulating MicroRNAs as a Novel Non-invasive Biomarker for the Diagnosis and Prognosis of Colorectal Cancer Patients: A Review**

Nadyatul Husna[1]
[1]*Medical Doctor/General Practitioner, Alumnus of Universitas Andalas, Padang, Indonesia*

PE2-038 **Salvage Treatment for Rectal Neuroendocrine Tumor with Positive Resection Margin Resected by Endoscopy**

Youngeun Seo[1], Hyunghoon Oh[1], Donghyun Kim[2], Daeseong Myung[1], Hyunsoo Kim[2], Youngeun Joo[1]
[1]*Gastrointestinal Medicine, Chonnam National University Hwasun Hospital, Hwasun, Korea*
[2]*Gastrointestinal Medicine, Chonnam National University Hospital, Gwangju, Korea*

POSTER EXHIBITION

PE2-043 **Therapeutic Potential of Pachypodol in the Medicine for the Treatment of Colon Cancer with Their Molecular Mechanism**

Kanika Patel[1], Dinesh Kumar Patel[1]
[1]*Department of Pharmaceutical Sciences, Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj, India*

Small Bowel Disease & Nutrition

PE3-001 **Discordance Rate and Risk Factor of Other Diagnostic Modalities for Small Bowel Tumors Detected by Device-assisted Enteroscopy: A Korean Association for the Study of Intestinal Disease (KASID) Multicenter Study**

Jihye Park[1], Jin Su Kim[2], Joo Hye Song[3], Kwangwoo Nam[4], Seong-Eun Kim[5], Eui Sun Jeong[5], Jae Hyun Kim[6], Seong Ran Jeon[7]
[1]*Department of Internal Medicine, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea*
[2]*Department of Internal Medicine, Eunpyeong St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Seoul, Korea*
[3]*Department of Internal Medicine, Konkuk University School of Medicine, Seoul, Korea*
[4]*Department of Internal Medicine, Dankook University Hospital, Dankook University College of Medicine, Cheonan, Korea*
[5]*Department of Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea*
[6]*Department of Internal Medicine, Kosin University College of Medicine, Busan, Korea*
[7]*Department of Internal Medicine, Soonchunhyang University College of Medicine, Seoul, Korea*

PE3-002 **Efficacy of Mucoprotective Agents on Recurrence of Non-steroidal Anti-inflammatory Drug-induced Enteropathy based on Severity: Multi-center Retrospective Study**

Kyewhon Kim[1], Kyeong Ok Kim[1], Hyun Joo Jang[2], Sin Hee Kim[3], Su Hwan Kim[4], Ji Hyung Nam[5], Young Joo Yang[6], Sang-Bum Kang[7]
[1]*Department of Internal Medicine, Yeungnam University College of Medicine, Deagu, Korea*
[2]*Department of Internal Medicine, Hallym University Dongtan Sacred Heart Hospital, Hwaseong, Korea*
[3]*Digestive Disease Center and Research Institute, Department of Internal Medicine, Soonchunhyang University Bucheon Hospital, Bucheon, Korea*
[4]*Department of Internal Medicine, Seoul Metropolitan Government Seoul National University Boramae Medical Center, Seoul, Korea*
[5]*Department of Internal Medicine, Dongguk University Ilsan Hospital, Goyang, Korea*
[6]*Department of Internal Medicine, Hallym University College of Medicine, Chuncheon, Korea*
[7]*Department of Internal Medicine, Daejeon St. Mary's Hospital, Daejeon, Korea*

PE3-003

Predictive Factors for Achieving Complete Enteroscopy via a Single Route in Single-balloon Enteroscopy: Insights from a Medical Center's Experience with 621 Procedures in Taiwan

Chi-Yu Lee[1,4], Wei-Chen Lin[1,2,3], Horng-Yuan Wang[1,3,4], Ching-Wei Chang[1,2,3], Ming-Jen Chen[1,3,4], Chen-Wang Chang[1,2,4]

[1]Division of Gastroenterology, Department of Internal Medicine, MacKay Memorial Hospital, Taipei City, Taiwan

[2]Department of Nursing, MacKay Medicine, Nursing and Management College, Taipei City, Taiwan

[3]Department of Medicine, MacKay Medical College, New Taipei City, Taiwan

[4]Study Group, Taiwan Association for the Study of Small Intestinal Diseases (TASSID), Taipei City, Taiwan

PE3-004

Academic Grant

Clinical Spectrum of Celiac Disease among Adult Population : Experience from Largest Tertiary Care Hospital of Karachi, Pakistan

Bushra Shahid[1]

[1]Gastroenterology and Hepatology, Jinnah Post Graduate Medical Centre, Karachi, Pakistan

PE3-005

Academic Grant

Potential Effects of Consumption of Phytosterols on Fecal Characteristics and Gut Microbiota in Constipated Middle aged Women

Pardeep Kumar[1], Sagar Lavania[1]

[1]Biochemistry, F H Medical College & Hospital, Agra, India

PE3-006

Academic Grant

Elucidation of Effect of Interleukin-15 Inhibitor in Experimental Model of Celiac Disease

Bikash Medhi[1], Ashutosh Singh[1], Rahul Singh[1], Ajay Prakash[1], Kaushal Kishor Prasad[2]

[1]Pharmacology, PGIMER, Chandigarh, India

[2]Gastroenterology, PGIMER, Chandigarh, India

PE3-007

Academic Grant

Analysing the Utility of IgA anti-tTG Co-localisation for Identification of Extra-intestinal Celiac Disease (CeD)

Rimlee Dutta[1], Alka Singh[2], Prasenjit Das[1], Siddhartha Datta Gupta[1], Govind Makharia[2]

[1]Pathology, All India Institute of Medical Sciences (AIIMS), New Delhi, India

[2]Gastroenterology and Human Nutrition, All India Institute of Medical Sciences (AIIMS), New Delhi, India

PE3-008

Academic Grant

Anti-cancer Activity of Heat-inactivated Bacteria on Stomach, Colon and Gallbladder Cancer Cells Lines

Ankush Kumar[1], Anil Gaur[1]

[1]Internal Medicine, Shakuntla Hospital and Research Center, Delhi, India

POSTER EXHIBITION

PE3-009 **Metastatic Amelanotic Melanoma Presenting as Recurrent Intussusception in a Pediatric Patient**

Ariane Marielle Valle[1], Jasher Chua[1], Ceri Jane Talan-Tampus[2], B. Januario Antonio Veloso[1]

[1]Laboratories, Philippine General Hospital, Manila, Philippines

[2]Pediatrics, Philippine General Hospital, Manila, Philippines

PE3-010 **Jejunal Angiodysplasia: Surgery as a Life-saving Intervention: A Case Report and Management Approach**

Abderrahaim Dabora[1], Alaedeen Nogoud[1], Muntasir Abdulsakhi[1], Ahmed Rafei[2], Hossam Khalifa[1]

[1]Hepatobiliary, IBN Sina Specialized Hospital, Khartoum, Sudan

[2]Research, National Center for Gastroentestinal and Liver Diseases, Khartoum, Sudan

PE3-011 **Intestinal Tuberculosis Masquerading as Acute Appendicitis: A Case Report**

Vihanga Chamod Wickramasinghe[1], Keddsgoda Gamage Vinod Saranga[1], Sumudumali Arundhathi Piyarathne[1], Jasenthu Kankanamge Ganindu Madhawa[1], Ambawatta Hewage Anil Prashantha[1], Manoharan Krishni[1]

[1]Surgery, Colombo South Teaching Hospital, Kalubowila, Sri Lanka

PE3-012 **Managing Obscure Gastrointestinal Bleeding: A Laparoscopic Approach to Jejunal Diverticulum - A Case Report**

Keddagoda Gamage Vinod Saranga[1], Nilanka Harshana Pemanthu Hewa[1]

[1]Colombo South Teaching Hospital, Post Graduate Institute of Medicine, Colombo, Sri Lanka

PE3-013 **A Case Report of Systemic Lupus Erythematosus Presenting with Enteritis and Cystitis Simultaneously**

Doan Nguyen[1,2], Huong Nguyen[3], Uyen Ha[5], Luu Le[4]

[1]General Internal Medicine, University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh, Vietnam

[2]Gastroenterology Department, Nguyen Tri Phuong Hospital, Ho Chi Minh, Vietnam

[3]Rheumatology Department, Nguyen Tri Phuong Hospital, Ho Chi Minh, Vietnam

[4]Gastroenterological Surgery Department, Nguyen Tri Phuong Hospital, Ho Chi Minh, Vietnam

[5]General Internal Medicine, Pham Ngoc Thach Medical University, Ho Chi Minh, Vietnam

General Topics

PE4-001 **Synergistic Effect of Phytochemicals Combination including Ginsenosides and Curcumin on Recovery from Radiation-induced Toxicity**

Seong-Eun Kim[1], Min-Sung Kim[2], Ryung-Ah Lee[3], Su-Jeong Yang[2], Tae-Yong Lee[2], So-Youn Woo[4]

[1]Department of Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea
[2]Central Research Center, CORESTEMCHEMON Inc, Seoul, Korea
[3]Department of Surgery, Ewha Womans University College of Medicine, Seoul, Korea
[4]Department of Microbiology, Ewha Womans University College of Medicine, Seoul, Korea

PE4-002 **Different Differentiation of Intestinal Stem Cell according to SOX2 Phosphorylation**

Dong Keon Kim[1], Yoojung Seo[1], Hyeonhee Lee[1], Tae Il Kim[1]

[1]Department of Gastroenterology, Severance Hospital, Seoul, Korea

PE4-003 **Effect of Thawing Time for Fecal Microbiota Transplantation on Treatment Effect of Recurrent Clostridioides Difficile Infection**

Jongbeom Shin[1], Boram Cha[1], Ji-Taek Hong[1], Soo-Hyun Park[2], Jung-Hwan Lee[2,1], Kye Sook Kwon[1]

[1]Division of Gastroenterology, Department of Internal Medicine, Inha University Hospital, Inha University School of Medicine, Incheon, Korea
[2]Department of Neurology, Kangdong Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea

PE4-004 **Clinical Outcomes of Clostridium Difficile Infection in Patients with Acute Severe Ulcerative Colitis**

Ki Young Lim[1], Kyeong Ok Kim[1], Yoo Jin Lee[2], Dong Hyun Kim[3], Hyun Soo Kim[3], Sang Hyoung Park[4], Kyung Hwan Oh[4], Eun Soo Kim[5], Seong-Jung Kim[6], Jun Lee[6], Eun Mi Song[7], Dae Sung Kim[8]

[1]Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea
[2]Internal Medicine, Keimyung University School of Medicine, Daegu, Korea
[3]Internal Medicine, Chonnam National University College of Medicine, Gwangju, Korea
[4]Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea
[5]Internal Medicine, Kyungpook National University, School of Medicine, Daegu, Korea
[6]Internal Medicine, Chosun University College of Medicine, Gwangju, Korea
[7]Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea
[8]Internal Medicine, Konyang University College of Medicine, Daejeon, Korea

POSTER EXHIBITION

PE4-005 **Stool Pictures of Patients Improve Trainees' and Nurses' Self-confidence on the Diagnosis of Gastrointestinal Bleeding**

Eunbi Lee[1], Eunsoo Kim[1], Sungkook Kim[1], Ohsung Kwon[1], Mirae Lee[1], Yoojin Lee[2], Kyeongok Kim[3]

[1]*Gastroenterology, Kyungpook National University Hospital, Daegu, Korea*
[2]*Gastroenterology, Keimyung University Dongsan Hospital, Daegu, Korea*
[3]*Gastroenterology, Yeungnam University Hospital, Daegu, Korea*

PE4-006 **Acute Gastropathy associated with Bowel Preparation using Oral Sulfate Tablet versus 1 L Polyethylene Glycol with Ascorbic Acid in Healthy Subjects**

Yun Jin Yum[1], Su Bee Park[1], Jin Young Youn[1], Jae Myung Cha[1]

[1]*Internal Medicine, Kyung Hee University Hospital at Gangdong, Seoul, Korea*

PE4-007 **Diagnosis of Intestinal Tuberculosis: A Systematic Review and Meta-analysis**

Academic Grant

Pubet Weeranawin[1], Tanawat Geeratragool[1], Wanruchada Katchamart[1], Julajak Limsrivilai[1]

[1]*Internal Medicine, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand*

PE4-008 **Chemoprotective Effect of Umbelliferone against 1,2 Dimethylhydrazine Induced Colon Cancer via Alteration the Oxidative Stress, Inflammatory Reaction and Gut Microbiota**

Academic Grant

Vikas Kumar[1], Firoz Anwar[2]

[1]*Pharmaceutical Sciences, Sam Higginbottom University of Agriculture, Technology & Sciences, Allahabad, India*
[2]*Biochemistry, King Abdulaziz University, Jeddah, Saudi Arabia*

PE4-009 **Therapeutic Effects of Curcumin and Ginsenoside Combination in a Animal Model of Radiation Proctitis**

Seong-Eun Kim[1], Min-Sung Kim[2], Ryung-Ah Lee[3], Su-Jeong Yang[2], Tae-Yong Lee[2], So-Youn Woo[4]

[1]*Department of Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea*
[2]*Central Research Center, CORESTEMCHEMON Inc. Seoul, Korea*
[3]*Department of Surgery, Ewha Womans University College of Medicine, Seoul, Korea*
[4]*Department of Microbiology, Ewha Womans University College of Medicine, Seoul, Korea*

PE4-010 **Successful Hemostasis of Refractory Lower GI Bleeding using a Novel Hemostatic Powder, UI-EWD, : A Muticenter Study**

Gyeol Seong[3], Boram Cha[1], Jongbeom Shin[1], Sung Min Kong[2], Ji Taek Hong[1], Kye Sook Kwon[1]

[1]*Department of Internal Medicine, Inha University Hospital, Inha University School of Medicine, Incheon, Korea*

[2]Department of Internal Medicine, Samsung Changwon Hospital, Sungkyunkwan University School of Medicine, Changwon, Korea
[3]Department of Internal Medicine, Nowon Eulji Medical Center, Eulji University School of Medicine, Seoul, Korea

PE4-011 **Personalized Prediction of Survival Rate with Combination of Penalized Cox Models and Machine Learning in Patients with Colorectal Cancer**

Jae Myung Cha[1], Seung Jun Shin[2], Seon Hwa Lee[3]
[1]Department of Internal Medicine, Kyung Hee University Hospital at Gangdong, Seoul, Korea
[2]Department of Data Statistics, Korea University, Seoul, Korea
[3]Medical Big Data Research Center, Kyung Hee University Hospital at Gangdong, Seoul, Korea

PE4-012 **Reduced Risk of Gastrointestinal Bleeding associated with Eupatilin in Aspirin Plus Acid Suppressant Users: Nationwide Population-based Study**

Hyun Seok Lee[1], Ji Hyung Nam[2], Dong Jun Oh[2], Yeo Rae Moon[3], Yun Jeong Lim[2]
[1]Internal Medicine, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Internal Medicine, Dongguk University College of Medicine, Goyang, Korea
[3]Data Platform Division, KakaoHealthcare Corp., Seongnam, Korea

PE4-013 **Novel Risk Score for 30-day Adverse Events Following Colonoscopy in the Elderly**

Min-Jae Kim[1], Jie-Hyun Kim[1], Young Hoon Youn[1], Hyojin Park[1], Jaeyoung Chun[1]
[1]Internal Medicine, Yonsei University College of Medicine, Seoul, Korea

PE4-014 **A Randomized Clinical Trial of Synbiotics in Irritable Bowel Syndrome: Dose-Dependent Effects on Gastrointestinal Symptoms and Fatigue**

Sang-Hoon Lee[1], Doo-Yeoun Cho[2], Seok-Hoon Lee[2], Kyung-Sun Han[2], Sung-Won Yang[2], Jin-Ho Kim[2], Su-Hyun Lee[2], Soo-Min Kim[2], Kyu-Nam Kim[2]
[1]Department of Family Medicine and Functional Medicine, Greencross I-Med Gangnam Medical Center, Seoul, Korea
[2]Department of Family Practice and Community Health, Ajou University School of Medicine, Suwon, Korea

PE4-015 **Outcome Predictors for Sigmoid Volvulus: A Retrospective Cohort Study**

Seo Yoon Choi[1], Jung Hyun Ji[1], Ji Hye Park[1], Soo Jung Park[1], Jae Hee Cheon[1], Tae Il Kim[1], Hye Kyung Hyun[2], Hyun Chul Lim[2], Jae Jun Park[1]
[1]Department of Internal Medicine, Division of Gastroenterology, Yonsei University College of Medicine, Severance Hospital, Seoul, Korea
[2]Department of Internal Medicine, Division of Gastroenterology, Yongin Severance Hospital, Yongin, Korea

POSTER EXHIBITION

PE4-016 **Comparison of Clinical Characteristics and Long-term Prognosis of Focal Hypoganglionosis with Adult-onset Megacolon and Chronic Intestinal Pseudo-obstruction**

Jung-Bin Park[1], Kee Wook Jung[1], June Hwa Bae[1], Kyuwon Kim[2], Seung Wook Hong[1], Sung Wook Hwang[1], Sang Hyoung Park[1], Dong-Hoon Yang[1], Byong Duk Ye[1], Jeong-Sik Byeon[1], Suk-Kyun Yang[1], Jong Lyul Lee[3], Yong Sik Yoon[3], Chan Wook Kim[3], Chang Sik Yu[3], Seung-Jae Myung[1]

[1]Department of Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

[2]Department of Gastroenterology, Chung-Ang University College of Medicine, Seoul, Korea

[3]Department of Colon and Rectal Surgery, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

PE4-017 **Unveiling the Shield: Exploring Antigenic Epitopes of Campylobacter Jejuni Virulence Factors for a Potent Multiepitope Vaccine**

Academic Grant

Rian Ka Praja[1], Reny Rosalina[2]

[1]Microbiology, Faculty of Medicine, Universitas Palangka Raya, Palangka Raya, Indonesia

[2]Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Palangka Raya, Palangka Raya, Indonesia

PE4-019 **Comparative Study on Changes of Clinical Aspects in Patients Taking Bowel Cleansers (Oral Sulfate Tablet vs Low PEG vs Very Low PEG)**

Youngcheon Ra[1], Eunsun Kim[1], Hoonjai Chun[1], Hongsik Lee[1], Yoontae Jeen[1], Bora Keum[1], Hyuksoon Choi[1], Jaemin Lee[1], Hanjo Jeon[1], Sanghyun Kim[1], Kangwon Lee[1], Jiyoung Yoon[1], Bomee Lee[1]

[1]Division of Gastroenterology and Hepatology, Department of Internal Medicine, Korea University Anam Hospital, Korea University College of Medicine, Seoul, Korea

PE4-020 **Diagnostic Performance of Non-invasive Tests for Cytomegalovirus Colitis: A Systematic Review and Meta-analysis**

Academic Grant

Onuma Sattayalertyanyong[1], Thanaboon Chaemsupaphan[1], Julajak Limsrivilai[1]

[1]Department of Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

PE4-021 **Clinical Characteristics of Acute Mesenteric Ischemia in Young Adults: A KASID Multicenter Study**

Kwangwoo Nam[1], Se Ram Shin[2], Seong Ran Jeon[2], Joo Hye Song[3], Seong-Eun Kim[4]

[1]Gastroenterology, Dankook University College of Medicine, Cheonan, Korea

[2]Gastroenterology, Soonchunhyang University College of Medicine, Seoul, Korea

[3]Gastroenterology, Konkuk University School of Medicine, Seoul, Korea

[4]Gastroenterology, Ewha Womans University College of Medicine, Seoul, Korea

PE4-023 **The Role of Immunohistochemistry in Diagnosing Cytomegalovirus Disease in the Gastrointestinal Tract**

Puo-Hsien Le[1,2], Pai-Jui Yeh[3], Ren-Chin Wu[4], Cheng-Tang Chiu[1,2]

[1]Department of Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

[2]TASSID, Taiwan Association of the Study of Small Intestinal Disease, Taoyuan, Taiwan

[3]Department of Pediatric Gastroenterology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

[4]Department of Pathology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

PE4-024 **Usefulness of Stool Multiplex Polymerase Chain Reaction Testing in Patients with Acute Diarrhea**

Seo Hyun Kim[1,3], You Sun Kim[2,3], Seung Hyuk Kim[3], Won Eui Yoon[3], Hee Jun Myung[3], Jeong Seop Moon[3]

[1]Internal Medicine, Seoul Won Hospital, Seoul, Korea

[2]Internal Medicine, Kangdong Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea

[3]Internal Medicine, Inje University College of Medicine, Seoul, Korea

PE4-025 **The Case of Cronkhite-cancada Syndrome (CCS) Accompanied by Unexplained Diarrhea**

Hee Jun Jang[1], Geom-Seog Seo[1], Dong Han Yeom[1], Hyo Yeop Song[1]

[1]Internal Medicine, Wonkwang University College of Medicine, Iksan, Korea

PE4-026 **Genetic Analysis of Human Ulcerative Colitis Mucosa Express Library Homo Sapiens cDNA 5', mRNA Sequence**

Academic Grant

Ramlah Ramlah[1], Haerani Haerani[2]

[1]Educational of Biology, Universitas Sulawesi Barat, Majene, Indonesia

[2]Public Health, STIKes Bina Bangsa Majene, Majene, Indonesia

PE4-027 **Impact of Portulaca Oleracea L. Extract in Patients with Irritable Bowel Syndrome**

Kwangwoo Nam[1], Jeong Eun Shin[1], Yong Sung Kim[2]

[1]Gastroenterology, Dankook University College of Medicine, Cheonan, Korea

[2]Gastroenterology, Wonkwang University College of Medicine, Iksan, Korea

PE4-028 **A Case of Intestinal Schistosomiasis Infection Diagnosed by Computed Tomography Scan**

Se Im Cho[1], Seong-Jung Kim[1], Jun Lee[1]

[1]Department of Internal Medicine, Chosun University, Gwangju, Korea

PE4-030 **Eosinophilic Colitis: An Uncommon Etiology of Chronic Diarrhea**

Nhan Trung Phan[1]

[1]Department of Gastroenterology, Cho Ray Hospital, Ho Chi Minh, Vietnam

POSTER EXHIBITION

PE4-031 **A Pediatric Case of Omental Infarction Successfully Treated with Conservative Management**

Hyo-Jeong Jang[1]

[1]*Department of Pediatrics, Keimyung Universitiy College of Medicine Dongsan Medical Center, Daegu, Korea*

PE4-033 **The Pediatric Case of Controversial Hereditary Polyposis Syndrome in an 8-year-old Child**

Zilola Khadjieva[1,2], Rustam Anvarov[1,2], Khashim Sultanov[2,1], Saodat Kamilova[2,1], Sukhrob Tashmatov[2,1]

[1]*Pediatrics, Central Asian University, Tashkent, Uzbekistan*

[2]*Pediatric Gastroenterology, National Children Medical Center, Tashkent, Uzbekistan*

PE4-034 **Case Report: Strongyloides Stercoralis Hyperinfection in a Patient with Long-term Corticosteroid Exposure**

Quyen Pham[1]

[1]*Gastroenterology, Cho Ray Hospital, Ho Chi Minh City, Vietnam*

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2024 SEOUL

The 7th International Meeting on Intestinal Diseases
in conjunction with
The Annual Congress of the Korean Association
for the Study of Intestinal Diseases

APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 11 (Thu)

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 11 (Thu.), 13:00-14:15 I Room B

IMKASID 2024 Education Workshop (1)

Intestinal Ultrasound (IUS) Lecture Courses

Chairs

Eun Young Kim (Daegu Catholic University, Korea)
Chang Hwan Choi (Chung-Ang University, Korea)

[IMKASID 2024 Education Workshop (1)]

EW1-1

Basics of Intestinal Ultrasound (IUS): Techniques and Interpretation

Yoon-Kyo An
Department of Gastroenterology, Mater Hospital Brisbane, Australia

The lecture will give an overview of techniques and modalities of intestinal ultrasound. It will cover the normal features of the bowel wall and contiguous structures; and a practical approach to review the main pathological findings and their interpretations.

[IMKASID 2024 Education Workshop (1)]

EW1-2

Utilizing IUS to Assess Treatment Response in Ulcerative Colitis

Shintaro Sagami
Vice-Director, Center for Advanced IBD Research and Treatment,
Director, Intestinal Ultrasound Global Program, Kitasato University Kitasato Institute Hospital, Japan

Effective management of ulcerative colitis depends on accurate prediction of outcomes after induction therapy. This presentation examines the role of intestinal ultrasonography (IUS), particularly early assessments within the first week of induction therapy, in predicting clinical remission and long-term outcomes such as clinical-endoscopic remission (CER) and histo-endoscopic mucosal improvement (HEMI). By assessing rectal bowel wall thickness (BWT) and contrasting it with sigmoid BWT, we are gaining valuable prognostic insights to inform treatment decisions. Our research highlights the utility of transperineal ultrasonograpy (TPUS) in guiding personalized UC care. In addition, we'll contrast our findings with the latest developments in IUS prognostic tools to provide an integrated perspective on UC management strategies.

[IMKASID 2024 Education Workshop (1)]

EW1-3

The Dynamic Role of IUS in Small Bowel Crohn's Disease

Noa Krugliak Cleveland
University of Chicago, USA

The lecture will review the role of IUS in clinical management of Crohn’s disease, from diagnosis, disease monitoring, assessment of disease complications such as stenosis and penetrating disease, to assessment of therapeutic response and transmural healing. The lecture will also review how IUS compares to our gold standard endoscopy and other monitoring modalities. This will be done utilizing ample sonographic examples and case studies and will cater to both a novice and experienced audience.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 11 (Thu.), 16:00-17:30 I Room B

IMKASID 2024 Education Workshop (3)

Case-based Learning for Daily Practice: A Beginner's Course

Chairs

Jong Hoon Lee (Dong-A University, Korea)
Satimai Aniwan (Chulalongkorn University, Thailand)

[IMKASID 2024 Education Workshop (3)]

EW3-1

Optimal Selection of Biologics for IBD Management

Hyuk Yoon
Internal Medicine, Seoul National University Bundang Hospital, Korea

Recently, the development of new drugs for Inflammatory Bowel Disease (IBD) treatment has expanded the treatment options available for patients with moderate to severe IBD. This advancement benefits patients, yet it also presents challenges in determining which drug will yield the best results. When selecting a medication for IBD patients, efficacy and safety are primary considerations. However, there are numerous additional factors to take into account. Disease-specific aspects include the location and behavior of the disease, its activity, and severity, as well as any extraintestinal manifestations. Drug-specific factors should also be considered, such as the speed of onset, potential for immunogenicity, the necessity for combination therapy, and the drug's durability. From the patient's perspective, factors such as age, comorbidities, adherence to treatment, and preferred route of administration are essential. In conclusion, in actual clinical practice, it is crucial to consider these various factors and engage in shared decision-making with patients. Therefore, in this lecture, we will explore how to select advanced therapy for IBD patients wisely, using case studies as a learning tool.

[IMKASID 2024 Education Workshop (3)]

EW3-2

Implementing the Treat-to-Target Strategy in IBD

Eun Soo Kim
Internal Medicine, Kyungpook National University, Korea

Inflammatory bowel disease (IBD) composed of Crohn's disease (CD) and ulcerative colitis (UC) is a life-long disorder of gastrointestinal tract (GIT). IBD is characterized by a repetitive inflammation which may result in an irreversible structural damage in GIT if patients are not optimally treated. In addition, uncontrolled IBD significantly affects quality of life of patients. Although there are various types of medical treatments for IBD, it is a great challenge for physicians to provide a right medicine to right patients in a right time. To avoid structural damage of GIT or to change natural course of disease, well-established treatment goal or target should be provided for the start of each therapy. Introduction of biologic therapy or novel small molecules allows us to achieve higher level of targets such as endoscopic healing which is way beyond subjective symptoms. Recently, the expert group of IBD (international organization for the study of IBD) has reported the Selecting Therapeutic Targets in Inflammatory Bowel Disease (STRIDE-II) which has been updated from the 2015 recommendations. This upgrade version of STRIDE recommends biomarker like fecal calprotectin and C-reactive protein, quality of life, absence of disability and normal growth in children as the formal targets of IBD treatment with time concept incorporated into achieving each target. The therapy should be modified when the target fails to be met. There are emerging targets such as histological healing for UC and transmural healing for CD, but they are not approved as the official target yet. In this lecture, I will explain each target in detail and discuss how to apply this strategy in the daily clinical practice of IBD management.

[IMKASID 2024 Education Workshop (3)]

EW3-3

Best Techniques for Colorectal Polyp Removal

Zhiqin Wong
Pantai Hospital Kuala Lumpur, Malaysia

[IMKASID 2024 Education Workshop (3)]

EW3-4

Colorectal Endoscopic Submucosal Dissection (ESD): Fundamentals of Techniques and Preparation

Dong Hoon Baek
Internal Medicine, Pusan National University, Korea

Colorectal Endoscopic Submucosal Dissection (ESD) is an established treatment for early-stage colorectal neoplasms. It ensures "en bloc" resection with safety margins (R0 resection), irrespective of the lesion's size, allowing for precise histological assessment and guiding clinical decisions. This technique, requiring careful case selection due to its complexities and risks, involves multiple steps: lesion characterization, injection, incision, submucosal access, and dissection.

Transparent cap and CO2 insufflation: A transparent cap on the endoscope's tip is essential in all cases to maintain a clear field of view and prevent too close proximity to the working area. Additionally, CO2 insufflation is mandatory, associated with lower pain and a reduced rate of adverse events. **Electrosurgical unit**: An electrosurgical unit is a device that uses high-frequency current to generate heat without stimulating nerves and muscles, allowing for tissue incision and coagulation. Adjusting the "effect," "cut duration," and "cut interval" allows operators to fine-tune the balance between cutting efficiency and tissue damage. **Submucosal injection**: To minimize the risk of perforation and ensure safe resection, appropriate submucosal injection is necessary. The injection fluid must provide adequate submucosal cushioning and its effect must last sufficiently long. Various studies have demonstrated the safety of using hyaluronate mixture solutions in colorectal ESD procedures. Additionally, blue dyes such as indigo carmine are mixed with the submucosal injection fluid to help distinctly separate the submucosal layer from the muscle layer, preventing perforation and playing a crucial role in determining the resection area with endoscopic incision guidance. **Mucosal incision**: A mucosal incision is typically made about 5 mm from the lesion's boundary, or 10 mm in the case of suspected fibrosis. **Creation of the mucosal flap**: Utilizing the properly formed flap allows the endoscope tip to enter the submucosal layer. The pocket-creation technique, which involves progressing the incision towards the left or right mucosal layers of the formed submucosal pocket, is also employed to complete the procedure. **Traction techniques**: Traction is crucial for better visualization and dissection. Gravity serves as the simplest traction method. A recent meta-analysis compared Traction-assisted ESD (T-ESD) with conventional ESD (C-ESD) found that although both methods are similar in terms of success and complication rates, T-ESD offers the benefits of shorter procedure times and a reduced risk of perforation. **Submucosal dissection**: The submucosal layer, rich in blood vessels, can become difficult to dissect if bleeding occurs, as it reduces the layer's translucency. To manage this, thick vessels are first pre-coagulated using hemostatic forceps in soft coagulation mode, then cut with an endoknife. Fat tissue may also be present within the submucosal layer, with the layer requiring dissection situated beneath this fat tissue. Dissecting the deep submucosal layer is crucial for assessing the extent of any significant malignant invasion into the submucosa.

The ESD technique and resection strategies have significantly evolved, emphasizing careful injection, incision, and the use of traction techniques to minimize risks and improve outcomes. Despite the challenges, successful patient outcomes can be achieved in over 95% of cases.

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APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 11 (Thu.), 13:00-13:50 I Meeting Room 2

KASID Research Workshop 1

Toward Better CRC Screening

Chairs

Han-Mo Chiu (National Taiwan University Hospital, Taiwan)
Chang Mo Moon (Ewha Womans University, Korea)

[KASID Research Workshop 1]

RW1-1

Learning from a Taiwanese FIT-based Screening Program: Strengths and Blind Spots

Han-Mo Chiu
Department of Internal Medicine, National Taiwan University Hospital, Taiwan

Globally, colorectal cancer (CRC) is one of the most commonly diagnosed cancers and ranks as the second leading cause of oncological death worldwide. Asia contributes to more than half of the incident cases and deaths. In 2004, the Taiwanese government launched a nationwide organized CRC screening program following a successful pilot program. The fecal immunochemical test (FIT) is offered biennially to individuals aged 50 to 69 (extended to 75 in 2013). Initially, the screening coverage rate was 21.4%, with a repeat screening rate of 28.3% during the inaugural 5 years (2004-2009). However, by 2014, these rates had improved to 56.6% and 52.3% respectively. A recent analysis from the program has demonstrated that CRC mortality and the incidence of advanced-stage CRC have reduced by 35% and 29% respectively, when comparing those who did and did not participate in FIT screening.

Nevertheless, there are several challenges and obstacles that need to be addressed. First, interval cancers, occurring either after a negative FIT or colonoscopy without the diagnosis of CRC, have more unfavorable clinical outcomes, significantly impacting the effectiveness of screening. Second, the rate of regular participation in the program is still not satisfactory. Both the government and professional societies should work towards increasing public awareness of CRC. Third, some individuals are not compliant with colonoscopy after a positive FIT, greatly affecting the effectiveness of screening. Fourth, there is a rising trend of young-onset CRC, sparking debate on whether the age for initiating screening should be lowered. Finally, long-term financial support for this program is essential for its success, especially in the era of an aging population and the trend of including younger age groups in the screening population. All of these challenges require collaboration between the screening organizers, distributors, and professional societies for effective solutions.

[KASID Research Workshop 1]

RW1-2

Beyond FIT: How about Stool DNA Testing?

Jaeyoung Chun
Department of Internal Medicine, Gangnam Severance Hospital, Yonsei University College of Medicine, Korea

Colorectal cancer (CRC) is a significant cause of mortality globally, with Korea experiencing high incidence rates. Population-based CRC screening programs have been effective, but there are challenges, including the modest diagnostic accuracy of current stool-based tests like the fecal immunochemical test (FIT) and the invasiveness of colonoscopy. To overcome these hurdles, there's been a surge in developing and validating noninvasive screening modalities, particularly stool DNA tests, which hold promise for enhancing CRC screening compliance and accuracy.

Stool-based DNA tests offer improved sensitivity over FIT, detecting not only occult blood but also genetic and epigenetic alterations associated with CRC and precancerous lesions. Multi-target stool DNA tests, like Cologuard®, have demonstrated high sensitivity for detecting CRC (92%) and advanced adenomas (42%) compared to FIT. However, there are limitations, including cost and lower sensitivity for advanced adenomas compared to colonoscopy. Remodeling studies have shown annual FIT and decennial colonoscopy to be more cost-effective than multi-target stool DNA testing every three years. In addition, concerns about false positives necessitate careful management to avoid unnecessary follow-up procedures.

Emerging stool-based biomarkers, such as methylation of syndecan-2 (SDC2), show promise for improving sensitivity and specificity in CRC detection. EarlyTect®-C, utilizing SDC2 methylation, has demonstrated high sensitivity (90%) and specificity (90-91%) for CRC detection. Ongoing trials such as NEXT-CRC aim to further evaluate the diagnostic performance of these stool-based tests, particularly in high-risk populations.

Stool DNA testing represents a significant advancement in CRC screening, offering improved sensitivity and potential cost-effectiveness compared to current modalities. While challenges remain, including optimizing diagnostic accuracy and cost considerations, ongoing research and clinical trials hold promise for integrating stool DNA testing into routine CRC screening programs. With continued advancements and validation efforts, stool DNA testing has the potential to revolutionize CRC screening, ultimately reducing cancer-related morbidity and mortality on a global scale.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 11 (Thu.), 14:00-14:50 I Meeting Room 1

KASID Research Workshop 2

Meta-Omics Analysis for Next-Generation IBD Research

Chairs

Eun Soo Kim (Kyungpook National University, Korea)
Jun Miyoshi (Kyorin University, Japan)

[KASID Research Workshop 2]

RW2-1

Predicting IBD Treatment Responses: Challenges and Promises of Gut Microbiome Analysis

Gyeol Seong
Department of Gastroenterology, Nowon Eulji Medical Center, Eulji University, Korea

The pathophysiology of inflammatory bowel disease (IBD) has not been well-known, but it's thought that environmental, genetic, and microbial factors affect to the development of IBD. As DNA sequencing and muti-omics have been dramatically advanced, it has been demonstrated that the patients with IBD have discriminative microbial features compared with healthy controls. And consistently observed findings in CD patients are reduced biodiversity and changes of specific taxa.

Because gut microbiome plays important role in the pathogenesis of IBD, it is not surprising that many studies are attempt to predict disease course and response of therapy using the microbiome data. Several studies have shown that the abundance of specific species of intestinal bacteria are correlate with prognosis, especially in CD.

Recent studies are focusing on the modeling through artificial intelligence or community modeling. Because a single marker is not usually able to discriminate with high sensitivity and specificity between the targeted groups, it is needed to combine different microbial markers with the design of an algorithm. Artificial learning models like the random forest model or neural network model are used to predict remission after induction therapy. A large set of microbial metabolic models (AGORA) is also used to reconstruct patient-specific secretion profiles such as butyrate, which enables us to do in-silico microbial community modeling.

However, there are important limitations in integrating the currently available data. They are heterogeneous and findings are not validated in independent cohorts. Additionally, the approach to microbiome analysis varies. Disease heterogeneity and environmental factors are also considerable challenges to unravel the prediction of disease course. Therefore, prospective studies for large population with detailed dietary and environmental data are need to be conducted. Future studies may should focus on collaborative, multi-omic analyses with clearly defined homogenous cohorts and definitions of treatment responses. It can be expected that we will soon have clinically useful tools that can help prediction of treatment responses and personalized therapy in IBD. Then, the ultimate goal would move toward interventional studies where predictive scores alter treatment pathways.

[KASID Research Workshop 2]

RW2-2

Stratifying Crohn's Disease Risk Using Meta-Omics Analysis: Insights from the GEM Project

Williams Turpin
Department of Gastroenterology, Mount Sinai Hospital, Canada

The cause of Crohn’s disease (CD) remains unknown; however, recent studies have identified a number of biomarkers associated with the risk of developing CD in healthy at-risk individuals. Developing a comprehensive prediction model that accurately stratifies healthy at-risk individuals’ future risk of CD is the first step towards primary prevention. To answer this question, we recruited healthy first-degree relatives (FDRs) of patients with CD from 2008-2017 as part of the global multicenter Crohn’s and Colitis Canada Genetic Environmental Microbial (CCC-GEM) Project. After collecting demographic information, blood, urine, and stool samples at recruitment, participants were followed prospectively for the development of CD. A GEM-integrative risk score (GEM-IRS), using random survival forest modeling that combined the baseline variables (demographics, measures of gut inflammation, intestinal barrier function, and fecal microbiome composition) to estimate time-to-CD onset, was trained and subsequently validated in two testing cohorts. Of the 2,619 FDRs followed for a median of 6.8 (IQR 4.2-9.6) years, 61 (2.3%) developed CD. The GEM-IRS, developed on the training cohort, had a predictive performance (concordance index) of 0.79 (95% CI 0.71-0.87) and a hazard ratio of 6.42 (top quartile vs rest; 95% CI 3.10-13.30) for the development of CD in the pooled testing cohort. The GEM-IRS predicted CD in pre-specified subgroups of FDRs with minimal subclinical inflammation or normal barrier function measures, and up to 7 years before diagnosis. The GEM-IRS is a valid risk stratification tool for predicting future development of CD in the healthy FDR population, which may be used to guide preventive care.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 11 (Thu.), 15:00-15:50 I Meeting Room 2

KASID Research Workshop 3

With the Master of Colorectal ESD: Sharing Solutions in Difficult Cases

Chairs

Sang Wook Kim (Jeonbuk National University, Korea)
Hyun Gun Kim (Soonchunhyang University, Korea)

[KASID Research Workshop 3]

RW3-1

Becoming an Expert: My Know-How and Essential Requirements

Fatih Aslan
Koc University, Türkiye

[KASID Research Workshop 3]

RW3-2

Challenging Cases: Discussing Solutions to Overcome Difficulties

Yunho Jung
Department of Internal Medicine, Soonchunhyang University Cheonan Hospital, Korea

Introduction

Endoscopic Submucosal Dissection (ESD) is an emerging technique for the resection of superficial gastrointestinal (GI) neoplasms. It's increasingly becoming the standard treatment in various Asian regions, mainly because it offers a higher rate of en bloc and complete resections compared to traditional Endoscopic Mucosal Resection (EMR), regardless of the tumor size. This advantage allows for a more precise histological assessment of the specimen.[1] However, Colorectal ESD is recognized as more challenging than gastric or esophageal ESD. This increased difficulty stems from the colon and rectum's narrower tubular lumen, the significant angulation at the flexures, and a thinner muscle layer, all of which complicate endoscopic control and maneuverability. In this chapter, we aim to review the challenging cases of colorectal ESD and discuss methods and technical tips for overcoming these difficulties.

Prediction of difficult ESD

The challenges associated with ESD often relate to the length of the procedure, incomplete en bloc resection, the need to switch to alternative methods, and the risk of perforation.[2]

1) Poor maneuverability

One of the primary causes of ESD difficulty in the colon is poor maneuverability and an unstable endoscope condition, which includes paradoxical scope movement. A long and highly flexed colon or adhesion of the colon due to previous surgical treatments or certain abdominal diseases can often disrupt the smooth maneuvering of the colonoscope. These factors can even make the insertion of the colonoscope challenging.[3]

2) Difficulties caused by nature of lesions

Large lesion sizes, severe submucosal fibrosis, and deeply invasive T1 cancer have been reported to be associated with a higher rate of perforation.[4,5] One of the most challenging situation for performing colorectal ESD arises in the presence of severe submucosal fibrosis. Due to the thinness of the colonic wall, it can easily perforate if there is severe fibrosis beneath the lesion. The most common cause of fibrosis is previous biopsy or endoscopic treatment. Furthermore, previous endoscopic treatment presents the most difficult situation for performing ESD due to the presence of extremely severe fibrosis.

3) Difficulties caused by lesion locations

Lesions located at the ileocecal valve or terminal ileum, in the cecum near the appendiceal orifice, and in the anal canal are recognized as challenging sites for endoscopic treatment.[6] The technical difficulties in treating lesions at the ileocecal valve or terminal ileum arise from limited endoscope maneuverability, the presence of abundant fatty tissue, and unique anatomical features.[7] Cecal lesions involving the appendiceal orifice pose challenges for ESD due to often associated submucosal fibrosis, a result of intense intestinal peristalsis and/or previous episodes of appendicitis, and the narrow workspace complicates en bloc resection. These lesions are typically visualized directly in front of the endoscope (perpendicular position).[8]

The lower rectum, given its proximity to the anal canal, has dense network of blood vessels from the rectal venous plexus, directly draining into the systemic circulation, increases the risk of systemic bacteremia after endoscopic procedures. The prevalence of internal and external hemorrhoids in the general population further elevates the risk of post-procedure bleeding. Additionally, the squamous epithelium below the dentate line, rich in sensory nerves, increases the likelihood of pain during procedures. Moreover, the narrow lumen adjacent to the anal sphincter challenges the maintenance of clear visualization and scope operability. Consequently, lesions in these specific locations demand careful consideration and tailored approaches due to their inherent complexities.[9]

Conclusions

Endoscopic poor maneuverability, large lesion sizes, severe submucosal fibrosis, and lesions located at the ileocecal valve or terminal ileum, in the cecum near the appendiceal orifice, and in the anal canal are known to present challenging situations for performing successful ESD. Let's explore tips and solutions to overcome these difficulties in challenging cases of colorectal ESD through discussions with presenter and discussants.

References

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April 11 (Thu.), 16:00-16:50 I Meeting Room 1

KASID Research Workshop 4

IBD Uncovered: Metabolic Implications and Cancer Prevention

Chairs

Won Moon (Kosin University, Korea)

Katsuyoshi Matsuoka (Toho University Sakura Medical Center, Japan)

[KASID Research Workshop 4]

RW4-1

The Emerging Concern: The IBD-Metabolic Disorder Interface

Yehyun Park
Department of Internal Medicine, Ewha Womans University, Korea

Recent attention has been growing on the association between Inflammatory Bowel Disease (IBD) and metabolic disorders such as obesity, fatty liver, and diabetes mellitus (DM). Previously, the focus of IBD management was primarily on controlling the disease itself, with malnutrition or weight loss seen as major accompanying issues if disease control was not achieved. However, with the epidemiologic rise in metabolic disorders and the development of various biologic agents that allow for better disease control than before, interest has shifted towards the intersection of metabolic disorders and the pathogenesis and prognosis of IBD.

The most representative liver manifestation of metabolic disorder is Metabolic-Associated Fatty Liver Disease (MAFLD). Although there is not yet full consensus on terminology and consensus among hepatologists regarding fatty liver, this manuscript will use the term MAFLD. MAFLD can be diagnosed when hepatic steatosis accompanies one or more of obesity, DM, or metabolic dysregulation, and IBD patients are reported to have an increased risk of MAFLD and advanced liver fibrosis. Cross-sectional and case-control studies have shown that, compared to a general population matched for age, sex, BMI, and DM status, the prevalence of MAFLD in IBD was 42%, with IBD patients having approximately twice the risk of MAFLD and about 5.5 times the risk of advanced liver fibrosis. IBD-MAFLD patients showed fewer typical metabolic risk factors like obesity or DM, suggesting that the inflammatory burden of IBD itself could increase the risk of MAFLD. Furthermore, IBD patients with fatty liver were shown to have higher readmission rates, indicating that active screening and evaluation of fibrosis in IBD patients with MAFLD could be crucial in managing IBD.

Additionally, it has been reported that 15-40% of IBD patients are obese, which is similar to the general population, indicating that IBD patients are no longer necessarily thinner or underweight compared to the general population. Obesity itself is associated with inflammation and can act as a risk factor for IBD, especially reported in Crohn's disease (CD). Cohort studies have shown that increases in BMI, waist-hip ratio, and weight may increase the risk of CD, but not ulcerative colitis (UC). Further pooled analysis of cohort studies and a nationwide cohort study in Korea analyzing around 10 million people found that an increase in waist circumference increased the risk of CD by 1.4 times, with no association with UC risk. The pathophysiologic mechanism linking obesity and CD risk may involve pro-inflammatory cytokines secreted by adipocytes, which can promote inflammation and contribute to the onset of IBD. The interaction between adipose tissue and colonic mucosa forming a feedback loop can also play a role in promoting IBD onset. Reductions in pro-inflammatory cytokines in the liver and SC fat after bariatric surgery or weight loss medication in obese patients have been observed, along with a significant decrease in the risk of developing de novo IBD, supporting the link between adipose tissue-induced inflammation and IBD risk. Although retrospective studies have associated obesity with a complicated disease phenotype or postoperative recurrence, recent cohort studies involving patients treated with biologic agents have shown no association between obesity and hospitalization, surgery, or serious infection in IBD patients.

Regarding DM, an increased risk of type 2 DM has been reported in IBD patients. Patients with IBD and DM have shown higher rates of biomarker elevation such as CRP and ESR, lower albumin levels, and higher hospitalization rates. While the use of biologic agents is similar between IBD patients with and without DM, those with DM tend to use more opioids and antibiotics. The mechanism linking DM and IBD considers the gut microbiome. Since the identification of a microbiome signature associated with DM in 2012, ongoing research into dysbiosis in DM and IBD has confirmed a common microbiome risk profile, with various preclinical disease models clarifying the causal relationship between dysbiosis and DM or IBD.

The metabolic nature of IBD is closely related to diet, as evidenced by animal experiments where gut inflammation is induced by excessive consumption of simple carbohydrates or polyunsaturated fatty acids. Additionally, several epidemiological studies have linked the Western diet with an increased risk of IBD and obesity-related disorders, inferring the connection between such diets and metabolic diseases and IBD. Epidemiologically, trends in increased calorie and fat intake coincide with the rise of IBD and metabolic syndrome in various regions and periods. It is believed that a high-fat or processed diet induces gut inflammation through microbiota changes and the activation of inflammatory pathways. Recent studies, including one on the artificial sweetener erythritol, suggest it increases the risk of cardiovascular events through platelet activation, indicating that diet can similarly induce inflammation in the bowel. Furthermore, recent research has shown that a high sugar diet disrupts the immune system's control mechanisms for metabolic syndrome development. Normally, Th17 cells regulate fat absorption, but a high sugar diet increases specific bacteria like *Faecalibacterium rodentium*, reducing the bacteria that induce Th17 cells and thus decreasing Th17 cells. This loss of regulatory control over fat absorption in a high-fat diet leads to metabolic syndrome and enhances inflammatory pathways, causing gut inflammation.

In summary, current knowledge on the relationship between IBD and metabolic diseases indicates that MAFLD prevalence and the risk of advanced liver fibrosis are increased in IBD patients. Obesity increases the risk of CD but not UC, and weight loss can reduce the elevated risk of CD. IBD increases the risk of DM, and various metabolic disorders are associated with the prognosis of IBD, with both MAFLD and DM known to increase hospitalization rates for IBD patients. A common mechanism likely operates between metabolic diseases and IBD, suggesting that future management of IBD patients should include the evaluation and management of various connected metabolic disorders.

[KASID Research Workshop 4]

RW4-2

Cancer Prevention in IBD: Strategies for Optimal Long-term Care

Shu-Chen Wei
Internal Medicine, National Taiwan University Hospital and College of Medicine, Taiwan

IBDs are chronic inflammation and often need to be controlled by immunosuppressive medications, both are factors playing a role for the cancer carcinogenesis. With the prevalence of IBDs increased and survival status improved as well as aging population worldwide, it is essential to consider primary, secondary and even tertiary prevention measures for neoplasms during daily care of IBD patients.

Cancers related to IBDs could be either disease related or treatment related. Chronic inflammation in patients with IBD leads to an increased risk of colorectal cancer, small bowel cancer, intestinal lymphoma and cholangiocarcinoma. However, treatments for IBDs have also been associated with an increased risk of neoplasms. Patients receiving thiopurines have an increased risk of hematologic malignancies, non-melanoma skin cancer, urinary tract neoplasms and cervical cancer. Anti-TNFs have been reported to be associated with a higher risk of neoplasms, mainly lymphomas and melanomas; however, more recent metanalysis showed that the risk was marginal and mostly might be related to the combination use of thiopurine. For disease related cancers, the most important strategy for primary prevention is control of inflammation, because this considerably reduces the risk of neoplasia. Quit smoking is another important strategy. And, the secondary prevention strategy is following surveillance guidelines. Vaccination (for example, HPV) is recommended in appropriate age group. For treatment related cancers, the primary prevention could be restricted usage of thiopurine especially in young men and elder patients. Sun protection is not troublesome but a practical way. Unfortunately, there is no validated secondary prevention for the hematologic malignancy. Annual dermatologic checkup is recommended for the skin cancer surveillance. All the other cancer surveillance for IBD patients is same to the general population as the ordinary recommendations. The most challenge situation is the management of IBD patients with coexistence cancers (tertiary prevention). Due to lacking of long-term follow up data, MDT care with oncologist onboard and shared decision making is the current recommended strategy.

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April 11 (Thu.), 16:20-17:30 I Meeting Room 3

RAPID Leaders Meeting

Drawing the Future of RAPID

Chairs

Tae Il Kim (Yonsei University, Korea)
Somchai Leelakusolvong (Mahidol University, Thailand)

[RAPID Leaders Meeting]

RLM-1

RAPID: From an Objective Point of View, How Far Have We Come?

Than Than Aye
Department of Gastroenterogy, Yangon General Hospital, Myanmar GI & Liver Society (MGLS), Myanmar

The Regional Academic Partnership for Intestinal Disease (RAPID) was an initiative started by the Korean Association of Intestinal Disease (KASID) in 2016 as the Region-Specific Forum (RSF) with partner countries from South East Asia for academic exchange. The objectives are (1) to enhance the education, joint studies, and other academic exchange among the intestinal disease researchers in the Asia-Pacific region (2) to be a great opportunity to promote a sustainable academic exchange through education and research and solidify the partnership of the RSF network (3) to organize and promote scientific network for doctors in intestinal disease and microbiome in the Asian region and finally, to implement educational purposes by carrying out academic conferences on a regular basis and cooperative research on fields of common interests.

With this purposes, the KASID invited speakers from six Asian countries to hold an independent session called a 'Region specific forum'(RSF) to present topics on the clinical situation of intestinal diseases in each country. The Region Specific Forum was a program for academic exchanges with researchers in Asia prior to the RAPID Forum, which was first held in 2016 and ran until 2022 and then was renamed to the RAPID Forum in 2023.In the second RSF session at IMAKSID in 2018, doctors from Thailand, Myanmar, Malaysia, Mongolia and Indonesia conducted a session on a free topic according to each presenter in a similar format to the first RSF session.

The program called GO IMKASID(Great Opportunity for collaboration in IMKASID) was launched in IMKASID 2019.The GO IMKASID program is intended to promote advancement and collaboration among participating Asian Societies of intestinal diseases. It is expected that doctors outside Korea to be able to acquire and develop new knowledge and technical skills about inflammatory bowel diseases, colorectal tumors, advanced colonoscopy and small bowel endoscopy at outstanding training centers in Korea. The training centers help participating trainees to acquire new knowledge through interesting case conferences, laboratory meeting, ward rounding/expert meetings and therapeutic endoscopy, etc. These experiences are anticipated to be invaluable in patient at the respective country or region.

In 2021 the RSF scientific committee was formed consisting of researchers from Indonesia, Malaysia, Myanmar, Thailand, and Vietnam who were formerly participants of the GO IMKASID program to conduct international joint studies and knowledge exchange via the International Multi-Society Online Case Conference for Intestinal Disease (IMOTICON). Total of 11 online case conferences from different countries have been successfully held from 2019 to January 2024.

As part of their continued efforts to promote regional collaboration in education and research, KASID invited the Malaysian Society of Gastroenterology & Hepatology (MSGH), The Gastroenterological Association of Thailand (GAT), Indonesian Society of Gastroenterology (ISG), Myanmar Gastroenterology & Liver Society (MGLS), and Vietnam Association of Gastroenterology (VNAGE) for the RAPID launching meeting and signing of memorandum of understanding (MOU) in Hanoi, Vietnam on the 14th January 2023. The signing of the MOU between the President of KASID and the presidents of the member countries from South East Asia signifying the beginning of a new chapter in the partnership between KASID, and friends from the region. The RAPID program will expand the current network of collaboration to include more gastroenterologists from the participating member countries specifically into 3 main groups i.e. the research committee, education committee and media committee. IMOTICON, RAPID Forum, separate Educational program, and multi-national multi-institutional

research by research team are the RAPID operating program. Currently, there are number of multi-national multi-institutional research are ongoing with the collaborating countries.

Regarding objective point of view, within 8 years period (2016 to 2023) RAPID has evolved rapidly to reach its goal of sustainable academic exchange through education and research and solidify the partnership of the RSFnetwork from partner South East Asia countries although we need a more systematic and efficient operation of educational sessions and active joint research for a more solid partnership in the future.

[RAPID Leaders Meeting]

RLM-2

RAPID, The Playground for Young GI Doctors

Yeong Yeh Lee
School of Medical Sciences, Universiti Sains Malaysia, Malaysia

KASID has always been known for its innovation and foresight in gastroenterology. For example, the COVID-19 pandemic has made GI societies within the region to embrace virtual meetings for their education needs, but their efforts are variable. However, KASID has gone beyond in its education and research efforts post-pandemic reaching out to its peers in the Asia-Pacific region, and more recently in the form of RAPID. RAPID or Regional Academic Partnership for Intestinal Diseases was inaugurated at Busan in January 2023. This platform is particularly important for the young GI doctors in the region for several reasons. First, RAPID serves as a highly informative educational platform on intestinal diseases for young GI doctors. Second, RAPID provides opportunities for young doctors and faculty to attend annual physical meeting for networking and to learn. Third, RAPID provides a platform for young GI doctors to discuss research projects and to initiate projects through collaborations between partner societies. I believe that RAPID will continue to grow its educational network and research collaborations for young GI doctors, and rightfully serving as the playground for our younger colleagues.

[RAPID Leaders Meeting]

RLM-3

RAPID, As an International Education Platform

Rabbinu Rangga Pribadi
Division of Gastroenterology, Pancreatobiliary and Digestive Endoscopy, Department of Internal Medicine, Cipto Mangunkusumo National General Hospital – Faculty of Medicine Universitas Indonesia, Indonesia

Regional academic partnership for intestinal disease (RAPID) is an international collaboration between Gastroenterological Association of Thailand (GAT), Indonesian Society of Gastroenterology (ISG), Korean Association for the Study of Intestinal Disease (KASID), Malaysian Society of Gastroenterology and Hepatology (MSGH), Myanmar Gastroenterology and Liver Society (MGLS) and Vietnam Association of Gastroenterology (VNAGE). It was officially established in Hanoi, Vietnam on 14 January 2023 to foster educational activities and research among members through three committees; education, research and media.

Educational purposes of RAPID consist of facilitating exchange course/training and organizing joint meeting in the field of intestinal disorders. Training for young Asian gastrointestinal (GI) doctors is known as GO IMKASID. Previously, it was held in Korean expert centers for 3 days and currently has been extended to 5 days of training. Another aim is to arrange the International Multi-Society Online Case Conference for Intestinal Diseases (IMOTICON) every three months. Up until February 2024, IMOTICON has been conducted for the 11th times since its inception. It is a case sharing forum presented by four to five physicians, guided by a moderator, discussed by the resource persons and all the participants.

The future looks bright and leads to numerous opportunities. Physicians exchange among RAPID members would be an important knowledge sharing program. Workshop of intestinal ultrasound, enteroscopy, capsule endoscopy or colonoscopy and their role in inflammatory bowel disease (IBD) or other small bowel diseases would be beneficial. Yearly scientific RAPID meeting in each country is potential approach to strengthen partnership. The IMOTICON should be escalated by documenting unique cases into a book compilation. Lastly, the prospect of expanding collaboration with other Asian nations is critical. All the aforementioned strategies will serve as the foundation for the growth of RAPID.

[RAPID Leaders Meeting]

RLM-4

International Collaborative Research in RAPID

Julajak Limsrivilai
Division of Gastroenterology, Department of Internal Medicine, Siriraj Hospital, Mahidol University, Thailand

It is my great honor to be invited to participate in RAPID. All members are good friends. Without RAPID, it is almost impossible for me to conduct multicenter studies. My project is about differentiating Crohn's disease from intestinal tuberculosis, one of the main problems in IBD in Asia. Due to limited resources, we need to use basic parameters most effectively to differentiate these two mimic conditions. However, the previous study demonstrated that using only clinical manifestations, endoscopic findings, and histopathological findings was not good enough to use it in clinical practice. Furthermore, gastrointestinal pathologists are limited in our region. Therefore, this project aims to integrate interferon gamma-releasing assay for tuberculosis into clinical and endoscopic parameters in differentiating these two conditions. Furthermore, computed tomography enterography (CTE) has become more available. It will be validated in subgroup analysis in patients with CTE available. This research should be valuable in solving this important problem.

[RAPID Leaders Meeting]

RLM-5

RAPID, A Network Connecting Academic Societies

Luan Minh Dang
IBD unit, Department of Gastroenterology, University Medical Center, Ho Chi Minh City, Vietnam

Korean Association for the Study of Intestinal Diseases proposed the Regional Academic Partnership for Intestinal Diseases (RAPID) to facilitate academic exchange, collaborative research, and education among researchers specializing in intestinal diseases in the Asia-Pacific area. Korean Association for the Study of Intestinal Diseases (KASID), Vietnam Association of Gastroenterology (VNAGE), Myanmar Gastroenterology & Liver Society (MGLS), Malaysian Society of Gastroenterology & Hepatology (MSGH), Indonesian Society of Gastroenterology (ISG), and Gastroenterological Association of Thailand (GAT) are all represented on the RAPID membership list. By bringing together these member societies, RAPID facilitates an excellent opportunity to establish and maintain professional connections, as well as to foster a sustainable academic exchange via international collaborative studies and education. Additionally, RAPID can assist in identifying challenges and unmet needs in the diagnosis and treatment of intestinal diseases throughout the region. This may contribute to an improvement in patient care quality in the participating nations.

[RAPID Leaders Meeting]

RLM-6

The Future of RAPID

Dong-Hoon Yang
University of Ulsan, Korea

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2024 SEOUL

The 7th International Meeting on Intestinal Diseases
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for the Study of Intestinal Diseases

APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri)

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 07:30-08:00 I Room C

Breakfast with Master 1

GSK

Chair

Hyun-Soo Kim (Yonsei University, Korea)

[Breakfast with Master 1 - GSK]

BM1-1

Evolving IBD Care - A Deep Dive into Shingles Prevention for IBD Patients

Shin Ju Oh
Internal Medicine, Kyung Hee University School of Medicine, Korea

Inflammatory bowel disease (IBD), which includes conditions such as Crohn's disease and ulcerative colitis, is characterized by chronic inflammation of the gastrointestinal tract. Patients with IBD are particularly susceptible to infections due to their disease state, treatment with immunosuppressive medications, and surgery. Among these infections, reactivation of latent viruses such as varicella-zoster virus (VZV), which causes shingles (herpes zoster), is a growing concern. The incidence of shingles is significantly higher in IBD patients due to their disease state and immunosuppressive therapy, with recent reports suggesting an incidence rate of 3-5% associated with the use of small molecule agents. This increased risk is attributed to the compromised immune system's reduced ability to keep VZV in check. Vaccination against shingles is therefore recommended for IBD patients to prevent the disease or reduce complications should it occur. Current national guidelines recommend vaccination against shingles for adults over the age of 50, but it may also be considered for younger IBD patients depending on their treatment regimen and level of immunosuppression. There are two primary vaccines available to prevent shingles. The previously available vaccine was the live, attenuated vaccine, which means it uses a weakened form of VZV to stimulate the immune system. This live vaccine was the first shingles vaccine and is given as a single dose. However, it was contraindicated in IBD patients receiving immunosuppressive therapy, and it was recommended to vaccinate either one month before starting such therapy or three months after discontinuing it. The recently introduced recombinant zoster vaccine (RZV) is a non-live subunit vaccine that contains a viral glycoprotein component combined with an adjuvant system to enhance the immune response. It is administered in two doses, with the second dose given two to six months after the first. RZV is recommended for most people over the age of 50, regardless of whether they recall having had chickenpox, because the vast majority of this population is at risk due to previous VZV exposure. Recently, with the introduction of the RZV and its subsequent domestic availability, it has become possible for IBD patients on immunosuppressive therapy to receive the shingles vaccine. This development represents a significant step forward in the comprehensive care of patients with IBD, offering them protection against a potentially serious infection for which they are at increased risk due to their underlying disease and treatment regimen.

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SHAPING THE FUTURE OF
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April 12 (Fri.), 07:30-08:00 I Meeting Room 1

Breakfast with Master 2

Pharmbio Korea Inc.

Chair

Jong Hoon Lee (Dong-A University, Korea)

[Breakfast with Master 2 - Pharmbio]

BM2-1

Optimal Bowel Preparation for the Elderly

Jae Myung Cha
Department of Gastroenterology, Kyung Hee University Hospital at Gangdong, Korea

In many studies, a common risk factor for the poor preparation is old age. However, there is insufficient evidence to recommend a specific agent for elderly patients. As intolerance to drinking a large volume of preparation agent is the main cause of poor preparation, low volume agent may be ideal in the elderly patients. For the safety issue, PEG based regimen have been preferred, and it was based on only old traditional studies. ACG and ASGE guidelines also strongly recommend the use of low-volume agent, because it is associated with greater willingness to undergo a repeat colonoscopy. Today, a variety of low-volume agents are available. A bowel preparation study targeting elderly patients older than 65 years was recently implemented using 2L PEG/Asc, 1L PEG/Asc and oral sulfate solution. In these studies, they showed similar efficacy or better efficacy in the right colon with comparable or better tolerability than traditional PEG-based solution, such as 4L PEG or 2L PEG/Asc.

Because of the unpleasant taste of liquid preparation agent, many patients favored tablet preparation agent. Oral sulfate tablet (OST), the Korean brand name of Orafang®, is developed with the similar chemical composition of oral sulfate solution and simethicone. In phase III trial, OST was compared with oral sulfate solution (OSS). In this study, OST was non-inferior to OSS for efficacy of bowel cleaning. OST showed better tolerability for taste score and willing to repeat same preparation than OSS. In addition, OST also showed better safety for nausea and vomiting than OSS. In USA, OST, the commercial brand name of Sutab®, was compared with 2L PEG/ASC. OST was noninferior to 2L PEG/ASC and showed more excellent preps for overall and proximal colon preparations. OST had better scores for tolerability, such as experience consuming preparation, overall experience, comparison with previous experience, and willingness to repeat the same agent. In addition, OST was well-tolerated to 2L PEG/ASC for nausea and vomiting.

There has been no study focused on elderly patients using OST preparation. In the subgroup analysis, OST showed better preparation scores in overall and right-colon than PEG in elderly subgroup as well as younger subgroups. In addition, OST showed excellent bubble scores in overall and all colonic segments than PEG in elderly subgroup as well as younger subgroup. Similarly, OST was well tolerated for overall satisfaction, difficulty of eating, and willingness to repeat same agents than PEG in elderly subgroup as well as younger subgroups. Safety profiles were comparable in elderly subgroup and younger subgroup for OST and PEG, respectively. In a retrospective analysis, BBPS scores and the proportions of inadequate preparation was not different between OST and 2L PEG/Asc in patients under 65 years. However, BBPS scores were significantly higher and the proportions of inadequate preparation was significantly less in OST group than 2L PEG/ASC group in patients 65 years and older subgroup. From these studies, we can guess promising efficacy of OST in elderly patients.

We designed prospective, multicenter, investigator single-blinded, randomized study to evaluate efficacy, tolerability, and safety of OST versus 2 PEG/ASC for bowel preparation in older patients over 70 years. 257 patients were enrolled and 254 patients were randomized to OST and 2L PEG/Asc group. The baseline characteristics of patients, including age, sex, BMI, smoking, alcohol, constipation history, previous abdominal surgery and comorbid disease were well balanced in both groups. As many exclusion criteria was adopted in this trial, so not all elderly patients could be included, however, these exclusion criteria were similar to other bowel preparation studies. High-quality preparation in overall segment as well as in each segment were significantly higher in OST group than 2L PEG/Asc group using Boston bowel preparation scale and Harefield cleansing scales. In addition, Boston bowel preparation scale scores and Harefield cleansing scales were significantly higher in OST group than 2L PEG/Asc group. For the main outcomes, high-quality preparation in OST group was better

than those in 2L PEG/Asc group, which resulted in higher ADR and PDR in OST group than 2L PEG/Asc group. For the tolerability, overall satisfaction was better in OST than 2L PEG/Asc group. Easy to consume the agent, overall experience, taste score, willingness to use same agent, better experience compared with previous preparation were all significantly better in OST group than 2L PEG/Asc group. Although the safety profiles were generally comparable between two groups, any adverse event and abdominal pain was less experienced by OST group than 2L PEG/Asc group. For the laboratory safety, some laboratory data were changed on the day of colonoscopy, the 3rd visit, but they all returned to the baseline level within 7 days after the colonoscopy the 4th visit. Generally, the efficacy and tolerability of OST is excellent, and their safety was comparable to other low volume agent.

In conclusion, low volume agents will be the major trend in preparation. Recently, the preference for preparation using OST is increasing. Physicians should consider the efficacy, safety, and tolerability of preparation agent as well as preference of patients. OST may be the optimal choice for elderly patients considering preference, efficacy, safety and tolerability of preparation agent.

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SHAPING THE FUTURE OF
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April 12 (Fri.), 07:30-08:00 I Meeting Room 2

Breakfast with Master 3

TAEJOON

Chair

Chang Soo Eun (Hanyang University, Korea)

[Breakfast with Master 3 - Taejoon]

BM3-1

Mini-OSTs: A Warm Welcome to Bowel Preparation for Colonoscopy!

Jaeyoung Chun
Internal Medicine, Gangnam Severance Hospital, Yonsei University College of Medicine, Korea

Suboptimal bowel preparation results in poor outcomes of colonoscopic procedures, including prolonged procedure times, reduced effectiveness (low cecal intubation rates and adenoma detection rates), increased adverse events, decreased patient satisfaction, and so on. Oral sulfate tablets (OSTs) are emerging as promising solutions for improving compliance as well as efficacy of bowel preparation for colonoscopy, addressing the challenges related to traditional standard bowel cleansing agents, large-volume polyethylene glycol (PEG) solutions.

Oral sodium sulfate (OSS) formulations contain three types of sulfate (trisulfate; sodium sulfate, potassium sulfate, magnesium sulfate). OSS formulations exhibit osmotic effects due to the anions that are not absorbed in the body. OSS solutions have demonstrated comparable efficacy to PEG solutions, with superior tolerability and acceptability among individuals undergoing colonoscopy. Recently, OSS has been developed into tablets for easier intake, which are expected to increase patients' satisfaction by overcoming the inconvenience and unfavorable taste of liquid preparations.

Recent clinical trial evaluated the efficacy, safety, and tolerability of mini-OSTs compared to conventional OSTs, and mini-OSTs showed similar efficacy and safety profiles to conventional OSTs. However, mini-OSTs might have advantages in terms of faster onset of bowel movements post-administration, and lower risk of hemorrhagic gastritis compared to conventional OSTs.

Mini-OSTs represent a promising advancement in bowel preparation for colonoscopy, offering comparable efficacy and safety to PEG solutions and even conventional OSTs with potential benefits in terms of patient acceptability and tolerability. Further research is warranted to validate these findings and optimize the utilization of mini-OSTs in clinical practice.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 08:30-10:00 I Room A

RAPID Forum

Clinical Challenges in Various Intestinal Diseases

Chairs

Dong-Hoon Yang (University of Ulsan, Korea)
Yeong Yeh Lee (Universiti Sains Malaysia, Malaysia)

[RAPID Forum]

RF-1

IBD vs. IBD Mimickers: Clinical Pearls for Differential Diagnosis

Julajak Limsrivilai
Division of Gastroenterology, Department of Internal Medicine,
Siriraj Hospital, Mahidol University, Bangkok, Thailand

Diagnosis of inflammatory bowel disease (IBD) is one of the most challenging issues in Asia. In ulcerative colitis (UC), although it has typical endoscopic and well-defined pathological findings, wrong diagnosis of UC is not uncommon. Some patients with drug-induced colitis and infectious colitis, such as sexually transmitted proctitis and amebic colitis, are misdiagnosed and treated as UC. In Crohn's disease (CD), the problem appears to be more difficult because CD does not have unique endoscopic findings. Furthermore, the disease has patchy involvement, causing nonspecific inflammation on pathological findings, with sometimes neither chronicity nor granuloma, the findings suggestive CD, present. Therefore, many diseases must be excluded before diagnosing CD, including infections, drug-induced enterocolitis, chronic ischemia, other autoimmune diseases, e.g., vasculitis, and malignancies, especially lymphoma. Among these diseases, intestinal tuberculosis (ITB) is the most challenging one because CD and ITB share many common clinical manifestations. Some endoscopic findings may suggest each disease, such as longitudinal ulcer and cobblestone appearance for CD and transverse ulcer for ITB, but they are not mutually exclusive. The definite diagnosis still relies on the detection of TB in intestinal tissue, either by acid-fast bacilli stain, polymerase chain reaction for TB, or culture for mycobacteria. However, the sensitivity of these techniques is still unsatisfactory; only about 75% even use their combinations. Many patients are diagnosed based on response to empirical anti-TB treatment. However, giving anti-TB treatment to patients with CD causes diagnostic delays, which can lead to CD complications. Therefore, many diagnostic tools have been studied to solve this issue, including serological tests, cross-sectional imaging, stool tests, other tissue processing techniques, and many diagnostic models integrating significant parameters. However, further research is still warranted.

[RAPID Forum]

RF-2

Old but Gold- Leveraging Conventional Immunosuppressants in the Biologics Era in IBD patients

Soo-Kyung Park
Department of Gastroenterology, Sungkyunkwan University, Korea

Inflammatory bowel disease (IBD), comprising Crohn's disease (CD) and ulcerative colitis (UC), presents a significant therapeutic challenge despite the emergence of biologic therapies. While biologics have revolutionized the management of IBD, conventional immunosuppressants remain a cornerstone of treatment. This presentation aims to explore the role of conventional immunosuppressants in the management of IBD patients within the context of the biologics era.

Conventional immunosuppressants, including thiopurines (azathioprine and mercaptopurine) and methotrexate, have demonstrated efficacy in inducing and maintaining remission in both CD and UC. Recent studies have highlighted their complementary role in combination therapy with biologics, offering improved clinical outcomes, including higher rates of mucosal healing, steroid-free remission, and prevention of immunogenicity to biologics. Additionally, conventional immunosuppressants have shown promise in reducing the risk of anti-drug antibody formation, thereby prolonging the durability of biologic response.

The safety profile of conventional immunosuppressants remains a subject of concern, particularly regarding the risk of myelosuppression, hepatotoxicity, and opportunistic infections. However, recent evidence suggests that with appropriate monitoring and dose optimization, these risks can be mitigated while maximizing therapeutic benefits. Moreover, pharmacogenomic studies have identified genetic markers associated with thiopurine metabolism, aiding in individualized dosing strategies to optimize efficacy and minimize adverse effects.

Furthermore, the concept of "top-down" versus "step-up" approaches in IBD management has gained traction, with growing recognition of the potential benefits of early initiation of combined biologic and immunosuppressive therapy, particularly in high-risk patients with aggressive disease phenotypes. Clinical trials such as the SONIC and UC SUCCESS studies have demonstrated superior outcomes with combination therapy compared to monotherapy, reinforcing the value of conventional immunosuppressants in the biologics era.

Despite the advent of novel biologic agents with targeted mechanisms of action, conventional immunosuppressants remain cost-effective options for many patients, especially in resource-limited settings or in cases of biologic intolerance or failure. Moreover, the long-standing experience and familiarity with these agents among healthcare providers contribute to their continued utilization in clinical practice.

In conclusion, while biologic therapies have transformed the landscape of IBD treatment, conventional immunosuppressants remain indispensable components of the therapeutic armamentarium. Through a understanding of their mechanisms, efficacy, safety, and synergistic potential with biologics, clinicians can optimize treatment strategies to achieve optimal outcomes for IBD patients in the biologics era.

[RAPID Forum]

RF-3

Challenges in Diagnosis of Early Colorectal Cancer in Limited Resources Settings

Hang Viet Dao
Endoscopy Center, Hanoi Medical University Hospital, Hanoi Medical University, Vietnam

Colorectal cancer (CRC) is a significant global cancer burden as well as in Asian countries. The availability of screening programs with the roles of fecal immunochemical test (FIT) and colonoscopy have contributed to a decrease in both incidence and mortality of CRC. However, diagnosing early-stage CRC in countries with limited-resource settings is still challenging.

The first challenge is the lack of national screening programs, especially in developing countries. The limitations of public awareness about the importance of screening, financial constraints, and logistical issues are main factors. The strategy of screening and stratifying population using fecal biomarkers such as FIT is not yet integrated routinely in healthcare system. The second challenge is a lack of standard diagnostic facilities. Colonoscopy is an important diagnostic tool but the numbers of endoscopists and endoscopy units are insufficient in resource-limited settings. The overwhelming number of colonoscopies per day can lead to missed early CRC lesions due to shortage of time, heterogeneous quality of endoscopy systems and doctors' experience. Advanced technologies including image-enhanced endoscopy and magnification are not available in many specializing centers which makes the interventional procedures such as ESD difficult to approach. Colonoscopy training is insufficient in these countries since it requires hands-on training and only held up in major cities. The emergence of artificial intelligence (AI) is promising in improving the detection of early CRC and guaranteeing quality of endoscopy training but applying AI in resource-limited settings also presents difficulties.

[RAPID Forum]

RF-4

Optimal Approach for Suspected Small Intestinal Bleeding

Seung Wook Hong
Gastroenterology, University of Ulsan, Korea

Gastrointestinal bleeding is a common clinical issue encountered by clinicians. While evaluating upper or lower gastrointestinal bleeding is relatively straightforward, addressing bleeding from the small intestine presents challenges in diagnosis and treatment. Small intestinal bleeding (SIB) accounts for 5-10% of all gastrointestinal bleeding cases. SIB can arise from various conditions, and differential diagnosis aids in determining appropriate diagnostic and therapeutic methods. When encountering a patient suspected of SIB, it's helpful to initially explore the etiology of bleeding based on the patient's age and comorbidities. For patients under 40 years old, conditions like inflammatory bowel disease or Meckel's diverticulum may be considered, while for older patients, causes such as angioectasia or NSAID-induced enteritis may be considered.

When a patient presents with suspected SIB, assessing hemodynamic stability is prioritized. If the patient is stable, video capsule endoscopy (VCE) may be considered following upper and lower endoscopy. VCE has no specific contraindications except for factors indicating capsule retention and has been reported to have a diagnostic yield of 53-73% for identifying the source of SIB. Performing VCE soon after bleeding occurs increases the diagnostic yield. In cases where VCE is not feasible or available, CT enterography can be considered. Particularly for brisk small bowel bleeding, CT enterography has a high diagnostic yield and may detect lesions in the small intestine that could be missed by VCE. If bleeding sources are identified on VCE or CT scans, small bowel enteroscopy may be performed. Balloon-assisted enteroscopy requires a high level of technical expertise and can be performed using antegrade or retrograde approaches. It allows direct visualization of the small bowel mucosa and immediate therapeutic intervention. If bleeding sources are not identified but bleeding persists, repeating VCE or CT scan may be considered. If the patient presents with unstable hemodynamics, CT angiography may be prioritized. CT angiography can detect extravasation of contrast material into the lumen of blood vessels, showing high diagnostic accuracy for active bleeding. If bleeding sources are confirmed on CT angiography, conventional angiography and embolization may be considered.

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SHAPING THE FUTURE OF
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April 12 (Fri.), 08:30-10:00 I Room B

KASID-KAI Joint Symposium

Immune Mediated Inflammatory Disorders (IMIDs): The Key to Advancing IBD Treatment and Fostering Collaborative Research (Korean)

Chairs

Chang Kyun Lee (Kyung Hee University, Korea)
Yong Woo Jung (Korea University, Korea)

[KASID-KAI Joint Symposium]

KIJS-1

The IMIDs Connection: Why IBD Doctors Need to Pay Attention?

Seong-Joon Koh
Internal Medicine, Liver Research Institute and Seoul National University College of Medicine, Korea

Immune-mediated inflammatory diseases (IMIDs) are a heterogeneous group of conditions characterized by chronic inflammation and organ damage, including inflammatory bowel disease (IBD), psoriasis, psoriatic arthritis, ankylosing spondylitis, rheumatoid arthritis, and multiple sclerosis. They share common underlying pathogenetic mechanisms but also show unique features that define their clinical phenotype, age and sex distribution, tissue localization, and therapeutic response profile. It is clear that the abnormal immune response, arising in genetically predisposed individuals due to various environmental and host-related factors, leads to the activation of inflammatory cascades, which contribute to inducing and maintaining the chronic inflammatory process. Conventional treatment, including glucocorticoids, immunomodulators, and sulfasalazine, served as a mainstay of therapy for various IMIDs. Recently, therapeutic innovations such as biologics or small molecular agents based on understanding fundamental molecular mechanisms were developed, initially with tumor necrosis factor (TNF) inhibitors in treating RA. Advances in therapeutic targeting of various cytokines helped to elucidate the pathophysiology of IMIDs, which make it possible to develop a molecular-based classification. In this lecture, I will highlight the connection between IBD and IMIDs and discuss what IBD specialists should know about IMIDs.

[KASID-KAI Joint Symposium]

KIJS-2

Shared Genetic Landscapes between IBD and Other IMIDs

Kwangwoo Kim
National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health, USA
Department of Biology, Kyung Hee University, Republic of Korea

The increasing prevalence of immune-mediated inflammatory diseases (IMIDs), particularly autoimmune diseases such as inflammatory bowel disease (IBD), is a significant burden in modern populations. The high comorbidity observed among IMIDs and the elevated prevalence of various IMIDs within affected families have suggested a common genetic basis, prompting extensive investigations into their underlying genetic architecture. Genome-wide association studies (GWASs) have provided unprecedented insights into the complex genetic architecture of IMIDs, especially autoimmune diseases, since the early 2010s. They have uncovered hundreds of genetic variants associated with these disorders, shedding light on their functional roles and biological mechanisms, particularly within the major histocompatibility complex (MHC) and many other immune genetic loci. Moreover, numerous pleiotropic genetic variants have been identified, exhibiting overlapping associations of consistent disease-risk alleles across different IMIDs. Evolutionary analyses indicate that autoimmune disease-risk alleles have been shaped by antagonistic pleiotropy, being evolutionarily retained for enhanced resistance to infections. This presentation aims to discuss the genetic landscape and shared heritability of IMIDs, as well as the evolutionary dynamics of IMID-associated variants, with a specific focus on the common genetic features shared between IBD and other autoimmune diseases.

[KASID-KAI Joint Symposium]

KIJS-3

Role of Microbiota and Nutrients in Gut Immune Regulation

Ye-Ji Bang
Department of Microbiology and Immunology, Seoul National University College of Medicine, Korea

The intricate interplay between the intestinal epithelium and the microbiota plays a pivotal role in regulating immune responses, with significant implications for health and disease. This presentation will explore the critical functions of epithelial cells in sensing and responding to microbial and nutritional signals, and how these interactions regulate intestinal immunity. It will delve into the mechanisms by which dietary nutrients, particularly vitamin A, modulate epithelial-immune crosstalk, enhancing mucosal immunity through the regulation of serum amyloid A and retinol transportation. By integrating recent findings, the presentation aims to illuminate the complex network of epithelial-microbial-immune interactions, highlighting the importance of nutritional and microbial environments in shaping immune homeostasis and the potential for targeted interventions to prevent or treat immune-mediated diseases.

[KASID-KAI Joint Symposium]

KIJS-4

The Microbiome as Pharmabiotics in IMIDs

Ho-Keun Kwon
Department of Microbiology and Immunology, Yonsei University College of Medicine, Korea

Over the last ten years, there has been a notable rise in the incidence of inflammatory disorders, particularly in developed nations. The "hygiene hypothesis," introduced in 1989, suggests a primary reason for this increase, positing that reduced exposure to microbes may lead to immune system dysregulation. Concurrently, groundbreaking research into the human microbiome—the vast array of microorganisms living in symbiosis with us—has transformed our understanding of its critical role in health. Often described as a "hidden organ," the microbiome is now known to be pivotal in shaping the immune response, influencing both its development and its ability to combat disease. These discoveries highlight the microbiome's integral role in preventing and potentially exacerbating inflammatory conditions. Despite this progress, translating microbiome science into effective treatments for inflammatory diseases remains challenging due to incomplete knowledge of the specific molecular and cellular interactions involved. Here, we will excavate into recent findings on the intricate interplay between the microbiome and the immune system, highlighting their roles in preserving health and contributing to the development of inflammatory diseases.

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SHAPING THE FUTURE OF
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April 12 (Fri.), 10:20-11:50 I Room A

Symposium 1

Latest Advances in IBD Treatment

Chairs

Joo Sung Kim (Seoul National University, Korea)
Gil Y. Melmed (Cedars-Sinai Medical Center, USA)

[Symposium 1]

SY1-1

Keynote: Tailored Management of Difficult-to-Treat IBD

Gil Y. Melmed
Cedars-Sinai Medical Center, USA

[Symposium 1]

SY1-2

Clinical Efficacy and Durability of Subcutaneous Infliximab in Patients with Inflammatory Bowel Disease after Switching from Intravenous Infliximab: A Real-world Multicenter Prospective Cohort Study in Korea

Kyuwon Kim[1], Sung Noh Hong[2], Sang-Bum Kang[3], Kang-Moon Lee[4], Ja Seol Koo[5], Yunho Jung[6], Beom Jae Lee[7], Hyuk Yoon[8], Hyung Wook Kim[9], Yun Jeong Lim[10], Hyun Seok Lee[11], Yoo Jin Lee[12], Jun Lee[13], Chang Kyun Lee[14], Jung Min Moon[15], Seung Yong Shin[15], Jeongkuk Seo[1], Chang Hwan Choi[1]

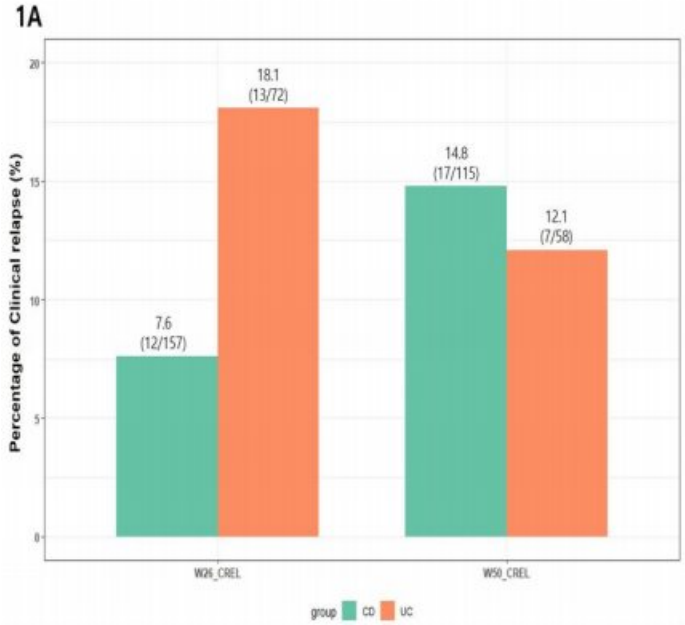
[1]Gastroenterology, Chung-Ang University Hospital, Seoul, Korea
[2]Gastroenterology, Samsung Medical Center, Seoul, Korea
[3]Gastroenterology, Daejeon St. Mary's Hospital, The Catholic University of Korea, Daejeon, Korea
[4]Gastroenterology, St. Vincent's Hospital, College of Medicine, The Catholic University of Korea, Suwon, Korea
[5]Gastroenterology, Korea University College of Medicine, Ansan, Korea
[6]Gastroenterology, Soonchunhyang University College of Medicine, Cheonan, Korea
[7]Gastroenterology, Korea University Guro Hospital, Korea University College of Medicine, Seoul, Korea
[8]Gastroenterology, Seoul National University Bundang Hospital, Seongnam, Korea
[9]Gastroenterology, Pusan National University Yangsan Hospital, Pusan National University College of Medicine, Yangsan, Korea
[10]Gastroenterology, Dongguk University Ilsan Hospital, Goyang, Korea
[11]Gastroenterology, Kyungpook National University School of Medicine, Daegu, Korea
[12]Gastroenterology, Keimyung University School of Medicine, Daegu, Korea
[13]Gastroenterology, Chosun University College of Medicine, Gwangju, Korea
[14]Gastroenterology, Kyung Hee University School of Medicine, Seoul, Korea
[15]Gastroenterology, Chung-Ang University Gwangmyeong Hospital, Gwangmyeong, Korea

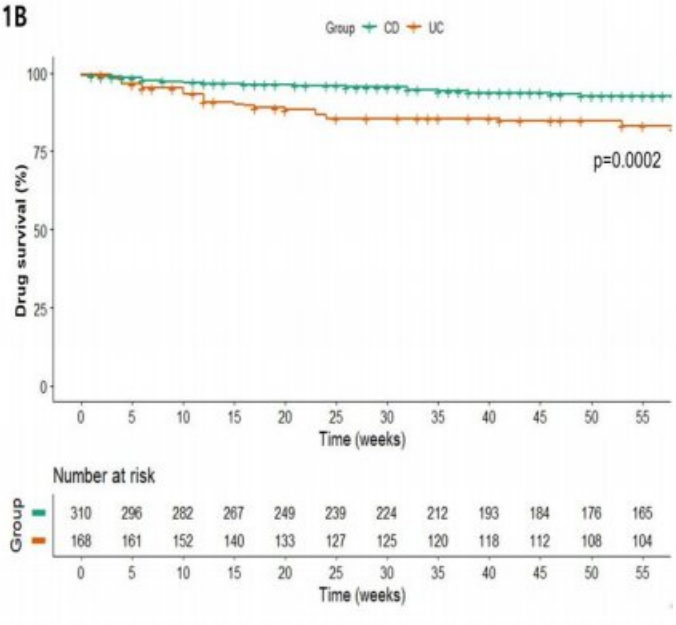
Background / Aim : We aimed to investigate the real-world efficacy and durability of subcutaneous infliximab (IFX-SC) after switching from intravenous (IV) IFX over a one-year period in a Korean patient cohort.
Methods : This multicenter, prospective cohort study, conducted from September 2021 to November 2023, included patients with IBD receiving IFX maintenance therapy. Patients received IFX-SC 120 mg at 8 weeks after the last IFX-IV administration (Week [W] 0), and every 2 weeks thereafter. Clinical relapse (CREL) at W26, W50, and one-year drug survival were assessed. Among IBD patients with W0 clinical remission, CREL was defined as partial Mayo score ≥2 points among UC patients, and Crohn's disease activity index ≥150 points among CD patients. Drug survival was evaluated based on the time of drug persistence from W0 to the last date of IFX-SC administration among drug-off cases. Drug re-switching rate (from IFX-SC to IFX-IV) was also investigated.
Results : Of 478 enrolled patients (UC with 168, and CD with 310), 85 UC and 237 CD patients showed clinical remission (Table 1). At W26, rate of CREL was significantly higher among patients with UC (18.1% vs. 7.6%, p=0.034) compared to CD patients, whereas rates of W50 CREL achievement showed no statistical difference among diseases (12.1% vs. 14.8%, p=0.799) (Figure 1A). On the other hands, one-year drug survival rate was significantly higher among patients with CD (92.7%, 95% confidence interval [CI], 0.895–0.960), compared to UC patients (84.7%, 95% CI 0.793–0.906) (p=0.0002) (Figure 1B). During the study, 3.1% of serious adverse events were reported. Drug re-switch rate was 5.0%, which was mainly due to injection site discomfort.
Conclusion : In real-world settings, IFX-SC administration presents a viable strategy for maintenance therapy subsequent to IFX-IV treatment.
Keywords : Subcutaneous Infliximab, Switch, Clinical Relapse, Drug Survival , Inflammatory Bowel Disease

Table 1. Baseline demographics of patients with inflammatory bowel disease

	UC (n=168)	CD (n=310)
Age, yr, mean (SD)	42.3 (14.6)	32.8 (11.3)
Male, n (%)	116 (69.0)	235 (75.8)
Smoking history, n (%)		
Never smoker	110 (65.5)	215 (69.6)
Ex-smoker	37 (22.0)	52 (16.8)
Current smoker	21 (12.5)	42 (13.6)
BMI, kg/m^2, mean (SD)	23.6 (3.5)	23.1 (3.7)
Disease duration, yr, mean (IQR)	7.2 (2.3–11.0)	7.5 (3.0–10.0)
Previous bowel resection, n (%)	3 (1.8)	63 (20.4)
IBD phenotype		
Disease extent, n (%)		
Proctitis	25 (15.0)	
Left-sided colitis	55 (32.9)	
Extensive colitis	87 (52.1)	
Location, n (%)		
Ileal		73 (23.5)
Colonic		40 (12.9)
Ileocolonic		197 (63.5)
Behavior, n (%)		
Non-stricturing/non-penetrating		161 (52.3)
Stricturing		88 (28.6)
Penetrating		59 (19.2)
Perianal disease modifier, n (%)		90 (29.1)
Past medication history, n (%)		
5-Aminosalicylic acid	141 (83.9)	215 (69.4)
Immunomodulator	132 (78.6)	262 (84.5)
Past exposure to biologics, n (%)		
No prior exposure other than IFX	155 (92.3)	290 (93.5)
Biologic-experienced	13 (7.7)	20 (6.5)
Adalimumab	3 (1.8)	13 (4.2)
Vedolizumab	6 (3.6)	5 (1.6)
Ustekinumab	2 (1.2)	8 (2.6)
Golimumab	2 (1.2)	0 (0.0)
Baseline Partial MS, mean (SD)	2.0 (2.1)	
Baseline CDAI, mean (SD)		80.9 (82.8)

UC, ulcerative colitis; CD, Crohn's disease; yr, year; SD, standard deviation; n, number; BMI, body mass index; IQR, interquartile range; IBD, inflammatory bowel disease; MS, Mayo score; CDAI, Crohn's disease activity index; IFX, infliximab





[Symposium 1]

SY1-3

Single-cell RNA Sequencing Reveals Immunological Mechanisms Underlying the Association between ASCA Levels and Impairment of Intestinal Barrier Permeability

Christine Suh-Yun Joh[1], Soyoung Jeong[1], Dongjun Kim[1], Yongjun Kim[1], Jong Pill Im[2,3], Joo Sung Kim[2,3], Hyun Je Kim[1,3,4], Seong-Joon Koh[2,3]

[1]Department of Biomedical Sciences, Seoul National University Graduate School, Seoul, Korea
[2]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea
[3]Seoul National University Hospital, Seoul National University Hospital, Seoul, Korea
[4]Genomic Medicine Institute, Seoul National University, Seoul, Korea

Background / Aim : Inflammatory bowel disease (IBD) is a chronic gastrointestinal disorder characterized by disrupted epithelial barriers due to immune-mediated responses against gut microbiota. Anti-Saccharomyces cerevisiae antibody (ASCA) is an anti-microbial antibody known as a poor prognostic factor in IBD patients. Recent studies showed that positive ASCA results are associated with increased risk of developing Crohn's disease in healthy 1st-degree relatives of people with Crohn's disease. However, the ASCA-related immunological phenotype in normal colonic mucosa and its clinical importance remains unknown.
Methods : Using single-cell RNA sequencing (scRNA-seq), we analyzed 40 biopsies – 22 lesions, 18 non-lesions – from 21 ulcerative colitis (UC) patients from Seoul National University Hospital. Stratifying patients based on ASCA positivity, we compared ASCA-positive and -negative samples obtained from lesion and non-lesion.
Results : We conducted scRNA-seq analysis of over 130,000 cells from 40 biopsies. Initially, we observed a substantial reduction in the frequency of type 3 innate lymphoid cells (ILC3) within the non-lesion of ASCA-positive patients, which is essential for maintaining gut homeostasis. Further analysis revealed reduced expression of IL18 and IL22 in ILC3s, along with a significant decrease in tight junction-associated genes (TJP1, CLDN3, CLDN4) within epithelial cells from ASCA-positive patients. Furthermore, the frequency of CD8 effector memory T cells (CD8 TEM) was significantly decreased in the lesion of ASCA-positive patients. Despite their diminished frequency, the expression of activation markers (ICOS, CD69, TNFRSF9) in CD8 TEM from ASCA-positive patients was increased, suggesting their role in disrupted barriers.
Conclusion : The observed decline in ILC3 levels within non-lesion along with the increased activation of CD8 TEM within lesion of ASCA-positive patients suggests compromised barrier function, potentially increasing susceptibility to colitis. These findings underscore the potential of targeting the ILC3 pathway to prevent disease progression and to facilitate endotype-based UC diagnosis.
Keywords : IBD, ASCA, ScRNA-seq

Figure 1

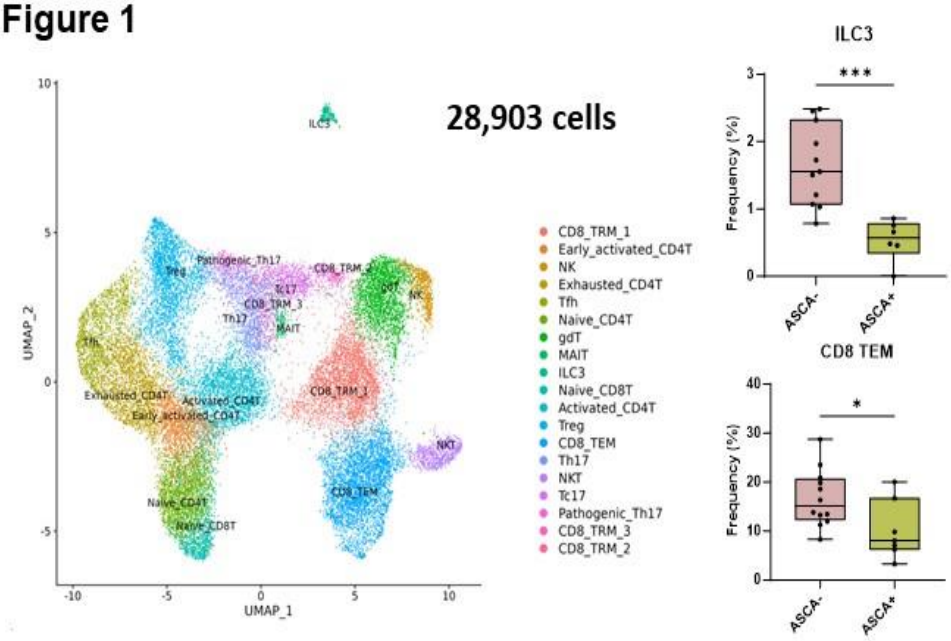


Figure 2

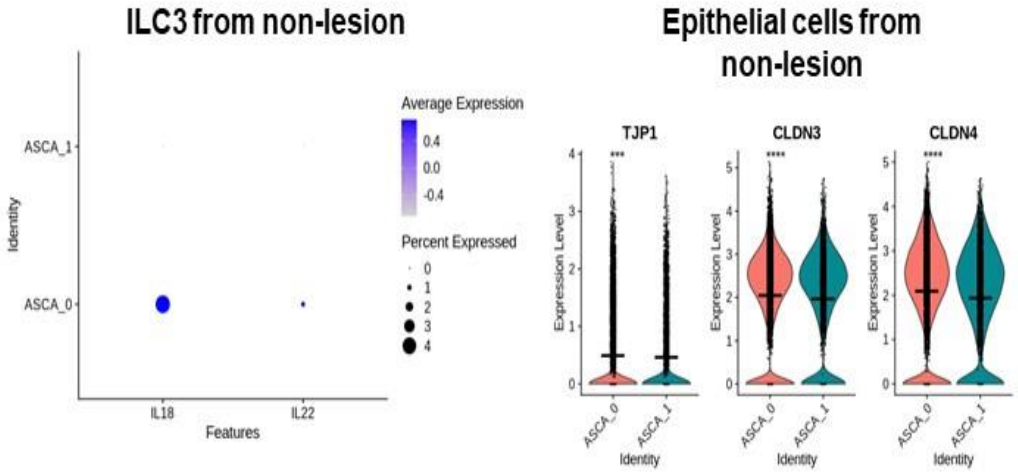
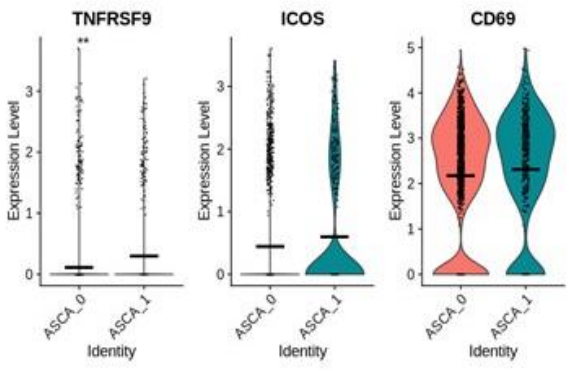


Figure 3



[Symposium 1]

SY1-4

‘Old’ and ‘New’ Biologics: New Insights

Won Moon
Crohn’s Disease and Ulcerative Colitis Clinic, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Kosin University Gospel Hospital, Korea

Inflammatory bowel diseases (IBD), encompassing ulcerative colitis (UC) and Crohn's disease (CD), present as chronic inflammatory conditions with multifaceted etiology and pathogenesis. Their course is marked by cycles of relapse and remission, often accompanied by extraintestinal manifestations. Recent therapeutic strategies aim for endoscopic remission and mucosal healing, prompting early use of disease-modifying agents (DMA). These include conventional immunosuppressants like thiopurines and methotrexate, biologic drugs such as anti-TNF, anti-integrin, and anti-IL12/23 monoclonal antibodies, and small molecules like JAK inhibitors and S1P receptor modulators. TNF-α serves a pivotal role in the autoimmune inflammatory cascade of UC and CD, prompting tissue damage. The primary class of biologics for IBD targets TNFα, mitigating inflammation and tissue harm. Inflammatory processes in IBD involve leukocyte aggregation, T lymphocyte cytokine production, and inhibited epithelial cell repair via interleukin-9. Integrin, notably α4β7, binds to MAdCAM in the gut, facilitating leukocyte homing. Vedolizumab inhibits this interaction, reducing inflammation by impeding lymphocyte migration. IL-12 and IL-23 are pivotal proinflammatory cytokines in GIT inflammation. Ustekinumab targets the p40 subunit, inhibiting IL-12 and IL-23 binding, thus mitigating inflammation. Selective IL-23 inhibition curtails Th17 differentiation and IL-17 upregulation, impeding inflammatory cell recruitment and intestinal inflammation, while maintaining the anticancer Th1 response of the IL-12 pathway.

[Symposium 1]

SY1-5

The Era of Small Molecules: Good Things Come in Small Packages

Katsuyoshi Matsuoka
Division of Gastroenterology and Hepatology, Department of Internal Medicine,
Toho University Sakura Medical Center, Japan

The range of treatment options for inflammatory bowel disease (IBD) has rapidly expanded in recent years. While the drug development for IBD has traditionally focused on antibodies targeting cytokines, the options for treatment with small molecules have also increased.

The first small molecule to emerge in the treatment of IBD was tofacitinib, a Janus Kinase (JAK) inhibitor. JAK is involved in the intracellular signaling of various cytokines including interleukin-6. Tofacitinib was approved for the treatment of ulcerative colitis. Following tofacitinib, filgotinib and upadacitinib were also introduced as JAK inhibitors for the treatment of ulcerative colitis. JAK inhibitors are characterized by their rapid onset of action and their effectiveness in patients who do not respond to biologics. However, JAK inhibitors are associated with an increased risk of herpes zoster, especially in Asian populations. Caution is also needed when administering to patients with a high risk of cardiovascular events or thromboembolism. While tofacitinib and filgotinib did not demonstrate efficacy in Crohn's disease, upadacitinib has shown effectiveness in this condition.

Following JAK inhibitors, sphingosine-1-phosphate receptor (S1PR) modulators were developed. S1PR modulators induce internalization of the S1PRs on lymphocytes and inhibit their egress from lymph nodes. Ozanimod was the first S1PR modulator approved for the treatment of ulcerative colitis in the United States and Europe, followed by the approval of etrasimod in Europe for the same indication. S1PR modulators carry risks of bradycardia and macular edema, necessitating appropriate assessment before administration.

In Japan, the oral α4 inhibitor carotegrast methyl is also available for the treatment of ulcerative colitis. Future development of small molecules for IBD include a Tyk2 inhibitor.

Small molecules are advantageous because they can be administered orally, which is preferred by patients. They also lack antigenicity, offering the possibility of drug holidays. On the other hand, the development of biomarkers to predict the effectiveness of the numerous molecular targeted therapies, including biologics, for individual patients is urgently needed.

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The 7th International Meeting on Intestinal Diseases
in conjunction with
The Annual Congress of the Korean Association
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APRIL 11 (Thu) - 13 (Sat), 2024
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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 10:20-11:50 I Room B

Symposium 2

How to Deal with Troublesome Situations in the Management of Colorectal Neoplasia

Chairs

Jeong-Sik Byeon (University of Ulsan, Korea)
Fatih Aslan (Koc University, Türkiye)

[Symposium 2]

SY2-1

Keynote: Preventing Complications Following Endoscopic Resection: Here's the Best Way to Do It

Fatih Aslan
Koc University, Türkiye

[Symposium 2]

SY2-2

Clinical Efficacy of Snare Tip Precutting Endoscopic Mucosal Resection in 15-20 mm Non-Pedunculated Colorectal Neoplasms: A Prospective Randomized Multicenter Study

Yunho Jung[1], Seong-Jung Kim[2], Chang Kyo Oh[3], Seong Woo Choi[1], Tae-Geun Gweon[4]
[1]Department of Medicine, Soonchunhyang University College of Medicine, Cheonan, Korea
[2]Department of Medicine, Chosun University College of Medicine, Gwangju, Korea
[3]Department of Medicine, Hallym University College of Medicine, Seoul, Korea
[4]Department of Medicine, The Catholic University of Korea College of Medicine, Seoul, Korea

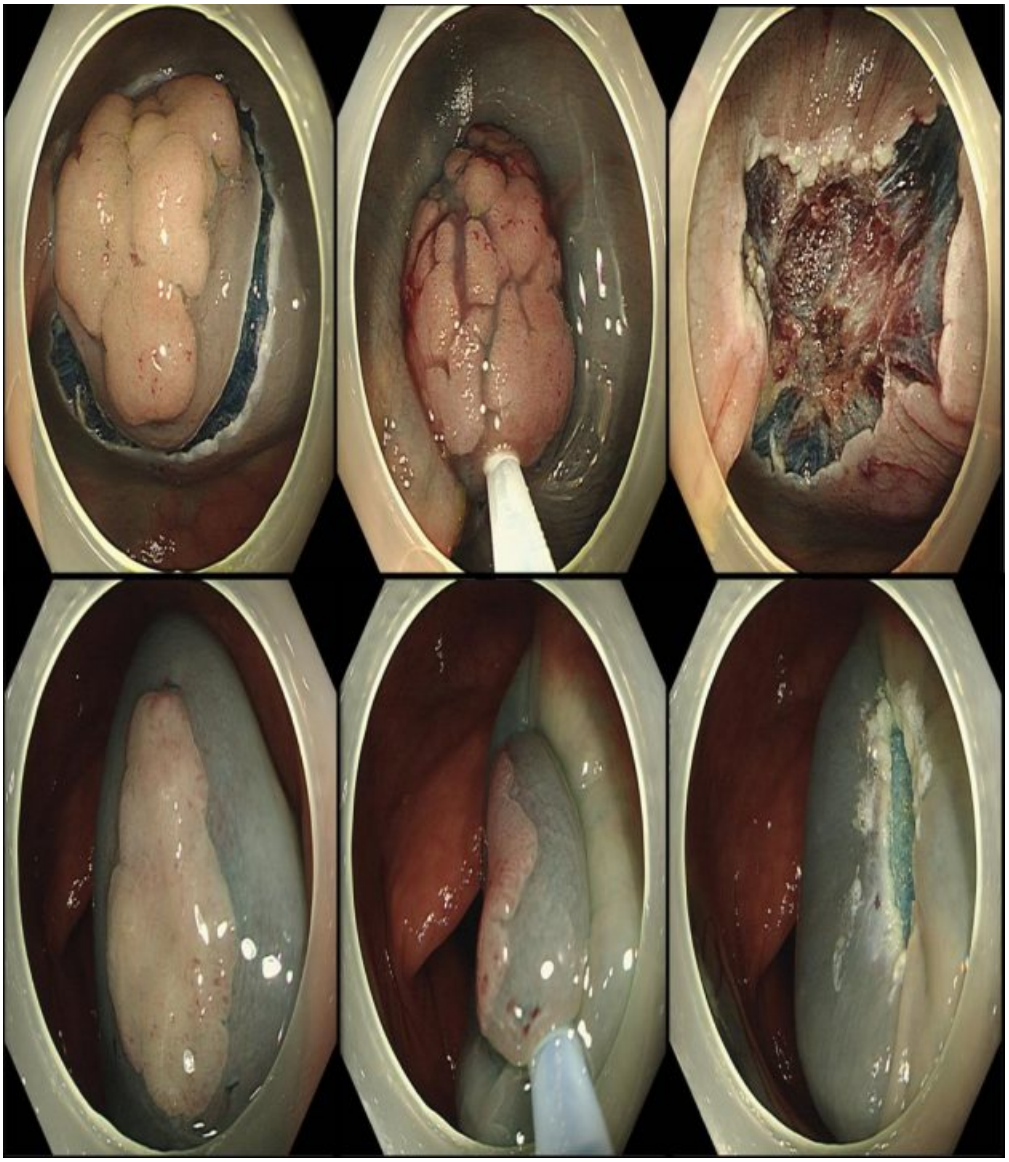
Background / Aim : The optimal endoscopic resection technique for non-pedunculated colorectal neoplasms 15-20mm in size remained unclear. This study therefore aimed to evaluate the efficacy of snare tip precutting endoscopic mucosal resection (STP-EMR) compared to conventional EMR (C-EMR) for these lesions.
Methods : This prospective randomized comparative study recruited 126 patients with 128 colorectal neoplasms of 15-20 mm in size and randomly assigned them in a 1:1 ratio to undergo STP-EMR or C-EMR at four university hospitals from June 2022 to November 2023. The primary outcomes were en bloc resection rate (EBR) and complete resection rate (CRR), determined by gastrointestinal pathologists.
Results : A total of 128 eligible colorectal neoplasms were successfully resected using C-EMR (n=65) and STP-EMR (n=63). The overall mean lesion size, EBR, and CRR were 17.2 ± 1.9 mm, 78.9% (101/128), and 67.1% (86/128), respectively. The EBR (87.3% vs. 70.8%, P=0.022) and CRR (76.2% vs. 58.5%, P=0.033) were significantly higher in the STP-EMR group compared to that of the C-EMR group. Additionally, the mean total procedure time was significantly longer in the STP-EMR group (8.1 ± 2.5 vs. 5.0 ± 3.9, P <0.001). There were no significant differences in the post-procedural bleeding rate, perforation rate (1.6% vs. 0%), and hospital stays between the two groups. Univariate analysis revealed that the resection method (STP-EMR vs. C-EMR) was the sole significant factor associated with both EBR (P=0.022) and CRR (P=0.033). Pathologic findings and polyp type also significantly influenced CRR. In the multiple logistic regression analysis, the resection method [STP-EMR (vs. C-EMR)] remained the only significant factor of both EBR (odds ratio [OR] 3.53, 95% confidence interval [CI] 1.33-9.34; P=0.011) and CRR (OR 3.03, 95% CI 1.29-7.07, P=0.011).
Conclusion : STP-EMR seems to significantly improve en bloc and complete resection compared to C-EMR for non-pedunculated colorectal neoplasms of 15-20 mm, despite a longer procedure time.
Keywords : Colorectal Neoplasms, Endoscopic Mucosal ResectionEndoscopic Mucosal Resection, Perforation

Table 1. Baseline characteristics and clinical outcomes between snare tip precut EMR and conventional EMR group.

Variables	Conventional EMR (n=65)	Precut-EMR (n=63)	P-value
Age, mean (± SD), y	60.9 ± 13.9	59.1 ± 13.0	0.441
Sex, no (%)			0.474
Male	33 (50.8)	28 (44.4)	
Female	32 (49.2)	35 (55.6)	
Hypertension, no (%)	20 (30.8)	16 (25.4)	0.499
Diabetes, no (%)	8 (12.3)	12 (19.0)	0.294
Anti-platelet, no (%)	6 (9.2)	8 (12.7)	0.530
Anti-coagulant, no (%)	2 (3.1)	1 (1.6)	>0.999
Polyp type, no (%)			0.064
Polypoid	23 (35.4)	13 (20.6)	
Non-polypoid	42 (64.6)	50 (79.4)	
Polyp characteristics, no (%)			0.151
LST-G type	38 (58.5)	26 (41.3)	
LST-NG type	19 (29.2)	26 (41.3)	
Sessile polypoid	8 (12.3)	11 (17.5)	
Polyp size, no (%)			0.156
15-17 mm	36 (55.4)	27 (42.9)	
18-20 mm	29 (44.6)	36 (57.1)	
Polyp location, no (%)			0.019
Right colon	46 (70.8)	55 (87.3)	
Left colon	14 (21.5)	3 (4.8)	
Rectum	5 (7.7)	5 (7.9)	
Non-lifting signs, no (%)	2 (3.1)	3 (4.8)	0.678
Perpendicular position, no (%)	9 (13.8)	23 (36.5)	0.003
Using transparent cap, no (%)	56 (86.2)	56 (88.9)	0.640
Pathologic findings			0.730
Serrated lesions	22 (33.8)	26 (41.3)	
Adenoma	42 (64.6)	36 (57.1)	
Carcinoma in situ	1 (1.5)	1 (1.6)	
Submucosal cancer	0	0	
En bloc resection, no (%)	46 (70.8)	55 (87.3)	0.022
Number of resected pieces, mean (± SD)	1.35 ± 0.62	1.22 ± 0.68	0.257
Complete resection, no (%)	38 (58.5)	48 (76.2)	0.033
Total procedure time, mean (± SD), min	5.0 ± 3.9	8.1 ± 2.5	<0.001
Precut time, mean (± SD), min		4.8 ± 1.8	
Admission rate, no (%)	34 (52.3)	48 (76.2)	0.005
Hospital stays, mean (± SD)	1.92 ± 0.973	2.14 ± 0.820	0.169

Table 2. Univariate analysis assessing factors associated with en bloc resection and complete resection.

Variables	En bloc resection (n=101)	P-value	Complete resection (n=86)	P-value
Polyp type, % (n)		0.443		0.044
Polypoid	83.3 (30/36)		80.6 (29/36)	
Non-polypoid	77.2 (71/92)		62.0 (57/92)	
Polyp characteristics, % (n)		0.449		0.231
LST-G type	78.1 (50/64)		64.1 (41/64)	
LST-NG type	75.6 (34/45)		64.4 (29/45)	
Sessile polypoid	89.5 (17/19)		84.2 (16/19)	
Polyp size, % (n)		0.063		0.079
15-17 mm	85.7 (54/63)		74.6 (47/63)	
18-20 mm	72.3 (47/65)		60.0 (39/65)	
Polyp location, % (n)		0.924		0.959
Right colon	79.2 (80/101)		67.3 (68/101)	
Left colon	76.5 (13/17)		64.7 (11/17)	
Rectum	80.0 (8/10)		70.0 (7/10)	
Non-lifting signs, % (n)	60.0 (3/5)	0.284	60.0 (3/5)	0.663
Perpendicular position, % (n)	84.4 (27/32)	0.381	71.9 (23/32)	0.514
Using transparent cap, % (n)	78.6 (88/112)	>0.999	69.6 (78/112)	0.118
Resection methods, % (n)		0.022		0.033
Conventional EMR	70.8 (46/65)		58.5 (38/65)	
Snare tip precut EMR	87.3 (55/63)		76.2 (48/63)	
Pathologic findings, % (n)		0.428		0.035
Serrated lesions	72.9 (35/48)		54.2 (26/48)	
Adenoma	82.1(64/78)		74.4 (58/78)	
Carcinoma in situ	100.0 (2/2)		100.0 (2/2)	
Submucosal cancer	0		0	



[Symposium 2]

SY2-3

Outcomes of Colorectal Endoscopic Submucosal Dissection according to the Size of Colorectal Neoplasm: A HASID Multicenter Study

Dong-Hyun Kim[1], Byung-Chul Jin[2], Hyung-Hoon Oh[1], Hyo-Yeop Song[3], Seong-Jung Kim[4], Dae-Seong Myung[1], Hyun-Soo Kim[1], Sang-Wook Kim[2], Jun Lee[4], Young-Eun Joo[1], Geom-Seog Seo[3], Honam Association for Study of Intestinal Diseases

[1]Department of Internal Medicine, Chonnam National University Medical School, Gwangju, Korea
[2]Department of Internal Medicine, Jeonbuk National University Medical School, Jeonju, Korea
[3]Department of Internal Medicine and Digestive Disease Research Institute, Wonkwang University School of Medicine, Iksan, Korea
[4]Department of Internal Medicine, College of Medicine, Chosun University, Gwangju, Korea

Background / Aim : Endoscopic submucosal dissection (ESD) is a valuable technique for treating early colorectal neoplasms. However, there is insufficient data available concerning the treatment outcomes in relation to the size of colorectal neoplasms.
Methods : The data on ESD for colorectal epithelial neoplasms between January 2015 and December 2020 were retrospectively collected from five tertiary medical centers. Colorectal neoplasms were stratified into groups based on their longitudinal diameter: <20 mm as Group 1, 20–39 mm as Group 2, 40–59 mm as Group 3, and 60 mm or more as Group 4.
Results : Of the 1,446 patients, there were 132 patients in Group 1 (<20 mm), 1,022 patients in Group 2 (20–39 mm), 249 patients in Group 3 (40–59 mm), and 43 patients in Group 4 (≥60 mm). There was a trend of increasing age from Group 1 to Group 4, and a corresponding increase in the Charlson Comorbidity Index was observed. The procedure time also exhibited a gradually increasing trend from Group 1 to Group 4. Similarly, the length of hospital stay tended to increase as the patients moved from Group 1 to Group 4. The predictive model using restricted cubic spline curves revealed that as the size of lesion exceeded 30 mm, complete resection steadily decreased, and major complications notably increased.
Conclusion : As the size of colorectal neoplasms increases, the rate of complete resection decreases and the rate of complications increases.
Keywords : Colonic Neoplasms, Colonoscopy, Endoscopic Mucosal Resection, Endoscopic Submucosal Dissection, Polyps

Table 1. Baseline characteristics of each factor in the colorectal ESD groups according to the size of the lesion

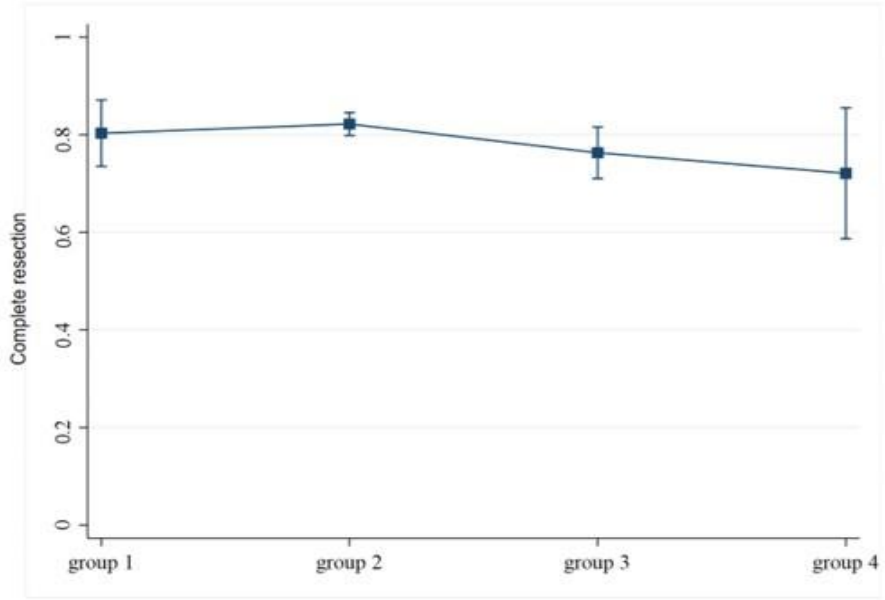
	Total (n=1,446)	Group 1 (<20 mm) (n=132)	Group 2 (20 – 39 mm) (n=1,022)	Group 3 (40 – 59 mm) (n=249)	Group 4 (≥60 mm) (n=43)
Age, yrs, mean±SD	65.3±11.1	63.9±12.9	65.0±11.3	66.6±9.4 *	68.6±11.1 *
Female sex, n (%)	581 (40.2)	54 (40.9)	397 (38.8)	114 (45.8)	16 (37.2)
Specimen size long axis (mm), mean±SD	29.6±12.3	14.2±3.0	26.1±5.1 **	44.9±5.0 **	70.4±16.0 **
Specimen size cross sectional axis (mm), mean±SD	25.1±10.3	12.9±5.1	22.5±5.6 **	37.0±7.0 **	53.8±14.1 **
Medication, n (%)					
Aspirin	127 (8.8%)	11 (8.3)	94(9.2)	20 (8.0)	2 (4.7)
Clopidogrel	50 (3.5%)	6 (4.5)	35 (3.4)	9 (3.6)	0
Antithrombotics	14 (1.0%)	1 (0.8)	11 (1.1)	2 (0.8)	0
Charlson comorbidity index, mean±SD	1.0±1.3	0.7±1.0	1.0±1.4 *	0.9±1.1	1.2±1.4 *
Morphology					*
Protruding	334 (23.1)	39 (29.5)	230 (22.5)	61 (24.5)	4 (9.3)
Superficial elevated	1085 (75.0)	90 (68.2)	772 (75.5)	184 (73.9)	39 (90.7)
Flat	14 (1.0)	2 (1.5)	11 (1.1)	1 (0.4)	0
Flat depressed	13 (0.9)	1 (0.8)	9 (0.9)	3 (1.2)	0
Tumor location, n (%)					
Right side	486 (33.6%)	54 (40.9)	531 (52.0)	129 (51.8)	15 (34.9)
Left side	322 (22.2%)	37 (28.0)	245 (24.0)	47 (18.9)	13(30.2)
Rectum	638 (44.1%)	41 (31.1)	246 (24.1)	73 (29.3)	15 (34.9)
Procedure time (min), mean±SD	47.4±46.4	36.4±31.0	41.5±46.0	67.0±38.3 **	105.9±62.5 **
Sedation, n (%)			**	**	
Midazolam	942 (65.1)	62 (47.0)	690 (67.5)	170 (68.3)	20 (46.5)
Propofol	5 (0.3)	0	3 (0.3)	0	2 (4.7)
Midazolam+Propofol	71 (4.9)	6 (4.5)	51 (5.0)	10 (4.0)	4 (9.3)
Histologic findings, n(%)					**
Adenoma	774 (53.5%)	67 (50.8)	582 (56.9)	113 (45.4)	12 (27.9)
Intramucosal cancer	300 (20.7%)	23 (17.4)	204 (20.0)	57 (22.9)	16 (37.2)
Invasive cancer	372 (25.7%)	42 (31.8)	236 (23.1)	79 (31.7)	15 (34.9)
Hospital stay (day), mean±SD	4.4±2.7	4.2±1.8	4.3±2.0	5.0±4.5 *	5.3±3.2 **

SD, standard deviation

*: $P<0.05$ compared with Group 1, **: $P<0.01$ compared with Group 1

Figure 2. Predictive margins for the association between four groups according to the size of the longitudinal diameter of colorectal neoplasm and rate of complete resection (A) and major complications (B).

(A)



(B)

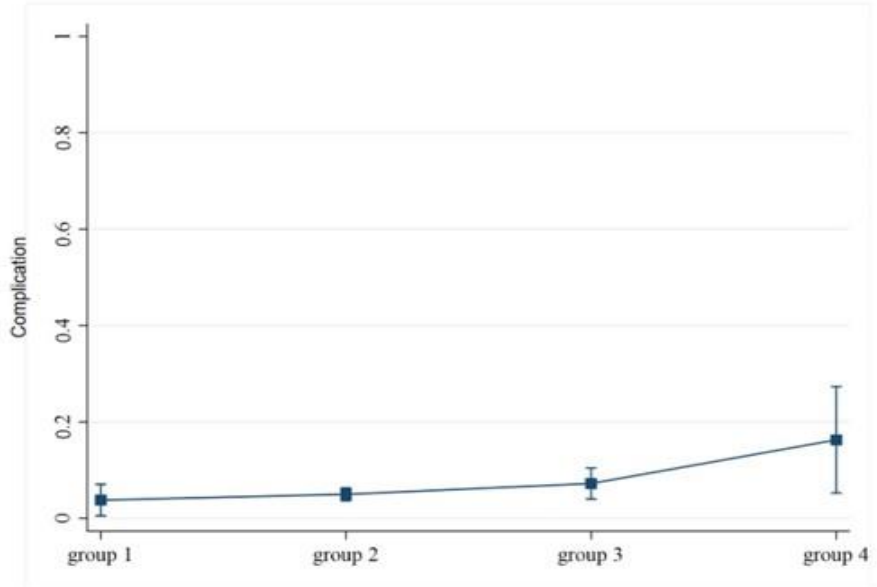
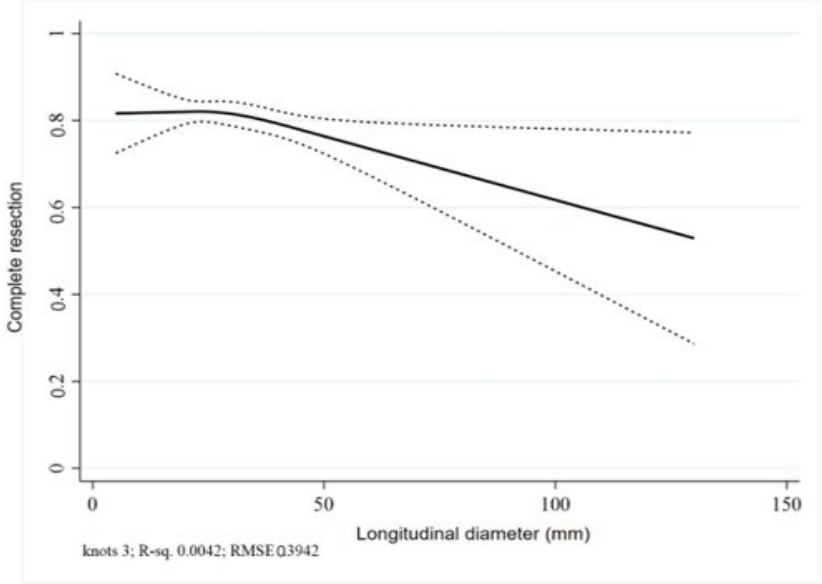
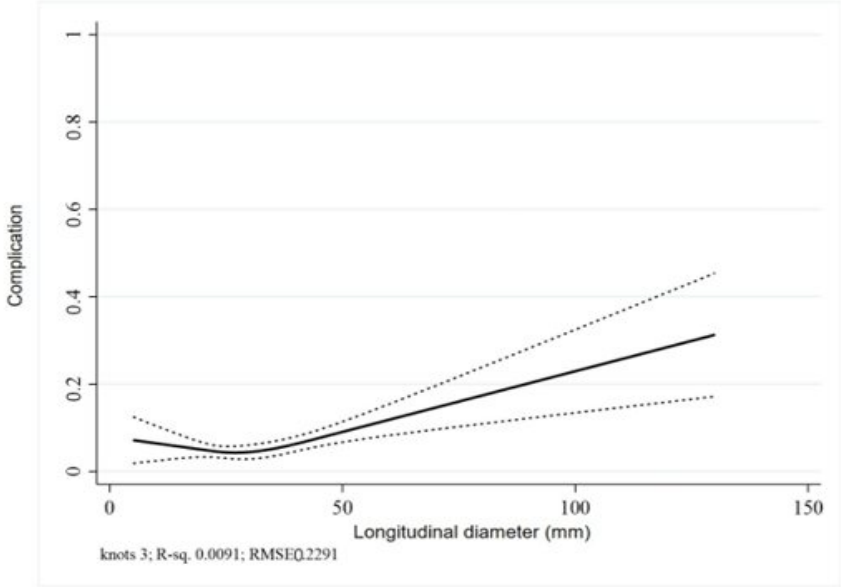


Figure 3. Prediction model of complete resection (A) and major complication (B) using restricted cubic spline curves according to the size of the longitudinal diameter of colorectal neoplasm.

(A)



(B)



[Symposium 2]

SY2-4

Selecting Endoscopic Resection and Surveillance for T1 CRC: What is the Optimal Indication?

Katsuro Ichimasa
Digestive Disease Center, Showa University Northern Yokohama Hospital, Japan

Colorectal intramucosal cancer (Tis) is amenable to endoscopic resection due to its lack of lymph node metastasis (LNM), while surgical colectomy with lymph node dissection remains the standard for invasive cancers extending beyond the muscularis propria layer (T2). Submucosal invasive cancer (T1), straddling these two stages, poses a clinical challenge, as approximately 10% of cases involve extraintestinal LNM, necessitating a choice between endoscopic treatment and surgery.

The decision to undertake surgical resection as a supplementary treatment post-endoscopic resection of T1 colorectal cancer hinges on the assessment of LNM risk based on histopathological findings. Current international guidelines identify key risk factors such as deep submucosal invasion (depth of SM invasion ≥1000 μm; T1b), high-grade histological types (poorly differentiated adenocarcinoma, mucinous carcinoma, or signet ring cell carcinoma), lymphovascular invasion, and high-grade tumor budding. Lesions exhibiting these characteristics generally require radical resection.

Nevertheless, the guidelines face two significant challenges. First, the predictive accuracy for LNM is limited, with only about 10% of cases identified by the guidelines actually presenting LNM, leading to potential overtreatment of the remaining 90%. Second, there is inconsistency among pathologists in identifying key pathological risk factors, especially lymphovascular invasion, which is pivotal in predicting LNM in T1 colorectal cancer. This variability highlights the subjective nature of risk stratification for LNM.

In light of these issues, there has been a growing interest in the development of artificial intelligence (AI) models that utilize clinicopathological factors or whole slide imaging to predict LNM in patients with T1 colorectal cancer. This session aims to evaluate the efficacy of AI models in accurately predicting the risk of LNM in T1 colorectal cancer.

[Symposium 2]

SY2-5

Tips and Tricks for Resecting Locally Recurrent Adenomas

Jun Lee
Gastroenterology, Internal Medicine, Chosun University, Korea

With advancements in endoscopic technology, the rate of complete colonic adenoma resection has significantly improved. However, challenges remain in cases involving large lesions, fibrotic tissue, or piecemeal resections, which are prone to recurrence. Such recurrent adenomas pose an increased risk of progression to colorectal cancer if not properly addressed.

The resection of locally recurrent adenomas necessitates meticulous planning and implementation, as complete removal is complicated by severe fibrosis. Currently, there are no standardized treatment protocols for the remediation of relapsed lesions, and research in this area is scant. Techniques such as Endoscopic Mucosal Resection (EMR), Endoscopic Submucosal Dissection (ESD), and Full-Thickness Resection offer promising outcomes. The selection of the appropriate technique depends on various factors, including the size, location, and histological characteristics of the adenoma, as well as the endoscopist's preference. Moreover, post-procedural monitoring is vital for the early detection of recurrences and the management of potential complications.

Effective resection of locally recurrent adenomas hinges on the integration of comprehensive evaluation of recurrent adenoma, advanced endoscopic methods, and diligent post-endoscopic surveillance. Approaches should be individualized based on the specific attributes of the lesion and the patient’s overall condition. Future research should aim at refining resection techniques and establishing standardized protocols for managing locally recurrent adenomas.

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APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 10:20-11:50 I Room C

IMKASID for 'JUMP':
Pathway for Rising Stars in Intestinal Research

First Steps as A Researcher

Chairs

Jae Myung Cha (Kyung Hee University, Korea)
Bora Keum (Korea University, Korea)

[IMKASID for 'JUMP': Pathway for Rising Stars in Intestinal Research]

JP-1

Summary of New Agents for IBD

Minjee Kim[1], Sang Hyun Kim[2]
[1]Gastroenterology, Samsung Medical Center, Korea
[2]Gastroenterology, Korea University Anam Hospital, Korea

** Mentor: Jin Hwa Park (Hanyang University College of Medicine, Korea)*
Yehyun Park (Ewha Womans University Seoul Hospital, Korea)
Soo-Kyung Park (Sungkyunkwan University, Korea)
** Group: Yiyoung Kwon (Inha University College of Medicine, Korea)*
Jun Hwa Bae (Daegu Catholic University School of Medicine, Korea)
Jungrock Moon (Inje University Ilsan Paik Hospital, Korea)

The timeline of JAK inhibitors unfolds from the introduction of infliximab in 2003, with subsequent advancements including the introduction of vedolizumab and biologics targeting intracellular gene transcription. Among these, upadacitinib and filgotinib emerged as selective JAK1 inhibitors, offering promise in conditions like ulcerative colitis (UC). Notably, filgotinib's mechanism of action involves inhibiting JAK1 phosphorylation, reducing proinflammatory cytokine signaling implicated in various inflammatory pathologies. Clinical studies demonstrate filgotinib's efficacy in UC, showing significant improvements in clinical remission rates, rectal bleeding, and stool frequency within weeks of treatment initiation. Studies show that filgotinib had rapiditiy and sustainability of response. Moreover, its safety profile appears favorable, with no significant difference in adverse events compared to placebo. In Korea, there are indications for medical care benefits by health insurance review and assessment service.

Ozanimod is an oral small molecule therapy that is approved in the USA, the European Union, and other countries as the first sphingosine 1-phosphate receptor modulator for the treatment of moderately to severely active ulcerative colitis in adults. This review provides guidance for ozanimod use for the treatment of ulcerative colitis, based on the prescribing information, clinical trial and real-world data, and the experts' clinical experiences. This guidance outlines patient characteristics to consider when deciding if ozanimod treatment is suitable and describes how to educate patients on risks and best practices. It also details the nature and frequency of monitoring during treatment, which should be adapted to the individual patient based on pre-existing risk factors and events that possibly occur during treatment. This review also provides insights into the patient characteristics and clinical scenarios best suited for ozanimod treatment, based on its efficacy, safety profile, and risks compared with other therapies.

[IMKASID for 'JUMP': Pathway for Rising Stars in Intestinal Research]

JP-2

Risk Factors for the Need of Salvage Treatment in Rectal Neuroendocrine Tumors with Positive Margin after Endoscopic Resection

Hyung-Hoon Oh
Department of Internal Medicine, Chonnam National University Medical School, Korea

** Mentor: Yunho Jung (Soonchunhyang University College of Medicine, Korea)*
Jae Gon Lee (Hallym University College of Medicine, Korea)
Shin Ju Oh (Kyung Hee University College of Medicine, Korea)

** Group: Jee Yeon Park (Dongguk University College of Medicine, Korea)*
Hyung-Hoon Oh (Chonnam National University Medical School, Korea)
Jundeok Lee (Yonsei University Wonju College of Medicine, Korea)
Kiyoung Lim (Yeungnam University College of Medicine, Korea)
Byungcheol Im (Yonsei University Wonju College of Medicine, Korea)
Jinook Jang (Pusan National University School of Medicine, Korea)
Kijae Jo (Seoul National University College of Medicine
Jung Hyun Ji (Yonsei University College of Medicine, Korea)

Background/Aims: Salvage treatment for rectal neuroendocrine tumors (NETs) with positive resection margin after endoscopic resection are frequently performed. We aimed to find the risk factors that can predict the presence of remnant tumor in patients with incompletely resected rectal NETs.
Method: We retrospectively reviewed clinical data of patients who underwent salvage treatment for incompletely resected rectal NETs between January 2010 and November 2023 at 5 tertiary hospitals.
Results: A total of 190 patients were enrolled in the study. Of these, 109 patients (57.4%) had a positive resection margin, while 81 patients (42.6%) had an indeterminate resection margin. 128 (67.4%) patients had no remnant tumor and 62 (32.6%) patients had remnant tumor at salvage resection specimen. The presence of remnant tumor varied according to the initial resection method used: 38.1% (16/42) for cold forcep polypectomy, 70.6% (24/34) for cold snare polypectomy, and 29.9% (26/87) for conventional EMR. Notably, no remnant tumors were found in patients who underwent modified EMR (n=21) or ESD (n=6) methods. Also, initial endoscopic resection performed by tertiary hospital expert showed significantly lower rate of remnant tumor compared to those performed by non-tertiary hospital expert with rate of 8.9% (4/45) and 40.9% (58/145) respectively. Lastly, patients with endoscopically remnant tumor before salvage treatment showed significantly higher rate of remnant tumor compared to those with endoscopically no remnant tumor with rate of 63.5%(47/74) and 12.9% (15/116) respectively. In multivariate analysis, endoscopic resection performed by non-tertiary expert (OR, 3.887; p=0.045) and endoscopically remnant tumor (OR, 10.891; p<0.001) were significant risk factors for the presence of remnant tumor.
Conclusion: Follow-up rather than resection may be considered for patients with positive resection margin after modified EMR or ESD for rectal NET. Also, endoscopic resection done by non-tertiary hospital expert and endoscopically remnant tumor are significant risk factors for the need of salvage treatment.

[IMKASID for 'JUMP': Pathway for Rising Stars in Intestinal Research]

JP-3

Inflammatory Bowel Disease (IBD) in Pediatrics and Adults: Commonalities, Differences, Transition

Donghwan Park
Internal Medicine – Gastroenterology, Dongguk University Ilsan Hospital, Korea

** Mentor: Hyuk Yoon (Seoul National University Bundang Hospital, Korea)*
Euisun Jeong (Ewha Womans University Mokdong Hospital, Korea)
Jeongkuk Seo (Chung-Ang University, Korea)
Eunjoo Lee (Severance Hospital, Yonsei University, Korea)

** Group: Hyumgseok Lim (Ewha Womans University Mokdong Hospital, Korea)*
Minkyu Kim (Asan Medica Center, University of Ulsan College of Medicine, Korea)
Sihyun Kim (Seoul National University Hospital, Korea)
Taehyoung Kim (KyungHee University Hospital at Gangdong, Korea)
Donghwan Park (Dongguk University Ilsan Hospital, Korea)

Differences between adults and children of inflammatory bowel disease

The incidence and prevalence of inflammatory bowel disease (IBD) are increasing worldwide, including in Korea where there has been a notable rise in cases.
IBD typically begins during childhood or young adulthood, a pattern also seen in Korea.
Pediatric-onset IBD often presents with more extensive disease involvement and a more aggressive course compared to when it develops in adults. Furthermore, the presence of growth impairment indicates the severity of the disease and its prognosis.
Treatment strategies for newly diagnosed patients, especially pediatric Crohn’s disease (CD), may differ from those for adults, with exclusive enteral nutrition being a viable option. Currently, anti-TNF agents are the only approved biologic therapy for use in pediatric IBD.

[IMKASID for 'JUMP': Pathway for Rising Stars in Intestinal Research]

JP-4

JAK Inhibitors in IBD: From Bench to Bedside

Sang Un Kim
Kyungpook National University Chilgok Hospital, Korea

* *Mentor:*

* *Group:*

[IMKASID for 'JUMP': Pathway for Rising Stars in Intestinal Research]

JP-5

The Use of Clinical Decision Support Tools in the Treatment of Inflammatory Bowel Disease

Kyuwon Kim
Department of Gastroenterology, Chung-Ang University Hospital, Korea

** Mentor: Soo-Young Na (Incheon St.Mary's Hospital, The Catholic University of Korea, Korea)*
Dong Hyun Kim (Chonnam National University Hospital, Korea)

** Group: Min-Jae Kim (Yonsei University Severance Hospital, Korea)*
Bomee Lee (Korea University Anam Hospital, Korea)
Won Myung Lee (Soonchunhyang University Hospital, Bucheon, Korea)
Seoyoon Choi (Yonsei University Severance Hospital, Korea)
Seung Min Hong (Pusan National University Hospital, Korea)

Inflammatory bowel disease (IBD), including ulcerative colitis (UC) and Crohn's disease (CD), poses treatment challenges with its unpredictable flare-ups and remissions. The limitations of conventional therapies like 5-aminosalicylic acid and immunomodulators have led to the development of biologic agents and small molecules, albeit increasing healthcare costs. Korea's specific reimbursement policies further complicate the selection of optimal, personalized treatments due to varied patient responses and the absence of direct comparative trials.

To address these challenges, Clinical Decision Support Tools (CDSTs) have been developed. CDST for infliximab used smoking history, disease location, immunomodulator use, and serum albumin to predict 1-year clinical remission (CREM) in CD patients. For UC patients, baseline infliximab clearance, stool frequency, and rectal bleeding score were chosen to predict endoscopic healing at 8 weeks. However, discriminant function of CDSTs remained limited, with an area under the curve of 0.64 and 0.67, respectively. For vedolizumab, CDST for CD patients included previous bowel surgery, past anti-TNF exposure, prior fistulizing disease, serum albumin, and serum C-reactive protein to predict 1-year CREM. A CDST for UC used disease duration, past anti-TNF exposure, moderate endoscopic disease activity, and serum albumin to predict 26-week corticosteroid-free clinical and endoscopic remission. For ustekinumab, similar factors were considered for predicting clinical response in CD patients.

Given the reliance on clinical data and potential Western bias, CDSTs specifically designed for Korean patients with IBD are essential, which incorporates factors like bio-naïve or experienced cohorts, phenotypic features (ileal vs. colonic CD, or extensive UC), previous bowel surgery, and novel biomarkers. Through the Korean Association for the Study of Intestinal Diseases (KASID), a large-scale national cohort to refine these CDSTs is anticipated. This may enhance the precision of IBD treatment in Korea and set a precedent for extending these tools to East Asian populations. This will provide a crucial step toward personalized medicine, improving IBD care and patient outcomes.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 12:00-12:40 I Room A

Luncheon Symposium 1

CELLTRION PHARM
CELLTRION

Chair

Yoon Tae Jeen (Korea University, Korea)

[Luncheon Symposium 1 - Celltrion]

LS1-1

Impact of Subcutaneous Infliximab in IBD Treatment

Byong Duk Ye
Gastroenterology and Inflammatory Bowel Disease Center,
University of Ulsan College of Medicine, Asan Medical Center, Korea

Intravenous (IV) injection formulation of infliximab (IFX) has been used to treat inflammatory bowel disease (IBD) for more than 20 years. Recently, the subcutaneous injection formulation of IFX (CT-P13 SC) was introduced in the European market as Remsima® SC (subcutaneous) in 2019 and approved by the US FDA known as Zymfentra™ in 2023.

In a pivotal randomized controlled trial (1.6 study, Part 2, NCT02883452) comparing SC vs. IV CT-P13 maintenance therapy for biologic-naïve IBD patients, demonstrated the pharmacokinetic non-inferiority of CT-P13 SC to IV, and the comparable efficacy, safety, and immunogenicity profile. In a post-hoc analysis, statistically significant improvements in pharmacokinetics, efficacy, fecal calprotectin levels, and quality of life were observed following the switch to SC administration at week 30 in the IV-to-SC switch group. Safety findings were similar pre- and post-switch. Of note, when comparing CT-P13 SC monotherapy and combotherapy with immunomodulators, pharmacokinetics, efficacy, and immunogenicity were comparable between the two treatment arms.

In randomized, placebo-controlled, double-blind, multicenter phase 3 trials comparing CT-P13 SC and placebo SC maintenance therapy for patients with Crohn's disease (CD, LIBERTY-CD, NCT03945019) or ulcerative colitis (UC, LIBERTY-UC, NCT04205643), clinical response, clinical remission, corticosteroid-free remission, endoscopic response (CD), endoscopic remission (CD), and endoscopic-histologic mucosal Improvement (UC) at week 54 were significantly higher in the CT-P13 SC arm compared with the placebo arm. The overall safety confirmed that CT-P13 SC was well tolerated, with a safety profile similar to placebo and no new safety concerns.

In addition to randomized controlled trials, multiple real-world studies demonstrated high treatment persistence rates while maintaining remission after switching from IV IFX to CT-P13 SC, with IFX serum levels increased after switching to CT-P13 SC. Interestingly, in patients with IBD who show uncontrolled disease activity during IV IFX maintenance treatment, switching to CT-P13 SC showed a potential for a new option avoiding swapping to out-of-class drugs with an improved effectiveness together with more favorable pharmacokinetic and tolerable safety profiles.

In this lecture, a comprehensive overview of available clinical trials and real-world data of CT-P13 SC treatment for patients with IBD will be provided, focusing on the benefits of switching from IV IFX to CT-P13 SC, including a potential as a biobetter.

[Luncheon Symposium 1 - Celltrion]

LS1-2

Interim Analysis of Subcutaneous Infliximab Cohort Study in Korea

Chang Hwan Choi
Department of Internal Medicine, Chung-Ang University College of Medicine, Korea

Subcutaneous infliximab (IFX-SC) has been explored as a potential alternative to intravenous infliximab (IFX-IV) for treating inflammatory bowel disease (IBD), including ulcerative colitis (UC) and Crohn's disease (CD), since its introduction in 2021. This study aimed to evaluate the real-world effectiveness and durability of IFX-SC over a one-year period in a Korean patient cohort.

Patients with IBD who consented to use IFX-SC were prospectively enrolled from September 2021 to November 2023. They were categorized into two groups: 1) the IFX-naïve cohort, including patients who were either biologic-naïve or had been exposed to biologics other than IFX, and 2) the IFX-IV to IFX-SC switching cohort, consisting of patients who were undergoing IFX maintenance therapy.

For the IFX-naïve cohort, after an induction period with IFX-IV from week 0 to week 2, patients received 120 mg of IFX-SC biweekly starting from week 6. The primary outcomes assessed were clinical remission (CREM) and clinical response (CRES) at weeks 14, 26, and 50, alongside one-year drug survival. CREM for CD was defined as a Crohn’s Disease Activity Index (CDAI) below 150 points, and CRES as a reduction in CDAI of 70 points or more from baseline. For UC, CREM was defined as a partial Mayo score (pMS) of 1 point or less, and CRES as a reduction in pMS of 2 points or more and 30% or more from baseline, along with a reduction in rectal bleeding subscore (RBS) of 1 point or more or an absolute RBS of 1 point or less.

The switching cohort received biweekly doses of 120 mg IFX-SC starting 8 weeks after their last IFX-IV dose. Clinical relapse (CREL) at weeks 26 and 50, as well as one-year drug survival, were evaluated. CREL among patients in remission at week 0 was defined for UC as a partial Mayo score of 2 points or more, and for CD as a CDAI of 150 points or more.

The study enrolled 220 patients in the IFX-naïve cohort, with 68 having UC and 152 having CD, approximately 80% of whom were biologic-naive. CREM and CRES rates were 84.4% and 93.8% at week 14, and 82.1% and 91.0% at week 50, respectively, in CD. In UC, CREM and CRES rates were 42.9% and 82.1% at week 14, and 48.5% and 75.8% at week 50, respectively. One-year drug survival rates were 96.4% and 88.2% in CD and UC, respectively. The study recorded serious adverse events in 2.7% (6/220) of patients.

The SC switching cohort included 478 patients, with 168 having UC and 310 having CD. At week 26, CREL rates were 7.6% in CD and 18.1% in UC, respectively. Drug survival rates at week 50 were 92.7% in CD and 84.7% in UC, respectively. Serious adverse events were reported in 3.1% (15/478) of patients, and the rate of drug re-switch due to injection site discomfort was 5.0% (24/478).

In conclusion, IFX-SC proves to be an effective and safe therapeutic option for patients with moderate-to-severe UC or CD in real-world settings, offering good drug survival and a tolerable safety profile. It also supports the possibility of switching from IFX-IV to IFX-SC, which enables individualized treatment approaches and improves compliance.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 12:40-13:20 I Room A

Luncheon Symposium 2

janssen
PHARMACEUTICAL COMPANIES OF
Johnson&Johnson

Durable Journey of Ustekinumab in IBD : Think 'Long-term' Outcomes

Chair

Dong Soo Han (Hanyang University, Korea)

[Luncheon Symposium 2 - Janssen]

LS2-1

A Step Closer to Durable Remission with Ustekinumab for Patients in UC

Eun Soo Kim
Internal Medicine, Kyungpook National University, Korea

Ulcerative colitis (UC) is a progressive inflammatory bowel disease characterized by chronic inflammation of the colon and rectum, leading to persistent bowel damage over time. The symptoms of UC significantly impact patients' quality of life, underscoring the importance of selecting effective long-term treatment options for symptom management.

While traditional therapies such as Anti-TNF agents have demonstrated efficacy in UC management, challenges such as Loss of Response (LoR) have been observed. Factors to consider when selecting medications, including effectiveness, immunogenicity, compliance, and safety, are also explained.

This lecture introduces the long-term study results of ustekinumab for UC patients, summarizing its 4-year long-term extension (LTE) study findings. Through these results, the proven effectiveness, safety, immunogenicity, and patient compliance of ustekinumab are discussed. Additional research highlighting the consistent effectiveness and safety of ustekinumab from various studies is also presented.

In conclusion, based on the evidence from recent research findings, ustekinumab emerges as a valuable first-line treatment option for UC. Its demonstrated long-term efficacy and favorable safety profile position it as a good choice for enhancing patient’s quality of life and ensuring sustained symptomatic remission in the management of UC.

[Luncheon Symposium 2 - Janssen]

LS2-2

Long Term Strategy for Bio-naïve CD Patients with Ustekinumab

Hyuk Yoon
Department of Internal Medicine, Seoul National University Bundang Hospital, Korea

The symposium lecture will focus on the management of difficult-to-treat Crohn's disease (CD), especially in bio-naive patients starting their first biological therapy with Stelara, an IL-12/23 inhibitor.

Firstly, the lecture will discuss Stelara's effectiveness in treating bio-naïve CD patients, showcasing clinical trials and real-world evidence to demonstrate its ability to achieve clinical remission in this group.

Next, the session will cover Stelara's persistence benefits, noting its dosing flexibility in response to disease severity, which allows for customized, long-term disease management without safety concerns.

The importance of adherence will then be examined, linking Stelara's efficacy and adaptable dosing to its appeal for bio-naive patients wary of biological treatments.

Lastly, the summary will tie together the main points, underscoring Stelara's appropriateness for bio-naive CD patients. It will point out how Stelara's proven effectiveness leads to improved persistence and adherence, essential for this group. The lecture will also promote using real-world evidence for personalized treatment plans, highlighting Stelara's significant role in enhancing long-term outcomes in a subset of CD patients.

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SHAPING THE FUTURE OF
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April 12 (Fri.), 12:00-12:40 I Room B

Luncheon Symposium 3

abbvie

Chair

Sung-Ae Jung (Ewha Womans University, Korea)

[Luncheon Symposium 3 – AbbVie]

LS3-1

Unveiling New Horizons in Crohn's Disease with Upadacitinib: The First Oral Advanced Therapy

Jae Hee Cheon
Department of Gastroenterology, Yonsei University, Korea

Crohn's disease(CD) is a chronic inflammatory disease, which requires treatment that can slow down disease progression. According to the STRIDE-II guideline, treatment should target short/intermediate/long-term goals, in which ultimately the complete healing of mucosa may lead to enhanced prognosis. Mucosal healing, in numerous studies during the past decades, is now known to have a rather clear correlation with long-term outcomes such as decreased relapse rates, surgery/hospitalization rates, steroid-dependency etc. in Crohn's Disease.

Upadacitinib, approved in 2023 in South Korea, is not only known as the first oral advanced therapy(AT) in CD, but also to have one of the first pivotal studies (along with Risankizumab) to put both clinical and endoscopic endpoints as co-primary outcomes. Mucosal endpoints defined in the trial include endoscopic response, endoscopic remission, endoscopic healing and ulcer-free endoscopy, which all showed clinically significant differences versus placebo. In advance, the induction of endoscopic response, remission and ulcer-free endoscopy with Upadacitinib was shown to be associated with improved clinical outcomes at 52 weeks in patients with CD, which also is in line with former discoveries that showed the correlation between early achievement of mucosal healing and long-term benefits. These endoscopic outcomes of Upadacitinib, along with its convenience as an oral therapy, suggest clinicians that Upadacitinib may be highly considered in naïve CD patients just moving onto advanced therapy.

Looking into the pivotal study of this drug, Upadacitinib phase III trial consists of 2 induction studies – U-EXCEL and U-EXCEED – and a maintenance study – U-ENDURE. Both induction studies (of which nearly 72% of patients in total enrolled were prior biologic-failure patients) are distinguished from other AT trials in that they applied forced corticosteroid tapering from the induction phases. They showed significant differences versus placebo in the coprimary endpoints – clinical remission (both defined with CDAI and SF/APS) and endoscopic response. Ranked secondary endpoints (corticosteroid-free clinical remission, maintenance of clinical remission and deep remission), were also achieved. Also, post-hoc analysis data also showed results such as symptomatic relief within week 1, efficacy and safety for the treatment of fistulas and fissures in patients with CD.

In conclusion, Upadacitinib showed evidence of efficacy and safety for patients with moderately-to-severe Crohn's Disease, and its endoscopic treatment effect and oral administration may provide physicians a favorable option for naïve CD patients.

[Luncheon Symposium 3 – AbbVie]

LS3-2

Upadacitinib in Focus: First Option for Achieving Mucosal Healing in UC

Chang Kyun Lee
Department of Gastroenterology, Kyung Hee University, Korea

The therapeutic goals for ulcerative colitis (UC) have evolved over time. Currently, the strategies are focused on achieving symptomatic control in the short term (normalization of bowel movements and the disappearance of rectal bleeding) and on normalizing biomarkers, including fecal calprotectin (FC) and C-reactive protein (CRP), with restoration of growth in children as an intermediate target. Long-term objectives should aim for endoscopic healing, normalization of QoL, and absence of disability, including decreasing the risk of surgery, dysplasia, or colorectal cancer. Histological remission is still considered an aspirational target but has recently been incorporated into the definition of mucosal healing in clinical trials.

With further knowledge of the pathogenesis of inflammatory bowel disease, small oral molecules have become available, including the Janus kinase (JAK) inhibitors. Upadacitinib (UPA) is a selective JAK1 inhibitor and has become the newest drug in this class, with recent approval for the management of moderate-to-severe ulcerative colitis. The large phase III program (including the U-ACHIEVE and U-ACCOMPLISH parallel induction trials and the U-ACHIEVE Maintenance trial) demonstrated superiority over placebo, for all primary and secondary endpoints including key clinical, endoscopic, and histological outcomes utilizing 45 mg orally (po) once daily (OD) during induction and either 30 mg or 15 mg po OD in maintenance. From a safety perspective, UPA has proven to be a safe and well-tolerated medication across immune-mediated diseases with manageable adverse risks such as an increase in herpes zoster. Mucosal Healing endpoints defined in the trial include Endoscopic subscore = 0 and Geboes Score <2 which all showed clinically significant differences versus placebo, which also is in line with former discoveries that showed the correlation between early achievement of mucosal healing and long-term benefits. These endoscopic outcomes of Upadacitinib, coupled with its convenience as an oral therapy, suggest that clinicians may consider Upadacitinib not only for bio-naïve UC patients transitioning to advanced therapy but also for those with prior biologic exposure, underscoring its efficacy across diverse patient populations.

This lecture aims to elucidate the rationale behind the selection of UPA, a Janus kinase inhibitor approved by the FDA, EMA and South Korea for treatment of moderately to severely active UC, by intensively examining its efficacy in mucosal healing, as demonstrated in pivotal Phase 3 trial outcomes, thereby guiding clinicians in making informed therapeutic choices for their UC patients.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 12:40-13:20 I Room B

Luncheon Symposium 4

Takeda

Discovering Optimal Approaches for Lifelong Care in CD

Chair

Young-Ho Kim (Sungkyunkwan University, Korea)

[Luncheon Symposium 4 - Takeda]

LS4-1

Optimal Approaches in Crohn's Disease: Who can be the right patient for Vedolizumab

Parambir S Dulai
Medicine, Gastroenterology, Northwestern University, USA

Vedolizumab is a gut selective monoclonal antibody that targets trafficking of the immune cells to resolve inflammation. It has demonstrated efficacy in both Crohn's disease and ulcerative colitis, but treatment responses are heterogenous and often times it can be difficult to know if a patient will do well on therapy. In this lecture we will review how providers can consider applying routine clinical features to select patients who are most ideal for starting vedolizumab. We will review available evidence for prediction models and decision support tools that are able to predict probability of response, remission, and prevention of disease related complications.

[Luncheon Symposium 4 - Takeda]

LS4-2

Vedolizumab in Ileal and Colonic Crohn's Disease

Sung Noh Hong
Department of Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Korea

Vedolizumab is a monoclonal antibody that specifically targets the α4β7 integrin, a cell surface protein involved in the migration of lymphocytes to the gut. By inhibiting this interaction, vedolizumab reduces the infiltration of inflammatory cells into the small and large intestine, thereby decreasing inflammation. This mode of action is particularly relevant for the treatment of inflammatory bowel diseases (IBD), including both ileal and colonic Crohn's disease. Unlike other biologic therapies that have broader systemic immunosuppressive effects, vedolizumab's action is thought to be more gut-selective, potentially leading to fewer systemic side effects.

In clinical trials, vedolizumab has demonstrated efficacy in inducing and maintaining remission in patients with Crohn's disease, including those with ileal, colonic, or ileocolonic involvement. Pivotal randomized controlled trials did not clearly analyze, recent meta-analysis shown that the vedolizumab showed successful anti-inflammatory effects regardless of disease location. The efficacy of vedolizumab in Crohn's disease underscores its role in the therapeutic landscape, offering an alternative mechanism of action to TNF and cytokine inhibitors and providing an option for patients who have not responded to conventional treatment as first-line therapy. The decision to use vedolizumab in the management of Crohn's disease, particularly in cases involving isolated ileal location, should be based on a comprehensive assessment of the patient's disease activity, severity, and treatment goals.

imkasid 2024 SEOUL

The 7th International Meeting on Intestinal Diseases
in conjunction with
The Annual Congress of the Korean Association
for the Study of Intestinal Diseases

APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 12:00-12:40 I Room C

Luncheon Symposium 5

SAMSUNG
BIOEPIS

Chair

Tae Il Kim (Yonsei University, Korea)

[Luncheon Symposium 5 - Samsung Bioepis]

LS5-1

The Latest Update in Management of IBD

Jong Pil Im
Internal Medicine, Seoul National University Hospital, Korea

Inflammatory bowel diseases (IBDs) including ulcerative colitis (UC) and Crohn's disease (CD) are chronic disorders that often require long-term use of conventional treatment, biologics and/or small molecules to achieve sustained clinical and histologic/radiologic remission. Although there has been much progress in the management of IBD with established and evolving therapies, most current approaches have failed to change the natural course. Many guidelines were developed to provide high-quality, evidence-based recommendations on medical and surgical treatment in IBD. To date, most of the guidelines for the management of IBD have been published based on studies conducted mainly on Western IBD patients. Therefore, a critical gap still remains in how we adapt recommendations for medical therapy positioning including biologics and small molecules, and there is a need to connect guideline recommendations from randomized clinical trials with real world practice.

Recent advances also have led to the therapeutic concept of the "treat to target" strategy shifting from clinical remission mainly based on symptoms to objective parameters such as endoscopic healing due to the discrepancies observed between symptoms, objectively evaluated inflammatory activity, and intestinal damage. To achieve successful "treat to target" strategy, objective evaluation of inflammation is crucial. Therefore, we need to take endoscopic, histological and radiological assessment tools into consideration, as well as the use of serum and fecal biomarkers and quality of life evaluation. In the future, paradigm change is expected that personalized approach can be applied to selected groups based on prognostic factors to control.

This lecture will review the latest update in management of IBD including prognostication and early intervention, treating to target, tight monitoring, and adoption of individualized therapeutic approaches.

[Luncheon Symposium 5 - Samsung Bioepis]

LS5-2

Extraintestinal Manifestation in IBD: Looking Beyond the Tract

Ji Won Kim
Seoul National University, Korea

Inflammatory bowel disease (IBD) is a chronic inflammatory condition affecting the intestines. Alongside intestinal symptoms, IBD is associated with various extraintestinal manifestations (EIMs) and complications.

EIMs can be categorized into three groups:
1. EIMs directly related to bowel disease activity: These include conditions like episcleritis, erythema nodosum, oral aphthous ulcers, and pauciarthritis. They arise due to inflammatory processes extending beyond the intestine or sharing genetic/environmental links with IBD.
2. EIMs reflecting susceptibility to related autoimmune disorders: Examples are ankylosing spondylitis (AS) and uveitis. These conditions are not directly tied to bowel disease activity but indicate the patient's predisposition to autoimmune issues.
3. EIMs with an unclear relationship to bowel disease activity: Conditions like pyoderma gangrenosum (PG) and primary sclerosing cholangitis (PSC) fall into this category. Their connection to IBD remains less defined.

Multidisciplinary approaches and uderstanding their pathogenesis and clinical implications is crucial for comprehensive patient care with EIMs.
The management of extraintestinal manifestations (EIMs) in patients with inflammatory bowel diseases (IBD) has significantly evolved over the past decade.

Anti-TNF agents (such as infliximab, adalimumab, and certolizumab) showed effectiveness for most EIMs over the last 10 years, but can also cause anti-induced skin lesions.
Vedolizumab, an anti-integrin agent, shows promise in managing joint and cutaneous manifestations associated with IBD.
JAK inhibitors and anti-IL-12/23 agents have limited data for IBD-associated EIMs, but their success in rheumatology and dermatology suggests potential efficacy.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 12:40-13:20 I Room C

Luncheon Symposium 6

DAEWOONG PHARMACEUTICAL CO.,LTD.

Chair

Eun Young Kim (Daegu Catholic University, Korea)

[Luncheon Symposium 6 - Daewoong]

LS6-1

Management of Ulcerative Colitis (UC) Flare in Mild-moderate Patients

Sung Wook Hwang
University of Ulsan, Korea

[Luncheon Symposium 6 - Daewoong]

LS6-2

ASACOL 1,600mg, One Tablet Once Daily to Maintain Remission

Dae Sung Kim
Department of Gastroenterology, Konyang University, Korea

Ulcerative colitis (UC) is a chronic, idiopathic inflammatory bowel disease, and its incidence is increasing dramatically in Asia. Starting with the development of infliximab in the late 1990s, various biologics have been developed and used, and it is no exaggeration to say that we are now living in the biologics era, and the current treatment of ulcerative colitis is dominated by various biologics. However, even in recent years, 5-aminosalicylic acid (5-ASA) has played an important role in inducing and maintaining remission in patients with mild-to-moderate ulcerative colitis. It is available in both oral and topical (suppositories) formulations, both of which act directly on the colonic mucosa to reduce inflammation through multiple pathways. In order for the medication to reach the colon, it is important that it is not destroyed or absorbed in the stomach or proximal small intestine. Several techniques have been developed for effective drug transport, the first being sulfasalazine, which is a sulfapyridine conjugated to 5-ASA with an azo bond. Sulfasalazine works in the colon as the azo bond is broken down by bacteria in the colon. However, it is often difficult to use due to gastrointestinal discomfort and various side effects caused by the sulfapyridine component.

Mesalamines are 5-ASA formulations that utilize various transport and release mechanisms to transport the 5-ASA to the intestine while avoiding gastric acid: time-dependent formulation (PENTASA®), pH-dependent formulation (ASACOL®), and multi matrix system (MEZAVANT XL®). PENTASA® is a microgranule encased in a semipermeable membrane that releases the drug over time, allowing the drug to be released from the duodenum to the small bowel and colon. ASACOL® is released at pH ≥7, so which is released from the terminal ileum and acts mainly in the colon. MEZAVANT XL® has a lipophilic and hydrophilic matrix structure encapsulated in a pH-dependent coating, and is released from the terminal ileum and colon, while the multi matrix system allows for a longer retention and action in the colonic mucosa. Recently, ASACOL® 1600 mg with the OPTICORE® delivery system is widely used, which combines pH-dependent release with bacterial-sensitive polymer release in contact with bacterial enzymes in the colon, allowing patients to take once daily. The OPTICORE® system helps patients achieve high therapeutic efficacy while improving patient convenience.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 13:50-15:20 I Room A

KASID-WEO Joint Symposium

Future Directions in CRC Screening: What's Next?

Chairs

Hyun-Soo Kim (Yonsei University, Korea)
Uri Ladabaum (Stanford University, USA)

[KASID-WEO Joint Symposium]

KWJS-1

Screening for Individuals Before 50: What Age Should We Start?

Eun Hyo Jin
Department of Internal Medicine,
Seoul National University Hospital Healthcare System Gangnam Center, Korea

Colorectal cancer (CRC) ranks as the third most commonly diagnosed cancer globally and the second leading cause of cancer-related deaths[1]. While the overall incidence and mortality of CRC have gradually declined in individuals aged 50 years and older due to increased screening and improvements in treatment, a concerning rise in early-onset CRC (occurring before age 50) has been observed worldwide since the mid-1990s[2]. This increase has prompted discussions about the adequacy of existing screening guidelines.

In 2021, the US Preventive Services Task Force (USPSTF) updated its 2016 recommendation, affirming that screening for colorectal cancer in adults aged 50 to 75 years provides significant overall benefit[3]. Additionally, the USPSTF concluded with moderate certainty that screening individuals aged 45 to 49 years also offers moderate net benefit. The American Gastroenterological Association (AGA) Clinical Practice Update Expert Review emphasizes the importance of risk stratification for CRC screening[4]. It suggests that individuals at average risk should begin screening at age 45, while those with a first-degree relative diagnosed with CRC should commence screening ten years prior to the relative's age at diagnosis or at age 40, whichever comes earlier. The 2022 U.S. Multi-Society Task Force on Colorectal Cancer recommends initiating CRC screening at age 45 for average-risk individuals[5]. This decision is based on the rising burden of the disease in those under 50, emerging data indicating similar rates of advanced colorectal neoplasia in individuals aged 45 to 49 compared to those aged 50 to 59, and modeling studies demonstrating the benefits of screening outweigh potential harms and costs.

Despite being one of the countries experiencing a rapid increase in early-onset CRC, Korea's guidelines and national screening programs have not been appropriately adjusted to address this issue of rising CRC incidence among younger age groups. Currently, they recommend initiating CRC screening at the age of 50[6]. However, The National Cancer Information Center recommended stool occult blood tests and colorectal cancer screening for individuals aged 45 to 80 in 2015. Given the rising incidence of CRC at younger ages, it is imperative to engage in in-depth discussions regarding appropriate screening initiation ages and individual risk stratification.

Reference

1. Jin EH, Han K, Lee DH, et al. Association between metabolic syndrome and the risk of colorectal cancer diagnosed before age 50 years according to tumor location. Gastroenterology 2022;163:637-648. e2.
2. Jin EH, Han K, Shin CM, et al. Sex and tumor-site differences in the association of alcohol intake with the risk of early-onset colorectal cancer. Journal of Clinical Oncology 2023;41:3816.
3. Davidson KW, Barry MJ, Mangione CM, et al. Screening for colorectal cancer: US Preventive Services Task Force recommendation statement. Jama 2021;325:1965-1977.
4. Issaka RB, Chan AT, Gupta S. AGA Clinical Practice Update on Risk Stratification for Colorectal Cancer Screening and Post-Polypectomy Surveillance: Expert Review. Gastroenterology 2023.
5. Patel SG, May FP, Anderson JC, et al. Updates on age to start and stop colorectal cancer screening: recommendations from the US Multi-Society Task Force on Colorectal Cancer. Gastroenterology 2022;162:285-299.
6. Lee B-I, Hong SP, Kim S-E, et al. Korean guidelines for colorectal cancer screening and polyp detection. Clinical Endoscopy 2012;45:25.

[KASID-WEO Joint Symposium]

KWJS-2

Using Computer-aided Polyp Detection System (CADe) to Maintain the High Quality in Adenoma Detection Rate during Community-based Colorectal Cancer Screening in Thailand: A Randomized Trial

Sittikorn Linlawan[1], Kasenee Tiankanon[2], Satimai Aniwan[2], Natanong Kongtub[2], Natawut Nupairoj[3], Peerapon Vateekul[3], Rungsun Rerknimitr[2]

[1]Department of Medicine, Phrachomklao Hospital, Phetchaburi, Thailand
[2]Gastrointestinal Endoscopy Excellence Center, Division of Gastroenterology, Chulalongkorn University, Bangkok, Thailand
[3]Department of Computer Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand

Background / Aim : Due to limited endoscopy resources and personnel in Thailand, a high-volume colonoscopy (75-100 colonoscopies/day) has been utilized to clear stranded patients with FIT positive and may contribute to a decline in effectiveness. Computer-aided polyp detection system (CADe) has been shown to improve adenoma detection rate (ADR). We aimed to evaluate the benefit of CADe guidance colonoscopy compared to colonoscopy without CADe in high-volume-colonoscopy setting.
Methods : FIT-positive individuals aged 50-75 were recruited. All subjects were randomly assigned to undergo colonoscopy performed with or without CADe guidance in a 1:1 ratio. Every endoscopist was assigned to perform colonoscopy in both CADe and control groups. The CADe system with real-time bounding box notifications and voice alarms projected on the monitor was activated before colonoscope insertion until finish. The primary outcome was the ADR. Secondary outcomes were the proximal adenoma detection rate (pADR), advanced adenoma detection rate (AADR), and the number of adenomas/proximal adenomas/advanced adenomas per colonoscopy (APC, pAPC, and AAPC, respectively).
Results : A total of 467 participants with a mean age of 59.9±6.4 were randomized to CADe (n=226) and control (n=241). The mean historical ADR of participated endoscopists was 37.9±7.54. The overall ADR in the control group dropped to 27.8% while the ADR in the CADe group was 40.3% (p=0.004). CADe also showed significantly higher mean APC when compared to that of from the controls (0.64 vs. 0.42; p=0.01). However, CADe showed no statistically significant differences in the pADR (11.9% vs. 7.9%; p=0.14), AADR (12.4% vs. 10%; p=0.41), pAPC (0.15 vs. 0.10; p=0.21), and AAPC (0.12 vs. 0.11; p=0.71).
Conclusion : During high-volume colonoscopy with the risk in dropping endoscopists' performance, CADe guidance colonoscopy can significantly help the endoscopists to maintain their high ADR level. In addition, CADe can be of help for the higher APC than conventional colonoscopy.
Keywords : CADe Guidance Colonoscopy, High-volume Colonoscopy, Colorectal Cancer Screening, Thailand

Table 1: Participant demographic and procedure-related characteristics by the randomized arm

Characteristics	Total (n=467)	CADe (n=226)	Control (n=241)	p-value
Patient characteristics				
Patient age, mean (SD), years	59.9 (6.4)	60.4 (6.0)	59.3 (6.7)	0.63
Male patient, (%)	162 (34.7)	71 (31.4)	91 (37.8)	0.15
Smoker, n (%)	68 (14.6)	33 (14.6)	35 (14.5)	0.81
Present family history of CRC, n (%)	16 (3.4)	9 (3.9)	7 (2.9)	0.26
Body mass index, mean (SD, kg/m^2)	24.5 (2.1)	24.6 (2.0)	24.4 (1.9)	0.93
Procedure-related characteristics				
Boston Bowel Preparation score (BPPS), median (IQR)	8 (7-8)	8 (8-8)	8 (7-8)	0.10
Cecal intubation time, median (IQR), min	10 (8-14)	11 (8-14)	10 (8-14)	0.11
Withdrawal time, median (IQR), min	8 (7-10)	8 (6-10)	8 (7-10)	0.82

SD, standard deviation; CRC, colorectal cancer; IQR, interquartile range

Fig. 1A. Adenoma detection rate (ADR), proximal adenomadetection rate (pADR), and advanced adenoma detection rate (AADR) between CADe and control groups

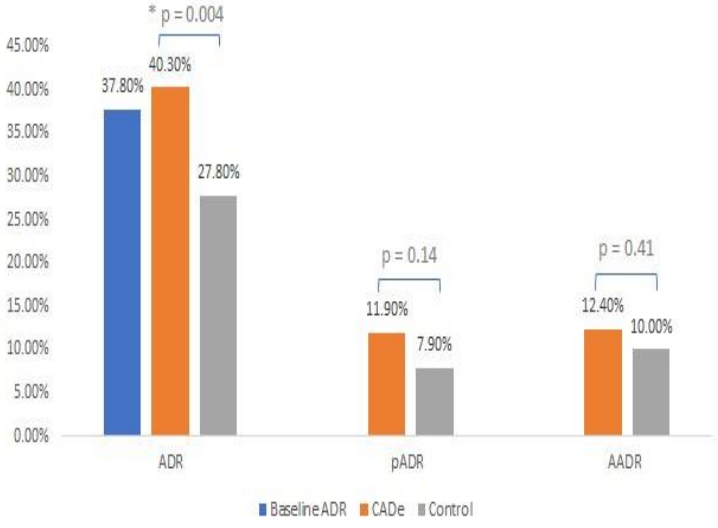
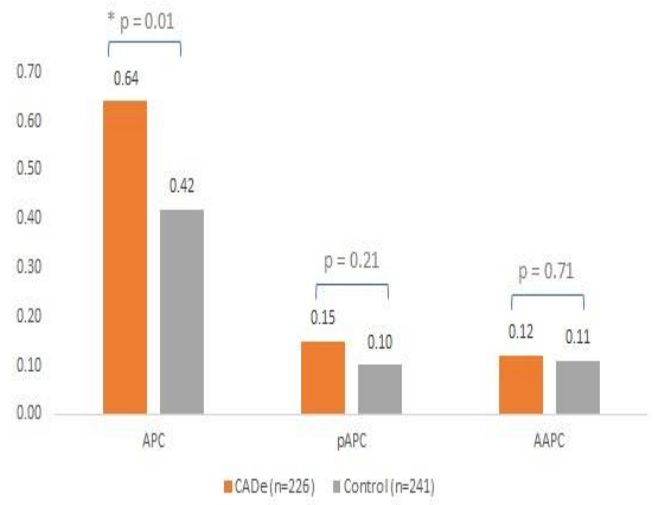


Fig. 1B. The number of adenomas (APC), proximal adenomas (pAPC), and advanced adenomas per colonoscopy (AAPC) between CADe and control groups



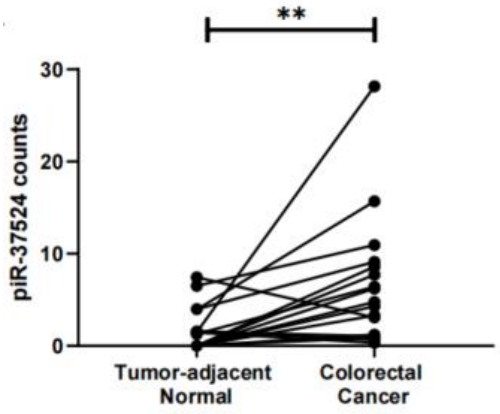
[KASID-WEO Joint Symposium]

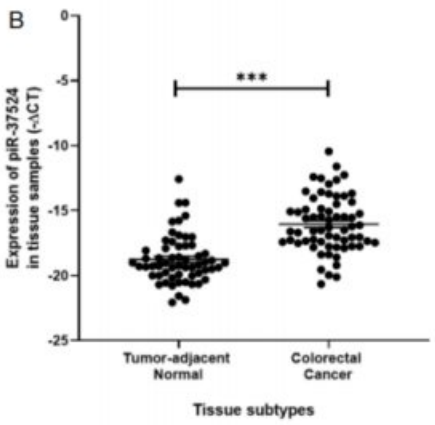
KWJS-3

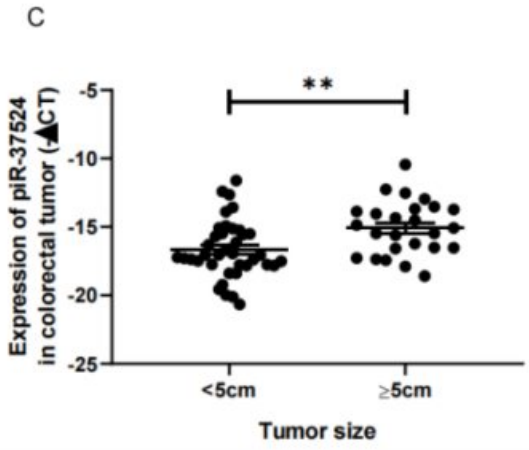
Unveiling piR-37524: A Novel Diagnostic Biomarker in Colorectal Cancer

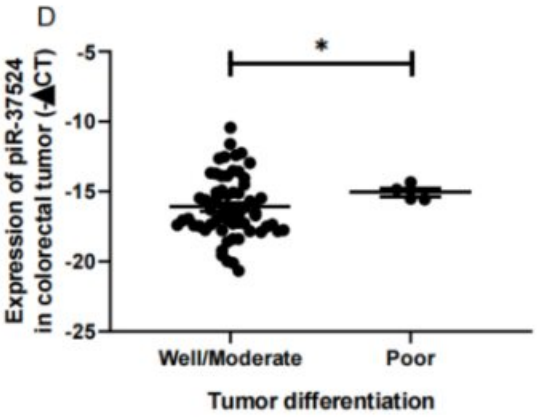
Jiaxi Li, Lui Ng
Surgery, The university of Hong Kong, Hong Kong, China

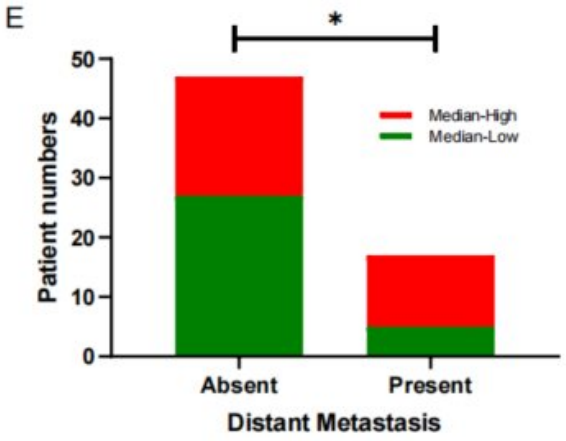
Background / Aim : Recent evidence emphasizes the pivotal role of PiRNAs in human cancer, particularly in the regulation of tumor development and progression. However, their significance in CRC remains understudied. This research aims to characterize piR-37524, a novel piRNA discovered through deep-sequencing profiling of CRC, and explore its clinical relevance as a potential diagnostic biomarker for early CRC identification. Additionally, the study seeks to elucidate the functional impact of piR-37524, specifically focusing on its potential therapeutic implications.
Methods : A comprehensive analysis of a dataset was conducted from 64 CRC patients. Clinicopathological correlations were explored using quantitative PCR, revealing associations with tumor size, differentiation, and metastasis. Validation of piR-37524 expression included colorectal adenomas, non-metastatic CRC, metastatic CRC, and distant liver metastases. Functional assays, such as cell proliferation, colony formation, and wound healing, were conducted after manipulating piR-37524 expression. Molecular mechanisms were explored through RNA-seq, and online databases were utilized for target prediction.
Results : PiR-37524 demonstrated consistent overexpression in CRC tissues, particularly in early-stage tumors and distant metastases. Clinicopathological analysis revealed positive correlations with tumor size, poor differentiation, and metastatic potential. In vitro studies indicated that downregulation of piR-37524 suppressed cell proliferation and migration. KEGG analysis revealed enrichment in the TNF signaling pathway and TGF-beta signaling pathway. Additionally, six co-upregulated genes were identified, with ALOXE3 and TNFAIP3 showing predictable potential binding sites.
Conclusion : This study identifies piR-37524 as a new diagnostic biomarker linked to colorectal adenomas and CRC. Its heightened expression in CRC tumors and serum samples implies a possible oncogenic role and diagnostic significance. Further research is needed to understand its mechanism in regulating tumor proliferation.
Keywords : PiRNA, Non-coding RNA, Biomarker, Colorectal Cancer, Adenoma

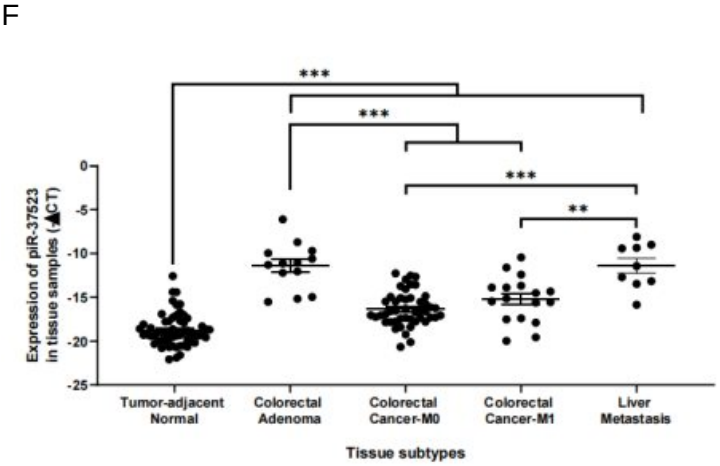

**
piR-37524 counts
30
20
10
0
Tumor-adjacent Normal
Colorectal Cancer


B
***
Expression of piR-37524 in tissue samples (-ΔCT)
0
-5
-10
-15
-20
-25
Tumor-adjacent Normal
Colorectal Cancer
Tissue subtypes

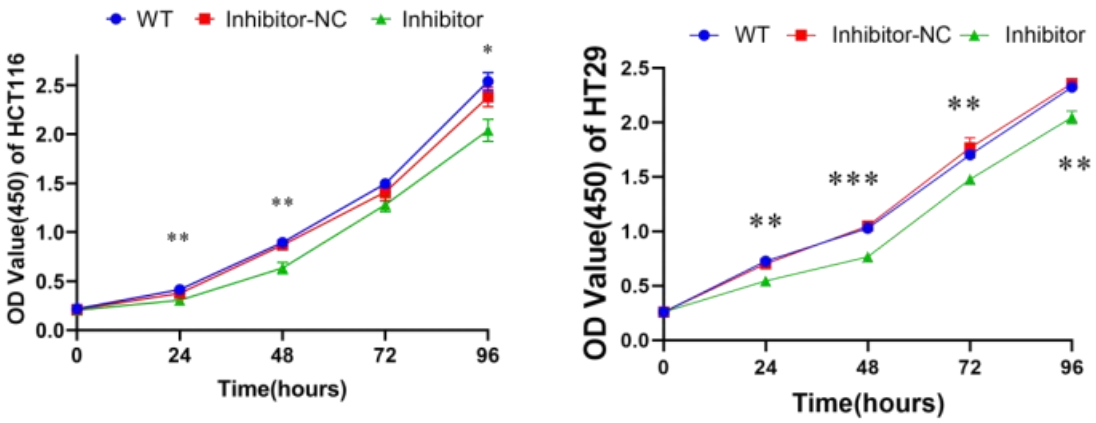

C
**
Expression of piR-37524 in colorectal tumor (-ΔCT)
-5
-10
-15
-20
-25
<5cm
≥5cm
Tumor size


D
*
Expression of piR-37524 in colorectal tumor (-ΔCT)
-5
-10
-15
-20
-25
Well/Moderate
Poor
Tumor differentiation

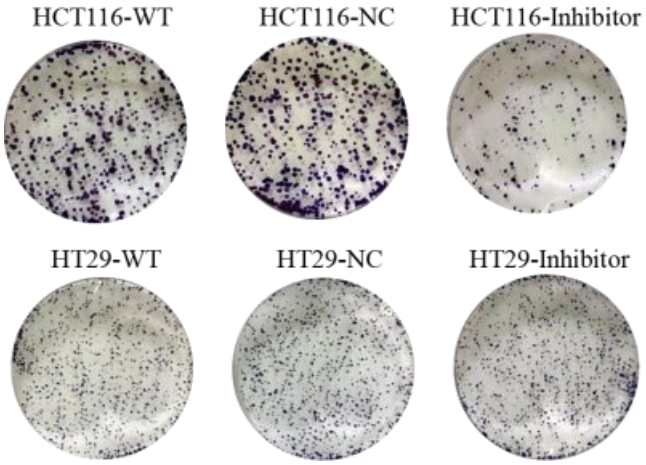

E
*
Patient numbers
50
40
30
20
10
0
Median-High
Median-Low
Absent
Present
Distant Metastasis


F
***
***
***
**
Expression of piR-37523 in tissue samples (-ΔCT)
0
-5
-10
-15
-20
-25
Tumor-adjacent Normal
Colorectal Adenoma
Colorectal Cancer-M0
Colorectal Cancer-M1
Liver Metastasis
Tissue subtypes

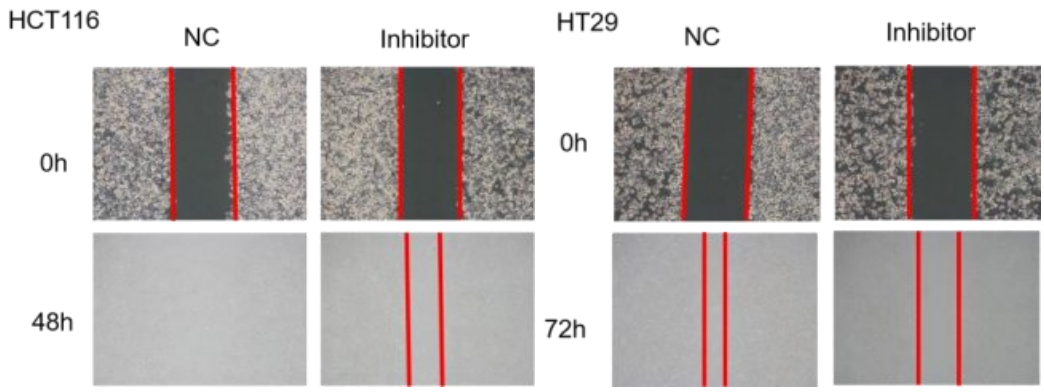
A


WT
Inhibitor-NC
Inhibitor
OD Value(450) of HCT116
Time(hours)
OD Value(450) of HT29
Time(hours)

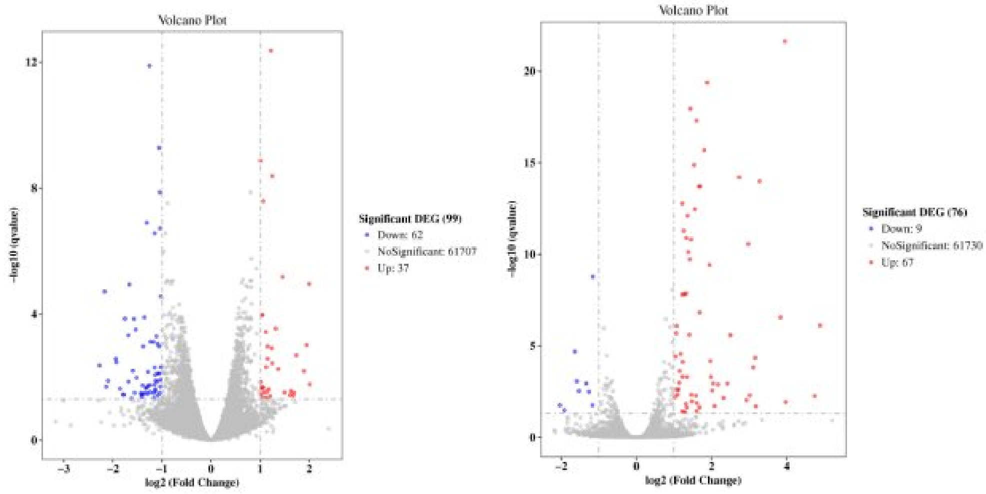
B


HCT116-WT
HCT116-NC
HCT116-Inhibitor
HT29-WT
HT29-NC
HT29-Inhibitor

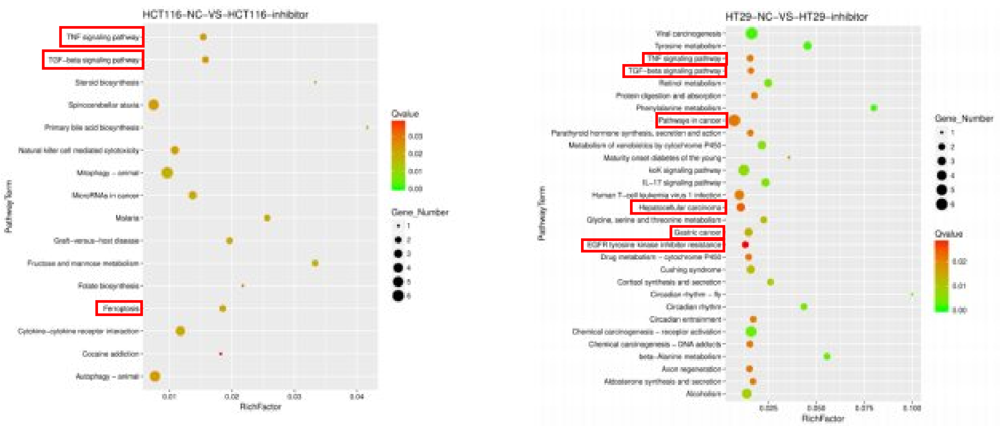
C


HCT116
NC
Inhibitor
HT29
NC
Inhibitor
0h
48h
0h
72h

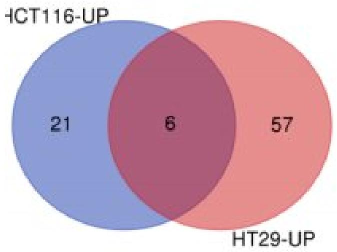
A



B



C



D

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Performing Scan: piR-37524 vs ALOXE3
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
   Forward:Score: 149.000000  Q:2 to 28  R:492 to 516 Align Len
 (26) (65.38%) (65.38%)

   Query:    3' tgAAGTGATAGACGTGATCTACGTGGAAt 5'
                  | |  || | | | |||   |||||||
   Ref:      5' ggTCCCCTTTGT-CCCTA---GCACCTTt 3'


Performing Scan: piR-37524 vs TNFAIP3
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=
   Forward:Score: 171.000000  Q:2 to 25  R:652 to 681 Align Len
 (24) (66.67%) (83.33%)

   Query:    3' tgaagTGAT-AGACGTGATCTACGTGGAAt 5'
                     :||: ||| :|: | ||||||||
   Ref:      5' aacaaGCTGCTCTTTATAATATGCACCTTt 3'
```

[KASID-WEO Joint Symposium]

KWJS-4

Colonoscopy as the First-line Screening Test: Everything You Need to Know

Uri Ladabaum
Division of Gastroenterology and Hepatology, Department of Medicine,
Stanford University School of Medicine, USA

The most robust evidence supporting the effectiveness of screening to decrease colorectal cancer (CRC) incidence and mortality comes from randomized controlled trials (RCTs) of guaiac occult blood testing (gFOBT) or flexible sigmoidoscopy (FS). However, the most common CRC screening tests today worldwide are fecal immunochemical testing (FIT) and colonoscopy.

FIT and colonoscopy are accepted on the basis of observational data, and extension of the evidence from the RCTs of gFOBT and FS. The recent 10-year interim analysis of the NordICC trial of invitation to colonoscopy vs. usual care reported a significant reduction in CRC incidence, but not CRC mortality, in the invitation arm in the intention to treat analysis. Numerically, the significant reduction in CRC incidence was larger than the non-significant reduction in CRC mortality. It remains to be explained why this pattern was observed, which is not consistent with previous data on the impact of screening.

Colonoscopy is operator-dependent. The quality of colonoscopy, which at present best captured by a colonocopist's adenoma detection rate (ADR), is closely associated with critical outcomes (post-colonoscopy CRC incidence and CRC mortality). Multiple interventions have been designed to improve colonoscopy quality. Despite this, a substantial range of operator-dependent performance persists.

Adherence with screening is a critical determinant of screening effectiveness in the real world. Patients preferences vary for non-invasive vs. invasive screening. Colonoscopy is not the first choice for all persons, and may or may not be available as a primary screening test in a given region.

This lecture will cover:

- Clinical research data pertinent to the effectiveness of CRC screening, and of colonoscopy as a primary screening strategy
- The importance of colonoscopy quality to clinical outcomes
- Measures to improve colonoscopy quality
- Recent development in artificial intelligence (AI) applied to colonoscopy, including computer-aided detection (CADe) of polyps
- Consideration of patient choice, participation, and availability of colonoscopy as a screening modality

[KASID-WEO Joint Symposium]

KWJS-5

Precision Medicine for Screening in the Near Future

Han-Mo Chiu
Department of Internal Medicine, National Taiwan University Hospital, Taiwan

Colorectal cancer (CRC) exhibits significant heterogeneity, with its risk and clinical characteristics influenced by various factors including molecular biology, lifestyle, gender, and comorbidities within the population. Within the prevailing framework of most organized CRC screening programs, screening policies are universal, employing a single screening test across the entire "average-risk population" within the same age range. However, this approach may offer inadequate protection for higher-risk individuals while leading to an overuse of screening resources for those at lower risk, exposing them to unnecessary screening-related risks across the broad spectrum of "average-risk." Consequently, the concept of precision screening becomes crucial in optimizing screening effectiveness, efficiency, and resource allocation.

Although prior studies have suggested that the polygenic risk score approach is less cost-effective, alternative population demographics can still be utilized for this purpose. Additionally, ongoing researches from Taiwanese programs have shown that quantitative measurement of fecal immunochemical tests (FIT), a commonly used primary screening method for CRC, can predict future CRC risk. This predictive capability allows for tailoring inter-screening intervals, stratifying the risk for post-colonoscopy CRC, and prioritizing diagnostic colonoscopy following a positive FIT result. Adjusting FIT positivity cutoffs for different genders can further enhance the detection of advanced neoplasms (AN) while reducing the likelihood of negative diagnostic colonoscopies after a positive FIT result. Individualized screening cessation based on predicted life expectancy is also feasible, with researchers developing a groundbreaking "health calculator" enabling 75-year-olds to assess their likelihood of reaching age 85. Moreover, previous screening history, including previous exposure to FIT screening and diagnostic colonoscopy and their results, may influence the a priori risk of detecting CRC or AN during subsequent screenings.

To accomplish these goals, establishing a real-world database linked to other pertinent health big data and leveraging cutting-edge artificial intelligence are essential.

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The 7th International Meeting on Intestinal Diseases
in conjunction with
The Annual Congress of the Korean Association
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APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 13:50-15:20 I Room B

Symposium 3

Basic and Translational Research: A Deep Dive into the Mechanisms of IBD

Chairs

Dong Il Park (Sungkyunkwan University, Korea)
Williams Turpin (Mount Sinai Hospital, Canada)

[Symposium 3]

SY3-1

Host-Microbial Interaction in IBD

Jun Miyoshi
Department of Gastroenterology and Hepatology, Kyorin University School of Medicine, Japan

Inflammatory bowel disease (IBD) is considered a heterogeneous disease in which genetic, microbial, and environmental factors play roles in causing inflammatory immunological activations. While the pathogenesis of IBD remains unestablished, the dramatic increase in the incidence and prevalence of IBD over the past decades cannot be explained by genetic drift but is more likely caused by microbial and environmental factors on a background of genetic susceptibility. Since various environmental factors, such as food, hygiene, and lifestyle, impact the human microbiome and the gut microbiome closely interacts with the host immune system, it seems reasonable to conceive that the host-microbial interaction plays a crucial role in the development of IBD. So far, many clinical studies reported that various changes in the intestinal microbial compositions are associated with IBD. Meanwhile, with studies using human samples, it is challenging to understand the causal link between the altered microbiome (dysbiosis) and the development of IBD and to obtain mechanistic insights into IBD pathoetiology. In this respect, translational research using animal models provides scientific merits. With the progress of cultivation-independent technologies, translational research demonstrated that dysbiosis influences the host immune system leading to intestinal inflammation, and identified various potential pathobionts or beneficial microbes. Furthermore, the evolution of multi-omics technologies opens a new era to explore the host-microbial interactions from the viewpoints of microbial compositions as well as functions. Of course, basic research is needed to understand the mechanisms underlying the observations in animal models and findings by computational approach. Then, given that the microbiome is different between the host species and no animal model perfectly mimics human IBD, it is necessary to eventually go back to human studies to understand human IBD to improve clinical practice and develop future therapeutic strategies. In this lecture, I would like to talk about insights into host-microbial interaction in IBD based on the integration of IBD medicine, immunology, microbiology, and bioinformatics.

[Symposium 3]

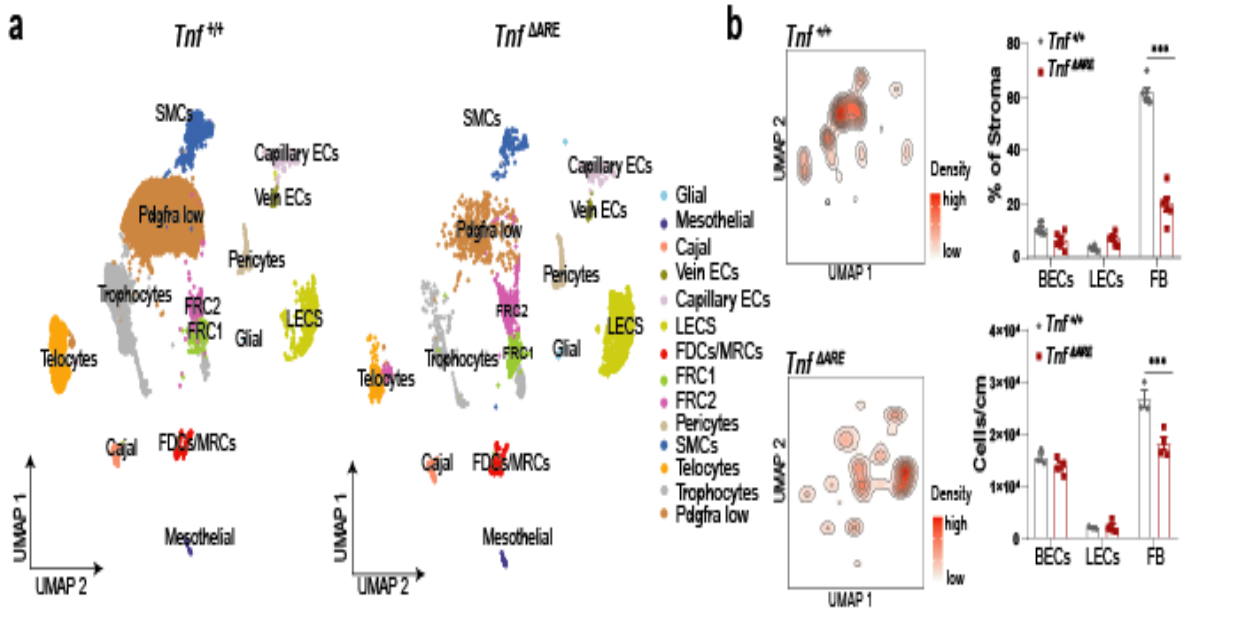
SY3-2

Cellular Complexity and Crosstalk in Murine TNF-dependent Ileitis: Different Fibroblast Subsets Propel Spatially Defined Ileal Inflammation through TNFR1 Signalling

Lida Iliopoulou[1], Alejandro Prados[2], Christos Tzaferis[1], Fani Roumelioti[1], Vasiliki Koliaraki[4], George Kollias[1,3]

[1]Institute for Bioinnovation, Biomedical Sciences Research Center "Alexander Fleming", Vari, Greece
[2]Barcelona Institute of Science and Technology, Institute for Research in Biomedicine (IRB Barcelona), Barcelona, Spain
[3]Department of Physiology, Medical School, National and Kapodistrian University of Athens, Athens, Greece
[4]Institute for Fundamental Biomedical Research, Biomedical Sciences Research Center "Alexander Fleming", Vari, Greece

Background / Aim : Crohn's disease (CD) represents a persistent inflammatory disorder primarily affecting the terminal ileum. Recent single-cell RNA sequencing studies (scRNA-seq) unveiled diverse cell populations in the inflamed intestine, linking IBD-risk genes, identifying crucial pathways, and associating gene signatures with treatment response. Among these, intestinal fibroblasts emerged as key regulators of inflammation, showing a pro-inflammatory subtype expressing immune-related genes. However, understanding their communication patterns, their spatial distribution, and their precise functional contribution during disease remains elusive.
Methods : In this study, we took advantage of the $Tnf^{\Delta ARE}$ CD-ileitis mouse model to generate a single-cell atlas that describes the relative cell-abundance alterations, the differentially activated signalling pathways, and the cellular interplays between the immune, and stroma cell compartments during ileitis. We also used two complementary genetic tools, to in vivo manipulate the Tnfrsf1a gene exclusively in fibroblast subsets during ileitis.
Results : Detailed immune cell analysis highlighted B-cell expansion, T-cell effector reprogramming, and macrophage lineage shifts during inflammation. Focusing on stromal cells, we revealed a strong pro-inflammatory character, acquired by all fibroblast subsets, which exhibit complex communication patterns with the infiltrating immune and surrounding stromal cells. Interestingly, we identified that $Tnf^{\Delta ARE}$-induced ileitis is initiated in the lamina propria via TNFR1 pathway activation in villus-associated fibroblasts (Telocytes and $Pdgfra^{low}$ cells). Furthermore, we unveil separate spatial subsets of fibroblasts acting as exclusive responders to TNF, each orchestrating inflammation in different intestinal layers. Additionally, manipulating the Tnfrsf1a gene exclusively in fibroblast subsets suggested that inflammation is initiated by Telocytes and $Pdgfra^{low}$ cells, while trophocytes drive its progression.
Conclusion : This study introduces novel evidence of spatial regulation of inflammation by fibroblast subsets, inciting and advancing disease in different layers of the gut. These findings underscore the pivotal role of fibroblasts in the inception and advancement of ileitis, proposing that targeting different fibroblast populations could impede the disease development and chronicity of inflammation.
Keywords : Intestinal Fibroblasts, CD-ileitis Mouse Model, TNF-response, Spatially-defined Subsets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Tnf +/+
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Telocytes
Cajal
FDCs/MRCs
Mesothelial
UMAP 1
UMAP 2
Glial
Mesothelial
Cajal
Vein ECs
Capillary ECs
LECS
FDCs/MRCs
FRC1
FRC2
Pericytes
SMCs
Telocytes
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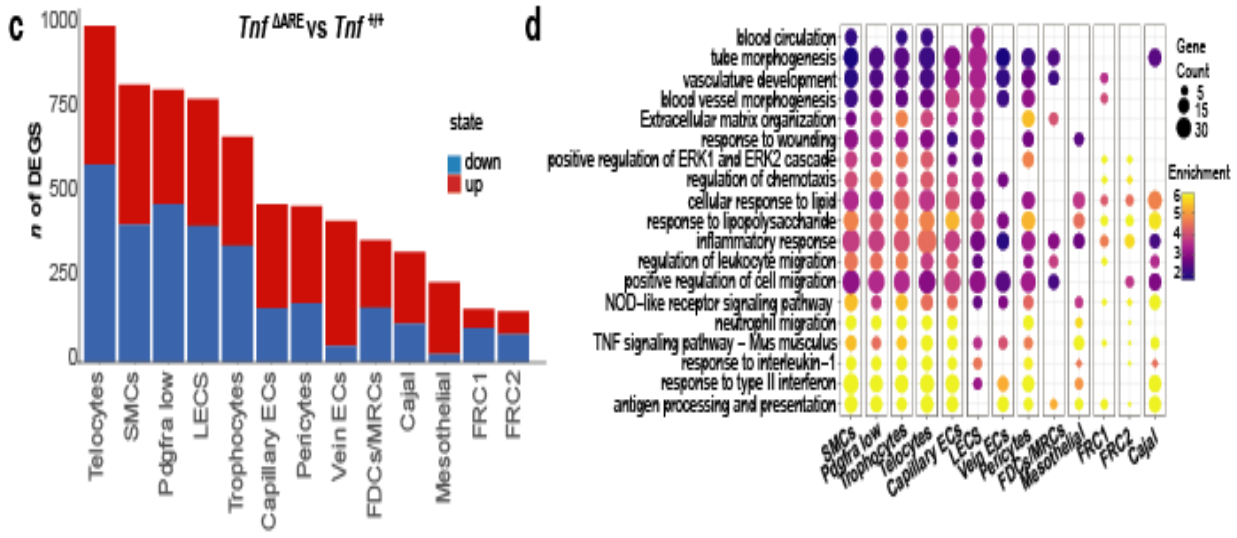
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Tnf ΔARE vs Tnf +/+
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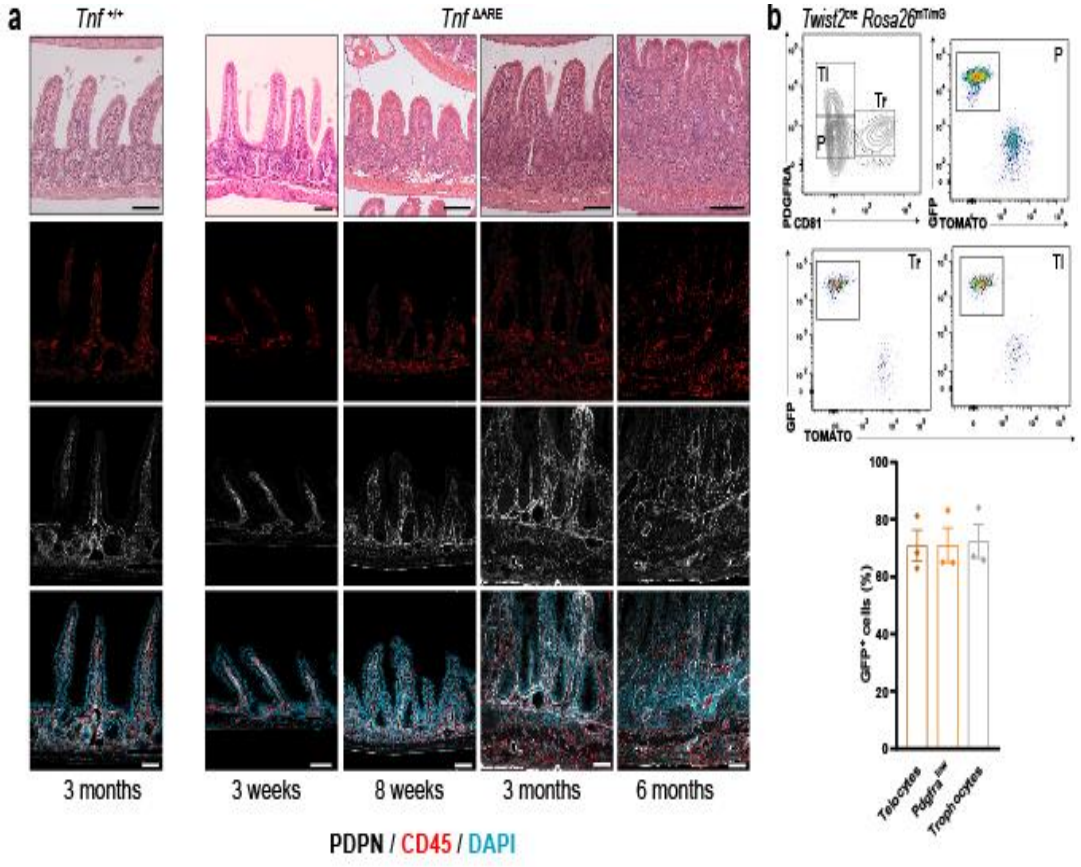
Telocytes
SMCs
Pdgfra low
LECS
Trophocytes
Capillary ECs
Pericytes
Vein ECs
FDCs/MRCs
Cajal
Mesothelial
FRC1
FRC2
d
blood circulation
tube morphogenesis
vasculature development
blood vessel morphogenesis
Extracellular matrix organization
response to wounding
positive regulation of ERK1 and ERK2 cascade
regulation of chemotaxis
cellular response to lipid
response to lipopolysaccharide
inflammatory response
regulation of leukocyte migration
positive regulation of cell migration
NOD-like receptor signaling pathway
neutrophil migration
TNF signaling pathway - Mus musculus
response to interleukin-1
response to type II interferon
antigen processing and presentation
Gene Count
Enrichment


a
Tnf +/+
Tnf ΔARE
3 months
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PDPN / CD45 / DAPI
b
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Tl
Tr
P
PDGFRA
CD81
GFP
TOMATO
GFP+ cells (%)
Telocytes
Pdgfra low
Trophocytes
c
Col6a1cre Rosa26mTmG
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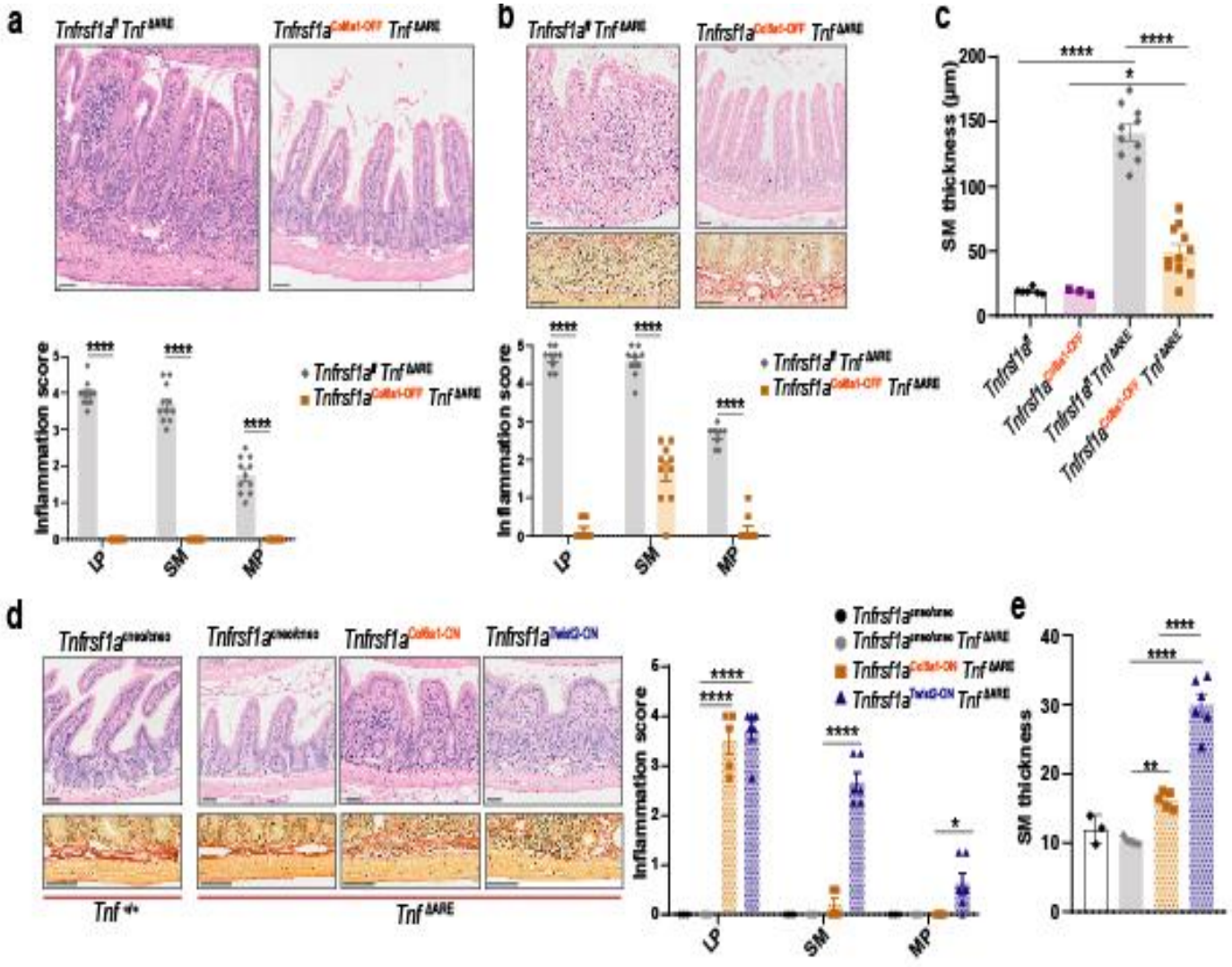
MP
Twist2low TnfΔARE R26mTmG


a
b
c
d
e
Inflammation score
SM thickness (μm)
SM thickness
LP
SM
MP
Tnf ΔARE
Tnf +/+

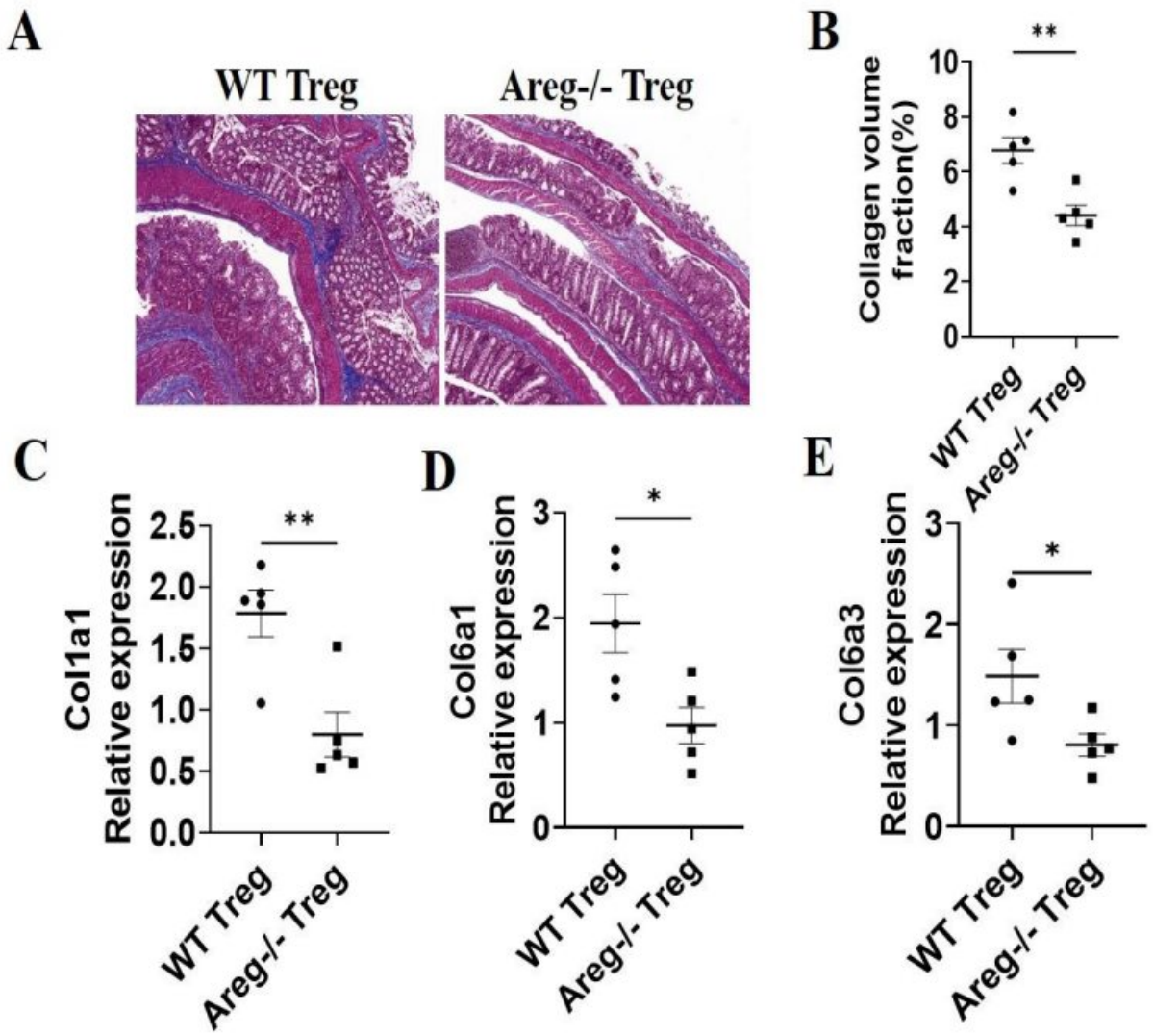
[Symposium 3]

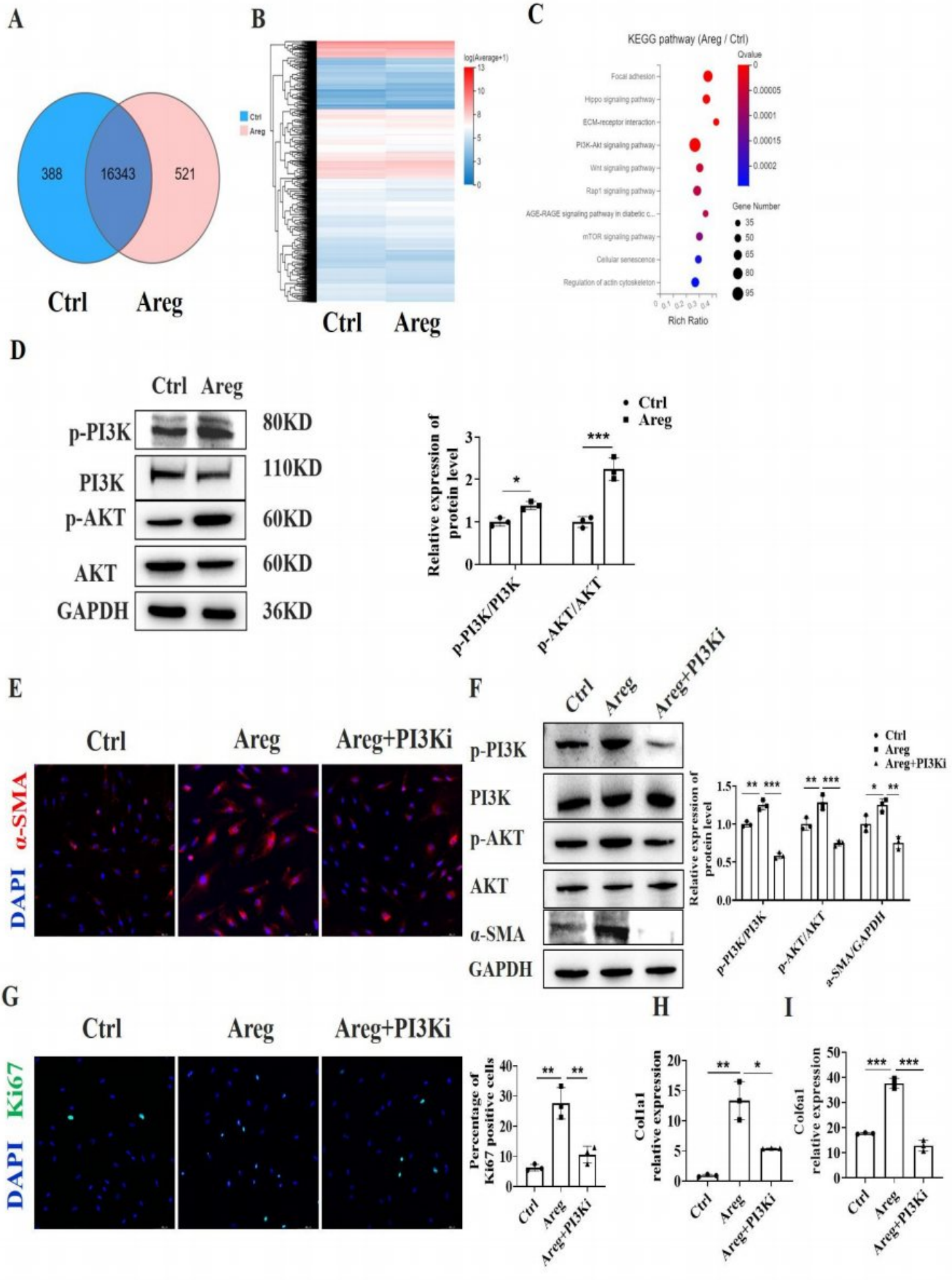
SY3-3

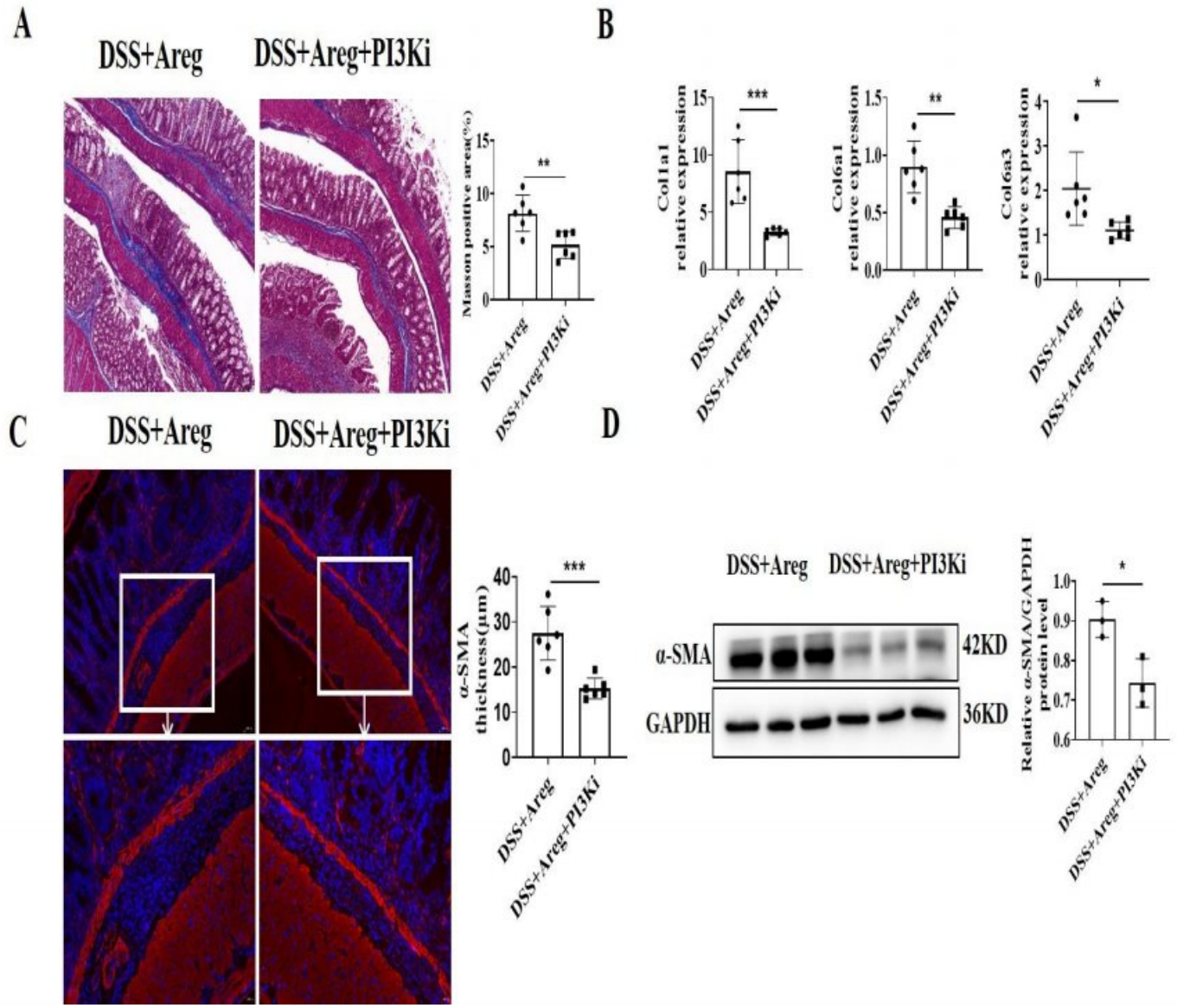
Treg and Human Intestinal Myobroblast-derived Amphiregulin Promotes Colitis-associated Intestinal Fibrosis through Activation of PI3K/AKT

Xiaojing Zhao, Lu Wang, Shu Wang, Hongjie Zhang
Gastroenterology, The First Affiliated Hospital with Nanjing Medical University, Nanjing, China

Background / Aim : Intestinal fibrosis is one of the most threatening complications of Crohn's disease (CD). Intestinal fibrosis is usually the result of chronic inflammation, and T cell response is the main driver of intestinal inflammation. At present, there are few researches on the mechanism of Treg cells in intestinal fibrosis, and the role of Treg-derived AREG in intestinal fibrosis has not been studied.
Methods : AREG and TGF-β expression were assessed in patients with CD with or without intestinal fibrosis by quantitative reverse-transcriptase polymerase chain reaction (qRT-PCR). In this study, dextran sulfate sodium (DSS)-induced chronic colitis model in WT and $Areg^{-/-}$ mice and T-cell transfer model with wild-type (WT) and $Areg^{-/-}$ Treg cells were used. RNA-sequencing of human intestinal fibroblasts treated with or without AREG was performed. $CD4^{+}$ T cell and human intestinal myofibroblasts expression of AREG were determined. The effect of AREG on proliferation/migration in human intestinal myofibroblasts was determined.
Results : AREG and TGF-β expression were increased in fibrotic sites compared with nonfibrotic sites from patients with CD. Although DSS-induced more severe colitis in $Areg^{-/-}$ mice, which developed less severe intestinal fibrosis compared with WT mice on DSS insults. Transfer of $Areg^{-/-}$ Treg cells induced less severe fibrosis in $Rag^{-/-}$ mice compared with WT Treg cells. TGF-β promoted AREG expression in Treg cells by activating Smad3. TGF-β also promoted the AREG expression in human intestinal myofibroblasts from CD patients with fibrosis. AREG promoted human intestinal fibroblast proliferation and motility by activating PI3K/AKT signaling. PI3K inhibitor suppressed AREG-induced fibroblast activation and proliferation, thus attenuated intestinal fibrosis.
Conclusion : These findings revealed that Treg and human intestinal myofibroblast-derived AREG induced by TGF promotes intestinal fibrotic responses in experimental colitis and human patients with CD. Thereby, AREG-PI3K/AKT might serve as a potential therapeutic target for fibrosis in CD.
Keywords : Crohn's Disease, Intestinal Fibrosis, Amphiregulin, Intestinal Myofibroblasts, PI3K/AKT


A
WT Treg
Areg-/- Treg
B
Collagen volume fraction(%)
**
WT Treg
Areg-/- Treg
C
Col1a1 Relative expression
**
WT Treg
Areg-/- Treg
D
Col6a1 Relative expression
*
WT Treg
Areg-/- Treg
E
Col6a3 Relative expression
*
WT Treg
Areg-/- Treg


A
388
16343
521
Ctrl
Areg
B
log(Average+1)
Ctrl
Areg
C
KEGG pathway (Areg / Ctrl)
Qvalue
Focal adhesion
Hippo signaling pathway
ECM-receptor interaction
PI3K-Akt signaling pathway
Wnt signaling pathway
Rap1 signaling pathway
AGE-RAGE signaling pathway in diabetic c...
mTOR signaling pathway
Cellular senescence
Regulation of actin cytoskeleton
Gene Number
Rich Ratio
D
Ctrl Areg
p-PI3K
PI3K
p-AKT
AKT
GAPDH
80KD
110KD
60KD
60KD
36KD
Relative expression of protein level
p-PI3K/PI3K
p-AKT/AKT
E
Ctrl
Areg
Areg+PI3Ki
α-SMA
DAPI
F
Ctrl
Areg
Areg+PI3Ki
p-PI3K
PI3K
p-AKT
AKT
α-SMA
GAPDH
Relative expression of protein level
p-PI3K/PI3K
p-AKT/AKT
α-SMA/GAPDH
G
Ctrl
Areg
Areg+PI3Ki
Ki67
DAPI
H
Percentage of Ki67 positive cells
I
Col1a1 relative expression
Col6a1 relative expression


A
DSS+Areg
DSS+Areg+PI3Ki
Masson positive area(%)
B
Col1a1 relative expression
Col6a1 relative expression
Col6a3 relative expression
C
DSS+Areg
DSS+Areg+PI3Ki
α-SMA thickness(μm)
D
DSS+Areg
DSS+Areg+PI3Ki
α-SMA
GAPDH
42KD
36KD
Relative α-SMA/GAPDH protein level

[Symposium 3]

SY3-4

Gut Barrier Dysfunction, Microbiome, and Environmental Factors in the Development of Crohn's Disease

Williams Turpin
Department of Gastroenterology, Mount Sinai Hospital, Canada

The pathogenesis of Crohn’s disease (CD) remains unknown. Case-control studies fail to explain the triggers or pathogenesis of the disease, notably due to confounding factors in patients with established disease. Investigating the pre-disease phase of CD improves the capacity to assess these confounding factors and enables us to identify biomarkers associated with increased risk of CD. The CCC-GEM is a prospective cohort of healthy first-degree relatives of patients with CD, allowing us to interrogate the pre-disease phase of CD. The CCC-GEM Project has led to the identification of several demographic, serological, and microbiome composition markers associated with an increased risk of disease in pre-clinical participants. Notably, altered intestinal barrier function, as measured by the fractional urinary excretion of lactulose mannitol ratio, is associated with a significantly increased risk of CD and can identify individuals that develop CD up to three years prior to onset. In conjunction with its role in future CD risk, impaired barrier function is closely related to the host proteome and gut microbiome, underscoring the importance of intestinal barrier integrity in the pathogenesis of CD. Indeed, we identified significant differences in microbiome composition and function in participants with impaired barrier function. Moreover, several environmental effects have been implicated in alterations of the intestinal barrier. In a recent study, we investigated the impact of environmental exposure on the risk of developing CD and found that dog ownership at any stage of life was significantly associated with decreased intestinal permeability. In summary, the intestinal barrier is a complex and highly dynamic structure influenced by various intrinsic and external factors, including diet, lifestyle, the environment, inflammation, and genetic susceptibility. Understanding these factors and their impact on the barrier function can aid in the development of effective mitigation strategies.

[Symposium 3]

SY3-5

Defining the Role of FMT in IBD Moving Forward

Rupert Leong
Department of Gastroenterology, Concord Hospital, University of Sydney, Australia

The gut microbiome comprises of >10 trillion organisms that include bacteria, viruses, and fungi. At birth the gut is exposed to maternal microbes during delivery and later on to maternal breast milk. Prebiotics then help select and sustain beneficial organisms. Diet and other environmental exposures further modify the microbial constituents. We suspect that dysbiosis, or an imbalance between the beneficial versus harmful organisms, might be responsible for precipitating and perpetuating gut diseases such as IBD.

Restoring gut microbiota to a healthier state could effectively treat IBD. A well-balanced ecosystem might thwart harmful organisms from compromising the barrier function, while postbiotics like short-chain fatty acids could aid in sustaining healthier enterocytes. Restitution of this balance may be achievable. Faecal microbiota transplantation (FMT) and defined bacteria consortia may restore microbial balance and improve gut health by replenishing beneficial bacteria, enhancing immune function, and modulating inflammatory responses. Defined bacteria consortia refer to specific combinations of bacterial species or strains that are intentionally selected and assembled for a particular purpose, such as enhancing gut health. By precisely selecting and combining different bacterial species, researchers and practitioners aim to leverage synergistic interactions among the microbes to achieve their desired goals effectively. FMT may be considered more potent due to its broader microbial diversity and potential to address complex dysbiosis. However, defined bacteria consortia offer advantages such as standardised formulations, easier quality control, and reduced risk of transmitting pathogens or adverse reactions associated with donor material.

Currently, numerous randomized controlled trials and their meta-analyses affirm the efficacy of FMT in inducing remission of ulcerative colitis. While there is less substantial evidence supporting FMT's effectiveness in treating Crohn’s disease, some cohort studies and expert opinions propose dysbiosis as a potential factor underlying this phenotype.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 13:50-15:20 I Room C

KASID-GEST Joint Symposium

Practical Strategies for Managing Difficult Clinical Scenarios in IBD

Chairs

Seung-Jae Myung (University of Ulsan, Korea)
Cheng-Tang Chiu (Chang Gung University, Taiwan)

[KASID-GEST Joint Symposium]

KGJS-1

Infections in IBD: Prevention, Diagnosis, and Management

Puo-Hsien Le
Department of Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taiwan

In the context of Inflammatory Bowel Disease (IBD), managing infections such as Cytomegalovirus (CMV), Clostridioides difficile (C. difficile), and Herpes Zoster presents unique challenges due to the altered immune responses in these patients. CMV infections can exacerbate the severity and complications of IBD, necessitating the use of histological examination and quantitative PCR for diagnosis, especially in suspected cases of viral reactivation. Preventive measures include maintaining proper hygiene practices and assessing the risk of CMV when prescribing immunosuppressive therapy for IBD. The management of CMV involves antiviral treatments like ganciclovir or valganciclovir, particularly in patients showing significant symptoms or in severe cases.

C. difficile infections, known for worsening IBD symptoms and increasing complications, rely on toxin testing and/or PCR for diagnosis. Preventing C. difficile infections involves minimizing unnecessary antibiotic use and enforcing strict infection control protocols in healthcare settings. Treatment strategies for C. difficile include discontinuing the inciting antibiotics, initiating appropriate antibiotic therapy against C. difficile, such as metronidazole or vancomycin, and considering fecal microbiota transplantation for severe or recurrent cases.

Herpes Zoster risk is heightened in IBD patients due to compromised immunity, with diagnosis primarily based on clinical presentation and, if necessary, PCR testing. Vaccination against Herpes Zoster is a key preventive measure, especially before starting biologic agents or immunosuppressants. Management includes antiviral medications like acyclovir, valacyclovir, or famciclovir, alongside symptomatic treatments to alleviate pain and discomfort.

Overall, a comprehensive approach to infection management in IBD patients, incorporating prevention, timely diagnosis, and appropriate treatment, is crucial to mitigate the impact of infections on patient health. Tailored clinical guidelines and individualized treatment plans are essential for effectively managing CMV, C. difficile, and Herpes Zoster infections in this vulnerable population.

[KASID-GEST Joint Symposium]

KGJS-2

Acute Severe Ulcerative Colitis: Integrating the Latest Evidence into Clinical Practice

Eun Mi Song
Department of Gastroenterology, Ewha Womans University Seoul Hospital, Korea

Ulcerative colitis (UC) is a chronic, relapsing, and remitting disease that causes inflammation in the colon. During the disease course, up to 25% of UC patients experience at least one severe flare-up of disease. Previous studies have indicated that 30% to 40% of patients with acute severe ulcerative colitis (ASUC) are at risk of needing a colectomy after one or more severe exacerbations, with 10% to 20% requiring colectomy at their first admission. Despite advancements in UC medications and overall declining colectomy rates, the risk of colectomy in ASUC patients has remained relatively unchanged in recent decades. Recent studies have suggested that the risk of colectomy is significantly lower in East Asian patients with ASUC, including those from Korea, compared to Western populations. Therefore, intensive medical treatment and careful monitoring are necessary for ASUC patients.

Traditionally, intravenous corticosteroids have been the first-line treatment for ASUC for nearly 50 years. However, approximately 30% to 40% of hospitalized ASUC patients do not respond to this treatment. In such cases, rescue therapy with cyclosporine or infliximab should be considered after evaluating the response to IV corticosteroids over a 3–5 day trial period. Cyclosporine, a calcineurin inhibitor, was first shown to be effective in ASUC patients almost three decades ago. Previous randomized controlled trials (RCTs) have reported short-term treatment response rates of 64% to 84% with an immediate colectomy rate of about 15%. Infliximab, another rescue therapy option for ASUC, has shown short-term treatment response rates of 66% to 84% and an immediate colectomy rate of about 10% in ASUC patients. RCTs comparing cyclosporine and infliximab in steroid-refractory UC patients have demonstrated no significant difference in efficacy or safety between the two treatments. Furthermore, meta-analyses have indicated similar outcomes between the two therapies, with infliximab associated with a significantly lower 12-month colectomy rate compared to cyclosporine. Regarding sequential rescue therapy following nonresponse to initial infliximab or cyclosporine, a systematic review has shown a short-term response in 62.4% of patients, with adverse events occurring in 23%. Therefore, the use of sequential therapy should be carefully considered in selected patients, weighing the benefits against the risks, including the need for colectomy.

Recently, small molecule agents such as tofacitinib and upadacitinib have emerged as promising options in ASUC due to their rapid onset of action. Timely decision-making without treatment delay and prompt consideration of rescue therapy, including surgical treatment, are crucial in managing ASUC.

[KASID-GEST Joint Symposium]

KGJS-3

Multidisciplinary Approach to Intraabdominal Abscesses in Crohn's Disease

Yoo Jin Lee
Internal Medicine, Keimyung University School of Medicine, Korea

Intra-abdominal abscesses (IA) occurs in approximately 10–30% of patients with Crohn's disease (CD). It can be associated with other CD related complications such as fistula (40%) and stenosis (51%). Patients with IA usually present to the emergency department with fever, abdominal pain and palpable masses and some cases can have a generalized sepsis. There are several treatment options for IA in CD. Traditionally, patients were treated with surgical drainage and enterectomy simultaneously. As percutaneous drainage became possible, the treatment strategy for IA shifted to non-surgical approach. Percutaneous drainage is very important because it allows time for the inflammation to resolve. This allows immediate surgery to be avoided. To use appropriate antibiotics, sample of drained fluid and send it for a microbiological test. The culture can reveal the type of microorganisms in the pus, allowing the optimization of the antimicrobial therapy. At the same time, it is necessary to optimize the patient's nutritional status, if possible, in collaboration with the nutrition team. Since the treatment success rate of percutaneous drainage varies from 50 to 95%, it is important to select an appropriate group of patients to be treated only with percutaneous drainage without surgical treatment. This must also take into account the risk of recurrence. If a patient develops septic shock or fails percutaneous drainage and antibiotic treatment, surgery should be considered immediately. Decision-making is complicated, especially when active CD is associated with an intra-abdominal abscess. Active disease requires medical treatment, but immune-suppressants are contraindicated in the presence of an abscess. Therefore, the role and timing of medical treatment and surgery should be discussed in a multidisciplinary setting with gastroenterologists, colorectal surgeons, and radiologists

[KASID-GEST Joint Symposium]

KGJS-4

Endoscopic Management of Crohn's Stricture: Timing, Techniques, and Outcomes

Chen-Wang Chang
Chang Gung University, Taiwan

Endoscopic management of Crohn's strictures has emerged as a valuable tool for treating intestinal narrowing caused by Crohn's disease. This approach offers a less invasive alternative to surgery and can effectively relieve symptoms and improve the quality of life for patients.

The optimal timing for endoscopic intervention in Crohn's strictures is still under investigation, but early intervention is generally favored to prevent complications such as bowel obstruction. Endoscopy is typically considered when patients experience refractory symptoms despite adequate medical treatment, such as abdominal pain.

Several endoscopic techniques are available for the management of Crohn's strictures, including balloon dilation, stricturotomy, and stent placement. The choice of endoscopic technique depends on factors such as the severity and location of the stricture. Endoscopic management of Crohn's strictures has been shown to effectively relieve symptoms and improve quality of life. Endoscopic procedures for Crohn's strictures are generally safe, but potential complications can include bleeding, perforation, and stent migration.

In conclusion, endoscopic management of Crohn's strictures is a valuable treatment option that can effectively relieve symptoms and improve quality of life. Early intervention is generally favored, and various endoscopic techniques can be employed depending on the characteristics of the stricture.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 15:40-17:10 I Room A

Symposium 4

MDT Case Discussion: Multidisciplinary Approach in Challenging Cases

Chairs

Bo-In Lee (The Catholic University of Korea, Korea)
Rupert Leong (University of Sydney, Australia)

[Symposium 4]

SY4-1

A 48-year-old Female Patient Presenting with Abnormal Colonoscopy Findings

Ji Eun Kim
Internal Medicine, Samsung Medical Center, Korea

- Age and Gender: 48-year-female

- Chief Complains: Abnormality of colonoscopic findings

- Present Illness: A new deep ulcer has developed at the previous site of inflammation seen on surveillance colonoscopy.

- Past History:
1994 Lt.sided Ulcerative colitis (A2E2)
Four years ago, the inflammation worsened to the transverse colon, but improved after steroid therapy and was tapered out. Remission was maintained with standard 5-ASA therapy.
3 years ago, due to poor bowel preparation, the cecum and ascending colon could not be observed during colonoscopy. Superficial ulcers and moderate endoscopic severity (MES 2) were found in the transverse and proximal colon.
2 years ago, ulcers and moderate endoscopic severity (MES 2) were observed in the ileocecal valve, cecum, and ascending colon during colonoscopy. High dose therapy with 5-aminosalicylic acid (5-ASA) was administered.
1 year ago, the patient reported hematochezia occurring once or twice a day. Colonoscopy revealed improvement in the previously observed ulcers in the proximal colon, with only ulcer scars remaining in the cecum, and some erosions observed in the rectum, indicating endoscopic improvement (MES 1)

- Family History: None

- Endoscopic and Radiologic Findings:
On November 20, 2023, colonoscopy revealed that most of the area around the cecum had scar-like mucosal changes; however, at the site of previous inflammation, there was mucosal hyperemic elevation on the periphery with central ulceration.

- Hospital Progress:
Endoscopic biopsy results of observed ulcers:
Atypical glands, in the background of chronic active colitis, suggestive of high grade dysplasia.
December 8, 2023, Attempted ESD -> ESD failure.
NBI and chromoendoscopy were performed to closely examine the dysplastic lesion.
The borders were not distinct, and when indigocarmine was applied, the lesion appeared to extend around a polypoid lesion at the cecal base, reaching to the appendiceal orifice. Attempts at submucosal injection did not elevate the depressive lesion, and the elevated areas in the cecum showed no color changes, appearing to cover the entire cecal base, suggestive of a neoplastic lesion -> Estimated as a widespread lesion due to the non-lifting sign, ESD was not performed. Only a repeat biopsy was conducted, and the examination was concluded.
ESD failure.
December 8, 2023, AP contrast CT:
Chronic inflammation sequela involving descending colon and sigmoid colon. No malignant-suspicious lesions or abnormal lymph nodes detected.
January 17, 2024, Surgery was done

[Symposium 4]

SY4-2

Case

Jeongkuk Seo
Chung-Ang University, Korea

[Symposium 4]

SY4-3

A 14-year-old Boy Presented with Weight Loss

Seo Hee Kim
Pediatrics, Chonnam National University Children's Hospital, Korea

- Age and Gender: 14-year-old, boy

- Chief Complains: Weight loss

- Present Illness: A 14-year-old boy presented with poor oral intake with abdominal discomfort. He had lost over 10% of his body weight in the past year. His vital signs were normal, but physical examination revealed abdominal tenderness in the right lower quadrant.

- Past History: None

- Family History: None

- Endoscopic and Radiologic Findings: The abdominal CT scan revealed multisegmental wall thickening of the terminal ileum and a 2-cm-sized abscess. A colonoscopy showed stenosis of the ICV valve and discrete ulceration of the entire colon, which confirmed the diagnosis of Crohn's disease.

- Hospital Progress: The boy started exclusive enteral nutrition. It showed improvement in symptoms. However, after nutritional therapy was discontinued, the abdominal abscess was aggravated. Then, we performed percutaneous drainage and prescribed anti-inflammatory drugs. Clinical symptoms and laboratory findings improved, but follow-up intestinal ultrasound and fecal calprotectin showed persistent inflammation. Shift to an anti-TNFa agent lead to normalization of growth and fecal calprotectin levels.

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APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 12 (Fri.), 15:40-17:10 I Room C

KASID-KSAR Joint Symposium

Bridging Specialties: Optimizing Diagnosis and Management through GI-Radiology Collaboration

Chairs

Kang-Moon Lee (The Catholic University of Korea, Korea)
Yong Eun Chung (Yonsei University, Korea)

[KASID-KSAR Joint Symposium]

KRJS-1

Treat-to-Target of Small bowel CD: How to Deal with Capsule and Enteroscopy?

Seong Ran Jeon
Institute for Digestive Research, Digestive Disease Center,
Soonchunhyang University College of Medicine, Seoul, Korea

The introduction of capsule endoscopy (CE) and device-assisted enteroscopy (DAE) and has dramatically changed the diagnostic approach and therapeutic decision making to small bowel diseases. CE allows painless endoscopic imaging of the entire small bowel, but it lacks the ability to obtain biopsy specimens and perform therapeutic intervention. On the other hand, DAE is more labor intensive and does not allow examination of the whole small bowel during one examination in most cases. DAE provides various therapeutic procedures such as hemostasis, polypectomy, stricture dilation, stenting and foreign body removal. The developments in CE and DAE have been paralleled by refinement in small bowel cross-sectional imaging (magnetic resonance enterography [MRE] or computed tomography enterography [CTE]) technologies.

Recently, it is widely accepted that treating to the target of endoscopic healing (EH) is associated with improved long-term prognosis.[1] Small bowel evaluation is warranted in all newly diagnosed patients with Crohn's disease (CD) as small bowel is involved in two-thirds of CD patients at diagnosis and approximately 10–30% of CD involved solitary small bowel.[2-4] The STRIDE-II has stated that alternative examinations in patients with CD can be CE or DAE (strength of recommendation 8.3 on a scale 1-10).[4] The following definitions prevailed in the systematic review and the Delphi group: for endoscopic response a > 50% decrease in the Simple Endoscopic Score in CD (SES-CD) or CD Endoscopic Index of Severity (CDEIS) and for endoscopic remission SES-CD ≤ 2 points or CDEIS < 3 and lack of ulcerations including aphthous ulcers.[4]

Common types of CE include the standard small bowel CE and colon CE. Recently, pan-enteric surveillance and application of colon capsule endoscopy and small-bowel colon capsule for CD have been reported.[5-6] The greatest concern with performing CE in patients with CD is capsule retention, but this can be overcome by performing cross-sectional imaging such as MRE or CTE and using patency capsules before performing the procedure.[8]

Unlike CE, DAE can be performed in patients with stenosis of the small bowel and has ability of biopsy for the differential diagnosis and therapy. CD-induced strictures may develop in the small bowel. Endoscopic small bowel dilation seems a safe and clinically useful alternative to repeated surgery. This method might prevent potential short bowel problems. Endoscopic balloon dilation is an option for short (<3-4 cm), non-inflammatory strictures mainly due to scar tissues.[9] Although complications are known to be rare and occur in <1% of diagnostic DAE procedures, they may be higher in patients with active CD.[10,11] In addition, the perforation risk (up to 3%) was higher if an intervention such as balloon dilation of strictures was carried out.[12-14] In 17% of CD patients the DAE procedure was unable to reach the target area.[15]

Recent advances in CE, DAE, and CT/MR enterography have facilitated a systematic approach toward evaluating in patient with CD. Although DAE is not a routine diagnostic procedure in patients with suspected CD, it can be considered for histologic confirmation of suspected CD imaging findings. Furthermore, recent years have driven by the demand of new goals in the management of IBD such as EH. In this time, we will discuss the use of CE and DAE for diagnosis, treatment and evaluating EH in patients with CD.

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[KASID-KSAR Joint Symposium]

KRJS-2

A Novel Cost-effective IBD Flare Management Pathway Utilising Rapid Access Intestinal Ultrasound and Nurse-led Triage Reduces Hospitalisation and Emergency Room Presentations

Jakob Begun[1,2,3], Richard Fernandes[1,2], Heidi Harris[1], Yoon-Kyo An[1,2,3]
[1]Gastroenterology, Mater Hospital Brisbane, Brisbane, Australia
[2]Inflammatory Bowel Disease, Mater Research, Brisbane, Australia
[3]Faculty of Medicine, University of Queensland, Brisbane, Australia

Background / Aim : Timely inflammatory bowel disease (IBD) flare treatment improves outcomes, but differentiation from other causes is challenging. We developed a novel IBD clinical care pathway (CCP) for early flare management, utilising nurse-led triage and objective assessment with rapid access intestinal ultrasound (RAIUS).
Methods : iData was collected from 15 November 2022 until 14 June 2023, including clinical outcomes, healthcare utilisation impact, clinical coding data, and patient satisfaction surveys. An IBD nurse triaged patients using a severity-based algorithm and given advice directly, referred for RAIUS, or considered for planned hospitalisation if severe symptoms (bypassing emergency department).
Results : There were 211 episodes of care (EOCs), with 407 initial and follow up encounters. Most (78%, n=165) EOCs were for flare symptoms (mild 41% (n=69), moderate 49% (n=80), severe 10% (n=16)). Of those with flare symptoms, 36% (n=59) had medication optimisation for active disease (5% (n=11) started steroids), 41% (n=67) reassured of remission, 12% (n=19) treated for constipation, 5% (n=8) referred for further investigations, 2% (n=3) electively admitted, and 3% (n=5) seen urgently in IBD clinic. RAIUS was performed in 56 EOCs (27%), showing active disease in 32% (n=18), response/remission in 43% (n=24), and faecal loading in 23% (n=13). Unplanned hospitalisation was avoided in 10% (n=20) EOCs, urgent clinic review avoided in 58% (n=123), and no direct impact in 32% (n=68), with a net saving of AUD$146,418 (Table 1). Clinical coding data showed lower hospital presentations (Figure 1). Only 7 patients (3%) had an unplanned hospital presentation within 30 days of CCP engagement.
Conclusion : Our novel CCP improved IBD care through timely assessment, with high patient satisfaction and cost savings. Better integration of nursing and intestinal ultrasound resources can improve IBD care.
Keywords : IBD, Inflammatory Bowel Disease, Intestinal Ultrasound, IBD Nurse

Figure 1: A line graph demonstrating a reduction in emergency department and hospital admissions.

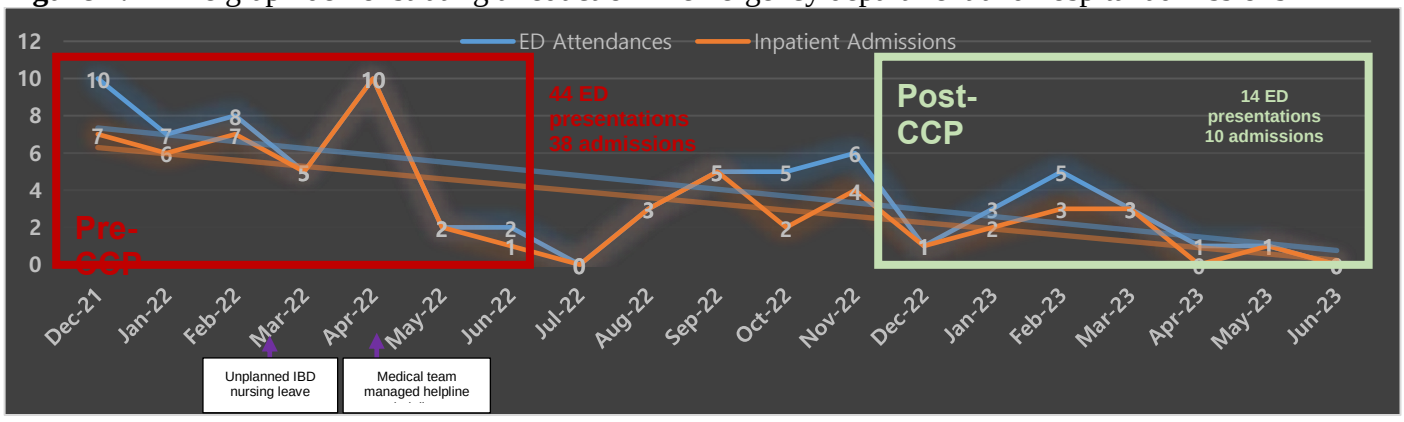

Figure 2: Detailed costs and savings associated with the CCP.

Costs		Savings	
IBD Clinical Nurse Consultant	$89,086.38	20 hospital admissions avoided x $11,545	$230,900.00
Administrative officer	$24,169.25	123 clinic overbookings avoided x $415.30	$51,081.00
Medical officer	$22,397.38		
TOTAL:	**$88841.90**	**TOTAL:**	**$282,071.00**
NET SAVING: AUD$146,417.99			

[KASID-KSAR Joint Symposium]

KRJS-3

A Real World Practice of Intestinal Ultrasound in the Monitoring of Disease Activity in Ulcerative Colitis

Kwang Woo Kim[1], Chan Hyung Lee[2], Tae Hyung Lee[1], Yoo Min Han[3], Hyun Jung Lee[2], Hyoun Woo Kang[1], Jong Pil Im[2], Ji Won Kim[1], Joo Sung Kim[2], Seong-Joon Koh[2], Seoul National University Inflammatory Bowel Disease Research Network (SIRN)

[1]Department of Internal Medicine, Seoul Metropolitan Government Seoul National University Boramae Medical Center, Seoul National University College of Medicine, Seoul, Korea

[2]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea

[3]Department of Internal Medicine, Healthcare Research Institute, Seoul National University Hospital Healthcare System Gangnam Center, Seoul, Korea

Background / Aim : Intestinal ultrasound (IUS) has become an essential monitoring tool in the clinical course of ulcerative colitis (UC). Previously known factors about UC have been considered regarding the associations with IUS. However, a few studies reported the associations between the findings of IUS and clinical aspects.

Methods : We simultaneously performed a multi-center, cross-sectional study of patients with UC who received IUS and clinical exams, including endoscopy. The primary endpoint was the association between endoscopic disease activity as Mayo endoscopic score (MES) and IUS finding as Milan ultrasound criteria (MUC). The secondary endpoint comprised the various clinical factors associated with MUC. Patients with MUC<6.2 were defined as low MUC group and the others as high MUC group.

Results : A total of 44 patients were enrolled in this study. Low- and high-MUC groups were 30 and 14, respectively. The median age in each group was 37 and 47 years old. The portion of male sex in each group was 60% and 79%. There were no significant differences in body mass index, onset age, disease duration, current medication such as 5-aminosalicylic acid, steroids, immunomodulators, and biologics and small molecules between the two groups. Compared with the low and high MUC groups, endoscopic remission was more significantly associated with the low MUC group than the high MUC group (33% vs. 0, p = 0.018). Other outcomes such as symptomatic remission, tolerable clinical activity defined as remission to mild disease activity, histologic remission, and biochemical response were not statistically but numerically higher in the low MUC group than the high MUC group.

Conclusion : Low MUC of IUS in the patients with UC showed significant clinical association, such as endoscopic remission and various clinical aspects. This study is now ongoing prospective research, and further investigation into the relationship between IUS and clinical outcomes of UC will elicit robust results.

Keywords : Ulcerative Colitis, Intestinal Ultrasound, Monitoring, Endoscopic Remission

Table 1. Baseline clinical characteristics

Clinical characteristics	Low MUC (n = 30)	High MUC (n = 14)	*p*-value
Age (years)	37.01 (25.19-52.56)	47.00 (33.96-64.50)	0.068
Male sex	18 (60)	11 (79)	0.314
BMI (kg/m^2)	23.06 (21.09-24.80)	24.22 (20.80-25.80)	0.537
Smoking, current	0 (0)	0 (0)	NA
Onset age (years)	36.49 (25.18-50.88)	46.50 (33.94-61.10)	0.074
Disease duration (months)	1.3 (0.6-20.0)	1.5 (0.2-10.5)	0.319
Current medication			
5-ASA	25 (83)	13 (93)	0.647
Steroid	6 (20)	3 (21)	1.000
Immunomodulator[a]	1 (3)	2 (14)	0.234
Biologics and small molecules	4 (13)	1 (7)	1.000

The values are presented as median ± interquartile range or number with a percentage.

MUC, Milan ultrasound criteria; BMI, body mass index; 5-ASA, 5-aminosalicylic acid; NA, not applicable.

[a] Defined as azathioprine, methotrexate.

Table 2. Clinical outcomes according to the MUC category

Outcomes	Low MUC (n = 30)	High MUC (n = 14)	*p*-value
Endoscopic remission[a]	10 (33%)	0 (0)	0.018
Symptomatic remission[b]	15 (50%)	4 (29%)	0.211
Tolerable clinical activity[c]	27 (90%)	9 (64%)	0.087
Histologic remission[d]	4 (13%)	1 (7%)	0.650
Biochemical response			
ESR[e]	14 (47%)	4 (29%)	0.503
CRP[f]	26 (87%)	10 (71%)	0.242
Fecal calprotectin[g]	14 (47%)	3 (21%)	0.111

The values are presented as numbers with a percentage.
MUC, Milan ultrasound criteria; ESR, erythrocyte sedimentation rate; CRP, C-reactive protein.
[a] Defined as Mayo endoscopic score = 0
[b] Defined as partial Mayo score < 2
[c] Defined as Mayo score < 6, remission to the mild category
[d] Defined as Nancy histologic index = 0
[e] Defined as ESR < 10 mm/hr
[f] Defined as CRP < 0.5 mg/dL
[g] Defined as fecal calprotectin < 100 ug/g

[KASID-KSAR Joint Symposium]

KRJS-4

Defining Transmural Healing of Crohn's Disease: The Role of Cross-sectional Imaging Modalities

Myung-Won You
Department of Radiology, Kyung Hee University Hospital, Korea

Although endoscopic healing (EH) is currently the gold standard in treat-to-target therapeutic approach, it may not sufficiently reflect the transmural and extramural inflammatory burden of CD. Transmural healing (TH) is a new concept in CD management, which is defined as the resolution of trans- and potentially extramural-disease-related alterations. TH is usually assessed by cross-sectional imaging(CSI) techniques including CT enterography(CTE), MR enterography(MRE), and intestinal ultrasound (IUS), and achievement of TH has been associated with significant improvements in disease-related outcomes. However, definitions of TH are various across the studies and there is no validated and globally accepted definition to date.

*** Definition of TH by IUS**

- BWT≤3 mm: most common definition not only on IUS but also on CTE/MRE, more reliable and quantifiable than other parameters

  # potential limitation of BWT: exclusion of cases of inactive, longstanding chronic disease where thickening persists given irreversible wall changes secondary to fibrosis or muscular hypertrophy/-plasia
- BWT≤3 mm+ normalized doppler signal
- Normalized all four parameters (BWT≤3 mm+ normal doppler signal+ no loss of wall layering+ normal mesenteric fatty proliferation)

*** Definition of TH by MRE/CTE**

- BWT≤3 mm without increased mural enhancement
- MaRIA score<7, Clermont score<8.4, ≥50% decrease in simple enterographic activity score for CD
- normalization of inflammatory signs, no extraenteric sign, no complications

*** Variable concept of healing and TH**

- EH without TH: poor agreement between EH and TH, showing that active inflammation beyond the mucosa could persist even in patients with EH(30%, Zacharopoulou et al. 2020)
- TH without EH: mild mucosal disease with TH (8.9%, Choi et al. 2022), MRE cannot detect subtle and early mucosal erosions and ulcers, which can only be detected by through ileocolonoscopy
- partial TH: partial improvement of parameters indicating inflammatory signs(BWT ≤3 mm only or normalized BWT +Doppler signal)
- complete TH(=intestinal healing, deep healing): EH+TH, improved all the inflammatory signs

*** Clinical significance of TH**

-TH may be more difficult to reach than EH; needs a longer period of therapy (>1 year). TH could probably be achieved earlier but only if aggressive therapy is used and applied in a timely manner.

-The most accurate method to assess TH? both MRE and IUS are the most appropriate techniques to monitor CD patients after treatment because they are non-invasive, accurate, and radiation-free

- The proportion of patients reaching TH seems to vary between 5~50% depending on time and frequency of assessment, therapeutic regimen, and segment of the bowel, with colonic disease exhibiting greater likelihood of healing faster compared with ileum

*** Prognostic significance of TH**

- Patients with TH (EH+ imaging remission): less surgery, hospitalization, therapy escalation rates in long-term follow-up than only EH (Fernandes et al.2017)
- Only EH or TH were not associated with long term better remission, but intestinal healing (EH+TH) significantly favoured long term remission (Eder et al. 2016)

Targeting to TH may enable stricter disease monitoring with a series of non-invasive CSI examinations followed by frequent therapeutic change, and finally change the disease course, preventing irreversible bowel damage and poor outcome.

[KASID-KSAR Joint Symposium]

KRJS-5

MRI for Staging Rectal Cancer: Current Role and Challenges in Clinical Practices

Nieun Seo
Department of Radiology, Severance Hospital, Yonsei University College of Medicine, Korea

Over the recent decades, several key advances for the management of rectal cancer had been made, including adopting total mesorectal excision as the standard surgical method, implementation of neoadjuvant chemoradiotherapy for patients with a high risk for recurrence, use of organ preservation strategy for patients with clinical complete response, and introduction of total neoadjuvant therapy for patients with a high risk of systemic recurrence.

In these respects, rectal MRI plays an essential role in diagnosis and management of rectal cancer. In baseline MRI, it is important to identify not only the clinical TNM staging, but also other potential risk factors for poor prognosis which require neoadjuvant treatment. These risk factors include involvement of circumferential resection margin, extramural depth of tumor invasion (> 5mm), advanced lower rectal cancer, positive extramural venous invasion, and lateral pelvic lymph node involvement. In restaging MRI, the key role is evaluation of tumor response after neoadjuvant treatment. First, clinical information and baseline MRI should be reviewed. Then, evaluation of primary tumor response, relationship between the tumor and adjacent organs, lymph node response, extramural venous invasion or tumor deposit is performed. Predicting complete response after neoadjuvant therapy is an important and challenging issue.

In this lecture, we will discuss the essential MRI items for deciding management strategy in patients with rectal cancer, and current role and challenges of rectal MRI in clinical practices.

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SHAPING THE FUTURE OF
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April 13 (Sat)

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SHAPING THE FUTURE OF
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April 13 (Sat.), 07:30-08:00 I Room B

Breakfast with Master 4

Takeda

Discovering Optimal Approaches for Lifelong Care in UC

Chair

Kyu Chan Huh (Konyang University, Korea)

[Breakfast with Master 4 - Takeda]

BM4-1

Optimal Position of Advanced Therapies to Improve Long-term Outcomes in UC

Sang Hyoung Park
Department of Gastroenterology and Inflammatory Bowel Disease Center,
University of Ulsan College of Medicine, Asan Medical Center, Korea

In the last two decades, eight advanced therapy agents have been approved for the treatment of moderate-to-severe ulcerative colitis (UC) in Korea. With the increasing number of treatment options, it has become crucial to determine the optimal positioning of each agent to achieve better treatment outcomes. However, management guidelines provide somewhat conflicting recommendations on the best positioning strategy. Therefore, this lecture will primarily focus on the positioning of advanced therapies for UC based on the latest real-world evidence, with a specific emphasis on Vedolizumab (VDZ). VDZ is the only anti-integrin agent available in the market and can be considered a versatile option for most UC patients. It has shown promising treatment outcomes, particularly in UC-naïve patients.

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SHAPING THE FUTURE OF
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April 13 (Sat.), 08:30-10:00 I Room A

Symposium 5

Cutting-edge Issues in IBD

Chairs

Jae Hee Cheon (Yonsei University, Korea)
Katsuyoshi Matsuoka (Toho University Sakura Medical Center, Japan)

[Symposium 5]

SY5-1

Prevention and Early Detection of IBD

Joyce Wing Yan Mak
Medicine and Therapeutics, The Chinese University of Hong Kong, Hong Kong, China

There has been a global rapid increase in the incidence of IBD over the past few decades, however, its etiology remains largely unknown. Current evidence suggests that IBD results from a complex interplay between genetic susceptibility genes, gut microbiome and the environment, resulting in an increased response towards microbial and self-antigens, followed by development of pre-clinical intestinal inflammation as a precursor to overt clinical disease. Detecting and managing IBD at early stage can be an effective strategy to avoid disease progression and development of complications. In this talk, I will share the current evidence on detection of pre-clinical phase of IBD, the prediction model of IBD-related complications. Hopefully, through early screening and intervention, the disease course of IBD can be reversed, attenuated or even prevented.

[Symposium 5]

SY5-2

Dilatations with Ustekinumab in Stricture Therapy Management in Crohn's Disease, a Multicentre Study

John Chetwood[1,2], Sri Selvaratnam[1], Arteen Arzivian[3], Pranita Dhanji[1], Sudarshan Paramsothy[1,2,3], Rupert Leong[1,2,3]

[1]Department of Gastroenterology, Concord Repatriation General Hospital, Sydney, Australia
[2]Sydney Medical School, University of Sydney, Sydney, Australia
[3]Department of Gastroenterology, Macquarie University Hospital, Sydney, Australia

Background / Aim : Symptomatic stricturing Crohn's disease (CD) represents a challenging treatment cohort with a high proportion requiring surgery, though recently endoscopically-delivered balloon dilation (EDBD) with medical therapy has shown promise in surgery-free management. There are limited data evaluating the performance of different medications in conjunction with EDBD, particularly for newer agents such as ustekinumab.

Methods : We performed a multicentre retrospective cohort study of all adult patients who underwent CD stricture dilation between 2013 and 2023. Strictures were subclassified according to their use of biological agent. Co-primary outcomes were surgery-free medication persistence, and clinical success (1-year of medication persistence without surgery or requirement for a subsequent EDBD after the most recent EDBD). Secondary outcomes included short-term success (1-year of medication persistence without surgery after the index EDBD), and adverse events. Propensity-score matching was used to address baseline cohort imbalance.

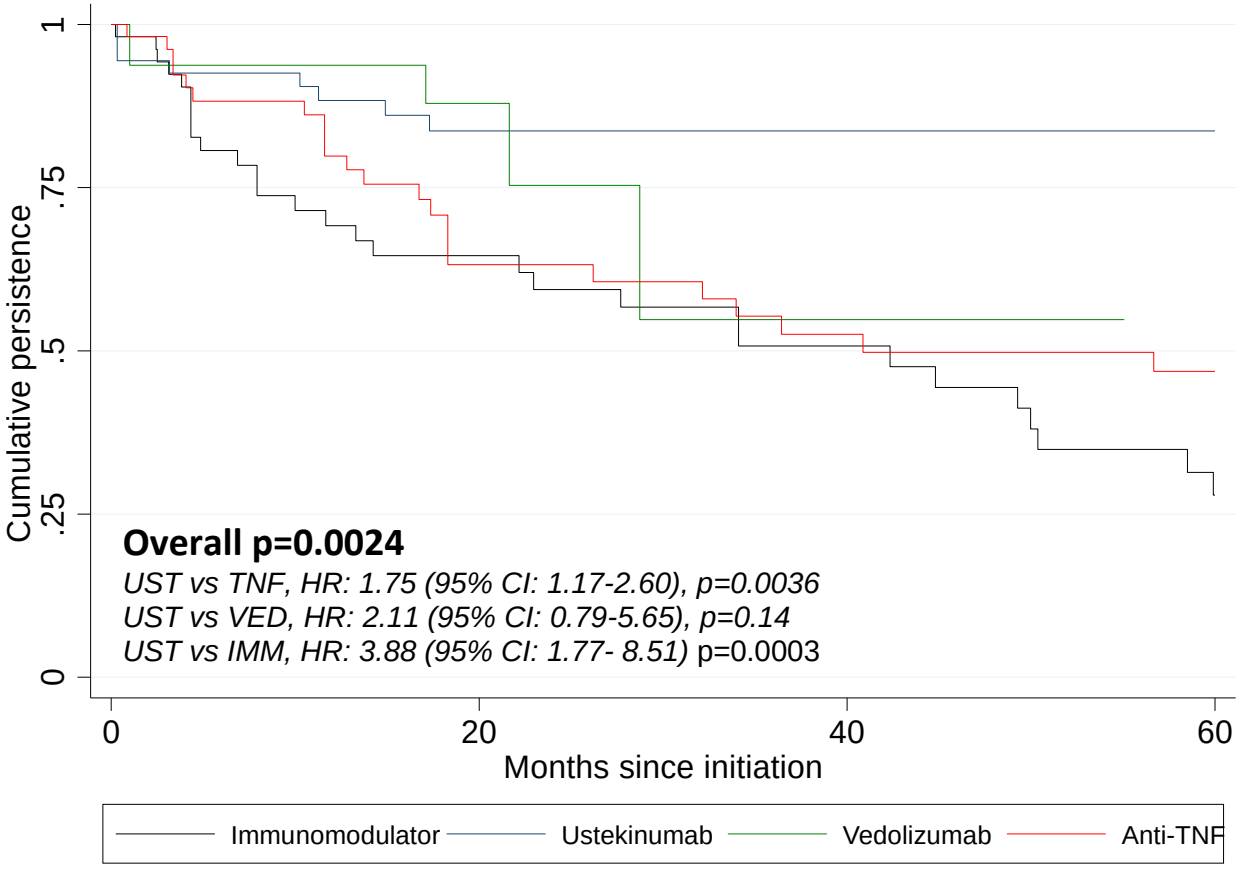
Results : A total of 525 dilations were performed on 199 strictures on 94 patients. Per intention to treat per stricture, current medical therapies were: immunomodulator monotherapy in 54/199 (27.1%), ustekinumab in 58/199 (29.1%), vedolizumab in 33/199 (16.6%) and anti-TNF in 54/199 (27.1%). Ustekinumab was associated with a greater clinical and short-term success rate than anti-TNF (both p=0.03), and with greater clinical success than vedolizumab (p=0.002).On multivariate analysis, stricture length >4cm, perianal disease phenotype and use of a non-ustekinumab agent predicted poorer surgery-free medication persistence. Using a propensity score matched analysis adjusted for stricture type, stricture location, stricture length, fistulising and perianal behaviour, and bio-experienced status, ustekinumab had superior clinical success and surgery-free persistence to anti-TNF (p=0.026 and p=0.021 respectively).

Conclusion : This multicentre observational study confirms the safety and efficacy of EDB with immunomodulation for the management of stricturing CD. Ustekinumab was associated with the highest clinical success and surgery-free persistence rate, and may be under-utilized in the current treatment paradigm.

Keywords : Inflammatory Bowel Disease, Ustekinumab, Strictures, Crohn's Disease, Endoscopically Delivered Balloon Dilatation

Figure 1: Surgery-free medication persistence by medication class

a) Overall



b) Propensity-score matched analysis

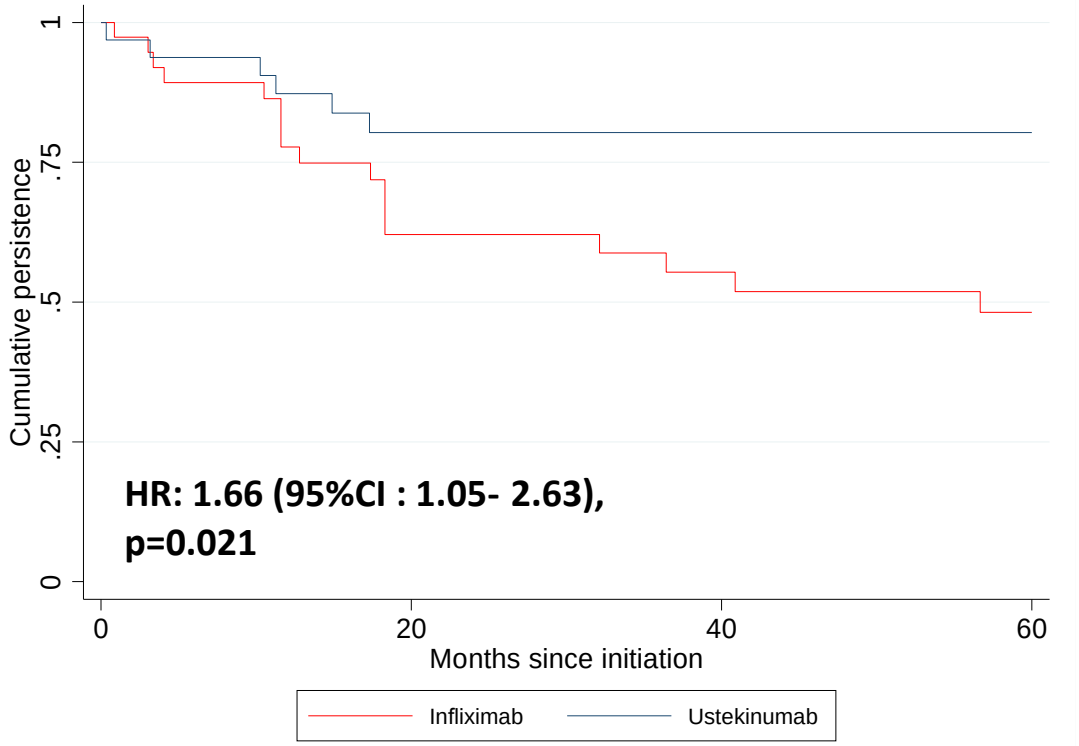


Table 2: Outcomes with endoscopically-delivered balloon dilatation

	ALL	Immunomodulator monotherapy	Ustekinumab	Vedolizumab	Anti-TNF	p (overall)	p (TNF vs UST)
Number dilatations (median, IQR)	2 (1-3)	2 (1-3)	2 (1-3)	2 (2-3)	2 (1-3)	0.44	0.28
Number dilatations if achieved clinical success (median, IQR)	1 (1-2)	1.5 (1-3)	1 (1-2)	1 (1-4)	2 (1-2)	0.73	0.86
Total days undergoing endoscopic dilatations if clinical success achieved (median, IQR)	133 (1-133)	133 (1-644)	28 (1-455)	245 (84-559)	66 (1-395)	0.47	0.53
Clinical success (1 year after most-recent EDBD) (n, %)							
Clinical success	67/123 (53.3%)	22/42 (52.4%)	24/30 (80.0%)	3/11 (27.3%)	18/40 (45.0%)	**0.05**	**0.03**
Clinical failure	56/123 (46.7%)	20/42 (47.6%)	6/30 (20.0%)	8/11 (72.7%)	22/40 (55.0%)		
Medication failure	38 (30.9%)	17 (40.5%)	2 (6.7%)	4 (36.4%)	15 (37.5%)		
Surgery	18 (14.6%)	3 (7.1%)	4 (13.3%)	4 (36.4%)	7 (17.5%)		
Censored (Follow up <1 year since last EDBD without event)	76	12	28	22	14		
Short-term follow up (1 year post index EDB) (n,%)							
Clinical success	129/157 (82.2%)	30/45 (66.7%)	44/46 (95.7%)	16/18 (88.9%)	39/48 (81.3%)	**0.003**	**0.03**
Clinical failure	28/157 (17.8%)	15/45 (33.3%)	2/46 (4.3%)	2/18 (11.1%)	9/48 (18.8%)		
Medication failure	23 (14.6%)	13 (28.9%)	2 (4.3%)	2 (11.1%)	23 (47.9%)		
Surgery	5 (3.2%)	2 (4.4%)	0	0	5 (10.4%)		
Censored (Follow up <1 year since index EBD without event)	42	9	12	15	6		
Technical Success							
Successful (n/total dilatations, %)	452/525 (86.1%)	86/119 (88.2%)	131/140 (93.6%)	73/85 (85.9%)	137/181 (75.7%)	**0.012**	**0.0025**
All adverse events (n, % per colonoscopy)	20/344 (5.8%)	3/99 (3.0%)	3/89 (3.4%)	3/35 (8.6%)	11/121 (9.1%)	0.16	0.10
Serious adverse event (n, % per colonoscopy)	5/347 (1.3%)	0/99 (0.0%)	3/89 (3.4%)	0/35 (0.0%))	2/121 (1.7%)	-	0.65

Key: IQR: interquartile range, EDBD: endoscopically-delivered balloon dilation

Table 3: Adverse predictors of surgery-free medication persistence in stricturing Crohn's disease with endoscopically-delivered balloon dilatation

Variable	Univariate			Multivariate		
	HR	95% CI	P value	aHR	95% CI	P value
Age (years)	0.99	0.97-1.00	0.072	0.99	0.972-1.01	0.193
Female gender	1.00	0.64-1.57	0.99			
Current smoking status	1.40	0.74-2.66	0.30			
Multiple strictures	1.06	0.65-1.74	0.80			
Non-anastomotic stricture	1.36	0.82-2.26	0.23			
Colonic stricture location (Colonic vs Ileal)	1.01	0.69-1.49	0.96			
Stricture length initially >4cm	1.73	1.02-2.95	0.042	2.11	1.22-3.65	0.007
Size of first dilatation (mm)	0.97	0.92-1.04	0.42			
Pre-stenotic dilatation on initial colonoscopy*	1.12	0.68-1.84	0.64			
Fistulising disease	1.32	0.84-2.07	0.23			
Perianal disease	2.86	1.44-5.65	0.003	2.49	1.19-5.21	0.016
Bio-experienced status	1.30	0.83-2.06	0.25			
Use of a non-ustekinumab agent	3.26	1.56-6.80	0.002	3.22	1.54-6.76	0.002

Key. HR: hazard ratios, aHR: adjusted hazard ratios, CI: confidence intervals, cm: centimetres
* >3cm bowel lumen diameter before the stenotic segment.

[Symposium 5]

SY5-3

Multimorbidity and Disease Trajectories in Patients with Inflammatory Bowel Disease: Insights from Observational and Genetic Analyses

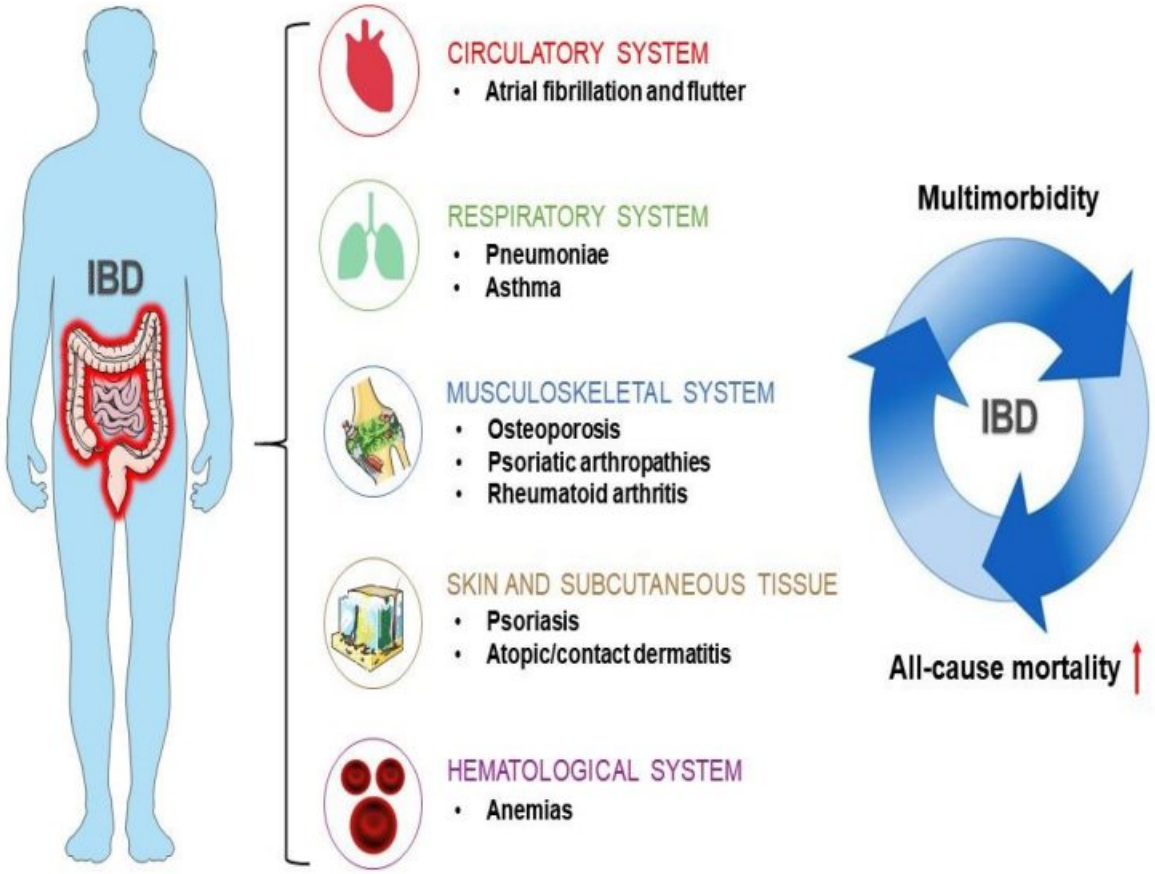
Fangyuan Jiang[1], Jianhui Zhao[1], Jie Chen[1], Lijuan Wang[1,2], Shuai Yuan[3], Kalla Rahul[4], Judith Wellens[5,6], Jan Krzysztof Nowak[7], Susanna C Larrson[3,8], Jonas F. Ludvigsson[9,10], Zhanju Liu[11], Jack Satsangi[6,12], Evropi Theodoratou[2,13], Xue Li[1,2]

[1]Department of Big Data in Health Science School of Public Health and The Second Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, China
[2]Centre for Population Health Sciences, Usher Institute, University of Edinburgh, Edinburgh, United Kingdom
[3]Unit of Cardiovascular and Nutritional Epidemiology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden
[4]Department of Gastroenterology, Royal Infirmary of Edinburgh, University of Edinburgh, Edinburgh, United Kingdom
[5]KU Leuven Department of Chronic Diseases and Metabolism, Translational Research Center for Gastrointestinal Disorders (TARGID), Leuven, Belgium
[6]Translational Gastroenterology Unit, Nuffield Department of Medicine, Experimental Medicine Division, University of Oxford, John Radcliffe Hospital, Oxford, United Kingdom
[7]Department of Paediatric Gastroenterology and Metabolic Diseases, Poznan University of Medical Sciences, Poznan, Poland
[8]Unit of Medical Epidemiology, Department of Surgical Sciences, Uppsala University, Uppsala, Sweden
[9]Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden
[10]Department of Pediatrics, Orebro University Hospital, Orebro, Sweden
[11]Center for IBD Research, Shanghai Tenth People's Hospital, Tongji University School of Medicine, Shanghai, China
[12]Institute of Genetics and Molecular Medicine, University of Edinburgh, Edinburgh, United Kingdom
[13]Cancer Research UK Edinburgh Centre, MRC Institute of Genetics and Molecular Medicine, University of Edinburgh, Edinburgh, United Kingdom

Background / Aim : The multi-morbidity pattern of inflammatory bowel disease (IBD) remains under-explored. We integrated both observational and genetic data to elucidate multisystem comorbidities and health consequences of IBD.
Methods : Phenome-wide association study (PheWAS) based on the international classification of disease (ICD)-diagnosed IBD was conducted to explore its associations with 1,053 unique clinical outcomes in the UK Biobank. Disease trajectory analyses were implemented to illustrate sequential patterns of IBD-related comorbidities. The associations of genetic liability to IBD proxied by a polygenic score with identified clinical outcomes were examined to strengthen causality (N=385,917). To investigate potential shared genetic bases and causality, we performed a cross-trait linkage disequilibrium score regression (LDSC) and two-sample Mendelian randomization (TSMR) analysis using the FinnGen biobank (N=377,277). The impact of IBD subtypes and the age at diagnosis were also evaluated in sensitivity analyses.
Results : A total of 5,782 cases with IBD (3,940 cases with UC and 1,800 cases with CD) were diagnosed at baseline in the UK Biobank. Observational PheWAS revealed elevated risks of all-cause mortality with HRs of 1.34 (95%CI=1.24-1.45, P<0.001), 1.61 (95%CI=1.41-1.83, P<0.001) and 1.22 (95%CI=1.10-1.34, P<0.001) for patients with IBD, CD or UC respectively. Increased mortality risk was noted across pediatric, early-onset, and later-onset IBD patients. Sequential patterns of IBD-related comorbidities were primarily found in cardiometabolic, respiratory, digestive and autoimmune diseases. The polygenic PheWAS, LDSC and TSMR analyses supported both strong genetic correlations and causal associations of IBD with immune-mediated (notably psoriatic arthropathies, psoriasis, dermatitis, asthma) as well as non-autoimmune diseases (pneumonia, anemias, and renal failure).

Conclusion : Our observational and genetic analyses suggest multisystem comorbidities and consequences of IBD, highlighting the need for multidisciplinary clinical management and investigation of shared biologically or genetically regulated mechanisms in the pathogenesis of IBD.

Keywords : Inflammatory Bowel Disease, Multisystem Comorbidities, PheWAS, Disease Trajectories



Graphic Abstract: Multi-system Comorbidities and Health Consequences of IBD.

[Symposium 5]

SY5-4

Bowel Strictures in Crohn's Disease: How to Prevent and Treat in Clinical Practice

Jun Hwan Yoo
Gastroenterology, CHA University, Korea

Bowel strictures represent a significant complication in Crohn's disease, affecting up to 25% of patients at diagnosis and over 50% during their lifetime. These strictures may consist of inflammation, fibrosis, or smooth muscle expansion, often combining these elements. Diagnosis and differentiation between inflammatory and fibrotic strictures are pivotal, requiring endoscopic evaluation to exclude malignancy and imaging studies, notably magnetic resonance enterography (MRE) and intestinal ultrasound (IUS), to assess stricture characteristics and differentiate between fibrosis and inflammation. The management of Crohn's strictures varies based on their nature and anatomical features, encompassing medical therapy, primarily biologics, endoscopic interventions, and surgery. Decision-making regarding treatment options is supported by scoring systems such as the BACARDI risk model and the CREOLE prognosis score, which guide the choice between medical and surgical approaches. Anti-TNF therapy combined with an immunomodulator represents the most effective medical strategy, whereas endoscopic balloon dilatation (EBD) and surgery are reserved for cases unresponsive to medical treatment or presenting significant obstructive symptoms. Preventive strategies focus on a treat-to-target approach based on initial risk stratification to mitigate the progression to stricturing disease. This review aims to provide a comprehensive overview of the detection methods and treatment strategies for bowel strictures in Crohn's disease, emphasizing the importance of personalized management plans to optimize patient outcomes.

[Symposium 5]

SY5-5

Caring Women with IBD and Their Children

Shu-Chen Wei
Internal Medicine, National Taiwan University Hospital and College of Medicine, Taiwan

The most prevalent age group for IBDs is the young age group, which affecting them during their reproductive years. Depending on the type of IBD, severity and surgical or medical management, which can negatively affect the pregnancy. C-sections and the risk of low-birth-weight babies are higher in women with IBD, independent of active/inactive disease, while preterm birth, stillbirth and miscarriage are associated with disease activity. Moreover, it has been reported that IBD patients have more voluntary childlessness. Decreasing birth rate becomes an important issue recently, especially in some countries like South Korea and Taiwan. Therefore, taking care of childbearing age IBD women and their foreseen children is an important and practical issue.

Consultation before the pregnancy plan in advance is the first step to avoid inappropriate management that resulting in increasing the risk of disease flare-up and unfavorable birth outcomes. Education the childbearing age patients with reassurance the safety of medications as well as the extremely low risk of transmitting IBD to their children might be helpful to decrease the voluntary childless. There are already recommendations about the conventional therapies as well as the biologics usage during the pregnancy period along with the vaccination program for their newborns. Nonetheless, there’s the knowledge gap about using small molecules during pregnancy and breastfeeding. Currently, “Pregnancy and IBD” consensus is under development by a global consensus group. Hopefully, we will see the result later this year.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 13 (Sat.), 08:30-10:00 I Room B

Symposium 6

Innovations in Artificial Intelligence for Intestinal Research

Chairs

Dong Kyung Chang (Sungkyunkwan University, Korea)
Kazuo Ohtsuka (Tokyo Medical and Dental University Hospital, Japan)

[Symposium 6]

SY6-1

Development of AI-assisted Colonoscopy in Inflammatory Bowel Disease

Kazuo Ohtsuka
Tokyo Medical and Dental University, Japan

Mucosal healing is an important target of treatment for inflammatory bowel disease (IBD). Endoscopy has an essential role for the assessment of the mucosa. However, inter- and intra- observer differences often occur because of human nature. Furthermore, specialists for IBD endoscopy are not common. Applications of artificial intelligence (AI) will change this situation.

The first approved AI for IBD in Japan is EndoBRAIN-UC. This evaluates ulcerative colitis (UC) activity, with 74% sensitivity, 97% specificity, and 91% accuracy for determining the histological activity, and its reproducibility was perfect. This system uses Endocytoscopy that provides 520-fold ultramagnifying images. A recent report presented that it accurately stratifies the risk of recurrence in UC patients with clinical remission.

An AI system using conventional white light image has been also studied. We developed a system, a deep neural network system based on colonoscopic images of ulcerative colitis (DNUC) that assesses mucosal healing and histological activity from endoscopic images. In addition, it was possible to predict the events such as hospitalization, surgery, steroid use, and relapse. Then we developed and applied it to video colonoscopy. In a prospective evaluation, the sensitivity of histological remission was 97.9% and the specificity was 94.6%.

AI will have many roles in the fields of endoscopy for IBD. It will reduce the needs for biopsies, processing of specimens and requirements for specialized pathologists. It will help improve the quality of training of IBD endoscopy. As a characteristic of AI, unlike human doctor, it is not affected by fatigue or the previous result, and the definitive results can always be obtained. Therefore, AI will have important roles for central reading of clinical trials. AI-assisted endoscopy for IBD will be widely spread in the future.

[Symposium 6]

SY6-2

Impact of a Real-time Computer-aided Polyp Characterization in Screening Colonoscopy Performed by Trainees versus Experienced Endoscopists: A Randomized Controlled Trial

Aniwat Saleepol[1], Satimai Aniwan[1,2], Kasenee Tiankanon[1], Natanong Kongtub[1], Santi Kulpatcharapong[1], Peerapon Vateekul[2], Pinit Kullavanijaya[1], Rungsun Rerknimitr[1]
[1]Division of Gastroenterology, Chulalongkorn University and King Chulalongkorn Memorial Hospital, Thai Red Cross Society, Gastrointestinal Endoscopy Excellence Center, Bangkok, Thailand
[2]Department of Computer Engineering, Faculty of Engineering, Chulalongkorn University, Bangkok, Thailand

Background / Aim : Data on the efficacy of computer-aided optical detection in clinical practice is robust, but data on computer-aided optical diagnosis (CADx) for experts and trainees is still lacking. We aimed to evaluate the accuracy, specificity, and negative predictive value (NPV) of CADx during real-time colonoscopy screening compared to standard colonoscopy performed by experts and trainees.
Methods : This randomized controlled study enrolled subjects undergoing screening colonoscopy, randomly assigned to CADx-assisted (CAD-EYE system; Fujifilm Co, Japan) or standard colonoscopy with magnified image-enhanced endoscopy. Diagnosis made by CADx or endoscopist and recorded as either neoplasia or hyperplastic polyp. Primary outcome was the accuracy of neoplasia detection with a size ≤10 mm. Secondary outcome assessed the influence of endoscopist experience on neoplasia detection accuracy, specificity, and NPV.
Results : Between 7/22-8/23, 831 subjects (female 52% and mean age 64±7 years) were enrolled. 423 were randomized to undergo CADx, 408 underwent standard colonoscopy. Two-thirds of colonoscopies 539 (64.9 %) were performed by trainees. In CADx group, 572 polyps sized ≤10 mm were resected, 485 (84%) confirmed as neoplasia. In standard group, 459 polyps sized ≤10 mm were resected, 380 (82.7%) confirmed as neoplasia. The accuracy for neoplasia detection with CADx was 83.7%, compared to 79.5% with standard group (p = 0.08). Subgroup analysis for trainees, CADx enhanced accuracy to 83.7%, compared to standard group at 76.8% (p=0.03). Colonoscopies performed by experts revealed comparable accuracy (83.8% vs. 83.2%, p=0.87). CADx increased specificity significantly (p <0.01, Table 1). NPV in CADx was significantly higher than standard group (47.3% vs. 38.1%, p <0.01), but not in trainee performance (41.4% vs. 35.7%, p = 0.15), (Table 1).
Conclusion : CADx showed improved accuracy in trainees, matched to experienced endoscopists, but fell short in NPV thresholds for widespread adoption, indicating the need for refinement for a better model.
Keywords : Computer-aided Optical Diagnosis, Screening Colonoscopy, Adenoma, Characterization

Table 1: Comparative Diagnostic Performance for Neoplasia Size ≤10 mm - Computer-Aided Optical Diagnosis System vs. Standard Colonoscopy

Diagnostic yield of neoplasia size ≤10 mm.	**CADx (n = 572 polyps)**	**Standard colonoscopy (n = 459 polyps)**	**P-value**
Accuracy (95% CI)	83.7 (80.5 – 86.7)	79.5 (75.5 – 83.1)	0.08
Sensitivity (95% CI)	87.8 (84.6 – 90.6)	89.7 (86.2 – 92.6)	0.34
Specificity (95% CI)	60.9 (49.9 – 71.2)	30.4 (20.5 – 41.8)	**<0.01**
Negative predictive value (95% CI)	47.3 (40.1 – 54.6)	38.1 (28.2 – 49.0)	**<0.01**
Subgroup of attending staff	CADx (n = 228 polyps)	Standard colonoscopy (n = 192 polyps)	P-value
Accuracy (95% CI)	83.7 (78.3 – 88.3)	83.2 (77.1 – 88.3)	0.87
Sensitivity (95% CI)	86.6 (80.9 – 91.2)	92.4 (87.0 – 96.0)	0.05
Specificity (95% CI)	70.7 (54.5 – 83.9)	32.1 (15.9 – 52.4)	**<0.01**
Negative predictive value (95% CI)	53.7 (43.4 – 63.7)	42.9 (25.9 – 61.7)	**0.03**
Subgroup of trainees	CADx (n = 344 polyps)	Standard colonoscopy (n = 267 polyps)	P-value
Accuracy (95% CI)	83.7 (79.4 – 87.5)	76.8 (71.2 – 81.7)	**0.03**
Sensitivity (95% CI)	88.6 (84.4 – 92.0)	87.6 (82.4 – 91.6)	0.70
Specificity (95% CI)	52.2 (37.0 – 67.1)	30.0 (17.9 – 44.6)	**<0.01**
Negative predictive value (95% CI)	41.4 (31.7 – 51.8)	35.7 (24.3 – 49.1)	0.15

CI, confidence interval; CADx, computer-aided optical diagnosis

[Symposium 6]

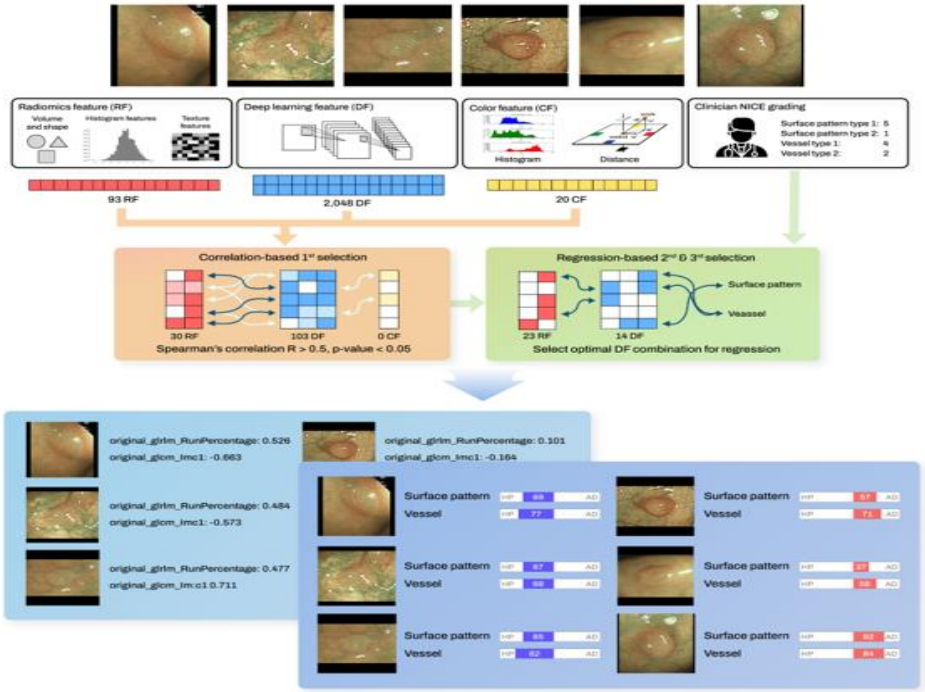
SY6-3

Development of Explainable Computer-aided Diagnosis System for Colonoscopy Optical Diagnosis using Interpretable Features

Youmin Shin[1,2], Jung Ho Bae[3], Changwoo Lee[1,4], Jinbae Park[5], Soonwhan Kang[5], Gyuseon Song[5], Jung Kim[3], Young-Gon Kim[1,6]

[1]Department of Transdisciplinary Medicine, Seoul National University Hospital, Seoul, Korea
[2]Interdisciplinary Program in Bioengineering, Seoul National University, Seoul, Korea
[3]Department of Internal Medicine and Healthcare Research Institute, Healthcare System Gangnam Center, Seoul National University Hospital, Seoul, Korea
[4]Department of Medical Device Development, College of Medicine, Seoul National University, Seoul, Korea
[5]Research & Development Team, Ainex Co., Ltd, Seoul, Korea
[6]Department of Medicine, Seoul National University College of Medicine, Seoul, Korea

Background / Aim : This study aims to develop an explainable artificial intelligence (XAI) method for differentiating hyperplastic polyps (HP) and adenoma (AD) in colonoscopy, addressing the "black box" issue of deep learning (DL)-based computer-aided diagnosis (CADx) systems in optical diagnosis (OD) using interpretable methods that closely follows the decision-making process of endoscopists.
Methods : The development of CADx with XAI comprises four steps: (1) Data preparation involving radiomics, color, deep features (Dataset A: 5492 ADs and 1576 HPs), and endoscopists-assigned NBI International Colorectal Endoscopic (NICE) features including surface, vessel and color patterns (Dataset B: 120 ADs and 120 HPs) ; (2) Correlation-driven selection process to identify significant correlations between radiomics/color and deep features; (3) Regression analysis to link NICE grading with selected deep features, transforming deep features into clinically relevant NICE grades; (4) Reinterpreting deep features in terms of radiomics features. The performance of CADx with XAI was evaluated for another 300 polyps (Dataset C: 160 ADs and 140 HPs).
Results : From 2,048 initial deep features, 14 were selected through screenings, and 24 out of 93 radiomics features were chosen. No color features were selected during feature screening. The CADx with XAI demonstrated accuracy comparable to deep learning, offering interpretable insights. In Dataset C, the system showed high performance (AUC: 0.946, ACC: 0.883, sensitivity: 0.888, specificity: 0.879, PPV: 0.893, NPV: 0.872) and met the Simple Optical Diagnosis Accuracy (SODA) criteria and Preservation and Incorporation of Valuable Endoscopic Innovations (PIVI) NPV thresholds. A comparative study between the XAI- inferred NICE grading and endoscopists' NICE assessments revealed a strong correlation (Spearman's 0.640, Kendall's 0.494), indicating high concordance and validating the model's clinical relevance. Furthermore, additional explanatory values using radiomics were presented.
Conclusion : The CADx with XAI system successfully integrates radiomics and deep features for understandable optical diagnosis in colonoscopy. This approach bridges the gap between AI predictions and clinical interpretations.
Keywords : Colonoscopy, NICE Grading, Deep Learning, Explainable, Radiomics



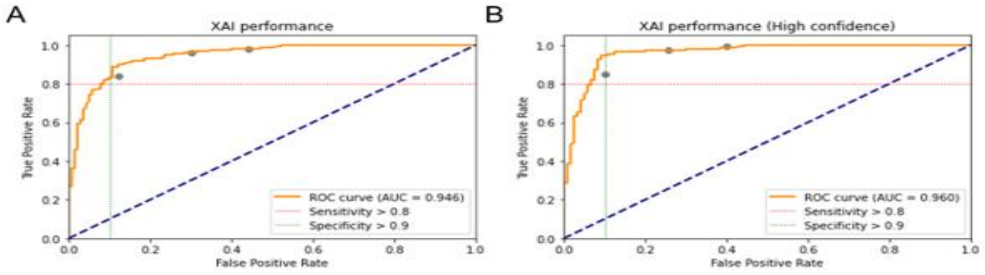


Table 1. Correlation results between the XAI NICE prediction and clinician NICE grading

	Diagnostic performance	NICE category	Spearman's correlation	Kendall tau correlation
Clinician A	0.857	Surface type 1	0.633	0.491
		Surface type 2	0.516	0.411
		Vessel type 1	0.715	0.559
		Vessel type 2	0.663	0.514
Clinician B	0.783	Surface type 1	0.590	0.448
		Surface type 2	0.664	0.517
		Vessel type 1	0.632	0.498
		Vessel type 2	0.607	0.470
Clinician C	0.840	Surface type 1	0.572	0.430
		Surface type 2	0.414	0.324
		Vessel type 1	0.725	0.584
		Vessel type 2	0.612	0.479
Average of clinician	0.876	Surface type 1	0.723	0.539
		Surface type 2	0.670	0.508
		Vessel type 1	0.757	0.580
		Vessel type 2	0.742	0.556
Mean ± SD	0.839 ± 0.035	-	0.640 ± 0.087	0.494 ± 0.066

[Symposium 6]

SY6-4

Expectations and Challenges of Colonoscopies with AI

Sravanthi Parasa
Department of Gastroenterology, Swedish Medical Center, Seattle, USA

The integration of Artificial Intelligence (AI) into endoscopic procedures, particularly colonoscopies, marks a significant advancement in gastroenterology, promising enhanced diagnostic accuracy, improved patient outcomes and tracking quality metrics. This lecture explores the evolving landscape of AI-assisted colonoscopies, delineating the expectations set forth by recent technological strides as well as the challenges that practitioners, patients, and healthcare systems face in adopting such innovations.

Initially, we will delve into the expected benefits of AI in colonoscopies, including the potential for AI algorithms to detect polyps and lesions with greater sensitivity and specificity than the human eye. The capability of AI to provide real-time analysis and guidance during procedures can significantly reduce the miss rate of early-stage colorectal cancers, thereby increasing the success rate of preventive measures.

However, the integration of AI into clinical practice is not devoid of challenges. We will address technical issues, such as the need for robust datasets to train AI models that can accurately recognize diverse pathologies across different populations. Ethical concerns will also be discussed, particularly regarding data privacy, consent, and the reliance on algorithmic decisions in clinical settings.

Additionally, the lecture will cover the practical hurdles in implementing AI-assisted colonoscopies, including the need for significant investment in technology, training for healthcare professionals to work alongside AI systems, and the potential resistance from practitioners accustomed to traditional methods.

In conclusion, while AI holds the promise of revolutionizing colonoscopy by enhancing diagnostic accuracy and patient safety, its successful integration hinges on overcoming a myriad of technical, ethical, and practical challenges. This lecture aims to provide a comprehensive overview of the current state and future prospects of AI in colonoscopies, offering insights into how these advancements could reshape the landscape of gastrointestinal diagnostics and treatment.

[Symposium 6]

SY6-5

Use of Natural Language Processing for Intestinal Diseases: From Rule-Based Programming to Generative AI

Jung Ho Bae
Department of Gastroenterology, Seoul National University, Korea

Extracting meaningful information from such narrative clinical note traditionally required significant human effort. However, the advancement of Natural Language Processing (NLP) technologies has revolutionized the ability to analyze and interpret vast amounts of unstructured medical data, offering unprecedented insights into complex health conditions. This presentation provides a comprehensive overview of the progression and application of NLP in the diagnosis, treatment, and management of lower intestinal diseases, from the initial rule-based coding systems to the cutting-edge large language models (LLMs) like GPT (Generative Pre-trained Transformer) series. Initially, rule-based NLP systems were employed, relying on predefined patterns and medical lexicons to extract and categorize information from colonoscopy reports. However, these systems were limited by their inability to understand context or adapt to new, unanticipated patterns in data. The evolution towards machine learning models marked a significant advancement, enabling more nuanced interpretations of text through statistical methods, but still required extensive feature engineering and domain expertise. The latest paradigm shift to LLMs has transformed the field, leveraging vast amounts of data and deep learning techniques to understand and generate human-like text, capturing the subtleties and complexities of medical language and patient data. This presentation highlights key applications of NLP in lower intestinal disease.

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SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 13 (Sat.), 10:15-11:35 I Room A

Special Session

Tracing Success: The Evolution and Impact of KASID Guidelines

Chairs

Sung-Ae Jung (Ewha Womans University, Korea)
Tae Oh Kim (Inje University, Korea)

[Special Session]

SS-1

Process of Creating Guidelines: Methodology

Seong-Eun Kim
Department of Internal Medicine, Ewha Womans University College of Medicine, Korea

The development of clinical guidelines is a three-phase process that involves the establishment of a development plan, guidelines development, peer review, and dissemination. The methodological approach decided during the planning phase involves either adaptation of existing international guidelines, De Novo development (creating new guidelines), or often a hybrid approach combining both. The development of recommendations includes seven key steps: identification of key questions (PICO questions), literature search and eligibility assessment, critical appraisal and evidence table, evidence synthesis, determination of evidence level and recommendation grade, drafting of recommendation statements, and consensus-building. Key questions are determined by reviewing existing domestic and international guidelines and selecting important clinical issues, which then inform the revision of anticipated recommendations. The process of literature search and eligibility assessment is conducted through a systematic search strategy tailored to each key question, with selected literature organized into evidence tables and assessed for risk of bias according to study design. Evidence synthesis involves extracting necessary data from categorized literature and applying either meta-analysis or qualitative synthesis methods. The determination of evidence level and recommendation grade is conducted using the GRADE methodology, categorizing recommendations from strong to against. The drafting of recommendations considers various factors to enhance the clinical feasibility of implementation. Finally, the developed recommendations undergo revision and consensus through both internal and external consultation, incorporating diverse opinions. This systematic approach is crucial for providing reliable clinical guidelines, playing a vital role in supporting clinical decision-making.

[Special Session]

SS-2

Do's and Don'ts Based on CDI Guidelines

Young-Seok Cho
Department of Gastroenterology, Seoul St. Mary's Hospital,
College of Medicine, The Catholic University of Korea, Korea

Clostridioides difficile infection (CDI) is a common infectious disease worldwide and the most common healthcare-associated infection in North America. In Korea, epidemiological data on CDI is limited and there is insufficient evidence for the classification of severity as well as on new therapeutic applications (fidaxomicin, anti-toxin B human monoclonal antibody, and fecal microbiota transplantation) in addition to metronidazole and vancomycin. Recently, we developed guidelines for the diagnosis and treatment of CDI in Korea, aiming to optimize medical care for patients with CDI. These guidelines include general information and clinical questions regarding CDI based on the most recent evidence. In this lecture, important issues to be considered for CDI management will be discussed.

[Special Session]

SS-3

Key Points in Treating Intestinal Behcet's Disease: Insights Post-Guideline Creation

Soo-Young Na
Internal Medicine, Incheon St. Mary's Hospital, College of Medicine,
The Catholic University of Korea, Korea

Behçet's disease (BD) is a chronic recurrent inflammatory disease characterized by the triad of recurrent oral ulcers, genital ulcers, and ocular inflammation. It can also involve the skin, joints, vascular, nervous, and gastrointestinal tract. In particular, when Behçet's disease affects the gastrointestinal tract, the response to treatment is poor, and complications such as perforation can occur, leading to life-threatening complications. Intestinal Behçet's disease is characterized by volcano-shaped ulcers in the ileocecal area. While rare in the West, it occurs relatively frequently in Far East Asia, with a 10-20% prevalence. Although the prevalence of Behçet's disease in Korea is gradually decreasing, reports suggest that the proportion of intestinal Behçet's disease is increasing in Far East Asia. Intestinal Behçet's disease is rare, and its pathophysiology has not yet been elucidated. Therefore, due to the lack of prospective research data on treatment, it is still difficult to establish therapeutic strategies, and empirical use of drugs for rheumatologic diseases or inflammatory bowel diseases is common. The Korean guidelines for the diagnosis of intestinal Behçet's disease were published in 2009 by the Inflammatory Bowel Disease Study Group of the Korean Association for the Study of the Intestinal Diseases. However, until now, there have been no treatment guidelines involving multidisciplinary experts, except for some comprehensive reviews in Korea. I will share the first Korean treatment guidelines for intestinal Behçet's disease, focusing on the key points in treating from insights post-guideline creation.

Keywords: Behcet’s disease, Intestines, Guideline, Therapy

[Special Session]

SS-4

Reflecting on the History and Clinical Impact of KASID's Guidelines

Chang Hwan Choi
Department of Internal Medicine, Chung-Ang University College of Medicine, Korea

Clinical practice guidelines provide information for delivering the best medical care based on the latest research findings and evidence. These guidelines assist healthcare professionals in providing consistent treatment, ensuring patients receive predictable and uniform treatment experiences. By recommending effective treatment methods, guidelines can reduce healthcare costs and efficiently utilize resources. Additionally, patients can gain information about their treatment and participate in medical decision-making through these guidelines.

The Korean Association of the Study of Intestinal Diseases (KASID) began developing clinical practice guidelines in November 2007 to provide the latest research findings on intestinal diseases and to assist in delivering optimal care. Four subcommittees were formed within the Inflammatory Bowel Disease (IBD) Research Group to develop diagnostic guidelines for representative inflammatory bowel diseases such as ulcerative colitis, Crohn's disease, intestinal tuberculosis, and intestinal Behçet's disease. The primary users of these guidelines were internal medicine and pediatric specialists. After a production period of 1 year and 3 months, diagnostic guidelines for the four diseases were published in March 2009. Subsequently, the KASID invited experts in evidence-based medicine methodology to develop various clinical practice guidelines for IBD, colorectal cancer, colorectal polyps, and other diseases. The guidelines are listed in the table below.

The most recently developed clinical practice guidelines were for acute colonic diverticulitis, which adhered to the principle of adapting existing overseas guidelines and adding the latest research findings. In cases where recommendations were not found in existing guidelines or as needed, a hybrid approach was chosen for new development. The development of clinical practice guidelines proceeded in three stages: establishing a development plan, development, review and dissemination. The main processes related to the actual recommendation development were 1) selection of key questions, 2) search and selection of evidence, 3) evaluation of evidence and summary of evidence tables, 4) synthesis of evidence, 5) determination of evidence levels and recommendation grades, 6) recommendation drafting, and 7) derivation of consensus. After a rigorous development process lasting about two years, the clinical practice guidelines for acute colonic diverticulitis, totaling 261 pages including appendices, were published in September 2023.

In the future, the principles of Evidence-Based Medicine (EBM) will be adhered to, and comprehensive clinical practice guidelines that reflect diverse opinions and expertise will be developed and disseminated through collaboration with various experts. The effectiveness and reliability of the guidelines will be maintained through continuous evaluation and updates. It is believed that this will significantly contribute to the improvement of the quality of healthcare for patients with intestinal diseases.

Table. Clinical practice guidelines (co)developed by KASID

Year of issue	Title of clinical practice guidelines
2009	Diagnostic Guideline of Ulcerative Colitis
2009	Diagnostic Guideline of Crohn’s Disease
2009	Diagnosis of Intestinal Behçet’s Disease
2009	Diagnostic Guideline of Intestinal Tuberculosis
2012	Guidelines for the Management of Ulcerative Colitis
2012	Guidelines for the Management of Crohn’s Disease
2012	Korean Guidelines for Colorectal Cancer Screening and Polyp Detection
2012	Korean Guidelines for Colonoscopic Polypectomy

2012	Korean Guidelines for Post-polypectomy Colonoscopic Surveillance
2015	Use of Thiopurines in Inflammatory Bowel Disease: A Consensus Statement by the KASID
2017	Second Korean guidelines for the management of ulcerative colitis
2017	Second Korean guidelines for the management of Crohn's disease
2020	Prevention and management of viral hepatitis in inflammatory bowel disease: a clinical practice guideline by the KASID
2021	SARS-CoV-2 Vaccination for Adult Patients with Inflammatory Bowel Disease: Expert Consensus Statements by KASID
2021	KASID Guidance for Clinical Practice Management of Adult Inflammatory Bowel Disease during the COVID-19 Pandemic: Expert Consensus Statement
2022	Korean Guidelines for Postpolypectomy Colonoscopic Surveillance: 2022 Revised Edition
2023	Korean clinical practice guidelines on biologics and small molecules for moderate-to-severe ulcerative colitis
2023	Korean clinical practice guidelines on biologics for moderate to severe Crohn's disease
2023	Clinical practice guidelines for the diagnosis and medical treatments of acute colonic diverticulitis

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APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 13 (Sat.), 10:15-11:35 I Room B

Symposium 7

Decoding the Connection: Diet and Intestinal Diseases

Chairs

Eell Ryoo (Gachon University, Korea)
Chang Soo Eun (Hanyang University, Korea)

[Symposium 7]

SY7-1

Reappraisal of Diet as a Therapeutic Approach in Adults with IBD

Peter Gibson
Department of Gastroenterology, Central Clinical School, Monash University, Australia

There is a new fervor across IBD communities to utilize whole diet as a therapy in patients with IBD, especially with the success of exclusive enteral nutrition (EEN) and the Crohn's disease exclusion diet as induction therapy for Crohn's disease, and the FODMAP diet for functional gastrointestinal symptoms in association with quiescent IBD. 39 trials evaluating 27 whole-diet strategies are now published. However, clarity on when and how this therapeutic tool should be applied is limited largely drive by two major factors:
(1) *Very low-quality evidence due to poor study design*. Key problem areas include defining the goal of therapy, ensuring medication stability, how dietary education is delivered, assessing adherence and defining the effect on nutrition in general. Furthermore, it is not always clear whether the diet was meant to be a primary or adjunctive therapy.
(2) *Limited infrastructure to optimally and safely deliver major dietary change*. This is not an easy therapy – it requires time, is very different to prescribing a drug (a diet sheet alone does not work), is optimally delivered by a dietitian who can personalize the diet, and must include serious consideration to safety especially (disordered eating behaviors, nutritional adequacy in patients).

There are a few rules that should be followed for a gastroenterologist to deliver effective diet therapy:
Rule 1: Define the targets for the therapy*:* There are 4 potential targets:

- *Nutritional status* (e.g., reduced lean mass, increased fat mass); If body composition is not assessed (how depends upon your setting/availability), it will never be a target and may be a missed opportunity for therapeutic gain.
- *Intestinal inflammation*; Appropriate inflammatory end points should be defined, without reliance purely on clinical (symptom-based) indices.
- *Symptoms/complications* (e.g., functional GI symptoms, strictures); Symptoms not related principally to intestinal inflammation itself should be identified.
- *Prevention of IBD:* This is of relevance to, for example, offspring of patients

Rule 2: Define the diet therapy(ies) for the target(s): Some, may have 2 or more targets (EEN may target inflammation, nutrition, complications); others are specific for one target (FODMAP diet targets functional GI symptoms only, low residue diet target symptoms due to strictures only).
Rule 3: Consider the safety issues: Routinely evaluate the diet quality and whether patients have or are at risk of nutritional comprise or disordered eating behavior; (i.e., address the question: is diet therapy is right for this patient?)
Rule 4: Develop resources to enable delivery of diet therapies*:* This can involve up-skilling and different time management; utilizing digital educational platforms; developing a team who can support this aspect – best done with a dietitian who understands the issues and options in IBD, but can involve another health professionals (e.g., nurse).
Rule 5: Document and monitor the defined target(s) of such diet therapy.

In conclusion, diet therapy can be rewarding in patient with IBD, but choosing the diet therapy is challenging due to the often-poor evidence base. Successful implementation of diet therapies does require up-skilling and effort (from the doctor and patient), and are best delivered via a team approach.

[Symposium 7]

SY7-2

Dietary Modification in Pediatric Crohn's Disease with Concerns of Insufficient Growth Restoration

Jeong Eun Ahn, Jin Gyu Lim, Homin Huh, Lia Kim, Kyung Jae Lee, Jae Sung Ko, Jin Soo Moon
Pediatrics, Seoul National University Children's Hospital, Seoul, Korea

Background / Aim : The Crohn's Disease Exclusion Diet (CDED) is a dietary intervention tailored for pediatric patients suffering from Crohn\'s disease (CD). Despite its demonstrated efficacy in inducing remission, concerns have emerged regarding its potentially restrictive nature, which may limit essential nutrient intake and impede growth. This study aims to evaluate the adjunctive effects of CDED in conjunction with immunomodulators, with a specific focus on potential nutritional implications for children.
Methods : This retrospective study assessed newly diagnosed CD patients under 18, treated with corticosteroids and immunomodulators. The assessment of treatment efficacy involved measuring clinical remission rate, changes in the Pediatric Crohn\'s Disease Activity Index (PCDAI), C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), and anthropometric parameters.
Results : The analysis included 53 patients, consisting of 21 (40%) without CDED and 32 (60%) following the CDED regimen. Rates of clinical remission were comparable between the non-CDED and CDED groups at 3 months (non-CDED 67%, CDED 66%, p=1.0), 6 months (non-CDED 52%, CDED 59%, p=0.78), and 12 months (non-CDED 45%, CDED 58%, p=0.72). Improvements in PCDAI, CRP, ESR, and height z-scores showed no significant differences between the two groups (p>0.05). However, changes in weight z- scores did exhibit a statistically significant disparity between the two groups at 1 month (non-CDED 0.41 vs. CDED 0.04, p=0.04), 3 months (non-CDED 0.87 vs. CDED 0.16, p=0.001), and 6 months (non-CDED 0.81 vs. CDED 0.38, p=0.001).
Conclusion : In conclusion, combining CDED with immunomodulators and steroids did not yield an additional therapeutic benefit in this cohort. This could be due to steroids' strong efficacy, potentially hiding CDED's effects. Notably, the non-CDED group improved weight z-scores more during induction therapy. This highlights the need for healthcare providers to monitor and address malnutrition in pediatric CD patients for their well-being.
Keywords : Pediatrics, Crohn Disease, Malnutrition

[Symposium 7]

SY7-3

Enteral Nutrition for Management of Pediatric IBD

Jin Soo Moon
Division of Pediatric Gastroenterology, Hepatology and Nutrition, Department of Pediatrics,
College of Medicine, Seoul National University, Korea

Inflammatory bowel disease (IBD), including Crohn’s disease (CD) and ulcerative colitis (UC), is a chronic immune-mediated disease affecting the gastrointestinal (GI) tract. Many environmental triggers in individuals with a genetic predisposition may be related to intestinal immune dysregulation. Diet is the one of the most important environmental risk factors. In children and adolescents with active CD, exclusive enteral nutrition (EEN) is recommended as first-line therapy to induce remission for decades. Six-to-twelve-week remission rates are usually between 70-93% according to the literatures. EEN seemed to be better in microbial changes after induction. About the mucosal healing, new data about EEN suggested that EEN induction has shown complete mucosal healing rates of 33%. The most difficult thing to use EEN in clincal practice is poor compliance due to it's bad taste. Recently, many dietary trials, such as CD exclusion diet, specific carbohydrate diet, Mediterranean diet, low FODMAP diet, anti-inflammatory diet, have been employed as new strategies about diet for CD, to overcome the poor compliance of EEN in children.

Partial enteral nutrition (PEN) and maintenance enteral nutrition (MEN) have been tried with a portion of the diet provided by enteral nutrition. A 2018 Cochrane review noted difficulty in determining recommendations and noted a very low certainty of evidence for superiority of PEN compared to a free diet. However, many new trials showed recently promising results.

In this presentation, I will show recent updates about the enteral nutrition for management of pediatric IBD including new data from SNU Children's Hospital.

[Symposium 7]

SY7-4

Omega-3 Intake Linked to Colorectal Adenoma Incidence: A Prospective, Multi-center Korean Study

Sang Hoon Kim[1], Jioh Kang[2], Eui Yeon Lim[2], Min Kyu Jung[3], Dong Hyun Kim[4], Joowon Chung[5], Hyun Joo Song[6], Ki Bae Kim[7], Jung Eun Lee[2], Yun Jeong Lim[8], Hoon Jai Chun[9],
Nutrition and GI Cancer Research Group, The Korean Society of Gastrointestinal Cancer Research
[1]Division of Gastroenterology and Hepatology, Chung-Ang University Gwangmyeong Hospital, Gwangmyeong, Korea
[2]Department of Food and Nutrition, Seoul National University, Seoul, Korea
[3]Division of Gastroenterology and Hepatology, Kyungpook National University Hospital, Daegu, Korea
[4]Division of Gastroenterology and Hepatology, Chonnam National University Hospital, Gwangju, Korea
[5]Division of Gastroenterology and Hepatology, Nowon Eulji University Hospital, Seoul, Korea
[6]Division of Gastroenterology and Hepatology, Jeju National University Hospital, Jeju, Korea
[7]Division of Gastroenterology and Hepatology, Chungbuk National University Hospital, Cheongju, Korea
[8]Division of Gastroenterology and Hepatology, Dongguk University Ilsan Hospital, Goyang, Korea
[9]Division of Gastroenterology and Hepatology, Korea University College of Medicine, Seoul, Korea

Background / Aim : Globally, colorectal cancer ranks third in prevalence, with a notable rise in South Korea. This study, led by the Korean Society of Gastrointestinal Cancer, investigates the role of diet, specifically omega-3 fatty acids, in affecting colorectal adenoma, a precursor to cancer.
Methods : The study enrolled 798 individuals over 40 from 10 institutions for elective colonoscopy. Participants with a history of colorectal cancer or on long-term dietary interventions were excluded. They completed a Food Frequency Questionnaire (FFQ) analyzed by Seoul National University, focusing on omega-3 intake from diet and supplements, and its correlation with adenoma detection.
Results : As dietary omega-3 intake increased, the rate of colorectal adenoma detection decreased. The group with the highest omega-3 intake (quartile 4) showed a significantly lower odds ratio (OR=0.53, 0.29-0.94) compared to the group with the lowest intake (quartile 1), with a consistent decrease across all quartiles (P for trend 0.03). This trend was particularly significant in the distal colon (P for trend, 0.01), while it was not significant in the proximal colon (P for trend, 0.08). Dietary sources of omega-3 were more strongly associated with a reduction in adenoma detection than supplementary sources. Additionally, the reduction in adenoma detection with increased omega-3 intake was most pronounced in younger individuals under 50 years of age (OR for tertile 3=0.18, 0.06-0.52).
Conclusion : Increased dietary intake of omega-3 fatty acids is associated with a reduced risk of colorectal adenomas, with the most significant effects observed in the distal colon and in individuals under 50.
Keywords : Colon Cancer, Nutrition, Adenoma, Omega-3 Fatty Acids

	Tertiles of energy-adjusted intake of omega-3 fatty acid acids from diet			*P* for trend
	Tertile 1	Tertile 2	Tertile 3	
Median (g/d) *	0.88	1.33	1.85	
Proximal	58/169	47/170	45/169	
Model 1[a]	1	0.76 (0.45-1.29)	0.62 (0.37-1.07)	0.09
Model 2[b]	1	0.71 (0.41-1.23)	0.61 (0.35-1.06)	0.08
Model 3[c]	1	0.73 (0.39-1.34)	0.64 (0.32-1.28)	0.22
Distal	33/169	21/170	15/169	
Model 1[a]	1	0.58 (0.30-1.12)	0.35 (0.17-0.72)	0.004
Model 2[b]	1	0.53 (0.27-1.04)	0.35 (0.17-0.73)	0.01
Model 3[c]	1	0.58 (0.28-1.23)	0.44 (0.18-1.09)	0.08

[a]The first half colon (Proximal) included the terminal ileum, cecum, ascending colon and transverse colon while the second half colon (Distal) included the descending, sigmoid colon and rectum.

*Adjusted for total energy using the residual method
[a]Model 1 was adjusted for age(years, continuous), sex(men, women), and total energy intake(kcal/d, continuous)
[b]Model 2 was additionally adjusted for BMI (kg/m^2, continuous), smoking status (never, past, current), physical activities (MET-hours/week, continuous), educational level (below high school, high school, college or more), family history of colorectal cancer (yes, no), history of colon polyp resection(never, ≤2years, ≤4years, >4years), hypertension (yes, no), diabetes (yes, no), taking aspirin (yes, no)
[c]Model 3 was additionally adjusted for variables listed in [b] and dietary Calcium intake (quartiles), dietary fiber intake (quartiles), and red meat and processed meat intake (quartiles).

	Tertiles of energy-adjusted intake of omega-3 fatty acid acids from diet stratified by age			*P* for trend	*P* for interaction
	Tertile 1	Tertile 2	Tertile 3		
Younger age group (≤ 50)					
No. of cases/Total	23/59	20/80	10/64		
Median (g/d) *	0.88	1.33	1.87		
Model 1[a]	1	0.54(0.24-1.22)	0.34(0.13-0.87)	0.02	
Model 2[b]	1	0.44(0.17-1.09)	0.29(0.11-0.80)	0.02	
Model 3[c]	1	0.52(0.18-1.48)	0.34(0.09-1.22)	0.10	0.63
Older age group (> 50)					
No. of cases/Total	69/110	48/90	50/105		
Median (g/d) *	0.88	1.31	1.82		
Model 1[a]	1	0.76(0.42-1.37)	0.62(0.35-1.10)	0.10	
Model 2[b]	1	0.75(0.41-1.39)	0.62(0.34-1.13)	0.12	
Model 2[b]	1	0.74(0.37-1.50)	0.68(0.31-1.49)	0.35	

*Adjusted for total energy using the residual method
[a]Model 1 was adjusted for age(years, continuous), sex(men, women), and total energy intake(kcal/d, continuous)
[b]Model 2 was additionally adjusted for BMI (kg/m^2, continuous), smoking status (never, past, current), physical activities (MET-hours/week, continuous), educational level (high school or below, college or more), family history of colorectal cancer (yes, no), history of colon polyp resection(never, ≤2years, ≤4years, >4years), hypertension (yes, no), diabetes (yes, no)
[c]Model 3 was additionally adjusted for variables listed in [b] and dietary Calcium intake (quartiles), dietary fiber intake (quartiles), and red meat and processed meat intake (quartiles).

[Symposium 7]

SY7-5

Dietary Supplement Use and Colorectal Cancer Risk

NaNa Keum
Food Science and Biotechnology, Dongguk University, Korea

According to the GLOBOCAN 2022 estimates of cancer incidence and mortality, colorectal cancer (CRC) ranks as the third most frequently diagnosed cancer after lung and breast cancer, with over 1.9 million new cases accounting for 9.6 % of total cancer incidence worldwide. The CRC stands as the second leading cause of cancer death after lung cancer death, responsible for 904,019 deaths that comprise 9.4% of total cancer death worldwide. Known as a disease of the Westernized countries, diet and lifestyle factors are strongly implicated in the development and progression of CRC. Established risk and protective factors of CRC include physical activity, body fatness, and consumption of alcoholic drinks, processed meat, whole grains, and dairy products among others. As dietary factors significantly influence CRC risk, emphasizing a balanced diet rich in fruits, vegetables, and whole grains has been a cornerstone of dietary recommendations to prevent CRC.

While food-based recommendations are generally preferred by experts due to their holistic benefits and safety profile, dietary supplements are widely used in developed countries and some supplements like folate, calcium, and vitamin D have gained an attention for their potential chemopreventive effects against CRC. However, their indiscriminate use without consideration of scientific evidence poses risks of misuse or overuse. Therefore, it is imperative to critically evaluate the existing body of evidence regarding the effects of dietary supplement use on CRC incidence and mortality. This session aims to provide a comprehensive overview of epidemiologic evidence surrounding diverse dietary supplements and their effects on CRC prevention and managements, thereby informing clinical practice and public health recommendations to optimize CRC outcomes.

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April 13 (Sat.), 12:25-13:05 I Room A

Luncheon Symposium 7

Bristol Myers Squibb™

Chair

Kang-Moon Lee (The Catholic University of Korea, Korea)

[Luncheon Symposium 7 - BMS]

LS7-1

ZEPOSIA, a First in Class S1PR Modulator with Proven Clinical Efficacy

Won Moon
Crohn's Disease and Ulcerative Colitis Clinic, Division of Gastroenterology and Hepatology, Department of Internal Medicine, Kosin University Gospel Hospital, Korea

Inflammatory bowel disease (IBD), characterized by immune dysregulation and chronic inflammation, presents a significant clinical challenge. The pathogenesis involves antigen-presenting cells capturing antigens from gut microbiota and initiating T cell activation, leading to increased inflammation. Sphingosine-1-phosphate (S1P) signaling plays a crucial role in immune cell trafficking and inflammation, with elevated S1P levels exacerbating inflammation at inflamed sites. Ozanimod, a selective S1P receptor modulator, selectively binds to S1P1/5 receptors, reducing lymphocyte migrate from lymphoid tissues to inflammatory site. Clinical trials, including the pivotal Phase 3 True North study, have demonstrated the efficacy of ozanimod in patients with moderate to severe ulcerative colitis (UC) who have had inadequate responses to conventional therapies or biologic agents. Ozanimod significantly improves clinical remission, symptomatic response, and mucosal healing compared to placebo, with rapid symptomatic improvement observed after one week of titration. Importantly, ozanimod maintains sustained efficacy over time, with a higher proportion of patients achieving corticosteroid-free remission and maintaining clinical remission during the maintenance period. Mucosal healing, a crucial therapeutic goal in UC management, is achieved by a significantly higher proportion of patients treated with ozanimod compared to placebo. This stringent endpoint, defined as endoscopic improvement and histologic remission, is associated with improved long-term outcomes and reduced rates of surgery. Notably, ozanimod demonstrates consistent efficacy in patients who have failed conventional therapies, including those previously treated with TNF inhibitors. In conclusion, ozanimod is an oral therapy for moderate to severe UC, offering rapid symptomatic relief, significant improvements in clinical remission and mucosal healing, and sustained efficacy over time. Its selective mechanism of action and favorable safety profile position it as a promising first-line advanced therapy option after conventional treatments, addressing the unmet needs of patients with UC.

[Luncheon Symposium 7 - BMS]

LS7-2

Practical Guidelines and Long-term Experience on ZEPOSIA in Treatment of UC

Sang-Bum Kang
Division of Gastroenterology, Department of Internal Medicine, The Catholic University of Korea, Korea

Ulcerative colitis (UC) is a chronic inflammatory bowel disease characterized by inflammation of the colon and rectum. Despite advancements in treatment, many patients with UC still experience disease flares and require long-term management strategies. ZEPOSIA (ozanimod) is an emerging therapeutic option for UC, approved by regulatory agencies based on its efficacy and safety profile. This presentation aims to provide practical guidelines and insights drawn from long-term clinical experience with ZEPOSIA in the treatment of UC. UC management is challenging due to its chronic nature and unpredictable disease course. Conventional therapies such as corticosteroids, immunomodulators, and biologics have limitations in terms of efficacy, safety, and long-term tolerability. ZEPOSIA, a sphingosine 1-phosphate receptor modulator, has demonstrated efficacy in inducing and maintaining remission in UC patients, offering a promising alternative for those who are refractory to or intolerant of existing therapies.

Patient Selection: ZEPOSIA can be considered for patients with moderate to severe UC who have failed conventional therapies or require an alternative due to safety or tolerability issues. Dosing and Titration: Initiate ZEPOSIA therapy with a recommended dose following titration to minimize the risk of adverse events, particularly cardiac effects associated with its initiation. Monitoring: Regular monitoring of patients on ZEPOSIA is essential to assess treatment response, disease activity, and safety parameters, including liver function tests, complete blood count, and cardiac monitoring as per guidelines. Combination Therapy: ZEPOSIA may be used as monotherapy or in combination with other UC treatments, such as 5-aminosalicylates or biologics, based on disease severity and patient response. Pregnancy and Contraception: Due to potential risks during pregnancy, appropriate contraception should be discussed with female patients of childbearing potential before initiating ZEPOSIA therapy.

Efficacy: Long-term data on ZEPOSIA demonstrate sustained efficacy in maintaining remission, reducing disease activity, and improving quality of life in UC patients. Safety: While generally well-tolerated, long-term safety data continue to be monitored, particularly regarding cardiac effects, infections, and malignancies. Quality of Life: Improvements in patient-reported outcomes, including symptom control, functional status, and overall well-being, have been observed with long-term ZEPOSIA therapy. Real-world Evidence: Real-world studies provide additional insights into the effectiveness and safety of ZEPOSIA in diverse patient populations, further supporting its role in UC management.

Conclusion: ZEPOSIA represents a valuable addition to the armamentarium of therapies for UC, offering both efficacy and safety benefits for patients who require alternative treatment options. Practical guidelines derived from long-term clinical experience facilitate its optimal use, emphasizing the importance of patient selection, dosing, monitoring, and consideration of long-term outcomes. Continued research and real-world evidence will further enhance our understanding of ZEPOSIA's role in the long-term management of UC.

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April 13 (Sat.), 13:05-13:45 I Room A

Luncheon Symposium 8

Pfizer Korea

Chair

Dong Il Park (Sungkyunkwan University, Korea)

[Luncheon Symposium 8 - Pfizer]

LS8-1

Cumulated Knowledge on JAKi -The Data Legacy of Tofacitinib in UC

Sung Hoon Jung
Internal Medicine, The Catholic University of Korea, Korea

Tofacitinib, an oral drug that targets Janus kinase (JAK), is prescribed for adults with moderate to severe ulcerative colitis (UC). It's effective in triggering and sustaining remission, enhancing mucosal repair, lowering the need for corticosteroids, and enhancing patients' life quality, especially for those who do not respond well to standard or biological treatments. However, it's associated with risks such as severe infections, cancer, blood clots, and increased lipid levels. As such, selecting patients carefully, continuous monitoring, and adopting strategies to mitigate risks are crucial. The FDA has highlighted these concerns through a boxed warning about the drug's potential for serious side effects. In Korea, since its approval in May 2019, tofacitinib has shown substantial clinical advantages in remission induction and maintenance with relatively few side effects noted, presenting a contrast to its perception globally due to its associated risks, such as infections and cancer, and the resulting strict FDA advisories. Korean research indicates that tofacitinib may have a safer profile than TNF inhibitors, particularly in terms of infection risks, making it a viable alternative for patients who cannot tolerate other treatments. These observations emphasize the need for customizing UC treatment plans based on individual and regional variations in drug efficacy and safety. Current investigations are focused on unveiling the long-term safety and efficacy of tofacitinib in Korean patients, which will enhance the worldwide perspective on the use of JAK inhibitors in managing UC.

[Luncheon Symposium 8 - Pfizer]

LS8-2

Optimizing Treatment Options -Right Patient of Tofacitinib

Soo-Young Na
Internal Medicine, Incheon St. Mary's Hospital, College of Medicine,
The Catholic University of Korea, Korea

Ulcerative colitis (UC) is a chronic inflammatory bowel disease. The disease's natural history is relapsing and remitting mucosal inflammation. Although the majority of patients with UC have a mild to moderate course, approximately 15% of patients may experience an aggressive course, and 20% of these patients may require hospitalization for severe disease activity.
The treatment of UC has evolved with the development of tumor necrosis factor-α inhibitors beyond conventional therapies. Despite their long-term effectiveness, many patients do not respond to or cannot sustain treatment with these drugs. Therefore, the development of new drugs targeting specific pathways in the pathogenesis of UC has become necessary. Tofacitinib, a Janus kinase inhibitor, has shown potential in UC clinical trials and real-world studies, providing safe and effective results. We should consider several factors to provide the right treatments at the right time, including age, adverse effects, extra-intestinal manifestations, disease severity, and previous treatment history. I will share the recently updated data for optimizing treatment options in patients with moderate to acute UC, focusing on the right patients for tofacitinib and providing a guide to the proper dosing.

Keywords: Colitis, Ulcerative, Therapy, Tofacitinib

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April 13 (Sat.), 12:25-13:05 I Room B

Luncheon Symposium 9

FERRING
PHARMACEUTICALS

Chair

Young Sook Park (Eulji University, Korea)

[Luncheon Symposium 9 - Ferring]

LS9-1

The Practical Application of 5-ASA as the Gold Standard in UC Treatment: Past, Present, and Future Perspectives

Yoon-Kyo An
Department of Gastroenterology, Mater Hospital Brisbane, Australia

This lecture provides a concise exploration of 5-aminosalicylic acid (5-ASA) as a cornerstone in UC treatment. Starting with global epidemiological insights, we navigate the historical evolution of UC therapy, emphasizing 5-ASA's pivotal role.

Key points include practical strategies, advocating for higher 5-ASA doses during induction, supported by recent research. Long-term treatment plans and methods to enhance patient compliance are discussed, alongside clinical case presentations.

Attendees will gain actionable insights to optimise UC management, leveraging 5-ASA for improved patient outcomes.

[Luncheon Symposium 9 - Ferring]

LS9-2

Enhancing UC Treatment: Combine PENTASA® Oral +Rectal Suppository for Comprehensive Relief

Seong-Joon Koh
Internal Medicine, Liver Research Institute and Seoul National University College of Medicine, Korea

Ulcerative colitis (UC) is a chronic relapsing disorder characterized by diarrhea and hematochezia. The prevalence of UC is rapidly increasing worldwide, including in Korea. UC is classified by the severity of inflammation (mild, moderate, and severe) and disease extent (proctitis, Left side colitis, and pancolitis). Although the treatment options for UC have increased with the discovery of immunomodulators, biologics, and small molecules, 5-ASA remains the mainstay of treatment for mild-to-moderate UC. Over 90% of UC patients receive a 5-ASA within the first year after diagnosis, with 60% and 90% continuing their use for up to 15 years. Optimization of 5-ASA use can reduce advanced treatment, which results in reducing cost and drug-related adverse events. However, one of the main drawbacks of using 5-ASAs is the heterogeneity in the optimum dosing, regimen, and route of administration because of the lack of data such as head-to-head comparison. The main approaches to optimize 5-ASA are combined oral plus rectal therapy and maximizing oral doses. Recent randomized control trials proved that combined oral and rectal 5-ASA was an effective strategy in patients at high risk of relapse during maintenance treatment. In addition, a systematic review recently confirmed that combination therapy with oral and topical 5-ASA was superior to oral 5-ASA alone for maintenance of remission. European guidelines usually recommend the 5-ASA combination as the first-line therapy for inducing remission in left-sided and extensive colitis. In this lecture, I will highlight the enhancement of UC treatment using a combination treatment of 5-ASA oral and rectal suppositories.

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APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 13 (Sat.), 13:05-13:45 I Room B

Luncheon Symposium 10

Eisai Korea Inc.

Therapeutic Approaches for Better Patient Outcome

Chair

Hyun Soo Kim (Chonnam National University, Korea)

[Luncheon Symposium 10 - Eisai]

LS10-1

Reasonable Therapeutic Approach: Role of JAK inhibitors in UC

Bora Keum
Division of Gastroenterology & Hepatology, Korea University College of Medicine, Korea

Ulcerative colitis (UC) affects the colon and rectum through multifactorial mechanisms associated with genetic alterations, environmental factors, microbiota, and mucosal immune dysregulation. In patients with moderate to severe UC, current therapies employ antibodies against tumor necrosis factor-α, α4β7 integrin, and interleukin (IL)-12/23 p40. Despite these revolutionary molecular targeting therapies introduced during the last two decades, 30%–60% of patients fail to respond such molecular targeting agents in the induction phase, requiring changes in treatment. Monoclonal antibodies, owing to their biologic origin, often induce antidrug antibody responses. Moreover, up to a third of patients receiving these drugs become primary non-responders, and about 50% of patients exhibit loss of response during treatment. Due to these limitations of biologics for the treatment of IBD, small-molecule drugs have been introduced in the therapeutic strategy of IBD, including Janus kinase (JAK) inhibitors.

Diverse inflammatory cells that produce various inflammatory cytokines contribute to the pathology of UC. JAKs are intracytoplasmic proteins that bind the cytoplasmic region of transmembrane cytokine receptor subunits. Different JAK members exhibit binding preferences for different cytokine receptors. Because each JAK member binds to a number of distinct cytokine receptors, JAK inhibitions present the opportunity to modulate the effects of multiple cytokines that are involved in inflammatory processes in moderate to severe UC. In addition to the cell type–specific expression of JAK members and cytokine receptors in immune cells, recently JAK inhibitors have been shown to have beneficial effects on a damaged intestinal barrier characterizing flares of IBD and may ameliorate chronic GI inflammation.

With regard to specific inhibition of particular JAK members, IL-6, IL-10, IL-11, IL-19, IL-20, IL-22, and IFN-α, IFN-β, and IFN-γ signal through JAK1. Whereas the hormone-like cytokines, erythropoietin, thrombopoietin, growth hormone, granulocyte macrophage colony-stimulating factor (GM-CSF), IL-3, and IL-5 signal through JAK2. Therefore, JAK2 inhibition has been associated with increased platelet count, risk of thrombosis, and influence on erythropoiesis and myelopoiesis. JAK3 is expressed primarily in hematopoietic cells for having an effect on lymphocyte proliferation and homeostasis. Also, JAK3 is important for signal transduction from the common γ-chain of the receptors of multiple cytokines. JAK3 inhibition seems to be an attractive target in selected autoimmune disorders and lymphocytic cancers but specific inhibition of JAK3 develop severe combined immunodeficiency, with a deficiency in natural killer cells and T lymphocytes. Thus, inhibition of JAK2 and JAK3 may contribute to adverse events given their involvement in regulating immune cell proliferation and homeostasis. This means selectivity and inhibition of distinct cytokine-mediated signaling pathways are thought to provide a mechanistic understanding of relative efficacy and safety profiles of JAK members.

Clinically, several adverse events, including serious cardiovascular complications, have been observed with pan-JAK inhibitors. selective JAK1 inhibitors, such as filgotinib, are anticipated to have lower effective dosages and fewer side effects in achieving clinical efficacy. JAK1 is mainly involved in regulating inflammation by inducing lymphocyte proliferation and homeostasis, innate immune responses, and antiviral defenses. A recent experimental study of JAK inhibitor-mediated inhibition of JAK dependent cytokine responses showed a more profound inhibition of cytokine signaling via JAK1 compared with other JAKs. In the results, the preferential JAK1 inhibitor, filgotinib, markedly reduced its inhibitory effects on JAK1-independent JAK/STAT signaling pathways as compared to the pan-JAK inhibitor, which means the relatively higher clinical JAK1 selectivity may be associated with a lower reported impact on homeostatic immune functions controlling natural killer cells, platelet numbers, anemia, lymphocyte numbers, infection, and herpes zoster viremia.

The efficacy of JAK inhibitor demonstrated in UC patient refractory to biologics supports selective JAK inhibitors as highly promising agents for the management. Selective JAK1 inhibitors have important clinical effects in the management of UC and may reduce the development of serious adverse events observed with pan-JAK inhibition, leading to a safer treatment. On the other hand, it is a big challenge to demonstrate whether selective JAK inhibitors are efficient in the long run.

[Luncheon Symposium 10 - Eisai]

LS10-2

Positioning Filgotinib in the Treatment Algorithm in UC

Kyeong Ok Kim
Department of Internal Medicine, Yeungnam University College of Medicine, Korea

Since the introduction of anti-TNF and other advanced therapies, the natural history of the disease has started to change. Increasing rates of corticosteroid- free remission, mucosal healing, deep remission, and an ameliorated quality of life of UC patients have become possible. Nevertheless, the treatment with biologics implicates various limitations, such as the primary non- responsiveness, a rather limited efficacy, the eventual secondary loss of response, and the risk of immunogenicity. Small molecules such as JAK inhibitors and S1P receptor modulators, administrated as oral agents, have the ambition of overcoming such limitations. Among them, Filgotinib is an orally administered second- generation JAKi, with JAK1 selectivity. Despite the lack of long-term data, the evidence on safety and efficacy of filgotinib is extremely encouraging in UC. In particular, as observed in the SELECTION trial, significantly higher rates of clinical remission at week 10 was achieved by both biologic-naive and biologic-experienced patients given filgotinib 200 mg compared with placebo (26.1% vs 15.3%, 95% CI 2.1–19.5; p=0·0157 and 11.5% vs 4.2%, 95% CI 1.6–12.8; p=0·0103, respectively) As concerns the maintenance study phase, 37.2% of patients in the filgotinib 200 mg group remained in clinical remission at week 58, compared with 11.2% of patients in the placebo group (95% CI 16.0–35.9; p<0·0001). Clinical remission did not significantly differ between filgotinib 100 mg and placebo at week 10, but was significant at week 58 (23.8% vs 13.5%, 95% CI 0.0–20.7; p=0·0420).The investigated secondary endpoints, Mayo clinc score remission, corticosteroid free clinical remission at m6, endoscopic remission, and histologic remission were achieved in the treatment arm with filgotinib 200 mg. In addition, the clinical improvement achieved as early as from 4 weeks of treatment and it also leads to a better quality of life. With respect to safety, herpes zoster infections and serious infections occurred at low rates in all treatment groups, differently from safety data reported for pan-JAKi. A concern on an increased risk for venous thromboembolism for all agents in the JAK class exists, however, the available evidence on filgotinib is reassuring and risk minimization measures in clinical practice are manageable. Treatment scenarios for moderate-to-severe UC are rapidly evolving toward more selective and safer drugs, with possibly higher rapidity of action, and filgotinib appears as an optimal candidate for providing fast clinical benefits, improving the quality of life of our patients with a safer profile as compared to several biologic agents. Filgotinib might additionally find place in the treatment of hospitalized patients with acute severe UC in analogy with tofacitinib, that according to recent retrospective data, has been demonstrated to be an effective induction option in this life-threatening condition. In addition, the shorter half-life of filgotinib in comparison to biologic agents might represent an advantage when a rapid drug elimination is needed (ie, for a scheduled surgery). The precise disease phenotype that might upmost respond to filgotinib is yet to be defined, surely a concomitant arthropathy and/or the failure to anti-TNF appear to be possible clinical criteria as well as steroid-dependency or in alternative to azathioprine. Filgotinib 200mg could be used in both biologic-naive and biologic-exposed patients. It could represent a valid alternative to tofacitinib, particularly in those who have an increased thromboembolic or infectious risk. Wider data are needed to define the use of filgotinib in case of recent oncological history and in case of fragile or elderly patients. A further open issue regards the sequence of therapies. The most recent data derived from a Bayesian network meta- analysis in patients with moderate-to-severe UC have shown the superiority of upadacitinib in terms of both efficacy and safety compared with other therapies including filgotinib. However, filgotinib followed upadacitinib in almost all sub- analyses. Specifically designed head-to-head trials comparing the different molecules will clarify this matter. The current preliminary data have shown that filgotinib is safe and effective in inducing clinical and endoscopic response and remission in both biologic-naïve and biologic-experienced patients with moderate-to-severe UC, also with high inflammatory burden at baseline. As far as we are concerned, filgotinib represents an appealing treatment option for its high selectiveness, route of administration and rapidity of action.

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April 13 (Sat.), 13:55-15:15 I Room B

Nurse and Dietitian Session

Clinical and Nutritional Approaches to IBD: Diet, Care, and Therapies
(Korean)

Chairs

Geom Seog Seo (Wonkwang University, Korea)
Jeong Eun Shin (Dankook University, Korea)

[Nurse and Dietitian Session]

ND-1

The Role of Food and Environmental Factors in the Pathogenesis of IBD

Seung Yong Shin
Internal Medicine, Chung-Ang University, Korea

Inflammatory bowel disease (IBD) is caused by a loss of tolerance of the mucosal immune system to the commensal flora in the susceptible host triggered by environmental factors. Environmental factors are considered significant triggering elements, encompassing almost everything in our surroundings, from the air, the food, the places, to socio-economic factors.

The significance of environmental factors in IBD becomes more apparent when observing the relationship between societal changes and the number of patients. The emergence of ulcerative colitis in Europe during the 1800s coincided with the Industrial Revolution, followed by a sustained increase in the number of patients. Similar patterns have been observed in several Asian countries since the mid-20th century. The most pronounced changes experienced by Europe in the 1800s and several Asian countries in the mid-20th century include industrialization and urbanization, leading to dramatic lifestyle alterations.

A variety of environmental factors have been suggested to be associated with the onset of IBD. Conversely, several protective factors that may reduce the risk of developing IBD have also been identified. These include breastfeeding, antibiotic use, consumption of coffee or tea, moderate exercise, among others. Dietary factors are considered the most closely related to the onset of IBD. This is because diet not only affects the intestinal bacteria but also directly or indirectly influences intestinal immune responses, making it a crucial factor. The impact of a Western-style diet on the intestine is diverse. It reduces the diversity of intestinal bacteria, causing imbalance and impairing the production of short-chain fatty acids. It also leads to epithelial cell damage, degradation of mucus, thereby impairing epithelial barrier function, and directly triggering inflammatory responses. Through these mechanisms, it is known to increase the incidence of IBD. Recently, particular attention has been given to ultraprocessed foods. These are highly processed foods containing added substances during various factory processing stages, including emulsifiers, colorants, sweeteners, and preservatives. Representative foods include instant noodles, sausages, ham, snacks, carbonated drinks, and fast food. Continuous research reports suggest that the consumption of ultraprocessed foods increases the incidence of IBD, with mechanisms including imbalances in intestinal bacteria, damage to the mucous layer, increased intestinal permeability due to impaired barrier function, and inflammatory reactions. The problem is that the consumption of such ultraprocessed foods is gradually increasing not only in countries like South Korea but also in many other countries, particularly in developing nations. Therefore, careful monitoring of the changes in the incidence of IBD associated with the global increase in the consumption of ultraprocessed foods is necessary. Continuous research on various environmental factors, including diet, is essential for preventing IBD and improving the quality of life for patients with IBD.

[Nurse and Dietitian Session]

ND-2

Contributions of IBD Nurses to the Field of Gut Microbiome Research

Jaewook Shin
Department of Gastroenterology, Seoul Nation University Hospital, Korea

Nurse's Know- How (Microbiome Study in Clinical Filed)

염증성장질환은 희귀 난치성 질환으로 그 유병률이 매년 증가하고 있습니다. 이러한 난치성 질환 특성상 사회적 비용 및 의료 비용의 급증이 예상됨으로 질환의 예후를 예측하고 나아가 치료할 수 있는 방법을 찾는 것이 중요합니다. 최근 이러한 염증성장질환 연구에서 미생물, 마이크로바이옴의 중요성이 대두되면서 서울대학교병원에서는 환자의 검체 분석을 통한 다양한 마이크로바이옴 연구를 진행중에 있습니다.

먼저 염증성장질환으로 치료를 받는 환자군의 코호트를 구축하고 다양한 자가면역질환 및 ASCA 양성인 염증성장질환 고위험군. 나아가 IBS등 치료군까지 임상 예후를 분석하며, 검체 분석을 통한 오믹스 연구 및 전임상 연구를 통해 유용 미생물을 발굴하며 나아가서는 염증성장질환 마이크로바이옴 기반의 치료제를 개발하고 다중오믹스를 분석을 통한 염증성장질환 MOA 규명 및 내재형(Endotype)를 규명하는데 그 목표가 있습니다. 이러한 연구를 진행하기 위해서는 임상 연구를 진행하며 정해진 프로토콜에 맞게 수행하고 환자와 의사, 그리고 연구진 사이에서 중재 역할을 하는 연구간호사의 역할이 중요하다고 할 수 있습니다. 저는 서울대학교병원에서 실제 임상현장에서 IBD 간호사로 일하며 현재까지 진행한 이러한 마이크로바이옴 기반의 연구를 설명하고, 제가 가지고 있는 노하우를 여러 병원의 IBD 간호사 선생님들과 나누고 싶습니다. 나아가서 환자와의 라포 형성 및 환자의 지속 가능한 건강한 삶을 위한 옹호자로서 IBD 간호사의 역할에 대해 이야기 하고자 합니다.

[Nurse and Dietitian Session]

ND-3

Conventional and Advanced Therapies in IBD

Dong Hyun Kim
Division of gastroenterology, Department of Internal Medicine,
Chonnam National University Hospital and Medical School, Korea

염증성 장질환 (Inflammatory Bowel Disease, IBD)은 만성 난치성 질환으로 호전과 악화를 반복하는 질환이다. 궤양성 대장염은 대장의 점막에 국한된 염증을 특징으로 하며, 주로 직장부터 시작하여 근위부로 염증이 확장하게 된다. 특징적인 증상으로, 지속적인 설사, 혈변, 복통 등의 증상이 나타날 수 있다. 크론병은 주로 소장과 대장을 침범하게 되고, 염증이 장의 여러 층에 걸쳐 나타날 수 있다. 크론병의 주요 증상으로는 복통, 설사, 체중 감소 등이 있으며, 경우에 따라 합병증으로 장폐색이나 누공이 발생할 수 있다.

궤양성 대장염과 크론병의 경우 경도-중등도에서 선택하는 치료약제가 유사하면서도, 다른 점이 있다. 우선 궤양성 대장염의 경우 5-ASA (5-Aminosalicylic Acid)가 치료약제로서 중요한 역할을 하게 된다. 5-ASA의 경우 크게 경구 복용약제와 항문투여 약제로 나뉘게 되는데, 주로 경증에서 중등도의 궤양성 대장염에 주로 사용하게 된다. 경구 5-ASA의 경우 약제별로 다양한 방식으로 장내에서 약제의 흡수 분포를 보이게 된다. 항문투여 약제의 경우 좌약이나 관장을 통해 약제가 투여되며, 궤양성 대장염이 대부분 직장에서부터 염증이 시작되어, 근위부로 염증이 진행된다는 점을 고려했을 때, 특히 직장에 한정된 궤양성 대장염 (Ulcerative Proctitis)의 치료에 특히 효과적이겠다.

궤양성 대장염에서 5-ASA의 치료로 충분한 치료효과를 보지 못하는 경우 면역조절제와 스테로이드 투여를 고려할 수 있다. 스테로이드는 중등도 이상의 염증성 장질환에서 사용한다. 즉, 처음 중등도 이상의 증상 발현이나 1년 이상 지나서 급성으로 재발하여 빨리 관해를 유도해야 하는 경우에 사용해야 한다. 경구 혹은 정주는 그 심한 정도에 따라 결정하는데 급성 중증 궤양성 대장염 혹은 입원이 필요할 정도의 크론병에서는 정주 스테로이드를 사용한다. 스테로이드가 염증성 장질환의 임상 관해 유도에는 매우 효과적인 치료에는 틀림이 없지만 내시경 점막치유에 도달하는 데는 한계가 있으며 스테로이드가 관해 유지 효과는 없으며 장기 사용 시에 부작용이 심각하므로 관해 유지 목적으로 장기간 사용을 하지 않도록 유의해야 한다.

크론병에서는 5-ASA의 역할이 비교적 적은 편이며, 면역조절제의 역할이 보다 중요하다. 가장 보편적으로 사용하는 면역조절제는 thiopurine제제로서, 스테로이드 의존 및 불응성 염증성 장질환의 관해 유지 목적으로 사용된다. 하지만 동아시아인에서는 NUDT15 유전자 변이가 있는 경우에 thiopurine 유발 조기 백혈구 감소증의 위험도가 높다는 보고가 있어, thiopurine 투약시에는 NUDT15 유전자 변이 여부를 확인하는 것이 심각한 부작용에 대한 예방 목적으로 중요할 수 있다. 그외에도 methotrexate, cyclosporine, tacrolimus와 같은 면역억제제가 염증성 장질환에서 사용될 수 있다.

염증성 장질환에서 생물학 제제/소분자약제의 사용은 보편적인 치료에 반응이 없을 때 사용이 가능한데, 장관 크론병의 경우 보편적인 치료에 반응이 없거나 내약성이 없는 경우 사용이 가능하며, 누공형 크론병은 보편적인 치료(2가지 이상의 치료법: 항생제, 배출법, 면역조절제 치료 등)에 반응이 없는 경우 사용이 가능하다. 궤양성 대장염의 경우 스테로이드나 6-MP 또는 AZA 등 보편적인 치료약제에 대해 적정한 반응을 나타내지 않거나 내약성이 없는 경우 또는 상기 약제가 금기인 중등도-중증 질병 활성도를 보이는 경우 투여가 가능하다.

항 TNF 제제를 시작으로 α4β7 integrin을 억제하여 림프구가 장으로 이동하는 것을 선택적으로 차단하는 vedolizumab, interleukin-12/23의 p40 subunit를 차단하는 ustekinumab, 소분자 억제제로 Janus kinase를 억제하는 tofacitinib, upadacitinib 등이 사용 가능하다. 일반적으로 보편적인 치료에 비해 임상적, 내시경적 관해율이 높고, 치료성적이 우수한 편이다. 양질의 연구가 제한적이기는 하지만 생물학 제제를 사용한 적이 없는 누공형 크론병에서 누공 폐쇄 유도효과는 infliximab이 adalimumab보다 우수한 것으로 보고되고 있어 우선적으로 선택될 수 있지만, 항 TNF 제제를 사용한 적이 있는 환자에서는 특정 약물의 우수성이 아직 보고되고 있지 않다. 크론병 환자에서 장절제술 후 재발 가능성이 높은 위험 인자로 장절제술을 여러 번 받은 경우, 흡연, 누공형 표현형 등이 알려져 있는데, 수술 후 재발을 예방하기 위한 생물학 제제로는 infliximab과 adalimumab이 우선적으로 권고된다. 염증성 장질환 환자에서는 다양한 장외증상이 발생할 수 있는데, 관절증상이나 피부증상이 있는 환자에서는 항 TNF 제제나 ustekinumab이 우선적으로 추천되고, 포도막염이 동반된 환자에서는 항 TNF 제제가 추천된다. 소분자 물질의 경우 궤양성 대장염에 특히 효과적이라는 연구가 많지만, 65세이상의 고령, 심혈관질환, 임산부 등에서 사용에 주의가 필요하다.

[Nurse and Dietitian Session]

ND-4

Dietary and Nutrition Counseling for IBD Patients

Seokyung Park
Department of Nutrition Team, Kyung Hee University Medical Center, Korea

대한장연구학회에서 발간한 2020 염증성 장질환 팩트 시트에 따르면 염증성 장질환 환자수는 지난 10년간 지속적으로 증가하고 있는 것으로 나타났다. 2019년도 궤양성 대장염 환자수는 37,439명으로 2010년 16,136명이었던 것에 비해 2배 이상 증가했고, 2019년 크론병 환자의 수는 18,463명으로 10년전 7,770명이었던 것에 비해 역시 2배 이상 증가하였다. 이는 염증성 장질환 환자 관리가 필요함을 보여주고 있다.

특히, 고지방 식이, 동물성 식품의 과다한 섭취, 가공된 식품의 잦은 섭취 등의 식사습관은 염증성 장질환의 발생 위험을 높일 수 있으며, 과거에 비해 서구화된 식습관으로 한국, 일본 등의 아시아 국가에서의 발병률이 증가하고 있는 추세이다.

한편, 염증성 장질환 환자에서 발생할 수 있는 대표적인 영양관련 문제는 영양 불량으로, 염증성 장질환 환자들의 영양 불량은 경구 섭취량의 감소, 영양 요구량의 증가, 위장관에서의 영양소 흡수 불량 등으로 인해 발생할 수 있다. 특히 소아청소년기에 염증성 장질환을 진단받은 환자들의 경우 영양 불량 상태가 지속될 경우 성장 및 발달 부진을 야기할 수 있다. 따라서 염증성 장질환 환자에 있어 영양관리는 반드시 필요하며, 특히 소아 청소년기 환자의 경우 정상적인 성장 및 발달이 될 수 있도록 적극적인 영양관리가 필요하다.

이에 따라, 염증성 장질환 환자의 영양관리에 대한 가이드라인을 통해 염증성 장질환 환자의 영양 중재 방법에 대해 살펴보고자 한다. 또한, 최근 관심도가 높아지고 있는 크론배제식과 관련한 연구를 살펴보고, 실제 임상에서의 적용, 실제 효과 등에 대해 논의하고자 한다.

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The 7th International Meeting on Intestinal Diseases
in conjunction with
The Annual Congress of the Korean Association
for the Study of Intestinal Diseases

APRIL 11 (Thu) - 13 (Sat), 2024
CONRAD SEOUL, SEOUL, KOREA

SHAPING THE FUTURE OF
INTESTINAL RESEARCH

April 13 (Sat.), 15:25-17:05 I Room A

KASID Presidential Plenary Session

Chairs

Tae Il Kim (Yonsei University, Korea)
Kyu Chan Huh (Konyang University, Korea)
Young-Eun Joo (Chonnam National University, Korea)

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[KASID Presidential Plenary Session]

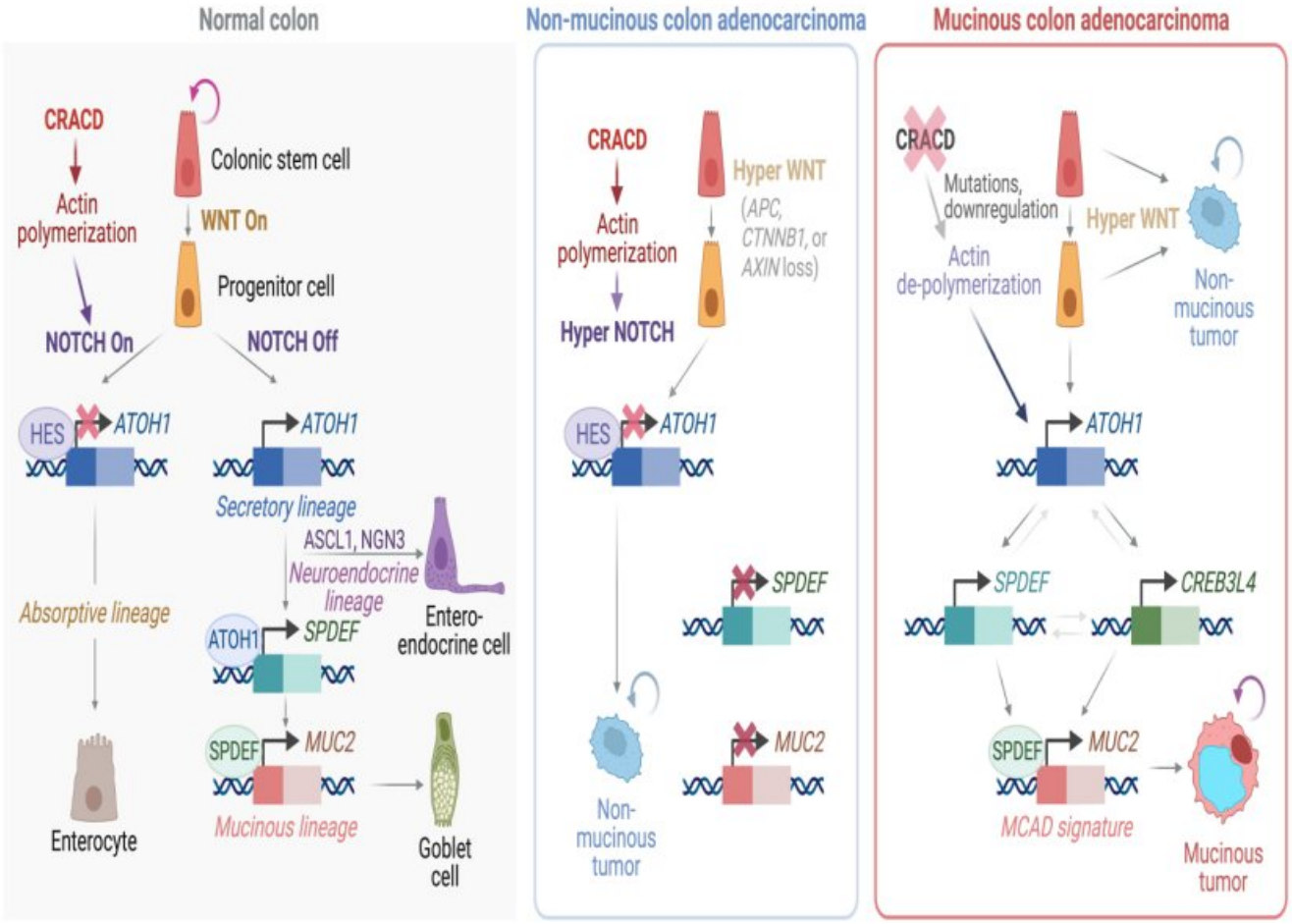
PS-1

Secretory Cell Plasticity by Aberrant CRACD-Actin-Regulon Is a Therapeutic Vulnerability of Mucinous Colon Cancer

Hunag Yuanjian[1,2], Kyung-Pil Ko[1], Yoo-Jung Seo[3,4], Shengzhe Zhang[1], Gengyi Zou[1], Bongjun Kim[1], Jie Zhang[1], Sohee Jun[1], Preeti Marie[5], Woong-Yang Park[6,7,8], Nir Hacohen[9,10,11], Tae Il Kim[3,4], Scott Kopetz[5], Yueming Sun[2], Jae-Il Park[1,12,13]

[1]Experimental Radiation Oncology, The University of Texas MD Anderson Cancer Center, Houston, United States
[2]General Surgery, The First Affiliated Hospital of Nanjing Medical University, Nanjing, China
[3]Internal Medicine, Yonsei University College of Medicine, Seoul, Korea
[4]Brain Korea 21 Project for Medical Sciences, Yonsei University College of Medicine, Seoul, Korea
[5]Gastrointestinal Medical Oncology, The University of Texas MD Anderson Cancer Center, Houston, United States
[6]Samsung Genome Institute, Samsung Medical Center, Seoul, Korea
[7]Molecular Cell Biology, Sungkyunkwan University Schoold of Medicine, Suwon, Korea
[8]Health Sciences and Technology, Samsung Advanced Institute for Health Sciences & Technology, Sungkyunkwan University, Seoul, Korea
[9]Broad Institute of Massachusetts Institute of Technology and Harvard, Boston, United States
[10]Massachusetts General Hospital Cancer Center, Havard Medical School, Boston, United States
[11]Immunology, Havard Medical School, Boston, United States
[12]Graduate School of Biomedical Sciences, The University of Texas MD Anderson Cancer Center, Houston, United States
[13]Program in Genetics and Epigenetics, The University of Texas MD Anderson Cancer Center, Houston, United States

Background / Aim : Mucinous colon adenocarcinoma (MCAD), a subtype of colorectal cancer (CRC), is characterized by the abundance of mucin-secreting tumor cells and extracellular mucin pools comprising more than 50% of the tumor lesion. Despite accounting for only 10-15% of CRC cases, MCAD is highly invasive and metastatic compared to non-mucinous CRC. Knowledge gap: To date, MCAD-specific therapeutic options are unavailable. Most MCAD tumors are resistant to conventional therapies. Moreover, the biology of MCAD tumorigenesis remains to be determined.
Methods : We employed genetically engineered mice, organoids, patient-derived xenografts/organoids, and single-cell transcriptomics of mouse models and patient tumor samples.
Results : Previously, we discovered a tumor suppressor gene called CRACD (Capping Protein Inhibiting Regulator of Actin Dynamics). CRACD promotes actin polymerization by inhibiting capping proteins. The CRACD gene is recurrently inactivated in cancer cells. We found that genetic ablation of Cracd in CRC mouse models (Apc and AOM/DSS) converts non-mucinous colon adenoma into MCAD. Cracd loss reprograms the proliferating and goblet cell lineages, inducing hyperplastic and hyper-mucinous colonic epithelium. Cross-species single-cell transcriptional analyses and proteomic validations identify the MCAD-specific molecular signatures and demonstrate the correlation of mucinous tumor cells between mouse and human MCAD. Moreover, we discovered the molecular subtypes of MCAD and their key features, including transcriptional signatures, mutation patterns, hallmark gene sets, and prognosis. Mechanistically, CRACD inactivation-dysregulated actin polymerization drives mucinous cell plasticity via epigenetically activating three key regulons. Furthermore, we found that the pharmacological or genetic blockade of mucinous tumor cell plasticity suppresses MCAD tumorigenesis without damaging the normal goblet cell lineage.
Conclusion : This study (1) elucidates the mechanisms of MCAD tumorigenesis, establishing a new paradigm by revealing an unexpected role of actin remodeling in restricting aberrant cell plasticity and (2) proposes an innovative concept, targeting mucinous tumor cell plasticity, which lays a novel foundation for developing new MCAD therapies.
Keywords : CRACD, Mucinous Colorectal Cancer, Cell Plasticity, Secretory Cell Ineage, Mucin


Normal colon
Non-mucinous colon adenocarcinoma
Mucinous colon adenocarcinoma
CRACD
Actin polymerization
NOTCH On
NOTCH Off
Colonic stem cell
WNT On
Progenitor cell
HES
ATOH1
Absorptive lineage
Secretory lineage
ASCL1, NGN3
Neuroendocrine lineage
Entero-endocrine cell
SPDEF
MUC2
Mucinous lineage
Enterocyte
Goblet cell
Hyper WNT
(APC, CTNNB1, or AXIN loss)
Hyper NOTCH
Non-mucinous tumor
Mutations, downregulation
Actin de-polymerization
CREB3L4
MCAD signature
Mucinous tumor

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[KASID Presidential Plenary Session]

PS-2

Clinical Characteristics of Steroid-Dependent Ulcerative Colitis Patients after Acute Severe Ulcerative Colitis Treatment in East Asia and Australia/New Zealand: AOCC and ANZIBDC Collaboration Study

Dong Hyun Kim[1,8], Sang Hyoung Park[2,8], Hyun-Soo Kim[1], Seong-Jung Kim[3], Kyeong Ok Kim[4,8], Yoo Jin Lee[5,8], Eun Mi Song[6,8], Eun Soo Kim[7,8], Hyun Seok Lee[7], Yoon-Kyo An[9,11], Jakob Begun[9,11], Leonie Ruddick-Collins[10,11], Richard Fernandes[9], Jing Liu[12], Qian Cao[12], Taku Kobayashi[13], Shu-Chen Wei[14]

[1]Division of Gastroenterology, Department of Internal Medicine, Chonnam National University Hospital, Gwangju, Korea
[2]Department of Gastroenterology and Inflammatory Bowel Disease Center, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea
[3]Division of Gastroenterology, Department of Internal Medicine, Chosun University Hospital, Gwangju, Korea
[4]Division of Gastroenterology, Department of Internal Medicine, Yeungnam University Hospital, Daegu, Korea
[5]Division of Gastroenterology, Department of Internal Medicine, Keimyung University Hospital, Daegu, Korea
[6]Division of Gastroenterology, Department of Internal Medicine, Ewha Womans University Seoul Hospital, Seoul, Korea
[7]Division of Gastroenterology, Department of Internal Medicine, Kyungpook University Hospital, Daegu, Korea
[8]IBD Research Group, Korean Association for the Study of the Intestinal Diseases, Seoul, Korea
[9]Department of Gastroenterology, Mater Hospital, Brisbane, Australia
[10]Institute of Health and Biomedical Innovation and School of Exercise and Nutrition Sciences, Queensland University of Technology, Brisbane, Australia
[11]ANZIBDC, Australia New Zealand IBD Consortium, Brisbane, Australia
[12]Center for Inflammatory Bowel Disease and Department of Gastroenterology, Sir Run Run Shaw Hospital, Zhejiang University School of Medicine, Hangzhou, China
[13]Center for Advanced IBD Research and Treatment, Kitasato University Kitasato Institute Hospital, Tokyo, Japan
[14]Department of Internal Medicine, National Taiwan University Hospital and College of Medicine, Taipei, Taiwan

Background / Aim : Intravenous steroid therapy (IVS) is the main initial treatment for acute severe ulcerative colitis (ASUC). The study aimed to assess corticosteroid dependency after treating ASUC and to explore potential differences between East Asian and Caucasian populations within the steroid-dependent group.
Methods : Patients from East Asia (China, Japan, South Korea, and Taiwan) and Australia/New Zealand diagnosed with ASUC based on the Trulove and Witts criteria from January 2015 to September 2022 were retrospectively included in the study. We specifically chose individuals responsive to intravenous corticosteroid treatment and divided them into two groups based on steroid dependency. Patients with a history of biologics or small molecules and those currently receiving them were excluded.
Results : Among 861 patients with ASUC (430 from East Asia and 431 from Australia/New Zealand), 626 received initial IVS and 381 showed steroid response. Among these steroid responders, 102 patients (26.7%) were classified as steroid-dependent with no significant difference between East Asians and Caucasians (28.3% vs. 24.1%, p=0.44). For 1 year after ASUC, the colectomy rate (7.8% vs. 2.9%, p=0.04) and ASUC relapse rate (18.6% vs. 10.2%, p=0.03) were higher in the steroid-dependent than non-dependent group. For the management of steroid-dependency, East Asians mainly repeated steroid treatment (60.9%), while Caucasians mostly switched to infliximab (57.1%). In the Cox regression analysis of 3-year follow-up data for the steroid-dependent group, Caucasians showed a significant increase in colectomy rates (adjusted hazard ratio [aHR] 1.59, 95% confidential interval [CI] 1.12-2.25, p<0.01) compared to East Asians. Additionally, relapse rates increased in Caucasians

(aHR 1.37, 95% CI 1.13-1.65, p<0.01), while relapse rates decreased in thiopurine users (aHR 0.32, 95% CI 0.12-0.87, p=0.03).
Conclusion : Around one fourth of patients with ASUC who initially responded to IVS became steroid-dependent. East Asian showed more favorable prognosis compare with Caucasian in this steroid-dependent group.
Keywords : Colectomy, Ethnicity, Infliximab, Steroids, Ulcerative Colitis

Figure 1. Flow chart of this study according to the ethnicity (A) East Asian (B) Caucasian

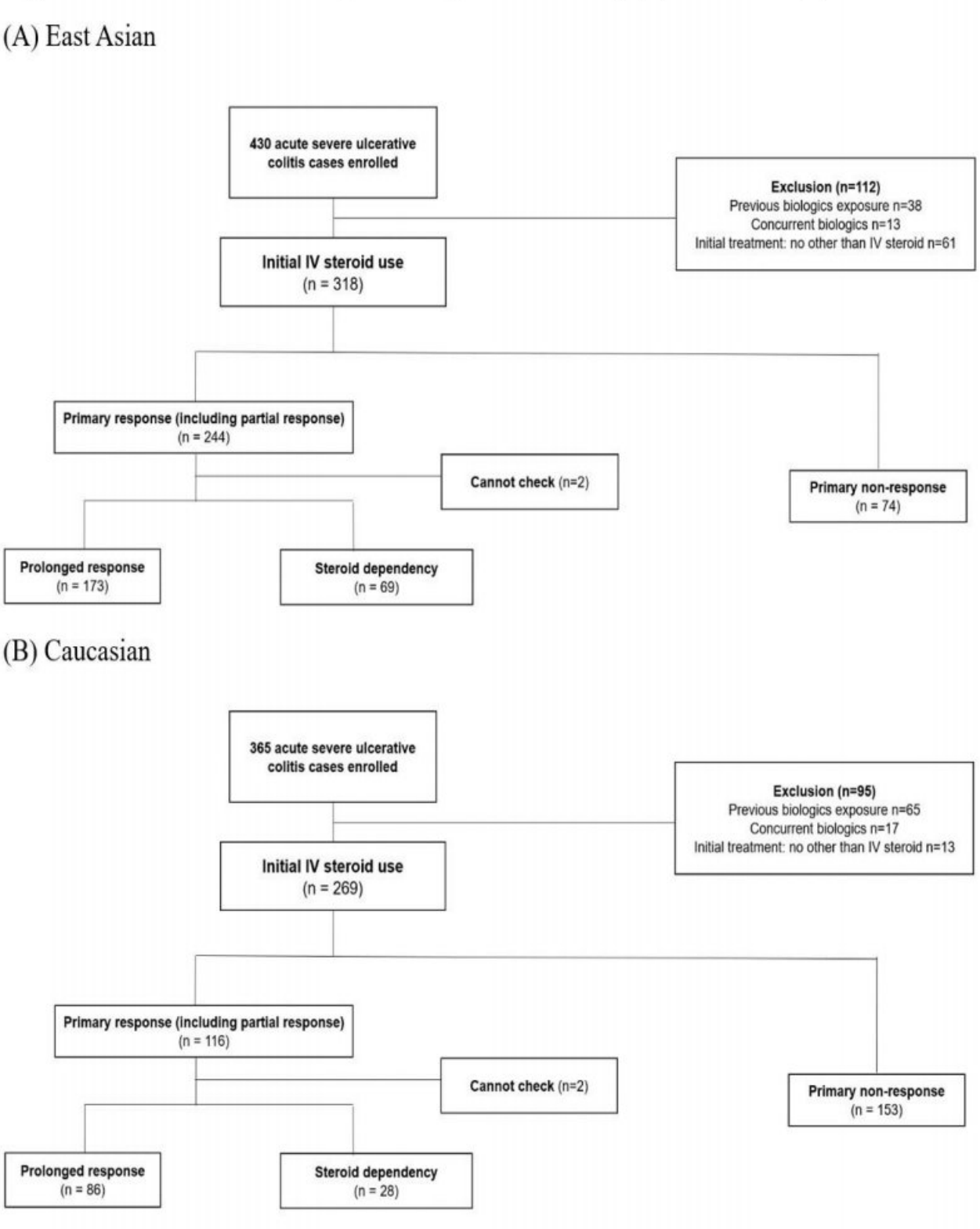


Table 1. Baseline Characteristics of the steroid dependent and prolonged response group

	Total (n=377)	Prolonged response (n=275)	Steroid dependent (n=102)	p
AOCC/ANZIBDC (n(%)/n(%))	240(63.7)/137(36.3)	171(62.2)/104(37.8)	69(67.6)/33(32.4)	0.33
Ethnicity (East Asian/Caucasian/others)	242 (64.2)/114 (30.2)/ 21 (5.6)	173 (62.9)/86 (31.3)/16 (5.8)	69 (67.6)/28 (27.5)/5(5.0)	0.69
Age (yr) (mean±SD)	42.4±17.2	41.8±16.9	44.2±17.9	0.23
Sex, Female (n, %)	155 (41.1)	109 (39.6)	46 (45.1)	0.34
Smoking (non, current, exsmoker, n, %)	273 (72.4)/73(19.4)/29(7.7)	204 (74.2)/45(16.4)/24(8.7)	69(67.6)/28(27.5)/5(4.9)	0.06
Phenotype, Age (A1/A2/A3) (n)	17 (4.5)/193 (51.5)/165 (43.8)	12 (4.4)/144 (52.4)/117 (42.5)	5 (4.9)/49 (48)/48 (47.1)	0.72
Phenotype, Extent (E1/E2/E3) (n)	17 (4.7)/121 (32.1)/224 (59.4)	12 (4.4)/75 (27.3)/175 (63.6)	5 (5)/46(46)/49 (49)	0.15
First presentation UC	136 (36.1)	106 (38.5)	30 (29.4)	0.10
Disease duration (yr) (mean±SD)	3.2±5.3	3.0±5.2	3.5±5.5	0.48
Mayo endoscopic score (mean±SD)	2.6±0.5	2.6±0.5	2.7±0.5	0.16
Partial Mayo-score (mean±SD)	7.7±1.1	7.8±1.1	7.6±0.9	0.80
UCEIS (mean±SD)	5.7±1.5	5.7±1.4	5.9±1.6	0.38
Presence of EIM (n, %)	14 (3.7)	11 (4.0)	3 (2.9)	0.54
Charlson comorbidity index (mean±SD)	0.4±0.9	0.4±0.9	0.3±0.8	0.57
Hospital stay (day) (mean±SD)	10.9±7.4	10.7±7.1	11.6±8.3	0.30
Hemoglobin (g/dL)	11.8±2.4	11.8±2.4	11.7±2.2	0.83
White Blood Cell (/uL)	10604±4625	10621±4892	10553±3734	0.89
C-reactive protein (mg/dL)	6.3±5.9	6.2±5.6	6.6±6.6	0.56
ESR (mm/hr)	44.2±28.0	43.1±26.7	47.3±31.2	0.43
Platelet (10^9/L)	384±152	388±157	374±135	0.40
Albumin (g/dL)	3.3±0.6	3.3±0.6	3.3±0.6	0.95

AOCC, Asian Organization of Crohn and Colitis; ANZIBDC, Australia New Zealand Inflammatory Bowel Disease Consortium; EIM: extra-intestinal manifestation, ESR, erythrocyte sedimentation rate; UCEIS, ulcerative colitis endoscopic index score

Table 2. Subgroup analysis of steroid dependent group according to ethnicity

	Total (n=102)	East Asian (n=69)	Caucasian (n=28)	Others (n=5)
Age (yr) (mean±SD)	44.2±17.9	46.0±17.8	42.0±19.0	31.2±3.0
Sex, Female (n, %)	46 (45.1)	31 (44.9)	13 (46.4)	2 (4)
Smoking (non, current, exsmoker, n, %)	69 (67.6)/28(27.5)/5(4.9)	42 (60.9)/23(33.3)/4(5.8)	22(78.6)/5(17.9)/1(3.6)	5(100)/0/0
Phenotype, Age (A1/A2/A3) (n)	5/49/48	2/30/37	3/14/11	0/5/0 *
Phenotype, Extent (E1/E2/E3) (n)	5/46/49	2/32/33	2/11/15	1/3/1
First presentation UC (n, %)	30 (29.4)	17 (24.6)	11 (39.3)	2 (40)
Disease duration (yr) (mean±SD)	3.5±5.5	3.3±4.9	4.0±7.0	3.1±4.0
Mayo endoscopic score (mean±SD)	2.7±0.5	2.8±0.4	2.5±0.6 *	2.3±0.5
Partial Mayo-score (mean±SD)	7.6±0.9	7.7±0.9	7.7±1.3	7.8±1.3
UCEIS (mean±SD)	5.9±1.6	6.1±1.5	5.1±1.6 *	4.7±1.5
Presence of EIM (n, %)	3 (2.9)	2 (2.9)	0	1 (20)
Charlson comorbidity index (mean±SD)	0.3±0.8	0.3±0.7	0.4±1.0	0
Hospital stay (day) (mean±SD)	11.6±8.3	14.5±8.3	5.7±3.9 **	4.6±3.1 **
Hemoglobin (g/dL)	11.7±2.2	11.3±2.1	12.5±2.2 *	13.7±1.9 *
White Blood Cell (/uL)	10553±3734	10308±3708	10737±3181	10885±3289
C-reactive protein (mg/dL)	6.6±6.6	6.7±6.9	6.8±6.5	4.0±4.6
ESR (mm/hr)	47.3±31.2	48.2±31.1	38.5±35.5	No data
Platelet (10^9/L)	374±135	367.3±134.6	403.5±137	369±147.8
Albumin (g/dL)	3.3±0.6	3.4±0.6	3.1±0.8	3.4±0.7

ESR, erythrocyte sedimentation rate; SD, standard deviation; UCEIS, ulcerative colitis endoscopic index score
*:$p<0.05$ compare with East Asian, **: $p<0.01$ compare with East Asian

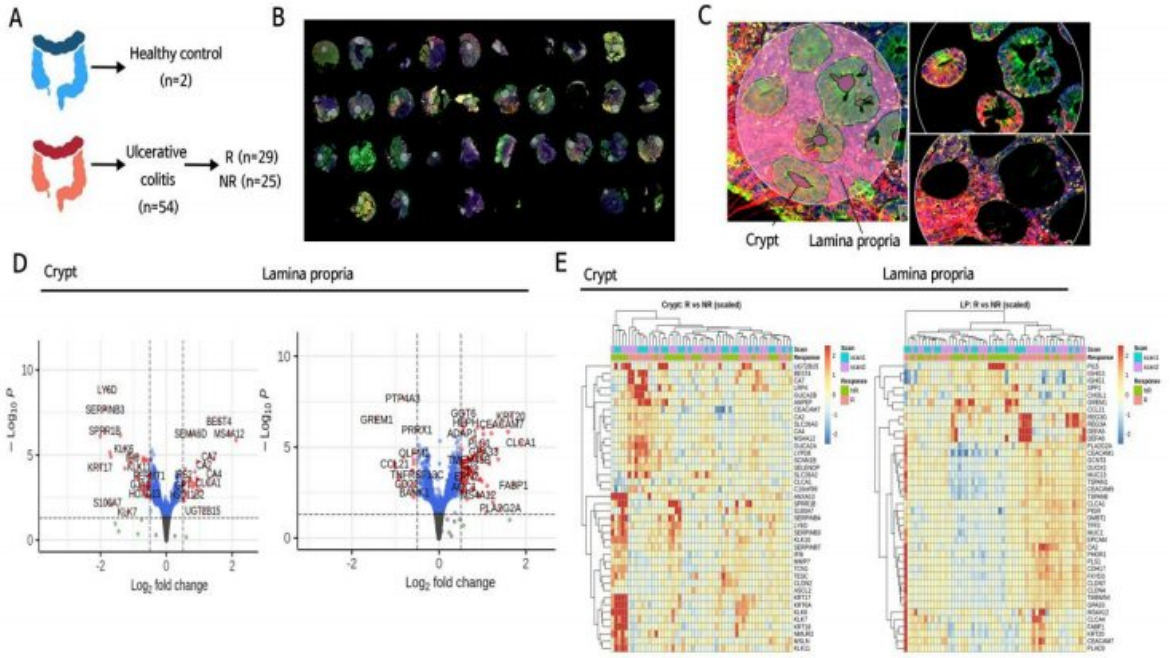
[KASID Presidential Plenary Session]

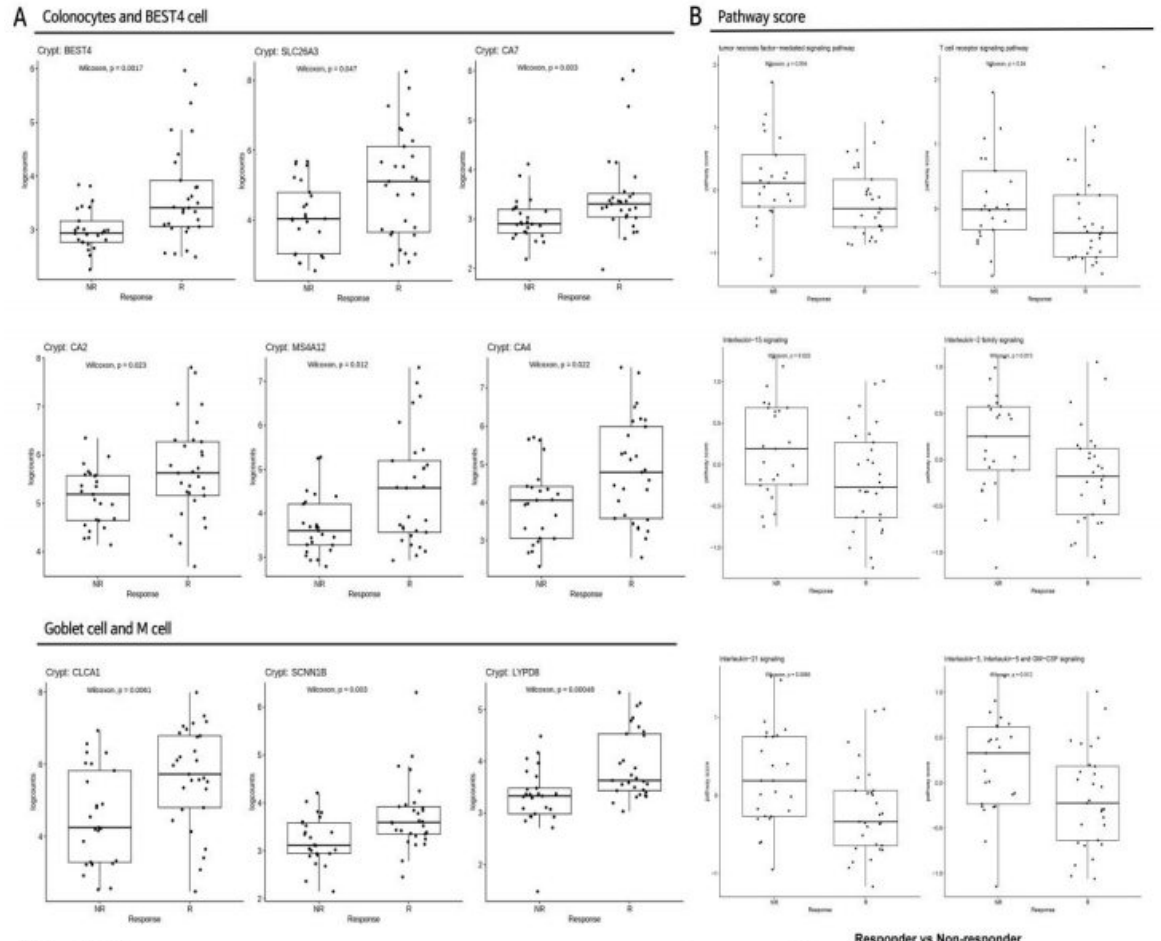
PS-3

Spatial Transcriptomics of Pre-treatment Biopsies Revealing Chronic Crypt Damage and Upregulated Inflammatory Process, Reflecting Histological Severity, as Predictors of Primary Responsiveness to TNF- Inhibitors in Bio-naive Ulcerative Colitis Patients

So-Woon Kim[1], Kiyong Na[1], Inho Park[3,4], Shin Ju Oh[2], Chang Kyun Lee[2]
[1]Pathology, Kyung Hee University Hospital, Kyung Hee University College of Medicine, Seoul, Korea
[2]Gastroenterology, Kyung Hee University Hospital, Kyung Hee University College of Medicine, Seoul, Korea
[3]Pathology, Gangnam Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
[4]Center for Precision Medicine, Gangnam Severance Hospital, Yonsei University College of Medicine, Seoul, Korea

Background / Aim : Biologic therapies, particularly tumor necrosis factor-alpha inhibitors (TNFi), have improved ulcerative colitis (UC) treatment, but many patients remain non-responsive. Essential for UC management is achieving histologic and molecular healing, but there's a gap in research on these changes at the crypt and lamina propria (LP) levels. Our study focuses on TNFi-resistant UC patients, using spatial transcriptomics to identify specific cell types in histologic sections, enhancing our understanding of UC treatment responses.
Methods : We evaluated 56 patients and two healthy control groups. Each underwent biopsies at the same sites before (preTx) and after treatment (postTx) (Figure 1A). This study focused on a 3-month follow-up of patients who were administered TNFi as a primary biologic therapy following resistance to conventional treatments. We used digital spatial profiling to analyze gene expression in the crypt and LP (Figure 1B, C).
Results : In our study, 29 UC patients were TNFi responders (R) and 25 non-responders (non-R). Comparative gene expression analysis showed distinct patterns: 72 genes in crypts and 105 in the LP differed between R and non-R (Figure 1D, E). Notably, non-R in the preTx samples had significantly lower expression of genes related to colonocyte and goblet cell maturation in crypts (Figure 2A). Pathway analysis revealed pronounced inflammatory signaling pathways, including TNF-mediated in the LP of the non-R (Figure 2B). Furthermore, when correlating spatial transcriptomic data with histomorphological features, we observed that crypt distortion and atrophy were significantly more pronounced in the non-R group than in the R group in the preTx biopsy samples (Figures 2C, D).
Conclusion : Our study unveils distinct molecular and histologic features between R and non-R to TNFi among bio-naive UC patients. The evaluation of chronic crypt damages, and severe inflammatory process in LP, in predicting TNFi response highlights the potential of early histologic assessment in guiding biologic therapy in the UC treatment pathway.
Keywords : Ulcerative Colitis, Anti-TNF Agents, Spatial Transcriptomics, Histology


A
Healthy control (n=2)
Ulcerative colitis (n=54)
R (n=29)
NR (n=25)
B
C
Crypt
Lamina propria
D
Crypt
Lamina propria
E
Crypt
Lamina propria


A Colonocytes and BEST4 cell
Crypt: BEST4
Crypt: SLC26A3
Crypt: CA7
Crypt: CA2
Crypt: MS4A12
Crypt: CA4
Goblet cell and M cell
Crypt: CLCA1
Crypt: SCNN1B
Crypt: LYPD8
B Pathway score
C Crypt distortion
NR
R
D
Responder vs Non-responder
Crypt distortion (%)
Predicted probability
Sensitivity
1 - Specificity
AUROC:0.92
P<0.0001
Prediction: 87%

[KASID Presidential Plenary Session]

PS-4

<Plenary 1> Breaking the Therapeutic Ceiling: Precision Medicine for Personalized Care of IBD

Byong Duk Ye
Gastroenterology and Inflammatory Bowel Disease Center,
University of Ulsan College of Medicine, Asan Medical Center, Korea

The management of inflammatory bowel disease (IBD) has been dramatically transformed over the last two decades with the introduction of biologics and small molecules. In addition, new therapeutics with other mechanisms of action are currently being developed for IBD management. Personalized care of patients with IBD involves the determination of patients with a high risk of progression and complications, setting individualized therapeutic targets, selecting the most appropriate therapy for a given patient by the better characterization of patients who may respond preferentially to specific therapeutic agents.

Precision medicine is the tailoring of treatment to the individual patient, encompassing a multitude of data-driven and multi-omic approaches to foster better clinical decision-making through a clearer understanding of the molecular basis of an individual's disease. In the field of IBD, precision medicine would have significant benefits, enabling timely therapy that is both effective and safe for the individual patient as well as an individualized monitoring strategy.

In this lecture, the current application of precision medicine for the personalized care of patients with IBD including some of the key areas of progress towards more accurately predicting disease susceptibility and its course, personalizing therapies, and monitoring therapeutic response will be reviewed. Finally, future perspectives of precision medicine including several challenges to be overcome in order to deliver this approach more appropriately will be discussed.

[KASID Presidential Plenary Session]

PS-5

<Plenary 2> Breaking the Therapeutic Ceiling: Integrating Evidence to Select Biologics and Small Molecules for IBD: What Clinicians Should Know

Parambir S Dulai
Medicine, Gastroenterology, Northwestern University, USA

The field of inflammatory bowel disease has experienced a tremendous amount of growth in treatment options. With this growth comes a need to understand how therapies should be integrated into clinical practice to maximize potential value and benefit to patients. In this lecture we will review available evidence and sources of evidence for the effectiveness of biologics and small molecules in IBD, how that evidence can guide selection of therapies for individual patients, and considerations clinicians should have been assessing the quality of evidence that will continue to arise over time. We will conclude with practical approaches to choose between therapies based on patient characteristics, and we will review decision support tools that can be used in routine care to guide treatment selection.

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POSTER ORAL PRESENTATION

[Poster Oral – Basic/Translational/Microbiome]

PO1-1

Integrated Analysis of Microbiome and Metabolome Reveals Disease-Specific Profiles in Inflammatory Bowel Diseases and Intestinal Behcet's Disease

Yehyun Park[1,2], Jae Bum Ahn[2], I Seul Park[2], Mijeong Son[2], Ji Hyung Kim[2], Hyun Woo Ma[2], Seung Won Kim[2], Jae Hee Cheon[2]

[1]Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea
[2]Internal Medicine, Yonsei University College of Medicine, Seoul, Korea

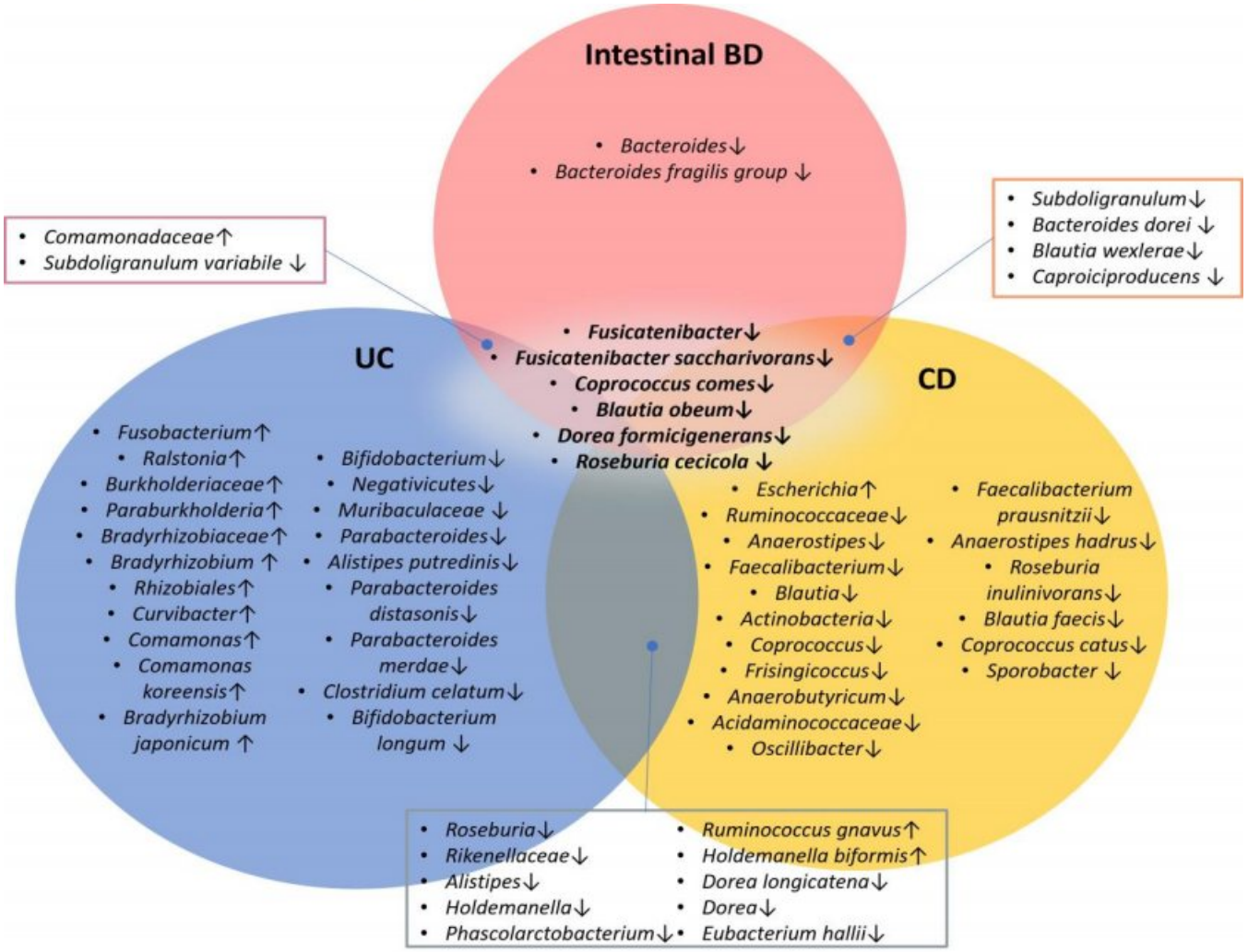
Background / Aim : Gut microbial and metabolic characteristics in intestinal Behcet's disease (BD), a condition sharing many clinical similarities with ulcerative colitis (UC) and Crohn's disease (CD), are largely unexplored. This study aimed to investigate the gut microbial and metabolic characteristics, as well as potential biomarkers in intestinal BD, comparing them with those in UC, CD, and healthy controls.

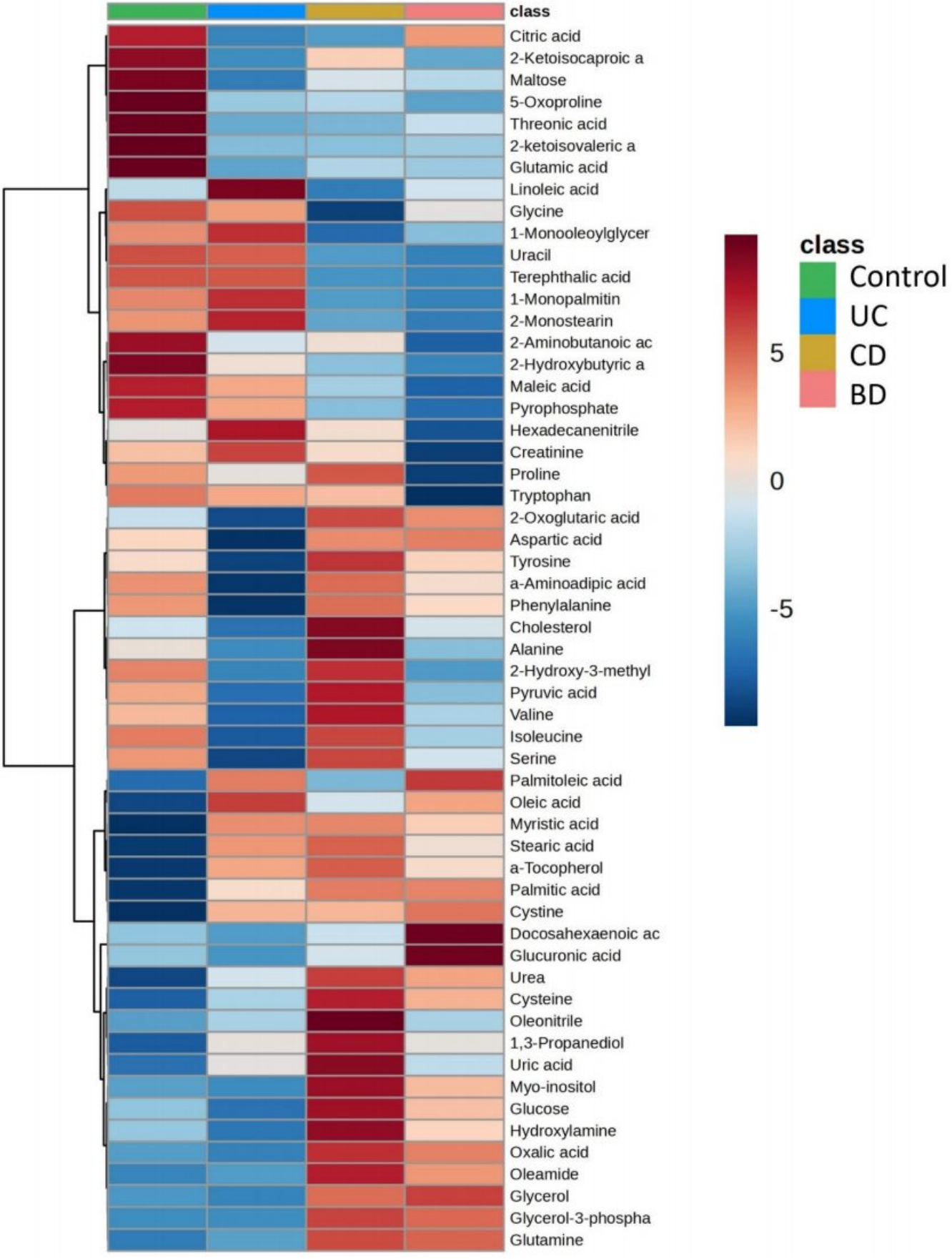
Methods : Patients with UC, CD, and intestinal BD, along with healthy volunteers undergoing diagnostic endoscopies, were enrolled. Colon tissue and stool samples were analyzed using 16S ribosomal RNA sequencing, to assess microbial diversity, taxonomic composition, and functional profiling. Plasma metabolomic analysis was performed using gas chromatography and ultra-performance liquid chromatography-time-of-flight mass spectrometry.

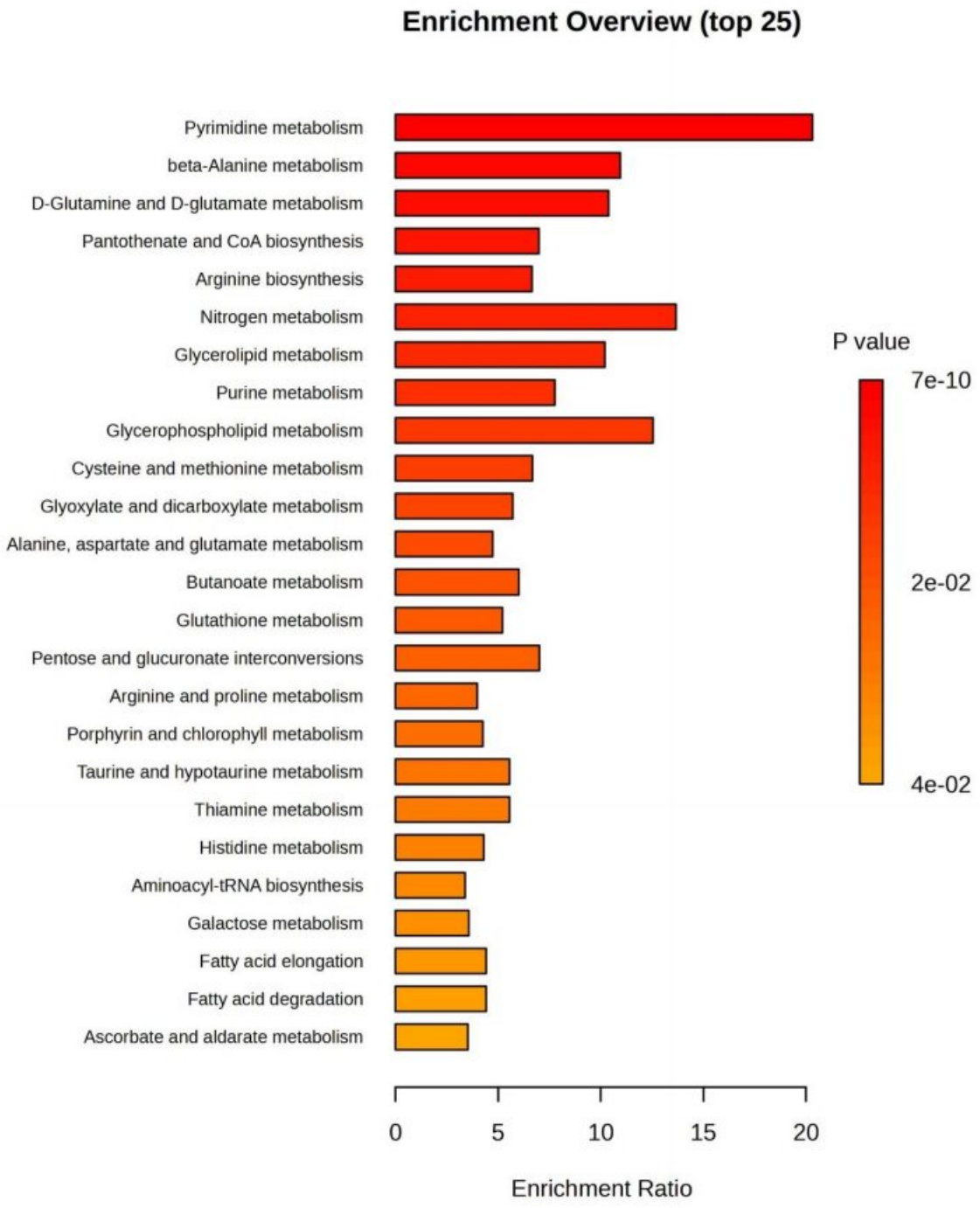
Results : In total, 100 patients (35 UC, 30 CD, and 35 BD) and 41 healthy volunteers were enrolled. While reduced microbial diversity was observed in the colon tissues from CD patients, no such significant decrease was shown in intestinal BD. The taxonomic profile of intestinal BD displayed distinct features different from UC, CD, and healthy controls (Figure 1). Common changes across all conditions included a decrease in five beneficial bacteria producing short-chain fatty acids. Additional changes in intestinal BD included a decreased abundance of *Subdoligranulum* variable and *Blautia wexlerae*, which were shared features with either UC or CD. Intestinal BD-specific alterations involved decreased abundance of certain bacteria, including *Bacteroides fragilis*. Metabolomic profiles of intestinal BD exhibited similarity to CD and distinction from UC and controls, revealing pronounced functional changes in energy metabolism and genetic information processing. These findings correlated with microbial functional analysis.

Conclusion : This integrative analysis unveiled both common and distinctive profiles in intestinal BD when compared to UC, CD, and controls. The study identified potential biomarkers, contributing to a deeper comprehension of the unique features in these diseases, which could serve as key elements for elucidating their pathogenesis.

Keywords : Intestinal Behcet's Disease, Ulcerative Colitis, Crohn's Disease, Microbiome, Metabolome


Intestinal BD
• Bacteroides↓
• Bacteroides fragilis group ↓
• Comamonadaceae↑
• Subdoligranulum variabile ↓
• Subdoligranulum↓
• Bacteroides dorei ↓
• Blautia wexlerae↓
• Caproiciproducens ↓
UC
CD
• Fusicatenibacter↓
• Fusicatenibacter saccharivorans↓
• Coprococcus comes↓
• Blautia obeum↓
• Dorea formicigenerans↓
• Roseburia cecicola ↓
• Fusobacterium↑
• Ralstonia↑
• Burkholderiaceae↑
• Paraburkholderia↑
• Bradyrhizobiaceae↑
• Bradyrhizobium ↑
• Rhizobiales↑
• Curvibacter↑
• Comamonas↑
• Comamonas koreensis↑
• Bradyrhizobium japonicum ↑
• Bifidobacterium↓
• Negativicutes↓
• Muribaculaceae ↓
• Parabacteroides↓
• Alistipes putredinis↓
• Parabacteroides distasonis↓
• Parabacteroides merdae↓
• Clostridium celatum↓
• Bifidobacterium longum ↓
• Escherichia↑
• Ruminococcaceae↓
• Anaerostipes↓
• Faecalibacterium↓
• Blautia↓
• Actinobacteria↓
• Coprococcus↓
• Frisingicoccus↓
• Anaerobutyricum↓
• Acidaminococcaceae↓
• Oscillibacter↓
• Faecalibacterium prausnitzii↓
• Anaerostipes hadrus↓
• Roseburia inulinivorans↓
• Blautia faecis↓
• Coprococcus catus↓
• Sporobacter ↓
• Roseburia↓
• Rikenellaceae↓
• Alistipes↓
• Holdemanella↓
• Phascolarctobacterium↓
• Ruminococcus gnavus↑
• Holdemanella biformis↑
• Dorea longicatena↓
• Dorea↓
• Eubacterium hallii↓


class
Citric acid
2-Ketoisocaproic a
Maltose
5-Oxoproline
Threonic acid
2-ketoisovaleric a
Glutamic acid
Linoleic acid
Glycine
1-Monooleoylglycer
Uracil
Terephthalic acid
1-Monopalmitin
2-Monostearin
2-Aminobutanoic ac
2-Hydroxybutyric a
Maleic acid
Pyrophosphate
Hexadecanenitrile
Creatinine
Proline
Tryptophan
2-Oxoglutaric acid
Aspartic acid
Tyrosine
a-Aminoadipic acid
Phenylalanine
Cholesterol
Alanine
2-Hydroxy-3-methyl
Pyruvic acid
Valine
Isoleucine
Serine
Palmitoleic acid
Oleic acid
Myristic acid
Stearic acid
a-Tocopherol
Palmitic acid
Cystine
Docosahexaenoic ac
Glucuronic acid
Urea
Cysteine
Oleonitrile
1,3-Propanediol
Uric acid
Myo-inositol
Glucose
Hydroxylamine
Oxalic acid
Oleamide
Glycerol
Glycerol-3-phospha
Glutamine
5
0
-5
class
Control
UC
CD
BD


Enrichment Overview (top 25)
Pyrimidine metabolism
beta-Alanine metabolism
D-Glutamine and D-glutamate metabolism
Pantothenate and CoA biosynthesis
Arginine biosynthesis
Nitrogen metabolism
Glycerolipid metabolism
Purine metabolism
Glycerophospholipid metabolism
Cysteine and methionine metabolism
Glyoxylate and dicarboxylate metabolism
Alanine, aspartate and glutamate metabolism
Butanoate metabolism
Glutathione metabolism
Pentose and glucuronate interconversions
Arginine and proline metabolism
Porphyrin and chlorophyll metabolism
Taurine and hypotaurine metabolism
Thiamine metabolism
Histidine metabolism
Aminoacyl-tRNA biosynthesis
Galactose metabolism
Fatty acid elongation
Fatty acid degradation
Ascorbate and aldarate metabolism
P value
7e-10
2e-02
4e-02
0
5
10
15
20
Enrichment Ratio

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[Poster Oral – Basic/Translational/Microbiome]

PO1-2

Reduction of Trypsin-Degrading Commensals Exacerbates Colitis

Hongsup Yoon[1], Nitsan Maharshak[3], Yosep Ji[5], Donghyun Lee[1], Wilhelm Holzapfel[1,5], Dirk Haller[2], Changkyun Lee[4]

[1]Life Science, Handong University, Pohang, Korea
[2]Nutrition and Immunology, Technical University of Munich, Munich, Germany
[3]Department of Gastroenterology and Liver Diseases, Tel Aviv Medical Center, Tel Aviv, Israel
[4]Department of Gastroenterology, Kyung Hee University College of Medicine, Seoul, Korea
[5]HEM pharma, Seoul, Korea

Background / Aim : Accumulating evidence indicates that intestinal microbiota degrade a luminal trypsin in the large intestine. Physiological dysregulation of tryptic activity (TA) is associated with epithelial barrier disruption and microbial dysbiosis in the intestine. While the barrier dysfunction and microbial dysbiosis in the intestine are risk factors for development of inflammatory bowel diseases (IBD), the causal relevance of increased TA in the pathogenesis of IBD remains largely unknown. We hypothesized that absence of trpsin-degrading commensal accelerate colitis.

Methods : Stools from 32 patients with IBD were used to measure TA and to investigate fecal microbiome through shotgun metagenomic sequencing. Stimulation of protease activating receptor 2 (PAR2-/-) epithelial cells and colon with fecal supernatants from patients was performed to assess permeability. IL10-/- mice showing high or low TA were used to investigate colitis development. Tight junction protein and PAR2 activation were determined in germ-free (GF) mice colonized with fecal microbiota from patient showing high or low TA.

Results : Patients with IBD showed a high TA. Ulcerative colitis (UC) and Crohn's disease (CD) patients showing high TA showed a loss of tight junction (ZO-1) and activation of PAR-2 compared to those having low TA. Strongly increased TA was associated with reduced microbial diversity. Fecal supernatants from CD patients with high TA strongly increased paracellular permeability in the intestinal epithelial cells. Trypsin inhibitor diminished barrier dysfunction. GF mice colonized with fecal microbiota from CD patients with high TA showed increased epithelial permeability in the large intestine. High TA-mediated PAR2 activation was causal for disruption of ZO-1 and increased epithelial permeability. Importantly, high PA accelerated colitis development in IL10-/- mice. However, protease inhibitor treatment partially abrogated the proinflammatory response in the colon of IL10-/- mice.

Conclusion : Reduction of trypsin-degrading commensals substantially triggers pro-inflammatory response through impairment of barrier function. These findings demonstrate that absence of trypsin-degrading commensals may contribute to development of IBD.

Keywords : Trypsin Activity, Barrier, Microbiome, Inflammation, Colitis

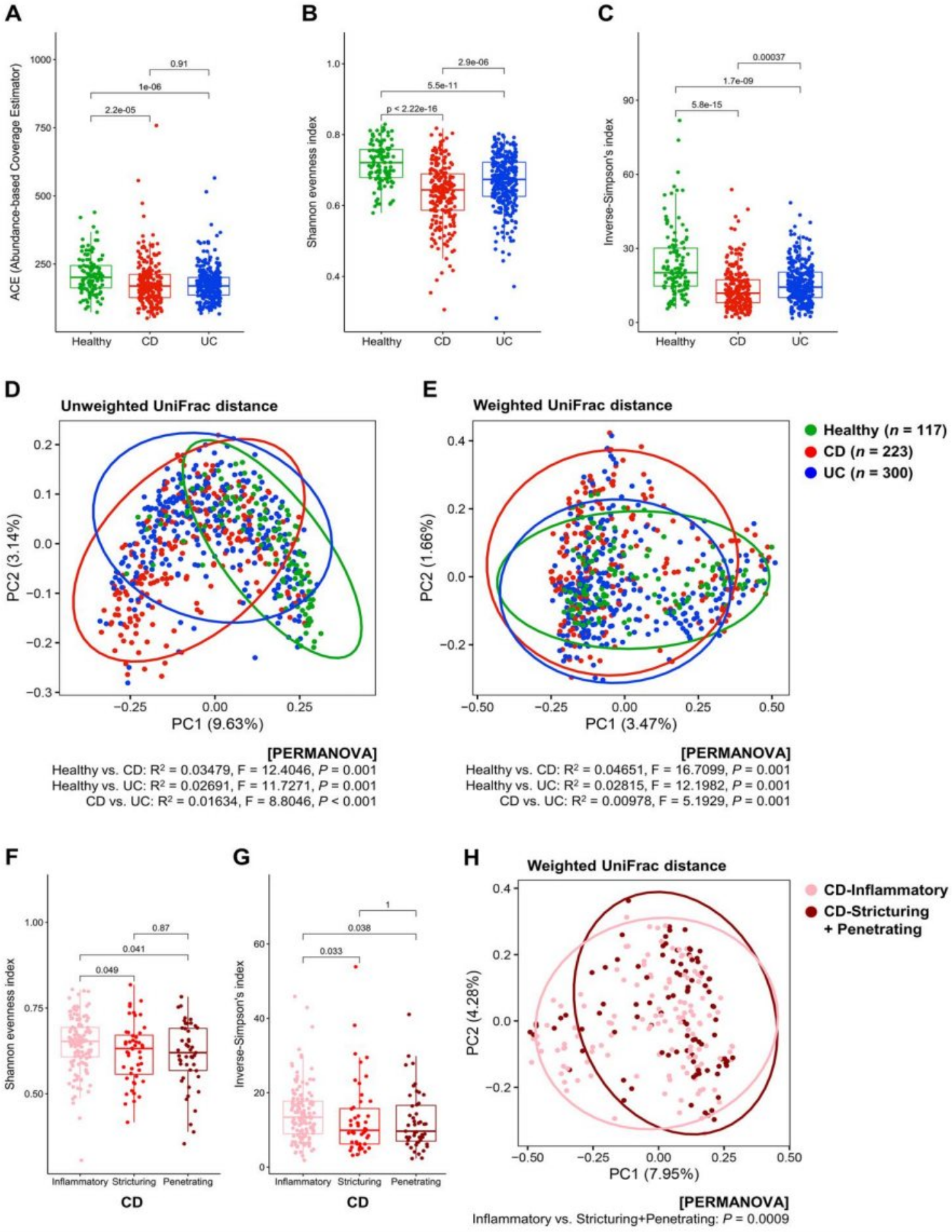
[Poster Oral – Basic/Translational/Microbiome]

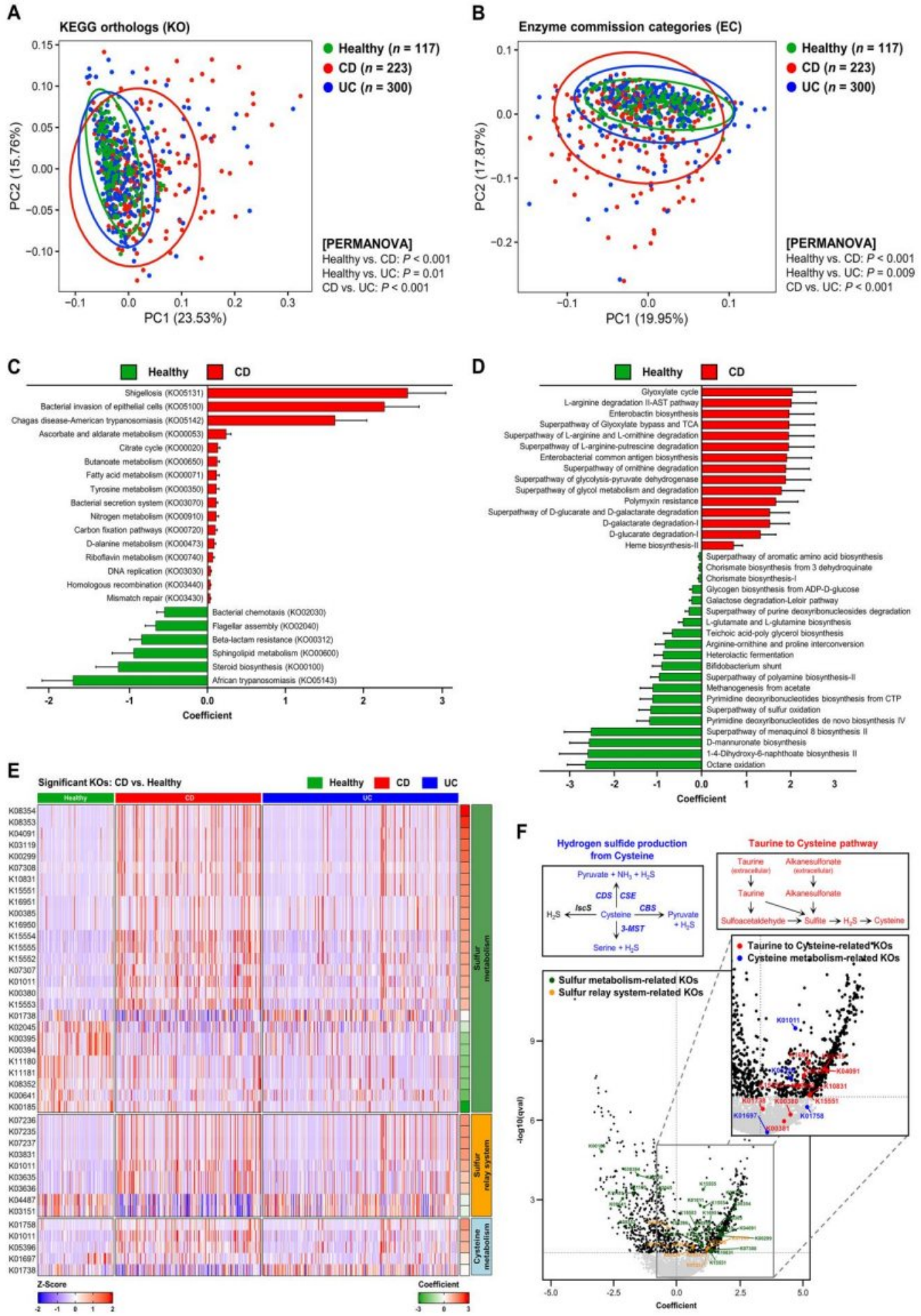
PO1-3

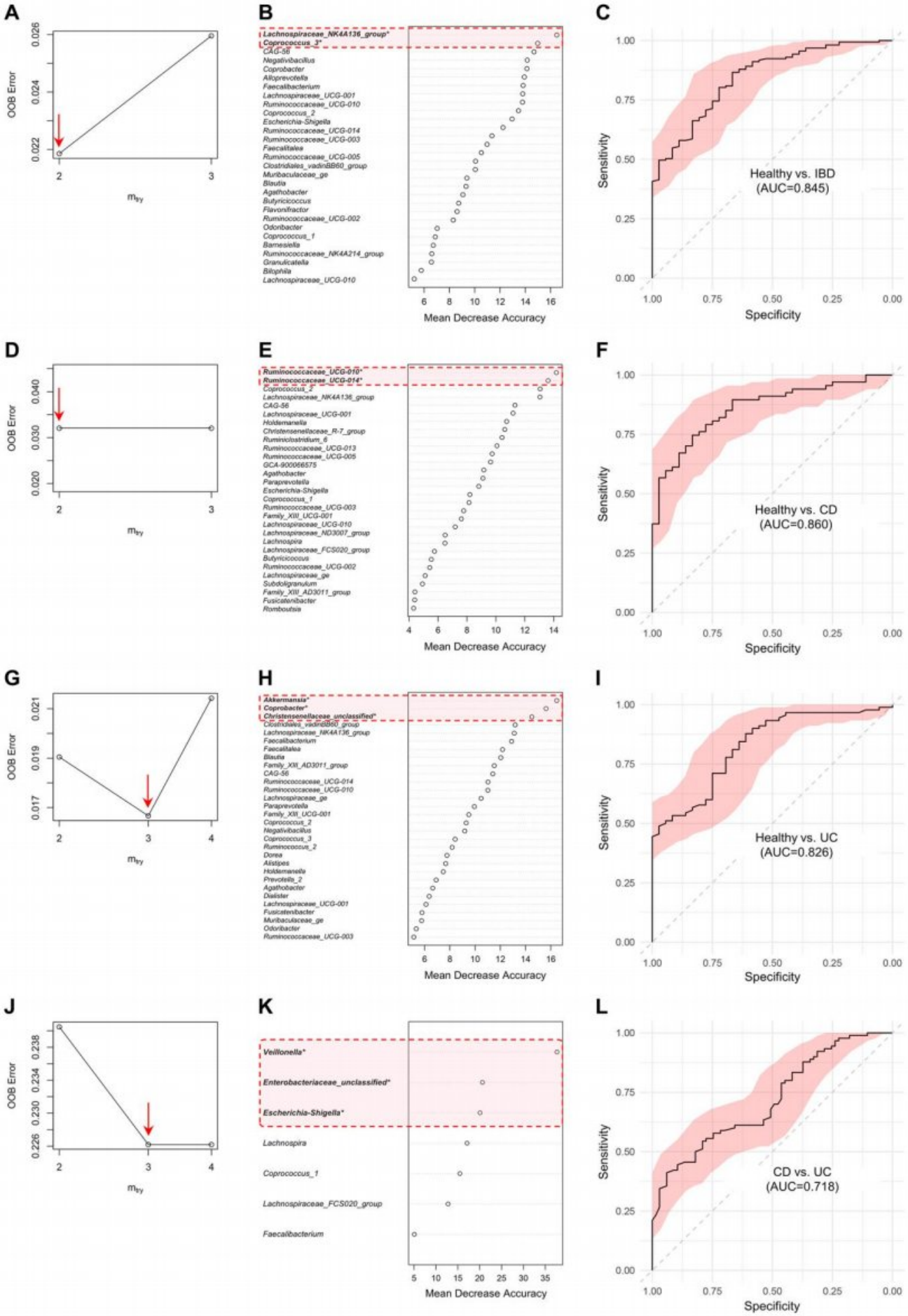
Dysbiotic Signatures and Diagnostic Markers of Gut Microbiota Precisely Predict the Subtypes of Inflammatory Bowel Disease: Study of a Cohort with Increasing Prevalence in South Korean Populations

Hyun Sik Kim[1], Shin Ju Oh[2], Jin-Woo Bae[1], Chang Kyun Lee[2]
[1]Biology, Kyung Hee University, Seoul, Korea
[2]Gastroenterology, Kyung Hee University College of Medicine, Seoul, Korea

Background / Aim : This study was designed to determine metagenomics-based gut dysbiotic characteristics and identify fecal microbial markers in East Asian populations with inflammatory bowel disease (IBD).
Methods : Fecal samples were collected 640 individuals in Korea, including 523 patients with IBD (223 with Crohn's disease [CD] and 300 with ulcerative colitis [UC]) and 117 healthy controls. The samples were subjected to cross-sectional gut metagenomic analysis using 16S rRNA sequencing and bioinformatics analysis.
Results : Patients with IBD, particularly those with CD, exhibited significantly lower alpha diversity than healthy subjects. Differential abundance analysis revealed dysbiotic signatures, characterized by an expansion of the genus *Escherichia-Shigella* in CD patients and an expansion of the families *Bacteroidaceae* and *Ruminococcaceae* and their constituent taxa in UC patients. Functional annotations showed that functional pathways related to bacterial pathogenesis and production of hydrogen sulfide (H2S) were strongly upregulated in CD patients. A dysbiosis score, calculated based on functional characteristics, correlated highly with disease severity. Markers distinguishing between healthy subjects and IBD patients showed accurate classification based on a small number of microbial taxa, which may be used to diagnose ambiguous cases.
Conclusion : The genus Escherichia-Shigella may play a critical role in the etiopathogenesis of CD in subjects from East Asia, a population in which IBD has shown unique epidemiological characteristics. These findings confirm the taxonomic and functional dysbiosis of the gut microbiota in IBD patients, especially those with CD. Taxa indicative of dysbiosis may have significant implications for future clinical research on the management and diagnosis of IBD.
Keywords : Inflammatory Bowel Disease, Crohn's Disease, Gut Microbiota, Dysbiosis, Diagnostic Marker


A
ACE (Abundance-based Coverage Estimator)
0.91
1e-06
2.2e-05
Healthy
CD
UC
B
Shannon evenness index
2.9e-06
5.5e-11
p < 2.22e-16
C
Inverse-Simpson's index
0.00037
1.7e-09
5.8e-15
D
Unweighted UniFrac distance
PC2 (3.14%)
PC1 (9.63%)
[PERMANOVA]
Healthy vs. CD: R² = 0.03479, F = 12.4046, P = 0.001
Healthy vs. UC: R² = 0.02691, F = 11.7271, P = 0.001
CD vs. UC: R² = 0.01634, F = 8.8046, P < 0.001
E
Weighted UniFrac distance
PC2 (1.66%)
PC1 (3.47%)
[PERMANOVA]
Healthy vs. CD: R² = 0.04651, F = 16.7099, P = 0.001
Healthy vs. UC: R² = 0.02815, F = 12.1982, P = 0.001
CD vs. UC: R² = 0.00978, F = 5.1929, P = 0.001
Healthy (n = 117)
CD (n = 223)
UC (n = 300)
F
Shannon evenness index
0.87
0.041
0.049
Inflammatory
Stricturing
Penetrating
CD
G
Inverse-Simpson's index
1
0.038
0.033
H
Weighted UniFrac distance
PC2 (4.28%)
PC1 (7.95%)
[PERMANOVA]
Inflammatory vs. Stricturing+Penetrating: P = 0.0009
CD-Inflammatory
CD-Stricturing + Penetrating


A
KEGG orthologs (KO)
Healthy (n = 117)
CD (n = 223)
UC (n = 300)
PC2 (15.76%)
PC1 (23.53%)
[PERMANOVA]
Healthy vs. CD: P < 0.001
Healthy vs. UC: P = 0.01
CD vs. UC: P < 0.001
B
Enzyme commission categories (EC)
Healthy (n = 117)
CD (n = 223)
UC (n = 300)
PC2 (17.87%)
PC1 (19.95%)
[PERMANOVA]
Healthy vs. CD: P < 0.001
Healthy vs. UC: P = 0.009
CD vs. UC: P < 0.001
C
Healthy
CD
Shigellosis (KO05131)
Bacterial invasion of epithelial cells (KO05100)
Chagas disease-American trypanosomiasis (KO05142)
Ascorbate and aldarate metabolism (KO00053)
Citrate cycle (KO00020)
Butanoate metabolism (KO00650)
Fatty acid metabolism (KO00071)
Tyrosine metabolism (KO00350)
Bacterial secretion system (KO03070)
Nitrogen metabolism (KO00910)
Carbon fixation pathways (KO00720)
D-alanine metabolism (KO00473)
Riboflavin metabolism (KO00740)
DNA replication (KO03030)
Homologous recombination (KO03440)
Mismatch repair (KO03430)
Bacterial chemotaxis (KO02030)
Flagellar assembly (KO02040)
Beta-lactam resistance (KO00312)
Sphingolipid metabolism (KO00600)
Steroid biosynthesis (KO00100)
African trypanosomiasis (KO05143)
Coefficient
D
Healthy
CD
Glyoxylate cycle
L-arginine degradation II-AST pathway
Enterobactin biosynthesis
Superpathway of Glyoxylate bypass and TCA
Superpathway of L-arginine and L-ornithine degradation
Superpathway of L-arginine-putrescine degradation
Enterobacterial common antigen biosynthesis
Superpathway of ornithine degradation
Superpathway of glycolysis-pyruvate dehydrogenase
Superpathway of glycol metabolism and degradation
Polymyxin resistance
Superpathway of D-glucarate and D-galactarate degradation
D-galactarate degradation-I
D-glucarate degradation-I
Heme biosynthesis-II
Superpathway of aromatic amino acid biosynthesis
Chorismate biosynthesis from 3 dehydroquinate
Chorismate biosynthesis-I
Glycogen biosynthesis from ADP-D-glucose
Galactose degradation-Leloir pathway
Superpathway of purine deoxyribonucleosides degradation
L-glutamate and L-glutamine biosynthesis
Teichoic acid-poly glycerol biosynthesis
Arginine-ornithine and proline interconversion
Heterolactic fermentation
Bifidobacterium shunt
Superpathway of polyamine biosynthesis-II
Methanogenesis from acetate
Pyrimidine deoxyribonucleotides biosynthesis from CTP
Superpathway of sulfur oxidation
Pyrimidine deoxyribonucleotides de novo biosynthesis IV
Superpathway of menaquinol 8 biosynthesis II
D-mannuronate biosynthesis
1-4-Dihydroxy-6-naphthoate biosynthesis II
Octane oxidation
Coefficient
E
Significant KOs: CD vs. Healthy
Healthy
CD
UC
Sulfur metabolism
Sulfur relay system
Cysteine metabolism
Z-Score
Coefficient
F
Hydrogen sulfide production from Cysteine
Pyruvate + NH3 + H2S
CDS
CSE
IscS
CBS
3-MST
Cysteine
Pyruvate + H2S
Serine + H2S
Taurine to Cysteine pathway
Taurine (extracellular)
Alkanesulfonate (extracellular)
Taurine
Alkanesulfonate
Sulfoacetaldehyde
Sulfite
H2S
Cysteine
Taurine to Cysteine-related KOs
Cysteine metabolism-related KOs
Sulfur metabolism-related KOs
Sulfur relay system-related KOs
-log10(qval)
Coefficient


A
OOB Error
0.022
0.024
0.026
2
3
mtry
B
Lachnospiraceae_NK4A136_group*
Coprococcus_3*
CAG-56
Negativibacillus
Coprobacter
Alloprevotella
Faecalibacterium
Lachnospiraceae_UCG-001
Ruminococcaceae_UCG-010
Coprococcus_2
Escherichia-Shigella
Ruminococcaceae_UCG-014
Ruminococcaceae_UCG-003
Faecalitalea
Ruminococcaceae_UCG-005
Clostridiales_vadinBB60_group
Muribaculaceae_ge
Blautia
Agathobacter
Butyricicoccus
Flavonifractor
Ruminococcaceae_UCG-002
Odoribacter
Coprococcus_1
Barnesiella
Ruminococcaceae_NK4A214_group
Granulicatella
Bilophila
Lachnospiraceae_UCG-010
6 8 10 12 14 16
Mean Decrease Accuracy
C
Sensitivity
Specificity
1.00 0.75 0.50 0.25 0.00
Healthy vs. IBD
(AUC=0.845)
D
OOB Error
0.020
0.030
0.040
2
3
mtry
E
Ruminococcaceae_UCG-010*
Ruminococcaceae_UCG-014*
Coprococcus_2*
Lachnospiraceae_NK4A136_group
CAG-56
Lachnospiraceae_UCG-001
Holdemanella
Christensenellaceae_R-7_group
Ruminiclostridium_6
Ruminococcaceae_UCG-013
Ruminococcaceae_UCG-005
GCA-900066575
Agathobacter
Paraprevotella
Escherichia-Shigella
Coprococcus_1
Ruminococcaceae_UCG-003
Family_XIII_UCG-001
Lachnospiraceae_UCG-010
Lachnospiraceae_ND3007_group
Lachnospira
Lachnospiraceae_FCS020_group
Butyricicoccus
Ruminococcaceae_UCG-002
Lachnospiraceae_ge
Subdoligranulum
Family_XIII_AD3011_group
Fusicatenibacter
Romboutsia
4 6 8 10 12 14
Mean Decrease Accuracy
F
Sensitivity
Specificity
1.00 0.75 0.50 0.25 0.00
Healthy vs. CD
(AUC=0.860)
G
OOB Error
0.017
0.019
0.021
2
3
4
mtry
H
Akkermansia*
Coprobacter*
Christensenellaceae_unclassified*
Clostridiales_vadinBB60_group
Lachnospiraceae_NK4A136_group
Faecalibacterium
Faecalitalea
Blautia
Family_XIII_AD3011_group
CAG-56
Ruminococcaceae_UCG-014
Ruminococcaceae_UCG-010
Lachnospiraceae_ge
Paraprevotella
Family_XIII_UCG-001
Coprococcus_2
Negativibacillus
Coprococcus_3
Ruminococcus_2
Dorea
Alistipes
Holdemanella
Prevotella_2
Agathobacter
Dialister
Lachnospiraceae_UCG-001
Fusicatenibacter
Muribaculaceae_ge
Odoribacter
Ruminococcaceae_UCG-003
6 8 10 12 14 16
Mean Decrease Accuracy
I
Sensitivity
Specificity
1.00 0.75 0.50 0.25 0.00
Healthy vs. UC
(AUC=0.826)
J
OOB Error
0.226
0.230
0.234
0.238
2
3
4
mtry
K
Veillonella*
Enterobacteriaceae_unclassified*
Escherichia-Shigella*
Lachnospira
Coprococcus_1
Lachnospiraceae_FCS020_group
Faecalibacterium
5 10 15 20 25 30 35
Mean Decrease Accuracy
L
Sensitivity
Specificity
1.00 0.75 0.50 0.25 0.00
CD vs. UC
(AUC=0.718)

[Poster Oral – Basic/Translational/Microbiome]

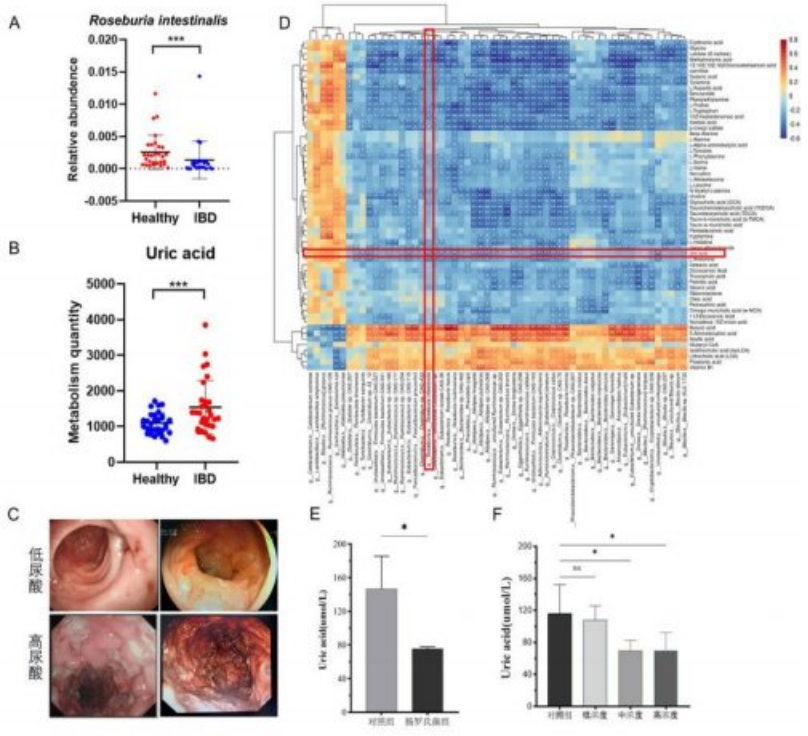
PO1-4

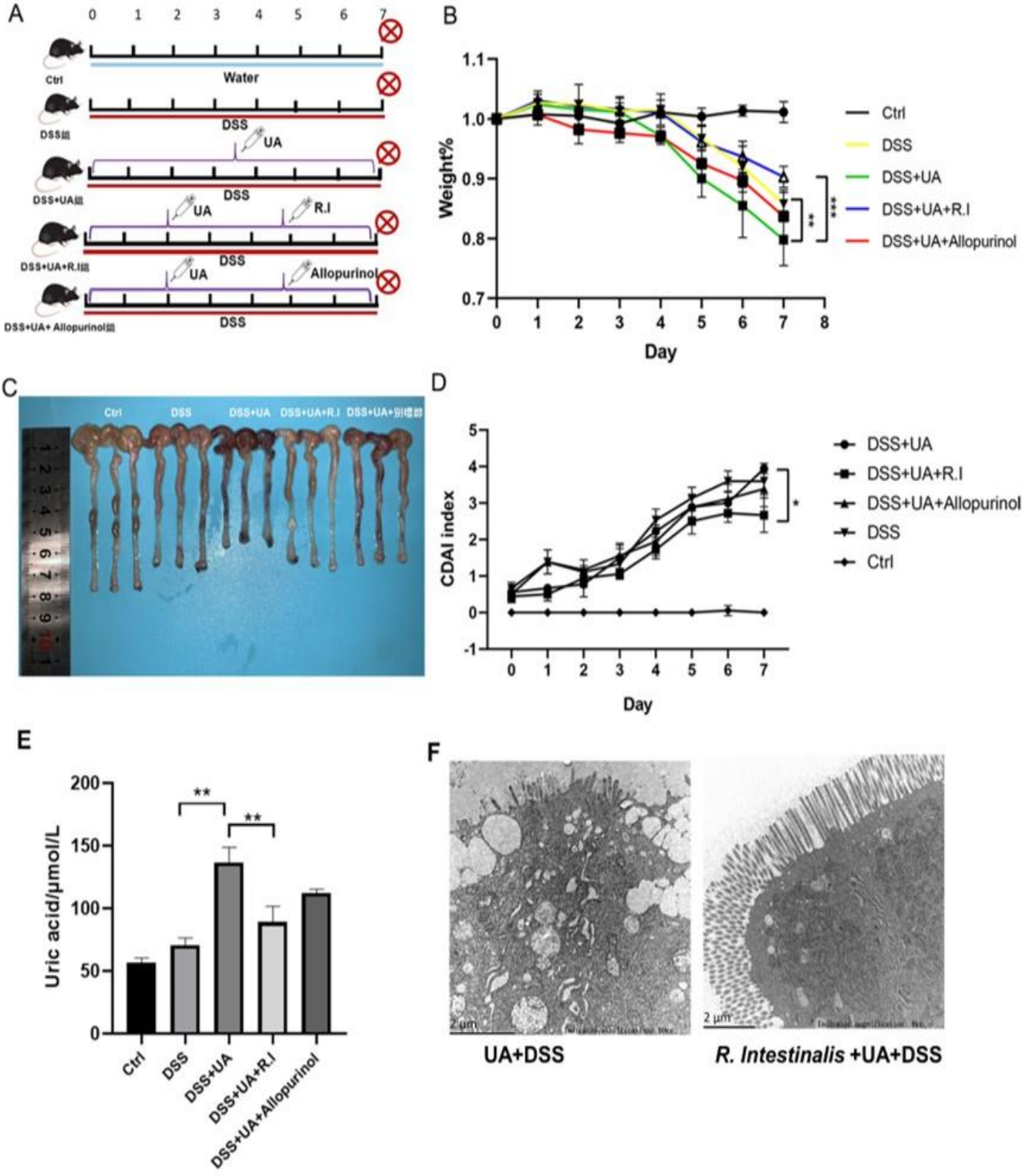
R. Intestinalis Improves IBD by Preventing Gut Uric Acid Absorption through Inhibiting METTL3 Mediated m6A Modification of SLC2A9

Kai Nie[1], Xiaoyan Wang[1]
[1]Gastroenterology, The Third Xiangya Hospital of Central South University, Changsha, China

Background / Aim : Inflammatory bowel disease (IBD) is a chronic inflammatory disease with persistent, recurrent, unsatisfactory response, and a poor prognosis. The alteration of uric acid metabolism by microbiota may contribute to the development of IBD.
Methods : In this study, metagenomic and metabolomic analyses were performed on fecal samples from 30 untreated IBD patients and 30 healthy controls. Body weight, colon length, disease activity score, serum uric acid levels, and electron microscopy were all assessed. The RNAseq combined with m6A antibody dot blot assay was conducted. MeRIP sequencing data analysis, SRAMP database predicted the potential for SLC2A9 mRNA to be modified by m6A modification.
Results : Multi-omics analysis revealed that the abundance of *R. intestinalis* was significantly decreased in untreated IBD patients, and uric acid levels correlate wit disease severity, while the multi-omics integrated analysis suggested a significant negative correlation between *R. intestinalis* and uric acid. *R. intestinalis* can lower blood uric acid levels in mice and it can alleviate the intestinal mucosal inflammation exacerbated by uric acid treatment. Butyric acid has been reported to regulate m6A, and dot blot assays showed that *R. intestinalis* can reduce the m6A modification level of intestinal epithelial cells, METTL3, and SLC2A9. MeRIP sequencing data further indicated that METTL3 can bind to SLC2A9 mRNA through m6A modification. Meanwhile, based on sequence prediction, the research team identified 13 potential m6A modification sites on SLC2A9 mRNA, of which 4 sites had extremely high credibility. The highest credibility site had a score of 0.694, with a modification site sequence of GGACU located on an adenosine nucleotide.
Conclusion : *R. intestinalis* inhibit the METTL3 mediated m6A modification of intestinal epithelial SLC2A9, reducing the expression of SLC2A9, preventing the epithelial absorption of uric acid, and relieving IBD-related colitis

Keywords : IBD, *R. Intestinalis*, Uric Acid, m6A, SLC2A9




A
0 1 2 3 4 5 6 7
Ctrl
Water
DSS组
DSS
UA
DSS+UA组
DSS
UA
R.I
DSS+UA+R.I组
DSS
UA
Allopurinol
DSS+UA+ Allopurinol组
DSS
B
Weight%
Day
Ctrl
DSS
DSS+UA
DSS+UA+R.I
DSS+UA+Allopurinol
C
Ctrl
DSS
DSS+UA
DSS+UA+R.I
D
CDAI index
Day
DSS+UA
DSS+UA+R.I
DSS+UA+Allopurinol
DSS
Ctrl
E
Uric acid/μmol/L
Ctrl
DSS
DSS+UA
DSS+UA+R.I
DSS+UA+Allopurinol
F
UA+DSS
R. Intestinalis +UA+DSS

[Poster Oral – Basic/Translational/Microbiome]

PO1-5

Roseburia Faecis Aggravates Acute Colitis in Mice through the Macrophage Polarization to M1 Phenotype and Microbial Dysbiosis

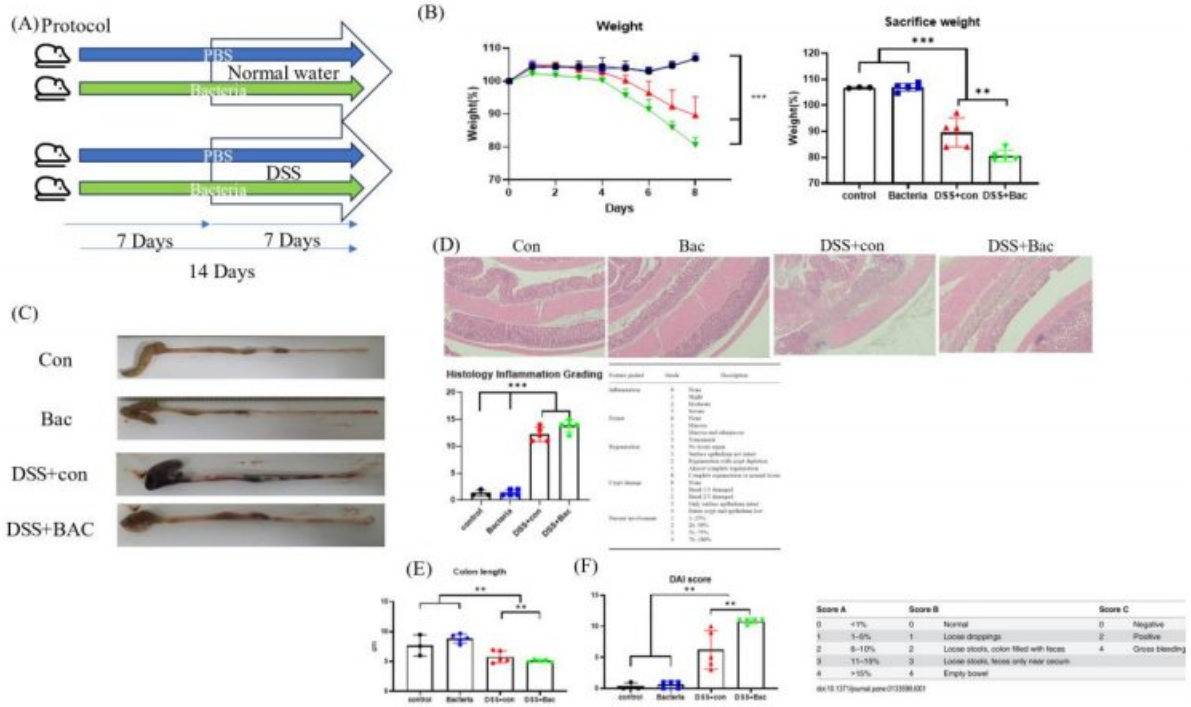
Hyun Taek Hong[3], Hee-Tae Yoon[2], Hyunsun Park[2], Jong Pil Im[1], Joo Sung Kim[1], Seong-Joon Koh[1,2]

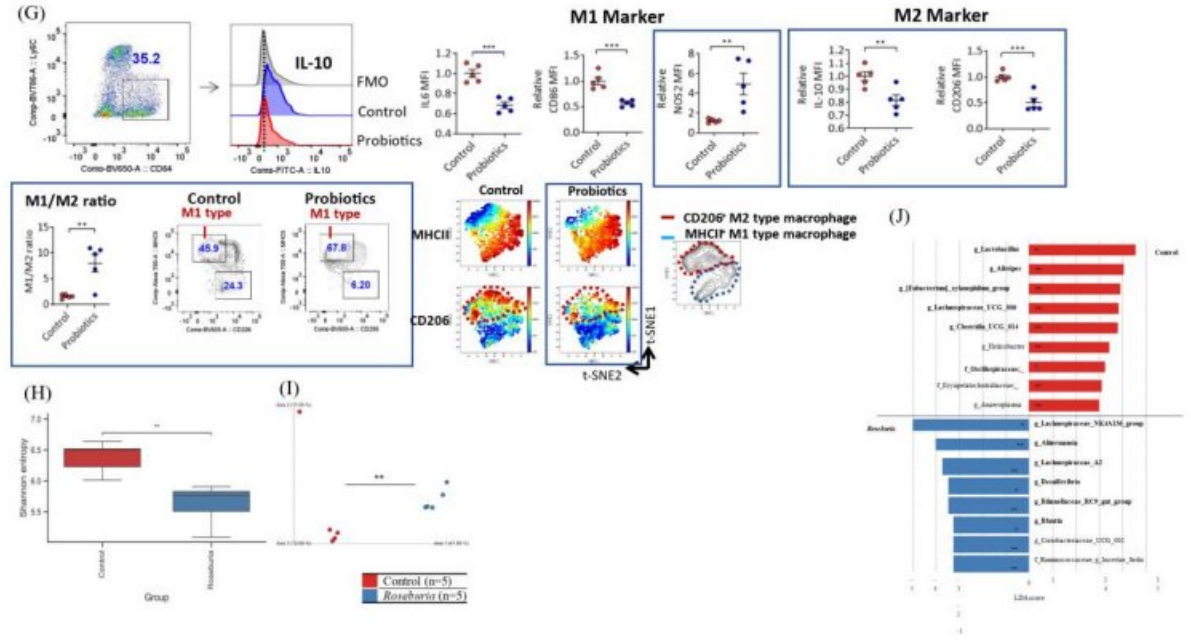
[1]Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea

[2]Laboratory of Intestinal Mucosa and Skin Immunology, Seoul National University College of Medicine, Seoul, Korea

[3]Biomedical Sciences Seoul National University Graduate School, Seoul National University College of Medicine, Seoul, Korea

Background / Aim : The aim of this study is to evaluate he role of Roseburia Faecis in intestinal inflammation.
Methods : Seven weeks-old C57BL/6 mice were divided into 4 groups conducting phosphate-buffered saline(PBS), *R.Faecis* (Bacteria) with 3% dextran sodium sulfate (DSS) or not. For 14 days, each group was fed PBS and bacteria orally and DSS water intake was performed on day 7. Disease activity index (DAI), and histologic score. Finally, Fluorescence Activated Cell Sortings (FACS) and 16s rRNA sequencing were performed to elucidate the mechanism of *R.Faecis* in intestinal inflammation.
Results : DSS-treated bacteria group exhibited a noticeable decrease in body weight compared to the DSS-treated PBS group. Histology inflammation grading, colon length measured through gross photos, and DAI scoring did not display significant differences between the bacteria group and control, despite the evident body weight reduction in the former group. FACS analysis showed the macrophage polarization to the M1 phenotype, resulting in the increase M1/M2 ratio. Microbial analyses from stool samples resulted in a reduction of α-diversity in the bacteria group. In addition, β-diversity, demonstrated a complete shift in the microbiome between the two groups. LEfSe analysis revealed significant differences in the relative abundance of bacterial strains between the two groups.
Conclusion : : *R.Faecis* aggravates acute murine colitis. These results suggest that regulation of *R.Faecis* can be a therapeutic target for the treatment of IBD
Keywords : IBD, *Roseburia Faecis*, Colitis


(A) Protocol
PBS
Normal water
Bacteria
PBS
DSS
Bacteria
7 Days
7 Days
14 Days
(B)
Weight
Weight(%)
Days
Sacrifice weight
control
Bacteria
DSS+con
DSS+Bac
(C)
Con
Bac
DSS+con
DSS+BAC
(D)
Con
Bac
DSS+con
DSS+Bac
Histology Inflammation Grading
(E)
Colon length
(F)
DAI score
Score A
Score B
Score C
Normal
Loose droppings
Loose stools, colon filled with feces
Loose stools, feces only near cecum
Empty bowel
Negative
Positive
Gross bleeding


(G)
35.2
IL-10
FMO
Control
Probiotics
M1 Marker
M2 Marker
IL6 MFI
CD86 MFI
NOS2 MFI
IL-10 MFI
CD206 MFI
M1/M2 ratio
Control
M1 type
Probiotics
M1 type
45.9
24.3
67.8
4.20
MHCII
CD206
t-SNE1
t-SNE2
CD206+ M2 type macrophage
MHCII+ M1 type macrophage
(H)
Shannon entropy
Group
(I)
Control (n=5)
Rosebaria (n=5)
(J)
Control
Rosebaria
LDA score

[Poster Oral – Basic/Translational/Microbiome]

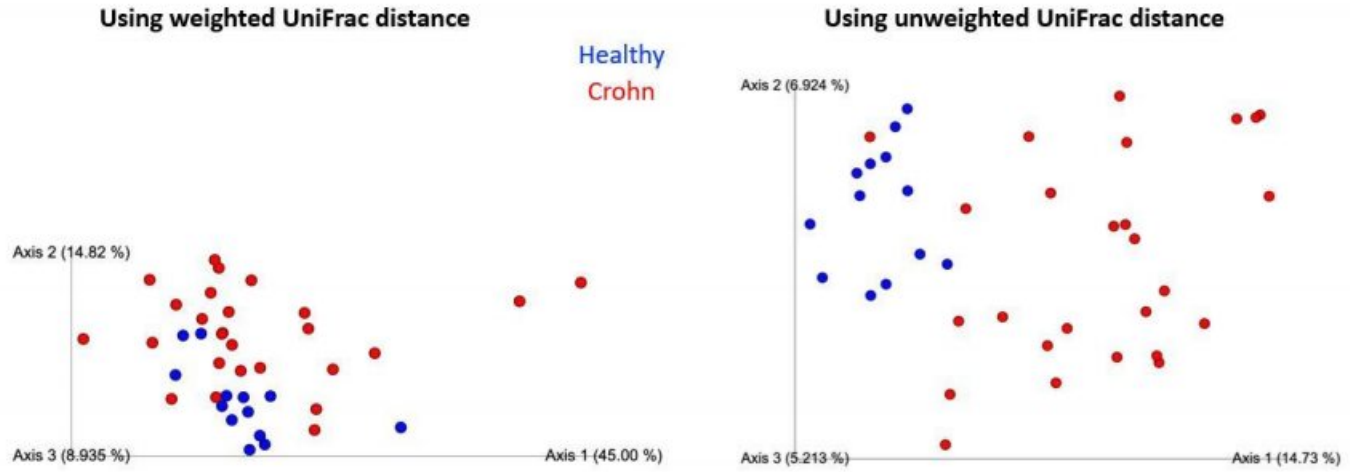
PO1-6

Investigation of Oral and Intestinal Microbiome of Korean Patients with Crohn's Disease

Jee Young Yoon, Yoon Tae Jeen, Jae Min Lee, Hyuk Soon Choi, Eun Sun Kim, Bora Keum, Hoon Jai Chun
Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea

Background / Aim : We aimed to conduct a study comparing the fecal and oral microbiomes of Korean Crohn's disease patients with those of healthy individuals. Since most of microbial study of inflammatory bowel disease patients are conducted overseas, this study would reveal if the microbiome of Korean patients and patients of other countries are the same or not. Also, since the process of fecal sample collection is inconvenient, saliva sample analysis was performed to find a relevance of disease activity.
Methods : This single center study recruited patients with CD between September 2022 and January 2023. At first visitation, stool collecting tube and saliva collecting tube were given to CD patient. Collected stools samples and saliva samples were sent to the environmental bioengineering laboratory in Korea University and assessed by 16S rRNA sequencing.
Results : 26 CD patients and 6 healthy individuals were enrolled to this study. In the comparison of healthy individual's fecal microbiome, the flora of fecal sample of CD patients were slightly different. The diversity of microbiome was decreased in CD patients compared to healthy individuals. There were 17 species existed only in CD patient's feces. The most frequently detected one was *Ruminococcus gnavus*, and the the highest abundance was Unclassified *Fusobacterium*. In the phylum level of bacteria, *Bacteroidota*, *Firmicutes*, and *Proteobacteria* were predominant. Saliva samples showed no significant difference between CD patient and control.
Conclusion : Fecal sampling can be usefully used as a diagnostic test technique that can reflect CD patients' microbiota. Similar to patient in overseas, dysbiosis of fecal microbiome and abundant species were detected.
Keywords : Oral Microbiome, Crohn's Disease, Fecal Microbiome

PCoA of stool samples



Common and unique species between Crohn and Healthy stools

Species detected in only crohn patient
(count >=3, unit: %)

Abundance
0% 5%

ID	Phylum	Species	Count	St1	St2	St3	St8	St9	St11	St12	St13	St14	St17	St18	St20	St21	St22	St23	St24	St25	St27	St33	St34	St35	St36	St37	St38	St39	St42
S328	Bacteroidota	Prevotella disiens	4	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.2	0.2	0.3	0	0	0	0	0	0	0	0	0	0
S093		Parabacteroides sp.	3	0.4	0	0	0	0	1.9	0	0	0	0	0	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S039	Firmicutes	Ruminococcus gnavus	10	0	0	1.2	0	0.7	0	0	0	1.5	0	1.4	0	0	0.7	0	1.2	0	0	0.6	0.1	0	0.7	0.7	0	0	0
S214		Erysipelatoclostridium ramosum	6	0	0	1.7	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.2	0	0	0.4	0.2	0	0	0
S070		Faecalimonas umbilicata	5	0	0	0	0	0	0	0	0	1.4	0	0	0	0	0	0	0	0	0	0	1.2	0	1.9	0.7	0.7	0	0
S048		Dialister invisus	4	0	0	0	0	0	0.6	0	0	0	1	0	2.1	0	0	0	0	0	0	0.9	0	0	0	0	0	0	0
S226		Intestinibacter bartlettii	4	0	0	0	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0.4	1.5	0
S118		Phascolarctobacterium faecium	3	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	2.3	0	0	0	0	0	1.4	0	0	0	0	0
S134		Unclassified Enterococcus	3	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	2.4	0
S165		Unclassified Colidextribacter	3	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2	0	2.5	0	0	0	0
S251		Unclassified Fenollaria	3	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.8	0	0	0	0	0	0	0	0	0	0	0
S265		Clostridium innocuum	3	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0	0.9	0	0	0	0
S297		uncultured bacterium	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0
S386		Unclassified Holdemania	3	0.2	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0	0	0	0	0
S448		Ruminococcus sp.	3	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0.2	0	0	0	0	0
S007	Fusobacteriota	Unclassified Fusobacterium	8	0	0	5.1	0	1.3	0	0	4.3	2.1	0	68	0	0	0	0	0	0	0	0	0.4	1.2	0	0	0.9	0	0
S286		Fusobacterium mortiferum	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.1	0.5	0	1.3	0	0	0	0	0	0	0	0

[Poster Oral – Basic/Translational/Microbiome]

PO1-7

Insights into the Role and Niche-Specific Adaptation of *Malassezia* in Inflammatory Bowel Disease

Seung Yong Shin[1], Yong-Joon Cho[2], Juan Yang[3], Hyo Keun Kim[4], Piyapat Rintarhat[3], Minji Park[3], Kate Lagree[5,6], David M. Underhill[5,6,7], Chul-Su Yang[4,8], Jung Min Moon[1], Jeongkuk Seo[1], Kyuwon Kim[1], Won Hee Jung[3], Chang Hwan Choi[1]

[1]Department of Internal Medicine, Chung-Ang University College of Medicine, Seoul, Korea
[2]Department of Molecular Bioscience, Kangwon National University, Chuncheon, Korea
[3]Department of Systems Biotechnology, Chung-Ang University, Anseong, Korea
[4]Department of Molecular and Life Science, Hanyang University, Ansan, Korea
[5]Widjaja Inflammatory Bowel and Immunobiology Research Institute, Cedars-Sinai Medical Center, Los Angeles, United States
[6]Department of Biomedical Sciences, Cedars-Sinai Medical Center, Los Angeles, United States
[7]Department of Pathology and Laboratory Medicine, David Geffen School of Medicine, University of California, Los Angeles, United States
[8]Department of Medicinal and Life Science, Hanyang University, Ansan, Korea

Background / Aim : We aimed to isolate a *Malassezia* strain directly from the human intestine mucosal surface from the patient with ulcerative colitis (UC) and investigated its genome and virulence in comparison to the same fungal species isolated from the human skin.
Methods : Mucosal lavage samples were collected separately from areas with and without inflammation in patients with UC. Samples from healthy individuals (HT) were obtained at randomly selected areas of the colon. Skin samples were taken from our previous work. DNA was extracted from these samples, and fungal isolation was conducted using PCR amplification with ITS4 and ITS5 primers. Comprehensive analysis and comparison of the genomes, transcriptomes, and virulence between *M. globosa* gut isolates and those of *M. globosa* strains isolated from the skin were performed. $1x10^7$ fungal cells were orally gavaged to DSS-induced colitis mouse model.
Results : Total 56 and 11 intestinal water-lavage samples from 29 patients and HT were obtained respectively. *Malassezia* was the fifth most frequently found fungal genus throughout the sample, and live fungal strains belong to 28 and 7 different species were isolated from the patients with UC and HT, respectively. The patients with UC tend to have higher frequency of *M. globosa* and *M. restricta* than HT in their gut mucosal surface with inflammation. *M. globosa* gut isolates are suffered more from the higher oxygen levels than the skin isolates in different oxygen concentrations. In a mouse model, gut-isolated *M. globosa* exhibited a more pronounced exacerbation of DSS-induced colitis (Figure 1) and elevated production of inflammatory cytokines including TNF-a, IL-6, IL-12p40, IL-1b, and IL-18, while the skin isolates showed no difference compared to the negative control (Figure 2).
Conclusion : Our data shed new light on the pivotal role of *M. globosa* in the pathogenesis of UC, highlighting the potential influence of niche-specific adaptations on the virulence of this fungus.
Keywords : Ulcerative Colitis, Fungus, *Malasseiza*, Pathogenesis

Figure 1

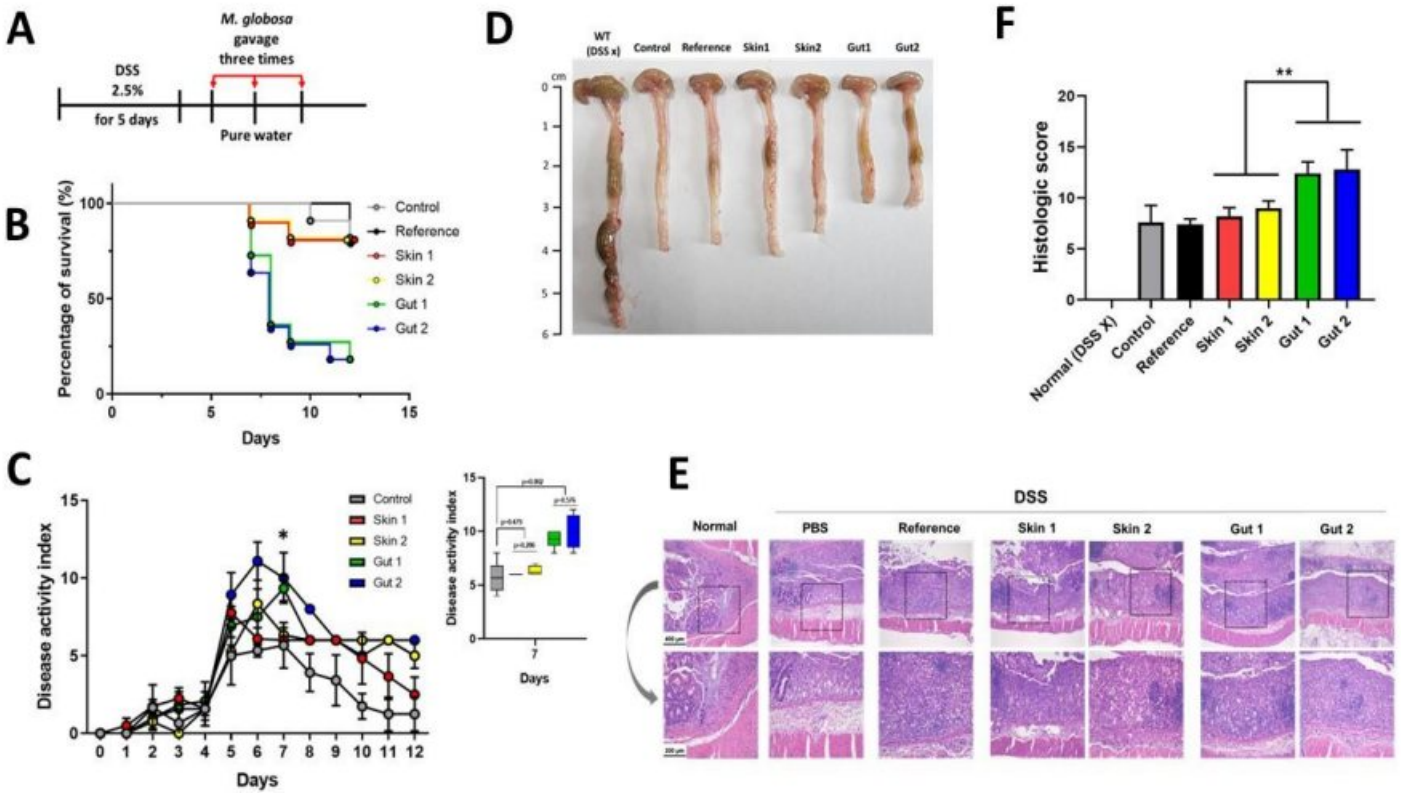
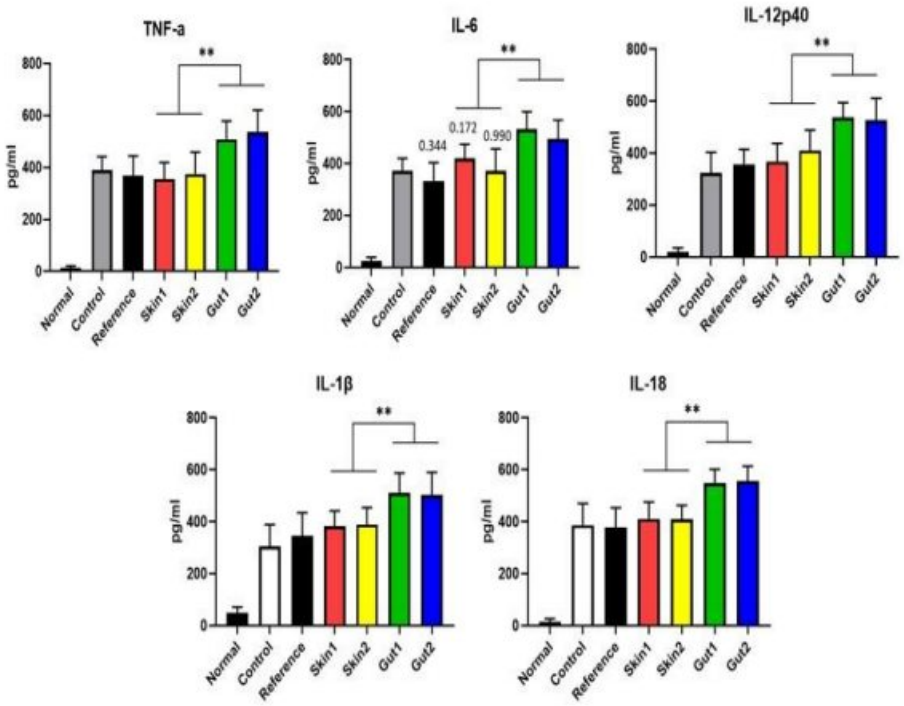


Figure 2



[Poster Oral – IBD/Clinical 1]

PO2-1

Dual Biologic or Small Molecule Therapy in Refractory Pediatric Inflammatory Bowel Disease: A Multicenter Study from the Pediatric IBD Porto Group of ESPGHAN

Ben Kang[1], Anat Yerushalmy-Feler[2], Christine Olbjorn[3], Kaija-Leena Kolho[4], Marina Aloi[5], Francesca Musto[5], Javier Martin-De-Carpi[6], Ana Lozano-Ruf[6], Dotan Yogev[7], Manar Matar[8], Luca Scarallo[9], Matteo Bramuzzo[10], Lissy De Ridder[11], Christoph Norden[12], David Wilson[13], Christos Tzivinikos[14], Dan Turner[7], Shlomi Cohen[2]

[1]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Pediatrics, Dana-Dwek Children's Hospital, Tel Aviv Sourasky Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel
[3]Pediatrics, Akershus University Hospital, Lorenskog, Norway
[4]Pediatrics, Children's Hospital, Helsinki University Hospital and University of Helsinki, Helsinki, Finland
[5]Pediatrics, Umberto I Hospital, Sapienza University of Rome, Rome, Italy
[6]Pediatrics, Hospital Sant Joan de Deu, Barcelona, Spain
[7]Pediatrics, Shaare Zedek Medical Center, Hebrew University of Jerusalem, Jerusalem, Israel
[8]Pediatrics, Schneider Children's Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel
[9]Pediatrics, Meyer Children's Hospital, Florence, Italy
[10]Pediatrics, Institute for Maternal and Child Health, IRCCS Burlo Garofolo, Trieste, Italy
[11]Pediatrics, Erasmus Medical Center/Sophia Children's Hospital, Rotterdam, Netherlands
[12]Pediatrics, Copenhagen University Hospital, Hvidovre, Denmark
[13]Pediatrics, Royal Hospital for Children and Young People, Edinburgh, United Kingdom
[14]Pediatrics, Al Jalila Children's Specialty Hospital, Dubai, United Arab Emirates

Background / Aim : Current data on dual biologic therapy in children are limited. This multicenter study aimed to evaluate the effectiveness and safety of dual therapy in pediatric patients with inflammatory bowel disease (IBD).
Methods : A retrospective study from 14 centers affiliated with the Pediatric IBD Interest and Porto Groups of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition. Included were children with IBD who underwent combinations of biologic agents or biologic and small molecule therapy for at least 3 months. Demographic, clinical, laboratory, endoscopic, and imaging data were collected. Adverse events were recorded.
Results : Sixty-two children (35 Crohn's disease, 27 ulcerative colitis; median age 15.5 [interquartile range, 13.1-16.8] years) were included. They had all failed previous biologic therapies, and 47 (76%) failed at least 2 biologic agents. The dual therapy included an anti-tumor necrosis factor agent and vedolizumab in 30 children (48%), anti-tumor necrosis factor and ustekinumab in 21 (34%) children, vedolizumab and ustekinumab in 8 (13%) children, and tofacitinib with a biologic in 3 (5%) children. Clinical remission was observed in 21 (35%), 30 (50%), and 38 (63%) children at 3, 6, and 12 months, respectively. Normalization of C-reactive protein and decrease in fecal calprotectin to <250 µg/g were achieved in 75% and 64%, respectively, at 12 months of follow-up. Twenty-nine (47%) children sustained adverse events, 8 of which were regarded as serious and led to discontinuation of therapy in 6.
Conclusion : Dual biologic therapy may be effective in children with refractory IBD. The potential efficacy should be weighed against the risk of serious adverse events.
Keywords : Inflammatory Bowel Disease, Crohn's Disease, Ulcerative Colitis, Dual Biologics, Children

[Poster Oral – IBD/Clinical 1]

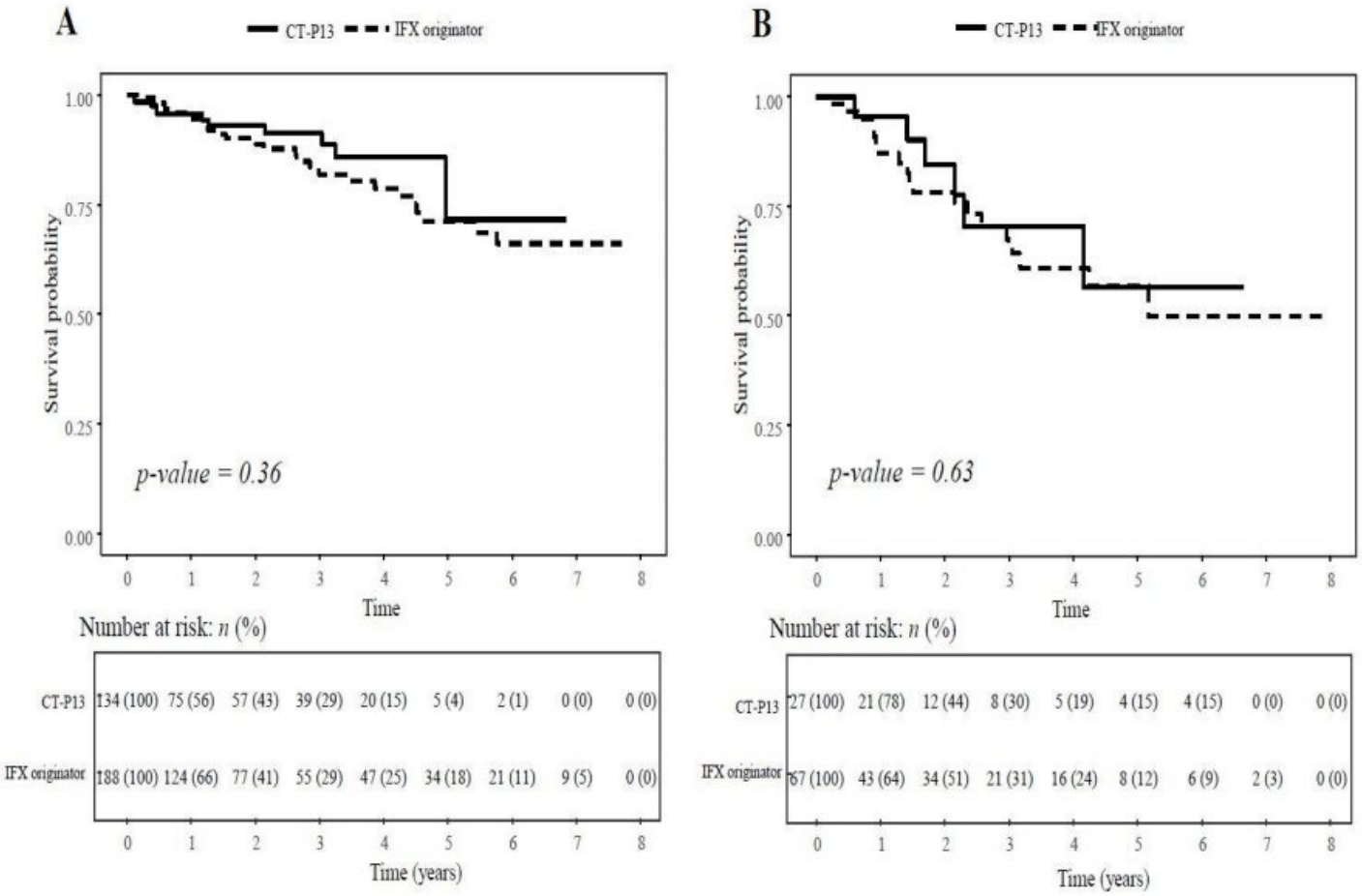
PO2-2

Comparison of Endoscopic Healing and Durability between Infliximab Originator and CT-P13 in Paediatric Patients with Inflammatory Bowel Disease

Eun Sil Kim[1], Sujin Choi[2], Byung-Ho Choe[2], Sowon Park[3], Yeoun Joo Lee[4], Soon Chul Kim[5], Ki Soo Kang[6], Kunsong Lee[7], Jung Ok Shim[8], Yu Bin Kim[9], Suk Jin Hong[10], Yoo Min Lee[11], Hyun Jin Kim[12], So Yoon Choi[13], Ju Young Kim[14], Yoon Lee[15], Ji-Sook Park[16], Jae Young Kim[17], Dae Yong Yi[18], Ben Kang[2]

[1]Department of Pediatrics, Kangbuk Samsung Hospital, Seoul, Korea
[2]Department of Pediatrics, Kyungpook National University Hospital, Daegu, Korea
[3]Department of Pediatrics, Severance Children's Hospital, Seoul, Korea
[4]Department of Pediatrics, Pusan National University Children's Hospital, Yangsan, Korea
[5]Department of Pediatrics, Jeonbuk National University Hospital, Jeonju, Korea
[6]Department of Pediatrics, Jeju National University Hospital, Jeju, Korea
[7]Department of Pediatrics, Dankook University College of Medicine, Cheonan, Korea
[8]Department of Pediatrics, Korea University Guro Hospital, Seoul, Korea
[9]Department of Pediatrics, Ajou University School of Medicine, Suwon, Korea
[10]Department of Pediatrics, Daegu Catholic University School of Medicine, Daegu, Korea
[11]Department of Pediatrics, Soonchunhyang University Bucheon Hospital, Bucheon, Korea
[12]Department of Pediatrics, Chungnam National University Hospital, Daejeon, Korea
[13]Department of Pediatrics, Kosin University Gospel Hospital, Busan, Korea
[14]Department of Pediatrics, Eulji Medical Center, Daejeon, Korea
[15]Department of Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea
[16]Department of Pediatrics, Gyeongsang National University College of Medicine, Jinju, Korea
[17]Department of Pediatrics, Gyeongsang National University Changwon Hospital, Changwon, Korea
[18]Department of Pediatrics, Chung-Ang University Hospital, Seoul, Korea

Background / Aim : Favourable clinical data were published on the efficacy of CT-P13, the first biosimilar of infliximab [IFX], in paediatric inflammatory bowel disease [IBD]; however, few studies have compared the effect on endoscopic healing [EH] and durability between the IFX originator and CT-P13. Therefore, we aimed to compare EH and the drug retention rate between the IFX originator and CT-P13.
Methods : Children with Crohn's disease [CD] and ulcerative colitis [UC]/IBD-unclassified [IBD-U] at 22 medical centres were enrolled, with a retrospective review conducted at 1-year and last follow-up. Clinical remission, EH and drug retention rate were evaluated.
Results : We studied 416 paediatric patients with IBD: 77.4% had CD and 22.6% had UC/IBD-U. Among them, 255 [61.3%] received the IFX originator and 161 [38.7%] received CT-P13. No statistically significant differences were found between the IFX originator and CT-P13 in terms of corticosteroid-free remission and adverse events. At 1-year follow-up, EH rates were comparable between them [CD: P = 0.902, UC: P = 0.860]. The estimated cumulative cessation rates were not significantly different between the two groups. In patients with CD, the drug retention rates were 66.1% in the IFX originator and 71.6% in the CT-P13 group at the maximum follow-up period [P > 0.05]. In patients with UC, the drug retention rates were 49.8% in the IFX originator and 56.3% in the CT-P13 group at the maximum follow-up period [P > 0.05].
Conclusion : The IFX originator and CT-P13 demonstrated comparable therapeutic response including EH, clinical remission, durability and safety in paediatric IBD.
Keywords : Children, Inflammatory Bowel Disease, Infliximab, CT-P13


A
CT-P13
IFX originator
Survival probability
1.00
0.75
0.50
0.25
0.00
p-value = 0.36
0 1 2 3 4 5 6 7 8
Time
Number at risk: n (%)
CT-P13 134 (100) 75 (56) 57 (43) 39 (29) 20 (15) 5 (4) 2 (1) 0 (0) 0 (0)
IFX originator 188 (100) 124 (66) 77 (41) 55 (29) 47 (25) 34 (18) 21 (11) 9 (5) 0 (0)
0 1 2 3 4 5 6 7 8
Time (years)
B
CT-P13
IFX originator
Survival probability
1.00
0.75
0.50
0.25
0.00
p-value = 0.63
0 1 2 3 4 5 6 7 8
Time
Number at risk: n (%)
CT-P13 27 (100) 21 (78) 12 (44) 8 (30) 5 (19) 4 (15) 4 (15) 0 (0) 0 (0)
IFX originator 67 (100) 43 (64) 34 (51) 21 (31) 16 (24) 8 (12) 6 (9) 2 (3) 0 (0)
0 1 2 3 4 5 6 7 8
Time (years)

[Poster Oral – IBD/Clinical 1]

PO2-3

Biological Agents in the Treatment of Fistulising Crohn's Disease: a Propensity Score-Matched Analysis from the Prospective Persistence Australian National IBD Cohort (PANIC) Study

John David[1], Yanna Ko[2], Sudarshan Paramsothy[1,3,4], Rupert Leong[1,3,4]
[1]Department of Gastroenterology, Concord Repatriation General Hospital, Australia
[2]Department of Gastroenterology, Canterbury Hospital, Sydney, Australia
[3]Department of Gastroenterology, Macquarie University Hospital, Australia
[4]Faculty of Medicine and Health Sciences, Macquarie University, Sydney, Australia

Background / Aim : Fistulizing Crohn's disease (FCD) is an aggressive disease phenotype associated with significant disability, representing one of the most challenging therapeutic subgroups. Randomized clinical trials with a primary endpoint of treating FCD are scarce, there are no RCTs assessing adalimumab against primary endpoints of FCD, nor any head-to-head RCTs comparing biological agents, and little evidence on immunomodulator co-therapy use.
Methods : The persistence of medications were analyzed from the Australian Pharmaceutical Benefits Scheme (PBS) registry data 2005-2021 for FCD, using all dispensed biological agents in Australia.
Results : There were 6,394 lines of therapy in 4,466 patients over the 16-year period with 220,065 years of patient follow-up. The median age was 35 years (interquartile range (IQR): 25-47), with 3,006/6,394 (47.0%) females. Via therapy, 2,983/6,394 (46.7%) were on adalimumab and 3,411/6,394 (53.3%) on infliximab; 40.6% (2,595/6,394) used thiopurine, and 10.6% (680/6,394) used methotrexate co-therapy. Used as a first-line biologic (biologic-naïve), infliximab had superior persistence to adalimumab ($p<0.0001$), and a longer median persistence by 18 months (68 months (95% confidence intervals (CI): 60-75) vs 50 months (95% CI 46-54), $p<0.0001$). Used after first-line (biologic-experienced), there was no difference between agents for persistence ($p=0.70$) and a similar median persistence (45 months (95% CI: 33-49) for infliximab vs 40 months (95% CI: 38-56) months for adalimumab, $p=0.70$). Outcomes were similar for corticosteroid-free persistence ($p=0.0004$ and $p=0.39$ respectively). A propensity score match for age, gender and methotrexate & thiopurine use did not affect persistence outcomes ($p<0.0001$ in bio-naive & $p=0.71$ in bio-exposed patients). Immunomodulator use was associated with improved persistence with both infliximab ($p=0.0005$) and adalimumab ($p=0.04$).
Conclusion : The PANIC cohort with real-world data of non-hierarchical prescribing of biological agents supports the superiority of infliximab over adalimumab in bio-naïve FCD patients, but did not show a therapeutic difference in bio-exposed FCD. Immunomodulator co-therapy is independently associated with improved persistence.
Keywords : Inflammatory Bowel Disease, Fistulising Crohn's Disease, Persistence, Medication Safety, Medication Efficacy

Figure 1: Biological agent persistence by biologic-exposure status

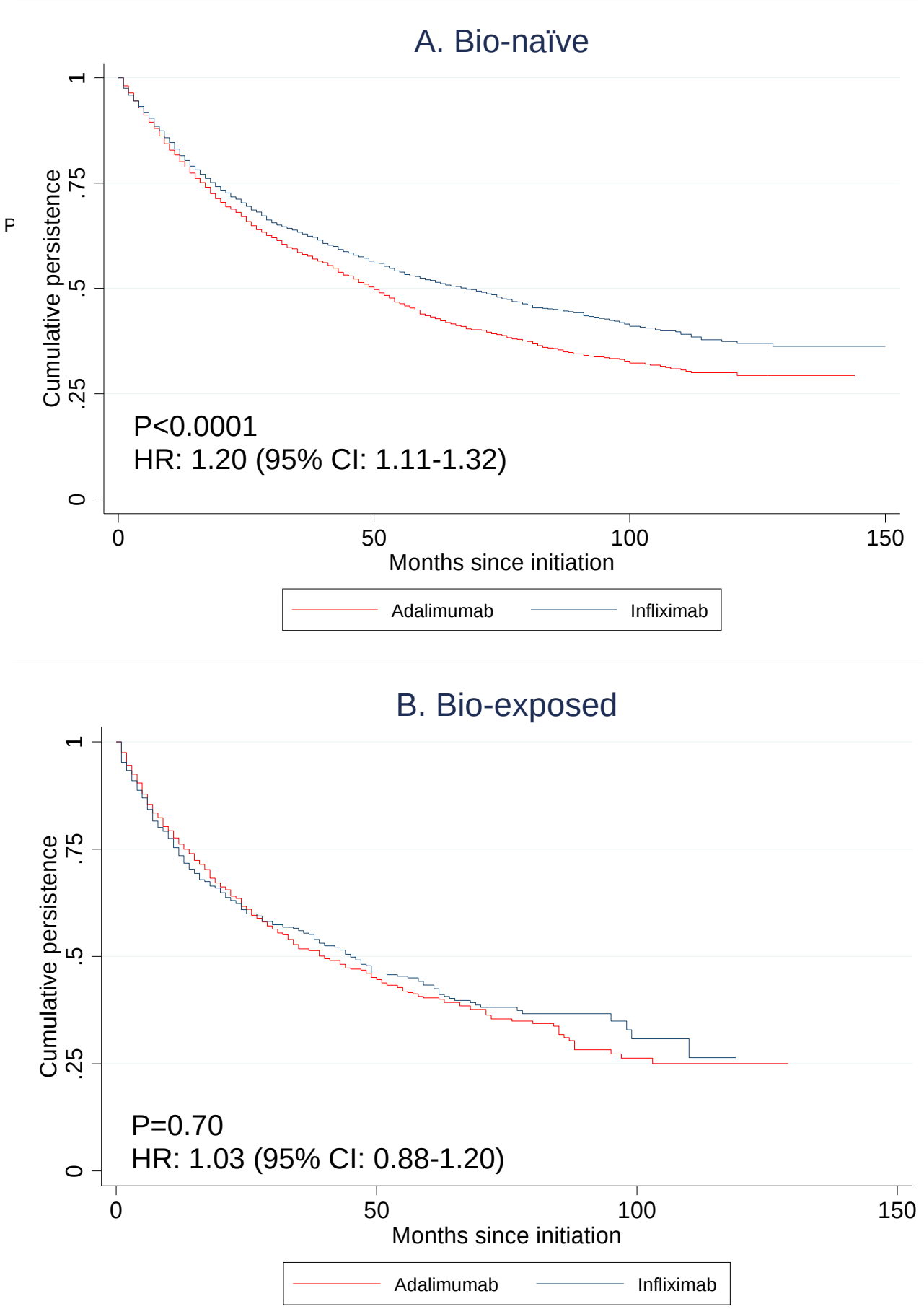


Figure 2: Persistence in propensity score matched bio-naïve FCD

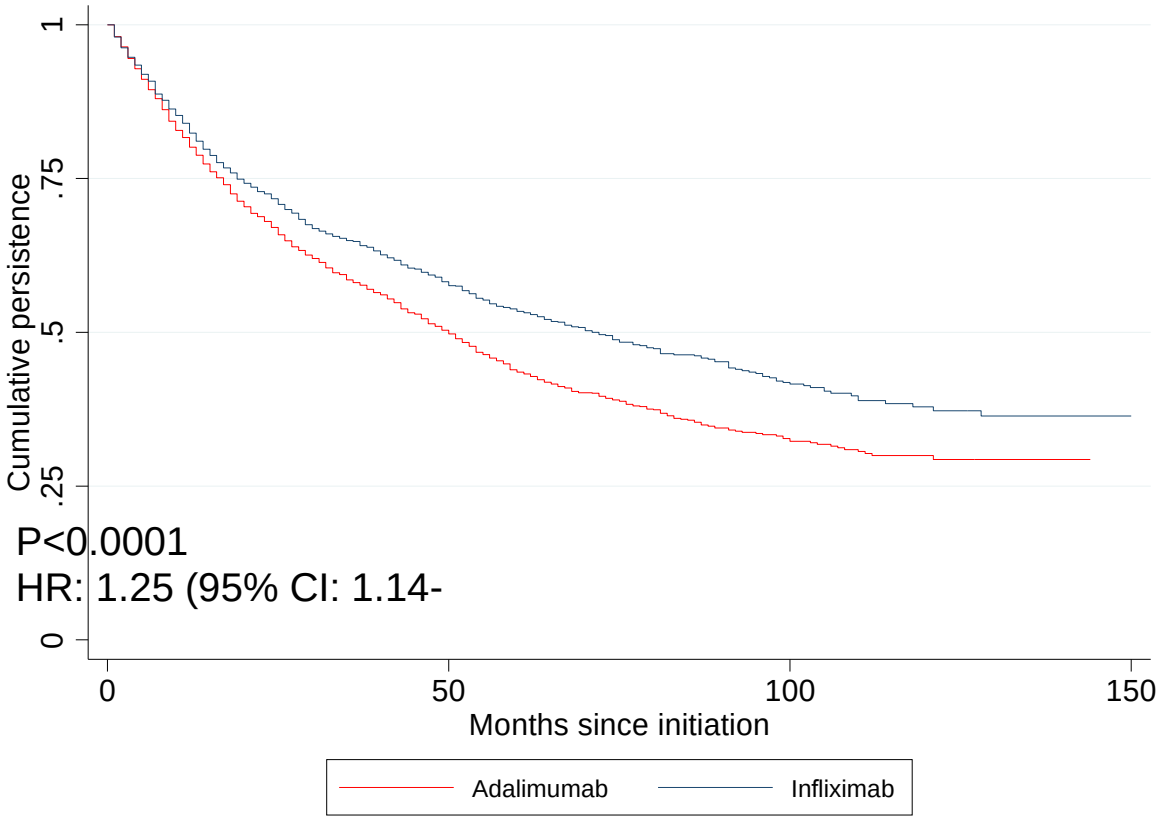
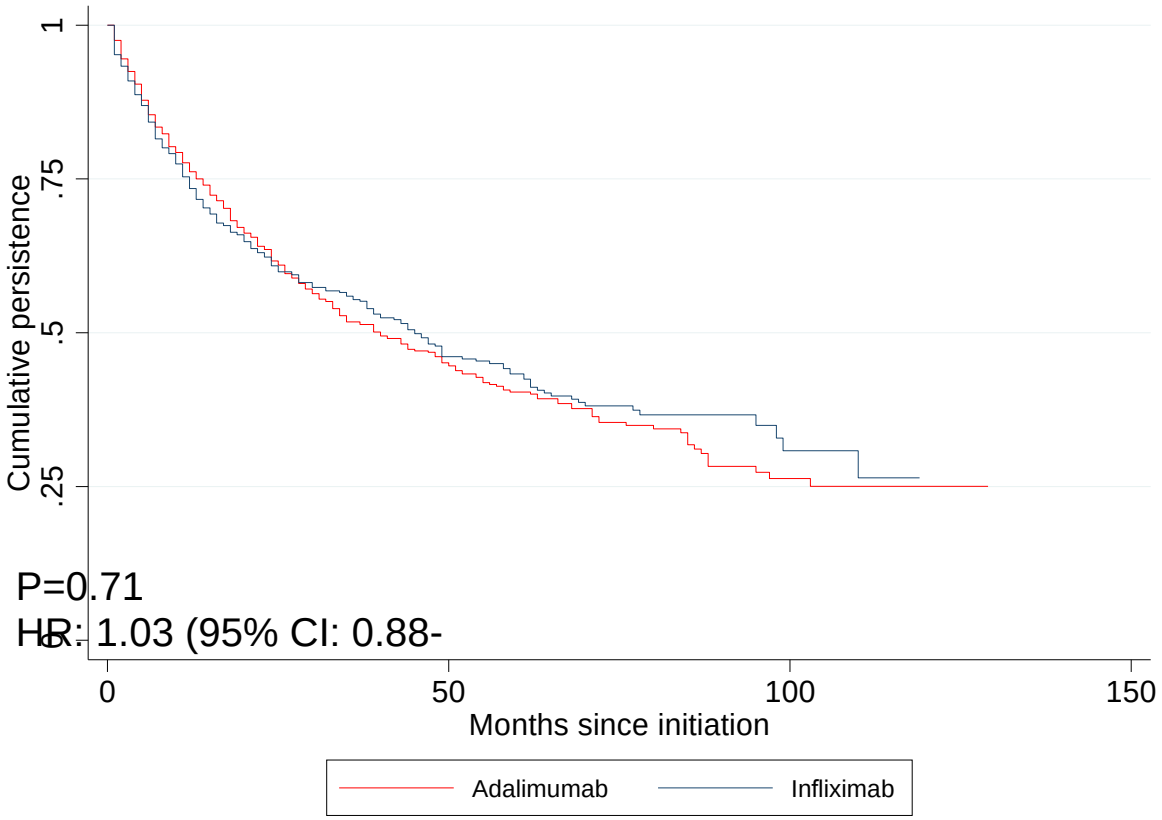


Figure 3: Persistence in propensity score matched bio-exposed FCD



[Poster Oral – IBD/Clinical 1]

PO2-4

The Diagnostic Performance of the DETAIL Questionnaire as a Screening Tool for Spondyloarthritis in Korean Patients with Inflammatory Bowel Disease

Sihyun Kim[1], Yu Kyung Jun[1,2], Yonghoon Choi[1], Cheol Min Shin[1,2], Young Soo Park[1], Nayoung Kim[1,2], Dong Ho Lee[1,2], You-Jung Ha[3], Hyuk Yoon[1,2]

[1]Division of Gastroenterology Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea

[2]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea

[3]Division of Rheumatology Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea

Background / Aim : The DETection of Arthritis in Inflammatory boweL diseases (DETAIL) is a simple questionnaire consisting of six items. Developed in Italy as a screening tool for spondyloarthritis (SpA) in patients with inflammatory bowel diseases (IBD), it has not been validated in Asian patients with IBD. This study aims to assess whether the DETAIL questionnaire demonstrates appropriate screening properties in Korean patients with IBD.

Methods : An IBD specialist prospectively enrolled adult patients with IBD and assessed them using the DETAIL questionnaire. Those who answered yes to any of questions or had musculoskeletal symptoms were referred to a rheumatologist. The performance of the DETAIL questionnaire was evaluated using a Bayesian analysis model.

Results : Out of the 696 patients with IBD who completed the DETAIL questionnaire, 110 patients were referred to rheumatology clinic and 87 (58 with ulcerative colitis and 29 with Crohn's disease) were finally analyzed. Forty-four (50.1%) patients were men, and the mean age of the patients was 39.1±12.1 years. Among these patients, 30 (34.5%) were diagnosed with SpA (20 peripheral, 10 axial). In the DETAIL questionnaire, items 1 (exploring peripheral synovitis), 2 (exploring dactylitis), and 3 (exploring Achilles enthesitis), which assess peripheral SpA, showed good performance, especially with the highest positive likelihood ratio (LR+) found in item 2 (LR+ 3.26). Meanwhile, questions about inflammatory low back pain (items 4, 5, and 6) exhibited poorer performance, with LR+ values near or below 1. In subgroup analysis, the DETAIL questionnaire revealed superior performance in younger IBD patients (< 40 years old) across three items for peripheral SpA, compared to older IBD patients (≥ 40 years old). An affirmative response to at least two questions about peripheral arthritis yielded a posttest probability of SpA of 85% or more.

Conclusion : The DETAIL questionnaire exhibits effective screening properties for detecting peripheral SpA in young Korean patients with IBD.

Keywords : DETAIL Questionnaire, Inflammatory Bowel Disease, Extraintestinal Manifestations, Spondyloarthritis

Table 1. Sensitivity, specificity, positive and negative predictive values, as well as likelihood ratios for items related to peripheral spondyloarthritis (questions 1, 2, 3) within the DETection of Arthritis in Inflammatory boweL diseases (DETAIL) questionnaire: a comparison among patient groups based on age

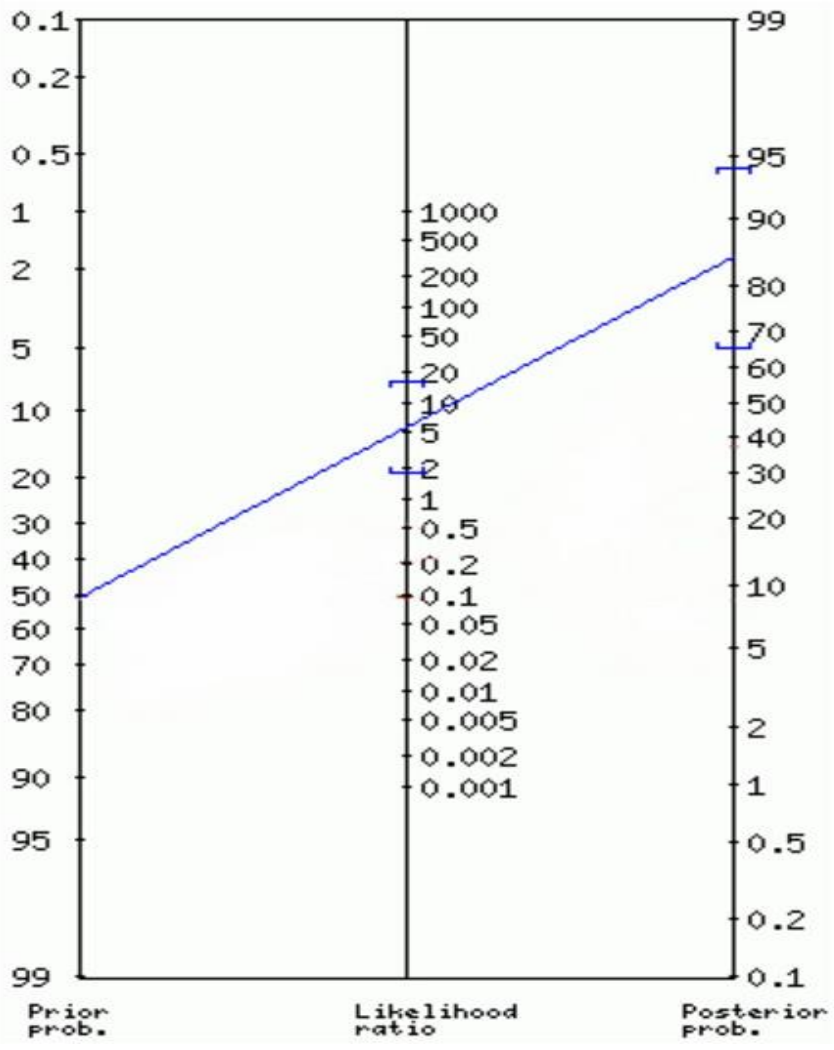
DETAIL Questions	Patient's Age	Sensitivity, % [95% CI]	Specificity, % [95% CI]	Positive Predictive Value, % [95% CI]	Negative Predictive Value, % [95% CI]	Positive Likelihood Ratio [95% CI]	Negative Likelihood Ratio [95% CI]
Question 1	All	73.33 [54.11, 87.72]	38.60 [26.00, 52.45]	38.60 [31.81, 45.86]	73.33 [58.27, 84.41]	1.19 [0.89, 1.61]	0.69 [0.35, 1.36]
	< 40 years	80.00 [56.34, 94.27]	57.90 [33.50, 79.75]	66.67 [53.05, 77.97]	73.33 [51.37, 87.74]	**1.90** [1.07, 3.36]	1.90 [1.07, 3.36]
	≧ 40 years	60.00 [26.23, 87.85]	27.03 [13.79, 44.12]	18.18 [11.44, 27.66]	71.43 [49.77, 86.32]	0.82 [0.48, 1.41]	1.48 [0.59, 3.73]
Question 2	All	40.00 [22.66, 59.40]	87.72 [76.32, 94.92]	63.16 [43.01, 79.57]	73.53 [67.12, 79.08]	3.26 [1.43, 7.40]	0.68 [0.50, 0.93]
	< 40 years	35.00 [15.39, 59.22]	94.74 [73.97, 99.87]	87.50 [48.67, 98.10]	58.07 [49.67, 66.02]	**6.65** [0.90, 49.09]	0.69 [0.49, 0.96]
	≧ 40 years	50.00 [18.71, 81.29]	83.78 [67.99, 93.81]	45.46 [24.20, 68.51]	86.11 [76.65, 92.13]	3.08 [1.18, 8.05]	0.60 [0.32, 1.13]
Question 3	All	36.67 [19.93, 56.14]	66.67 [52.94, 78.60]	36.67 [24.17, 51.25]	66.67 [59.02, 73.53]	1.10 [0.61, 2.00]	0.95 [0.68, 1.32]
	< 40years	45.00 [23.06, 68.47]	84.21 [60.42, 96.62]	75.00 [48.82, 90.42]	59.26 [48.33, 69.35]	**2.85** [0.91, 8.96]	0.65 [0.42, 1.02]
	≧ 40 years	20.00 [2.52, 55.61]	56.76 [39.49, 72.90]	11.11 [3.32, 31.30]	72.41 [63.33, 79.96]	0.46 [0.13, 1.69]	1.41 [0.93, 2.14]

*Question 1: Have your fingers, toes, or other joints ever swollen or painful for no apparent reason?

*Question 2: Have you sometimes had your entire finger or toe swell and look like a sausage?

*Question 3: Have you ever had pain in your heel?

Figure 1. Graphical representation of the posttest probability of the DETection of Arthritis in Inflammatory boweL diseases (DETAIL) questionnaire by using Fagan's nomogram



[Poster Oral – IBD/Clinical 1]

PO2-5

Risk of Spondyloarthritis in Patients with Inflammatory Bowel Disease under Treatment with Biologics or Janus Kinase Inhibitors

Young-Eun Kim[1], Sung Wook Hwang[2], Byong Duk Ye[2], Suk-Kyun Yang[2], Seokchan Hong[1], Sang Hyoung Park[2]

[1]Division of Rheumatology, Department of Internal Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

[2]Division of Gastroenterology, Department of Internal Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

Background / Aim : To evaluate the occurrence of and risk factors for spondyloarthritis (SpA) in patients with inflammatory bowel disease (IBD) during biologic or Janus kinase inhibitor (JAKi) treatment.

Methods : Patients with IBD on biologics or JAKis without a prior SpA diagnosis were included. Then, we analyzed patients who presented with new-onset arthralgia and were referred to our rheumatology clinic based on suspicion of a rheumatic disease. Clinical and laboratory data including radiographs of the sacroiliac joints and human leukocyte antigen B27 (HLA-B27) testing were collected. We compared the patients diagnosed with SpA and those without.

Results : Of 1,649 patients with IBD under biologic or JAKi treatment (1,335 with Crohn's disease [CD], 314 with ulcerative colitis [UC]), 96 (5.8%) were excluded due to a prior SpA diagnosis. Among the remaining 1,553 patients, 106 (6.8%) developed arthralgia during IBD treatment including biologics or JAKi, and 30 (1.9%) were finally diagnosed with SpA (20: axial SpA, 10: peripheral SpA). Patients diagnosed with SpA had a higher ESR both at the initiation of biologics or JAKis and at the onset of arthralgia. HLA-B27 positivity was more common in the SpA group (23.3%) than in the non-SpA group (1.3%, P=0.001) (Table 1). Risk factors for SpA development in patients with IBD receiving biologic or JAKi treatment were a partial Mayo score of UC at arthralgia onset (HR 1.660, P=0.034) and HLA-B27 positivity (HR 3.387, P=0.001) (Table 2). Regarding SpA treatment safety, the IBD disease activity did not worsen during treatment, regardless of NSAID use (Table 3).

Conclusion : Approximately 7% of patients with IBD on biologics or JAKis experienced new-onset arthralgia, and one-third were diagnosed with SpA. HLA-B27 positivity and higher UC disease activity were associated with an increased risk of SpA.

Keywords : Inflammatory Bowel Disease, Spondyloarthritis, Extra-intestinal Manifestation, Ulcerative Colitis, Crohn's Disease

	Non-SpA (N=76)	SpA (N=30)	P
Age (years)	25.6 (19.1–37.2)	24.8 (19.0–33.4)	0.70
Male sex	40 (52.6)	15 (50.0)	0.80
Primary disease			
UC	24 (31.6)	14 (46.7)	0.29
CD	52 (68.4)	16 (53.3)	
At initiation of biologics			
ESR (mm/hr)	27.0 (12.0–43.0)	48.5 (15.5–68.3)	**0.03**
CDAI score for CD	239 (224–272)	238 (225–270)	0.83
Partial Mayo score for UC	6.0 (6.0–7.0)	6.0 (5.0–8.0)	0.40
Presence of arthralgia	6 (7.9)	4 (13.3)	0.36
At onset of arthralgia			
Duration of biologic use (years)	1.7 (0.6–3.3)	1.3 (0.4–3.7)	0.21
ESR (mm/hr)	15.0 (6.8–25.5)	20.5 (9.5–60.0)	**0.003**
CDAI score for CD	93 (51–181)	63 (45–217)	0.80
Partial Mayo score for UC	1.0 (0.0–2.5)	2.0 (1.0–4.0)	0.13
Positive HLA-B27	1 (1.3)	7 (23.3)	**0.001**
Biologic or JAKi			
Adalimumab	14 (18.4)	10 (33.3)	0.08
Infliximab	53 (69.7)	13 (43.3)	0.01
Vedolizumab	4 (5.3)	2 (6.7)	0.76
Ustekinumab	4 (5.3)	4 (13.3)	0.23
Tofacitinib	1 (1.3)	1 (3.3)	0.56

	HR	95% CI	*P*
Age	1.018	0.986–1.052	0.276
Male sex	0.754	0.332–1.714	0.500
Primary disease			
UC	0.603	0.277–1.311	0.202
CD	-		
At onset of arthralgia			
ESR	1.009	0.997–1.021	0.134
CRP	1.051	0.914–1.208	0.487
CDAI score for CD	1.003	0.997–1.009	0.269
Partial Mayo score for UC	**1.660**	**1.038–2.653**	**0.034**
Biologic or JAKi			
Adalimumab	-		
Infliximab	0.512	0.121–1.240	0.138
Vedolizumab	1.123	0.240–5.253	0.883
Ustekinumab	1.387	0.373–5.161	0.626
Tofacitinib	2.503	0.310–20.180	0.389
Positive HLA-B27	**3.387**	**1.408–8.144**	**0.001**

	Total (n=30)	*P*[a]
Total follow-up after diagnosis of SpA (months)	25.7 (17.8–39.9)	
Type of SpA		
Axial	20 (66.7)	
Peripheral	10 (33.3)	
Medication for SpA		
NSAIDs	23 (76.7)	
csDMARDs	7 (23.3)	
Glucocorticoids	4 (13.3)	
Treatment response		
ESR (mm/hr)		**0.01**
Onset of arthralgia	20.5 (9.5–60.0)	
6 months after treatment	16.0 (5.0–26.0)	
12 months after treatment	13.0 (6.3–35.8)	
CDAI score for CD		0.11
Onset of arthralgia	63.0 (44.5–216.5)	
6 months after treatment	99.0 (37.0–212.8)	
12 months after treatment	62.0 (31.3–135.3)	
Partial Mayo score for UC		0.52
Onset of arthralgia	2.0 (1.0–4.0)	
6 months after treatment	1.0 (0.0–3.0)	
12 months after treatment	1.0 (0.0–2.3)	

[Poster Oral – IBD/Clinical 1]

PO2-6

Rising Prevalence of Overweight Population in Inflammatory Bowel Disease Patients and its associated Clinical Outcome

Min Kyu Kim[1], Cheol-Hyung Lee[1], Ji Eun Baek[1], June Hwa Bae[1], Jung-Bin Park[1], Seung Wook Hong[1], Sang Hyoung Park[1,2], Dong-Hoon Yang[1], Byong Duk Ye[1,2], Jeong-Sik Byeon[1], Seung-Jae Myung[1], Suk-Kyun Yang[1,2], Sung Wook Hwang[1,2]

[1]Department of Gastroenterology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

[2]Inflammatory Bowel Disease Center, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

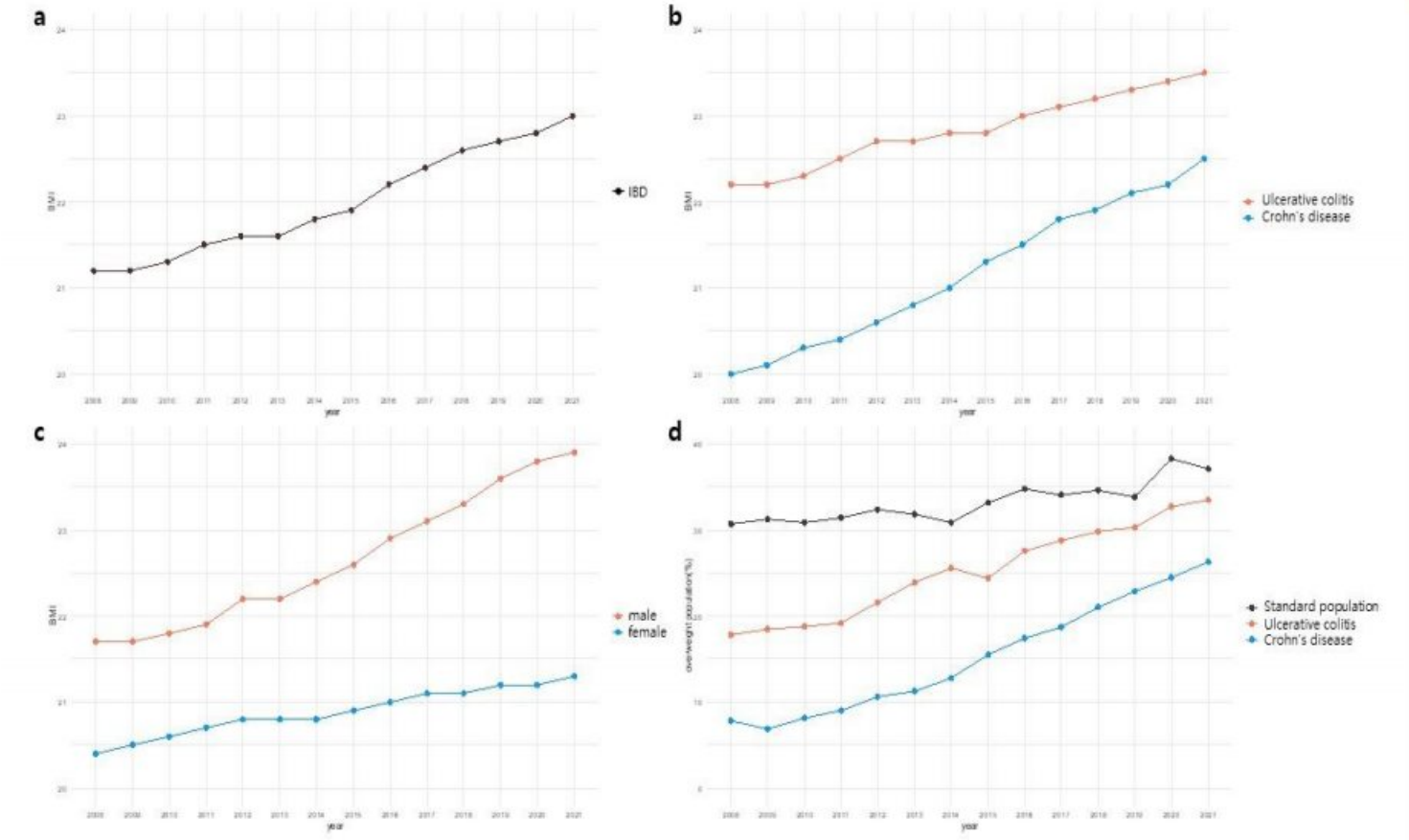
Background / Aim : Recently, the prevalence of overweight patients with inflammatory bowel disease (IBD) has escalated. In addition, the correlation between body mass index (BMI) at the time of diagnosis and the prognostic implication shows controversial results.

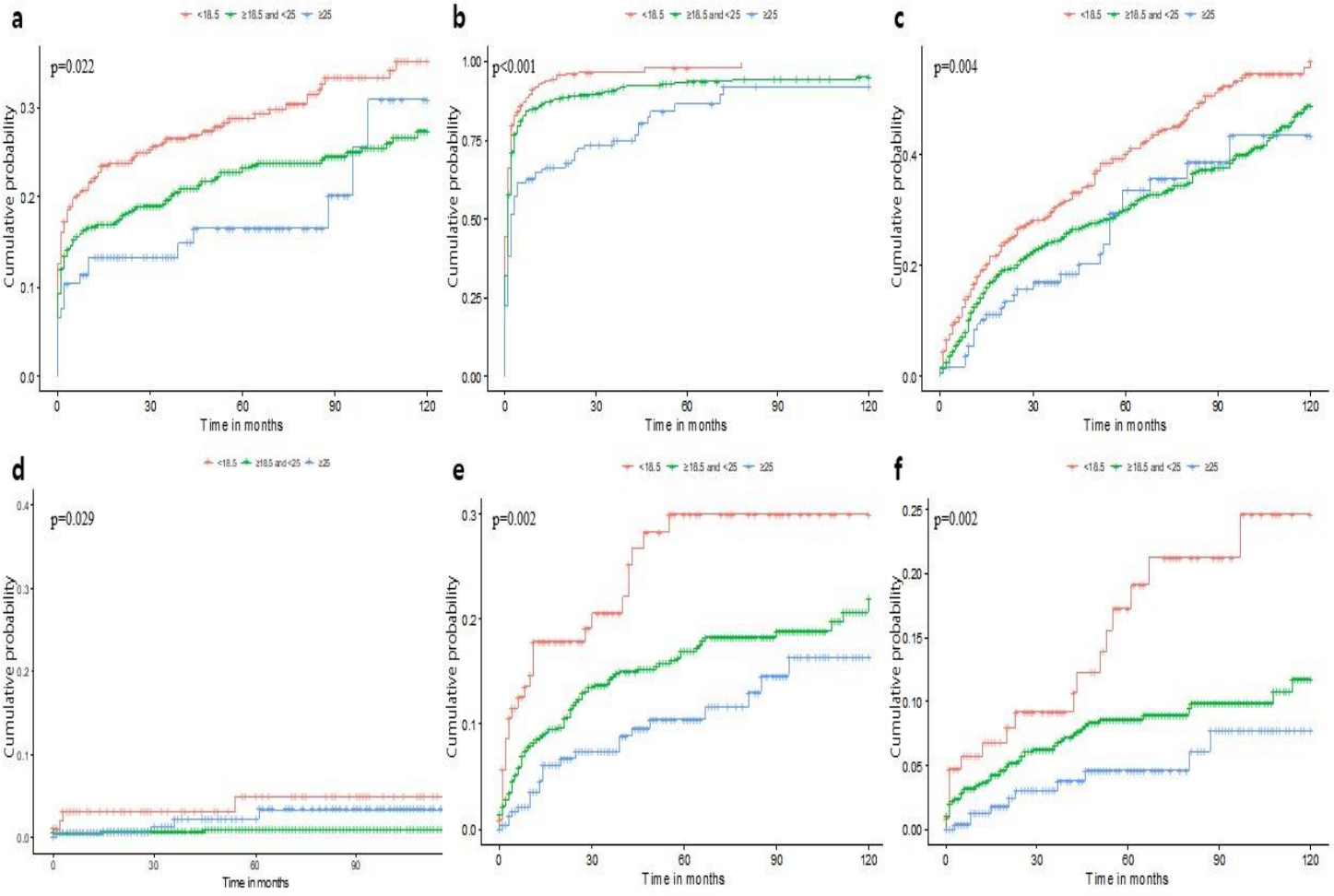
Methods : We collected data from patients with IBD who visited Asan Medical Center between 2008 and 2021.We calculated the median BMI and mean value of laboratory data for each year. Patients with a recorded BMI at the time of diagnosis were evaluated for clinical outcomes using the prospectively managed registry data at our center.

Results : 11,216 patients with IBD accounted for 277,179 visits to our center. The median BMI increased over the study period.(Figure 1a) This trend was more apparent in Crohn's disease (CD) than ulcerative colitis (UC) and males than females.(Figure 1b and 1c) The gap in the prevalence of overweight (BMI ≥25 kg/m^2) individuals between those with IBD and the standard population has narrowed.(Figure 1d) Serum glucose and triglyceride levels increased from 98.8 mg/dL and 114.7 mg/dL in 2008 to 102.4 mg/dL and 129.6 mg/dL in 2021, respectively. The overweight population at diagnosis demonstrated a longer duration of intestinal resection-free survival than the underweight (BMI <18.5 kg/m^2) or healthy weight (BMI ≥18.5 kg/m^2 to <25 kg/m^2) group in CD (Figure 2a) and exhibited longer periods of thiopurine-free and biologics-free survival in both CD and UC (Figure 2b, 2c, 2e, and 2f). Overweight was independently associated with the decreased risk of thiopurine use in CD and biologics use in UC (adjusted hazard ratio (aHR) 0.64, 95% CI 0.48–0.85, p = 0.002; aHR 0.52, 95% CI 0.25-1.06, p=0.072, respectively).

Conclusion : BMI and the prevalence of overweight patients in IBD, as well as laboratory data associated with metabolic syndrome, tended to increase over 14 years. Overweight patients exhibited longer resection-free and medication-free survival.

Keywords : IBD, Overweight, BMI, Metabolic Syndrome


a
BMI
year
IBD
b
BMI
year
Ulcerative colitis
Crohn's disease
c
BMI
year
male
female
d
overweight population(%)
year
Standard population
Ulcerative colitis
Crohn's disease


a
<18.5 ≥18.5 and <25 ≥25
p=0.022
Cumulative probability
Time in months
b
<18.5 ≥18.5 and <25 ≥25
p<0.001
Cumulative probability
Time in months
c
<18.5 ≥18.5 and <25 ≥25
p=0.004
Cumulative probability
Time in months
d
<18.5 ≥18.5 and <25 ≥25
p=0.029
Cumulative probability
Time in months
e
<18.5 ≥18.5 and <25 ≥25
p=0.002
Cumulative probability
Time in months
f
<18.5 ≥18.5 and <25 ≥25
p=0.002
Cumulative probability
Time in months

[Poster Oral – IBD/Clinical 1]

PO2-7

Effectiveness of Early Thiopurine Use in Korean Patients with Moderate-to-severe Ulcerative Colitis: A Prospective Multicenter Cohort (MOSAIK) Study

Hye Kyung Hyun[1], Ji Won Kim[2], Jun Lee[3], Yoon Tae Jeen[4], Tae-Oh Kim[5], Joo Sung Kim[6], Jae Jun Park[7], Sungnoh Hong[8], Dong Il Park[9], Hyun-Soo Kim[10], Yoojin Lee[11], Eun Suk Jung[12], Youngdoe Kim[12], Su Young Jung[12], Jae Hee Cheon[7]

[1]Internal Medicine, Yonsei University College of Medicine, Yongin Severance Hospital, Yongin, Korea
[2]Internal Medicine, SMG-SNU Boramae Medical Center, Seoul National University College of Medicine, Seoul, Korea
[3]Internal Medicine, Chosun University Hospital, Gwangju, Korea
[4]Internal Medicine, Korea University Anam Hospital, Seoul, Korea
[5]Internal Medicine, Inje University Haeundae Paik Hospital, Busan, Korea
[6]Internal Medicine, Seoul National University College of Medicine, Seoul, Korea
[7]Internal Medicine, Yonsei University College of Medicine, Severance Hospital, Seoul, Korea
[8]Internal Medicine, Samsung Medical Center, Seoul, Korea
[9]Internal Medicine, Kangbuk Samsung Hospital, Seoul, Korea
[10]Internal Medicine, Yonsei University Wonju College of Medicine, Wonju, Korea
[11]Internal Medicine, Keimyung University School of Medicine, Daegu, Korea
[12]Medical Affaris, Janssen Korea Ltd, Seoul, Korea

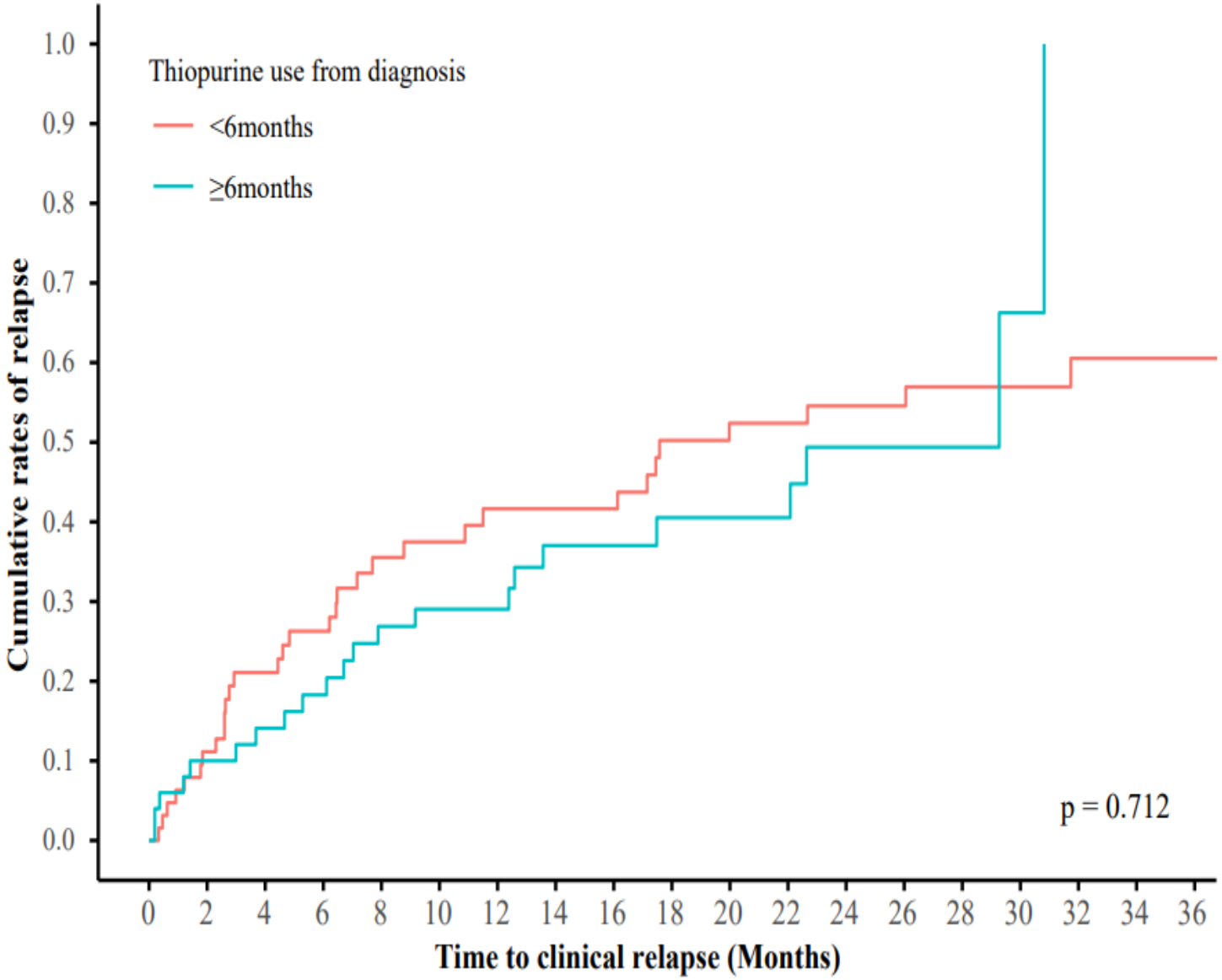
Background / Aim : Thiopurines play an important role in the management of steroid-refractory steroid-dependent ulcerative colitis (UC). However, the effectiveness of the early use of thiopurines in UC remains controversial.
Methods : In this multicenter prospective cohort study, we divided patients with UC into those who underwent early (within 6 months of diagnosis) and late (6 months after diagnosis) thiopurine therapy to determine the effectiveness of early thiopurine treatment. The primary outcome was the cumulative rate of clinical relapse (Mayo score >2 points). Multivariate Cox proportional hazards regression was used to identify independent clinical factors associated with the outcomes.
Results : Overall, 333 patients with moderate-to-severe UC were included in the MOSAIK study. Of the 118 patients treated with thiopurines, 65 (55.1%) and 53 (44.9%) received thiopurine therapy within and after 6 months of diagnosis. The cumulative use rate of thiopurines was 38.96% at 3 years after diagnosis. The median initial dose of thiopurines was 0.7 mg/kg (0.3–2.0), and the median maintenance dose was 1.1 mg/kg (0.3–2.4). The cumulative rate of clinical relapse was not significantly different between patients who started thiopurine therapy within 6 months of diagnosis and those who started therapy 6 months after diagnosis (p= 0.712). Multivariate analysis showed that the presence of extraintestinal manifestations (hazard ratio [HR]: 4.674, 95% CI: 1.210–18.061, p= 0.025) independently predicted an increased risk of clinical relapse.
Conclusion : Patients with UC who received early thiopurine therapy did not differ significantly in terms of clinical relapse compared with those who received late therapy.
Keywords : Thiopurine, Immunomodulator, Ulcerative Colitis, Effectiveness, Early Therapy

Table 2. Results from Cox proportional hazards model for clinical relapse

Variables	Univariate			Multivariate*		
	HR	95% CI	p value	HR	95% CI	p value
Demographic variables						
Age < 40 years		(Reference)				
Age ≧ 40 years	1.266	0.748-2.141	0.380	-	-	-
Male gender	0.929	0.532-1.623	0.796	-	-	-
Body mass index, kg/m^2	1.012	0.932-1.099	0.770	-	-	-
Duration from UC diagnosis, days	1.000	0.999-1.002	0.665	-	-	-
Smoking status at diagnosis						
Never smoked		(Reference)			(Reference)	
Ex-smoker	2.026	1.140-3.599	0.016	1.681	0.913-3.094	0.095
Current smoker	1.336	0.395-4.522	0.641	0.830	0.190-3.622	0.804
Drinking status at diagnosis						
Never drinker		(Reference)				
Past drinker	1.688	0.750-3.800	0.206	-	-	-
Current drinker	1.391	0.648-2.985	0.397	-	-	-
UC disease location						
Proctitis (E1)		(Reference)				
Left sided (E2)	0.966	0.279-3.341	0.956	-	-	-
Pancolitis (E3)	1.264	0.374-4.272	0.707	-	-	-
Disease activity index						
Mayo score 6-10		(Reference)				
Mayo score 11-12	1.479	0.615-3.558	0.381	-	-	-
Partial Mayo score	1.093	0.898-1.330	0.376	-	-	-
Endoscopic disease activity						
Moderate disease		(Reference)			(Reference)	
Severe disease	0.502	0.263-0.961	0.038	0.500	0.233-1.073	0.075
Extraintestinal manifestations	3.990	1.649-9.666	0.002	4.674	1.210-18.061	0.025
Laboratory variables						
White blood cell count, 10^9/L	1.050	0.981-1.124	0.160	-	-	-
Hemoglobin, g/dL	1.013	0.896-1.146	0.836	-	-	-
Erythrocyte sedimentation rate, mm/h	1.014	1.000-1.030	0.058	1.013	0.998-1.028	0.096
Serum C-reactive protein, mg/dL	1.021	0.994-1.049	0.126	-	-	-
Serum albumin, g/dL	1.106	0.725-1.687	0.640	-	-	-
Concomitant medication						
Steroid	0.817	0.453-1.473	0.501	-	-	-
Immunosuppressant	-	-	-	-	-	-
5-aminosalicylic acid	0.088	0.025-0.311	<0.001	1.611	0.238-10.897	0.625
Biologics	1.445	0.744-2.806	0.277	-	-	-
Time from diagnosis to Tiopurines use ≧6 months	0.901	0.518-1.567	0.712	-	-	-
Thiopurine reuse after remission	1.143	0.670-1.950	0.625	-	-	-
Maintenance dose of Thiopurines, mg Azathioprine ≧ 1.1mg/kg	1.123	0.657-1.921	0.671			
Duration of use of thiopurines at least 6 consecutive months	0.443	0.253-0.778	0.005	-	-	-

UC, ulcerative colitis; HR, hazard ratio; CI, confidence interval.

Multivariate* adjusted smoking history, Endoscopic disease activity, EIMs, ESR, concomitant 5-ASA and duration of use of thiopurines ;


Thiopurine use from diagnosis
<6months
≥6months
Cumulative rates of relapse
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
p = 0.712
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36
Time to clinical relapse (Months)

[Poster Oral – IBD/Clinical 2]

PO3-1

Risk Factors and Outcomes of Chronic Antibiotic-refractory Pouchitis in Korean Ulcerative Colitis Patients: A Single Center Retrospective Study

Ji Eun Baek[1], Jung-Bin Park[1], June Hwa Bae[1], Min Hyun Kim[2], Seung Wook Hong[1], Sung Wook Hwang[1], Jong Lyul Lee[2], Yong Sik Yoon[2], Dong-Hoon Yang[1], Byong Duk Ye[1], Jeong-Sik Byeon[1], Seung-Jae Myung[1], Chang Sik Yu[2], Suk-Kyun Yang[1], Sang Hyoung Park[1]

[1]Department of Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

[2]Department of Surgery, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

Background / Aim : Chronic inflammation of the pouch after total proctocolectomy with ileal pouch-anal anastomosis (IPAA) remains a morbid complication in ulcerative colitis (UC). The goal of this study was to investigate risk factors and clinical outcomes of chronic antibiotic-refractory pouchitis (CARP) in Korean patients with UC.

Methods : This was a single center retrospective study on patients with UC who underwent total proctocolectomy with IPAA at Asan Medical Center in Korea between January 1987 and December 2022. Primary outcomes were endoscopic remission and pouch failure. Univariable and multivariable logistic regression analysis were used to identify risk factors of CARP.

Results : A total of 251 patients were included and 232 were analyzed (Table 1). The most common cause of surgery was steroid refractoriness (50.9%), followed by dysplasia/colorectal cancer (26.7%). The median time from surgery to chronic pouchitis was 48 months (interquartile range 23.5–100.0). Among 74 patients (31.9%) with chronic pouchitis, 31 patients (13.4%) were CARP and 43 patients (18.5%) were chronic antibiotic-dependent pouchitis (CADP) (Table 2). The most frequent endoscopic phenotype according to Chicago classification was focal inflammation of the pouch in all groups (chronic pouchitis, 47.3%; CARP, 35.5%; CADP, 55.8%). Patients with CARP were less likely to have concomitant probiotics compared with CADP (29.0% vs 72.1%; $p<0.01$). Endoscopic remission rate in chronic pouchitis, CARP, and CADP were 14.9% (11/74), 9.7% (3/31), and 18.6% (8/43), respectively (Table 2). Pouch failure rate in chronic pouchitis, CARP, and CADP were 13.5% (10/74), 16.1% (5/31), and 11.6% (5/43), respectively (Table 2). In a multivariable analysis, current smoking status was positively associated with CARP development (OR: 3.56; 95% confidence interval 1.33–9.52; $p=0.01$) (Table 3).

Conclusion : Current smoker with UC who underwent IPAA had a higher risk of CARP. Concomitant use of probiotics was less likely to be associated with developing CARP.

Keywords : Ulcerative Colitis, Chronic Pouchitis, Ileal Pouch-Anal Anastomosis

Table 1. Patient characteristics

Characteristics	N=232	Missing (%)
Age at diagnosis of UC (years), median (IQR)	37.0 (27.0–46.0)	0.0
Age at surgery (years), median (IQR)	44.0 (32.3–54.0)	0.0
Time from UC diagnosis to surgery (years), median (IQR)	4.0 (1.0–11.0)	0.0
Male, n (%)	133 (57.3%)	0.0
BMI (kg/m^2), median (IQR)	20.7 (18.3–23.0)	0.0
Smoking, n (%)		0.0
Current	31 (13.4%)	
Past	60 (25.9%)	
Non-smoker	141 (60.8%)	
Surgery indication, n (%)		0.0
Steroid refractory/Acute fulminant colitis	118 (50.9%)	
Steroid dependent	30 (12.9%)	
Dysplasia/colorectal cancer	62 (26.7%)	
Obstruction	4 (1.7%)	
Perforation	10 (4.3%)	
Toxic megacolon	5 (2.2%)	
Massive hemorrhage	3 (1.3%)	
Stages of surgery, n (%)		0.0
1	11 (4.7%)	
2	206 (88.8%)	
3	15 (6.5%)	
Anastomosis type, n (%)		0.0
Stapled	184 (79.3%)	
Hand-sewn	48 (20.7%)	
Previous use of biologic agents, n (%)	55 (23.7%)	0.0
TNF inhibitor	50 (21.6%)	
Vedolizumab	8 (3.4%)	
Tofacitinib	4 (1.7%)	
Previous use of immunosuppressant, n (%)	92 (39.7%)	0.0
Previous use of systemic corticosteroid, n (%)	199 (85.8%)	0.0
Previous use of 5-ASAs, n (%)	194 (83.6%)	0.0
Oral	187 (80.6%)	
Topical (Suppository)	80 (34.5%)	
Mayo score, median (IQR)	8.0 (3.0–10.3)	25.0
Partial Mayo score, median (IQR)	6.0 (2.0–8.0)	24.6
Disease extent by Montreal classification, n (%)		0.0
Proctitis (E1)	2 (0.8%)	
Left-sided colitis (E2)	22 (9.5%)	
Extensive colitis (E3)	208 (89.7%)	
Extra-intestinal manifestations, n (%)	19 (8.2%)	0.0
Primary Sclerosing Cholangitis	8 (3.4%)	
Arthralgia	7 (3%)	
Pyoderma gangrenosum	2 (0.8%)	
Erythema nodosum	3 (1.3%)	
Others	2 (0.8%)	
Preoperative *Clostridium difficile* infection, n (%)	5 (2.2%)	0.0
Preoperative CMV infection, n (%)	45 (19.4%)	0.0
Baseline laboratory values, median (IQR)		
White blood cell (/mm^3)	8,500 (5,900–11,500)	0.0
Hemoglobin (g/dL)	11.0 (9.73–12.9)	0.0
Serum Albumin (g/dL)	3.1 (2.4–3.6)	2.2
ESR (mm/hr)	36.0 (17.3–54.0)	31.0
Serum CRP (mg/dL)	2.01 (0.47–5.61)	8.2

ASA, aminosalicylic acid; BMI, body mass index; CMV, cytomegalovirus; CRP, C-reactive protein; ESR, Erythrocyte sedimentation rate; IQR, interquartile range; TNF, tumor necrosis factor; UC, ulcerative colitis

Table 2. Characteristics of chronic pouchitis

	Chronic pouchitis (n=74)	**CARP (n=31)**	**CADP (n=43)**	**P-value** OR (95% CI)
Age at diagnosis of chronic pouchitis (years), median (IQR)	47(35.5–56.5)	46 (36.0–52.5)	47 (33.5–58.0)	0.89
Male, n (%)	40 (54.1%)	19 (61.3%)	21 (48.8%)	0.29
Time from IPAA to chronic pouchitis (months), median (IQR)	48 (23.5–100)	61 (24.0–106.0)	40 (24.5–75.5)	0.07
Chicago classification, n (%)				0.25
Afferent limb involvement	9 (12.2%)	6 (19.4%)	3 (7.0%)	
Diffuse inflammation	17 (23.0%)	8 (25.8%)	9 (20.9%)	
Focal inflammation	35 (47.3%)	11 (35.5%)	24 (55.8%)	
Cuffitis	13 (17.6%)	6 (19.4%)	7 (16.3%)	
Concomitant use of probiotics, n (%)	40 (54.1%)	9 (29.0%)	31 (72.1%)	**< 0.01** 0.16 (0.06–0.44)
Treatment, n (%)				
Metronidazole			8 (18.6%)	
Ciprofloxacin			25 (58.1%)	
Metronidazole + ciprofloxacin			19 (44.2%)	
Imipenem			2 (4.7%)	
5-ASAs		25 (80.6%)	3 (7.0%)	
Systemic corticosteroids		16 (51.6%)	4 (9.3%)	
Immunomodulators		11 (35.5)		
Biologics/small molecules		9 (29.0%)		
Pouch failure, n (%)	10 (13.5%)	5 (16.1%)	5 (11.6%)	0.73
Endoscopic remission, n (%)	11 (14.9%)	3 (9.7%)	8 (18.6%)	0.34

ASA, aminosalicylic acid; CADP, chronic antibiotic dependent pouchitis; CARP, chronic antibiotic refractory pouchitis; CI, confidence interval; IPAA, ileal pouch-anal anastomosis; IQR, interquartile range; OR, odds ratio

Table 3: Factors associated with Chronic antibiotic refractory pouchitis

	Univariable analysis		Multivariable analysis	
	OR (95% CI)	P value	OR (95% CI)	P value
Female	0.83 (0.38–1.80)	0.63		
Age at UC diagnosis	0.97 (0.94–1.00)	0.08	1.00 (0.94–1.06)	0.92
Age at surgery	0.97 (0.94–1.00)	0.03	0.97 (0.92–1.03)	0.97
BMI	0.90 (0.79–1.01)	0.07	0.92 (0.81–1.05)	0.23
Smoking				
Non smoker	–	–	–	–
Current	2.80 (1.11-7.01)	0.03	3.56 (1.33–9.52)	0.01
Past	0.49 (0.16-1.51)	0.21	0.72 (0.21–2.42)	0.59
Stage of surgery				
1	–	–		
2	0.40 (0.10–1.61)	0.20		
3	0.19 (0.02–2.15)	0.18		
Anastomosis type	0.96 (0.80-1.16)	0.69		
Hand sewn	–	–		
Staple	1.10 (0.42–2.86)	0.84		
Previous use of biologics	1.23 (0.51–2.94)	0.65		
Previous use of systemic steroids	2.64 (0.60–11.65)	0.20		
Previous use of immunomodulators	1.51 (0.71–3.23)	0.29		
Previous use of 5-ASA	1.02 (0.37–2.85)	0.97		
Oral	0.86 (0.28–2.59)	0.79		
Topical	1.10 (0.11–11.16)	0.94		
Both	1.28 (0.42–3.94)	0.67		
EIM	1.84 (0.57–5.95)	0.31		
PSC	2.30 (0.44–11.96)	0.32		
Arthralgia	4.59 (0.73–28.75)	0.10		
Preoperative CMV infection	0.77 (0.28–2.14)	0.62		

ASA, aminosalicylic acid; BMI, body mass index; CI, confidence interval; CMV, cytomegalovirus; EIM, Extra-intestinal manifestations; PSC, Primary Sclerosing Cholangitis; OR, odds ratio; UC, ulcerative colitis.

[Poster Oral – IBD/Clinical 2]

PO3-2

Molecular Remission Potential: Tissue Neutrophil Elastase is Better than Histological Activity for Predicting Long-term Relapse in Patients with Ulcerative Colitis in Clinical and Endoscopic Remission

Yu Kyung Jun[1,2], Ji Ae Lee[3], Yonghoon Choi[1], Cheol Min Shin[1,2], Young Soo Park[1], Nayoung Kim[1,2], Dong Ho Lee[1,2], Hyeon Jeong Oh[3], Hyuk Yoon[1,2]

[1]Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea
[2]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea
[3]Department of Pathology, Seoul National University Bundang Hospital, Seongnam, Korea

Background / Aim : Growing interest exists in deep remission, beyond clinical and endoscopic remission, to improve long-term prognosis in patients with ulcerative colitis (UC). Our study aimed to evaluate the risk of relapse according to tissue expression levels of calprotectin and neutrophil elastase (NE) in patients with quiescent UC.

Methods : Rectal biopsies were performed on 218 patients with UC in clinical and endoscopic remission. Histological activity was prospectively scored using the Robarts Histological Index. Tissue calprotectin and NE levels were evaluated using immunohistochemistry. Clinical relapse was defined as the requirement for medical therapy escalation, systemic steroid administration, UC-related emergency room visits, hospitalization, or surgery. Optimal tissue calprotectin and NE cutoffs for relapse were determined using log-rank analysis. A Kaplan–Meier analysis was performed to assess the cumulative incidence of clinical relapse, and a Cox proportional hazard analysis was conducted to identify the risk factors for clinical relapse.

Results : Tissue calprotectin and NE levels were significantly higher in patients with histological activity than in those in histological remission (Table 1). The optimal cutoffs of tissue calprotectin and NE for relapse were 10.61 /mm^2 and 22.08 /mm^2, respectively. The 3-year clinical relapse risk was significantly lower in the low tissue NE group than in the high tissue NE group (P = 0.009); however, it did not differ between the low- and high-tissue calprotectin group (P = 0.094) (Figure). In multivariate analyses for 3-year clinical relapse, a low level of tissue NE expression and maintenance treatment using biologics were independently associated with a lower risk of 3-year clinical relapse, but previous steroid exposure was independently related to increase the risk of 3-year clinical relapse (Table 2).

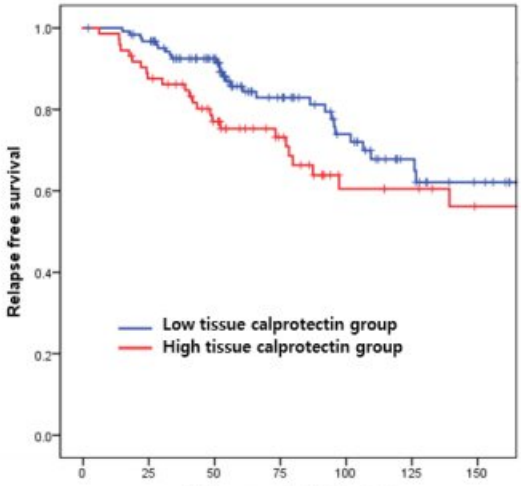
Conclusion : In patients with UC who have achieved clinical and endoscopic remission, tissue expression of NE is a better predictor of long-term relapse than histological activity.

Keywords : Colitis, Ulcerative, Leukocyte Elastase, Inflammatory Bowel Diseases, Neutrophils

Table 1. Baseline characteristics of the patients with ulcerative colitis in clinical and endoscopic remission according to the histological activity

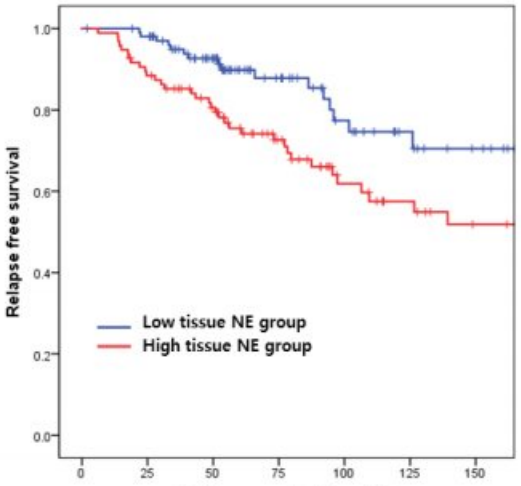
	Histological remission (n = 118)	**Histological activity** (n = 100)	***P*-value**
Age, year	44.1 ± 14.6	43.7 ± 14.3	0.837
Male	73 (61.9)	46 (46.0)	**0.019**
Current smoking	19 (16.1)	8 (8.0)	0.070
Disease duration, year	6.0 ± 5.7	4.9 ± 4.9	0.142
Disease extent			0.232
E1 (proctitis)	31 (26.3)	36 (36.0)	
E2 (left-sided colitis)	37 (21.4)	31 (31.0)	
E3 (extensive colitis)	50 (42.4)	33 (33.0)	
Partial Mayo score			0.862
0	83 (70.3)	70 (70.0)	
1	21 (17.8)	16 (16.0)	
2	14 (11.9)	14 (14.0)	
UCEIS			**<0.001**
0	79 (66.9)	40 (40.0)	
1	39 (33.1)	60 (60.0)	
Exposed medication			
Steroids	75 (63.6)	54 (54.0)	0.152
IMMs	36 (30.5)	33 (33.0)	0.694
Biologics	22 (18.6)	20 (20.0)	0.800
Maintenance treatment			0.826
5-ASA or none	88 (74.6)	75 (75.0)	
IMMs	12 (10.2)	8 (8.0)	
Biologics	18 (15.3)	17 (17.0)	
De-escalation of treatment	36 (30.5)	15 (15.0)	**0.007**
FCP > 80.0 mg/kg [a]	20 (16.9)	37 (54.4)	**<0.001**
CRP > 0.5 mg/dL[b]	3 (2.5)	4 (4.3)	0.507
Tissue calprotectin, positive number/mm^2	0.44 ± 1.79	219.72 ± 397.74	**<0.001**
Tissue NE, positive number/mm^2	27.89 ± 46.50	199.64 ± 265.63	**<0.001**

(A) Relapse free survival rate in patients with quiescent ulcerative colitis (UC) according to tissue calprotectin



Number at risk							
Low tissue calprotectin group	126	118	89	54	38	23	15
High tissue calprotectin group	73	62	47	32	17	15	11

(B) Relapse free survival rate in patients with quiescent UC according to tissue neutrophil elastase (NE)



Number at risk							
Low tissue NE group	104	99	71	42	28	18	11
High tissue NE group	96	82	67	45	28	21	15

Table 2. Univariate and multivariate analyses for predictors associated with 3-year-clinical relapse in patients with ulcerative colitis who achieved both clinical and endoscopic remission.

Variable	Univariate analysis		Multivariate analysis	
	HR (95% CI)	*P*-value	HR (95% CI)	*P*-value
Age (>40 years)	1.219 (0.691-2.151)	0.494		
Male	1.210 (0.699-2.096)	0.496		
Disease duration (>2 years)	0.854 (0.461-1.580)	0.615		
Extent				
E1 (proctitis)	Reference		Reference	
E2 (left-side colitis)	1.243 (0.581-2.660)	0.575	1.336 (0.590-3.023)	0.487
E3 (extensive colitis)	1.874 (0.937-3.748)	**0.076**	1.486 (0.666-3.315)	0.334
UCEIS				
0	Reference			
1	0.641 (0.363-1.131)	0.124		
Exposed medication				
Steroids	2.411 (1.236-4.703)	**0.010**	2.824 (1.298-6.141)	**0.009**
IMMs	1.427 (0.816-2.494)	0.212		
Biologics	0.801 (0.390-1.647)	0.547		
Maintenance treatment				
5ASA or no treatment	Reference		Reference	
IMMs	2.657 (1.278-5.525)	**0.009**	1.189 (0.434-3.256)	0.737
Biologics	0.518 (0.203-1.319)	0.168	0.368 (0.141-0.962)	**0.041**
De-escalation of treatment	1.177 (0.601-2.305)	0.636		
FCP (>80 mg/kg) [a]	0.840 (0.452-1.562)	0.582		
CRP (>0.5 mg/dL) [b]	5.538 (1.699-18.053)	**0.005**	2.338 (0.521-10.495)	0.268
Histological remission	0.704 (0.406-1.220)	0.211	0.661 (0.245-1.784)	0.414
Lymphoid aggregate	1.011 (0.559-1.827)	0.971		
Crypt atrophy and architectural distortion	1.251 (0.672-2.328)	0.480		
Tissue calprotectin (<10.61 /mm^2)	0.628 (0.362-1.088)	**0.097**	1.208 (0.415-3.510)	0.729
Tissue NE (<22.08 /mm^2)	0.462 (0.255-0.838)	**0.011**	0.443 (0.220-0.893)	**0.023**

HR, hazard ratio; IMM, immunomodulator; UCEIS, ulcerative colitis endoscopic index of severity; FCP, fecal calprotectin; CRP, C-reactive protein; 5-ASA, 5-aminosalicylic acid; NE, neutrophil elastase.
The *P*-value was indicated in bold in the univariate and multivariable analysis when it was < 0.1 and < 0.05, respectively.
[a] Patients with missing FCP values were excluded, and this is the number among 144 patients with FCP values.
[b] Patients with missing CRP values were excluded, and this is the number among 192 patients with CRP values.

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[Poster Oral – IBD/Clinical 2]

PO3-3

Comparative Efficacy of Subcutaneous Infliximab in Remission and Non-remission Patients with Inflammatory Bowel Disease after Switching from Maintenance of Intravenous Infliximab: One-year Outcomes from a Multicenter Cohort Study

Jun Hwa Bae[1], Jung-Bin Park[1], Ji Eun Baek[1], Yoo Jin Lee[3,7], Kyeong Ok Kim[4,7], Eun Soo Kim[5,7], Hyeong Ho Jo[6,7], Seung Wook Hong[1], Sang Hyoung Park[1,2], Dong-Hoon Yang[1], Byong Duk Ye[1,2], Jeong-Sik Byeon[1], Seung-Jae Myung[1], Suk-Kyun Yang[1,2], Eun Young Kim[6,7], Sung Wook Hwang[1,2]

Asan-Crohn's and Colitis Association in Daegu-Gyeongbuk (CCAiD) study group

[1]Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

[2]Inflammatory Bowel Disease Center, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

[3]Internal Medicine, Keimyung University School of Medicine, Daegu, Korea

[4]Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea

[5]Internal Medicine, School of Medicine, Kyungpook National University, Daegu, Korea

[6]Internal Medicine, Daegu Catholic University School of Medicine, Daegu, Korea

[7]CCAiD, Crohn's and Colitis Association in Daegu-Gyeongbuk, Daegu, Korea

Background / Aim : An elective switching from intravenous (IV) to subcutaneous (SC) infliximab (IFX) has shown effectiveness in patients with inflammatory bowel disease, but long-term outcomes for non-remission patients after switching from IV maintenance therapy are unclear. This study aims to evaluate the long-term outcomes of switching from IV to SC IFX maintenance therapy in both remission and non-remission patients.

Methods : This retrospective multicenter study was conducted from January 2021 to November 2023. Clinical remission was defined as Crohn's Disease Activity Index (CDAI) <150 for Crohn's disease and partial Mayo score <2 for ulcerative colitis. Biochemical remission was defined as fecal calprotectin <250 μg/g and C-reactive protein <0.5 mg/dL. The primary outcome was 1-year treatment persistence of SC IFX.

Results : Among 127 patients included in the study, 90 (70.9 %) were in clinical remission, and 37 (29.1 %) were in a non-remission state at switching. The treatment persistence rate at 1 year was high, at 92.1%, without significant differences between remission and non-remission groups (94.4% vs. 86.5%, p=0.139). In both groups, IFX pharmacokinetics and biomarkers between baseline and 12 months (p<0.01) significantly improved. The disease activity index remained stable in the remission group and decreased in the non-remission group (partial Mayo score, p<0.001; CDAI, p=0.063). The rates of clinical and biochemical remission increased at 1 year from baseline (70.9% to 87.9% and 48.0% to 67.9%, respectively). Biologics exposure before IFX was the only significant variable associated with treatment persistence (odds ratio 5.138, 95% confidence interval 1.150–22.951, p=0.032), and concomitant use of immunomodulators was not a significant factor. The incidence of IFX-related adverse events was 14.2%, with only three patients discontinuing treatment.

Conclusion : Switching from IV IFX to SC IFX during maintenance therapy demonstrated high treatment persistence and safety, regardless of remission status.

Keywords : Inflammatory Bowel Disease, Infliximab, Subcutaneous, Remission

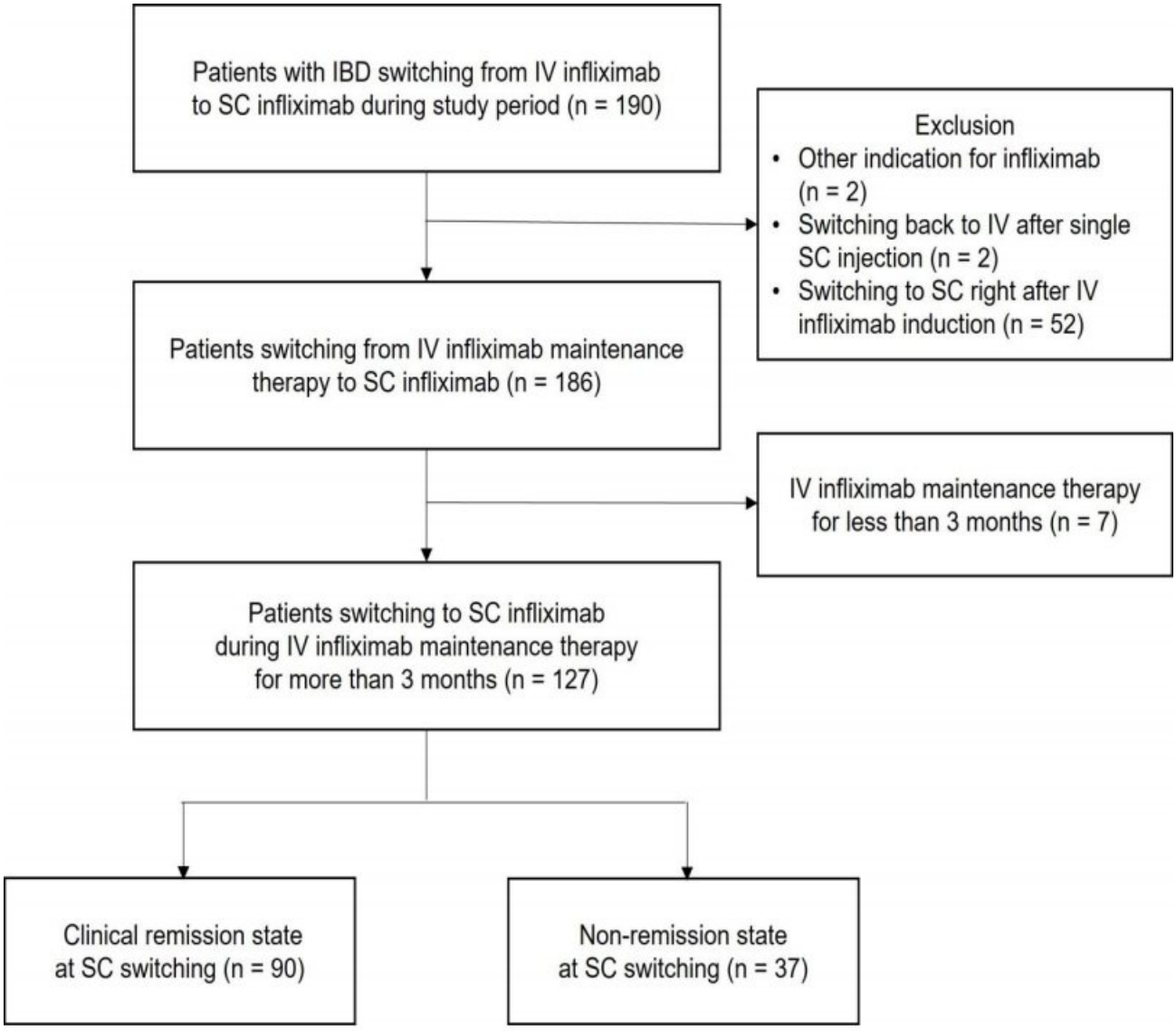


Figure 1. Flow chart of the study. IBD, inflammatory bowel disease; IV, intravenous; SC, subcutaneous

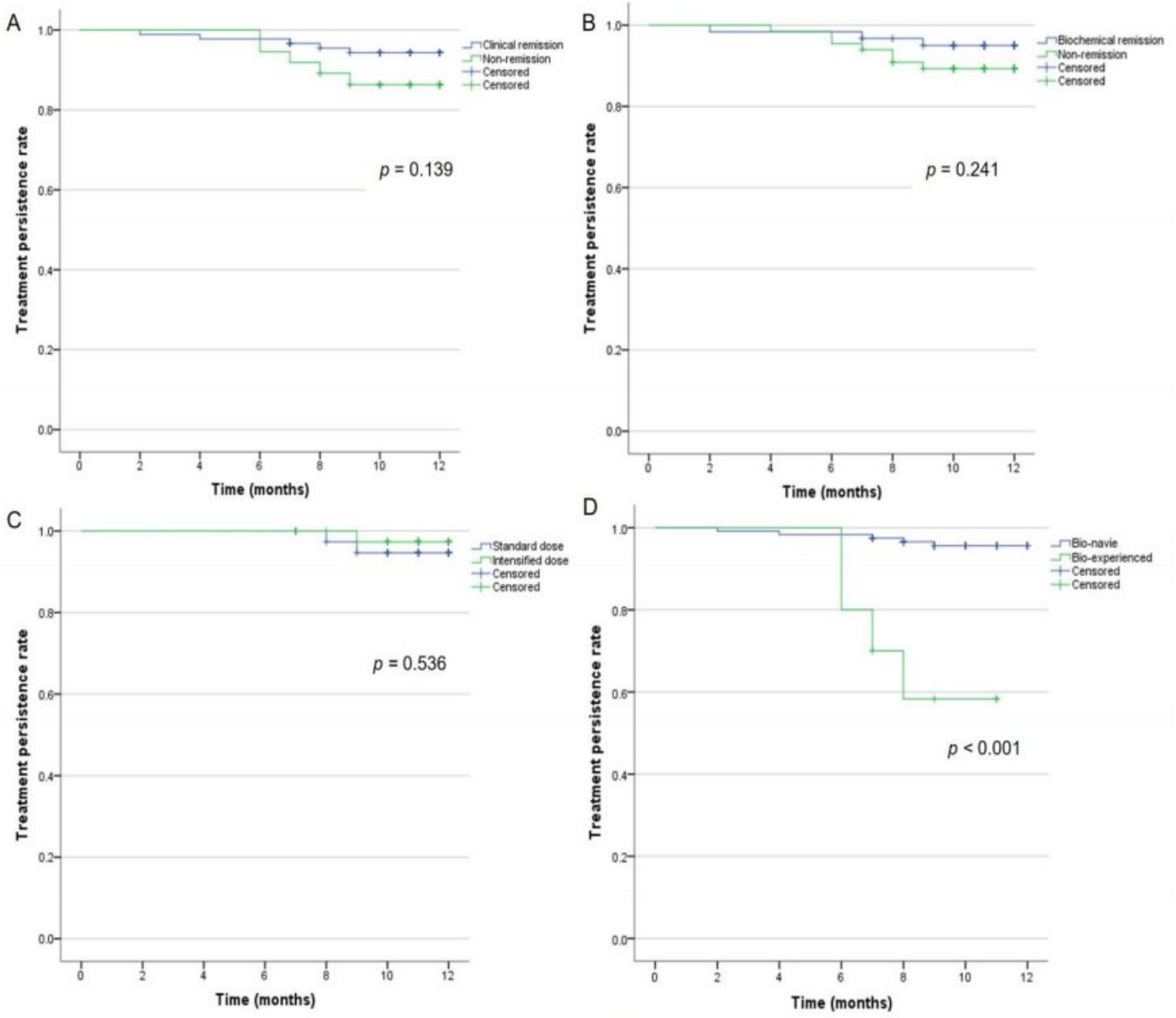


Figure 2. (A) Kaplan–Meier curve of treatment persistence with subcutaneous (SC) infliximab in patients with clinical remission and non-remission states at baseline. (B) Kaplan–Meier curve of treatment persistence with SC infliximab in patients with biochemical remission and non-remission states at baseline. (D) Kaplan–Meier curve of treatment persistence with SC infliximab in patients with Crohn's disease switched from intravenous (IV) standard dose and IV intensified dose.(D) Kaplan–Meier curve of treatment persistence with SC infliximab in biologics-naïve and biologics-experienced patients.

Table 1. Trends in serum infliximab levels, biomarkers, and disease activity indices over 12 months from baseline

Variables	Baseline [BL]	3 m	6 m	9 m	12 m	p-value BL vs 12 m
Clinical remission state at baseline						
Serum IFX level, μg/mL, median [IQR]	3.9 [2.0-6.6]	16.6 [10.9-25.2]	16.0 [10.7-25.6]	16.0 [11.3-27.2]	16.4 [9.2-24.8]	<0.001
Fecal calprotectin, μg/g, median [IQR]	251.0 [74.7-1315.5]	212.0 [38.7-1105.0]	242.0 [36.8-551.0]	100.6 [27.9-890.5]	119.0 [12.2-436.3]	0.002
CRP, mg/dL, median [IQR]	0.11 [0.10-0.38]	0.15 [0.10-0.50]	0.10 [0.10-0.27]	0.10 [0.10-0.32]	0.10 [0.10-0.25]	<0.001
CDAI, median [IQR]	30.5 [12.0-76.6]	36.6 [13.0-79.0]	28.6 [7.9-96.4]	33.4 [13.7-78.9]	29.8 [13.4-102.0]	0.899
Partial Mayo score, median [IQR]	0.0 [0.0-0.8]	0.0 [0.0-0.0]	0.0 [0.0-0.0]	0.0 [0.0-0.0]	0.0 [0.0-0.0]	>0.999
Non-remission state at baseline						
Serum IFX level, μg/mL, median [IQR]	1.6 [0.2-4.2]	14.8 [8.6-20.4]	13.2 [10.6-20.3]	12.4 [9.9-19.2]	13.0 [10.7-21.1]	<0.001
Fecal calprotectin, μg/g, median [IQR]	1274.0 [508.0-2624.0]	538.5 [166.2-2628.0]	241.0 [73.3-1637.0]	262.0 [35.0-1566.0]	487.0 [49.3-1511.5]	0.005
CRP, mg/dL, median [IQR]	0.56 [0.11-1.30]	0.10 [0.10-0.22]	0.15 [0.10-0.51]	0.15 [0.10-0.44]	0.23 [0.10-0.34]	0.002
CDAI, median [IQR]	225.1 [166.3-261.0]	151.9 [117.9-178.9]	147.2 [128.6-186.4]	121.0 [79.2-161.0]	145.1 [100.2-176.0]	0.063
Partial Mayo score, median [IQR]	4.0 [2.0-6.0]	1.0 [0.8-2.0]	1.0 [0.0-2.0]	1.0 [0.0-3.0]	1.0 [0.3-2.0]	<0.001

CDAI, Crohn's disease activity index; CRP, C-reactive protein; IFX, infliximab

[Poster Oral – IBD/Clinical 2]

PO3-4

Edema Index as a More Sensitive Indicator of Nutritional Status with Crohn's Disease

Yu Peng, Xiaowei Liu
Department of Gastroenterology, Xiangya Hospital Central South University, Changsha, China

Background / Aim : Crohn's disease (CD) often presents with malnutrition due to the impaired mucosal barrier accelerating the loss of protein. The edema index can indicate protein consumption. This study aims to confirm whether the edema index could be a nutritional assessment for CD patients.
Methods : The study was conducted at Xiangya Hospital Central South University between January 2023 and July 2023, including CD patients and the control group. In both groups, bioelectrical impedance analysis was performed, and the edema index defined as extracelluar water/total body water (ECW/TBW) was calculated. The demographic data and body composition parameters were collected through the medical system. The control group consisted of healthy adults, strictly matched for gender, age, and BMI in a 1:1 case-control manner. Univariate analysis and multivariate analysis were used to compare the differences in nutrition-related indicators between both groups.
Results : A total of 126 subjects were included in the final cohort with 50% each of CD patients and healthy individuals. There were no significant differences in gender, age, BMI. Fat free mass, muscle mass, basal metabolic rate (BMR), and visceral fat rating were similar in both groups ($P > 0.05$). Compared to the control group, CD patients had significantly lower fat mass (9.26 ± 5.38 vs.16.63 ± 10.67, $P = 0.006$), bone mass (2.16 ± 0.41 vs. 2.52 ± 0.57, $P = 0.019$), but a higher level of edema index (41.07 ± 2.38 vs. 38.53 ± 5.62, $P = 0.015$). Multivariate logistic regression analysis revealed that edema index was an independent factor to malnutrition in CD patients (OR: 1.665, 95% CI: 1.158-2.395, $P = 0.006$).
Conclusion : A higher edema index in CD patients demonstrates their worse nutritional status compared to healthy subjects. The edema index may serve as a more sensitive and noninvasive indicator to assess nutritional status in CD patients.
Keywords : Edema Index, Nutritional Status, Crohn's Disease

[Poster Oral – IBD/Clinical 2]

PO3-5

Clinical Outcomes for Ulcerative Colitis Patients Stopping 5-aminosalicylates Starting Biologics and/or Immunomodulator Therapy: A Systematic Review and Meta-analysis

Jung Rock Moon[1], Ji Eun Na[2], Jung Hyun Ji[3], Hye Sun Lee[4], Jae Jun Park[3]
[1]Internal Medicine, Ilsan Paik Hospital, Inje University College of Medicine, Goyang, Korea
[2]Internal Medicine, Haeundae Paik Hospital, Inje University College of Medicine, Busan, Korea
[3]Internal Medicine, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
[4]Biostatics Collaboration Unit, Yonsei University College of Medicine, Seoul, Korea

Background / Aim : Although 5-aminosalicylic acid (5-ASA), a crucial agent in the treatment of ulcerative colitis (UC), its role in the context of more advanced therapies, including immunomodulators and/or biologics, is not well defined. We sought to perform a systematic review and meta-analysis to assess the pooled consequences of discontinuing 5-ASA in patients with UC undergoing treatment with immunomodulators or biologics
Methods : We searched MEDLINE, EMBASE, and the COCHRANE library to identify articles analyzing clinical outcomes associated with either discontinuing or maintaining 5-ASA in UC patients receiving immunomodulators or biologic treatments. A meta-analysis was performed using a random-effects model to pool estimates and report hazard ratios [HRs] or odds ratios [ORs], following the data format specified in the individual studies
Results : A total of 6 studies were identified as eligible for the meta-analysis. In UC patients receiving immunomodulators and/or biologics, stopping 5-ASA was not associated with steroid use (HR 0.86, 95% confidence interval [CI] 0.65-1.14 and OR 0.84, 95% CI 0.47-1.51), UC-related hospitalization (HR 0.92, 95% CI 0.69-1.22), UC-related surgery (HR 0.88, 95% CI 0.65-1.18), one-year clinical (OR 0.93, 95% CI 0.63-1.39) and endoscopic (OR 1.24, 95% CI 0.30-5.08) remission.
Conclusion : The cessation of 5-ASA in UC patients treated with immunomodulators and/or biological agents is not related to worsening of clinical outcomes. This finding suggests a limited role for 5-ASA in the setting of more advanced therapies
Keywords : Ulcerative Colitis, Immunomodulator, Biologics, Stopping, Clinical Outcome

[Poster Oral – IBD/Clinical 2]

PO3-6

Modification and Application of Simplified Magnetic Resonance Index of Activity (sMaRIA) to MR and CT Enterography in Crohn's Disease

Dong Il Kim[1], Ye Rin Hwang[1], Sung Kyoung Moon[1], Myoung-Won Yoo[1], Seong Jin Park[1], Shin Ju Oh[2]
[1]Radiology, Kyung Hee University Hospital, Seoul, Korea
[2]Gastroenterology, Kyung Hee University Hospital, Seoul, Korea,

Background / Aim : To modify simplified MaRIA(sMaRIA) score for better reflection of the small bowel disease activity in Crohn's disease(CD), and to prove its diagnostic values when applied to MR and CT.
Methods : Fifty-five patients who had CD and underwent MR and CT, and ileocolonoscopy within 2 months of each imaging were enrolled. One radiologist reviewed CT and MR, and gave global sMaRIA by calculating scores of the 5 segments(terminal ileum, right, transverse, left colon, and rectum in each patient. Modified sMaRIA was simply given by adding the score of the proximal small bowel above the terminal ileum. One gastroenterologist reviewed ileocolonoscopy and gave SES-CD score retrospectively. We collected fecal calprotectin(FC) levels, and used 100μg/g as the cutoff for the prediction of disease activity. We analyzed the comparison between SES-CD score with sMaRIA, correlation of the FC levels with SES-CD scores, sMaRIA, and modified sMaRIA, and their performance in predicting the disease activity.
Results : Global sMaRIA showed the substantial agreement with SES-CD score with ICC 0.666, 95CI 0.421-0.807 at MR, and ICC 0.658, 95CI 0.407-0.802 at CT($p < 0.001$). SES-CD score(12.39 vs. 7.00 in CT and 6.70 vs 2.24 in MR), CT/MR sMaRIA(10.13 vs 5.57 in CT and 5.52 vs 2.64 in MR), and modified CT/MR sMaRIA(13.58 vs 7.64 in CT and 8.56 vs 3.44 in MR) were significantly higher in the group with FC level >100μg/g. In the disease activity prediction, modified MR and CT maria scores showed the best performance with AUROC 0.857 and 0.806 over SES-CD score(0.694-MR and 0.702-CT), MR and CT sMaRIA(0.737 and 0.776).
Conclusion : Modified sMaRIA score covering the disease involvement of small bowel loops showed the best prediction of Crohn's disease activity both in MR and CT enterography based on FC level. Its successful CT application may maintain the consistent assessment of disease activity over the imaging modality difference.
Keywords : Crohn's Disease, MaRIA, SES-CD, CT, MR

[Poster Oral – IBD/Clinical 2]

PO3-7

Higher Ustekinumab Trough Levels are associated with Endoscopic Remission in Patients with Crohn's Disease and Ulcerative Colitis

Makoto Okabe[1], Shuji Yamamoto[1], Kensuke Hamada[1], Hiroki Kitamoto[1], Atsushi Yonezawa[2], Hiroshi Seno[1]

[1]Gastroenterology and hepatology, Graduate School of Medicine, Kyoto University, Kyoto, Japan
[2]Pharmacology, Keio University, Tokyo, Japan

Background / Aim : There are few reports on the significance of ustekinumab (UST) trough levels in Japanese patients with Cohn's disease (CD) and ulcerative colitis (UC). This study aimed to clarify the correlation between UST trough levels and disease activity in CD and UC patients.
Methods : We enrolled 19 patients with CD and 15 with UC who initiated UST in Kyoto University Hospital from April 2020 to July 2023. We measured serum UST trough levels at 8, 16, 24, and 52 weeks after UST introduction. Clinical remission in CD and UC was defined as a Harvey-Bradshaw index of 2 or less and partial Mayo score of 2 or less, respectively, and endoscopic remission as a Simple endoscopic score for CD of 2 or less and Mayo endoscopic subscore of 1 or 0, respectively. Trough levels between remission and active disease were compared and the optimal cut-off values were calculated using the Youden index.
Results : UST trough levels were similar between clinically remitted and active CD but were significantly higher in clinical remission than in active disease of UC (6.72ug/mL vs 3.75ug/mL $p<0.01$). Furthermore, in UC patients, UST trough levels of 13 ug/mL or higher at 8 weeks prognosticated clinical remission at 52 weeks. Endoscopic remission had significantly higher UST trough levels compared to endoscopic active disease in both CD and UC (CD: 3.82 ug/mL vs 2.45 ug/mL, $p<0.05$, UC: 4.65 ug/mL vs 2.51 ug/mL, $p<0.05$). The optimal cut-off values for endoscopic remission in CD and UC were 3.9 ug/mL (AUC 0.75, sensitivity 60.0%, specificity 93.3%) and 3.5 ug/mL (AUC 0.86, sensitivity 87.5%, specificity 85.8%), respectively.
Conclusion : The UST trough levels correlated with endoscopic activity in CD and UC and the trough levels at 8 weeks could be a predictive biomarker for clinical remission at 52 weeks in UC.
Keywords : Ustekinumab, Trough Level, Biomarker

[Poster Oral – IBD/Basic/Translational]

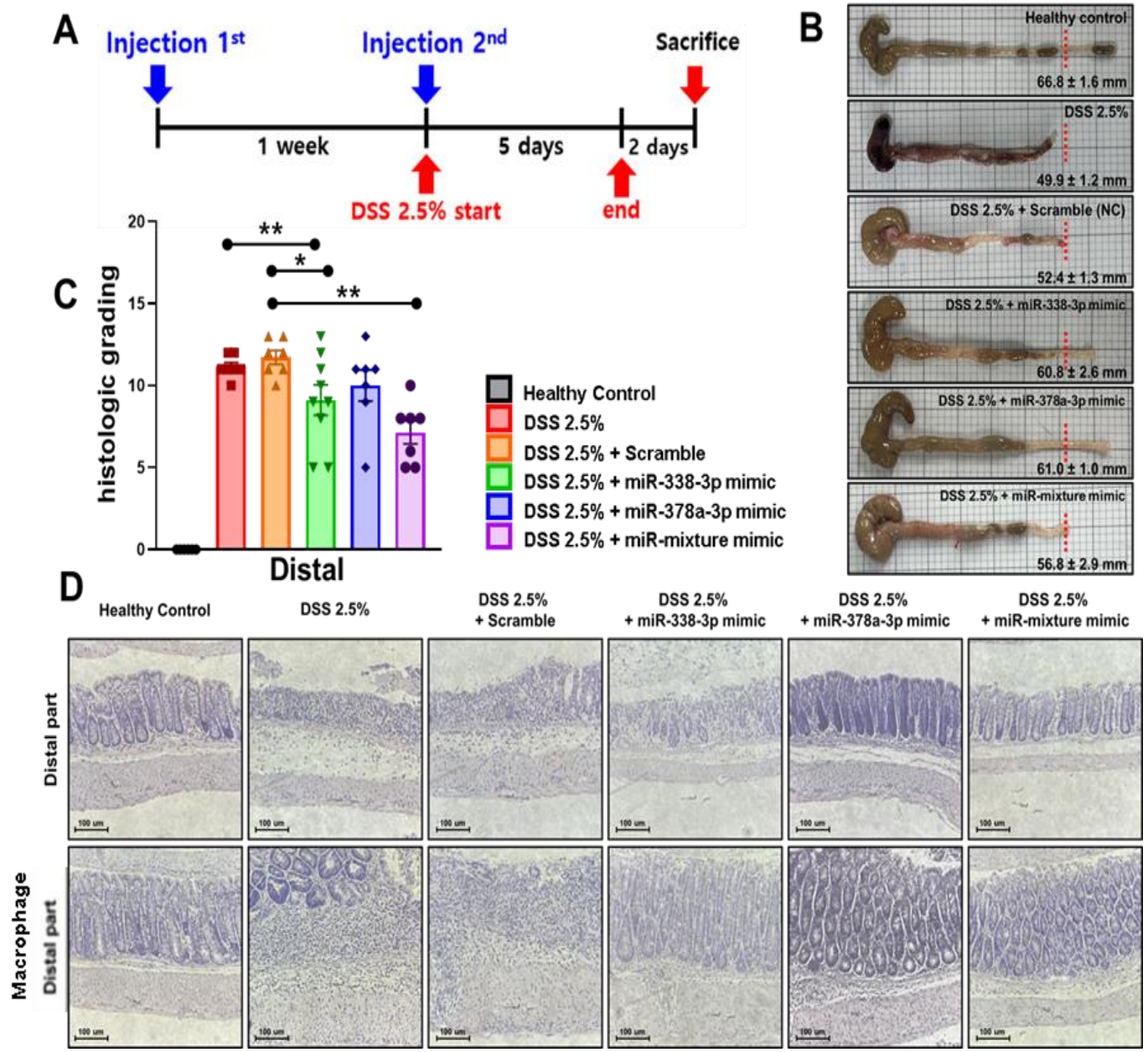
PO4-1

Regulation of miR-338-3p and miR-378a-3p in the Intestinal Mucosa of Crohn's Disease: Potential Targets for Inflammation Modulation

Jung Min Moon[1], Ki-Uk Kim[2,3], Eunsu Lim[2], Hye Won Hwang[4], Kyuwon Kim[1], Jeongkuk Seo[1], Seung Yong Shin[1], Hyeyoung Min[2], Chang Hwan Choi[1]

[1]Department of Internal Medicine, Chung-Ang University College of Medicine, Seoul, Korea
[2]College of Pharmacy, Chung-Ang University, Seoul, Korea
[3]Department of Biomedical Sciences, Seoul National University College of Medicine, Seoul, Korea
[4]Department of Pathology, Chung-Ang University College of Medicine, Seoul, Korea

Background / Aim : Increasing evidence indicates that microRNAs from epithelial cells play a role in inflammatory bowel disease (IBD) development. This involvement results in changes to colonic epithelial permeability and triggers the release of inflammatory cytokines like IL-33. We examined the expression of epithelial cell-derived microRNAs (miRNAs) in Crohn's disease (CD) patients versus healthy controls, exploring their role in inflammation regulation through experimental IBD models.
Methods : We collected terminal ileum tissue from non-IBD healthy controls (n=26), CD patients in remission (n=34), and active CD patients (n=42) via ileocolonoscopy. miRNA levels were measured using small-RNA sequencing and validated through qRT-PCR. Specific miRNAs' diagnostic capabilities were assessed using receiver operating characteristic (ROC) curve analysis. Selected miRNAs from sequencing and qRT-PCR were used to create single-strand mimics for tests in a 2.5% dextran sodium sulfate colitis model. Histologic grading, immunohistochemistry (IHC) evaluation, and flow cytometry analyses were performed. TargetScan pathway analysis was performed to search for miRNA target genes in regulating inflammation.
Results : We identified distinct miRNA arrays between CD patients and non-IBD controls. Small-RNA sequencing revealed distinct microRNA profiles in both aremission and active CD patients. qRT-PCR validation indicated significantly increased expression levels of miR-141-3p, miR-338-3p, miR-378a-3p, and miR-200b-3p, while miR-125b-5p, miR-29b-3p and miR-155-5p were significantly increased in the inflamed tissue of active CD patients. ROC analysis suggested miRNAs vary in diagnostic efficacy for clinical disease activity and endoscopic inflammation. In IBD animal model, administration of miR-338-3p and miR-378-3p mimics each demonstrated anti-inflammatory effects, confirmed histologically, in IHC data, and in flow cytometry analyses. A comb ined application of these miRNA mimics yielded consistent results. IHC staining indicated IL-33 pathway-dependent anti-inflammatory responses through miR-378-3p expression.
Conclusion : Our findings highlight miR-338-3p and miR-378a-3p as distinct markers in mucosa of CD patients, supporting their potential role as therapeutic targets for novel IBD therapies.
Keywords : Crohn's Disease, MicroRNA, Experimental IBD Model


A
Injection 1st
Injection 2nd
Sacrifice
1 week
5 days
2 days
DSS 2.5% start
end
B
Healthy control
66.8 ± 1.6 mm
DSS 2.5%
49.9 ± 1.2 mm
DSS 2.5% + Scramble (NC)
52.4 ± 1.3 mm
DSS 2.5% + miR-338-3p mimic
60.8 ± 2.6 mm
DSS 2.5% + miR-378a-3p mimic
61.0 ± 1.0 mm
DSS 2.5% + miR-mixture mimic
56.8 ± 2.9 mm
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histologic grading
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DSS 2.5%
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Healthy Control
DSS 2.5%
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DSS 2.5% + miR-338-3p mimic
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Distal part
Macrophage
Distal part

[Poster Oral – IBD/Basic/Translational]

PO4-2

Differentiation of Tonsil-derived Mesenchymal Stem Cells to Intestinal Stem Cells-like Cells for Cell Therapy of Inflammatory Bowel Disease

Eun Mi Song, Yang Hee Joo, Ju-Ran Byeon, A-Reum Choe, Chung Hyun Tae, Chang Mo Moon, Seong-Eun Kim, Hye-Kyung Jung, Ki-Nam Shim, Sung-Ae Jung
Internal Medicine, College of Medicine, Ewha Womans University, Seoul, Korea

Background / Aim : Tonsil-derived mesenchymal stem cells (TMSCs) were found to exhibit a faster growth rate compared to mesenchymal stem cells derived from other tissues. This is attributed to the relatively younger age of the tonsil tissue donors. Moreover, it has been verified that TMSCs possess the capability to undergo differentiation into endoderm lineages, giving rise to cell types like parathyroid glands and insulin-producing cells. In this study, we explored the possibility of differentiation of TMSCs into intestinal stem cells-like cells (ISC-like cells), a cell type of endoderm lineages for utilizing these cells for therapeutic applications in inflammatory bowel disease (IBD).
Methods : TMSCs were cultivated in DMEM (10% FBS) and used in the experiment when 90-100% confluency was observed. Adipose-derived mesenchymal stem cells (AMSCs) were used as the control for assessing the differentiation efficacy of TMSCs.
Results : After exposing TMSCs to 100ng/ml Activin A for 5 days, there was a significant upregulation in endoderm markers (SOX17, FOXA2) confirmed by real-time PCR (SOX17: 0.999 vs. 3.610, P=0.0394; FOXA2: 1.047 vs. 3.912, P=0.0297). Subsequent treatment with 500ng/ml FGF4 and 500ng/ml Wnt3a for 7 days resulted in a remarkable increase in Lgr5 expression, an intestinal stem cell (ISC) marker, in TMSCs (pre-differentiation vs. ISC-differentiation, 1.061 vs. 134.0, P<0.001). Notably, TMSCs exhibited significantly higher Lgr5 expression compared to AMSCs (134.0 vs. 9.819, P<0.001). Spheroid formation, observed only in TMSCs, occurred 7 days into FGF4 and Wnt3a treatment, contrasting with AMSCs. Immunofluorescence staining confirmed higher expression of SOX17 (endoderm marker) and increased fluorescence density of LGR5 in TMSCs versus AMSCs. Protein expression levels further confirmed the upregulation of each marker in TMSCs.
Conclusion : This study validated the potential of TMSCs to differentiate into ISC-like cells, with a higher efficiency observed compared to AMSCs. The prospect of differentiating into ISC positions TMSCs as promising candidates for use as a tool in IBD.
Keywords : Ulcerative Colitis, Inflammatory Bowel Disease, RNA Sequencing

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[Poster Oral – IBD/Basic/Translational]

PO4-3

Serum Metabolomic Biomarkers can Identify Inflammatory Bowel Disease and Characterize associated Subtypes and Phenotypes

Ji Eun Kim[1], Dong Ho Suh[2], Yu Jin Park[2], Shin Ju Oh[1], Hyeji Kang[2], Yosep Ji[2], Eun Sung Jung[2], Chang Kyun Lee[1]

[1]Gastroenterology, Kyung Hee University College of Medicine, Seoul, Korea
[2]Metabolomics, HEM Pharma Inc., Suwon, Gyeonggi-do, Korea

Background / Aim : This study explores comprehensive serum metabolomic profiles and specific metabolic pathways to differentiate patients with inflammatory bowel disease (IBD) from healthy individuals and to identify IBD subtypes (Crohn's disease [CD], ulcerative colitis [UC]) using highly acceptable serum biomarkers.
Methods : Serum samples, along with matched clinical metadata, were collected from IBD patients at Kyung Hee University Hospital, Korea, and compared with samples from normal controls (NCs). Untargeted analysis of serum metabolites was conducted via gas chromatography-mass spectrometry, while bile acid and tryptophan profiles were targeted using liquid chromatography. Biomarker identification involved univariate and multivariate statistics, including ROC curves and metabolic pathway analysis.
Results : The study included 134 CD, 124 UC, and 88 NC participants (Table 1). The patients with IBD were clearly clustered from the NCs, while IBD subgroups were not clearly separated from each other in the nontargeted profiling. Tryptophan and indole-3-acetic acid levels increased in both CD and UC; kynurenine and indole-3-propionic acid levels rose only in CD. Compared to CD, UC patients showed lower levels of indole-3-acetic acid, serotonin, and acetylcholine. Both groups had a reduced primary and secondary bile acids ratio compared to NCs. The ROC curves demonstrated high discriminatory power, with AUC values indicating strong separation between NCs, CD, and UC groups (Figure 1A). Pathway analysis revealed consistent alterations in glyoxylate, dicarboxylate, alanine, aspartate, glutamate, glycine, serine, and threonine metabolism across all comparisons (NCs vs UC, NCs vs CD, UC vs CD). Beta-alanine, arginine, and proline metabolism were linked to IBD compared to NCs. Glycerolipid metabolism distinctly differed between UC and CD (Figure 1B-1D). Network analysis revealed associations between metabolomic markers and specific clinical phenotypes of IBD subtypes.
Conclusion : This study demonstrates that serum metabolomic biomarkers are novel and effective tools for diagnosing IBD, as well as for identifying and characterizing its subtypes and associated phenotypes.
Keywords : Inflammatory Bowel Disease, Metabolomics, Serum Biomarkers, Ulcerative Colitis, Crohn's Disease

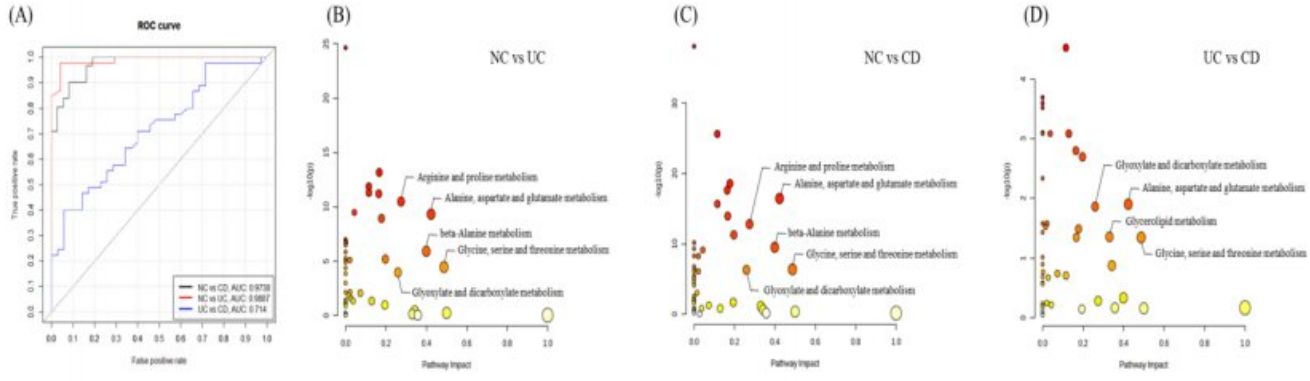

Figure 1. Potential serum biomarkers distinguishing between IBD subtypes and NC subjects. (A) ROC curve of selected serum biomarkers by Boruta feature selection through comprehensive metabolic profiles. (B-D) Overview of pathway analysis. The x-axis represents the pathway impact value computed from pathway topologic analysis, and the y-axis is the negative log of the P value obtained from pathway enrichment analysis. The color of each circle is based on P values (darker colors indicate more significant changes of metabolites in the corresponding pathway), whereas the size of the circle corresponds to the pathway impact score.

Table 1. Basic Characteristics of Study Participants

	NC (n = 88)	CD (n = 134)	UC (n = 124)
Men, No. (%)	62 (70)	104 (78)	77 (62)
Mean age (years ± SD)	33.6 ± 9.4	49.5 ± 12.3	42.7 ± 14.9
Mean BMI, kg/m2	23.5	22.8	22.9
Smoking, No (%)			
Never / Former / Current	0	100 (75)/24 (18)/10 (7)	101(81)/16(13)/7 (6)
Age at diagnosis, No (%)			
A1/A2/A3		23 (17.2)/98(73.1)/13(9.7)	8(6.5)/70(56.5)/46(37.1)
Disease duration, yrs, median (range)		6 (0-27)	1 (0-25)
Disease activity, No (%)			
Active	-	67 (50)	57 (46)
Remission	-	67 (50)	67 (54)
Treatment, No (%)			
Naïve	-	8 (6)	16 (13)
Exposed	-	126 (94)	108 (87)
Immunosuppressant therapy, No (%)	-	111 (83)	55 (44)
Steroid, No (%)	-	15 (11)	12 (10)
Biologics, No (%)	-	92 (69)	11 (9)
Disease behaviour of CD			
Montreal L1/L2/L3/L4, No (%)		30(22)/10(7)/90(67)/4(3)	
Montreal B1/B2/B3, No (%)		87(65)/25(19) /22(16)	
Perianal fistula, No (%)		75 (56)	
Bowel resection, No (%)		23 (17)	
Disease Extent of UC			
E1/E2/E3, No (%)			31(25)/53(43)/40(32)

Age at diagnosis : A1 = age <16y, A2 = 16-40y, 3 = age >40y; Montreal L1= ileal, L2 = colonic, L3 = ileocolonic, L4 = upper digestive tract; B1= nonstricturing nonpenetrating, B2 = stricturing, B3 = penetrating; E1= proctitis, E2 = left-sided colitis, E3 = pancolitis; NC, Normal Control; CD, Crohn's disease; UC, Ulcerative colitis; BMI, Body Mass Index.

[Poster Oral – IBD/Basic/Translational]

PO4-4

Two Different Mechanisms of Pathogenic Variants in the Extracellular Domain of IL10RA

Juhwan Lee[2], Inki Kim[1], Seak Hee Oh[1], Iksoo Chang[2]
[1]Pediatrics, Seoul Asan Medical Center, Seoul, Korea
[2]Creative Research Initiatives Center for Proteome Biophysics, DGIST, Daegu, Korea

Background / Aim : Interleukin-10 receptor alpha (IL10RA) deficiency is one of prominent causes of refractory very early-onset inflammatory bowel disease (VEO-IBD). However, there is limited knowledge regarding the structural and biochemical mechanism to pathogenic effect of mutant IL10RA proteins in VEO-IBD, since the limited human samples hinders any extensive biological research activity. In this study, we applied digital approach to comprehensively acquire the atom-level structural and thermodynamic insight of mutant IL10RA and the subsequent experimental validation in VEO-IBD.
Methods : We selected representative mutant IL10RA proteins exhibiting missense pathogenic variants (PVs). Our digital approach to predict distinct biochemical properties included supercomputing molecular dynamics simulations and multiplex computational assessments for PVs. Predictions were then tested through in vitro experimental validations using human cell lines and samples from patients with IL10RA-defective VEO-IBD.
Results : We identified two distinct pathogenic mechanisms of defective IL10RA signaling, based on mutation types in IL10RA's extracellular domain. Type I mutations (W45G, Y57C, W69R, T84I, Y91C, V100G, R101W, L125R, G141R, and I169T) were predicted to cause intra-structure instability such as hydrophobic core collapse, hydrogen-bond breaking, and salt-bridge breaking. Type II mutations (R117H and R117C) were predicted to induce inter-structure binding instability with IL-10 without any intra-structure instabilities. In experimental validations, Type I mutant IL10RA proteins failed to localize to the plasma membrane, and this phenomenon was explained by defective glycosylation of the mutant proteins in our subsequent analysis. Conversely, Type II mutant proteins were properly localized to the plasma membrane but failed to respond to the IL-10 cytokine.
Conclusion : These findings provide novel insights into two different pathogenic mechanisms of IL10RA deficiency based on the types of missense mutations, which may deepen our understanding of IL10RA's role in VEO-IBD and inform future therapeutic strategies.
Keywords : VEO-IBD, IL10RA Deficiency, Pediatics

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[Poster Oral – IBD/Basic/Translational]

PO4-5

Cell-derived Vesicles Extruded from Adipose Mesenchymal Stem Cells Attenuate Intestinal Inflammation and Augment Epithelial Regeneration in a Colitis Model

Min Kyoung Jo[1,2], Hyeon-Jeong Jeon[1,2], So Hui Kim[1,2], Hye Sun Lee[1,2], Seong-Eun Kim[1], Sung-Ae Jung[1], Hui-Chong Lau[3], Sung-Soo Park[3], Seung Wook Oh[3], Chang Mo Moon[1,2]

[1]Internal Medicine, College of Medicine, Ewha Womans University, Seoul, Korea
[2]Inflammation-Cancer Microenvironment Research Center, College of Medicine, Ewha Womans University, Seoul, Korea
[3]BioDrone Research Institute, MDimune Inc., Seoul, Korea

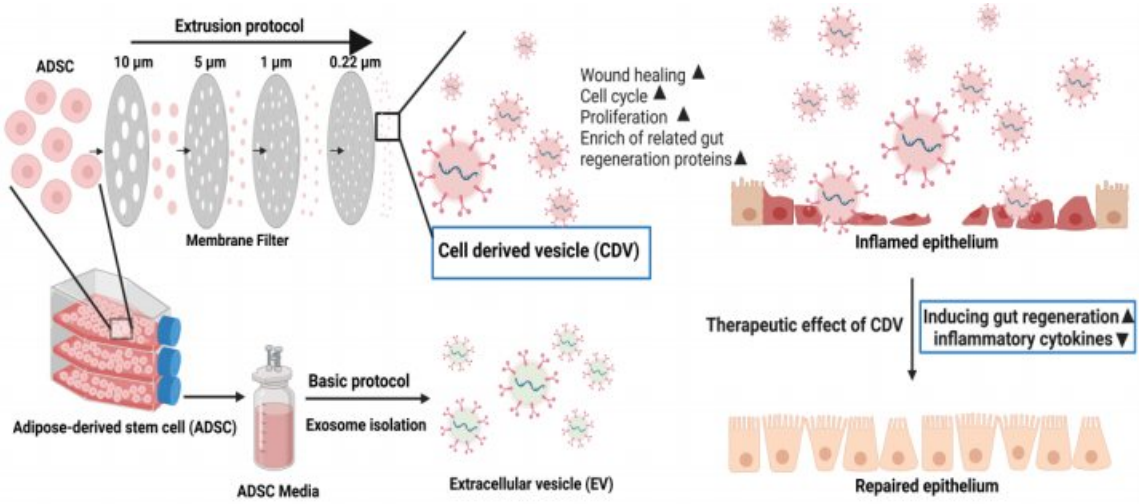
Background / Aim : Extracellular vesicles (EVs) derived from mesenchymal stem cells (MSCs) have demonstrated therapeutic effects in various inflammatory disorder. However, producing EVs in sufficient quantities for clinical applications is challenging. This is due to the need for a large amount of cell media and the associated high costs. Adipose-derived stem cell (ADSC) cell-derived vesicles (CDVs) have been developed to overcome the limitations of ADSCs and ADSC EVs. This study evaluates the characteristics and therapeutic potential of ADSC CDVs compared to ADSCs and their EVs using ex vivo organoid models and an in vivo colitis model.

Methods : ADSC CDVs were produced from ADSCs through serial extrusions with polycarbonate membrane filters. We compared the regenerative properties of ADSC CDVs with ADSC EVs and assessed the therapeutic impact of ADSC CDVs on epithelial regeneration and inflammatory response using in vitro, ex vivo organoid models, and a dextran sodium sulfate (DSS)-induced colitis model in vivo.

Results : Although both ADSC CDVs and ADSC EVs had circular shapes, ADSC CDVs were larger in mean size than ADSC EVs. ADSC CDVs demonstrated enhanced proliferation, migration, wound healing capabilities compared to ADSC EVs. Additionally, ADSC CDVs upregulated the S phase of the cell cycle and enhanced the expression of gut regeneration markers such as β-catenin, OLFM4, and Ki-67, leading to increased formation and growth of colon organoids post IFN-γ treatment. Furthermore, ADSC CDVs effectively reduced inflammatory cytokine levels in the organoid model and mitigated acute inflammation in the DSS-induced colitis model.

Conclusion : ADSC CDVs show promise in reducing gut epithelial inflammation and promoting epithelial regeneration, both ex vivo in organoids and in vivo in a colitis mouse model. ADSC CDVs show promise in reducing gut epithelial inflammation and promoting epithelial regeneration, suggesting their potential as a new therapeutic option for IBD, alongside conventional drugs.

Keywords : Inflammatory Bowel Disease, Cell-derived Vesicle, Adipose-derived Stem Cell, Regeneration



[Poster Oral – IBD/Basic/Translational]

PO4-6

Increased S100B in Chronic Colitis is associated with Neuroinflammation

Doyeon Lee[1], Sihyun Jeong[1], Geunhyung Yang[1], Daehyun Park[1], Youngju Do[1], Yunna Lee[1], Sang Hoon Rhee[2], Eunok Im[1]
[1]Pharmacy, Pusan National University, Busan, Korea
[2]Biological Sciences, Oakland University, Rochester, United States

Background / Aim : S100 calcium binding protein B (S100B), expressed specifically in glial cells, acts as a proinflammatory cytokine and also as a biomarker for blood-brain barrier permeability. It is well-known to be elevated in patients with inflammatory bowel diseases and various brain disorders, such as neurodegenerative diseases and mood disorders. The aim of this study was to investigate whether colitis-induced S100B regulates neuroinflammation via the gut-brain axis.
Methods : Two types of inflammatory bowel disease mouse models were used in this study: Il-$10^{-/-}$ mice with a piroxicam diet and C57BL/6J mice with dextran sulfate sodium (DSS). Pentamidine, an inhibitor of S100B, was injected into the mice with colitis to investigate the role of S100B inhibition in neuroinflammation. BV-2 microglia cells were stimulated with high mobility group box-1 (HMGB1) to induce pyroptosis.
Results : S100B expression was significantly higher in both the colon and the hippocampus of Il-$10^{-/-}$ mice with a piroxicam diet (Il-$10^{-/-}$-PD) compared to control mice. An increase in pyroptosis factor expression, as well as elevated levels of pro-inflammatory cytokines, were also observed in Il-$10^{-/-}$-PD mice compared to the control. S100B levels increased in the colon, serum, and the hippocampus of mice with chronic colitis, which were subsequently reduced by intraperitoneal injection of pentamidine. S100β mRNA expression increased with HMGB1 stimulation, along with an increase in pyroptosis in BV-2 cells.
Conclusion : A significant increase in S100B was identified in the colon, serum, and the hippocampus, correlating with the severity of colitis symptoms, ultimately leading to neuroinflammation. This study may contribute to the development of therapeutic strategies for neuroinflammation, at least in part, derived from chronic colitis by targeting S100B.
Keywords : S100B, Neuroinflammation, Pyroptosis, Colitis, Gut-brain Axis

[Poster Oral – IBD/Basic/Translational]

PO4-7

Anti-Inflammatory Effect of LMT503, a Modulator of Immune Cell Metabolism, on Murine Adoptive T Cell Transfer-Induced Colitis Model

Ki Beom Kim[1], Yoojin Shin[1], I Seul Park[1], Ji Hyung Kim[1], Seung Won Kim[1,2], Jae Hee Cheon[1,2]
[1]Department of Internal Medicine and Institute of Gastroenterology, Graduate School of Medical Science, Brain Korea 21 Project, Yonsei University College of Medicine, Seoul, Korea
[2]Sevrance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea

Background / Aim : Inflammatory bowel disease(IBD), a chronic inflammatory disease of the gastrointestinal tract, is caused by various factors, including genetic and environmental factors, as well as dysregulated immune responses. LMT503, a novel organic small-molecule compound, has the potential to suppress pro-inflammatory cells and induce anti-inflammatory cells by modulating their cell metabolisms. We evaluated the anti-inflammatory effects of LMT503 in a murine adoptive T cell transfer-induced colitis model.
Methods : Naïve $CD4^{+}CD25^{-}CD45RB^{high}CD62L^{high}$ T cells that were isolated from wild-type mice and transferred to Rag1 knock-out mice by intraperitoneal injection to induce colitis. LMT503 was orally administrated for last 2 weeks (50 mg/kg, 100 mg/kg). The disease activity index(DAI) was checked daily, and histopathological score and colon length were evaluated after sacrifice. Macrophages and T cells from the spleen were analyzed by flow cytometry. Gene expression in colon tissue was measured by RT-qPCR and cytokine profile in plasma was measured by cytometric bead array.
Results : Oral administration of LMT503 ameliorated adoptive T cell transfer-induced colitis in mice. The DAI and histopathological score were significantly decreased in a dose-dependent manner after the administration of LMT503. Th1, Th17 cells, and M1 macrophages in the spleen were suppressed, while M2 macrophages were induced by the administration of LMT503. MPO activity and gene expressions of pro-inflammatory cytokines in colon tissue were suppressed by the administration of LMT503. Additionally, the levels of pro-inflammatory cytokines in plasma were significantly suppressed by the administration of LMT503. In particular, LMT503 treatment significantly increased the gene expression of PGC1α, a master regulator of mitochondrial biogenesis, suggesting that LMT503 modulates cellular metabolism towards an anti-inflammatory metabolism.
Conclusion : Our data suggest that the anti-inflammatory effect of LMT503 ameliorates murine adoptive T cell transfer-induced colitis by modulating cellular metabolism and immune cell modulation. Therefore, LMT503 may represent a novel therapeutic drug that opens new avenues for the treatment of IBD.
Keywords : Inflammatory Bowel Disease, LMT503, Metabolism, Mitochondria

[Poster Oral – Colorectal Neoplasia/Clinical 1]

PO5-1

Comparison of Precutting EMR using Snare Tip and ESD Knife for 15-25 mm Non-pedunculated Colorectal Polyps: A Randomized Controlled Trial

Chang Kyo Oh[1], Young Wook Cho[2], Young-Seok Cho[2]
[1]Division of Gastroenterology, Department of Internal Medicine,
Hallym University Kangnam Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea
[2]Division of Gastroenterology, Department of Internal Medicine, Seoul St. Mary's Hospital,
Catholic University of Korea, Seoul, Korea

Background / Aim : Precutting endoscopic mucosal resection (EMR-P) is a modified EMR method for the resection of large non-pedunculated colorectal polyps; In actual clinical practice, mucosal incision is performed using a snare-tip or ESD knife, but there are concerns that the snare-tip may have a lower procedure success rate than the ESD knife. We aimed to assess the efficacy and safety of EMR-P using snare-tip compared with EMR-P using dual knife for large non-pedunculated colorectal polyps (15–25 mm).
Methods : Large non-pedunculated colorectal polyps (15-25 mm) were randomly allocated to either the EMR-P using snare-tip group or the EMR-P using dual knife group. This study was conducted from June 2021 to February 2023 in Seoul St. Mary's hospital and Hallym University Kangnam Sacred Heart Hospital. Primary outcome was en bloc resection rate.
Results : A total of 53 and 53 polyps were resected using EMR-P using snare-tip or EMR-P using dual knife, respectively. Demographic and clinical features of the two groups were similar. Median size of lesions was noted 18 mm [IQR, 16-20] and 18 mm [IQR, 16-20] between EMR-P using snare-tip and EMR-P using dual knife group, respectively (p=0.442). In the intention-to-treat population, en bloc resection rate for the EMR-P using snare-tip and EMR-P using dual knife group was 98.1% vs 98.1% (P=1.000), respectively. The R0, Rx, R1 resection rate of EMR-P using snare-tip group was not significantly difference compared to the EMR-P using dual knife group (88.7% vs 92.5%, 9.4 vs. 5.6%, 1.9% vs 1.9%; P=0.812). the local recurrence rate was 0% in both groups. There was no perforation in both groups.
Conclusion : In this study, EMR-P using snare-tip was non inferior to EMR-P using dual knife for large non-pedunculated colorectal polyps (15-25 mm). There seems to be similar between the two methods.
Keywords : Precutting EMR, Large Non-pedunculated Colorectal Polyps, Snare-tip, ESD Knife

[Poster Oral – Colorectal Neoplasia/Clinical 1]

PO5-2

Prediction of Lymph Node Metastasis in T1 Colorectal Cancer using Artificial Intelligence with Hematoxylin and Eosin-stained Whole Slide Images of Endoscopically Resected and Surgical Specimens

Joo Hye Song[1], Yiyu Hong[2], Eun Ran Kim[3], Insuk Sohn[2], Su Min Ahn[4], Seok-Hyung Kim[4], Kee-Taek Jang[4]

[1]Internal Medicine, Konkuk University Medical Center, Seoul, Korea
[2]R&D Center, Arontier Co., Ltd, Seoul, Korea
[3]Medicine, Samsung Medical Center, Seoul, Korea
[4]Pathology, Samsung Medical Center, Seoul, Korea

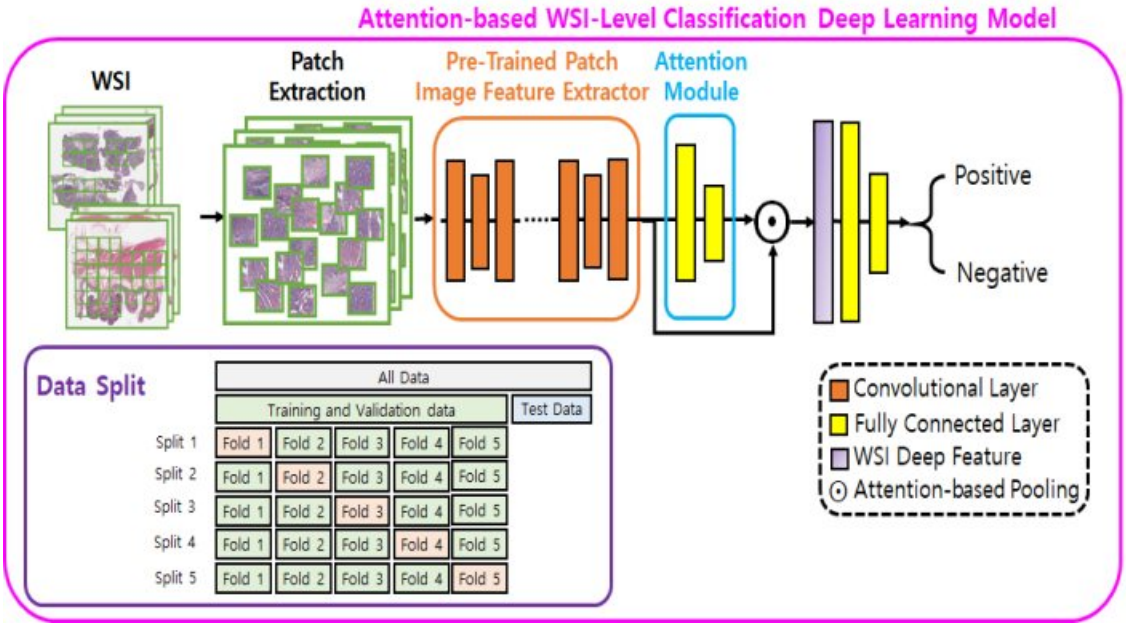
Background / Aim : In case of endoscopically resected specimens of early colorectal cancer (CRC) with high-risk of lymph node metastasis (LNM), additional surgery was performed according to current guidelines. However, the rate of LNM was 2.1%-25.0% in cases first treated endoscopically and then with surgery. The aim of this study was to develop an artificial intelligence (AI) model with H&E-stained WSIs without hand-crafted features using surgical and endoscopically resected specimens, and to apply our AI model for predicting LNM in T1 CRC.

Methods : We developed model with four versions in various combination of train and test set using H&E-stained whole slide images (WSIs) from endoscopically (400 patients) and surgically resected specimens (from 881 patients); Version 1, Train and Test: surgical specimens; Version 2, Train and Test: endoscopic and surgical resected specimens; Version 3, Train: endoscopic and surgical specimens and Test: surgical specimens; Version 4, Train: endoscopic and surgical specimens and Test: endoscopic specimens. The area under the curve (AUC) of the receiver operating characteristic curve was used to determine the accuracy of AI for predicting LNM with a 5-fold cross-validation in the training set.

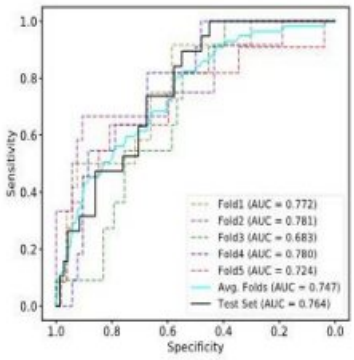
Results : We developed a step-2 deep learning AI model using only WSI and pathologist independent strategy. The AUC of our model was 0.758-0.830 in training and 0.781-0.824 in test set, and this performance power was higher than our previous model and highest than previous AI studies with only WSI.

Conclusion : Our AI model with H&E-stained WSIs and without annotation showed good performance power with validation of independent cohort in single center.

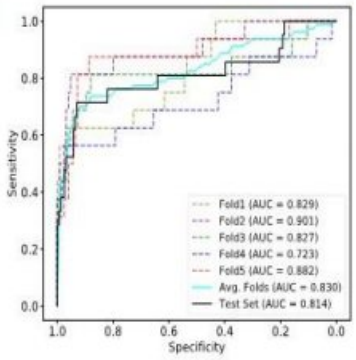
Keywords : Lymph Node Metastasis, Artificial Intelligence, Whole Slide Image, T1 Colorectal Cancer



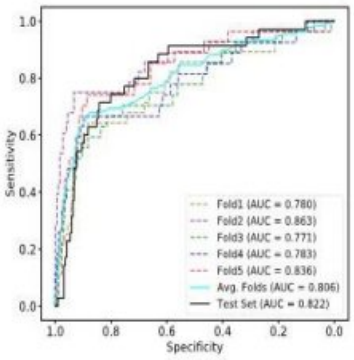
(A)


Sensitivity
Specificity
Fold1 (AUC = 0.772)
Fold2 (AUC = 0.781)
Fold3 (AUC = 0.683)
Fold4 (AUC = 0.780)
Fold5 (AUC = 0.724)
Avg. Folds (AUC = 0.747)
Test Set (AUC = 0.764)

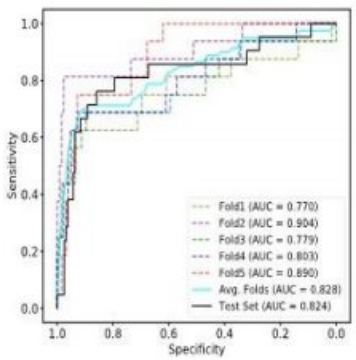
(B)


Sensitivity
Specificity
Fold1 (AUC = 0.829)
Fold2 (AUC = 0.901)
Fold3 (AUC = 0.827)
Fold4 (AUC = 0.723)
Fold5 (AUC = 0.882)
Avg. Folds (AUC = 0.830)
Test Set (AUC = 0.814)

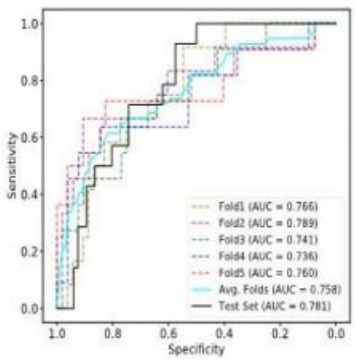
(C)


Sensitivity
Specificity
Fold1 (AUC = 0.780)
Fold2 (AUC = 0.863)
Fold3 (AUC = 0.771)
Fold4 (AUC = 0.783)
Fold5 (AUC = 0.836)
Avg. Folds (AUC = 0.806)
Test Set (AUC = 0.822)

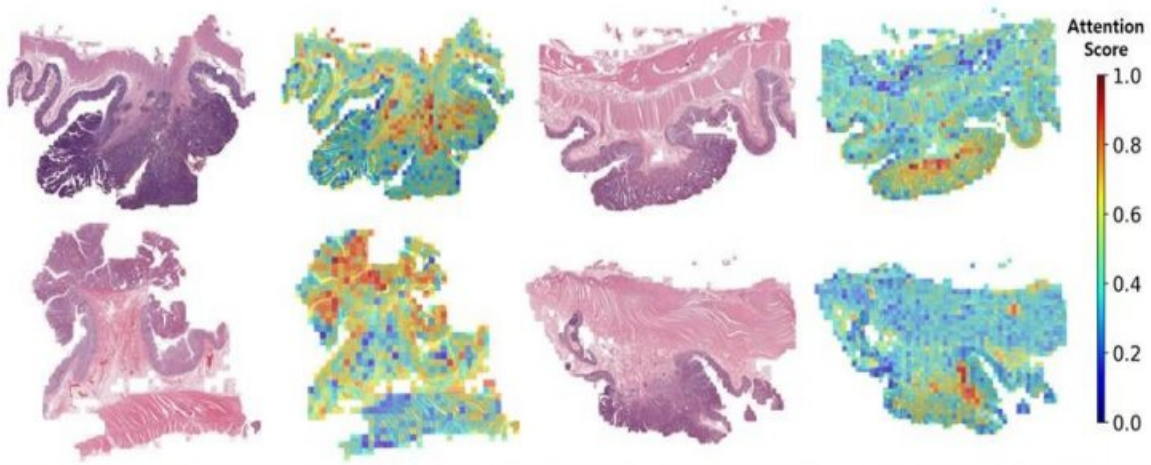
(D)


Sensitivity
Specificity
Fold1 (AUC = 0.770)
Fold2 (AUC = 0.904)
Fold3 (AUC = 0.779)
Fold4 (AUC = 0.803)
Fold5 (AUC = 0.890)
Avg. Folds (AUC = 0.828)
Test Set (AUC = 0.824)

(E)


Sensitivity
Specificity
Fold1 (AUC = 0.766)
Fold2 (AUC = 0.789)
Fold3 (AUC = 0.741)
Fold4 (AUC = 0.736)
Fold5 (AUC = 0.760)
Avg. Folds (AUC = 0.758)
Test Set (AUC = 0.781)

(A)


Attention Score
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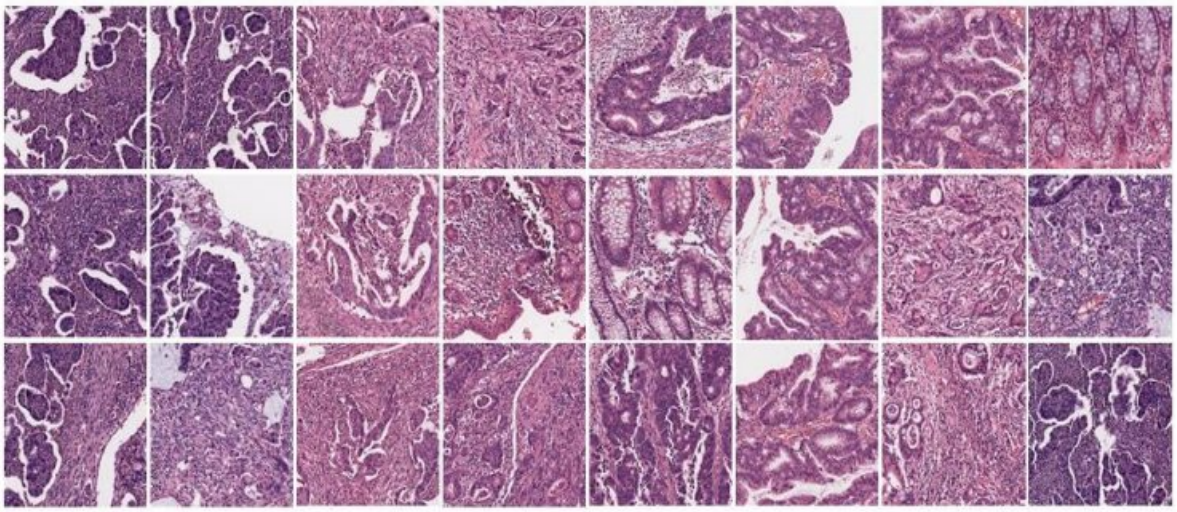
0.8
0.6
0.4
0.2
0.0

(B)



[Poster Oral – Colorectal Neoplasia/Clinical 1]

PO5-3

Does Urgent Colonoscopic Intervention Improve Outcomes of Post-polypectomy Bleeding? A CHASID Multicenter Study

Seongwoo Choi[1], Yunho Jung[1], Dae Sung Kim[2], Kwang Woo Nam[3], Sung Hyeok Ryou[3], Hoon Sup Koo[2], Hee Seok Moon[4], Sang-Bum Kang[5], Jeong Eun Shin[3], Kyu Chan Huh[2]

[1]Internal Medicine, Soonchunhyang University College of medicine, Cheonan, Korea
[2]Internal Medicine, Konyang University College of Medicine, Daejeon, Korea
[3]Internal Medicine, Dankook University College of Medicine, Cheonan, Korea
[4]Internal Medicine, Chungnam National University School of Medicine, Daejeon, Korea
[5]Internal Medicine, Daejeon St. Mary's Hospital, College of Medicine, Daejeon, Korea

Background / Aim : The optimal timing of colonoscopy for hemostasis in patients with post-polypectomy bleeding (PPB) is not well established. This study aimed to compare the clinical outcomes of urgent and early colonoscopic intervention for PPB.

Methods : This study enrolled 206 patients who developed PPB after polypectomy at three university hospitals between January 2016 and November 2023. We classified them into the urgent-intervention group (≤6h, n=98) and the early-intervention group (≤24h, n=108) based on the timing of colonoscopic hemostasis after their arrival at the hospital, and retrospectively analyzed clinical outcomes such as rebleeding rate, transfusion rate, hospitalization, and length of hospital stay.

Results : The timing of PPB occurrence was as follows: 48.5% (≤ 24h), 20.9% (24-48h), 15.1% (48-96h), and 15.5% (96h-14days). The overall success rate of colonoscopic hemostasis and the rebleeding rate following endoscopic hemostasis were 99.5% (205/206) and 4.9% (10/206), respectively. The most common endoscopic hemostatic method used was hemoclips (91.8%), followed by argon plasma coagulation (21.8%), epinephrine injection (4.9%), and hemostatic forceps (4.9%). Comparing the urgent and early intervention groups, there was no statistically significant difference in rebleeding rates (6.1% vs. 3.7%, p=0.523), transfusion rates (8.2% vs. 3.7%, p=0.172), or length of hospital stay (p=0.130). However, the hospitalization rate was significantly higher in the early-intervention group than in the urgent-intervention group (94.9% vs. 100%, p=0.023). The occurrence of rebleeding was statistically significantly associated with the timing of PPB occurrence (p=0.025), bleeding features (spurting: 33.3% vs. oozing: 5.0%, vs. non-bleeding visible vessels: 1.7%, p=0.024), and the use of epinephrine during hemostasis (p=0.008).

Conclusion : Urgent colonoscopic hemostasis for PPB did not appear to have any additional benefit for improving outcomes such as rebleeding incidence, transfusion, and length of hospital stay. The rebleeding after endoscopic hemostasis was significantly associated with the timing of DPPB occurrence, bleeding features, and the use of epinephrine.

Keywords : Post Polypectomy Bleeding, Timing of Colonoscopy, Hemostasis

Table1. comparisons of clinical results of endoscopic hemostasis in both groups.

Variables	Total (n=206)	Timing of hemostasis		P-value
		Urgent group (n=98)	Early group (n=108)	
Rebleeding	10 (4.9%)	6 (6.1%)	4 (3.7%)	0.523
Transfusion	12 (5.8%)	8 (8.2%)	4 (3.7%)	0.172
Length of hospital stay (day)	3.2 ± 2.2	3.0 ± 1.9	3.4 ± 2.4	0.130
Hospitalization	201 (97.6%)	93 (94.9%)	108 (100.0%)	0.023

Table2. comparisons of PPB occurrence, bleeding features and methods of endoscopic hemostasis in both groups.

Variables	Total (n=206)	Rebleeding		P-value
		Negative group (n=196)	Positive group (n=10)	
PPB occurrence				
≤ 24h	100 (48.5%)	92 (46.9%)	8 (80.0%)	0.025
24-48h	43 (20.9%)	41 (20.9%)	2 (20.0%)	
48-96h	31 (15.1%)	31 (15.8%)	0 (0.0%)	
96h-14days	32 (15.5%)	32 (16.3%)	0 (0.0%)	
Bleeding features				
Spurting	6 (2.9%)	4 (2.0%)	2 (20.0%)	0.024
Oozing	141 (68.5%)	134 (68.4%)	7 (70.0%)	
Non-bleeding visible vessels	59 (28.6%)	58 (29.6%)	1 (10.0%)	
Methods of endoscopic hemostasis				
Epinephrine injection	10 (4.9%)	7 (3.6%)	3 (30.0%)	0.008
Argon plasma coagulation	45 (21.8%)	43 (21.9%)	2 (20.0%)	>0.999
Hemostatic forcep coagulation	10 (4.9%)	10 (5.1%)	0 (0.0%)	>0.999
Hemoclip	189 (91.8%)	179 (91.3%)	10 (100.0%)	>0.999

[Poster Oral – Colorectal Neoplasia/Clinical 1]

PO5-4

Impact of Second Examination of the Right Colon with Narrow Band Imaging on Adenoma Detection Rates: Interim Analysis of a Multicenter Randomized Controlled Trial

Jae Gon Lee[1], Sang Pyo Lee[1], In Kyung Yoo[2], Shin Hee Kim[3], One Zoong Kim[4], Jae Yong Park[5], Young Joo Yang[6], Jin Hwa Park[7]

[1]Internal Medicine, Hallym University Dongtan Sacred Heart Hospital, Hallym University College of Medicine, Hwaseong, Korea
[2]Gastroenterology, CHA Bundang Medical Center, CHA University College of Medicine, Seongnam, Korea
[3]Internal Medicine, Soon Chun Hyang University College of Medicine, Bucheon, Korea
[4]Internal Medicine, Uijeongbu Eulji Medical Center, Eulji University School of Medicine, Uijeongbu, Korea
[5]Internal Medicine, Chung-Ang University College of Medicine, Seoul, Korea
[6]Internal Medicine, Hallym University Chuncheon Sacred Heart Hospital, Hallym University College of Medicine, Chuncheon, Korea
[7]Internal Medicine, Hanyang University Hospital, Hanyang University College of Medicine, Seoul, Korea

Background / Aim : Repeated examination of the right colon, whether second forward view or retroflexion, is known to increase adenoma detection rate (ADR) in the right colon. We aimed to investigate whether a second examination of the right colon with narrow band imaging (NBI) can increase the ADR in the right colon compared to repeated examination with white light imaging (WLI).
Methods : A multicenter, randomized controlled trial was conducted in 7 tertiary care centers in Korea. Consecutive patients with routine indications for colonoscopy were enrolled and randomized into two groups. The control arm underwent two repeated forward examinations of the right colon with WLI only (repeated WLI group). The intervention arm underwent the first examination of the right colon with WLI and the second with NBI (WLI-NBI group). Lesions detected on first and second examinations in each group were analyzed. The primary outcome was the ADR of the right colon.
Results : A total of 385 colonoscopies were analyzed, involving 191 patients in the repeated WLI group and 194 patients in the WLI-NBI group. The median age was 59.0, and 48.1% were female. The overall ADR in the right colon was significantly higher in the WLI-NBI group than in the repeated WLI group (28.9% vs. 18.3%, $p = 0.021$). Adenomas per colonoscopy in the right colon was also significantly higher in the WLI-NBI group than in the repeated WLI group (mean number of adenomas: 0.43 ± 0.89 vs. 0.25 ± 0.60, $p = 0.023$). However, there were no significant differences in the detection rates of advanced adenomas and sessile serrated lesions between the WLI-NBI group and the repeated WLI group (advanced adenoma: 5.7% vs. 3.7%, $p = 0.490$; sessile serrated lesion: 3.1% vs. 4.2%, $p = 0.763$).
Conclusion : Second forward examination of the right colon with NBI increase ADR in the right colon.
Keywords : Colonoscopy, Adenoma Detection Rate, Right Colon, Narrow Band Imaging

Table 1. Baseline characteristics the study participants.

	Repeated WLI group (n=191)	WLI-NBI group (n=194)	p-value
Age (IQR)	58.0 (48.0–66.0)	60.0 (50.0–68.0)	0.152
Sex, n (%)			0.170
Male	92 (48.2%)	108 (55.7%)	
Female	99 (51.8%)	86 (44.3%)	
Indication, n (%)			0.057
Screening	70 (36.6%)	95 (49.0%)	
Surveillance	69 (36.1%)	53 (27.3%)	
Positive FOBT	5 (2.6%)	8 (4.1%)	
Symptom evaluation	47 (24.6%)	38 (19.6%)	
First examination time, sec (IQR)	76.0 (60.0–90.0)	75.0 (60.0–90.0)	0.918
Second examination time, sec (IQR)	71.0 (60.0–83.0)	68.5 (60.0–85.0)	0.896

WLI, white light imaging; NBI, narrow band imaging; IQR, interquartile range; FOBT, fecal occult blood test

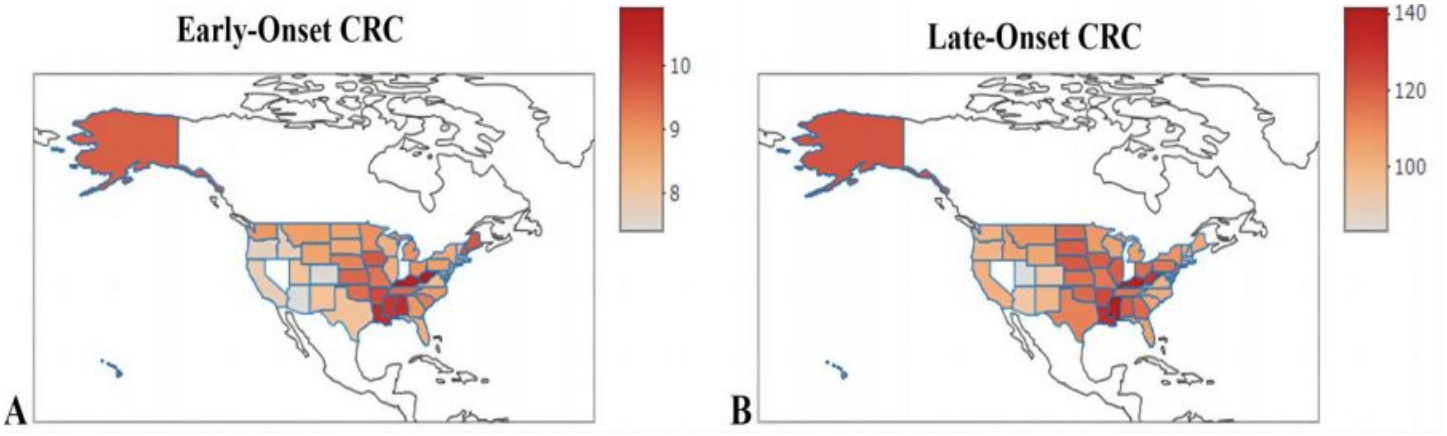
[Poster Oral – Colorectal Neoplasia/Clinical 1]

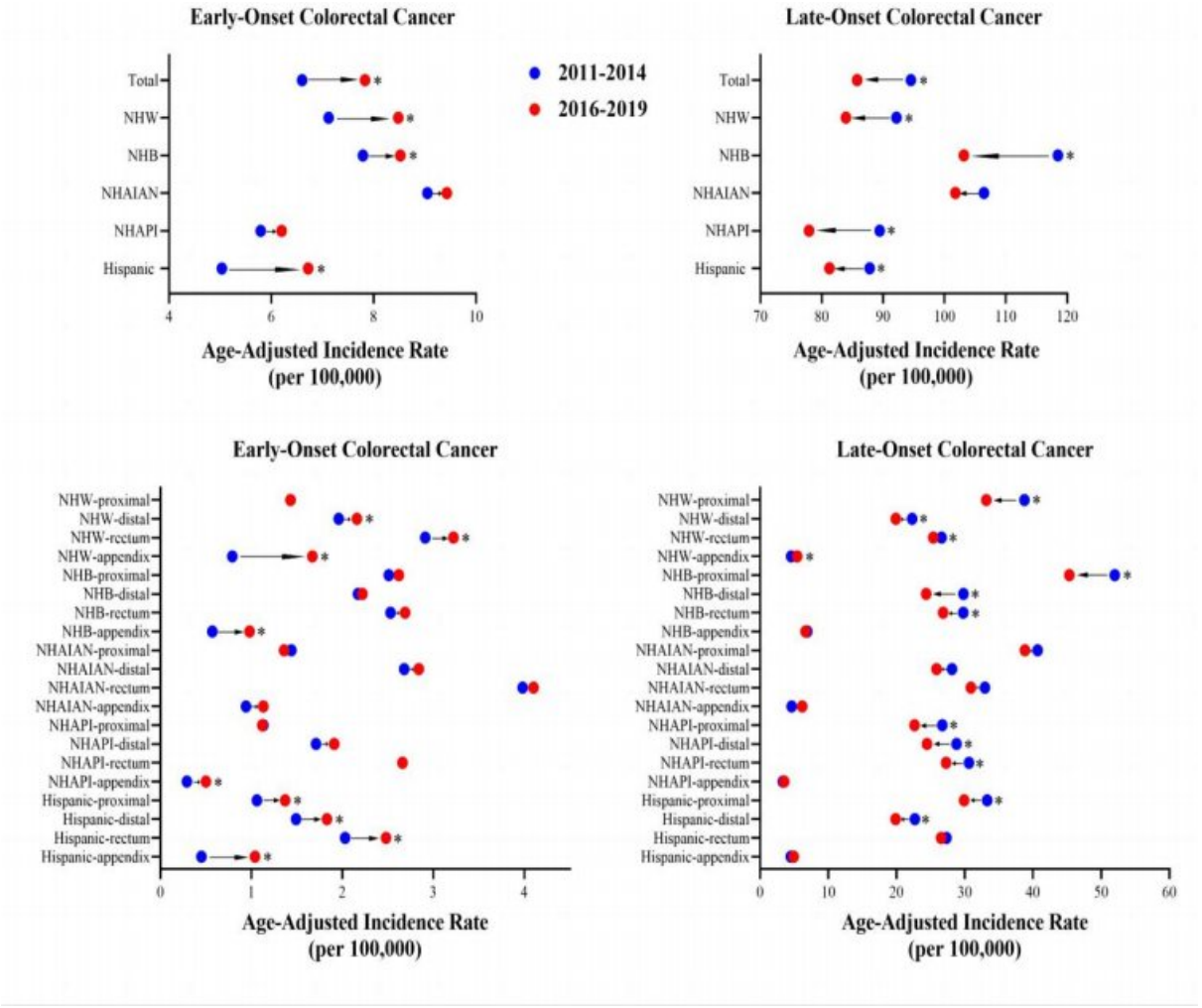
PO5-5

Racial Disparities in Early- and Late-onset Colorectal Cancer by State, Stage and Anatomic Site

Jia Xu, Jingyuan Liao, Qiong Yan, Mingming Deng, Xiaowei Tang
Department of Gastroenterology, The Affiliated Hospital of Southwest Medical University, Luzhou, China

Background / Aim : Racial disparities and age differences have long been recognized in colorectal cancer (CRC). Cancer incidence is expected to rise owing to the influence of demographic changes. The objective of our study was to identify any new changes during the period of 2016-2020.
Methods : A total of 166,369 colorectal cancer cases diagnosed during 2016-2020 were extracted from 17 registries in the Surveillance, Epidemiology and End Result database. Results were based on age-adjusted incidence and mortality rates categorized by age at diagnosis (<50 and ≥50 years), race/ethnicity, American state and anatomic site of the colorectum.
Results : Incidence of early-onset CRC consistently increased during 2016-2020 except for Non-Hispanic Black (Annual Percentage Change [APC], -1.40), while late-onset CRC decreased in this period. Non-Hispanic American Indian/Alaska Native (NHAIAN) had the highest early-onset CRC incidence rate of 10.4 per 100,000 persons, and that was Non-Hispanic Black (NHB; 121.2 per 100,000 persons) in late-onset CRC. Younger individuals were more likely to develop rectum cancer, while the older population had a higher incidence rate of proximal CRC. Comparing the incidence between 2011-2014 and 2016-2019, Hispanic early-onset CRC increased largest (5.03→6.72) and NHB late-onset CRC decreased largest (118.50→103.16). NHB and NHAIAN had higher rate of dying from primary CRC. Regardless of the high incidence rate of early-onset rectum cancer, mortality of distant proximal CRC in NHB ranked first in all young racial/ethnic groups. Survival rates were better in metropolitan areas compared to nonmetropolitan areas, and NHAIAN had the highest survival probability while NHB had the worst in both areas.
Conclusion : Early-Onset CRC continued to increase during 2016-2020 except for NHB, and late-onset CRC decreased in all racial/ethnic groups. NHB showed favorable trends in early-onset CRC. NHAIAN had significant CRC incidence and mortality, and improved the least compared to other race/ethnicity.
Keywords : Colorectal Cancer, Race, Early-Onset, Anatomic Site, SEER




Early-Onset Colorectal Cancer
Late-Onset Colorectal Cancer
2011-2014
2016-2019
Total
NHW
NHB
NHAIAN
NHAPI
Hispanic
Age-Adjusted Incidence Rate (per 100,000)
NHW-proximal
NHW-distal
NHW-rectum
NHW-appendix
NHB-proximal
NHB-distal
NHB-rectum
NHB-appendix
NHAIAN-proximal
NHAIAN-distal
NHAIAN-rectum
NHAIAN-appendix
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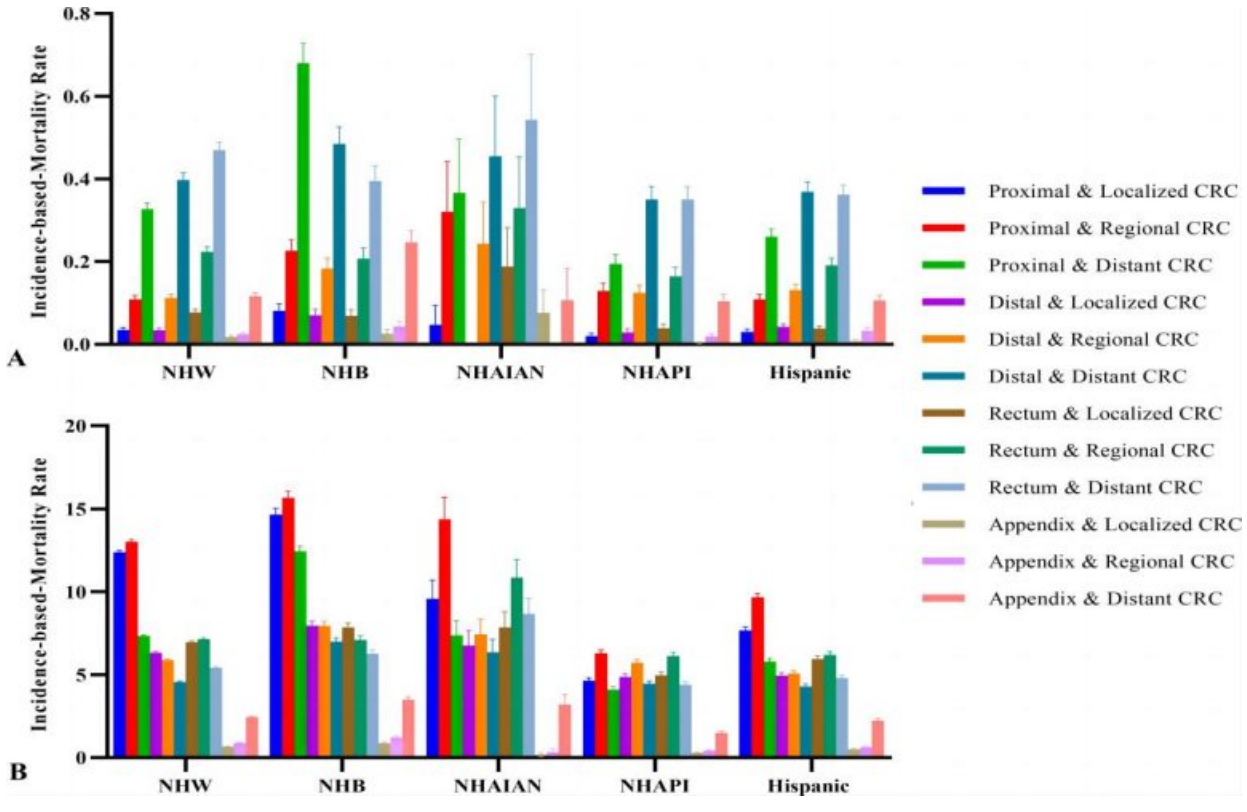
Hispanic-proximal
Hispanic-distal
Hispanic-rectum
Hispanic-appendix


A
B
Incidence-based-Mortality Rate
NHW
NHB
NHAIAN
NHAPI
Hispanic
Proximal & Localized CRC
Proximal & Regional CRC
Proxinal & Distant CRC
Distal & Localized CRC
Distal & Regional CRC
Distal & Distant CRC
Rectum & Localized CRC
Rectum & Regional CRC
Rectum & Distant CRC
Appendix & Localized CRC
Appendix & Regional CRC
Appendix & Distant CRC

[Poster Oral – Colorectal Neoplasia/Clinical 1]

PO5-6

Efficacy and Safety of Colorectal Hybrid Endoscopic Submucosal Dissection: A Honam Association for the Study of Intestinal Disease (HASID) Multicenter Study

Hyo Yeop Song[1], Geom Seog Seo[1], Seong Jung Kim[2], Jun Lee[2], Byung Chul Jin[3], Sang Wook Kim[3], Dong Hyun Kim[4], Hyun Soo Kim[4], Young Eun Joo[4], Dae Seong Myung[4], A Honam Association for the Study of Intestinal Disease (HASID)

[1]Internal Medicine, Wonkwang University College of Medicine, Iksan, Korea
[2]Internal Medicine, Chosun University Hospital, Gwangju, Korea
[3]Internal Medicine, Jeonbuk National University Hospital, Jeonju, Korea
[4]Internal Medicine, Chonnam National University Hospital, Gwangju, Korea

Background / Aim : Hybrid endoscopic submucosal dissection, in which an incision is made around a lesion and snaring is performed after submucosal dissection, is increasingly being used to overcome the complexity of conventional ESD. In this study, we evaluated the efficacy and safety of hybrid ESD.
Methods : We retrospectively analyzed the medical records of 1,777 colorectal neoplasms of 1,777 patients who underwent colorectal ESD at five tertiary general hospitals in Korea from January 2015 to December 2020. Conventional ESD was performed in 1,165 cases, and hybrid ESD was performed in 280 cases. We retrospectively investigated procedure time, en bloc resection rate, occurrence of complications, and local recurrence.
Results : Compared to conventional ESD, hybrid ESD was more likely to have depression or ulcer in the lesion (15.2% vs. 24.3%, $p < 0.001$) and submucosal fibrosis (31% vs. 39.3%, $p < 0.008$). Although there was no difference in total procedure time, the time for intra-procedural bleeding control and preventive coagulation was shorter (6.41 vs. 4.76 min, $p < 0.001$). The en bloc resection rate was lower in hybrid ESD (90.1% vs. 86.1%, $p = 0.048$), but there was no difference in complete resection rate, occurrence of post-ESD coagulation syndrome, delayed perforation, delayed bleeding, and local recurrence.
Conclusion : Hybrid ESD was associated with a lower en bloc resection rate compared to conventional ESD, but there were no differences in total procedure time, occurrence of complications, complete resection rate and local recurrence. Therefore, Hybrid ESD is an effective and safe method for colorectal neoplasms that are difficult to remove with conventional ESD.
Keywords : Colorectal Neoplasm, Endoscopic Submucosal Dissection, Hybrid Endoscopic Submucosal Dissection

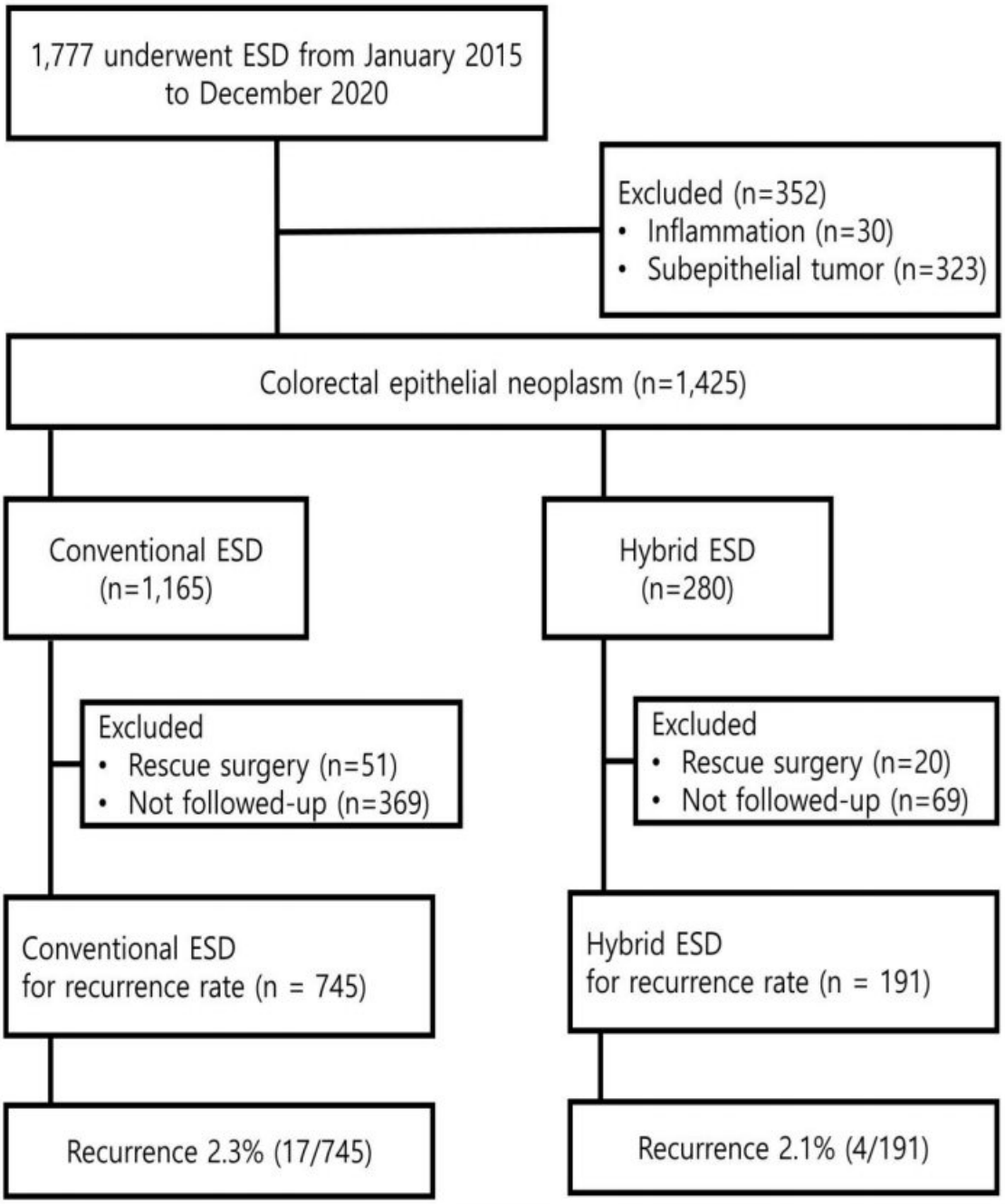

1,777 underwent ESD from January 2015 to December 2020
Excluded (n=352)
• Inflammation (n=30)
• Subepithelial tumor (n=323)
Colorectal epithelial neoplasm (n=1,425)
Conventional ESD (n=1,165)
Hybrid ESD (n=280)
Excluded
• Rescue surgery (n=51)
• Not followed-up (n=369)
Excluded
• Rescue surgery (n=20)
• Not followed-up (n=69)
Conventional ESD for recurrence rate (n = 745)
Hybrid ESD for recurrence rate (n = 191)
Recurrence 2.3% (17/745)
Recurrence 2.1% (4/191)

Table 1. Baseline characteristics of patients and lesions

Variable	Conventional ESD (n=1165)	Hybrid ESD (n=280)	*p* value
Age (mean)	65.29 (21-89)	65.23 (30-91)	0.935
Female (n, %)	468(40.2)	112(40.0)	0.958
BMI (mean ± SD)	24.18 ± 3.38	24.36 ± 3.34	0.413
ASA (≥2) (n, %)	588(50.5)	170(60.7)	0.02
CCI (mean ± SD)	0.93±1.323	1.21±1.382	0.001
Lesion location (n, %)			
Cecum	115(9.9)	30(10.7)	
Ascending	271(23.3)	70(25.0)	
HF-transverse	185(15.9)	58(20.7)	
SF-descending	64(5.5)	15(5.4)	
Sigmoid	210(18.0)	53(18.9)	
Rectum	320(27.5)	54(19.3)	
Gross finding (n, %)			0.215
Is/0-IIa/0-Is + IIa(protruding)	890(76.4)	204(72.9)	
IIc/0-IIa + IIc/scar(flat)	275(23.6)	76(27.1)	
Depression or ulcer (+)	177(15.2)	68(24.3)	< 0.001
Histopathology			0.657
benign	868(74.5)	205(73.2)	
malignancy	297(25.5)	75(26.8)	
Deep SM invasion (+)	76(6.5)	25(8.9)	0.157
Submucosal fibrosis (n, %)	361(31.0)	110(39.3)	0.008
Non-lifting sign (n, %)	322(27.6)	91(32.5)	0.106

ESD, endoscopic submucosal dissection; BMI, body mass index; ASA, American society of anesthesiologists score; CCI, Charlson comorbidity index; SM, submucosal

Table 2. Clinical outcomes of treatment

Characteristic	**Conventional ESD (n=1,165)**	**Hybrid ESD (n=280)**	***P* value**
Total procedure time (min), mean	45.31(2-319)	47.18(4-284)	0.531
Procedure time (min), mean	38.55(1-307)	42.12(4-235)	0.095
Bleeding control time (min), mean	6.41(0-137)	4.76(0-81)	< 0.001
Resected specimen size (mm), mean	29.5(6-120)	29.8(5-130)	0.756
Adverse events			
PECS (n, %)	33(2.8)	8(2.9)	0.982
Delayed perforation (n, %)	8(0.7)	1(0.4)	0.529
Delayed bleeding (n, %)	26(2.2)	8(2.9)	0.536
En bloc resection (n, %)	1050(90.1)	241(86.1)	0.048
Complete resection (n, %)	932(80.0)	234(83.6)	0.174
Local recurrence rate (n, %)	17(2.3)	4(2.1)	0.876

PECS, post-endoscopic submucosal dissection electrocoagulation syndrome.

[Poster Oral – Colorectal Neoplasia/Clinical 1]

PO5-7

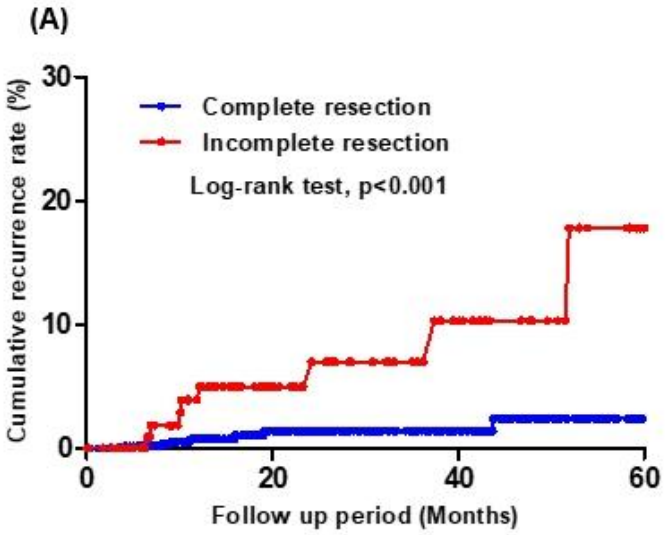
Risk Factors for Local Recurrence after Colorectal Endoscopic Submucosal Dissection: A HASID Multicenter Study

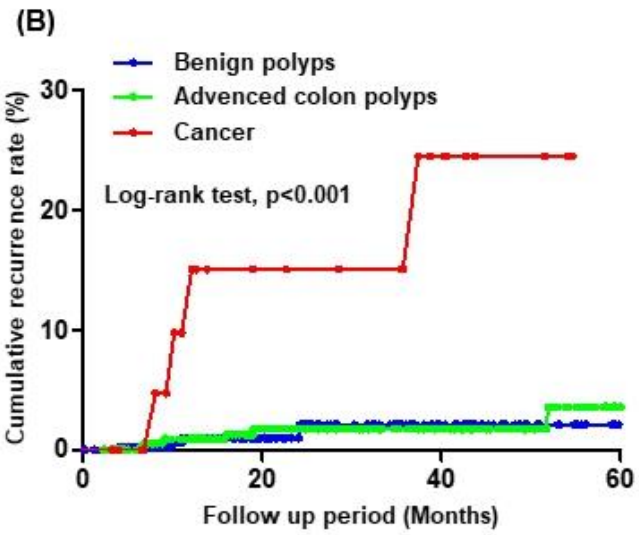
Seong-Jung Kim[1], Jun Lee[1], Hyo Yeop Song[2], Geom-Seog Seo[2], Byung-Chul Jin[3], Sang-Wook Kim[3], Dong Hyun Kim[4], Hyun-Soo Kim[4], Hyung Hoon Oh[4], Dae-Seong Myung[4], Young-Eun Joo[4]
A group of Honam Association for the Study of Intestinal Disease (HASID)
[1]Department of Internal Medicine, College of Medicine, Chosun University, Gwangju, Korea
[2]Department of Internal Medicine, College of Medicine, Wonkwang University, Iksan, Korea
[3]Department of Internal Medicine, College of Medicine, Jeonbuk National University, Jeonju, Korea
[4]Department of Internal Medicine, College of Medicine, Chonnam National University, Gwangju, Korea

Background / Aim : Endoscopic submucosal dissection (ESD) for colorectal neoplasms is a highly effective method for achieving en bloc resection. However, The risk factors of local recurrence after colorectal ESD have yet to be identified. The aim of this study is to invetigated such risk factors after ESD for colorectal neoplasms.
Methods : This retrospective stuy incluced of 1,325 patients who underwent colorectal ESD across five university hospitals from January 2015 to December 2020. We evaluated several factors linked to local recurrence in these patients. The primary object was on assessing the occurrence of local recurrence and its association with clinicopathological factors.
Results : In this study, the en bloc resection rate was 90.8%, and the complete resection rate was 82.7%. During a follow-up period of 23.86 ± 18.96 months, the local recurrence rate was 1.4% (18 patients). The risk factors for local recurrence were histologic incomplete resection (Odds ratio [OR], 4.601; 95% confidence intervals [CI], 1.134-18.659; $p<0.001$) and early colorectal cancer (OR 10.375; 95% CI 2.180-52.865; $p=0.004$). There were no deaths attributed to local recurrence.
Conclusion : Histologic incomplete resection and early colorectal cancer were investigated as risk factors for local recurrence after colorectal ESD. For patients with these risk factors, careful surveillance colonoscopy would be necessary.
Keywords : Colorectal Neoplasm, Endoscopic Submucosal Dissection, Recurrence

Characteristics	n=1325	Local recurrence(-) n=1307	Local recurrence(+) n=18	p value
Age (year, mean±SD)	65.27±11.21	65.27±11.23	64.77±9.77	0.775
Sex (n,%)				0.053
Male	803(60.6)	788(60.3)	15(83.3)	
Female	522(39.4)	519(39.7)	3(16.7)	
Tumor location (n,%)				0.024
Right colon	685(51.7)	678(51.9)	7(38.9)	
Left colon	293(22.1)	284(21.7)	9(50.0)	
Rectum	347(26.2)	345(26.4)	2(11.1)	
Tumor morphology (n,%)				1.000
0-Is/0-IIa/0-Is + IIa	1013(76.5)	999(76.4)	14(1.4)	
0-IIb/0-IIa + IIc/IIc	312(23.5)	308(23.6)	4(1.3)	
Tumor size (mm, mean±SD)	22.01±11.94	21.96±11.87	25.02±16.45	0.320
Histopathology (n,%)				<0.001
Benign lesions	753(56.8)	748(57.2)	5(27.8)	
Advanced colon polyps*	527(39.8)	519(39.7)	8(44.4)	
Cancer	45(3.4)	40(3.1)	5(27.8)	
Type of ESD (n,%)				0.763
Conventioan ESD	1075(82.1)	1061(81.2)	14(77.8)	
Hybrid ESD	250(18.9)	246(18.8)	4(22.2)	
Submucosal fibrosis (n,%)	178(13.4)	172(13.2)	6(3.4)	0.013
En bloc resection	1195(90.8)	1181(90.4)	14(77.8)	0.092
Piecemeal resection	130(9.8)	126(9.6)	4(22.2)	
ESD procedure time (min)	42.56±34.66	42.29±34.37	61.72±49.09	0.162
Adverse events (n,%)				
Perforation	11(1)	11(1)	0	1.000
Delayed bleeding	32(2.4)	125(9.6)	1(5.6)	1.000
Complete resection (n,%)	1096(82.7)	1088(83.2)	8(44.4)	<0.001
Histologic incomplete resection (n,%)				
Lateral margin involvement	84(6.4)	80(6.1)	4(22.2)	0.023
Deep margin involvement	20(1.5)	18(1.4)	2(11.1)	0.029
Indeterminated margin	130(9.8)	126(9.6)	4(22.2)	0.092
Follow-up duration (months)	23.86±18.96			
Local recurrence (n,%)	18(1.4)			

Risk factors	Odds ratio	95% Confidential intervals	P value
Right colon	1.000		
Left colon	1.462	0.468-4572	0.514
Rectum	0.309	0.057-1.666	0.712
Submucosal fibrosis	3.120	0.967-10.070	0.057
Piecemeal resection	0.757	0.165-3.463	0.720
Histologic incomplete resection	4.601	1.134-18.659	0.033
Lateral margin involvement	1.526	0.320-7.267	0.596
Deep margin involvement	0.780	0.087-7.026	0.825
Benign lesions	1.000		
Advanced colon polyps*	1.577	0.496-5.011	0.440
Cancer	10.735	2.180-52.865	0.004





[Poster Oral – Colorectal Neoplasia/Clinical 2]

PO6-1

Efficacy, Tolerability and Safety of Oral Sulfate Table versus 2L-polyethylene Glycol/Ascorbate for Bowel Preparation in Elderly Patients: Prospective, Multicenter, Investigator Single-blinded, Randomized Study

Ho Suk Kang[1], Soo-Young Na[2], Jin Young Yoon[3], Yunho Jung[4], Geom Seog Seo[5], Jae Myung Cha[3]
[1]Department of Internal Medicine, Hallym University Sacred Heart Hospital, Hallym University College of Medicine, Anyang, Korea
[2]Department of Internal Medicine, Incheon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Seoul, Korea
[3]Department of Internal Medicine, Kyung Hee University Hospital at Gangdong, College of Medicine, Kyung Hee University, Seoul, Korea
[4]Department of Internal Medicine, Soonchunhyang University College of Medicine, Cheonan, Korea
[5]Department of Internal Medicine, School of Medicine, Wonkwang University, Iksan, Korea

Background / Aim : There are still insufficient evidence for specific low volume agents before colonoscopy in elderly individuals. We aimed to compare the efficacy, tolerability, and safety of oral sulfate tablets (OSTs) versus 2 L-polyethylene glycol/ascorbate (2L- PEG/Asc) with a split- dosing regimen in elderly subjects undergoing scheduled colonoscopy.
Methods : This was a prospective, randomized, investigator-blinded multicenter study conducted between June 2022 and October 2023. Subjects ≥ 70 years were randomized at a ratio of 1:1 to either OST or 2L- PEG/Asc group. The efficacy of the bowel preparation was evaluated using the Boston Bowel Preparation Scale (BBPS) and Harefeld Cleansing Scale (HCS).
Results : A total of 254 patients were evaluated based on the modified full analysis set. Successful overall bowel preparation was excellent and similar between OST and 2L- PEG/Asc group for BBPS (96.5% vs 96.6%) and HCS (96.5% vs 97.4%). The overall high-quality preparation rate in OST group was higher than that in 2L-PEG/Asc group (BBPS; 55.7% vs 28.4%, $p<0.001$, HCS; 66.1% vs 38.8%, $p<0.001$). The tolerability scores including overall satisfaction were generally better in OST group than 2L-PEG/Asc group. The incidence of major solicited adverse events was comparable between two groups (55.7% vs 68.1, $p=0.051$), and there were no clinically significant derangements in serum laboratory profiles at the day of or 7 days after colonoscopy.
Conclusion : In elderly subjects ≥ 70 years, OST is an effective and safe low volume agents for colonoscopy with better tolerance, compared to those of 2L-PEG/Asc.
Keywords : Aged, Bowel Preparation Solutions, Colonoscopy, Efficacy, Safety

Figure legends.
Figure 1. Flowchart of the study population.

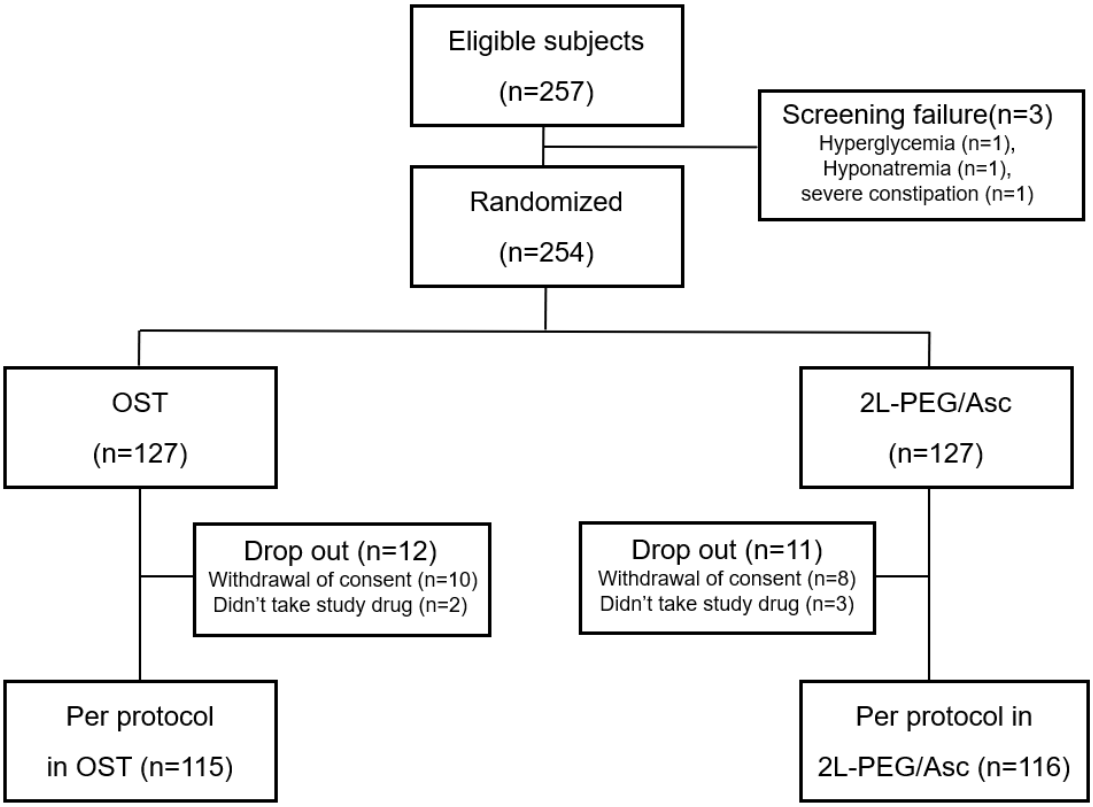


Figure 2. Efficacy of bowel preparation in the oral sulfate tablet (OST) group and 2L polyethylene glycol/ascorbic acid (2L PEG/Asc) group. High-quality preparations were significantly higher in the OST group than in the 2L PEG/Asc group with the Boston Bowel Preparation Scale and Harefield Cleansing Scale.

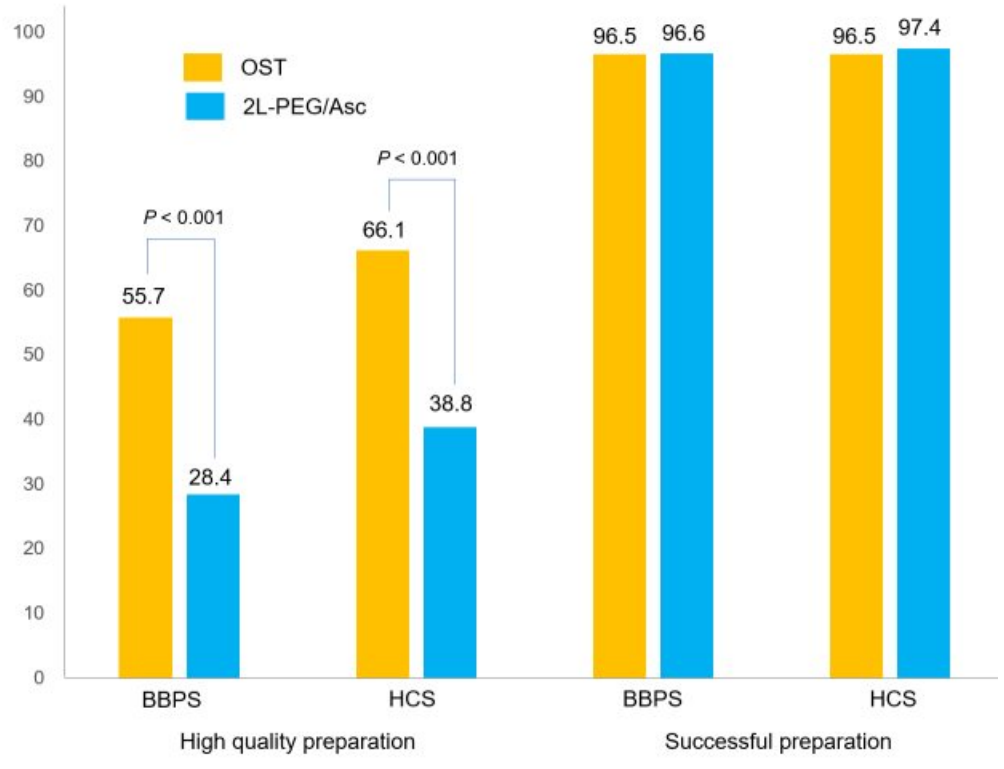


Table 1. Baseline characteristics of the study population (modified full analysis set)

Baseline characteristics	OST (n=127)	2L-PEG/Asc (n=127)	P value
Age (years), mean (SD)	74.8 (3.8)	74.4 (3.7)	0.353
Age groups (years), n (%)			0.852
70-79	110 (86.6)	111 (87.4)	
≥ 80	17 (13.4)	16 (12.6)	
Sex (male), n (%)	62 (48.8)	71 (55.9)	0.258
BMI (kg/m^2), mean (SD)	24.4 (2.8)	24.1 (3.1)	0.346
Smoking			0.234
Nonsmoker	88 (69.3)	79 (62.2)	
Ex or current smoker	39 (30.7)	48 (37.8)	
Alcohol drinking (yes), n (%)	27 (21.3)	35 (27.6)	0.243
Constipation (yes), n (%)	31 (24.4)	24 (18.9)	0.286
Indication for colonoscopy, n (%)			0.045
Screening/Surveillance	87 (68.5)	101 (79.5)	
Diagnostic	40 (31.5)	26 (20.5)	
Previous abdominal surgery, n (%)	34 (26.8)	28 (22.0)	0.381
Comorbid disease, n (%)			
Any disease	96 (53.3)	84 (46.7)	0.098
Hypertension	76 (59.8)	61 (48.0)	0.059
Dyslipidemia	49 (38.6)	45 (35.4)	0.637
Diabetes mellitus	37 (29.1)	30 (23.6)	0.319
Ischemic heart disease	8 (6.3)	3 (2.4)	0.216
Cerebrovascular accidents	10 (7.9)	7 (5.5)	0.451

OST, oral sulfate tablet; PEG/Asc, polyethylene glycol/ascorbic acid; SD, standard deviation; BMI, body mass index

Table 2. Efficacy of bowel preparation using the Boston Bowel Preparation Scale and Harefield Cleansing Scale (per protocol set)

Efficacy of bowel preparation	OST (n=115)	2L-PEG/Asc (n=116)	*P* value
Boston Bowel Preparation Scale (BBPS)			
Overall preparation, n (%)			
High-quality preparation (score ≥ 3)	64 (55.7)	33 (28.4)	< 0.001
Successful cleansing (score ≥ 2)	111 (96.5)	112 (96.6)	1.000
Preparation in each segment			
High-quality preparation, n (%)			
Right colon	69 (60.0)	41 (35.3)	< 0.001
Transverse colon	85 (73.9)	67 (57.8)	0.010
Left colon	81 (70.4)	64 (55.2)	0.016
BBPS score (0-3), mean (SD)			
Right colon	2.6 (0.6)	2.3 (0.6)	< 0.001
Transverse colon	2.7 (0.5)	2.6 (05)	0.027
Left colon	2.7 (0.5)	2.5 (0.5)	0.026
Harefield Cleansing Scale (HCS)			
Overall cleansing, n (%)			
High-quality cleansing (Grade A)	76 (66.1)	45 (38.8)	< 0.001
Successful cleansing (Grade A/B)	111 (96.5)	113 (97.4)	0.722
Preparation in each segment			
High-quality cleansing (Grade A), n (%)			
Ascending colon/cecum	83 (72.2)	57 (49.1)	< 0.001
Transverse colon	94 (81.7)	79 (68.1)	0.017
Descending colon	89 (77.4)	61 (52.6)	< 0.001
Sigmoid colon	95 (82.6)	83 (71.6)	0.046
Rectum	98 (85.2)	85 (73.3)	0.025
HCS score (0-4), mean (SD)			
Ascending colon/cecum	3.0 (0.8)	2.5 (0.7)	< 0.001
Transverse colon	3.3 (0.8)	2.9 (0.7)	< 0.001
Descending colon	3.1 (0.8)	2.7 (0.8)	< 0.001
Sigmoid colon	3.3 (0.8)	2.9 (0.7)	< 0.001
Rectum	3.4 (0.8)	3.0 (0.8)	< 0.001

OST, Oral Sulfate Tablet; PEG/Asc, Polyethylene glycol/ascorbic acid; HCS, Harefield Cleansing Scale; BBPS, Boston Bowel Preparation Scale, SD, standard deviation

Table 3. Tolerability of bowel preparation using the Patient Satisfaction Scale (per protocol set).

Tolerability	OST (n=115)	2L-PEG/Asc (n=116)	*P* value
[1]VAS for overall satisfaction (1-10), mean (SD)	8.0 (1.8)	7.0 (2.2)	< 0.001
[2]Patient Satisfaction Scale			
Domain 1			
Easy to consume (1-5), men (SD)	2.1 (1.1)	2.7 (1.2)	< 0.001
Ability to consume (yes), n (%)	115 (100.0)	114 (98.3)	0.498
Overall experience (1-5), mean (SD)	2.1 (0.8)	2.7 (0.9)	< 0.001
Taste (1-5), mean (SD)	2.2 (0.7)	2.9 (1.0)	< 0.001
Domain 2			
Willingness to use same agent, n (%)	95 (82.6)	76 (65.5)	0.003
Refusal to use same agent, n (%)	21 (18.3)	42 (36.2)	0.005
[3]Better experience compared with previous preparation, n (%)	80/109 (73.4)	45/112 (40.2)	< 0.001
Adherence of dose (≥ 75%), n (%)	115 (100.0)	116 (100.0)	1.000

OST, oral sulfate tablet; PEG/Asc, polyethylene glycol/ascorbic acid; VAS, visual analog scale, SD, standard deviation
[1]VAS had higher scores for better satisfaction; however, [2]Patient Satisfaction Scale (Domain 1 and 2) had higher scores representing lower satisfaction.
[3]Experience compared with previous preparation was only surveyed for subjects with a previous experience of bowel preparation with any preparation agents.

Table 4. Clinical adverse events associated with bowel preparation (safety set)

Clinical safety data	OST (n=115)	2L-PEG/Asc (n=116)	*P* value
[1]Major solicited AE, n (%)			
Any AE	64 (55.7)	79 (68.1)	0.051
Mild AE	57 (49.6)	67 (57.8)	0.212
Moderate/Severe AE	21 (18.3)	26 (22.4)	0.433
Nausea	13 (11.3)	13 (11.2)	0.981
Vomiting	5 (4.3)	4 (3.4)	0.748
Abdominal pain	1 (0.9)	9 (7.8)	0.019
Bloating	12 (10.4)	17 (14.7)	0.333
[2]Minor solicited AE, n (%)			
Any AE	0 (0.0)	1 (0.9)	1.000
Mild AE	0 (0.0)	1 (0.9)	1.000
Moderate/Severe AE	0 (0.0)	0 (0.0)	1.000

OST, oral sulfate tablet; PEG/Asc, polyethylene glycol/ascorbic acid; AE, adverse events
[1]Major solicited AEs included nausea, vomiting, abdominal pain and bloating.
[2]Minor solicited AEs included fecal incontinence, hunger pain, hunger sense, thirst/dehydration, hematochezia, soreness, headache, dizziness, numbness in hands/feet, convulsion, insomnia, weakness/easy fatigue, skin rash, edema, myalgia, cough/sputum, pneumonia, and others.

Table 5. Laboratory adverse events associated with bowel preparation (safety set)

Laboratory data	OST (n=115)	2L-PEG/Asc (n=116)	*P* value
BUN (mg/dL, normal: 6-20)			
Baseline value, mean (SD)	18.0 (5.3)	17.0 (4.3)	0.124
Out of normal limit at 3rd visit, n (%)	10 (8.8)	12 (10.4)	0.669
Out of normal limit at 4th visit, n (%)	25 (21.9)	21 (18.4)	0.509
Cr (mg/dL, normal: 0.7-1.2)			
Baseline value, mean (SD)	0.9 (0.3)	0.9 (0.2)	0.883
Out of normal limit at 3rd visit, n (%)	8 (7.0)	8 (7.0)	0.986
Out of normal limit at 4th visit, n (%)	9 (7.9)	10 (8.8)	0.811
Na (mEq/L, normal: 136-145)			
Baseline value, mean (SD)	140.7 (2.1)	140.5 (2.7)	0.609
Out of normal limit at 3rd visit, n (%)	15 (13.2)	11 (9.6)	0.392
Out of normal limit at 4th visit, n (%)	7 (6.1)	6 (5.3)	0.775
K (mEq/L, normal: 3.5-5.1)			
Baseline value, mean (SD)	4.5 (0.4)	4.5 (0.3)	0.624
Out of normal limit at 3rd visit, n (%)	5 (4.4)	8 (9.6)	0.401
Out of normal limit at 4th visit, n (%)	5 (4.4)	7 (6.1)	0.553
Cl (mEq/L, normal: 98-107)			
Baseline value, mean (SD)	104.4 (2.4)	104.1 (2.6)	0.494
Out of normal limit at 3rd visit, n (%)	17 (14.9)	34 (30.4)	0.008
Out of normal limit at 4th visit, n (%)	12 (10.5)	10 (8.8)	0.654
Mg (mg/dL, normal: 1.6-2.6)			
Baseline value, mean (SD)	2.2 (0.2)	2.2 (0.2)	0.457
Out of normal limit at 3rd visit, n (%)	1 (0.9)	1 (0.9)	1.000
Out of normal limit at 4th visit, n (%)	1 (0.9)	0 (0.0)	0.316
Ca (mg/dL, 9.1-10.6)			
Baseline value, mean (SD)	9.5 (0.5)	9.6 (0.5)	0.377
Out of normal limit at 3rd visit, n (%)	18 (15.8)	19 (16.5)	0.880
Out of normal limit at 4th visit, n (%)	24 (21.1)	16 (14.0)	0.164
P (mg/dL, 2.5-4.5)			
Baseline value, mean (SD)	3.8 (3.0)	3.7 (2.2)	0.831
Out of normal limit at 3rd visit, n (%)	12 (10.5)	2 (1.7)	0.006
Out of normal limit at 4th visit, n (%)	21 (18.4)	21 (18.4)	1.000
Bicarbonate (mmol/L, 22-29)			
Baseline value, mean (SD)	43.8 (80.3)	38.8 (60.4)	0.592
Out of normal limit at 3rd visit, n (%)	42 (36.8)	32 (27.8)	0.132
Out of normal limit at 4th visit, n (%)	52 (45.6)	60 (52.6)	0.289

OST, oral sulfate tablet; PEG/Asc, polyethylene glycol/ascorbic acid; SD, standard deviation
Laboratory data at the 3rd visit (on the day of colonoscopy) were missing in one subject in the OST group (n=114) and one subject in the 2L PEG/Asc group (n=115), and data at the 4th visit (7 ± 3 days after colonoscopy) were missing in one subject in the OST group (n=114) and two subjects in the 2L PEG/Asc group (n=114) as they refused blood sampling.

Supplementary Table 1. Colonoscopy performance data (per protocol set)

Performance	OST (n=115)	2L-PEG/Asc (n=116)	*P* value
Cecal intubation (success), n (%)	115 (100.0)	116 (100.0)	1.000
Insertion time (min), mean (SD)	4.5 (2.5)	4.1 (2.1)	0.215
Withdrawal time (min), mean (SD)	8.9 (5.5)	8.3 (4.6)	0.335
Adenoma detection, n (%)	63 (54.8)	41 (35.3)	0.003
Polyp detection, n (%)	68 (59.1)	49 (42.2)	0.010

OST, oral sulfate tablet; PEG/Asc, polyethylene glycol/ascorbic acid

Supplementary Table 2. Subgroup analysis of efficacy, tolerability and clinical safety of preparation according to age groups

Variables	70-79 years (n=202)	≥ 80 years (n=29)	*P* value
Type of preparation agents, n (%)			0.824
Oral sulfate tablet	100 (49.5)	15 (51.7)	
2L-PEG/Asc	102 (50.5)	14 (48.3)	
Efficacy of overall preparation			
Boston Bowel Preparation Scale, n (%)			
High-quality preparation (score ≥ 3)	86 (42.6)	11 (37.9)	0.636
Successful cleansing (score ≥ 2)	195 (96.5)	28 (96.6)	0.996
Harefield Cleansing Scale, n (%)			
High-quality cleansing (Grade A)	111 (55.0)	10 (34.5)	0.039
Successful cleansing (Grade A/B)	196 (97.0)	28 (96.6)	1.000
Tolerability of preparation			
VAS for overall satisfaction (1-10), mean (SD)	7.5 (2.1)	7.6 (1.7)	0.722
Easy to consume (1-5), men (SD)	2.4 (1.2)	2.2 (1.1)	0.416
Overall experience (1-5), mean (SD)	2.4 (0.9)	2.3 (0.9)	0.512
Willingness to use same agent, n (%)	54 (26.7)	6 (20.7)	0.488
Clinical safety of preparation			
Major solicited AE, n (%)			
Any AE	128 (63.3)	15 (51.7)	0.227
Mild AE	111 (55.0)	13 (44.8)	0.307
Moderate/Severe AE	42 (20.8)	5 (17.2)	0.657

PEG/Asc, polyethylene glycol/ascorbic acid; SD, standard deviation; VAS, visual analog scale; AE, adverse event

[Poster Oral – Colorectal Neoplasia/Clinical 2]

PO6-2

Effectiveness of Grab-and-capture Traction using Repositionable Clip in Endoscopic Submucosal Dissection of Large Non-pedunculated Colorectal Polyps

Won Myung Lee[1], Bong Min Ko[1], Moon Sung Lee[1], Yunho Jung[2], Sung Ran Jeon[3], Hyun Gun Kim[3]
[1]Digestive Disease Center and Research Institute, Department of Internal Medicine, SoonChunHyang University School of Medicine, Bucheon, Korea
[2]Digestive Disease Center and Research Institute, Department of Internal Medicine, SoonChunHyang University School of Medicine, Cheonan, Korea
[3]Digestive Disease Center and Research Institute, Department of Internal Medicine, SoonChunHyang University School of Medicine, Seoul, Korea

Background / Aim : To facilitate colorectal endoscopic submucosal dissection (ESD) of large non-pedunculated colorectal polyps (LNPCP), various traction methods have been devised. We introduce a novel traction method using a repositionable clip. The aim of the study is to compare the safety and effectiveness of grab-and-capture traction ESD.
Methods : This retrospective study included patients who underwent ESD for LNPCP from January 2021 to December 2023 at a single tertiary center. Patients were categorized into two groups: traction ESD (T-ESD) and conventional ESD (C-ESD). The primary outcome measured was the speed of dissection.
Results : A total of 60 cases (20 in the T-ESD group, 40 in the C-ESD group) were evaluated. The median dissection speed for T-ESD and C-ESD were 11.71 mm^2/min (IQR 8.56,18.74) and 10.31 mm^2/min (IQR 6.51,15.55), respectively ($p = 0.24$), indicating no significant difference between the two groups. However, a subgroup analysis of cases with a lesion diameter of 25-55mm showed a median dissection time of 17.15 mm^2/min for T-ESD and 11.20 mm^2/min for C-ESD ($p = 0.04$).
Conclusion : The grab-and-caputre traction by a repositionable clip in ESD did not significantly increase the overall dissection speed. However, it may be useful for the resection of certain types of LNPCP.
Keywords : Endoscopic Submucosal Dissection, Large Non Pedunculated Colorectal Polyp, Traction Assisted Endoscopic Submucosal Dissection, Lateral Spreading Tumor

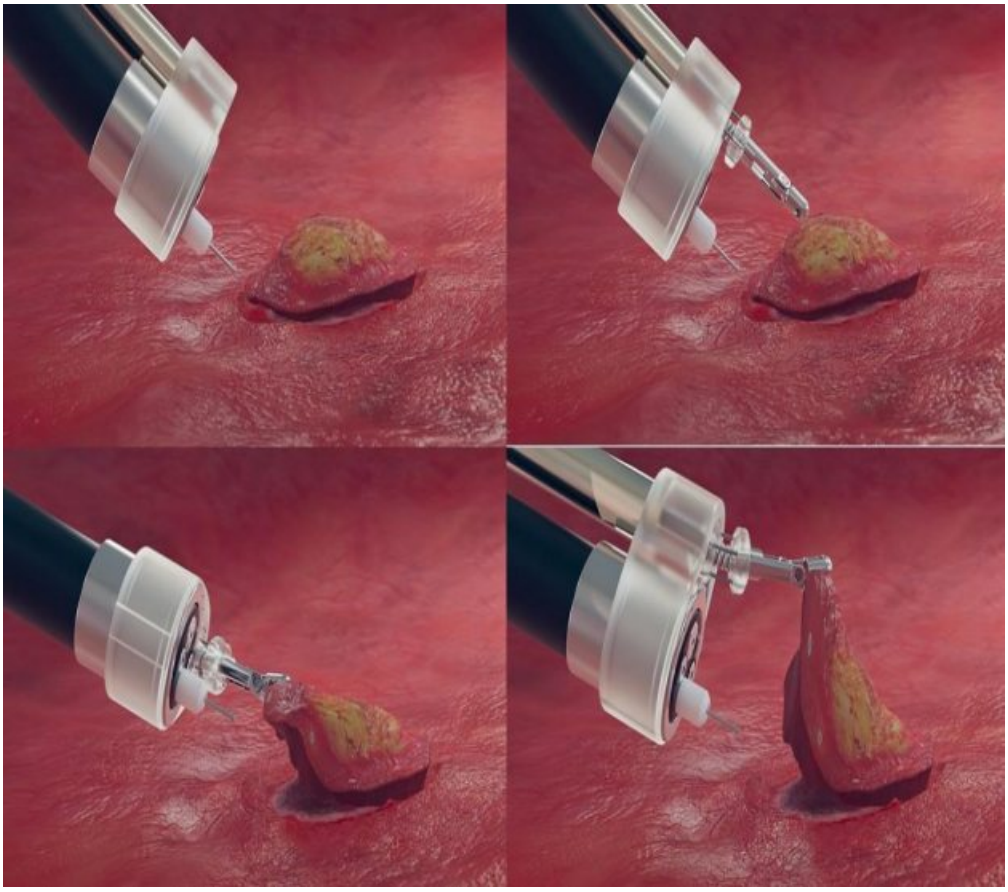
[Poster Oral – Colorectal Neoplasia/Clinical 2]

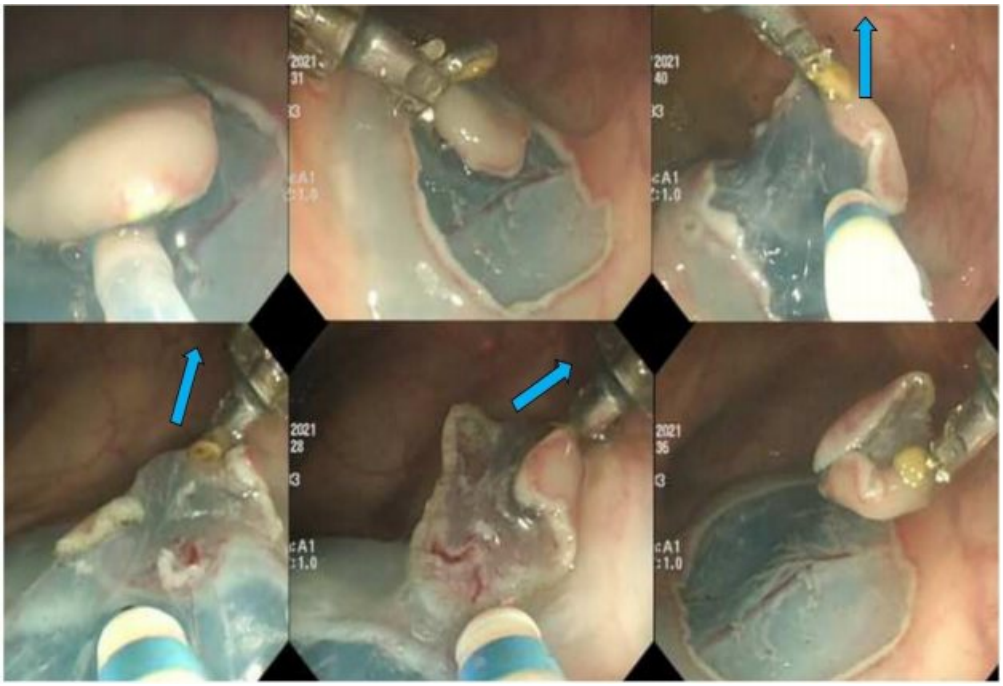
PO6-4

A Novel Retractable Robotic Device for Colorectal Endoscopic Submucosal Dissection

Sang Hyun Kim, Bora Keum, Han Jo Jeon, Hyuk Soon Choi, Eun Sun Kim, Yoon Tae Jeen, Hoon Jai Chun
Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea

Background / Aim : Appropriate tissue tension and clear visibility of the dissection area using traction are essential for effective and safe endoscopic submucosal dissection (ESD). In this study, we developed a retractable robot-assisted traction device and evaluated its performance in colorectal ESD.
Methods : An experienced endoscopist performed ESD 18 times on an ex vivo porcine colon using the robot and 18 times using the conventional method. The outcome measures were procedure time, dissection speed, procedure-related adverse events, and blind dissection rate.
Results : Thirty-six colonic lesions were resected from ex vivo porcine colon samples. The total procedure time was significantly shorter in robot-assisted ESD (RESD) than in conventional ESD (CESD) (20.1±4.1 vs. 34.3±8.3; $P<0.05$). The submucosal dissection speed was significantly faster in the RESD group than in the CESD group (36.8±9.2 vs. 18.1±4.7; $P<0.05$). The blind dissection rate was also significantly lower in the RESD group (12.8±3.4% vs. 35.1±3.9%; $P<0.05$). In an in vivo porcine feasibility study, the robotic device was attached to a colonoscope and successfully inserted into the proximal colon without damaging the colonic wall, and ESD was successfully performed.
Conclusion : The dissection speed and safety profile improved significantly with the retractable robot-assisted ESD. Thus, our robotic device has the potential to provide simple, effective, and safe multidirectional traction during colonic ESD.
Keywords : Endoscopic Submucosal Dissection, Colon, Robot





[Poster Oral – Colorectal Neoplasia/Clinical 2]

PO6-5

Utility of the Japan Narrow-band Imaging Expert Team (JNET) Classification with Dual Focus Magnification for Optical Diagnosis of Colorectal Polyp Histology in the Vietnamese Setting

Manh -Tien Huynh[1,2], Quang - Nhan Le[2], Dinh Quang Le[1,2,3], Minh Huy Le[1,2], Trong Duc Quach[1,2]
[1]Internal Medicine, University of Medicine and Pharmacy at Hochiminh City, Ho Chi Minh City, Vietnam
[2]GI Endoscopy, University Medical Center at Hochiminh, Ho Chi Minh City, Vietnam
[3]GI Endoscopy, Nhan Dan Gia Dinh Hospital, Ho Chi Minh, Vietnam

Background / Aim : Accurated real-time optical diagnostic of colorectal polyps into benign and malignant entities is crucial for guiding appropriate follow-up procedures, given their close association with colorectal cancer. The JNET classification, when employed with magnified narrow-banding imaging (NBI), facilitates the prediction of colorectal polyp histology, guiding tailored treatment strategies. However, the diagnostic efficacy of JNET classification on NBI mode with dual focus (DF) magnification remains insufficiently explored in Vietnam. This study aims to assess the diagnostic capability of JNET classification on NBI-DF mode for predicting the histology of colorectal polyps in the Vietnamese context.
Methods : A cross-sectional descriptive study was conducted on 666 patients with 1087 colorectal adenomatous polyps from October 2021 to February 2023 at the University Medical Center. Data were analyzed using SPSS 25.0 software. The EVIS EXERA III CV-190 processing system and CF-HQ190I endoscope were used to evaluate the polyps according to JNET classification. The collected data was statistically analyzed to assess the diagnostic accuracy.
Results : The sensitivity, specificity, positive predictive value, negative predictive value, and accuracy of the JNET classification types for predicting the histology of colorectal adenomatous polyps were as follows: type 1, 86.5%, 95.7%, 88.3%, 95.0%, and 93.2%; type 2A, 91.9%, 81.4%, 90%, 84%, and 87.7%; type 2B, 54.7%, 96.6%, 54.7%, 96.6%, and 93.7%; type 3, 66.7%, 99.9%, 93.3%, 99.4%, and 99.4%. The sensitivity for differentiating neoplastic lesions from benign non-neoplasia lesions was 97.8%, the specificity for distinguishing malignant neoplasia from benign neoplasia was 95.9%, and the specificity in the differentiation deep submucosal cancer from other neoplasia was 99,8%.
Conclusion : JNET classification with DF mode proved highly effective in predicting colorectal polyp histology, offering valuable insights for tailored treatment decisions and avoiding unnecessary surgeries. Its application is recommended in the specific context of Vietnam.
Keywords : Optical Diagnostic, Japan Narrow Banding Imaging Expert Team, Narrow-banding, Dual Focus, Vietnam

[Poster Oral – Colorectal Neoplasia/Clinical 2]

PO6-6

Outcome of Colorectal Endoscopic Submucosal Dissection in Patients with Chronic Kidney Disease: A HASID Multicenter Study

Byung Chul Jin[1], Dong Hyun Kim[2], Hyung-Hoon Oh[2], Hyo-Yeop Song[3], Seong-Jung Kim[4], Dae-Seong Myung[2], Young-Eun Joo[2], Jun Lee[4], Hyun-Soo Kim[2], Sang-Wook Kim[1], Geom-Seog Seo[3], HASID

[1]Department of Internal Medicine, Jeonbuk National University Hospital, Jeonju, Korea
[2]Department of Internal Medicine, Chonnam National University Medical School, Gwangju, Korea
[3]Department of Internal Medicine and Digestive Disease Research Institute, Wonkwang University School of Medicine, Iksan, Korea
[4]Department of Internal Medicine, Chosun University, Gwangju, Korea

Background / Aim : Due to the increasing frequency of colonoscopies, there is a growing detection of colorectal neoplasms. Colorectal neoplasms are also frequently found in patients with chronic kidney disease (CKD). However, the safety of colorectal endoscopic submucosal dissection (CESD) in patients with CKD is not well-established.
Methods : This retrospective analysis examined CESD conducted at five tertiary medical institutions from January 2015 to December 2020. Patients were categorized into five groups based on their estimated Glomerular Filtration Rate (eGFR): CKD 1 (eGFR≥90mL/min/1.73m²), CKD 2 (eGFR ≥60 mL/min/1.73m² to <90 mL/min/1.73m²), CKD 3 (eGFR≥30 mL/min/1.73m² to <60 mL/min/1.73m²), CKD 4 (eGFR≥15 mL/min/1.73m² to <30 mL/min/1.73m²) and CKD 5 (eGFR<15 mL/min/1.73m²). Among the 1,266 patients, 610 (48.2%), 537 (42.4%), 104 (8.2%), 9 (0.7%), and 6 (0.5%) belonged to the respective CKD groups.
Results : In baseline characteristics, age was significantly higher in CKD3 and CKD4 compared to CKD1 (73.7 vs. 72.3 vs. 62.4 years, $p < 0.01$). There were no significant differences in specimen size among the CKD groups. Regarding comorbidities, CKD3, CKD4, and CKD5 showed higher prevalence rates of ischemic heart disease, chronic heart failure, and diabetes compared to CKD1, along with a higher frequency of aspirin and clopidogrel use. The Charlson comorbidity index demonstrated a trend of increasing from CKD1 to CKD5, and this trend was statistically significant. While the complete resection rate was notably lower in CKD5 compared to CKD1 (50% vs. 83.4%, $p < 0.05$), no significant differences were observed in other CKD groups compared to CKD1. Additionally, there were no substantial variations among the groups in terms of procedural complications such as perforation, bleeding, and post ESD anticoagulation syndrome.
Conclusion : Performing CESD cautiously in patients with CKD appears to be feasible and safe, allowing for careful consideration of this procedure in such individuals.
Keywords : Colorectal Neoplasm, Chronic Kidney Failure, Endoscopic Submucosal Dissections, Colon

Table I. Baseline Characteristics Across Different Stages of Chronic Kidney Disease (CKD)

	Total (n=1266)	CKD1 (n=610)	CKD2 (n=537)	CKD3 (n=104)	CDK4 (n=9)	CKD5 (n=6)
Age, years, mean ± SD	65.4±11.2	62.4±11.5	67.1±10.1**	73.8±7.9**	72.3±8.2**	62.8±11.4
Female sex, n (%)	510 (40.3)	276 (45.2)	192 (35.8)**	35 (33.7)*	5 (55.6)	2 (33.3)
Specimen size, long axis (mm), mean ± SD	29.9±12.4	29.3±12.3	30.1±11.5	32.3±15.5	29.1±14.2	38.3±22.1
Past history, n(%)						
Ischemic heart disease	51 (4.0)	19 (3.1)	22 (4.1)	7 (6.7)	0	3 (0.5)*
Chronic heart failure	17 (1.3)	2 (0.3)	6 (1.1)	7 (6.7)**	1 (11.1)**	1 (16.7)*
Diabetes mellitus	252 (19.9)	97 (15.9)	110 (20.5)*	38 (36.5)**	5 (55.6)**	2 (33.3)
Diabetes mellitus with End organ disease	16 (1.5)	1 (0.2)	3 (0.6)	4 (3.8)**	4 (44.4)**	4 (66.7)*
Cerebrovascular accident	38 (3.0)	11 (1.8)	17 (3.2)	7 (6.7)**	3 (33.3)**	0
Medication, n (%)						
Aspirin	106 (8.4)	32 (5.2)	54 (10.1)**	14 (13.5)**	3 (33.3)**	3 (0.5)
Clopidogrel	41 (3.2)	11 (1.8)	20 (3.7)*	9 (8.7)**	0	1 (16.7)**
Warfarin	5 (0.4)	0	4 (0.7)*	1 (1.0)*	0	0
Charlson comorbidity index, mean ± SD	1.0±1.3	0.8±1.1	1.0±1.2**	1.8±1.6	4.0±2.7**	5.7±2.2**
Tumor location, n (%)						
Right side	649 (51.3)	316 (51.8)	271 (50.5)	56 (53.8)*	3 (33.3)*	3 (50.0)*
Left side	302 (23.9)	151 (24.8)	127 (23.6)	21 (20.2)*	2 (22.2)*	1 (16.7)*
Rectum	315 (24.9)	143 (23.4)	139 (25.9)	27 (26.0)*	4 (44.4)*	2 (33.3)*
Morphology, n (%)						
Protruding	256 (20.2)	106 (17.4)	114 (21.2)	29 (27.9)	4 (44.4)*	3 (50.0)*
Superficial, elevated	987 (78.0)	493 (80.8)	413 (76.9)	73 (70.2)	5 (55.6)*	3 (50.0)*
Flat	13 (1.0)	7 (1.1)	4 (0.7)	2 (1.9)	0	0
Flat, depressed	10 (0.8)	4 (0.7)	6 (1.1)	0	0	0
Method of sedation, n (%)						
Midazolam	816 (64.5)	403 (66.1)	327 (60.9)	74 (71.2)*	6 (66.7)*	6 (100.0)
Propofol	5 (0.4)	3 (0.5)	2 (0.4)	0	0	0
Midazolam and propofol	65 (5.1)	31 (5.1)	26 (4.8)	7 (6.7)*	1 (11.1)*	0
Histologic findings, n (%)						
Adenoma	665 (52.5)	333 (54.6)	278 (51.8)	51 (49.0)	2 (22.2)*	1 (16.7)*
Intramucosal cancer	263 (20.8)	115 (18.9)	120 (22.3)	23 (22.1)	3 (33.3)*	4 (57.1)*
Invasive cancer	338 (26.7)	162 (26.6)	139 (25.9)	30 (28.8)	4 (44.4)*	2 (33.3)*
Hospital stay (day), mean ± SD	4.4±2.3	4.5±2.4	4.3±1.7	4.4±3.6	4.3±1.6	6.5±4.8*

SD, standard deviation; CKD, chronic kidney disease;
* $P < 0.05$ compared with the CKD 1, ** $P < 0.01$ compared with the CKD 1

Table II. Treatment Outcomes Across Different Stages of Chronic Kidney Disease (CKD)

	Total (n=1266)	CKD1 (n=610)	CKD2 (n=537)	CKD3 (n=104)	CDK4 (n=9)	CKD5 (n=6)
En bloc resection, n (%)	1,131 (89.3)	539 (88.4)	485 (90.3)	93 (89.4)	9(100.0)**	5 (83.3)
Complete resection, n (%)	1,060 (83.7)	510 (83.6)	448 (83.4)	92 (88.5)	7 (77.8)	3 (50.0)*
Perforation, n (%)	9 (0.7)	6 (1.0)	3 (0.6)	0	0	0
Bleeding, n (%)	30 (2.4)	16 (2.6)	9 (1.7)	4 (3.8)	0	1 (16.7)*
PECS, n (%)	37 (2.9)	24 (3.9)	12 (2.2)	1 (1.0)	0	0
Sedation-related complication, n (%)	0	0	0	0	0	0
Hypoxemia	1 (0.1)	1 (0.2)	0	0	0	0
Hypotension						

CKD, chronic kidney disease; ESD, endoscopic submucosal dissection; PECS, post-ESD coagulation syndrome.
* $P < 0.05$ compared with the CKD 1, ** $P < 0.01$ compared with the CKD 1

[Poster Oral – Colorectal Neoplasia/Clinical 2]

PO6-7

A Re-audit on Bowel Preparation for Colonoscopy in a Surgical Unit of a Tertiary Care Hospital, Sri Lanka

Keddagoda Gamage Vinod Saranga, Vihanga Chamod Wickramasinghe, Sumudumali Arundathi Piyarathne, Jasenthu Kankanamge Ganindu Madhawa, Ambawatta Hewage Anil Prashantha
Colombo South Teaching Hospital, Post Graduate Institute of Medicine, Colombo, Sri Lanka

Background / Aim : This re-audit aimed to assess the impact of changes on colonoscopy bowel preparation practices in a Sri Lankan tertiary care hospital's surgical unit, aligning with European Society of Gastrointestinal Endoscopy (ESGE) guidelines. The primary objective was to evaluate improvements in adherence to ESGE recommendations following the introduction of a protocol and educational initiatives.
Methods : Conducted from May to July 2023 in the surgical unit, the initial audit identified deficiencies, leading to the development of a protocol based on ESGE guidelines. Educational initiatives for nursing and junior staff were implemented, and patient education materials were created. Changes included adjusting the split-dose regime timing, discontinuing routine enema use, and providing clear instructions to patients. A re-audit from August to October 2023 evaluated the impact of these interventions. Data collected through patient records were analyzed using descriptive statistics.
Results : The re-audit demonstrated substantial improvements in colonoscopy bowel preparation adherence to ESGE recommendations. The total number of patients undergoing the procedure was 88 in the initial audit and 96 in the re-audit. Patients following a low fiber diet increased from 22.72%(n=20) to 90.62%(n=87), and adherence to enhanced instructions improved from 14.7%(n=13) to 70.8%(n=69). Routine enema use was eliminated (0% to 100%). Compliance for split-dose preparation increased from 42.04%(n=37) to 81.25%(n=78), and timing of the last dose within 5 hours improved from 42.04%(n=37) to 81.25%(n=78). Specific instructions to patients and clinic staff also significantly improved from 28.4%(n=25) to 97.9%(n=94)
Conclusion : In conclusion, the re-audit emphasizes significant improvements in colonoscopy preparation, highlighting the positive impact of introduced changes. These findings underscore the effectiveness of evidence-based guidelines, education, and continuous audits in optimizing outcomes. Implementing a checklist, staff, and patient education has proven essential for transforming and enhancing bowel preparation quality.These simple yet focused measures are essential in transforming and streamlining the quality of bowel preparation.
Keywords : Bowel Preparation, Colonoscopy, Quality Improvement, ESGE Guidlines, Split-dose Regime

[Poster Oral – Colorectal Neoplasia/Basic/Translational]

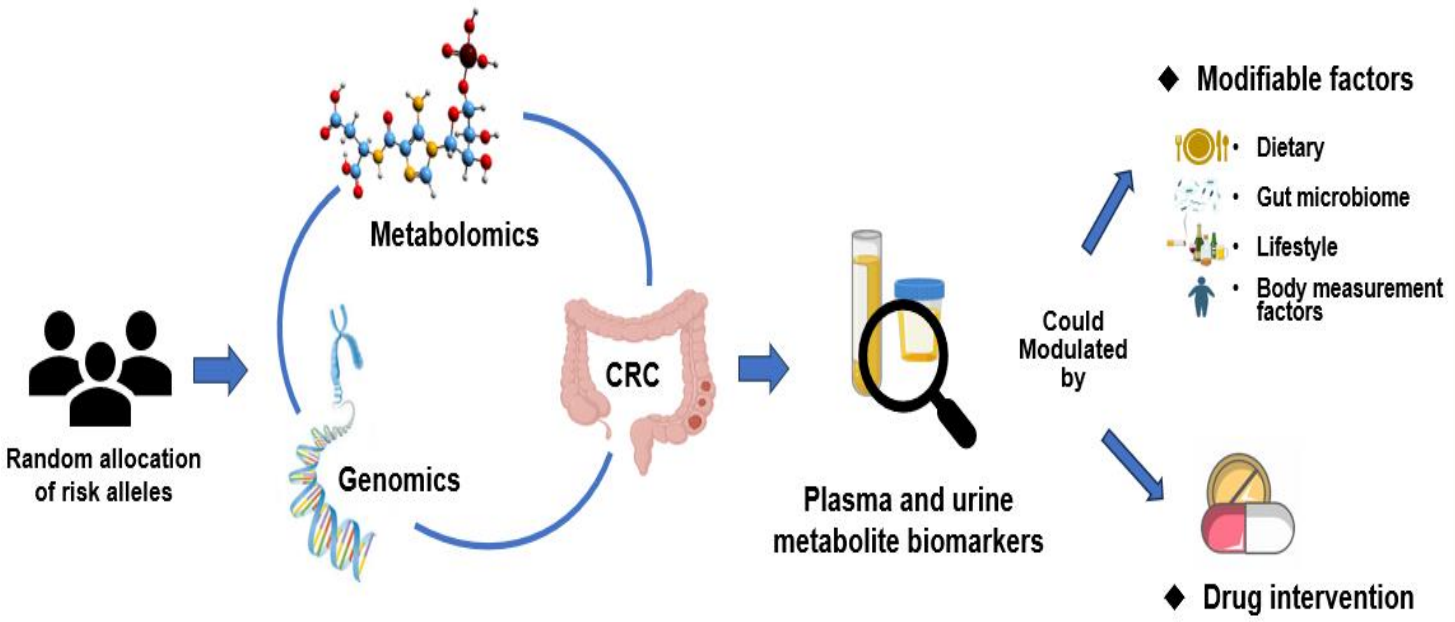
PO7-1

Systematic Investigation of Plasma and Urinary Metabolites to Discover Potential Interventional Targets for Colorectal Cancer

Jing Sun[1], Jianhui Zhao[1], Siyun Zhou[1], Xinxuan Li[1], Tengfei Li[1], Lijuan Wang[2], Shuai Yuan[3], Dong Chen[4], Philip J Law[5], Susanna C. Larsson[3,6], Susan M Farrington[7], Richard S Houlston[5], Malcolm Dunlop[7,8], Evropi Theodoratou[2,8], Xue Li[1]

[1]Department of Big Data in Health Science School of Public Health, and Center of Clinical Big Data and Analytics of The Second Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, Zhejiang, China
[2]Centre for Global Health, Usher Institute, University of Edinburgh, Edinburgh, United Kingdom
[3]Unit of Cardiovascular and Nutritional Epidemiology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden
[4]Department of Colorectal Surgery, The First Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, China
[5]Division of Genetics and Epidemiology, The Institute of Cancer Research, London, United Kingdom
[6]Unit of Medical Epidemiology, Department of Surgical Sciences, Uppsala University, Uppsala, Sweden
[7]Cancer Research UK Edinburgh Centre, Medical Research Council Institute of Genetics and Cancer, University of Edinburgh, Edinburgh, United Kingdom
[8]Colon Cancer Genetics Group, Institute of Genetics and Cancer, University of Edinburgh, Edinburgh, United Kingdom

Background / Aim : Metabolic alterations have been associated with colorectal cancer (CRC). We aimed to identify plasma and urinary metabolites related to CRC risk and elucidate their mediator role in the associations between modifiable risk factors and CRC.
Methods : Metabolite quantitative trait loci (mQTLs) were derived from two published genome-wide association studies (GWASs) on plasma and urinary metabolome, and summary-level data were extracted for 651 plasma metabolites and 208 urinary metabolites. Genetic associations with CRC were obtained from a large-scale GWAS meta-analysis (100,204 cases; 154,587 controls) and the FinnGen cohort (4,957 cases; 304,197 controls). Mendelian randomization (MR) and colocalization analyses were performed to evaluate the causal roles of metabolites in CRC. Druggability evaluation was employed to prioritize potential therapeutic targets. Multivariable MR and mediation estimation were conducted to elucidate the mediating effects of metabolites on the associations between modifiable risk factors and CRC.
Results : The study identified 30 plasma metabolites and four urinary metabolites for CRC. Two CRC-related metabolites (sphingomyelin, lactose) could be modulated by drug interventions (i.e., Olipudase alfa, Tilactase). Nine CRC-related metabolites could be affected by 13 modifiable factors (two dietary factors, two gut microbial taxa, five lifestyle factors, four obesity-related factors), and these metabolites mediated the effect of modifiable risk factors (Actinobacteria, BMI, waist-hip ratio, fasting insulin, smoking initiation) on CRC.
Conclusion : This study identified key plasma and urinary metabolites associated with CRC and elucidated their mediator roles in the associations between modifiable risk factors and CRC. These findings provide new insights into the etiology and potential therapeutic targets for CRC and the etiological pathways of modifiable environmental factors with CRC.
Keywords : Colorectal Cancer, Metabolite Biomarker, Metabolome-wide Mendelian Randomization, Modifiable Risk Factor, Drug Target


Metabolomics
Genomics
CRC
Random allocation of risk alleles
Plasma and urine metabolite biomarkers
Could Modulated by
◆ Modifiable factors
• Dietary
• Gut microbiome
• Lifestyle
• Body measurement factors
◆ Drug intervention

[Poster Oral – Colorectal Neoplasia/Basic/Translational]

PO7-2

Patient-derived Organoid Model for Prediction of MMR (Mismatch Repair) Gene Function and Cancer Risk in Patients with Germline Variations of MMR Genes

Youmi Shin[1], Yoojeong Seo[1], Dong Keon Kim[2], Tae Il Kim[1,2]
[1]Department of Internal Medicine, Institute of Gastroenterology, Yonsei University College of Medicine, Seoul, Korea
[2]Department of Gastroenterology, Severance Hospital, Seoul, Korea

Background / Aim : Lynch syndrome (LS) patients carry mutations in DNA mismatch repair (MMR) genes, and have high risk of multiple cancers, including colorectal cancer. However, individual cancer development risk is various, and clinical significance of some variants is uncertain. To identify the patients with high risk of tumor development, we aim to develop the individualized functional assay model for variations of MMR genes.
Methods : Patient-derived organoid (PDO) was derived from normal colon of LS patients and healthy person. Organoids were exposed to N'-Mehtyl-N'-Nitrosoguanidine (MNNG), ATR inhibitor and O6-benzylguanine (O6BG), which is MGMT inhibitor. After the organoids were pre-treated with O6BG and ATR inhibitor, they were treated with MNNG for 24 hours. All chemicals were dissolved in dimethyl sulfoxide and diluted in deionized water. DNA damage of PDO was assessed immunofluorescence, Wesetrn blot of γH2AX, which is a DNA damage recognition marker for detecting in earlier phase of DNA damage. In addition, to confirm increased mutation accumulation, we performed whole genome sequence (WES) in normal and MLH1-mutated PDOs
Results : The MNNG induced the apoptosis of organoids, and with additional treatment of ATR inhibitor and O6BG showed significant apoptosis in normal organoid group. Then, we found that the cytotoxic effect by combined treatment of MNNG, O6BG and ATR inhibitor in normal organoids were more sensitive than in MMR genes mutated PDOs. In addition, in DNA damage response by analyzing the expression of γH2AX, we found higher expression of γH2AX in normal organoids than MMR gene mutated PDOs. In WES analysis, MLH1-mutated PDOs showed significant increase of mutational signature of single base substitutions signature 14, which is associated with defective DNA mismatch repair, compared to normal organoids.
Conclusion : The MMR gene function of individual LS patients could be evaluated by measurement of DNA damage response using MNNG/O6BG-treated individual PDO model, suggesting an individualized prediction model of CRC risk.
Keywords : Lynch Syndrome, MMR Genes, DNA Damage Response, Patient-derived Organoid

[Poster Oral – Colorectal Neoplasia/Basic/Translational]

PO7-3

The Traditional Chinese Medicine Formula Huai-hua-san Exerts Anti-colorectal Cancer Effects through Multiple Mechanisms

Ruixuan Han, Xiaoqi Wang, Jingxuan Bai, Xiuqiong Fu, Zhiling Yu
Center for Cancer and Inflammation Research, School of Chinese Medicine,
Hong Kong Baptist University, Hong Kong, China

Background / Aim : Colorectal cancer (CRC) is one of the common tumors of the digestive system. Current CRC therapies have limitations. Huai-Hua-San (HHS) is a traditional Chinese medicine formula comprising two edible herbs, Sophorae Flos and Gardeniae Fructus. HHS was traditionally used to manage TCM symptoms that resemble CRC. However, pharmacological basis of the formula's application in treating CRC is not known.
Methods : Three CRC cell models were used for in vitro assays, and an HCT116 tumor-bring mouse model was employed for in vivo assays. CCK8 assay was used to examine cell proliferation. Flow cytometry analysis was used to detect apoptosis. Network pharmacology, RNA-Seq and miRNA-Seq were used to predicate signaling pathways involved in the anti-CRC effects of HHS. Immunoblotting was used to examine protein levels, and RT-qPCR was employed to examine mRNA levels.
Results : An HHS extract (HHSE) reduced the viability of, and induced apoptosis in, HCT116, HCT8, and HT-29 CRC cells. Importantly, HHSE dose-dependently inhibited colorectal cancer growth without overt toxicity. KEGG pathway enrichment highlighted the involvement of PI3K/AKT signaling pathway in the anti-CRC effects of HHSE. Western blot results demonstrated that HHSE significantly lowered the protein levels of phospho-AKT (Ser 473). Stimulation with an AKT activator (SC79) significantly reduced the anti-proliferative effects of HHSE, indicating that inhibition of the PI3K/AKT pathway contributes to the anti-CRC effects of the extract. RNA-Seq and miRNA-Seq analyses of mouse tumors suggested that the miR-142-3p/FAM98A pathway was another signal transduction pathway involved in the anti-CRC effects of HHSE. RT-qPCR results showed that HHSE upregulated miR-142-3p levels and downregulated FAM98A mRNA levels in CRC cells. Immunoblotting showed that HHSE significantly downregulated protein levels of FAM98A signaling molecules, including PRMT1, β-catenin, AKT and Bcl-xL.
Conclusion : Our findings provide pharmacological justifications for using HHS in treating CRC and suggest that HHSE can be developed into a modern anti-CRC agent.
Keywords : Colorectal Cancer (CRC), Huai-Hua-San (HHS), PI3K/AKT, MiR-142-3p/FAM98A

[Poster Oral – Colorectal Neoplasia/Basic/Translational]

PO7-4

Neuropeptide Y Deficiency Increases Susceptibility to Colitis-associated Colorectal Cancer

Yunna Lee, Sihyun Jeong, Doyeon Lee, Geunhyung Yang, Eunok Im
College of Pharmacy, Pusan National University, Busan, Korea

Background / Aim : Neuropeptide Y (NPY) is a 36-amino acid peptide found in the brain, nervous system, and different peripheral tissues, including the gastrointestinal (GI) tract. Dysfunction of the NPY has been implicated in various tumor microenvironments and GI disorders, such as inflammatory bowel disease. Recently, NPY has emerged as a promising target in cancer diagnosis and therapy for colorectal cancer. However, the specific role of NPY in colitis-associated colorectal cancer (CACC) is still not clearly established. In this study, we aimed to investigate the pathophysiological functions of NPY in CACC.
Methods : To induce tumor in the mouse colon, azoxymethane (AOM) and dextran sodium sulfate (DSS) were administered to $NPY^{-/-}$ mice and littermate $NPY^{+/+}$ mice. Inflammation and adenoma burden were monitored by changes in body weight, clinical symptoms, colon length, and histological scores. Colon tissues were analyzed for cytokine production and activation of signaling molecules by immunofluorescence staining, enzyme-linked immunosorbent assay, and immunoblot analysis.
Results : The $NPY^{-/-}$ mice exhibited more severe clinical symptoms and enhanced tumorigenesis compared to the $NPY^{+/+}$ mice in the AOM/DSS mouse model. The $NPY^{-/-}$ mice showed larger adenoma size, more severe histological features, and a significantly higher total number of developed polyps in the colon. NPY deficiency significantly increased the expression of cell proliferation signaling-related factors (p-AKT, p-ERK and Bcl-2), as well as pro-inflammatory factors (p-STAT3, TNF-α, and IL-6). Interestingly, pyroptosis-related factors (cleaved caspase-11, cleaved caspase-1, cleaved GSDMD, and IL-18) were significantly increased in polyp tissues from the $NPY^{-/-}$ mice compared to the $NPY^{+/+}$ mice.
Conclusion : In conclusion, NPY deficiency confers tumor-promoting effects in AOM/DSS-treated mice. Therefore, pharmacological inhibition against NPY-mediated responses could be of significance for developing a novel approach against CACC.
Keywords : Neuropeptide Y, Colitis-associated Colorectal Cancer, Inflammatory Bowel Diseases, Tumorigenesis, Pyroptosis

[Poster Oral – Colorectal Neoplasia/Basic/Translational]

PO7-5

Modulation of Chemotherapy-related Fatigue (CRF) by Hesperidin Having Colon Cancer via Inhibition of p-AMPK, IL-6 and TNF- expression

Deepika Singh
Department of Pharmaceutical Sciences, SHUATS, Prayagraj, India

Background / Aim : Patients receiving chemotherapy are increasingly experiencing chemotherapy-related fatigue (CRF). Patients with CRF experience worse physical and social functioning in addition to a decreased quality of life. There isn't a medication available right now that can cure and prevent CRF. Citrus fruit flavanone glycoside, which is present in hesperidin, has been shown to have a variety of pharmacological effects, such as anti-inflammatory, anti-tumor, and immunoregulation. In this study, we investigated whether hesperidin modifies the expression of p-AMPK, IL-6, and TNF in mice with colon cancer in order to alleviate chemotherapy-related fatigue (CRF).
Methods : For eighteen days, mice with CT26 tumors were given 50 mg/kg of five-fluorouracil and 50 mg/kg of hesperidin. The medications were administered to them in combination or in isolation. The assessment focused on energy metabolism, inflammatory variables, and behaviors related to weariness.
Results : We discovered that the addition of hesperidin to 5-FU reduced the amount of fatigue in the muscles by enhancing mitochondrial function and muscle quality, raising the amount of glycogen and ATP produced, reducing LDH activity and lactic acid levels, and inhibiting the expression of p-AMPK, IL-6, and TNF in skeletal muscle. The 5-FU-induced central fatigue-like behavior was also lessened by co-treatment with hesperidine. This was accomplished by inhibiting the TLR4/Myd88/NF-B pathway, which lowers the expression of COX2, iNOS, and IL-6 in the hippocampal tissues.
Conclusion : The effects of 5-FU on peripheral and cerebral tiredness in rats with tumors may be mitigated by hesperidin. This indicates that colon cancer-induced CRF may be treated in the clinic with hesperidin.
Keywords : Colon Cancer, Chemotherapy, Fatigue, Hesperidin

[Poster Oral – Colorectal Neoplasia/Basic/Translational]

PO7-6

Effect of Alverine Citrate Plus Simethicone in Colonoscopy: A Randomized Controlled Trials

Chumpon Wilasrusmee, Jakrapan Jirasiritham, Chairat Supsamutchai, Puvee Punmeechao, Napaphat Poprom

Surgery, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand

Background / Aim : Colonoscopy is the standard procedure for screening, surveillance of the colorectal neoplasia and also treatment for colonic lesions. Colonic spasm is an important problem from colonoscopy that effects to the surgeon and the patients. The spasm also might be the cause of longer of cecal intubation time, difficulty of the procedure, and increased pain. Previous reported indicated antispasmodic agents can decreased those symptoms. Therefore, we conducted the study to investigate the efficacy of Alverine citrate plus simethicone in colonoscopy.

Methods : The single blinded randomized controlled trial was conducted in 1 March 2021 to 31 August 2021. The patients who allocated to Alverine citrate plus simethicone (AS) or control group, in 1:1 ratio. The intention to treat analysis was applied in this study. The study design and method were conducted following the consolidated standards of reporting trials (CONSORT) guidelines, approved and consent by the ethical committee of Ramathibodi Hospital (#COA. MURA2020/1892), and registered in Thai Clinical Trials Registry with number: TCTR20210219008.

Results : From 104 patients, 51 patients were randomly allocated to AS and 53 patients were allocated control group. The efficacy cecal intubation time showed similar results of 5 (2, 14) and 5 (2, 15) minutes in AS and control group, respectively, with no statistically significant (p-value=0.953). The mean scores of all domains i.e., pain, spasm, cleanliness, and difficulty were superior in AS than control group. The contribution of the satisfaction scores also showed high efficacy of AS in term of low spasm, low difficulty, and high cleanliness but pain was controversy (table 1).

Conclusion : Prescribe of Alverine citrate plus simethicone before colonoscopy should be the choice of treatment. However, further large RCT and meta-analysis need to confirm these results.

Keywords : Colorectal Neoplasia, Antispasmodic Agent, Efficacy, Visual Analog Scale, Intention to Treat

Table 1. The scores of outcomes among 2 interventions

Domain	Antispasmodic group (n=51)	Control group (n=53)	p-value
Cecal intubation time (minutes), median (range)	5 (2, 14)	5 (2, 15)	0.953
Pain, mean (SD)	2.0 (0.8)	2.0 (0.7)	0.805
Pain score by VAS, mean (SD)	2.6 (1.4)	3.1 (1.7)	0.098
Spasm, mean (SD)	1.8 (0.8)	2.3 (0.8)	<0.001
Difficulty, mean (SD)	2.0 (0.9)	2.2 (0.9)	0.198
Cleanliness, mean (SD)	2.4 (0.9)	2.1 (0.7)	0.048

[Poster Oral – Colorectal Neoplasia/Basic/Translational]

PO7-7

Efficacy of Novel One-step Knife compared to Conventional Knife for Colorectal Endoscopic Submucosal Dissection: A Multicenter, Randomized Controlled Trial

Su Young Kim[1], Gwang Ho Baik[2], Myeongsook Seo[3], Hyun Il Seo[3], Sung Chul Park[4], Hyunil Kim[1], Hyun-Soo Kim[1], Hong Jun Park[1]

[1]Division of Gastroenterology, Department of Internal Medicine, Yonsei University Wonju College of Medicine, Wonju, Korea
[2]Department of Internal Medicine, Hallym University College of Medicine, Chuncheon, Korea
[3]Department of Gastroenterology, Gangneung Asan Hospital, University of Ulsan College of Medicine, Gangneung, Korea
[4]Department of Internal Medicine, Kangwon National University School of Medicine, Chuncheon, Korea

Background / Aim : For the treatment of advanced colorectal neoplasms, colon endoscopic submucosal dissection (ESD) is an essential technique; however, it is time-consuming. The purpose of this study was to evaluate the efficacy of a recently developed one-step knife (OSK) in colon ESD and compare it with a conventional knife.
Methods : Between July 2020 and November 2011, patients scheduled to undergo colorectal ESD were randomly assigned to the OSK group (Endo-UpexTM Onestep knife) or conventional-knife (CK) group (Olympus DualKnife™). The primary outcome was the total submucosal injection time. Additionally, total procedure time, treatment outcome, adverse events, and operator convenience were compared and analyzed.
Results : A total of 53 patients (28 in the OSK group and 23 in the CK group) were finally analyzed. The mean total injection time was significantly reduced in the OSK group (208.1 ± 25.2 sec) compared to CK group (208.1 ± 25.2 vs. 377.0 ± 68.7 sec, P = 0.020). Total procedure time was also shorter in the OSK group than in the CK group (20.3 ± 2.6 vs. 34.3 ± 6.2 min, P = 0.034). Resection rate and adverse events did not differ between the two groups. A greater proportion of endoscopists expressed high contentment with the utilization of endoscopic knives (OSK), particularly in regards to injection (67.9% vs. 32.0%, P = 0.009).
Conclusion : In comparison to CK, the use of OSK for colorectal ESD substantially decreased the total injection and procedure time. It is believed that the use of this newly developed endoscopic knife will be helpful in performing colorectal ESD treatment more effectively.
Keywords : Endoscopic Submucosal Dissection, Colorectal Neoplasm, Endoscopic Knife

[Poster Oral – Small Bowel Disease/Nutrition]

PO8-1

Role of Wearable Technology and Geo-fencing Device for Celiac Disease in School Adolescents Patients in Jaipur City, India

Vikas Sharma, Madhu Gautam
Applied Sciences, IDAC Research Center, Gurugram, India

Background / Aim : To study effects of daily life routine activities on depression, anxiety, and weak immunity and CD 4 counts data by wearable devices (MI Band 8) and Geo-Fencing technology that can obtain real-time data, processes them and provides assistance based on pre-determined specifications in school adolescents patients with celiac disease.
Methods : Total of 68 school adolescents patients with celiac disease patients were taken as subject with an equal ratio of male and female and age group between 14 to 18 years in Jaipur city, India. Wearable monitoring devices like MI band-8 and geo-fencing device were put on the wrist of celiac disease patients for 30 days and a questionnaire was filled out by each patient. In all subjects, blood pressure, blood glucose was measured on daily basis with day to day data of their monitoring of step count, motion time, sleep monitoring, calorie consumption, monitoring heart rate to know daily routines and recording them for health purpose. Wearable bands, automatically provides a cueing sound with sensing alert when celiac disease patients move out of the geo-fenced area and which stays until the subject resumes walking in virtual boundary.
Results : Wearable device reading showed that there was a significant normal heart rate ($p<0.05$), increase calorie burnt with a significant decrease of blood glucose and blood pressure levels ($p<0.01$), and increased significantly ($p<0.05$) sleep duration in active physically workout, include walking in celiac disease patients compared to less physically workout celiac disease patients, identified by professional physiotherapists. There is significantly normalize in memory loss, wandering events and their CD 4 counts increase events normalize after one month with changing lifestyle routine among celiac disease patients.
Conclusion : With this study we show that online assistive feedback for celiac disease patients is possible and demonstrate the benefit of such a context-aware system and motivate further studies
Keywords : Celiac Disease, Wearable Bands, Geo-Fencing Technology

[Poster Oral – Small Bowel Disease/Nutrition]

PO8-2

Metabolomic Analysis and Precision Nutrition Interventions: Enhancing Nutrient Absorption and Modulating Microbial Metabolism in Short Bowel Syndrome Patients

Sahnaz Vivinda Putri[1], Ratna Ayu[2], Bella Cantika[3], Andi Nursanti Andi Ureng[4], Elfiany Elfiiany[5,2]
[1]Health Management Laboratory, International University Semen Indonesia, Gresik, Indonesia
[2]Clinical Nutrition, Bantaeng General Hospital, Bantaeng, Indonesia
[3]Gastroenterology, Bantaeng General Hospital, Bantaeng, Indonesia
[4]Pharmacy, Andini Persada College of Health Sciences, Mamuju, Indonesia
[5]Computational Science Laboratory, Bulukumba Muhammadiyah University, Bulukumba, Indonesia

Background / Aim : Short Bowel Syndrome (SBS) presents a formidable challenge due to diminished small bowel length, resulting in malabsorption and nutrient deficiencies. This multi-center prospective interventional study aims to utilize metabolomic profiling to explore the distinctive impact of precision nutrition on nutrient absorption and microbial metabolism in individuals with Short Bowel Syndrome across various clinical settings.
Methods : In this multicenter study, a cohort of 60 adult patients diagnosed with Short Bowel Syndrome was recruited from diverse clinical settings. Comprehensive baseline assessments, including small bowel length measurement, nutrient absorption tests, and fecal microbial analysis, were conducted. Patients were categorized based on the severity of malabsorption and randomly assigned to either the precision nutrition intervention group or the control group, which received standardized dietary recommendations. The precision nutrition approach involved individualized metabolomic analysis to tailor dietary plans addressing specific nutrient deficiencies and optimizing microbial metabolism. The control group received generic dietary advice.
Results : Following a 16-week intervention, the precision nutrition group exhibited a statistically significant improvement in nutrient absorption rates compared to the control group. Metabolomic profiling revealed a distinctive shift in metabolite concentrations, with notable increases in key micronutrients (e.g., vitamin B12, zinc) and short-chain fatty acids in the precision nutrition group. The intervention group demonstrated a 25% reduction in the requirement for parenteral nutrition supplementation (95% CI: 18-32%, $p < 0.001$) compared to the control group. Fecal microbial composition analysis identified specific bacterial taxa associated with enhanced nutrient metabolism in the precision nutrition group.
Conclusion : This multicenter study demonstrates precision nutrition's effectiveness in improving nutrient absorption and microbial metabolism in Short Bowel Syndrome patients. Individualized dietary plans based on metabolomic profiles show promise in optimizing management across diverse clinical settings, enhancing overall nutritional status and quality of life.
Keywords : Precision Nutrition, Short Bowel Syndrome, Metabolomic Profiling, Nutrient Absorption, Microbial Metabolism

[Poster Oral – Small Bowel Disease/Nutrition]

PO8-3

How could the Caregiver Status Increase the Quality of Life and Nutritional Status among Elderly with Colorectal Cancer Disease?

Rosinta Hotmaida Pebrianti Purba, Ester Marnita Purba, Ni Made Ratih Kusuma Dewi
Socioeconomics, The Pranala Institute, Yogyakarta, Indonesia

Background / Aim : Indonesia is entering an aging society with an older people population reaching 26.82 million (10%). Small bowel cancer is the fourth most common cancer in Indonesia with 34,189 cases and more than 90% of cases occur in those aged 50 years or entering the elderly. As an incurable disease, colorectal cancer requires strict management and control. Therefore, the elderly with diabetes and comorbidity are dependent on the caregiver's presence to maintain their quality of life. However, certified informal caregivers are not regulated in Indonesia.
Methods : The purpose of this study is to examine how the availability of caregivers in maintaining the quality of life of the elderly with colorectal cancer using the 2014 Indonesia Family Life Survey (IFLS).
Results : Elderly with small bowel cancer reaches 2,57% and 59,18% are male. 57,5% of them experienced mental health problems and the percentage is higher in men. 1.42% of them were identified as having symptoms of dementia with moderate to severe (assessed using the mini-cognitive test). The elderly needing long-term care due to these health conditions reaches 9.7% and 88% of them do not have caregivers. Most the elderly are cared for by their families or tend to "aging in community". 36% of them are holders of social protection programs so that they benefit from health insurance and government social assistance. Using the Geriatric Depression Scale (GDS) it is known that the percentage of elderly with dementia who has caregivers with mental health problems is lower than respondents who do not have caregivers.
Conclusion : A comprehensive strategy is needed to improve the quality of life of the elderly through the availability of certified caregivers and community services. Furthermore, expanding the coverage of health insurance for the provision of caregivers is a top priority because it mitigates mental health problems.
Keywords : Elderly With Colorectal Cancer, Dementia, Caregiver, Quality of Life

[Poster Oral – Small Bowel Disease/Nutrition]

PO8-4

Revealed Intermittent Fasting Benefit: How Does the Systematic Review Suggest Patients with Small Bowel Cancer Should Undergo the Most Effective Fasting?

Ester Marnita Purba[1], Rosinta Hotmaida Pebrianti Purba[1], Ni Made Ratih Kusuma Dewi[1], Helen Tryjuni Asti[1,2]

[1]Socioeconomics, The Pranala Institute, Yogyakarta, Indonesia
[2]Public Health, Cendrawasih University, Papua, Indonesia

Background / Aim : The effects of Intermittent Fasting (IF) on cancer incidence and prognosis remain debated. Disruptions in circadian rhythm have been linked to increases in metabolic disorders associated with cancer risk, especially colon cancer. Emerging clinical trials suggest the benefits of prolonged fasting has the potential to induces expression of autophagy-related Atg5 and LC3II/I of colon cancer which eventually inhibits tumor growth. However, there are potential dangers associated with fasting.
Methods : We summarize epidemiological, preclinical, and clinical studies in cancer published between August 2018 and August 2023 to analyze the advantages and drawbacks of intermittent fasting among small bowel cancer patients and how to make it effective.
Results : Fasting is a safe and well-tolerated practice among patients received chemotherapy during religion fasting (Ramadan). The cytotoxicity of oxaliplatin (OXP) combined with 48 hours of fasting potentiated the effect of OXP on the suppression of carcinoma growth. Through an alternate-day fasting (ADF) protocol, the combination of selenite and fasting led to a stronger upregulation of SLC7A11, decrease in glutathione, and increase in ROS and NADPþ/NADPH compared with either single treatment. ADF for two weeks on CT26 colon inhibited tumor growth which is because fasting altered cancer immune microenvironment without weight loss. Three days of fasting followed by irinotecan prevented toxicities but did not enhance the efficacy of chemotherapy. It is because induced a lower systemic exposure to SN-38 and activated a protective stress response in normal tissue but not in cancer.
Conclusion : IF improves the metabolic and circadian rhythm mechanisms of patients with small bowel cancer. Further, prolonged fasting in selected patients will be dangerous for patients undergoing active treatment including insulin, diabetes drugs, blood pressure medications, and pregnant or breastfeeding.
Keywords : Fasting For Small Bowel Disease, Intermittent Fasting, Fasting Guidelines

[Poster Oral – Small Bowel Disease/Nutrition]

PO8-5

Clinical Features of Celiac Disease and Non-celiac Gluten Sensitivity among Children in the Republic of Uzbekistan

Noiba Azimova, Altinoy Kamilova, Zulkhumar Umarnazarova, Dilrabo Abdullaeva, Svetlana Geller, Gulnoza Azizova
Gastroenterology and Nutrition, Republican Specialized Scientific Practical Medical Center of Pediatrics, Tashkent, Uzbekistan

Background / Aim : The aim of this study is to investigate whether there are significant differences in the clinical and laboratory findings in pediatric patients with gluten-related disorders (GRD) in the Republic of Uzbekistan.
Methods : 84 pediatric patients with newly diagnosed GRD were examined: 50 with celiac disease (CD), 34 with non-celiac gluten sensitivity (NCGS). The diagnosis of CD was based on the clinical, serological (antibodies to tissue transglutaminase IgA, G), histopathological and HLA class 2 genetical data. The diagnosis of NCGS was based on the Salerno Experts' Criteria (2015).
Results : The median age of children with CD was 66.5±7.7 months and with NCGS was 59.3±14.1 months. Diarrhea was observed in 38 (76.0%) children with CD and in 2 (12.5%) patients with NCGS. Vomiting and anemia were observed more frequently in CD (44.0% and 30.0%). Among all examined patients the lowest physical development indexes were observed in CD with median values of SD of height: -2.16; SD of weight: -2.69 and SD of BMI -1.29. In NCGS smaller changes were found on the physical development which showed SD of height: -0.97, SD of weight: -0.6 and SD of BMI: -0.06. Increased enzymes (ALT, AST) were observed in children: 9 (18.0%) with CD and 1(6.3%) with NCGS. Bilirubin was elevated in 9 (18.0%) of patients with CD. Low total protein levels were showed in 60.0% of patients with CD, whereas in children with NCGS were only 2.5%. The lowest serum calcium levels were fixed in CD patients (median 1.7±0.03). In NCGS this index was higher (median 1,9±0,06).
Conclusion : Although celiac disease is the leading cause of the lowest rates of physical development and deficits among patients GRD, many other gastrointestinal symptoms are as common in pediatric patients with NCGS as they are in celiac disease.
Keywords : Celiac Disease, Non-celiac Gluten Sensitivity, Symptoms

[Poster Oral – Small Bowel Disease/Nutrition]

PO8-6

Clinical Outcomes of Delayed Capsule Endoscopy in Inpatients with Small Bowel Bleeding: Propensity Score Matching Analysis

Cheolung Kim, Seung Min Hong, Dong Hoon Baek, Geun Am Song, Hyeon Tae Cho, Jeong Gil Park, Gwang Ha Kim, Bong Eun Lee, Moon Won Lee, Dong Chan Joo
Department of Internal Medicine, Pusan National University School of Medicine and Biomedical Research Institute, Pusan National University Hospital, Busan, Korea

Background / Aim : This study analyzes the clinical outcomes of performing delayed capsule endoscopy in patients hospitalized for small bowel bleeding.
Methods : All patients were divided into two groups: the Early-48 group (n = 46), who underwent capsule endoscopy within 48 hours of the bleeding episode, and the Late-48 group (n = 54), who underwent capsule endoscopy more than 48 hours after the bleeding episode. Using 1:1 propensity score matching (PSM) analyses, 34 pairs were made.
Results : In the unmatched cohort, the baseline characteristics of both groups showed no statistically significant differences, except in the number of cases requiring blood transfusion (82.6% vs. 61.1%, p = 0.032). There were no bleeding-related deaths in both groups. After the 1:1 PSM, there was no difference in yield for both groups to detect positive findings on capsule endoscopy (88.2% vs. 79.4%, p = 0.510), the need for intensive care unit (ICU) care (8.8% vs. 5.9%, p = 1.000), the amount of blood transfusion (4.2 ± 5.5 units vs. 3.6 ± 6.9 units, p = 0.698), and the number of recurrent bleeding episodes (0.5 ± 0.9 times vs. 0.8 ± 1.5 times, p = 0.279) (Table 1). When the patients were divided into two groups based on 72 hours and after performing 1:1 PSM, the group that underwent capsule endoscopy within 72 hours of a bleeding episode had a significantly higher yield in detecting positive findings compared to the group that underwent capsule endoscopy more than 72 hours after a bleeding episode (95.5% vs. 68.2%, p = 0.046). However, there were no differences in other clinical outcomes between the two groups.
Conclusion : Although performing delayed capsule endoscopy on inpatients with small bowel bleeding may reduce the yield in detecting positive findings, it is considered feasible as it does not affect patient survival and the outcomes of inpatient treatment.
Keywords : Capsule Endoscopy, Small Bowel Bleeding, Clinical Outcomes

Table 1. Clinical outcomes of both groups before and after PSM

	Before PSM			After PSM		
	< 48 hrs (n=46)	> 48 hrs (n=54)	*p* value	< 48 hrs (n=34)	> 48 hrs (n=34)	*p* value
Hemoglobin, g/dL (SD)	8.7 (2.3)	8.2 (2.2)	0.240	8.6 (2.4)	8.6 (2.4)	0.939
Positive findings on capsule endoscopy, n (%)			0.353			0.510
Absent	6 (13.0)	12 (22.2)		4 (11.8)	7 (20.6)	
Present	40 (87.0)	42 (77.8)		30 (88.2)	27 (79.4)	
ICU care, n (%)			0.659			1.000
No	43 (93.5)	52 (96.3)		31 (91.2)	32 (94.1)	
Yes	3 (6.5)	2 (3.7)		3 (8.8)	2 (5.9)	
Amount of blood transfusion, unit (SD)	4.1 (4.9)	3.3 (5.8)	0.455	4.2 (5.5)	3.6 (6.9)	0.698
Number of recurrent bleeding episodes, times (SD)	0.6 (1.0)	0.8 (1.5)	0.399	0.5 (0.9)	0.8 (1.5)	0.279

PSM, propensity score matching; ICU, intensive care unit

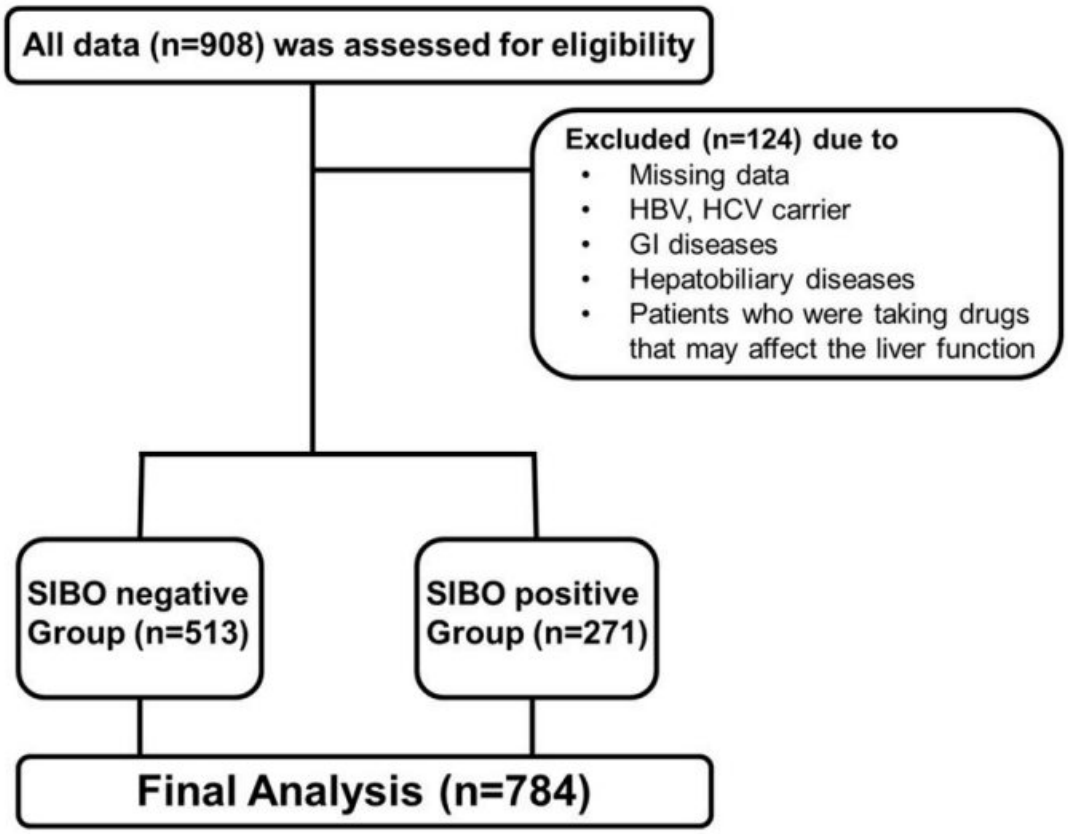
[Poster Oral – Small Bowel Disease/Nutrition]

PO8-7

Total Bilirubin can be a Serologic Predictor of Small Intestinal Bacterial Overgrowth in Diarrhea Predominant Irritable Bowel Syndrome

Seung-Eun Jung[1], Sang-Hoon Lee[2], Kyu-Nam Kim[1]
[1]Department of Family Practice and Community Health, Ajou University School of Medicine, Suwon, Korea
[2]Greencross I-Med Gangnam Medical Clinic, Department of Family Medicine and Functional Medicine, Seoul, Korea

Background / Aim : Small intestinal bacterial overgrowth (SIBO) associated with irritable bowel syndrome (IBS) can cause microscopic mucosal inflammation and oxidative damage. Bilirubin is a marker of oxidant stress that is responsible for anti-oxidative activities. The objective of this research was to determine whether or not total bilirubin is associated with SIBO according to IBS subtypes.
Methods : We retrospectively reviewed the charts of patients who showed IBS symptoms with documented results of lactulose breath test (LBT) for SIBO. Multivariate models were used in order to assess the relationship of total bilirubin with SIBO according to IBS subtypes.
Results : Of the 784 IBS patients, 271 (34.6%) were found to have SIBO. The total bilirubin level of subjects with SIBO was significantly higher than it was in those without. An examination according to IBS subtype groups showed that total bilirubin was independently associated with SIBO only in the subjects with diarrhea-predominant IBS subtype (OR: 2.648, 95% CI: 1.234-5.685, p = 0.012).
Conclusion : These findings suggest that total bilirubin levels may provide additional information regarding the presence of SIBO in diarrhea-predominant IBS patients.
Keywords : Irritable Bowel Syndrome, Gastrointestinal Microbiome, Bilirubin, Breath Test, Diarrhea



Characteristic	Without SIBO (n=513)	With SIBO (n=271)	P value
Age (years)	**47.9 ± 11.0**	**46.1 ± 12.2**	**0.043***
Gender (Male, %)	**334 (65.1%)**	**153 (56.5%)**	**0.018†**
IBS-Diarrhea	351 (68.4%)	193 (71.2%)	0.654†
IBS-Mixed	125 (24.3%)	63 (23.2%)	
IBS-Constipation	37 (7.3%)	15 (5.6%)	
BMI (kg/m2)	**24.4 ± 3.4**	**23.2 ± 3.4**	**< 0.001***
Waist circumference(cm)	**86.4 ± 8.2**	**82.3 ± 9.5**	**< 0.001***
Total bilirubin(mg/dL)	**0.95 ± 0.34**	**1.07 ± 0.48**	**0.002***
Uric acid(mg/dL)	**5.5 ± 1.5**	**5.2 ± 1.5**	**0.026***
Diabetes mellitus, No. (%)	32 (6.4%)	18 (6.9%)	0.767†
HTN, No. (%)	113(22.6%)	53 (20.5%)	0.508†
Dyslipidemia, No. (%)	73 (14.6%)	35 (13.5%)	0.692†
Alcohol (g/week)	183.2 ± 152.7	159.4 ± 135.5	0.242*

*P-value was calculated using the independent *t*-test. †P-value was calculated using the chi-square test.

Characteristic	Without SIBO (n=513)	With SIBO (n=271)	P value
IBS-Diarrhea			
Age (years)	47.7 ± 9.5	46.1 ± 11.4	0.138*
Total bilirubin (mg/dL)	0.98 ± 0.33	1.09 ± 0.46	0.037*
Alcohol (g/week)	174.2 ± 122.7	151.1 ± 113.4	0.201*
IBS-Mixed			
Age (years)	47.6 ± 10.7	46.9 ± 10.5	0.732*
Total bilirubin (mg/dL)	1.00 ± 0.32	1.09 ± 0.55	0.339*
Alcohol (g/week)	147.3 ± 114.4	112.4 ± 79.5	0.249*
IBS-Constipation			
Age (years)	49.3 ± 16.1	44.6 ± 15.9	0.392*
Total bilirubin (mg/dL)	0.89 ± 0.42	0.91 ± 0.25	0.894*
Alcohol (g/week)	110.6 ± 70.9	21.0	NA

*P-value was calculated using the independent *t*-test.

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POSTER EXHIBITION

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-001

Interleukin-17 Regulates CXCL5 in Gut Mucosa of Inflammatory Bowel Disease: Implications for Inflammation and Neutrophil Recruitment

Jung Min Moon[1], Seong-Joon Koh[2], Hosun Yoo[3,4], Eunsu Lim[5], Hyeyoung Min[5], Seulji Kim[2,6], Kwang Woo Kim[2,7], Yukyung Jun[2,8], Hyun Jung Lee[2], Jong Pil Im[2], Joo Sung Kim[2]

[1]Department of Internal Medicine, Chung-Ang University College of Medicine, Seoul, Korea
[2]Department of Internal Medicine and Liver Research Institute,
Seoul National University College of Medicine, Seoul, Korea
[3]Graduate School of Medical Science and Engineering,
Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea
[4]Korea Virus Research Institute, Institute for Basic Science, Daejeon, Korea
[5]College of Pharmacy, Chung-Ang University, Seoul, Korea
[6]Department of Internal Medicine, Korea Institute of Radiological and Medical Sciences, Seoul, Korea
[7]Division of Gastroenterology, Department of Internal Medicine,
Seoul National University Boramae Medical Center, Seoul, Korea
[8]Division of Gastroenterology, Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea

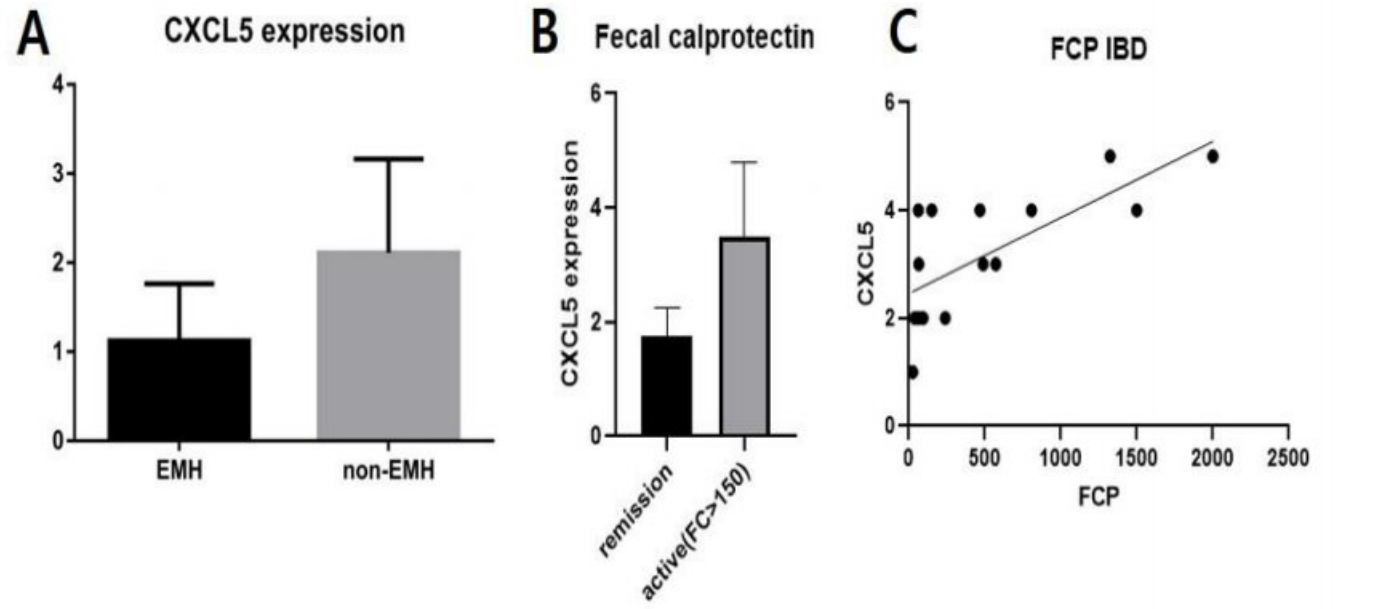
Background / Aim : CXCL5 is an epithelial cell-derived neutrophil-activating peptide involved in neutrophil homeostasis in normal gut mucosa. Given the crucial role of neutrophils in gut inflammation in inflammatory bowel disease (IBD), we explored CXCL5's role in gut mucosal immunity, particularly concerning the IL-17 pathway.

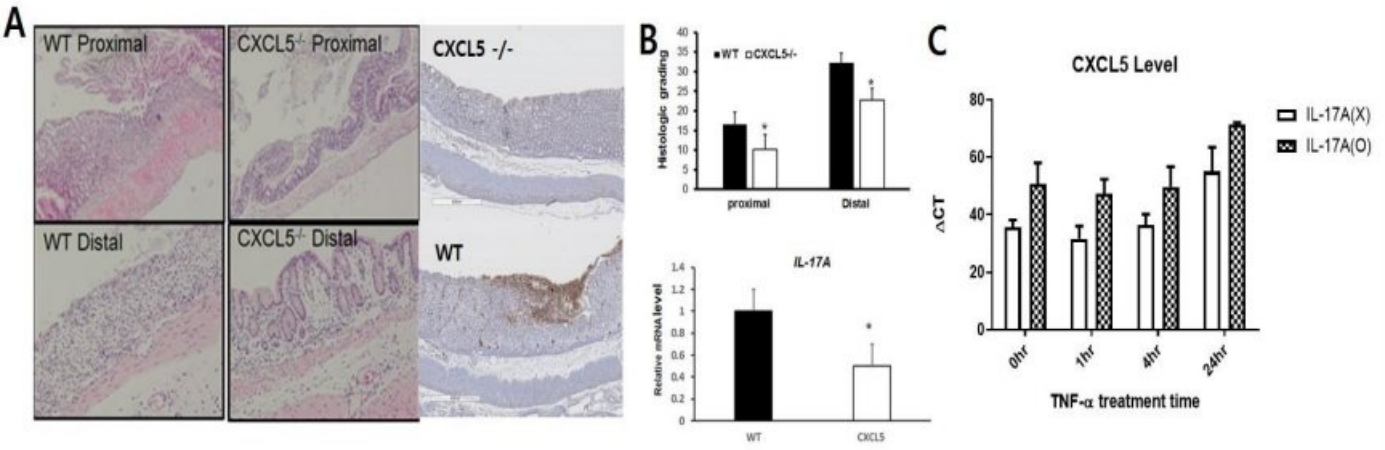
Methods : We analyzed CXCL5 expression in colon tissues of IBD patients using reverse transcription-polymerase chain reaction (RT-PCR). Clinical data, including endoscopic activity scores and calprotectin levels, were analyzed in correlation with CXCL5 expression. IBD experimental mouse models included 3% dextran sodium sulfate (DSS)-induced colitis in wild-type (WT) and CXCL5 knockout (CXCL5-/-) mice, and piroxicam-induced chronic colitis in IL-10/CXCL5 double knockout (CXCL5-/-/IL10-/-) mice. We isolated lamina propria mononuclear cells (LPMCs) from these mice for cytokine level comparisons. Additionally, we performed in vitro assays on SNU1197 cell lines to assess CXCL5 expression following IL-17 stimulation, along with gene expression analysis and cell-to-cell interaction studies.

Results : IBD patients' fecal calprotectin levels positively correlated with CXCL5 expression. Notably, crohn's disease(CD) patients with calprotectin <150mg/kg showed numerically lower CXCL5 expression (p=0.114). Ulcerative colitis(UC) patients with endoscopic mucosal healing had significantly reduced CXCL5 expression (p=0.029). Myeloperoxidase staining revealed consistent results with CXCL5 expression levels. WT mice developed severe colitis in the DSS model, while inflammation was attenuated in CXCL5-/- mice. IL-17A expression in LPMCs was significantly lower in CXCL5-/- mice. Increased neutrophil recruitment was observed in WT mice through myeloperoxidase immunohistochemical staining. IL-10/CXCL5 double knockout mice showed attenuated intestinal inflammation in chronic colitis models. Histologic grading and myeloperoxidase staining results were consistent. In vitro analysis showed increased level of CXCL5 after TNF-α stimulation, and IL-17A pretreatment significantly further stimulated CXCL5 expression.

Conclusion : Our study indicates that CXCL5 is critical in IBD gut inflammation through neutrophil recruitment and is regulated by IL-17. This could suggest that CXCL5/IL-17 signaling could be a viable therapeutic target in IBD treatment.

Keywords : CXCL5, IL-17, Inflammatory Bowel Disease


A
CXCL5 expression
EMH
non-EMH
B
Fecal calprotectin
CXCL5 expression
remission
active(FC>150)
C
FCP IBD
CXCL5
FCP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WT Proximal
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1hr
4hr
24hr
TNF-α treatment time

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SHAPING THE FUTURE OF INTESTINAL RESEARCH
The 7th International Meeting on Intestinal Diseases in conjunction with The Annual Congress of the Korean Association for the Study of Intestinal Diseases
APRIL 11 (Thu) - 13 (Sat), 2024 CONRAD SEOUL, SEOUL, KOREA

[Poster Exhibition – Inflammatory Bowel Disease]

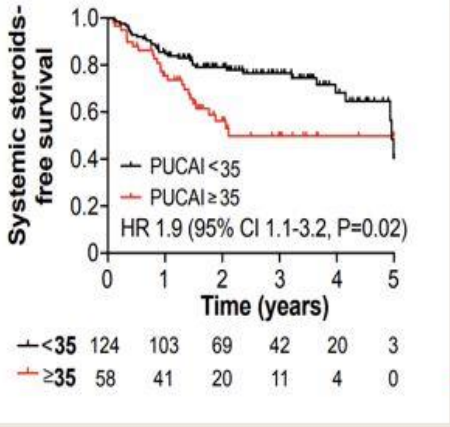
PE1-002

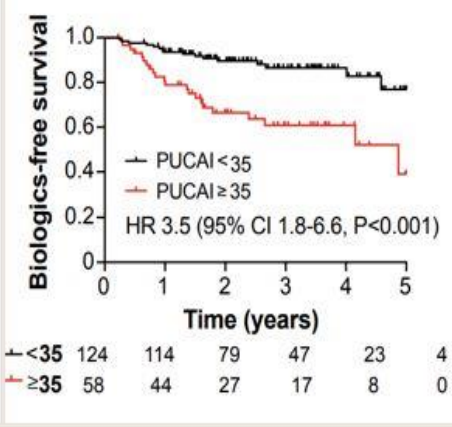
Clinical Features and Natural History of Pediatric Patients with Ulcerative Proctitis: A Multicenter Study from the Pediatric IBD Porto Group of ESPGHAN

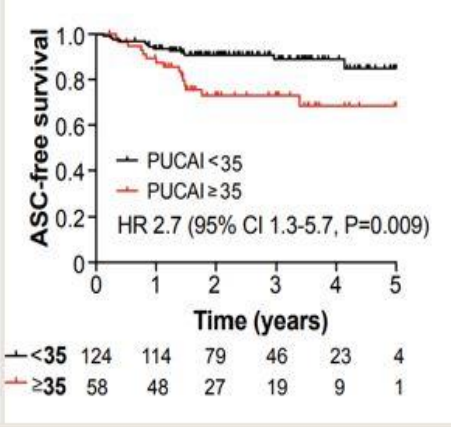
Ben Kang[1], Noa Tal[2], Christos Tzivinikos[3], Marco Gasparetto[4], Daniela Serban[5], Eyal Zifman[6], Iva Hojsak[7], Oren Ledder[8], Anat Yerushalmy Feler[9], Helena Rolandsdotter[10], Marina Aloi[11], Matteo Bramuzzo[12], Stephan Buderus[13], Paolo Lionetti[14], Lorenzo Norsa[15], Christoph Norden[16], Darja Urlep[17], Claudio Romano[18], Ron Shaoul[19], Dror Shouval[2]

[1]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Pediatrics, Sacker Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel
[3]Pediatrics, Al Jalila Children's Specialty Hospital, Mohammed Bin Rashid University, Dubai Medical College, Dubai, United Arab Emirates
[4]Pediatrics, Barts Health NHS Trust, The Royal London Children's Hospital, London, United Kingdom
[5]Pediatrics, Iuliu Hatieganu University of Medicine and Pharmacy, Emergency Clinical Hospital for Children, Cluj-Napoca, Romania
[6]Pediatrics, Meir Medical Center, Kfar-Saba, Israel
[7]Pediatrics, Children's Hospital Zagreb, Zagreb, Croatia
[8]Pediatrics, Shaare Zedek Medical Center, The Hebrew University of Jerusalem, Jerusalem, Israel
[9]Pediatrics, Dana-Dwek Children's Hospital, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel
[10]Pediatrics, Sweden and Sachs' Children and Youth Hospital, Stockholm, Sweden
[11]Pediatrics, Sapienza University of Rome, Rome, Italy
[12]Pediatrics, Institute for Maternal and Child Health, IRCCS, Trieste, Italy
[13]Pediatrics, St-Marien-Hospital, Bonn, Germany
[14]Pediatrics, University of Florence, Meyer Children's Hospital, Florence, Italy
[15]Pediatrics, ASST Papa Giovanni XXIII, Bergamo, Italy
[16]Pediatrics, Hvidovre University Hospital, Hvidovre, Denmark
[17]Pediatrics, University Children's Hospital of the University Medical Centre Ljubljana, Ljubljana, Slovenia
[18]Pediatrics, University of Messina, Messina, Italy
[19]Pediatrics, Ruth Children's Hospital of Haifa, Rambam Medical Center, Haifa, Israel

Background / Aim : Ulcerative proctitis (UP) is an uncommon presentation in paediatric patients with ulcerative colitis. We aimed to characterize the clinical features and natural history of UP in children, and identify predictors of poor outcomes.
Methods : Retrospective study involving 37 sites affiliated with the IBD Porto Group of ESPGHAN. Data were collected from patients aged<18 years diagnosed with UP between 01/01/2016-31/12/2020.
Results : We identified 196 patients with UP (median age at diagnosis 14.6 [IQR 12.5-16.0] years), with a median follow-up of 2.7 (IQR 1.7-3.8) years. The most common presenting symptoms were bloody stools (95%), abdominal pain (61%) and diarrhea)47%). At diagnosis, the median paediatric ulcerative colitis activity index (PUCAI) score was 25 (IQR 20-35), but most patients exhibited moderate-severe endoscopic inflammation. By the end-of-induction, 5-aminosalicylic acid administration orally, topically or both resulted in clinical remission rates of 48%, 48% and 73%, respectively. The rates of treatment escalation to biologics at 1, 3 and 5 years were 10%, 22% and 43%, respectively. In multivariate analysis, the PUCAI score at diagnosis was significantly associated with initiation of systemic steroids, or biologics, and subsequent acute severe colitis events and IBD-associated admission, with a score≥35 providing increased risk for poor outcomes. By the end of follow-up, 3.1% of patients underwent colectomy. Patients with proximal disease progression (48%) had significantly higher rates of cecal patch at diagnosis and higher PUCAI score by end-of-induction, compared to those without progression.
Conclusion : Pediatric patients with UP exhibit high rates of treatment escalation and proximal disease extension.
Keywords : Children, Inflammatory Bowel Disease, Proctitis, Ulcerative Colitis







Systemic steroids Biologics ASC

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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-003

Risankizumab versus Ustekinumab for Patients with Moderate to Severe Crohn's Disease: Results from the Phase 3b SEQUENCE Study

Laurent Peyrin-Biroulet[1], J. Casey Chapman[2,3,4], Jean-Frederic Colombel[5], Flavio Caprioli[6,7], Geert D'haens[8], Marc Ferrante[9], Stefan Schreiber[10], Raja Atreya[11], Silvio Danese[12], James O. Lindsay[13], Peter Bossuyt[14], Britta Siegmund[15], Peter Irving[16], Remo Panaccione[17], Ezequiel Neimark[18], Kori Wallace[18], Toni Anschutz[18], Kristina Kligys[18], W Rachel Duan[18], Marla C Dubinsky[19]

[1]Department of Gastroenterology, University Hospital of Nancy-Brabois, Vandoeuvre-les-Nancy, France
[2]Department of Internal Medicine, Louisiana State University Health Sciences Center, Baton Rouge, Louisiana, United States
[3]Crohn's and Colitis Center, The Baton Rouge General, Baton Rouge, Louisiana, United States
[4]Gastroenterology, GI Alliance, Baton Rouge, Louisiana, United States
[5]Icahn School of Medicine, Mt. Sinai, New York, United States
[6]Department of Pathophysiology and Transplantation, Universit degli Studi di Milano, Milan, Italy
[7]Unit of Gastroenterology and Endoscopy, Fondazione IRCCS Ca Granda Ospedale Policlinico di Milano, Milan, Italy
[8]Department of Gastroenterology, Amsterdam UMC campus AMC, Amsterdam, Netherlands
[9]Department of Gastroenterology and Hepatology, University Hospitals Leuven, KU Leuven, Leuven, Belgium
[10]Department of Internal Medicine, U University Hospital Schleswig-Holstein, Kiel, Germany
[11]Department of Internal Medicine, Friedrich-Alexander-Universitt Erlangen-Nrnberg, Erlangen, Germany
[12]Gastroenterology and Endoscopy, IRCCS Ospedale San Raffaele and University Vita-Salute San Raffaele, Milan, Italy
[13]13Centre for Immunobiology, Barts and The London School of Medicine and Dentistry, Queen Mary University of London, London, United Kingdom
[14]Department of Gastroenterology, Imelda General Hospital, Bonheiden, Belgium
[15]Department of Gastroenterology, Infectious Diseases and Rheumatology, Charit - Universittsmedizin Berlin, Berlin, Germany
[16]Department of Gastroenterology, Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom
[17]Inflammatory Bowel Disease Unit, Division of Gastroenterology and Hepatology, University of Calgary, Calgary, AB, Canada
[18]Medical, AbbVie, North Chicago, Illinois, United States
[19]Susan and Leonard Feinstein IBD Center, Icahn School of Medicine Mount Sinai, New York, United States

Background / Aim : The SEQUENCE study directly compared the efficacy and safety of risankizumab (RZB) and ustekinumab (UST) in patients with moderate to severe Crohn's disease (CD).
Methods : This open-label, multicenter, randomized trial enrolled patients who failed ≥1 anti-TNF therapy. Patients were randomized 1:1 to receive RZB (600 mg IV induction, followed by 360 mg SC maintenance every 8 weeks [wk]) or UST (a single weight-based IV induction dose, followed by 90 mg SC maintenance every 8 wks) over a period of 48 wks.1 Primary endpoints included clinical remission at wk24 (non-inferiority of RZB vs UST) and endoscopic remission at wk48 (superiority of RZB vs UST). Ranked secondary endpoints encompassed clinical, endoscopic response, steroid-free (SF) endoscopic remission, and SF clinical remission (all tested for superiority of RZB vs UST). Safety was also assessed.
Results : Of 520 patients, 255 received RZB and 265 received UST. RZB had a higher completion rate (89.4% vs 74.0% for UST). At wk24, clinical remission rates were 58.6% for RZB and 39.5% for UST (non-inferiority criteria met) (Table). At wk48, endoscopic remission rates were 31.8% for RZB and 16.2% for UST (P<0.0001 for superiority). RZB was superior in all secondary endpoints (all P<0.0001). Adverse event rates were similar between the drugs. Serious AEs and discontinuations due to AEs were slightly higher with UST. Rates of serious

infections and hepatic events were comparable (Table). One case of malignancy was reported in each group and there was one event of adjudicated MACE with UST. No deaths were reported.

Conclusion : In pts with moderate to severe CD who failed anti-TNF therapy, RZB demonstrated non-inferiority to UST in achieving wk24 clinical remission, superiority in achieving wk48 endoscopic remission, and superiority for achieving all secondary endpoints. The safety profiles of RZB and UST were consistent with previously published results.

Keywords : Risankizumab, Head to Head, SEQUENCE, Crohn's Disease, Ustekinumab

Table. SEQUENCE (Part 1*) Efficacy and Safety

	RZB N=255 n/N (%)	UST N=265 n/N (%)	Treatment Difference RZB – UST % [95% CI]
Primary[a]			
1. Clinical remission at wk 24 (ITT-1H[b])	75/128 (58.6%)	54/137 (39.5%)	Non-inferiority[c] met 18.4 [6.6, 30.3]
2. Endoscopic remission at wk 48 (ITT-1[d])	81/255 (31.8%)	43/265 (16.2%)	15.6 [8.4, 22.9], P<0.0001
Ranked Secondary[a,d]			
• Clinical remission at wk 48	155/255 (60.8%)	108/265 (40.8%)	19.7 [11.3, 28.1], P<0.0001
• Endoscopic response at wk 48	115/255 (45.1%)	58/265 (21.9%)	23.3 [15.4, 31.2], P<0.0001
• Endoscopic response at wk 24	115/255 (45.2%)	70/265 (26.4%)	18.9 [10.9, 26.9], P<0.0001
• Steroid-free endoscopic remission at wk 48	80/255 (31.4%)	41/265 (15.5%)	15.9 [8.8, 23.1], P<0.0001
• Steroid-free clinical remission at wk 48	155/255 (60.8%)	107/265 (40.4%)	20.1 [11.7, 28.4], P<0.0001
Treatment Emergent Adverse Events (AEs)[e]	**RZB N=262 PYs = 257.6 Events (E/100PYs)**[f]	**UST N=265 PYs = 269.9 Events (E/100PYs)**[f]	**Treatment Difference RZB – UST % [95% CI]**
All TEAEs	879 (341.2)	763 (282.7)	58.5 (28.3, 88.7)
Investigator-defined drug-related AE[g,h]	167 (64.8)	111 (41.1)	23.7 (11.2, 36.2)
Severe AE	60 (23.3)	82 (30.4)	-7.1 (-15.9, 1.7)
Serious AE	36 (14.0)	64 (23.7)	-9.7 (-17.1, -2.4)
AEs leading to study drug discontinuation	10 (3.9)	14 (5.2)	-1.3 (-4.9, 2.3)
Death	0	0	0
Adverse Events of Special Interest			
Adjudicated MACE/Extended MACE[i]	0	1 (0.4)	-0.4 (-1.1, 0.4)
Serious infections	10 (3.9)	14 (5.2)	-1.3 (-4.9, 2.3)
Active tuberculosis	0	0	0
Opportunistic infections excluding tuberculosis and herpes zoster[j]	1 (0.4)	0	0.4 (-0.4, 1.1)

AE – adverse event; BL - baseline; CD – Crohn's disease; CDAI – CD activity index; ITT – intention to treat; RZB - risankizumab; PY, patient years; SES-CD, simple endoscopic score for CD; TEAE – treatment emergent AE; UST – ustekinumab; Wk, week

Clinical remission – CDAI < 150
Endoscopic remission - SES-CD ≤ 4 and at least a 2-point reduction versus BL and no sub score greater than 1 in any individual variable, as scored by a central reviewer blinded to treatment allocation
Endoscopic response - decrease in SES-CD > 50% from BL (or for pts with isolated ileal disease and a BL SES-CD of 4, at least a 2-point reduction from BL), as scored by central reviewer
Steroid-free endoscopic remission - endoscopic remission and not receiving steroids at the corresponding visit
Steroid-free clinical remission - clinical remission and not receiving steroids at the corresponding visit

*SEQUENCE Part 1 compared the efficacy and safety of RZB versus UST over 48 wks, while Part 2 is an ongoing open-label long-term extension to evaluate the long-term safety of RZB in pts who received RZB in Part 1 and completed wk48 visit.
[a]Categorical variables were analyzed using Cochran-Mantel-Haenszel (CMH) test. For both the primary and secondary endpoints, the non-responder imputation while incorporating multiple imputation to handle missing data (due to COVID-19 or geopolitical conflict) was used. Primary and secondary endpoints were tested sequentially in the order specified using the CMH risk difference estimate test stratified by the number of failed anti-TNF therapies (1, > 1) and steroid use at baseline (yes, no).

[b]ITT1H population is a subset of ITT-1 population and includes approximately 50% of ITT1 subjects who have opportunity to reach wk24 by the time of the primary analysis of CDAI clinical remission at wk24; non-inferiority of RZB vs. UST

[c]Non-inferiority test: If the lower limit of 95% confidence interval based on the CMH estimation for the risk difference between RZB and UST groups (RZB – UST) was greater than the negative of 10% noninferiority margin, then noninferiority was demonstrated for clinical remission at wk24. If non-inferiority was demonstrated for clinical remission (CDAI) at Week 24, the superiority for the endoscopic remission at Week 48 was subsequentially tested at two-sided significance level of 0.05 using the CMH test.

[d]Intent-to-treat-1 (ITT-1) population included all randomized subjects who were randomized to RZB with the selected RZB dose (RZB 600 mg IV followed by RZB 360 mg SC) or UST and who received at least 1 dose of study drug during Part 1 of the study; superiority of RZB vs. UST

[e]TEAEs are events that begin either on or after the first dose of UST or RZB in Part 1 and until the first dose of study drug (RZB) in Part 2 if the pt is enrolled into the Part 2 or within 140 days after the last dose administration of the study drugs (UST or RZB) in Part 1 if the pt does not participate in Part 2. Only safety data obtained before 12JUL2023 or Week 52 dosing date (the first dose date of Part 2), whichever occurred earlier, are reported here.

[f]SA1 population includes all pts who received at least 1 dose of study drug during Part 1 of the study.

[g]As assessed by investigator

[h]RZB related: 3 patients with SAEs related to RZB (anal fistula, anal abscess, campylobacter, cystitis, localized infection, genital fistula); 8 patients with SAEs related to UST (abdominal pain, anal fistula, CD, ileal stenosis, vomiting)

[i]MACE: Major Adverse Cardiovascular Events, defined as cardiovascular death or death due to stroke, non-fatal myocardial infarction, and non-fatal stroke; extended MACE defined as MACE with hospitalization for unstable angina and coronary revascularization procedures

[j]Opportunistic infection: RZB, oesophageal candidiasis

[k]Malignant tumor: RZB, squamous cell carcinoma of skin; UST, anal squamous cell carcinoma

iOne case of potential Hy's Law in the UST treatment group

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-004

Long-term Clinical and Endoscopic Outcomes in True North Week 52 Clinical Remitters over 3 Years of Treatment with Ozanimod: An Interim Analysis of the True North Open-label Extension Study

Remo Panaccione[1], David T. Rubin[2], Maria T. Abreu[3], Michael V. Chiorean[4], Lucy Akukwe[5], Anjali Jain[5], Annkatrin Petersen[5], Mark T. Osterman[5], Hsiuanlin Wu[5], Silvio Danese[6], Byung Ik Jang[7], Anita Afzali[8]

[1]Department of Gastroenterology, Inflammatory Bowel Disease Clinic, Calgary, AB, Canada
[2]Department of Medicine, Gastroenterology, University of Chicago Medicine, Inflammatory Bowel Disease Center, Chicago, IL, United States
[3]Department of Medicine, Digestive Health and Liver Diseases, University of Miami Miller School of Medicine, Miami, FL, United States
[4]Department of Medicine, Gastroenterology, Swedish Medical Center, Seattle, WA, United States
[5]Clinical Development, Bristol Myers Squibb, Princeton, NJ, United States
[6]Department of Medicine, Gastroenterology and Digestive Endoscopy, IRCCS Ospedale San Raffaele and University Vita-Salute San Raffaele, Milan, Italy
[7]Department of Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea
[8]Division of Digestive Diseases, University of Cincinnati, Cincinnati, OH, United States

Background / Aim : Ozanimod (OZA), a selective sphingosine 1-phosphate receptor modulator, is approved for the treatment of moderate to severe ulcerative colitis (UC) based on results from the phase 3, 52-week True North (TN) study. A subsequent post hoc analysis demonstrated the durability of OZA efficacy and safety profile over 3 years during the ongoing TN OLE in patients who achieved clinical response at Week (W) 52.
Methods : This interim analysis of the TN OLE expands on the evaluation of W52 clinical responders to include those who achieved clinical remission at W52 vs those who did not. Clinical remission, clinical response, endoscopic improvement, and corticosteroid (CS)–free remission was evaluated in clinical remitters vs nonremitters at OLE W46 and W94 using observed case (OC) and nonresponder imputation (NRI) analyses.
Results : 131 patients entered the OLE as clinical responders; of these patients, 63% (83/131) were clinical remitters. All patients had received 146 weeks of OZA treatment up to OLE W94 or discontinued treatment. Baseline demographic and disease characteristics were generally similar, but a lower incidence of prior TNF inhibitor use was reported in clinical remitters (25.3%) vs nonremitters (43.8%). Compared with clinical nonremitters, more clinical remitters achieved the evaluated efficacy endpoints at OLE W46 and OLE W94 in the OC analysis (Table). A similar trend was observed in the NRI analysis. Durability of response for all efficacy endpoints was sustained from OLE W46 to W94 in most clinical remitters and nonremitters, respectively: 68.5% (37/54) and 75.0% (12/16); clinical response: 75.0% (48/64) and 75.9% (22/29); endoscopic improvement: 66.1% (41/62) and 68.4% (13/19); CS-free remission: 67.9% (36/53) and 80.0% (12/15).
Conclusion : Most patients who achieved clinical remission after 1 year of OZA had sustained efficacy for an additional 2 years. These findings provide further evidence for the long-term durability of OZA treatment in patients with moderate to severe UC.
Keywords : Ozanimod, Ulcerative Colitis, Clinical Remission

	Clinical remitters at TN W52 (n=83)		Clinical nonremitters at TN W52 (n=48)	
	OLE W46	OLE W94	OLE W46	OLE W94
Clinical remission,[a] % (n/N)	97.0 (64/66)	94.4 (51/54)	93.5 (29/31)	85.2 (23/27)
Clinical response,[b] % (n/N)	81.8 (54/66)	75.9 (41/54)	51.6 (16/31)	55.6 (15/27)
Endoscopic improvement,[c] % (n/N)	86.1 (62/72)	78.6 (44/56)	59.4 (19/32)	63.3 (19/30)
CS-free remission,[d] % (n/N)	80.3 (53/66)	74.1 (40/54)	48.4 (15/31)	55.6 (15/27)

Note: Denominators for the OC analyses were based on the numbers of patients who completed OLE W46 or OLE W94 and had data available for the endpoints in question. [a]Clinical remission: RBS=0 point and SFS ≤1 point, a decrease of ≥1 point from the baseline SFS, and endoscopy subscore ≤1 point. [b]Clinical response: reduction from baseline in the 9-point Mayo score (sum of the RBS, SFS, and endoscopy subscore) of ≥2 points and ≥35%, and a reduction from baseline in the RBS of ≥1 point or an absolute RBS of ≤1 point. [c]Endoscopic improvement: endoscopy subscore of ≤1. [d]CS-free remission: clinical remission while off CS for ≥12 weeks. RBS, rectal bleeding subscore; SFS, stool frequency subscore.

[Poster Exhibition – Inflammatory Bowel Disease]

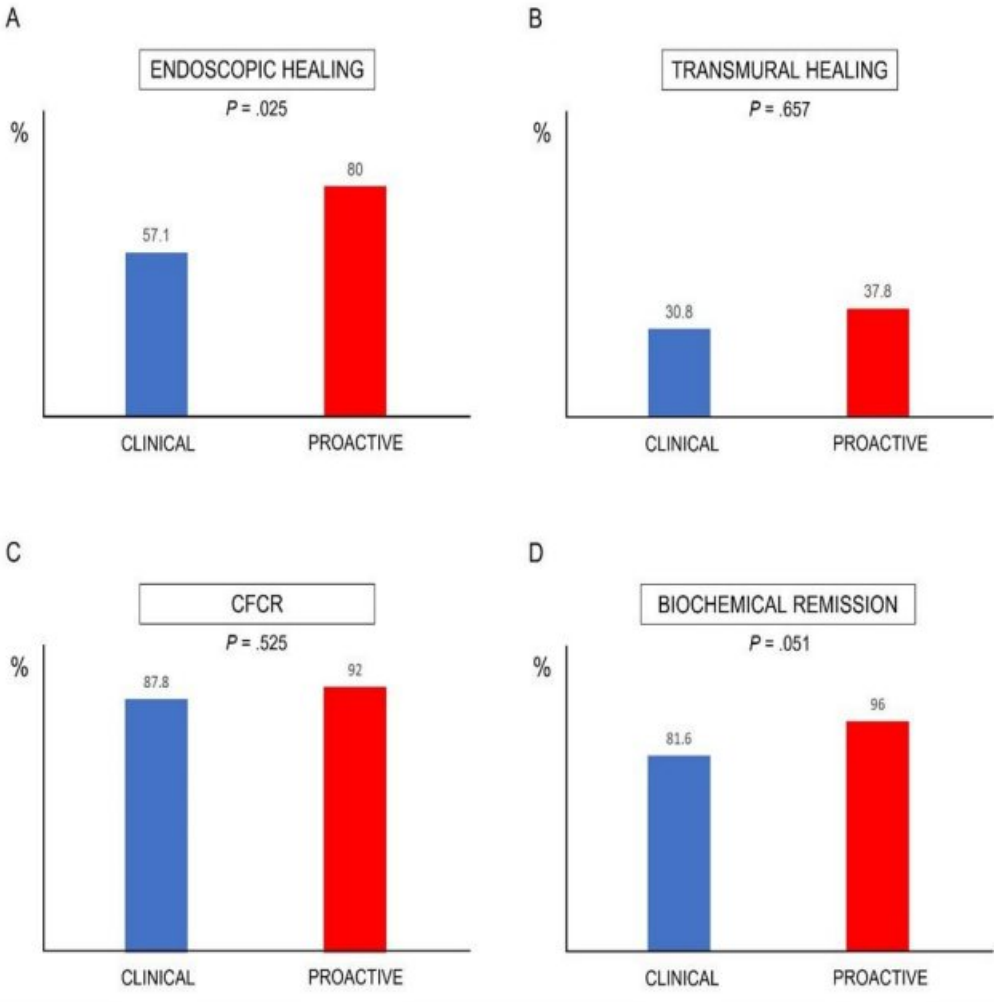
PE1-005

Therapeutic Drug Monitoring-based Proactive Dosing is Superior to Clinically-based Dosing in Terms of Endoscopic Healing in Pediatric Patients with Crohn's Disease Receiving Maintenance Infliximab: A Randomized Controlled Trial

Ben Kang[1], Eun Sil Kim[2], Sujin Choi[1], Byung-Ho Choe[1], Jin Soo Moon[3], Jae Sung Ko[3], Sangjun Sohn[4], Yeoun Joo Lee[4], Yiyoung Kwon[5], Mi Jin Kim[6], Yon Ho Choe[6]

[1]Department of Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Department of Pediatrics, Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine, Seoul, Korea
[3]Department of Pediatrics, Seoul National University College of Medicine, Seoul, Korea
[4]Department of Pediatrics, Pusan National University Yangsan Hospital, College of Medicine, Pusan National University, Yangsan, Korea
[5]Department of Pediatrics, School of Medicine, Inha University, Incheon, Korea
[6]Department of Pediatrics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea

Background / Aim : Proactive dosing based on therapeutic drug monitoring (TDM) of adalimumab has been reported to be associated with higher rates of sustained corticosteroid-free clinical remission (SCFCR) in children with Crohn's disease (CD) compared to reactive TDM. We aimed to investigate whether proactive dosing of infliximab (IFX) based on TDM is associated with higher rates of endoscopic healing (EH) in pediatric patients with CD compared to clinically-based dosing.
Methods : We conducted a nonblinded, randomized controlled trial of 112 children with CD who were biologic naïve and had responded to induction treatment with IFX at 4 centers in South Korea from July 2017 to November 2020. Patients were randomly assigned to groups that received dosing based on proactive TDM (proactive arm) or clinically-based dosing (clinical arm). The primary endpoint was EH at week 54 treatment with IFX.
Results : The primary endpoint was achieved in 80.0% (40/50) of the proactive group and 57.1% (28/49) of the clinical group (P = 0.025) (Figure 1). SCFCR was achieved in 69.6% (39/56) of the clinically based dosing group and 89.3% (50/56) of the proactive dosing group at week 54 treatment (P = .019). According to multivariate logistic regression analysis, intervention group (proactive arm vs. clinical arm) was an independent factor associated with EH (OR 3.48, 95% CI 1.26–10.43, P = .019) and SCFCR (OR 5.50, 95% CI 1.72–21.61, P = .007), respectively.
Conclusion : Dosing based on proactive TDM was superior to clinically-based dosing in terms of EH in a randomized controlled trial of pediatric CD (cris.nih.go.kr, Number: KCT0005190).
Keywords : Therapeutic Drug Monitoring, Proactive Dosing, Crohn's Disease, Infliximab, Child


A
ENDOSCOPIC HEALING
P = .025
%
57.1
80
CLINICAL
PROACTIVE
B
TRANSMURAL HEALING
P = .657
%
30.8
37.8
CLINICAL
PROACTIVE
C
CFCR
P = .525
%
87.8
92
CLINICAL
PROACTIVE
D
BIOCHEMICAL REMISSION
P = .051
%
81.6
96
CLINICAL
PROACTIVE

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-006

Comparative Risk of Serious Infections and Tuberculosis of Vedolizumab/Ustekinumab Compared with Anti-TNF- agents: A Nationwide Population-based Study of Korean Patients with Inflammatory Bowel Disease

Min Jee Kim[1], Hyeon Hwa Kim[1], Ye Jee Kim[2], Dae Hyun Jeong[3], Seonok Kim[2], Seokchan Hong[4], Sang Hyoung Park[5], Kyung Wook Jo[1]

[1]Department of Pulmonology and Critical Care Medicine, Asan Medical Center, Seoul, Korea
[2]Department of Clinical Epidemiology and Biostatistics, Asan Medical Center, Seoul, Korea
[3]Department of Pulmonology, Sahmyook Medical Center, Seoul, Korea
[4]Department of Rheumatology, Asan Medical Center, Seoul, Korea
[5]Department of Gastroenterology, Asan Medical Center, Seoul, Korea

Background / Aim : We compared serious infection and active tuberculosis risks in Korean patients with inflammatory bowel disease treated with vedolizumab/ustekinumab or anti-tumor-necrosis-factor-α agents.
Methods : The Health Insurance Review and Assessment Service claim data (representing 97% of the total South Korean population) between January 2007 and February 2021 were reviewed and adults with inflammatory bowel disease who initiated vedolizumab/ustekinumab or anti-tumor-necrosis-factor-α treatment (n=6123) from 2017 to 2020 were enrolled, after excluding those with treatment initiation between July and December 2016. The intergroup difference in the risk of serious infection requiring hospitalization/emergency department visit or active tuberculosis during the follow-up period was determined.
Results : In the patients treated with anti-tumor-necrosis-factor-α agents or vedolizumab/ustekinumab during a mean follow-up of 1.55±1.05 and 0.84±0.69 years, the incidence of serious infection was 9.43/100 and 6.87/100 person-years, respectively. Multivariable analysis showed that no significant intergroup difference in the risk for serious infection with vedolizumab/ustekinumab or anti-tumor-necrosis-factor-α agent treatment; the adjusted relative risk of vedolizumab/ustekinumab compared with anti-tumor-necrosis-factor-α agents was 0.81 (95% confidence interval 0.46–1.44, P=0.478) (Table 1). Among patients tretaed with anti-tumor-necrosis-factor-α agents or vedolizumab/ustekinumab, the incidence of active tuberculosis was 0.87 and 0.37 per 100 person-years, respectively. The relative risk of vedolizumab/ustekinumab compared with anti-tumor-necrosis-factor-α agents was 0.31 (95% confidence interval 0.07–1.26, P=0.101) (Table 2).
Conclusion : Vedolizumab/ustekinumab treatment was associated with a similar incidence of serious infection or active tuberculosis as with anti-tumor necrosis factor-α agent treatment in Korean patients with inflammatory bowel disease.
Keywords : Inflammatory Bowel Disease, Vedolizumab, Ustekinumab, Serious Infections, Tuberculosis

Table 1. Risk of serious infection with vedolizumab/ustekinumab compared to anti-TNF-α agent treatment in patients with inflammatory bowel disease

	Anti-TNF-α agents (n = 4902)*		**Vedolizumab/Ustekinumab (n = 622)†**					
	No. of episodes	IR/100 PY	No. of episodes	IR/100 PY	Relative risk (95% CI)	*P*-value	Adjusted relative risk‡ (95% CI)	*P*-value
Serious infections, Total	718	9.43	36	6.87	0.73 (0.40–1.34)	0.308	0.81 (0.46–1.44)	0.478
Pulmonary	135	1.77	4	0.76	0.43 (0.10–1.85)	0.256	0.47 (0.11–1.98)	0.302
Gastrointestinal	165	2.17	8	1.53	0.70 (0.27–1.85)	0.476	0.83 (0.33–2.07)	0.688
Skin and soft tissue	104	1.37	9	1.72	1.26 (0.53–3.01)	0.607	1.43 (0.63–3.25)	0.391
Urinary tract	63	0.83	2	0.38	0.46 (0.07–2.92)	0.411	0.50 (0.07–3.72)	0.497
Eye/Nose/Throat	80	1.05	5	0.95	0.91 (0.30–2.76)	0.865	0.94 (0.31–2.87)	0.912
Musculoskeletal	3	0.04	1	0.19	4.84 (0.76–30.70)	0.094	4.24 (1.16–15.43)	0.029
Others	168	2.21	7	1.34	0.61 (0.15–2.37)	0.471	0.66 (0.19–2.31)	0.516

Abbreviations: TNF, tumor necrosis factor; IR, incidence rate; PY, person-year; CI, confidence interval

*Sum of person-years of patients treated with anti-TNF-α agents was 7613.75

Table 2. Risk of tuberculosis with vedolizumab/ustekinumab compared to anti-TNF-α agent treatment in patients with inflammatory bowel disease

	Anti-TNF-α agents (n = 5337)*		**Vedolizumab/Ustekinumab (n = 644)†**			
	No. of episodes	IR/100 PY	No. of episodes	IR/100 PY	Relative risk (95% CI)	*P*-value
Mycobacterium tuberculosis infection, Total	71	0.87	2	0.37	0.31 (0.07–1.26)	0.101
Pulmonary tuberculosis	52	0.64	2	0.37	0.43 (0.10–1.76)	0.238
Extrapulmonary tuberculosis	19	0.23	0	0.00	N/A	N/A

Abbreviations: TNF, tumor necrosis factor; IR, incidence rate; PY, person-year; CI, confidence interval

*Sum of person-years of patients treated with anti-TNF-α agents was 8155.87

†Sum of person-years of patients treated with vedolizumab/ustekinumab was 535.22

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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-008

Association between Efficacy and Long-term Outcomes: Four Year Results from the UNIFI Study of Ustekinumab in Ulcerative Colitis

Laurent Peyrin-Biroulet[1], Rupert Leong[2], Bruce E. Sands[3], Ye Miao[4], Colleen Marano[4], Silvio Danese[5]
[1]Inflammatory Bowel Disease (IBD) Group at the Gastroenterology Department, Nancy University Hospital, University of Lorraine, Nancy, France
[2]Director of Endoscopy, Head of IBD Services, Concord Repatriation General Hospital, Concord, Australia
[3]Gastroenterology, Icahn School of Medicine at Mount Sinai, New York, United States
[4]Immunology, Janssen Research & Development, LLC, Spring House, United States
[5]Gastroenterology and Endoscopy, IRCCS Ospedale San Raffaele and University Vita-Salute San Raffaele, Milan, Italy

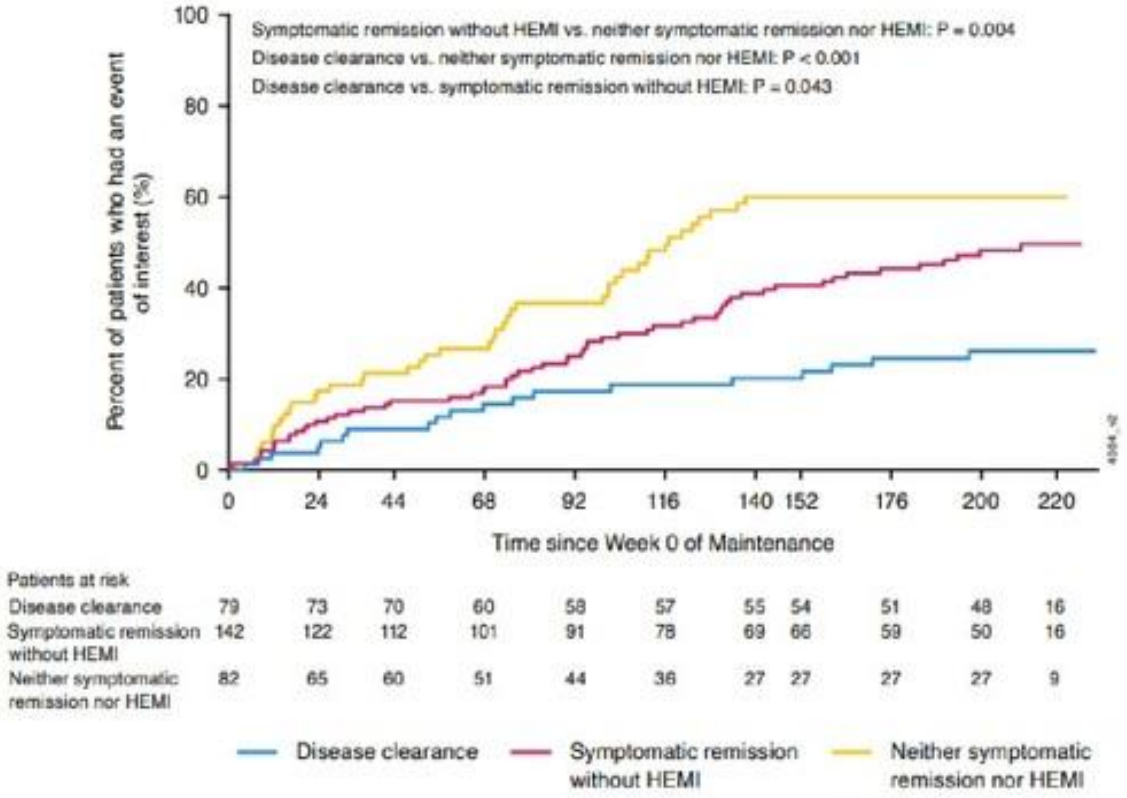
Background / Aim : Long-term outcomes from the UNIFI study of ulcerative colitis (UC) are presented for patients who achieved symptomatic remission after induction with intravenous (IV) ustekinumab with or without histo-endoscopic mucosal improvement (HEMI).
Methods : In UNIFI, patients were randomized to IV ustekinumab (130mg or ~6mg/kg/body weight) or placebo. Patients with clinical response at 8 weeks (w) following IV induction with ustekinumab were randomized to subcutaneous (SC) ustekinumab 90mg every-12-weeks (q12w) or q8w or SC placebo maintenance. At the investigator's discretion, enrolment in this long-term extension study was optional for patients who completed 44w of maintenance. Outcomes included HEMI (histologic improvement [<5% neutrophils in the epithelium, no crypt destruction, no erosions, ulcerations, or granulations] and endoscopic improvement [Mayo endoscopic subscore 0-1]) and symptomatic remission (stool frequency subscore 0-1, rectal bleeding subscore 0). Patients were stratified by efficacy 8w after IV induction as: 1) disease clearance (achieving both HEMI and symptomatic remission [n=79]), 2) symptomatic remission without HEMI (n=142), or 3) neither symptomatic remission nor HEMI (n=82). Time to treatment failure (UC-related surgery/hospitalization, adverse event [AE] of UC, or discontinuation of study agent due to an AE of worsening UC or lack of efficacy) was compared between cohorts using a log-rank test.
Results : Proportions of patients in symptomatic remission were highest for those in disease clearance after induction through 200w (~4 years) of ustekinumab treatment (Table). Time to treatment failure was longer in patients with disease clearance than patients in symptomatic remission without HEMI (p=0.004), and in patients in symptomatic remission without HEMI than patients with neither symptomatic remission nor HEMI (p=0.043) (Figure).
Conclusion : Patients with disease clearance 8w after IV induction had greater long-term symptomatic remission outcomes and longer time to treatment failure than those with symptomatic remission without HEMI or those with neither symptomatic remission nor HEMI after induction.
Keywords : Histo-endoscopic Mucosal Improvement (HEMI), Ulcerative Colitis, Ustekinumab

Table: Symptomatic remission up through 4 years in patients receiving SC maintenance ustekinumab by efficacy strata

	Disease clearance	Symptomatic remission without HEMI	Neither symptomatic remission nor HEMI
Number of patients	79	142	82
Week 44			
Symptomatic remission	63 (79.7%)	98 (69.0%)	35 (42.7%)
CS-free symptomatic remission	60 (75.9%)	97 (68.3%)	34 (41.5%)
Week 92			
Symptomatic remission	63 (79.7%)	100 (70.4%)	41 (50.0%)
CS-free symptomatic remission	60 (75.9%)	98 (69.0%)	39 (47.6%)
Week 152			
Symptomatic remission	60 (75.9%)	78 (54.9%)	32 (39.0%)
CS-free symptomatic remission	57 (72.2%)	76 (53.5%)	31 (37.8%)
Week 200			
Symptomatic remission	58 (73.4%)	76 (53.5%)	37 (45.1%)
CS-free symptomatic remission	56 (70.9%)	74 (52.1%)	35 (42.7%)

CS, corticosteroid; HEMI, histo-endoscopic mucosal improvement; IV; intravenous; SC; subcutaneous

Figure: Kaplan-Meier curve for time to treatment failure (UC-related surgery or hospitalization, adverse event of UC, or discontinuation of study agent because of lack of efficacy or adverse event of worsening UC) in patients receiving SC maintenance ustekinumab



Disease clearance: having both symptomatic remission and histo-endoscopic mucosal healing.
Histo-endoscopic mucosal healing: having both endoscopic improvement (endoscopic score of 0 or 1) and histologic improvement (0 - <5% neutrophils in epithelium, no crypt destruction, and no erosions or ulcerations or granulations).
Symptomatic remission without HEMI: a stool frequency subscore of 0 or 1 and a rectal bleeding subscore of 0.
Neither symptomatic remission nor HEMI: Neither symptomatic remission nor histo-endoscopic mucosal healing.
Lack of efficacy: Based on e-CRF study agent discontinuation forms, includes 1) Lack of efficacy, 2) Not in partial Mayo response 16 weeks following initiation of rescue medication (collected from Week 0 through Week 44), 3) Did not show improvement in UC disease activity 16 weeks following dose adjustment (collected from Week 44 through Week 220).
P-values are based on log-rank tests.

e-CRF, electronic case report form; HEMI, histo-endoscopic mucosal improvement; SC, subcutaneous; UC, ulcerative colitis

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-009

Comparing the Persistence of Advanced Therapies in the Management of Inflammatory Bowel Disease: A Retrospective Cohort Study in Taiwan

Horng-Yih Chiu[1], Puo-Hsien Le[2,3], Chia-Jung Kuo[2,3], Ming-Wei Lai[3,4], Ren-Chin Wu[5], Chien-Ming Chen[6], Cheng-Tang Chiu[2,3], Cheng-Hsun Chiu[7], Ming-Yao Su[3,8], Yu-Bin Pan[9]

[1]School of Medicine, Chang Gung University, Taoyuan, Taiwan
[2]Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[3]Taiwan Association of the Study of Small Intestinal Disease, Taoyuan, Taiwan
[4]Division of Pediatric Gastroenterology, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[5]Anatomic Pathology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[6]Medical Imaging and Interventions, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[7]Division of Pediatric Infectious Diseases, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[8]Gastroenterology and Hepatology, New Taipei City Municipal Tucheng Hospital, New Taipei City, Taiwan
[9]Biostatistical Section, Clinical Trial Center, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

Background / Aim : The prevalence of inflammatory bowel disease (IBD) is swiftly on the rise in Asia, where advanced therapies have markedly transformed outcomes for the cases with moderate to severe disease activity. Among various factors, the persistence of treatment holds paramount importance in choosing appropriate treatment option. We present the first study in Asia that compares real-world persistence rates among advanced therapies in IBD patients in Taiwan.
Methods : Conducted as a retrospective cohort study, we enrolled IBD patients who underwent treatment with five advanced therapies—infliximab (IFX), adalimumab (ADA), vedolizumab (VDZ), ustekinumab (UST), and tofacitinib (TOF)—at Linkou Chang Gung Memorial Hospital from October 2017 to September 2023. UST followed a standard maintenance dosing frequency of every 12 weeks, while TOF was exclusively allowed as a second-line treatment option for UC in Taiwan. The study compared baseline data and drug persistence rates within the initial 52 weeks for the overall group, biologic-naïve patients, and biologic-experienced patients.
Results : A total of 511 IBD patients were included, with 41.1% diagnosed with ulcerative colitis (UC) and 58.9% with Crohn's disease (CD). UST exhibited the highest escalation rate at 24.2%. Across all five drugs, secondary loss of response was the primary cause for discontinuation. Further baseline characteristics were presented in Table 1. In the Kaplan-Meier analysis, UST demonstrated the highest 52-week persistence rates in overall (88.31%, $p < 0.001$, Figure 1a), biologic-naïve patients (96.97%, $p < 0.001$, Figure 1b), and biologic-experienced CD patients (81.82%, $p=0.023$, Figure 1c). While statistically insignificant, UST also exhibited the highest 52-week persistence in overall (66.67%, $p=0.083$, Figure 1d), biologic-naïve (80%, $p=0.445$, figure 1e), and biologic-experienced (57.14%, $p=0.359$, Figure 1f) UC patients.
Conclusion : UST showcased the superior 52-week persistence among advanced therapies in CD patients. However, it's noteworthy that the rate of dose escalation in UST surpassed that of other therapies.
Keywords : Inflammatory Bowel Disease, Persistence, Advanced Therapy, Biologics, Small Molecules

Table 1. Baseline Characteristics and Clinical Outcomes of Patients with Inflammatory Bowel Disease Receiving Advanced Therapies

Characteristics	Overall (n=511)	IFX (n=51)	ADA (n=106)	VDZ (n=193)	UST (n=149)	TOF (n=12)	P-value
Age	43.7±16.2	36.3±21.0	43.8±13.4	46.7±15.4	42.5±16.4	42.3±14.5	0.149
Sex, n (%)							
Male	347(67.9)	37(72.5)	76(71.7)	123(63.7)	106(71.1)	5(41.7)	0.123
BMI	22.5±5.5	23.1±10.7	22.6±3.5	22.6±4.2	22.3±5.5	22.3±2.4	0.371
Diagnosis, n(%)							
UC	210(41.1)	21(41.2)	32(30.2)	115(59.6)	30(20.1)	12(100)	< 0.001*
CD	301(58.9)	30(58.8)	74(69.8)	78(40.4)	119(79.9)	0	
Biologic-experienced, n (%)	268(52.4)	34(66.7)	71(67.0)	55(28.5)	96(64.4)	12(100)	< 0.001*
Dose escalation, n (%)	72(14.1)	5(9.8)	6(5.7)	25(13.0)	36(24.2)	0	< 0.001*
Reasons of discontinuation, n (%)							
Side effects	8(1.6)	3(5.9)	3(2.8)	1(0.5)	1(0.7)	0	0.047*
Primary non-responder	16(3.1)	2(3.9)	0	12(6.2)	2(1.3)	0	0.021*
Secondary non-responder	71(13.9)	7(13.7)	21(19.8)	35(18.1)	8(5.4)	0	0.002*
Personal reasons	10(2.0)	2(3.9)	0	3(1.5)	0	5(41.7)	< 0.001*
Others	10(2.0)	2(3.9)	2(1.9)	4(2.1)	2(1.3)	0	0.813

Continuous data were subjected to Analysis of Variance (ANOVA) analysis and are presented as mean ± standard deviation. Categorical data underwent analysis using Pearson's Chi-Square test and are presented as absolute numbers (percentages). Abbreviations: ADA, Adalimumab; BMI, Body Mass Index; CD, Crohn's disease; IFX, infliximab; TOF, Tofacitinib; UC, ulcerative colitis; UST, Ustekinumab; VDZ, Vedolizumab. * $p<0.05$.

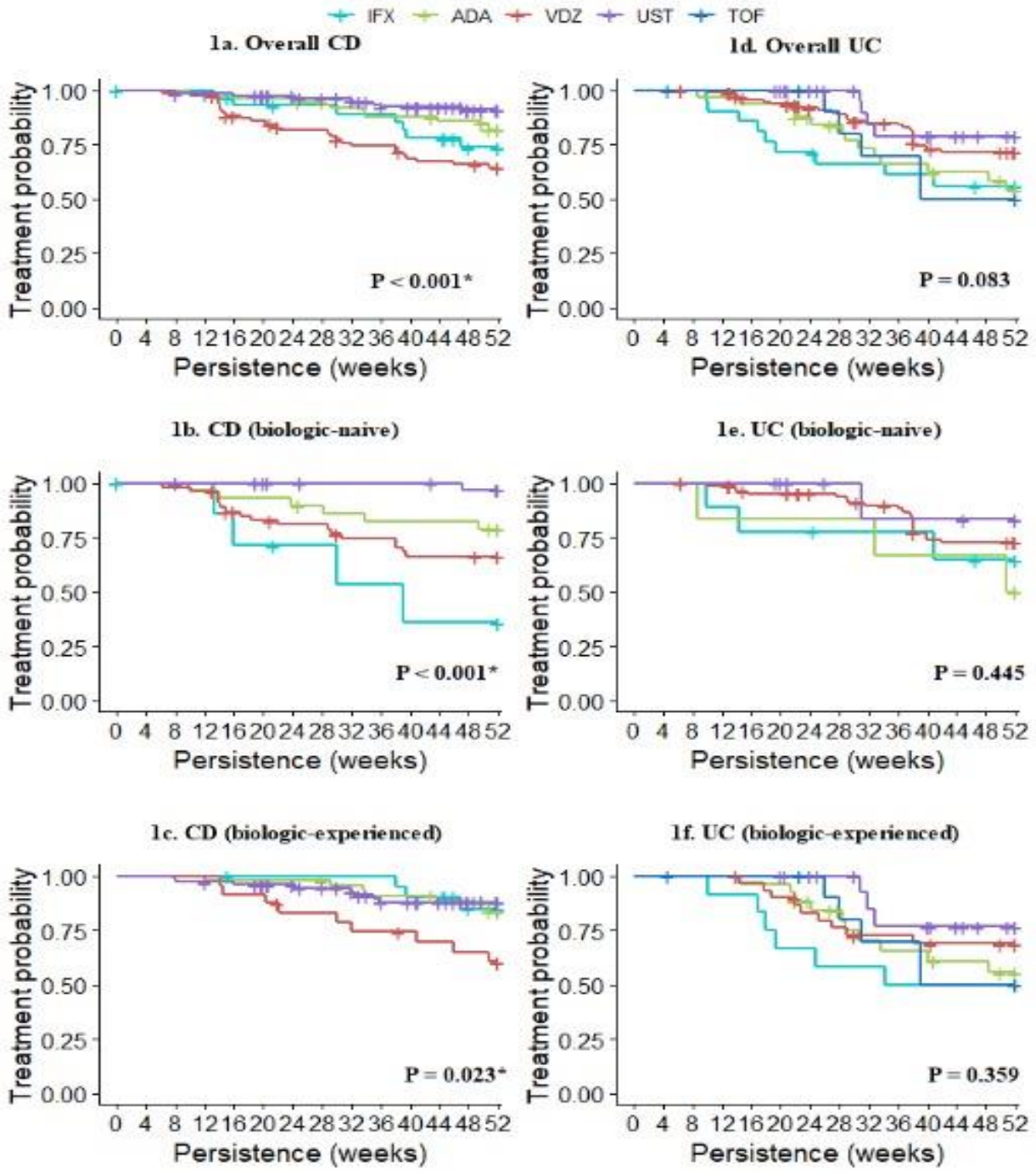


Figure 1. Kaplan-Meier curves illustrating the persistence of advanced therapies in Crohn's disease (Figure 1a: overall, Figure 1b: biologic-naïve, Figure 1c: biologic-experienced) and ulcerative colitis (Figure 1d: overall, Figure 1e: biologic-naïve, Figure 1f: biologic-experienced). Abbreviations: ADA, Adalimumab; CD, Crohn's disease; IFX, infliximab; TOF, Tofacitinib; UC, ulcerative colitis; UST, Ustekinumab; VDZ, Vedolizumab. * $p<0.05$.

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-010

Effectiveness of Fecal Microbiota Transplantation in Treating Clostridioides Difficile Infection among Patients with and without Inflammatory Bowel Disease

Jing-Han Chen[1], Puo-Hsien Le[2,3,4], Pai-Jui Yeh[4,5], Chien-Chang Chen[4,5], Chia-Jung Kuo[2,3,4], Cheng-Tang Chiu[2,3,4], Cheng-Hsun Chiu[4,6]

[1]School of Medicine, Chang Gung University, Taoyuan City, Taiwan
[2]Department of Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan
[3]TASSID, Taiwan Association of the Study of Small Intestinal Disease, Taoyuan City, Taiwan
[4]Chang Gung Microbiota Therapy Center, Chang Gung Memorial Hospital, Taoyuan City, Taiwan
[5]Division of Pediatric Gastroenterology, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan
[6]Division of Pediatric Infectious Diseases, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan

Background / Aim : Clostridioides difficile infection (CDI) worsens outcomes in inflammatory bowel disease (IBD) patients. Fecal microbiota transplantation (FMT) is effective for recurrent or refractory CDI, but there's a lack of comparative studies on success rates between IBD and non-IBD patients. Our study aims to fill this gap by examining FMT efficacy in these distinct patient groups.
Methods : This retrospective cohort study at Chang Gung Memorial Hospital between April 2019 to February 2023. Participants underwent colonoscopy for recurrent or refractory CDI and were categorized into two groups: those with and without IBD. We compared baseline characteristics and evaluated clinical outcomes at one-month and one-year follow-ups. CDI diagnosis was confirmed by positive CD toxin A/B genes and corresponding symptoms. Donor specimens were obtained from the fecal bank at Chang Gung Microbiota Therapy Center.
Results : Analyzing 88 FMT patients (30 IBD, 58 non-IBD), those with IBD were notably younger (45.23±16.45 vs. 61.90±24.40 years, P = 0.001) and had fewer comorbidities, including lower rates of hypertension (10.0% vs. 55.2%, P < 0.001), diabetes (6.7% vs. 31.0%, P = 0.014), and cancer (3.3% vs. 31.0%, P = 0.012) compared to non-IBD. At one month, both IBD and non-IBD groups exhibited similar rates of negative CDI toxin A/B tests (83.3% vs. 63.8%, P = 0.174) and comparable FMT success rates (80.0% vs. 78.9%, P = 0.908). In the one-year follow-up, both groups showed similar rates of eradication (94.4% vs. 73.9%, P = 0.112) and FMT success (70.0% vs. 67.6%, P = 0.857). Importantly, no safety concerns were reported throughout the study period, indicating FMT efficacy with a favorable safety profile in both patient groups.
Conclusion : FMT has proven to be both safe and effective in treating recurrent or refractory CDI in individuals with and without IBD. Furthermore, it has demonstrated efficacy in alleviating inflammation associated with IBD.
Keywords : Inflammatory Bowel Disease, Fecal Microbiota Transplantation, Clostridioides Difficile Infection

Table 1: Baseline Characteristics and One-Month Post-FMT Clinical Outcomes in IBD and Non-IBD Patient Groups

	overall (%) (n = 88)	IBD (%) (n = 30)	non-IBD (%) (n = 58)	p-value
Baseline characteristics				
Age(years)	56.22±23.31	45.23±16.45	61.90±24.40	0.001
Gender, Female(%)	36(40.9)	11(36.7)	25(43.1)	0.56
BMI	21.41±4.39	20.88±4.21	21.70±4.49	0.431
IBD type				
Crohn's disease		10(33.3)		
CDAI		225.88±126.86		
Ulcerative colitis		20(66.7)		
Partial mayo score		5.60±2.78		
Endoscopic mayo score		2.50±0.99		
Underlying diseases				
Cancer	19(21.6)	1(3.3)	18(31.0)	0.002*
Diabetes mellitus	20(22.7)	2(6.7)	18(31.0)	0.014*
Hypertention	35(39.8)	3(10.0)	32(55.2)	0.001>*
Antibiotics used to treat CDI				
Mentronidazole	77(89.5)	26(89.7)	51(89.5)	1
Vancomycin	42(48.8)	10(34.5)	32(56.1)	0.057
Fidaxomin	17(19.8)	2(6.9)	15(26.3)	0.044*
FMT indication				
Refractory CDI	54(61.4)	16(53.3)	38(65.5)	0.266
Recurrent CDI	31(35.2)	13(43.3)	18(31.0)	0.252
Both	3(3.4)	1(3.3)	2(3.4)	1
Degree of bowel cleansing				
Poor	16(18.2)	2(6.7)	14(24.1)	0.077
Fair	34(38.6)	15(50.0)	19(32.8)	0.115
Good	36(40.9)	13(43.3)	23(39.7)	0.739
Excellent	2(2.3)	0(0.0)	2(3.4)	0.545
Location of transplant				
Terminal ilecum	52(59.8)	23(79.3)	29(50.0)	0.009*
Cecum	28(32.2)	5(17.2)	23(39.7)	0.035*
Others	7(8.0)	1(3.4)	6(10.3)	0.416
Additional medication				
Proton Pump Inhibitors	39(44.3)	10(33.3)	29(50.0)	0.136
HMG-CoA reductase inhibitor	9(10.2)	0(0.0)	9(15.5)	0.025*
IBD Medication				
Prednsiolone		16(53.3)		
Biologics		14(46.7)		
Immunomodulator(AZA)		6(20.0)		
5-ASA		23(76.7)		
Laboratory data at FMT				
CRP(mg/L)	21.12±39.24	20.31±42.60	21.61±37.53	0.702
Albumin(g/dL)	3.53±0.78	3.68±0.59	3.43±0.88	0.234
WBC(1000/uL)	7.94±3.44	8.04±3.21	7.89±3.58	0.845
Hemoglobin(g/dL)	11.32±2.57	11.96±2.78	10.98±2.40	0.098
Duration (First time CDI to FMT),Day	108.13±159.91	142.82±220.74	91.38±119.06	0.256
Clinical outcomes (one month)				
BMI	21.20±4.07	20.91±3.81	21.41±4.30	0.33
BMI change	0.18±1.22	0.10±1.32	0.23±1.17	0.86
IBD severity				
Partial mayo score change		-2.90±3.18		
Endoscopic mayo score change		-0.70±0.98		
Mayo score change		-3.80±3.53		
CDAI change		-79.98±58.11		
IBD Medication				
Prednsiolone		16(53.3)		
Biologics		17(56.7)		
Immunomodulator(AZA)		4(13.3)		
5-ASA		20(66.7)		
Theraputic result				
Success rate of FMT	69(79.3)	24(80)	45(78.9)	0.908
Negative CD toxin A/B	62(70.5)	25(83.3)	37(63.8)	0.174

Note. we used the Student's t test on continuous variable and Chi-square or Fisher's exact test on categorical data abbreviation. BMI= body mass index, IBD= inflammatory bowel disease, CDAI= Crohn's Disease Activity Index, WBC=white blood cell, CDI= Clostridium difficile infection, FMT= Fecal microbiota transplant, CRP= C-reactive protein.

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-011

Risk Factors of Extraintestinal Manifestations in Inflammatory Bowel Diseases; A CHASID Multicenter Study

Ju Seok Kim[1], Hee Seok Moon[1], Yunho Jung[2], Sang-Bum Kang[3], Kwangwoo Nam[4], Sunghyeok Ryou[4], Jeong Eun Shin[4], Kyu Chan Huh[5], Hoon Sup Koo[5], Dae Sung Kim[5]
[1]Internal Medicine, Chungnam National University School of Medicine, Daejeon, Korea
[2]Internal Medicine, College of Medicine, Soonchunhyang University, Cheonan, Korea
[3]Internal Medicine, Daejeon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Daejeon, Korea
[4]Internal Medicine, Dankook University Hospital, Dankook University College of Medicine, Cheonan, Korea
[5]Internal Medicine, Konyang University College of Medicine, Daejeon, Korea

Background / Aim : Extraintestinal manifestations (EIMs) are common in patients with inflammatory bowel disease (IBD) and associated with patient prognosis. However, studies about EIMs are lacking, particularly in Asia. This study aimed to evaluate the prevalence of EIMs and find risk factors of patients with EIMs.
Methods : From January 2010 to December 2021 the medical records of 1,132 patients diagnosed with IBD (493 with Crohn's disease [CD] and 639 with ulcerative colitis [UC]) were reviewed. The patients baseline characteristics and risk factors were analyzed by dividing them into two groups according to EIMs presence.
Results : The prevalence of EIMs in all patients with IBD was 9.5% (n=107), of which CD and UC prevalence were 9.7% (n=48) and 9.2% (n=59), respectively. The articular (4.9%), cutaneous (3.8%), ocular (0.6%), and hepatobiliary types (0.2%) of EIMs were observed. Two or more EIMs occurred in only 0.9% of all IBD patients. Multivariate analysis revealed that the risk factors for the occurrence of EIMs were a follow-up period ≥10 years (odds ratio [OR], 2.867; 95% confidence interval [CI], 1.025–4.112; P=0.038) and treatment with biologics (OR, 1.592; 95% CI, 1.041–3.104; P=0.045).
Conclusion : The EIMs' prevalence in patients with IBD was 9.5%, and the articular type was the most common, with EIMs occurring more frequently in patients with CD patients. Patients who have been treated for IBD for more than 10 years or biologics user more carefully monitored as they are at high risk for EIMs.
Keywords : Extraintestinal Manifestations, Inflammatory Bowel Disease, Incidence

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-012

Multimodal Prehabilitation is associated with Improved Surgical Outcomes in Inflammatory Bowel Disease (IBD)

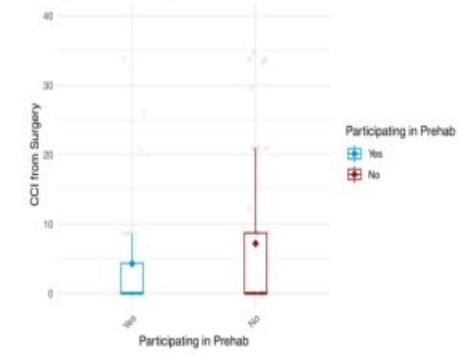
Rebecca Wernick, Kelly Issokson, Andrea Banty, Viankail Cedillo-Castellan, Colleen Gwarnicki, Theodore Solomon, Stacey Collins, Erin Feldman, Christine Scarcello, Lilly Martirosyan, Brittany Slater-Washington, Andrea Wise, Pamela Roberts, Melissa Hampton, Yosef Nasseri, Karen Zaghiyan, Phillip Fleshner, Shervin Rabizadeh, Gil Melmed
Gastroenterology, Cedars-Sinai Medical Center, Los Angeles, United States

Background / Aim : Multimodal prehabilitation (MPH) improves outcomes after cancer surgery. However, the effects of MPH for IBD surgery are not established. We aimed to assess surgical outcomes among IBD patients exposed to MPH relative to no MPH.
Methods : We conducted a case-controlled study of MPH (cases) vs standard-of-care (SOC, controls) in IBD patients who underwent major abdominal surgery (May-October 2023) at a tertiary center. Cases participated in a 10-week MPH program with medical, psychosocial, nutrition counseling (with preoperative carbohydrate loading (CL) and perioperative immunonutrition (IN)) and physical therapy beginning 4 weeks prior to surgery; SOC included written preoperative surgical instructions without MPH. Baseline assessments for MPH included Patient-reported Outcomes Measurement Information System (PROMIS) Anxiety, Depression, Pain Interference, Global Mental and Physical Health, General Health, Social Activities scales, 6-minute walk, timed get-up-and-go, fall risk status. We assessed postoperative complications (defined by comprehensive complications index (CCI)), post-operative length of stay (LOS), post-operative opioids (daily morphine milligram equivalents (MME)), reoperation rate, 30-day readmission, and adherence to CL and PI. Statistical tests included linear and logistic regression, Mann-Whitney U test, Chi-Square test, and Fisher's exact test.
Results : 77 patients were included, including 29 PH (cases) and 48 SOC (controls). Surgeries included ileocecal resection, colectomy with ileostomy, ileal pouch-anal anastomosis, and small bowel resection. Postoperative complications and re-operation rates were significantly lower among MPH relative to SOC (Table). Numerically, opioid use and LOS were lower among MPH vs SOC, while readmissions were higher. Among MPH, lower complication rates were significantly associated with better baseline PROMIS Anxiety, Physical Health, and General Health scores, preoperative 6-minute walk distance, get-up-and-go times, absence of fall risk, and adherence to CL. Prior surgery, BMI, and IN were not associated with outcomes.
Conclusion : MPH may improve surgical outcomes in IBD. Larger, prospective controlled studies may further clarify the impact of MPH on surgical outcomes for IBD.
Keywords : IBD, Surgery, Multidisciplinary, Complications, Crohn's Disease

	Prehabilitation N = 29	Standard of Care N = 48	p-value
Age (median years)	45	39.5	
Female	13/29 (45%)	30/48 (63%)	
Prior abdominal surgery	15/29 (52%)	28/48 (58%)	
Preoperative physical health assessments			
Median distance in 6-min walk (meters)	420	-	
IQR distance in 6-min walk (meters)	97.86	-	
Median time get up and go test (seconds) (IQR)	7.74 (2.60)	-	
Fall risk rate	1/29 (3%)	-	
Preoperative mental health assessments			
Median PROMIS anxiety score	62	-	
Median PROMIS global mental health score	3	-	
Median PROMIS global physical health score	2	-	
Median PROMIS general health Score	2	-	
Median PROMIS social activities score	3	-	
Median PROMIS depression T-score	51	-	
Median PROMIS pain interference score	0	-	
Nutrition predictors			
Median BMI (IQR) at time of surgery	21.7 (4.07)	20.3 (4.23)	
Participation in carbohydrate loading (CL)	23/29 (79%)	-	
Median number of CL ONS completed	3	-	
Participation in immunonutrition (IN)	28/29 (97%)	-	
Median number of IN ONS completed	10	-	
Outcomes			
Mean CCI score	6.87	9.09	0.02
Median CCI score	0	0	0.14
IQR CCI score	8.70	9.57	
Mean daily morphine mg equivalents	24.13	27.67	0.07
Median morphine mg equivalents (IQR)	15.08 (19.75)	21.75 (28.44)	0.05
Mean length of stay in days	4.66	5.02	0.11
Median length of stay in days (IQR)	3 (2)	3.5 (5)	0.26
Readmission within 30 days rate	8/29 (27.58%)	8/48 (16.66%)	0.14
Re-operation rate	2/29 (6.89%)	6/48 (12.5%)	<0.0001

CCI: Comprehensive Complication Index
IQR: Interquartile range
ONS: oral nutrition supplement
BMI: Body mass index
CL: Carbohydrate loading
IN: Immunonutrition
PROMIS: Patient-reported outcomes measurement information system

A)



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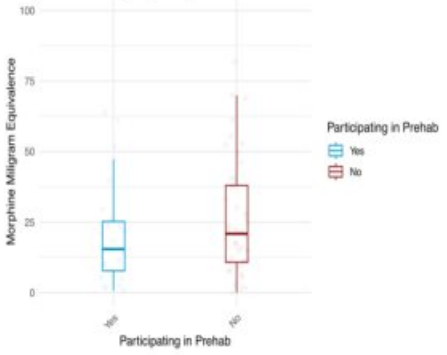

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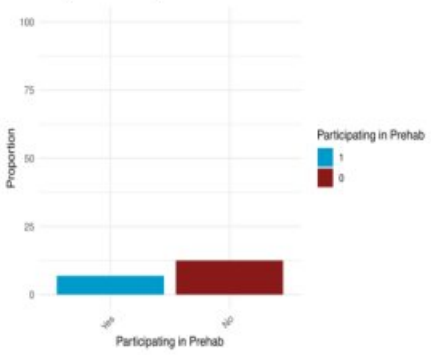

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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-013

Clinical Efficacy and Durability of Subcutaneous Infliximab in Patients with Moderate-to-severe Inflammatory Bowel Disease: A Real-world Multicenter Prospective Cohort Study in Korea

Kyuwon Kim[1], Sung Noh Hong[2], Sang-Bum Kang[3], Kang-Moon Lee[4], Ja Seol Koo[5], Yunho Jung[6], Beom Jae Lee[7], Hyuk Yoon[8], Hyung Wook Kim[9], Yun Jeong Lim[10], Hyun Seok Lee[11], Yoo Jin Lee[12], Jun Lee[13], Chang Kyun Lee[14], Jung Min Moon[15], Seung Yong Shin[15], Jeongkuk Seo[1], Chang Hwan Choi[1]

[1]Gastroenterology, Chung-Ang University Hospital, Seoul, Korea
[2]Gastroenterology, Samsung Medical Center, Seoul, Korea
[3]Gastroenterology, Daejeon St. Mary's Hospital, The Catholic University of Korea, Daejeon, Korea
[4]Gastroenterology, St. Vincent's Hospital, College of Medicine, The Catholic University of Korea, Suwon, Korea
[5]Gastroenterology, Korea University College of Medicine, Ansan, Korea
[6]Gastroenterology, Soonchunhyang University College of Medicine, Cheonan, Korea
[7]Gastroenterology, Korea University Guro Hospital, Korea University College of Medicine, Seoul, Korea
[8]Gastroenterology, Seoul National University Bundang Hospital, Seongnam, Korea
[9]Gastroenterology, Pusan National University Yangsan Hospital, Pusan National University College of Medicine, Yangsan, Korea
[10]Gastroenterology, Dongguk University Ilsan Hospital, Goyang, Korea
[11]Gastroenterology, Kyungpook National University School of Medicine, Daegu, Korea
[12]Gastroenterology, Keimyung University School of Medicine, Daegu, Korea
[13]Gastroenterology, Chosun University College of Medicine, Gwangju, Korea
[14]Gastroenterology, Kyung Hee University School of Medicine, Seoul, Korea
[15]Gastroenterology, Chung-Ang University Gwangmyeong Hospital, Gwangmyeong

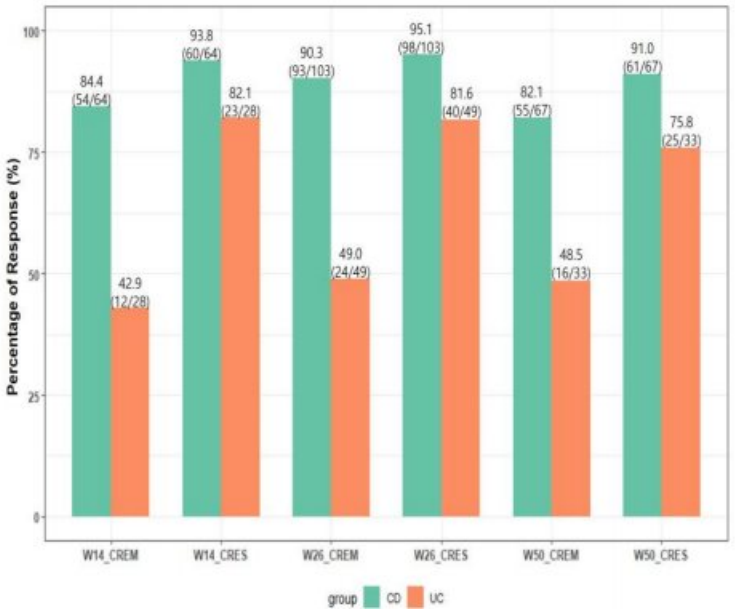
Background / Aim : We aimed to investigate real-world efficacy and durability of subcutaneous infliximab (IFX-SC) over a one-year period in a Korean patient cohort with ulcerative colitis (UC) or Crohn's disease (CD).
Methods : From September 2021 to November 2023, a prospective study enrolled patients with moderate-to-severe UC or CD who were biologic-naïve or naïve only for infliximab (IFX) from 39 tertiary centers in Korea. After Week (W) 0-W2 intravenous IFX induction, IFX-SC was administered biweekly from W6. Clinical remission (CREM) and response (CRES) were assessed at W14, 26, and 50, along with one-year drug survival. For CD patients, CREM was defined as a Crohn's disease activity index (CDAI) <150 points, and CRES as a reduction in CDAI ≥70 points from baseline. For UC patients, CREM was defined as a partial Mayo score (pMS) of ≤1 point with no individual subscore >1 point. CRES was defined as a reduction from baseline in pMS of ≥2 points and ≥30%, along with either a reduction in rectal bleeding subscore (RBS) of ≥1 point or an absolute RBS of ≤1 point. Drug survival was based on time from W0 to the last date of IFX-SC administration.
Results : Of 220 patients (68 with UC, 152 with CD), about 80% were biologic-naïve (Table 1). CD patients had significantly higher response rates than UC at various time points: W14 CREM (42.9% vs. 84.4%, p<0.001), W26 CREM (90.3% vs. 49.0%, p<0.001), W26 CRES (95.1% vs. 81.6%, p=0.017), and W50 CREM (82.1% vs. 48.5%, p=0.001) (Figure 1A). Additionally, CD patients demonstrated a significantly higher one-year drug survival rate (96.4%, 95% CI 0.934–0.996) compared to UC (88.2%,95% CI 0.803–0.968) (p=0.02) (Figure 1B). Throughout the study, 2.7% (6/220) experienced serious adverse events.
Conclusion : IFX-SC appears to be an effective therapeutic option for patients with moderate-to-severe UC or CD in real-world settings.
Keywords : Subcutaneous Infliximab, Clinical Outcome, Drug Survival, Inflammatory Bowel Disease

Table 1. Baseline demographics of patients with inflammatory bowel disease

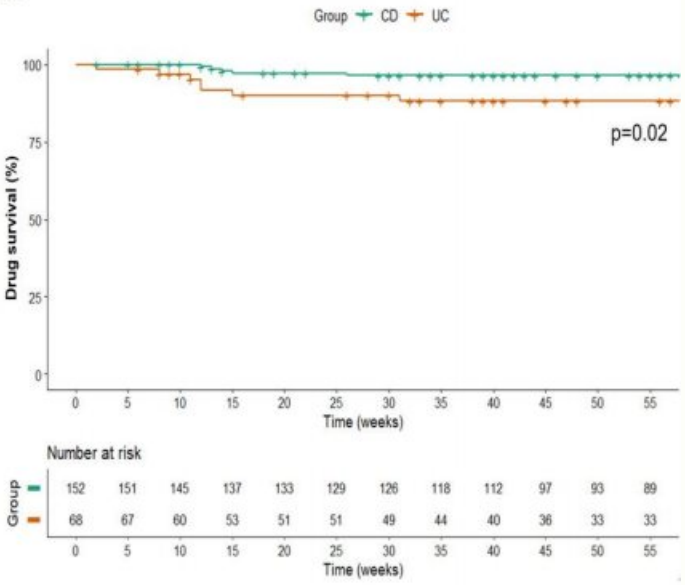
	UC (n=68)	CD (n=152)
Age, yr, mean (SD)	41.3 (15.4)	33.9 (12.7)
Male, n (%)	55 (80.9)	109 (71.7)
Smoking history, n (%)		
Never smoker	41 (60.3)	112 (74.2)
Ex-smoker	21 (30.9)	23 (15.2)
Current smoker	6 (8.8)	16 (10.6)
BMI, kg/m^2, mean (SD)	23.3 (3.5)	21.9 (3.6)
Disease duration, yr, mean (IQR)	4.6 (0–6.5)	4.4 (0–7.0)
Previous bowel resection, n (%)	2 (3.0)	31 (20.4)
IBD phenotype		
Disease extent, n (%)		
Proctitis	10 (14.7)	
Left-sided colitis	30 (44.1)	
Extensive colitis	28 (41.2)	
Location, n (%)		
Ileal		55 (36.2)
Colonic		15 (9.9)
Ileocolonic		82 (53.9)
Behavior, n (%)		
Non-stricturing/non-penetrating		78 (51.7)
Stricturing		49 (32.5)
Penetrating		24 (15.9)
Perianal disease modifier, n (%)		40 (26.5)
Past medication history, n (%)		
5-Aminosalicylic acid	57 (83.8)	112 (73.7)
Immunomodulator	50 (73.5)	130 (85.5)
Past exposure to biologics, n (%)		
Biologic-naïve	60 (88.2)	126 (82.9)
Biologic-experienced but naïve to IFX	8 (11.8)	26 (17.1)
Adalimumab	0 (0.0)	6 (25.0)
Vedolizumab	6 (75.0)	8 (33.3)
Ustekinumab	1 (12.5)	13 (54.2)
Golimumab	1 (12.5)	0 (0.0)
Baseline Partial MS, mean (SD)	6.9 (1.6)	
Baseline CDAI, mean (SD)		262.3 (58.9)

UC, ulcerative colitis; CD, Crohn's disease; yr, year; SD, standard deviation; n, number; BMI, body mass index; IQR, interquartile range; IBD, inflammatory bowel disease; MS, Mayo score; CDAI, Crohn's disease activity index; IFX, infliximab

1A


Percentage of Response (%)
100
75
50
25
0
84.4 (54/64)
42.9 (12/28)
93.8 (60/64)
82.1 (23/28)
90.3 (93/103)
49.0 (24/49)
95.1 (98/103)
81.6 (40/49)
82.1 (55/67)
48.5 (16/33)
91.0 (61/67)
75.8 (25/33)
W14_CREM
W14_CRES
W26_CREM
W26_CRES
W50_CREM
W50_CRES
group CD UC

1B


Group CD UC
Drug survival (%)
100
75
50
25
0
p=0.02
0 5 10 15 20 25 30 35 40 45 50 55
Time (weeks)
Number at risk
Group
152 151 145 137 133 129 126 118 112 97 93 89
68 67 60 53 51 51 49 44 40 36 33 33
0 5 10 15 20 25 30 35 40 45 50 55
Time (weeks)

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-014

Associations between Factors at Diagnosis in Pediatric Patients with Crohn's Disease: Results from a Multicenter, Registry-based, Inception Cohort Study

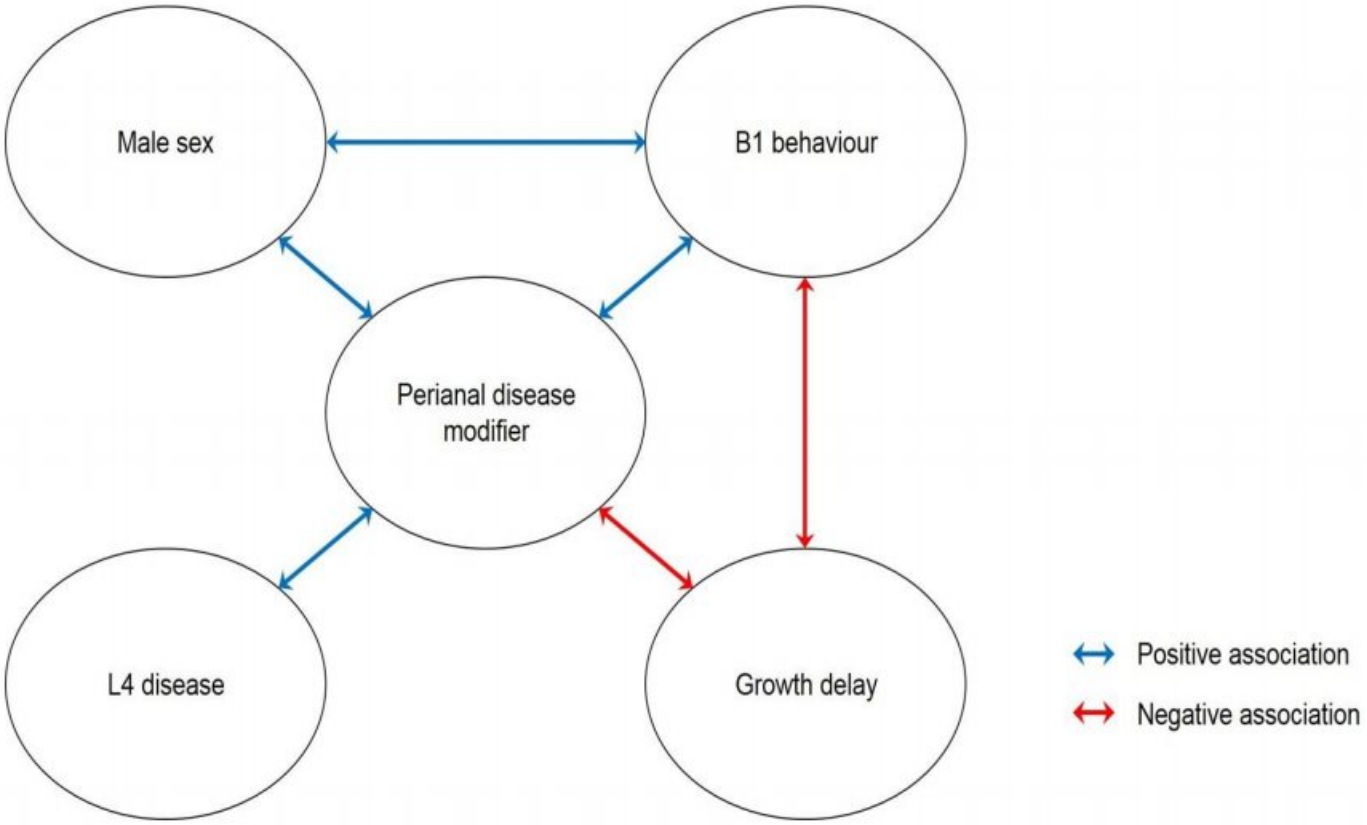
Ben Kang[1], Seak Hee Oh[2], Eell Ryoo[3], Jin Soo Moon[4], Minsoo Shin[5], Yu Bin Kim[6], Yon Ho Choe[7], Yeoun Joo Lee[8], Hye Ran Yang[9], Hong Koh[10], Yoo Min Lee[11], Soon Chul Kim[12], Ji-Sook Park[13], So Yoon Choi[14], Tae Hyeong Kim[15], Ju Young Chang[16], Yoon Lee[17], Su Jin Jeong[18], Jung Ok Shim[19]

[1]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Pediatrics, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea
[3]Pediatrics, Gachon University Gil Medical Center, Incheon, Korea
[4]Pediatrics, Seoul National University College of Medicine, Seoul, Korea
[5]Pediatrics, Korea University Medical Center Ansan Hospital, Ansan, Korea
[6]Pediatrics, Ajou University School of Medicine, Suwon, Korea
[7]Pediatrics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea
[8]Pediatrics, Pusan National University Children's Hospital, Pusan National University School of Medicine, Yangsan, Korea
[9]Pediatrics, Seoul National University Bundang Hospital, Seongnam, Korea
[10]Pediatrics, Yonsei University College of Medicine, Severance Children's Hospital, Seoul, Korea
[11]Pediatrics, Soonchunhyang University Bucheon Hospital, Soonchunhyang University College of Medicine, Bucheon, Korea
[12]Pediatrics, Jeonbuk National University Hospital, Jeonbuk National University Medical School, Jeonju, Korea
[13]Pediatrics, Gyeongsang National University College of Medicine, Jinju, Korea
[14]Pediatrics, Kosin University Gospel Hospital, Kosin University College of Medicine, Busan, Korea
[15]Pediatrics, Kyung Hee University Hospital at Gangdong, Seoul, Korea
[16]Pediatrics, Seoul Metropolitan Government-Seoul National University Boramae Medical Center, Seoul, Korea
[17]Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea
[18]Pediatrics, CHA Bundang Medical Center, CHA University School of Medicine, Seongnam, Korea
[19]Pediatrics, Korea University College of Medicine, Korea University Guro Hospital, Seoul, Korea

Background / Aim : The 5-year analyses of the EUROKIDS registry was the first study to prospectively evaluate patients who had undergone a complete diagnostic workup according to the revised Porto criteria. This study showed that disease phenotypes in pediatric Crohn's disease (CD) differ according to age at disease onset. We aimed to investigate the associations between factors at diagnosis in pediatric patients with Crohn's disease (CD).
Methods : This was a multicenter, registry-based, inception cohort study conducted in Korea. Pediatric patients newly diagnosed with CD <19 years were included in this study. Baseline clinicodemographics, results from laboratory, endoscopic, histologic exams, and Paris classification factors were collected, and associations between factors were investigated.
Results : A total 699 patients with CD were included. The median age at diagnosis was 14.3 years (IQR 12.3–15.9), and male-to-female ratio was 2.66:1. Perianal disease modifiers comprised 50.6% (354/699) of the patients. Females had a higher proportion of B2/B3 behaviour (14.4% vs. 21.4%, P=0.029), higher Paediatric Crohn's Disease Activity Index scores (median 32.5 vs. 40, P<0.001), higher CRP (median 2.96 vs. 1.88 mg/dL, P=0.017), higher Simple Endoscopic Score for Crohn's Disease scores (median 16 vs. 13, P=0.01), and more frequently detected non-caseating granulomas in the lower gastrointestinal tract (41.3% vs. 30.1%, P=0.008). Perianal disease modifier was positively associated with males (81.1% vs. 64.1%, P<0.001), upper gastrointestinal tract involvement (85.3% vs. 75.7%, P=0.002), B1 behaviour (89.5% vs. 79.7%, P < 0.001), and negatively associated with growth delay (13.8% vs. 23.2%, P=0.002) (Table 5). Albumin was higher (median 4.0 vs. 3.8 g/dL, P=0.006), and CRP was lower (median 1.73 vs. 3.07 mg/dL, P<0.001) in patients with perianal disease modifiers.

Conclusion : At pediatric Crohn's disease diagnosis, female patients present with a more severe phenotype, while patients with perianal disease modifiers present with a less severe phenotype.

Keywords : Crohn's Disease, Korea, Sex, Perianal Disease Modifier, Phenotype



[Poster Exhibition – Inflammatory Bowel Disease]

PE1-015

Persistence Comparison of Ustekinumab and Anti-TNF Agents in Vedolizumab-Experienced IBD Patients: A Retrospective Cohort Study

Horng-Yih Chiu[1], Puo-Hsien Le[2,3], Pai-Jui Yeh[4], Chia-Jung Kuo[2,3], Ming-Wei Lai[3,4], Ren-Chin Wu[5], Chien-Ming Chen[6], Cheng-Tang Chiu[2,3], Cheng-Hsun Chiu[7], Ming-Yao Su[3,8], Yu-Bin Pan[9]

[1]School of Medicine, Chang Gung University, Taoyuan, Taiwan
[2]Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[3]Taiwan Association of the Study of Small Intestinal Disease, Taoyuan, Taiwan
[4]Division of Pediatric Gastroenterology, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[5]Anatomic Pathology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[6]Medical Imaging and Interventions, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[7]Division of Pediatric Infectious Diseases, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[8]Gastroenterology and Hepatology, New Taipei City Municipal Tucheng Hospital, New Taipei City, Taiwan
[9]Biostatistical Section, Clinical Trial Center, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

Background / Aim : As the range of biologics for inflammatory bowel disease (IBD) expands, choosing the right treatment sequence is crucial. Vedolizumab (VDZ), a gut-selective α4β7-integrin inhibitor, has proven effective and safe in IBD treatment. Yet, comparative studies on efficacy and safety between ustekinumab (UST) and anti-tumor necrosis factor (anti-TNF) agents in VDZ-experienced IBD patients are scarce.
Methods : This retrospective study at Chang Gung Memorial Hospital, a leading medical center in Taiwan, included VDZ-experienced IBD patients from May 2019 to September 2023. Patients were excluded if they hadn't received subsequent UST or anti-TNF treatment (adalimumab, infliximab). We divided them into UST and anti-TNF groups, comparing baseline characteristics, treatment courses, safety profiles, and 52-week treatment persistence using Cox regression and Kaplan-Meier analysis.
Results : The baseline characteristics are shown in Table 1. Out of 110 participants (40 with ulcerative colitis, 70 with Crohn's disease), demographic factors were similar across groups. Secondary loss of response was the main reason for VDZ discontinuation. The anti-TNF group showed higher, yet not statistically significant, rates of IBD-related admission and opportunistic infections. In Cox regression, UST significantly outperformed anti-TNF in 52-week persistence in Crohn's disease patients (HR: 10.75, P = 0.025). This was echoed in Kaplan-Meier analysis (Figure 1). In ulcerative colitis patients, higher persistence with UST was observed but was not statistically significant (HR: 2.25, 95% CI: 0.63-8, P = 0.211). UST also had a higher steroid-free clinical remission rate at 52th week (81% vs. 73.7%). The primary discontinuation reason for both treatments was secondary loss of response. UST required more dose escalations, but safety profiles of both treatments were comparable.
Conclusion : UST shows superior one-year persistence over anti-TNF in VDZ-experienced Crohn's disease patients, although with a higher need for dose escalation.
Keywords : Inflammatory Bowel Disease, Persistence, Vedolizumab, Anti-TNF, Ustekinumab

Table 1. Baseline characteristics of patients with previous exposure to vedolizumab

Characteristics	Overall (n = 110)	Anti-TNF (n = 51)	Ustekinumab (n = 59)	P-value
Age	47.5±17.1	47.8±17.0	47.2±17.3	0.846
Sex, n(%)				
Male	75 (68.2)	37 (72.5)	38 (64.4)	0.361
BMI	22.8±7.1	24.3±9.6	21.4±3.2	0.059
Diagnosis, n(%)				
UC	40 (36.4)	24 (47.1)	16 (27.1)	0.030*
CD	70 (63.6)	27 (52.9)	43 (72.9)	
Dose escalation, n (%)	17 (15.5)	4 (7.8)	13 (22.0)	0.040*
Concomitant steroid use				
Steroid free at 52 weeks (%)	77.5	73.7	81.0	0.583
Reasons of Vedolizumab discontinuation, n (%)				
Reimbursement restriction in Taiwan (52 weeks)	26 (23.6)	7 (13.7)	19 (32.2)	0.023*
Side effects	2 (1.8)	2 (3.9)	0	0.125
Primary non-responder	24 (21.8)	14 (27.5)	10 (16.9)	0.184
Secondary non-responder	58 (52.7)	28 (54.9)	30 (50.8)	0.671
Reasons of discontinuation of the current biologic, n (%)				
Side effects	1 (4)	1 (4.8)	0	0.656
Primary non-responder	1 (4)	1 (4.8)	0	0.656
Secondary non-responder	19 (76)	15 (71.4)	4 (100)	0.220
Personal reasons	1 (4)	1 (4.8)	0	0.656
Others	3 (12)	3 (14.3)	0	0.420
IBD related hospitalization, n (%)		14 (31.8)	7 (17.1)	0.115
Opportunistic infection, n (%)				
CMV colitis		3 (6.8)	0	0.089
C. difficile colitis		5 (11.4)	2 (4.9)	0.277

Continuous data were subjected to t-test and are presented as mean ± standard deviation. Categorical data underwent analysis using Pearson's Chi Square test and are presented as absolute numbers (percentages). Abbreviations: Anti-TNF, anti-tumor necrosis factor; BMI, Body Mass Index; CD, Crohn's disease; C. difficile, clostridium difficile; CMV, cytomegalovirus; IBD, inflammatory bowel disease; UC, ulcerative colitis. *p<0.05.

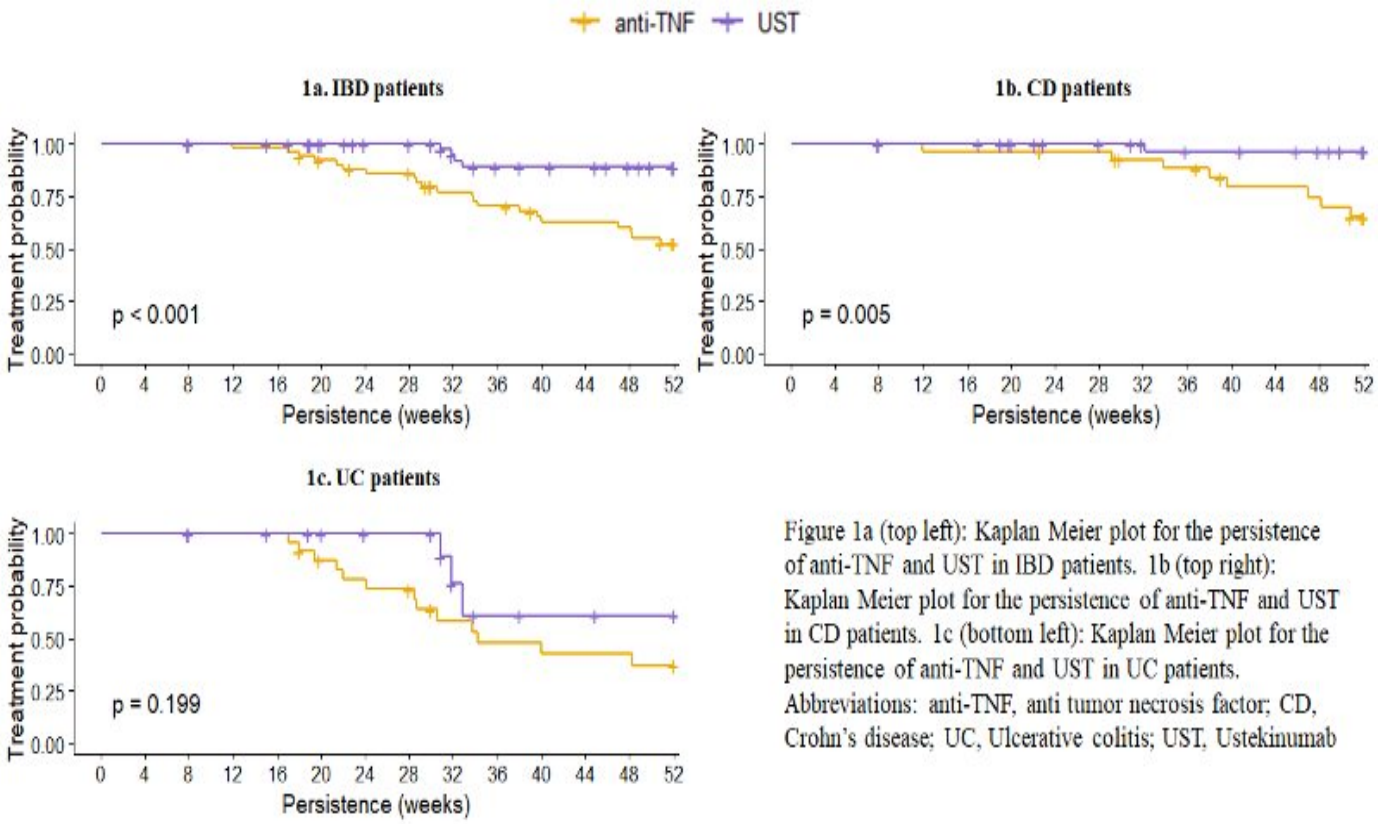


Figure 1a (top left): Kaplan Meier plot for the persistence of anti-TNF and UST in IBD patients. 1b (top right): Kaplan Meier plot for the persistence of anti-TNF and UST in CD patients. 1c (bottom left): Kaplan Meier plot for the persistence of anti-TNF and UST in UC patients.
Abbreviations: anti-TNF, anti tumor necrosis factor; CD, Crohn's disease; UC, Ulcerative colitis; UST, Ustekinumab

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-016

Pathogenic Mechanism of XIAP BIR2 Mutant Proteins in XIAP Deficiency

Juhwan Lee[2], Inki Kim[1], Seak Hee Oh[1], Iksoo Chang[2]
[1]Pediatrics, Seoul Asan Medical Center, Seoul, Korea
[2]Creative Research Initiatives Center for Proteome Biophysics, DGIST, Daegu, Korea

Background / Aim : X-linked inhibitor of apoptosis protein (XIAP) deficiency (OMIM #300635), caused by mutations in the XIAP gene at Xq25, is associated with a macrophage activation-like syndrome known as hemophagocytic lymphohistiocytosis and refractory Crohn's disease, for which hematopoietic stem cell transplantation is the only therapeutic option. The XIAP protein plays a critical role in the pro-inflammatory response via the NOD signaling pathways. In this process, the BIR2 domain of the XIAP protein recruits and ubiquitinates the RIP2 protein by acting as a potent E3 ubiquitin-protein ligase. There have been some efforts to manipulate mutant XIAP signaling to restore NOD2 signaling. However, the detailed mechanism of XIAP BIR2 mutant proteins has not yet been revealed. In this study, we utilized a digital approach to comprehensively acquire atom-level structural and thermodynamic insight into mutant BIR2 and then conducted in vitro experimental validation.
Methods : We selected representative XIAP BIR2 mutant proteins that exhibited missense pathogenic variants. Our digital approach for predicting distinct biochemical properties included supercomputing molecular dynamics simulations and multiplex computational assessments for variants. Predictions were subsequently tested through in vitro experimental validations, including conventional immunoprecipitation and fluorescence cross-correlation spectroscopy on the 293T cell lines.
Results : Co-immunoprecipitation and fluorescence cross-correlation spectroscopy showed that wild-type XIAP and RIP2 preferentially interacted in live cells, whereas all non-synonymous PV XIAPs failed to interact properly with RIP2. Structural analysis showed that various structural changes by mutations, such as hydrophobic core collapse, Zn-finger loss, and spatial rearrangement, destabilized the two loop structures (174–182 and 205–215) that critically interact with RIP2. Subsequently, it caused a failure of RIP2 ubiquitination and loss of protein deficiency by the auto-ubiquitination of all XIAP mutants.
Conclusion : These findings could enhance our understanding of the role of XIAP mutations in XIAP-deficient inflammatory bowel disease and may benefit new-drug-development strategies
Keywords : VEO-IBD, XIAP Deficiency, Pediatrics

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-017

Superior Treatment Persistence with Ustekinumab in Biologic-Experienced Crohn's Disease: Real-world Registry Data from the Persistence Australian National IBD Cohort (PANIC) Study

John Chetwood[1,2], Yanna Ko[1,2], Aviv Pudipeddi[1,2], Viraj Kariyawasam[3,4], Sudarshan Paramsothy[1,2,5], Rupert Leong[1,2,5]

[1]Department of Gastroenterology, Concord Repatriation General Hospital, Sydney, Australia
[2]School of Medicine, University of Sydney, Sydney, Australia
[3]Department of Gastroenterology, Blacktown and Mount Druitt Hospital, Sydney, Australia
[4]School of Medicine, Western Sydney University, Sydney, Australia
[5]Department of Gastroenterology, Macquarie University Hospital, Sydney, Australia

Background / Aim : Comparative effectiveness research provides data on the relative benefits and risks between treatments. In Crohn's disease, however, there are few head-to-head studies comparing advanced therapies and none with long-term follow-up. Real-world effectiveness, defined by treatment persistence, obtained from prospective population-based patient cohorts may help determine the best sequencing and positioning of biological agents.

Methods : We analysed the prospectively-collected population-based Australian national Pharmaceutical Benefits Scheme dispensing data registry (2005-2019) for CD. There is no mandated biological agent prescribing order and all citizens and permanent residents are eligible for treatment irrespective of insurance status. Propensity score matching was performed to reduce selection bias.

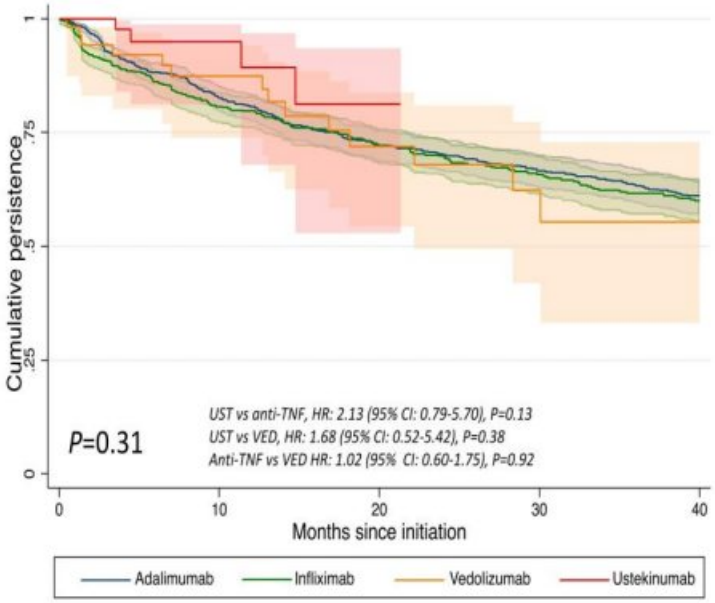
Results : There were 2,029 lines of therapy in 1,446 patients (median age 43-years, IQR: 34-58, 44% males) over the 15-year period with 5,618 patient-years of follow-up. Per line of therapy, 915/2,029 (45.1%) patients used adalimumab, 722/2,029 (35.6%) used infliximab, 155/2,029 (7.6%) used vedolizumab, and 237/2,029 (11.7%) used ustekinumab. When used in biological agent-naïve patients, there was no difference in persistence between any agent (P>0.05). Used after first-line in biological agent-experienced CD, ustekinumab had significantly better persistence than non-ustekinumab biological agents (P=0.0018), versus both anti-tumour necrosis factor (TNF) alpha therapy (P=0.006) or vedolizumab (P<0.001). Ustekinumab persistence was unaffected by prior biological agent-exposure (P=0.51). After anti-TNF use, ustekinumab had superior persistence to an alternative anti-TNF agent (P=0.033) and to vedolizumab (P=0.026). Using a propensity score matched analysis adjusted for age, immunomodulator use and bio-exposed status, ustekinumab had superior persistence to anti-TNF (P=0.01). Multivariate predictors of worse persistence were use of a non-ustekinumab biological agent (adjusted hazard ratios (aHR): 2.10, P<0.001), and bio-experienced status (aHR: 1.23, P<0.001).

Conclusion : This large national prospective database with non-hierarchical prescribing of biological agents did not identify superior persistence of any agent in bio-naïve CD. However, for bio-experienced CD patients, persistence was greater with ustekinumab.

Keywords : Inflammatory Bowel Disease, Crohn's Disease, Biological Agents, Persistence, Medication Safety

Figure 1: Biological agent persistence in bio-naïve Crohn's disease

1a: Persistence by individual agent



1b: Ustekinumab vs pooled non-ustekinumab biological agents

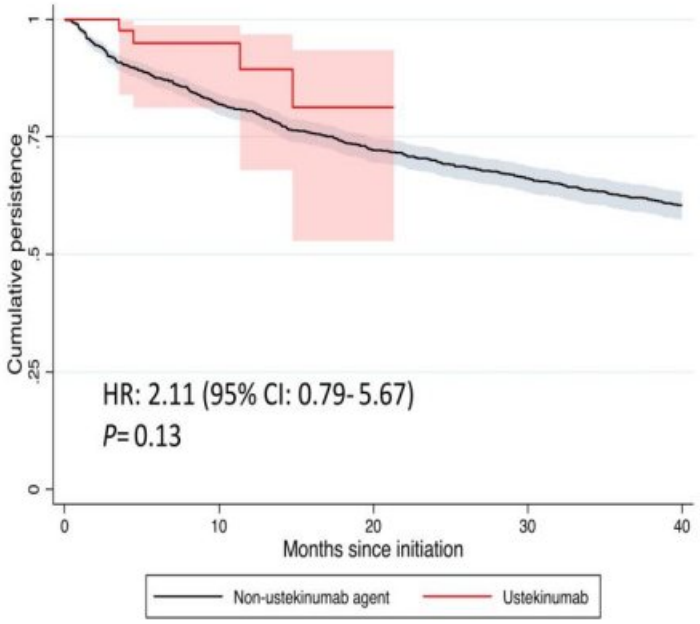
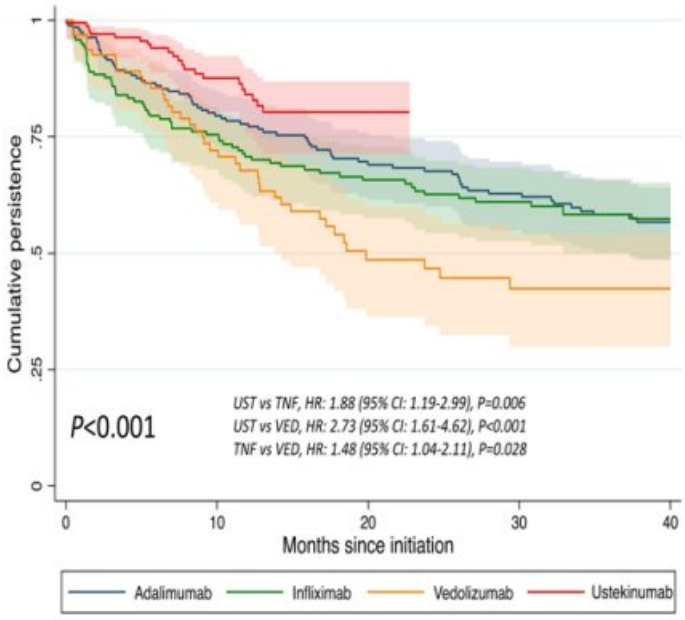


Figure 2: Biological agent persistence in bio-exposed Crohn's disease

2a: Persistence by individual agent



2b: Ustekinumab vs pooled non-ustekinumab biological agents

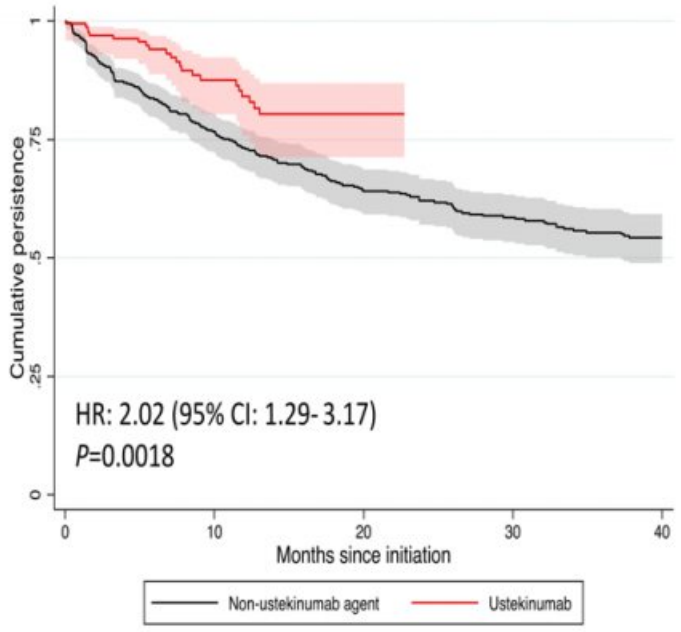
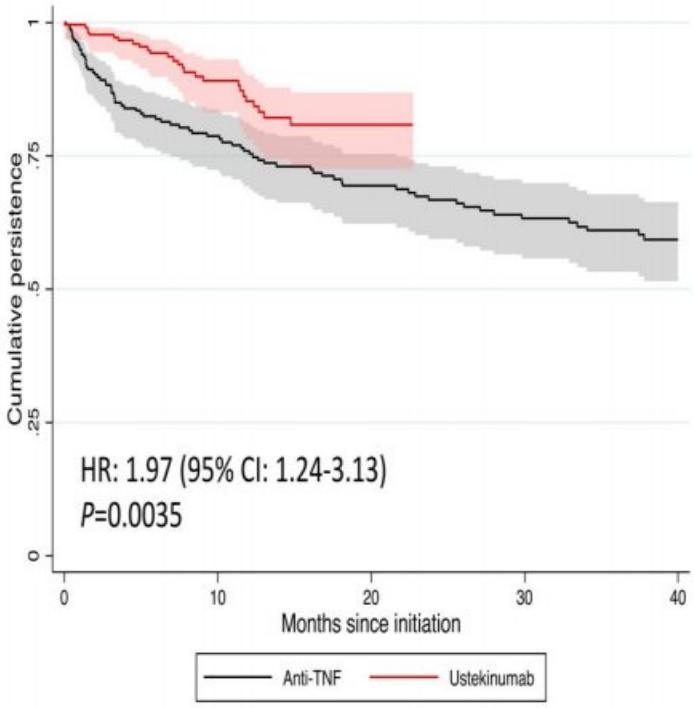
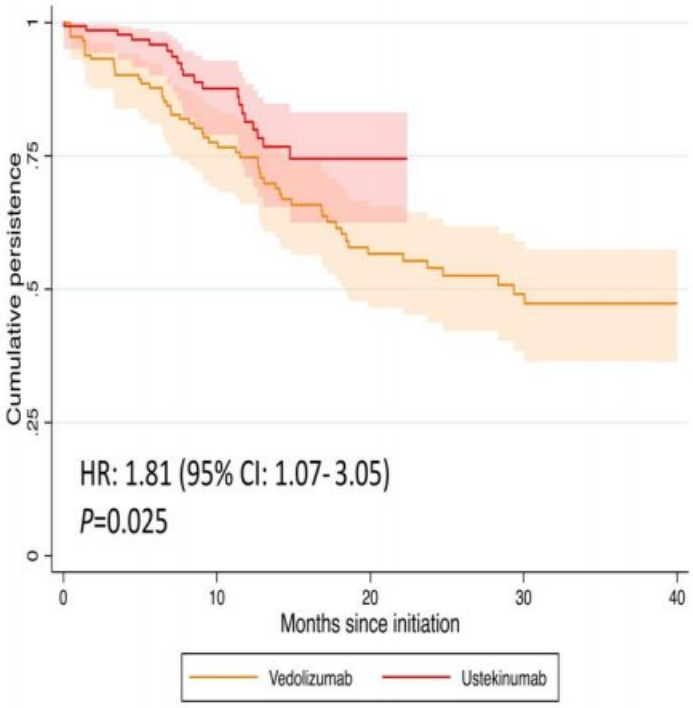


Figure 3: Persistence via propensity score matched analysis in Crohn's disease

3a: Ustekinumab vs anti-TNF



3b: Ustekinumab vs vedolizumab



[Poster Exhibition – Inflammatory Bowel Disease]

PE1-018

Forecasting the Future Prevalence of Inflammatory Bowel Disease in Korea through 2048: An Epidemiologic Study Employing Autoregressive Integrated Moving Average Models

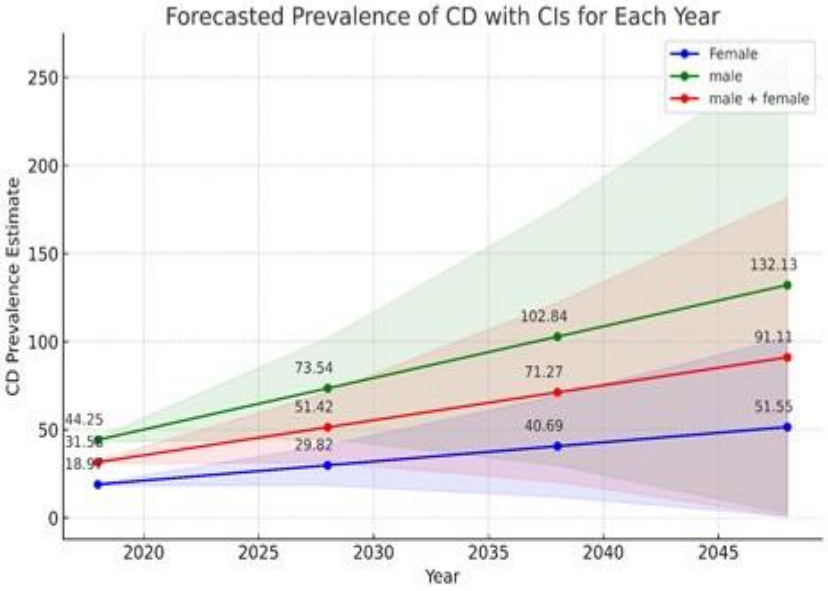
Ji Eun Kim, Shin Ju Oh, Chang Kyun Lee
Gastroenterology, Kyung Hee University Hospital, Seoul, Korea

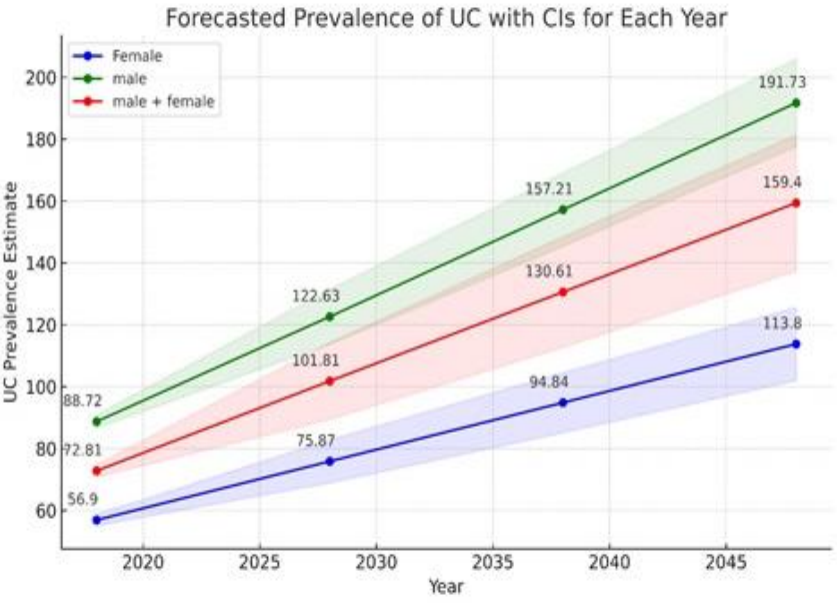
Background / Aim : The global escalation of Inflammatory Bowel Disease (IBD) has precipitated an increased burden of disease and economic impact, particularly accentuated within the Asian context. The primary objective of this study is to predict the future prevalence trajectory of IBD in Korea and elucidate the pattern of its evolution.
Methods : We analyzed data from the Korean National Health Insurance Service to identify patients with IBD from 2004 to 2017 using a validated diagnostic algorithm. With the autoregressive integrated moving average method, we predicted the number of patients and prevalence of IBD from 2018 to 2048. A generalized linear model (GLM) was also employed to identify factors contributing to the observed trend in IBD prevalence.
Results : The validation of our prediction model demonstrated an acceptable range of error for IBD prevalence, with a 2.45% error rate and a mean absolute difference of 2.61. We foresee a sustained average annual increase of 4.51 IBD cases per 100,000, culminating in a prevalence of 239.73 per 100,000 by 2048. The forecasted Average Annual Percent Change is 6.17% for males, which is higher than 2.75% for females over next 30 years. With these results, the future epidemiological status of Korean IBD population would be in an accelerating incidence stage. The GLM analysis linked UC prevalence increased mainly to the 20-39 age group and CD growth to age groups 20-39 and 40-59 over years (all interaction p-values <0.05).
Conclusion : Our study forecasts a notable increase in the prevalence of IBD in Korea by 2048, with males and the age groups 20-39 and 40-59 being the most affected demographics. These findings underscore the potential for early diagnosis and intervention in these age cohorts to mitigate the future disease burden.
Keywords : : Inflammatory Bowel Disease, Prevalence Prediction, Korean National Health Insurance Service, Autoregressive Integrated Moving Average, Healthcare Burden

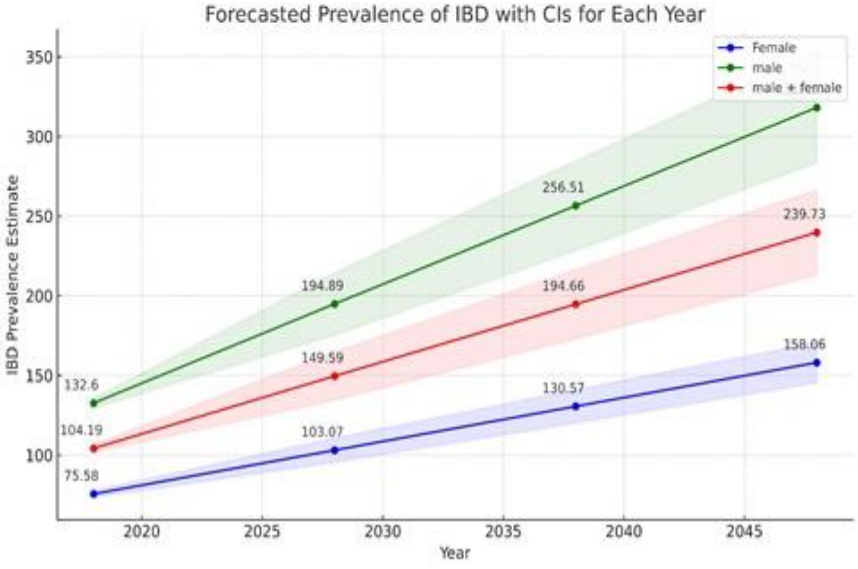
Table. Generalized Linear Model Analyses to Identify Factors Influencing the Progression of the Projected Prevalence of Inflammatory Bowel Disease

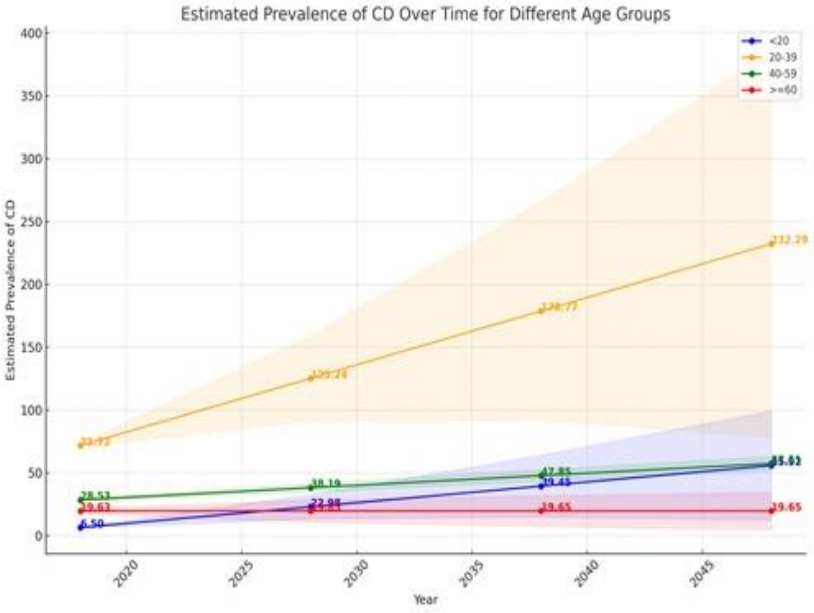
	Male				Female				Interaction P
	Estimate	CI		p-value	Estimate	CI		p-value	values
IBD									
age <20	0.00	.	.	.	0.00	.	.	.	.
age 20–39	421.53	383.74	459.33	<.0001	194.08	175.16	213.00	<.0001	<.0001
age 40–59	162.95	125.16	200.75	<.0001	101.56	82.64	120.48	<.0001	0.0063
age ≥60	63.52	25.72	101.31	0.0013	32.09	13.17	51.01	0.0012	0.1597
seq(year)	6.33	4.83	7.82	<.0001	2.81	2.06	3.55	<.0001	0.0010
UC									
age <20	0.00	.	.	.	0.00	.	.	.	.
age 20–39	233.03	209.14	256.92	<.0001	141.00	129.23	152.76	<.0001	<.0001
age 40–59	140.20	116.31	164.09	<.0001	119.85	108.08	131.61	<.0001	0.1360
age ≥60	85.79	61.90	109.68	<.0001	80.25	68.49	92.01	<.0001	0.6840
seq(year)	3.42	2.48	4.36	<.0001	2.77	2.31	3.24	<.0001	0.2781
CD									
age <20	0.00	.	.	.	0.00	.	.	.	.
age 20–39	181.54	167.44	195.64	<.0001	36.90	31.87	41.92	<.0001	<.0001
age 40–59	15.80	1.70	29.90	0.0300	-15.34	-20.36	-10.31	<.0001	0.0002
age ≥60	-25.29	-39.39	-11.19	0.0006	-20.90	-25.92	-15.87	<.0001	0.5906
seq(year)	3.07	2.52	3.63	<.0001	1.31	1.11	1.51	<.0001	0.0010

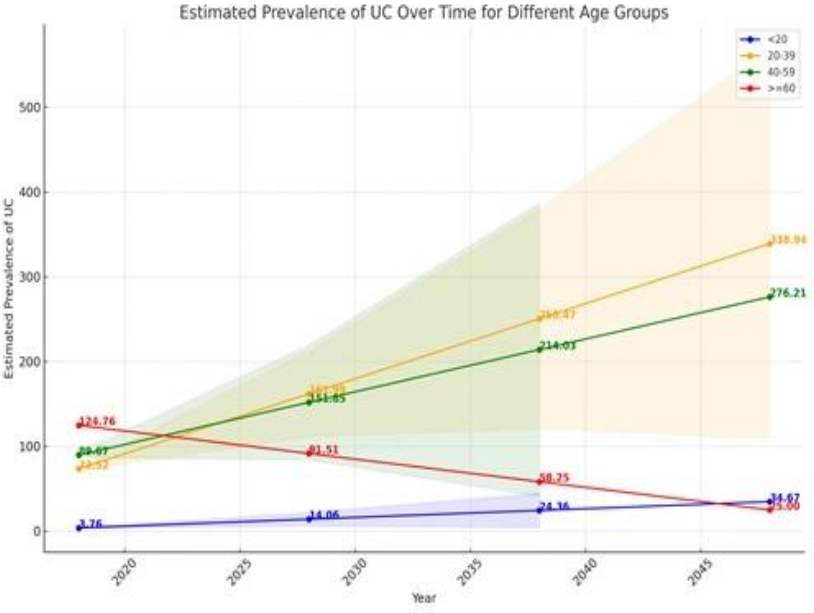
CI, confidence interval; IBD, inflammatory bowel disease; UC, ulcerative colitis; CD, Crohn’s disease

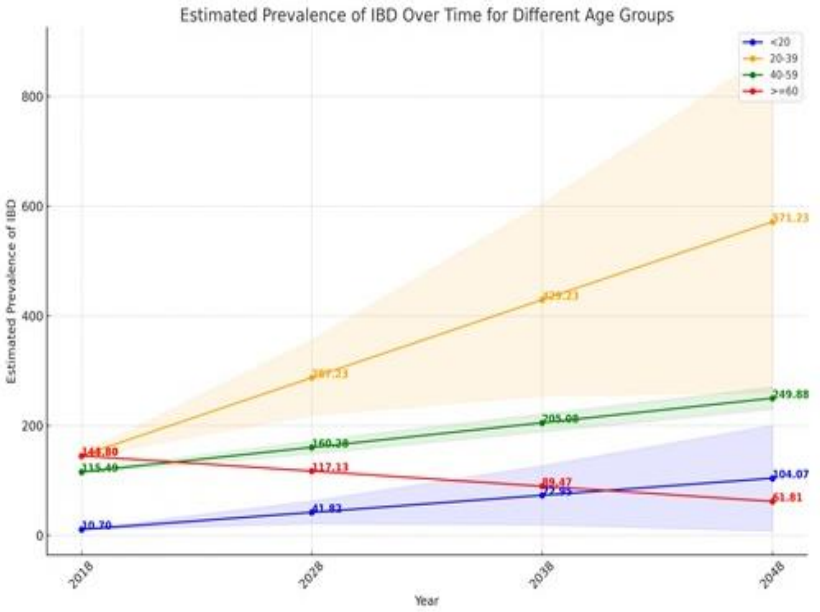

Forecasted Prevalence of CD with CIs for Each Year
Female
male
male + female
CD Prevalence Estimate
Year
44.25
31.58
18.9
73.54
51.42
29.82
102.84
71.27
40.69
132.13
91.11
51.55


Forecasted Prevalence of UC with CIs for Each Year
Female
male
male + female
UC Prevalence Estimate
Year
88.72
72.81
56.9
122.63
101.81
75.87
157.21
130.61
94.84
191.73
159.4
113.8


Forecasted Prevalence of IBD with CIs for Each Year
Female
male
male + female
IBD Prevalence Estimate
Year
132.6
104.19
75.58
194.89
149.59
103.07
256.51
194.66
130.57
158.06
239.73


Estimated Prevalence of CD Over Time for Different Age Groups
Estimated Prevalence of CD
Year
<20
20-39
40-59
>=60
400
350
300
250
200
150
100
50
0
2020
2025
2030
2035
2040
2045
232.29
178.77
139.24
73.72
47.85
38.19
28.53
19.63
6.50
19.65


Estimated Prevalence of UC Over Time for Different Age Groups
Estimated Prevalence of UC
Year
<20
20-39
40-59
>=60
500
400
300
200
100
0
2020
2025
2030
2035
2040
2045
338.94
276.21
214.03
151.85
124.76
91.51
58.25
34.67
24.36
14.06
3.76


Estimated Prevalence of IBD Over Time for Different Age Groups
Estimated Prevalence of IBD
Year
<20
20-39
40-59
>=60
800
600
400
200
0
2018
2028
2038
2048
571.73
429.23
287.33
249.88
205.08
160.28
144.80
115.40
117.13
104.07
81.82
61.81
10.70

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-020

Prevalence and Risk Factors of Gallstones and Renal Stones in Patients with Intestinal Behcet's Disease

Jaewon Song, Soo Jung Park, Jae Jun Park, Tae Il Kim, Jae Hee Cheon, Jihye Park
Department of Internal Medicine, College of Medicine, Yonsei University, Seoul, Korea

Background / Aim : Although the relationship between inflammatory bowel disease (IBD) and the development of gallstones and renal stones have been conducted, there is a lack of research in this area for patients with intestinal Behçet's disease (BD). This study aims to examine the prevalence of gallstones and renal stones in patients with intestinal BD and identify potential risk factors.
Methods : We analyzed 553 patients diagnosed with intestinal BD conducting cross-sectional imaging examinations at IBD center of Severance Hospital, Seoul, Korea, from March 2005 to April 2021. Gallstones and renal stones occurrences were assessed and logistic regression models were performed to identify risk factors for gallstone and renal stone development in intestinal BD patients.
Results : Among the 553 patients during mean 12.1 years, 141 patients (25.4%) had gallstones, and 35 patients (6.3%) had renal stones. In the multivariate logistic regression analysis, disease duration exceeding 19 years (odds ratio [OR]: 2.91, 95% confidence interval [CI] :1.56 - 5.44, $p < 0.001$), prior intestinal BD-related surgery (OR: 2.29, 95% CI: 1.42 - 3.68, $p < 0.001$), and Disease Activity Index for intestinal Behçet's Disease (DAIBD) scores exceeding 75 (OR: 2.23, 95% CI: 1.12 – 4.45, $p = 0.022$) were associated with increased gallstone occurrence. For renal stones, disease duration exceeding 19 years (OR: 5.61, 95% CI: 1.98-15.9, $p = 0.001$) and frequent hospitalizations more than 3times (OR: 3.29, 95% CI: 1.52-7.13, $p = 0.002$) were positively linked. However, no significant correlation was found between gallstone and renal stone occurrences.
Conclusion : These findings contribute to the understanding of prevalence and risk factors gallstone and renal stone in intestinal BD patients.
Keywords : Intestinal Behet's Disease, Gallstone, Renal Stone

imkasid 2024 SEOUL SHAPING THE FUTURE OF INTESTINAL RESEARCH
The 7th International Meeting on Intestinal Diseases in conjunction with The Annual Congress of the Korean Association for the Study of Intestinal Diseases
APRIL 11 (Thu) - 13 (Sat), 2024 CONRAD SEOUL, SEOUL, KOREA

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-021

CKD-506, a New Histone Deacetylase 6 Inhibitor, Suppresses Immune Cells and Restores Intestinal Epithelial Function

Jae-Young Lee[1], Hyun Woo Ma[2], Ji Hyung Kim[2], I Seul Park[2], Mijeong Son[2], Keun Ho Ryu[4], Jieun Shin[4], Won Ho Kim[2], Seung Won Kim[2,3], Jae Hee Cheon[2,3]

[1]Medicine, Yonsei University College of Medicine, Seoul, Korea
[2]Internal Medicine and Institute of Gastroenterology, Graduate School of Medical Science, Brain Korea 21 Project, Seoul, Korea
[3]Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea
[4]Non-clinical Study, CKD Pharmaceutical Co., Seoul, Korea

Background / Aim : Inflammatory bowel disease (IBD) represents a group of chronic immune-mediated diseases of the gastrointestinal tract, characterized by recurrent inflammation and consequential damage of the gastrointestinal tract. Histone deacetylases (HDACs) are a family of mostly ubiquitous enzymes that remove acetyl groups from lysines on histone proteins to regulate gene transcription. HDAC6, which is localized to the cytoplasm, appears to be a promising candidate in IBD treatment. The purpose of the current study was to examine the anti-inflammatory effects of CKD-506, a novel HDAC6 inhibitor, on human peripheral blood mononuclear cells (PBMCs) and $CD4^+$ T cells and to explore the relationship between CKD-506 and gut epithelial barrier function.

Methods : Lipopolysaccharide (LPS)-stimulated human PBMCs from IBD patients were treated with CKD-506, and TNF-α expression was measured using enzyme-linked immunosorbent assay. The proliferation of $CD4^+$ T cells from IBD patients was evaluated using flow cytometric analysis. The effects of CKD-506 on gut barrier function in a cell line and colon organoids, with examinations of mRNA production, goblet cell differentiation, and E-cadherin recovery, were investigated using quantitative reverse transcription PCR, immunofluorescence, and FITC-dextran permeability assay.

Results : TNF-α secretion, a pivotal pro-inflammatory mediator in IBD, of LPS-triggered PBMCs was markedly decreased by CKD-506 treatment in a dose-dependent manner and to a greater extent than by tofacitinib or tubastatin A treatment. E-cadherin mRNA expression and goblet cell differentiation increased significantly and dose-dependently in HT-29 cells in response to CKD-506, and inhibition of E-cadherin loss after TNF-α stimulation was significantly reduced both in HT-29 cells and gut organoids. Caco-2 cells treated with CKD-506 showed a significant reduction of barrier permeability in a dose-dependent manner.

Conclusion : The present study demonstrated that CKD-506 has anti-inflammatory effects on PBMCs and $CD4^+$ T cells and improved gut barrier function, indicating its potential as a promising and competent candidate for small-molecule medicine for IBD treatment.

Keywords : HDAC6 Inhibitor, Inflammatory Bowel Diseases, Barrier Function, T-cell

Figure 1

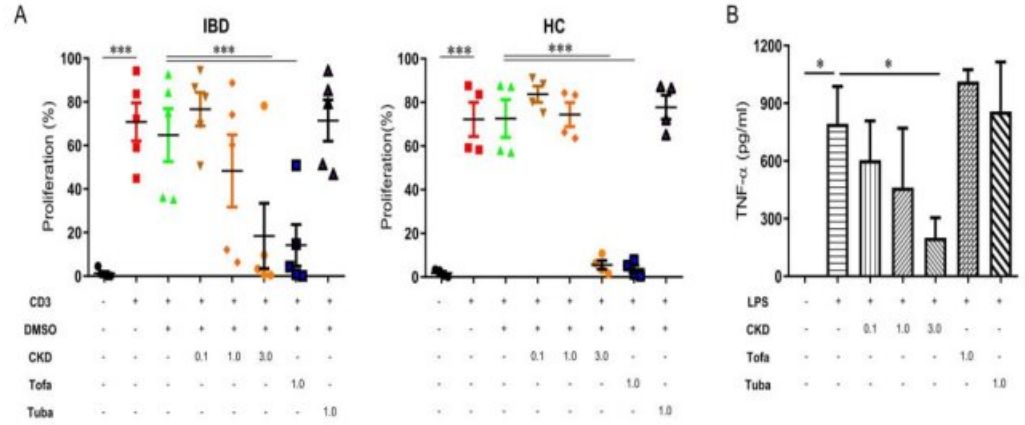


Figure 2

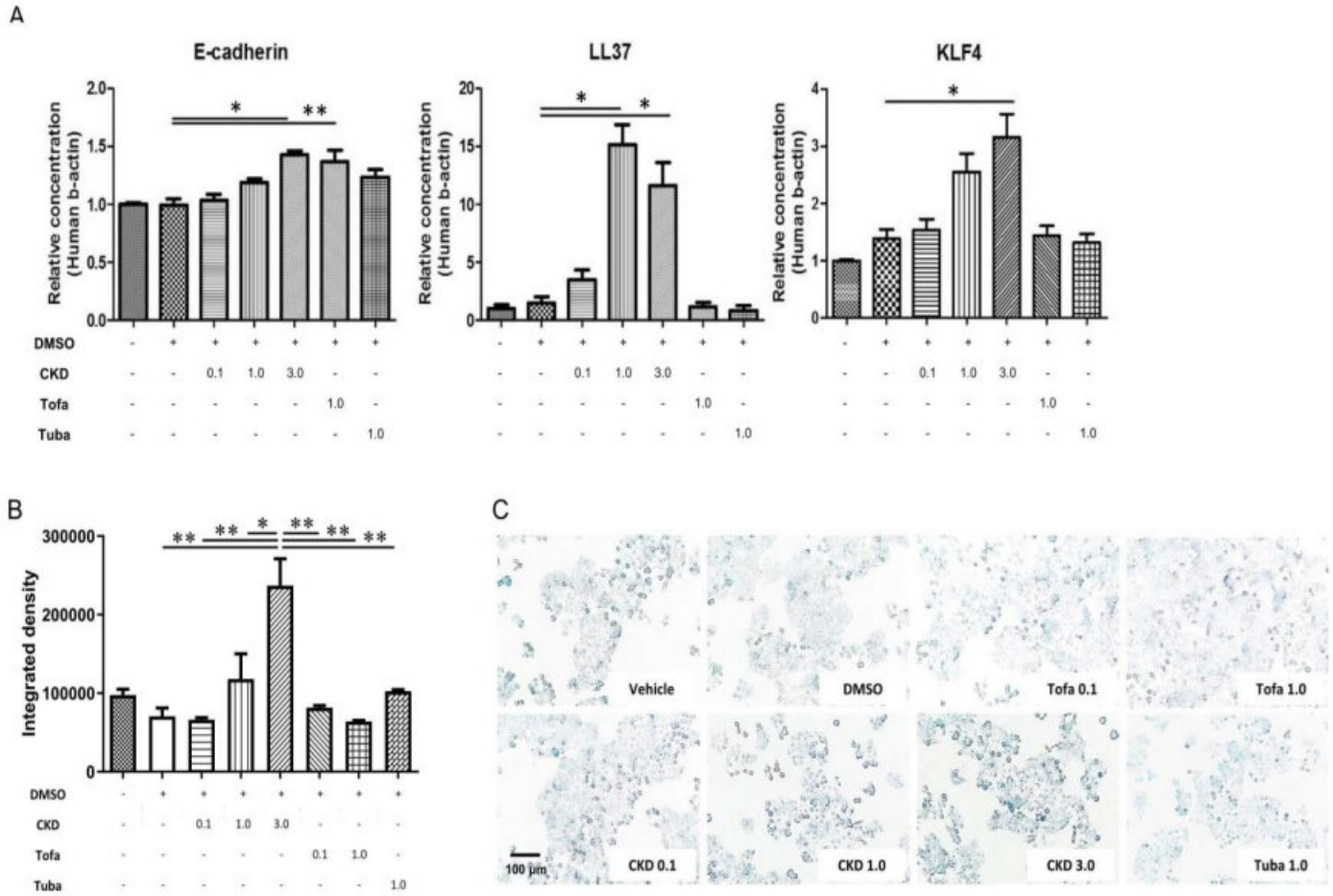
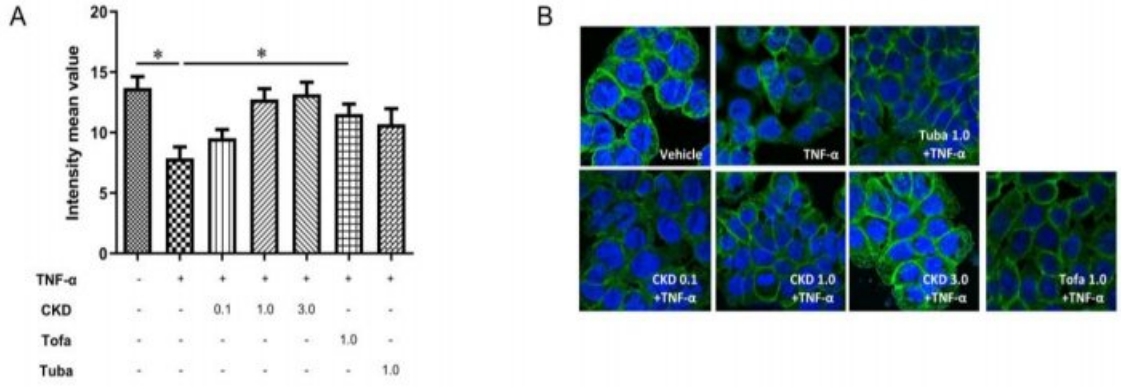


Figure 3



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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-022

Predicted Inflammatory Status and Inflammatory Bowel Disease among Korean Adults: A Multicenter Case-control Study

Dong Hyun Kim[1,10], Akinkunmi Paul Okekunle[2,3], Jioh Kang[2], Hyun-Soo Kim[1], Sang Hoon Kim[4,10], Min Kyu Jung[5,10], Jae Ho Park[6,10], Soo-Young Na[7,10], Jung Eun Lee[2,3], Yun Jeong Lim[8,10], Hoonjai Chun[9,10]

[1]Division of Gastroenterology, Department of Internal Medicine, Chonnam National University Medical School, Gwangju, Korea
[2]Department of Food and Nutrition, College of Human Ecology, Seoul National University, Seoul, Korea
[3]Research Institute of Human Ecology, Seoul National University, Seoul, Korea
[4]Division of Gastroenterology, Department of Internal Medicine, Chung-Ang University Gwangmyeong Hospital, Gwangmyeong, Korea
[5]Division of Gastroenterology and Hepatology, Department of Internal Medicine, Kyungpook National University Hospital, Daegu, Korea
[6]Division of Gastroenterology, Department of Internal Medicine, Chungnam National University Sejong Hospital, Sejong, Korea
[7]Department of Internal Medicine, Incheon St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Incheon, Korea
[8]Division of Gastroenterology and Hepatology, Department of Internal Medicine, Dongguk University Ilsan Hospital, Dongguk University College of Medicine, Goyang, Korea
[9]Division of Gastroenterology, Department of Internal Medicine, Korea University Hospital and Korea University College of Medicine, Seoul, Korea
[10]Council of the Nutrition Research, Korean Society of Gastrointestinal Cancer Research, Seoul, Korea

Background / Aim : There are limited studies on the overall implication of diet and lifestyle factors in the development of IBD (inflammatory bowel disease), particularly among East Asian. This study assessed the association of pro-inflammatory predicted high sensitivity C-reactive protein (hs-CRP) scores (derived from diet and lifestyle factors) with IBD among Korean adults.
Methods : From July 2017 to September 2023, 912 subjects who underwent gastrointestinal endoscopy at eight tertiary medical centers and completed a food frequency questionnaire were used in this study. Pro-inflammatory predicted hs-CRP score was derived from sociodemographic, lifestyle, and dietary information and multivariable-adjusted conditional logistic regression model was used to predicted hs-CRP scores (adjusting for age, sex alcohol intake, smoking, education, physical activity and energy-adjusted dietary energy intakes) at a two-sided $P<0.05$.
Results : Overall, 127 patients with IBD and 127 healthy controls were included in the study after propensity score matching. Of 127 IBD cases, 59 (46.5%) presented with CD and 51 (40.2%) were females. The prevalence of alcohol use was higher in the healthy control group compared to IBD patients (70.1% vs. 48.0%), while a BMI $\geq$ 23 was more common in IBD patients (58.3% vs. 35.4%). Smoking, age, sex, physical activity, and energy intake differed insignificantly between the two groups. Overall, the median (interquartile range) of the predicted hs-CRP was -2.6 (-3.0, -2.2), and multivariable-adjusted ORs and 95% CIs for IBD by tertiles of the predicted hs-CRP score were 1.00, 1.00 (0.44, 2.25), 8.67 (2.24, 33.51; P trend = 0.004) in males and females combined. When the association was stratified by IBD subtype, the association remained for UC but not CD.
Conclusion : Pro-inflammatory predicted hs-CRP score (derived from diet and lifestyle characteristics) was associated with higher odds of IBD, particularly among IBD cases presenting with UC. Promoting lifestyle modification to avoid inflammation might be promising for the primary prevention of IBD.
Keywords : Ulcerative Colitis, Crohn’s Disease, Food, Inflammation, Inflammatory Bowel Diseases

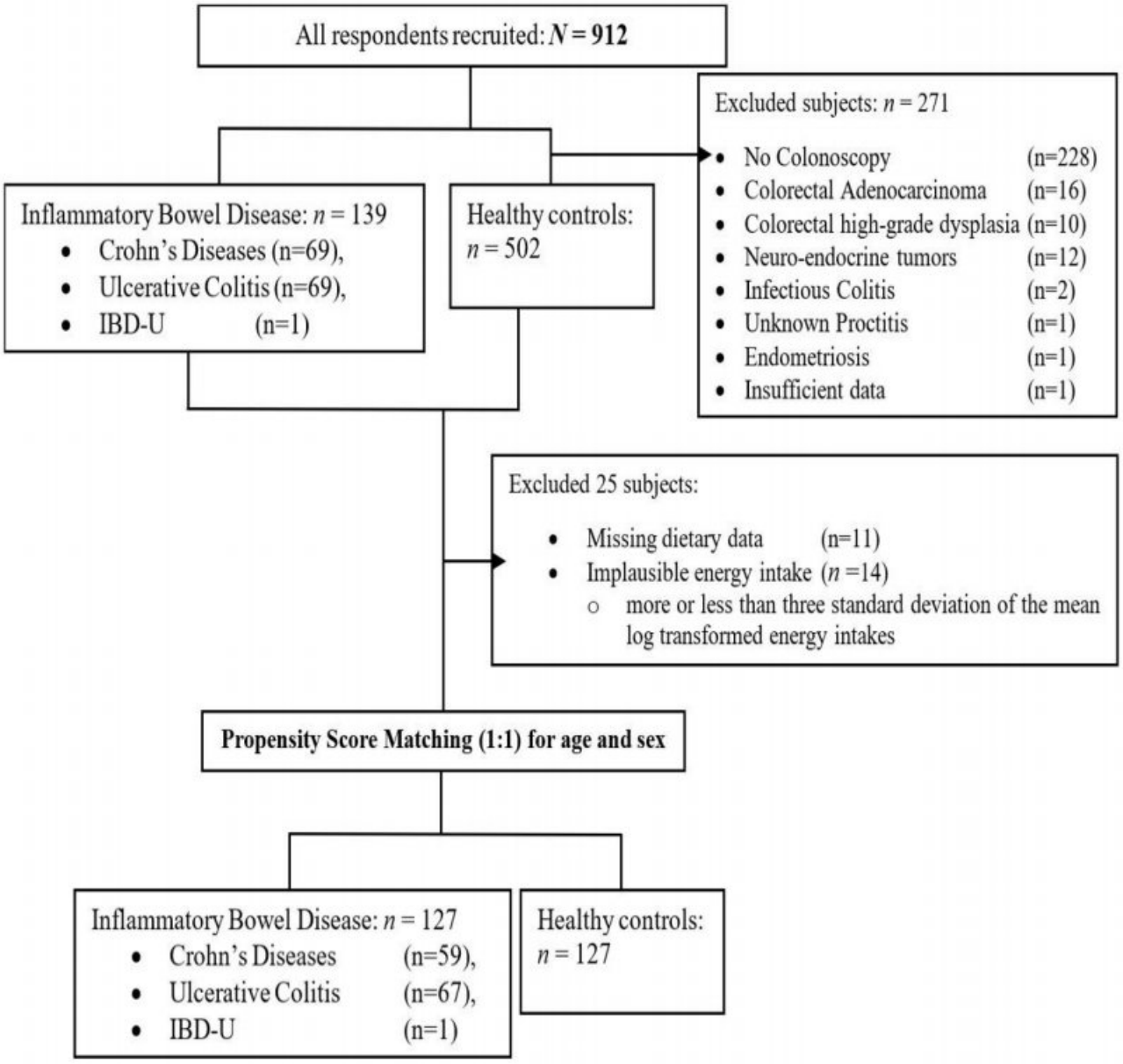

Figure 1. Flowchart describing selection of respondents for this study

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-023

Achievement of Long-term Treatment Goals with Upadacitinib in Patients with Moderately to Severely Active Ulcerative Colitis: A Post-hoc Analysis of Induction and Maintenance Phase 3 Trials

Julian Panes[1], Remo Panaccione[2], Marla C Dubinsky[3], Yoh Ishiguro[4], Jacinda Tran[5,6], Dapo Ilo[6], Jason Eccleston[6], Yuri Sanchez Gonzalez[6], Brian Feagan[7]

[1]Hospital Clinic Barcelona, IDIPABS, CIBERehd, Barcelona, Spain
[2]Department of Gastroenterology and Hepatology, University of Calgary, Calgary, AB, Canada
[3]Susan and Leonard Feinstein IBD Center, Icahn School of Medicine Mount Sinai, New York, United States
[4]Department of Clinical Research, National Hirosaki Hospital, National Hospital Organization, Hirosaki, Japan
[5]The Comparative Health Outcomes, Policy, and Economics Institute, University of Washington, Seattle, WA, United States
[6]Medical, AbbVie Inc, North Chicago, United States
[7]Gastroenterology, Western University, London, ON, Canada

Background / Aim : STRIDE II consensus emphasizes mucosal healing and quality of life normalization as long-term goals in ulcerative colitis (UC) treatment. Phase 2/3 trials (U-ACHIEVE and U-ACCOMPLISH) demonstrated that upadacitinib (UPA) significantly improves these outcomes in moderately to severely active UC.. This study evaluates UPA's effectiveness in concurrently achieving both goals within a year.
Methods : Responders to an 8-week UPA 45 mg QD induction in U-ACHIEVE and U-ACCOMPLISH were rerandomized to UPA 15 mg QD, UPA 30 mg QD, or placebo (PBO) QD. The composite endpoint assessing long-term goals at weeks 8 and 52 included endoscopic remission (ER), complete symptom resolution (CSR), and Inflammatory Bowel Disease Questionnaire (IBDQ) remission. ER was defined as an endoscopic score of 0; CSR as stool frequency subscore ≤1, rectal bleeding subscore of 0, and absence of bowel urgency and abdominal pain; IBDQ remission as IBDQ total score ≥170. Response rates were compared between UPA and PBO, adjusting for baseline characteristics.
Results : At week 8, 6.4% of patients on UPA 45 mg achieved ER+CSR+IBDQ remission versus 0.9% on PBO ($p<0.001$). At week 52, 18.3% on UPA 30 mg and 13.1% on UPA 15 mg achieved this composite endpoint versus 4.5% on PBO ($p<0.001$). Among those achieving ER+CSR+IBDQ remission at maintenance start, 42.1% (UPA 30 mg), 23.5% (UPA 15 mg), and 22.2% (PBO) maintained it at week 52. Of those not achieving it initially, 16.2% (UPA 30 mg), 12.3% (UPA 15 mg), and 2.9% (PBO) achieved it by week 52.
Conclusion : UPA can achieve rigorous, long-term ER+CSR+IBDQ remission goals in some patients with moderately to severely active UC by week 8. Nearly one in five patients on UPA 30 mg and one in eight on UPA 15 mg achieved this stringent target, demonstrating the potential of sustained UPA treatment within one year.
Keywords : Upadacitinib, Ulcerative Colitis, Long-term, Composite Endpoint

Percentage of patients who achieved composite endpoint of endoscopic remission and complete symptom resolution and IBDQ remission at week 8 of induction and week 52 of maintenance

	Responder, n/N (%)	Adjusted rate diff[a], % (95% CI)
Induction week 8		
PBO	3/328 (0.9)	5.5 (3.3, 7.7)*
UPA 45 mg QD	42/660 (6.4)	
Maintenance week 52[b]		
PBO	10/223 (4.5)	
UPA 15 mg QD	30/225 (13.1)	8.5 (3.4, 13.7)*
UPA 30 mg QD	43/233 (18.3)	13.7 (8.1, 19.3)*

*$p \leq 0.001$ for UPA vs PBO.

[a]At week 8, the adjusted response rate between PBO and UPA 45 mg was calculated using the Cochran-Mantel-Haenszel (CMH) test adjusting for baseline corticosteroid use, Adapted Mayo score, and inadequate response to biologic (Bio-IR) status. At week 52, the rate difference between PBO and UPA 30 mg and 15 mg was calculated using CMH adjusted for Bio-IR status at induction baseline, and clinical remission status and corticosteroid use at week 0 of maintenance. Calculations were based on non-responder imputation incorporating multiple imputation to handle missing data due to COVID-19 or non-responder imputation if there were no missing data due to COVID-19. [b]The maintenance study population comprises patients who achieved clinical response after UPA 45 mg QD 8-week induction treatment in the Phase 2 and 3 programs and were enrolled in the 52-week maintenance treatment period. CI, confidence intervals; IBDQ, Inflammatory Bowel Disease Questionnaire (IBDQ), PBO, placebo; QD, once daily; UPA, upadacitinib.

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-024

"Totality-of-the-Evidence" of Proposed Ustekinumab Biosimilar SB17

Byong Duk Ye[1], Alessandro Armuzzi[2], Giampiero Girolomoni[3], Steven Feldman[4], Joao Goncalves[5], Younjin Park[6]

[1]Gastroenterology, Inflammatory Bowel Disease Center, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea
[2]IBD Center, IRCCS Humanitas Research Hospital, Milan, Italy
[3]Dermatology, University of Verona, Verona, Italy
[4]Dermatology, Wake Forest University School of Medicine, Winston Salem, United States
[5]Faculty of Pharmacy, Universidade de Lisboa, Lisbon, Portugal
[6]Medical Affairs, Samsung Bioepis Co., Ltd, Incheon, Korea

Background / Aim : SB17 is a proposed biosimilar to ustekinumab reference product (UST-RP), which is a fully human IgG1/kappa monoclonal antibody to interleukin (IL)-12/23. In accordance with regulatory guidelines, "totality-of-the-evidence" proofs similarity between a proposed biosimilar and its reference product and includes analytical, non-clinical and clinical data.[1, 2] The justification for extrapolation of SB17 was based on "totality-of-the-evidence" (i) MoA of ustekinumab binding to p40 subunit of IL-12/23, which has been associated with immune-mediated diseases, including approved indications of UST-RP (ii) overall data from the comparability comparison to UST-RP using analytical methods showing similar molecular structure and in vitro function (iii) PK studies showing similar exposure, and PD studies in healthy subject and (iv) efficacy and safety based on clinical studies. The phase III study was conducted in ustekinumab-naïve patients with moderate-to-severe psoriasis (PsO) as the most sensitive design to assess potential differences in efficacy and the risk of immunogenicity. The objective is to describe the biosimilarity of SB17 to UST-RP for potential extrapolation from PsO to other indications.
Methods : Analytical comparability of SB17 to UST-RP was assessed in ELISA binding assays. PK equivalence, efficacy, safety, tolerability, and immunogenicity similarity were assessed in clinical trials of healthy subjects and PsO patients.
Results : In the analytical assessment, SB17 showed similarity to EU- and US-UST-RP in overall critical and non-critical quality attributes.[3] In a phase I study, SB17 and EU- and US-UST-RP had similar PK and comparable safety, tolerability, and immunogenicity.[4] In a phase III study of patients with moderate-to-severe PsO, SB17 had equivalent efficacy, comparable safety and immunogenicity to UST-RP up to Week 28 (Table 1).[5]
Conclusion : With similar target binding and PK and confirmed similarity in efficacy and safety for PsO patients, SB17 is proposed to be highly similar to UST-RP in physicochemical, non-clinical, and clinical studies and data supports its extrapolation to UST-RP indications.
Keywords : Ustekinumab, Biosimilar, SB17

Table 1. Summary of Phase I and III Study Results of SB17

Product	**SB17**	
Phase	Phase I	Phase III
Design	Randomized, double-blind, 3-arm, parallel group, single-dose study in healthy subjects	Randomized, double-blind, multi-center study in patients with moderate to severe plaque psoriasis (PsO)
Dose	45 mg (single SC injection)	45 mg SC injection at Week 0, 4, and Week 16
No. of Subjects	201 (67 in each arm)	503 (249 in SB17, 254 in UST-RP)
Study Duration	98 days	Up to 28 Weeks
Primary Endpoint	**PK [Least square geometric mean of PK parameters (90% CI)]**	**Percent change from Baseline in PASI at Week 12**
	AUC_{inf}	**Per protocol set [LSMeans (SE)]**
	SB17 vs. EU-UST RP: 1.01 (0.93, 1.10) SB17 vs. US-UST RP: 0.99 (0.90, 1.08) EU-UST RP vs. US-UST RP: 1.02 (0.93, 1.12)	SB17 (n= 243): 85.7 (2.53) UST-RP (n=249): 86.3 (2.41) Difference (SB17-UST-RP): -0.6 (1.62) [-3.780, 2.579]**
	C_{max}	**Full analysis set [LSMeans (SE)]**
	SB17 vs. EU-UST RP: 0.94 (0.86, 1.04) SB17 vs. US-UST RP: 0.90 (0.82, 0.98) EU-UST RP vs. US-UST RP: 1.05 (0.96, 1.15)	SB17 (n=249): 85.7 (2.53) UST-RP (n=254): 86.3 (2.41) Difference (SB17-UST-RP): -0.7 (1.60) [-3.849, 2.439]**
Immunogenicity	**Anti-drug antibody (%)**	**Anti-drug antibody (%)**
	SB17: 26.9 EU-UST RP: 34.3 US-UST RP: 34.3	SB17: 13.3 UST RP: 39.4
Safety	**AE/SAE (%)**	**TEAE/Treatment-emergent SAE (%)**
	SB17: 68.7/ 0.0 EU-UST RP: 58.2/ 0.0 US-UST RP: 67.2/ 0.0	SB17: 48.2/ 2.4 UST RP: 48.8/ 1.2

* AE: Adverse event, PASI: Psoriasis Area and Severity Index, PK: Pharmacokinetic, PsO: Psoriasis, SAE: Serious adverse event, SC: Subcutaneous, TEAE: Treatment emergent adverse event, UST-RP: Ustekinumab reference product.

** 95% Confidence Interval (CI)

Reference:

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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-025

Histological Remission as a Predictor of Reduced Endoscopic Flare-ups in Ulcerative Colitis Patients with Moderate-to-Severe Disease: Insights from a Detailed Retrospective Cohort Analysis

Zih-Hao Wei[1], Puo-Hsien Le[2,3,4], Horng-Yih Chiu[1], Pai-Jui Yeh[4,5], Cheng-Tang Chiu[2,3,4], Cheng-Hsun Chiu[4,6]

[1]School of Medicine, Chang Gung University, Taoyuan City, Taiwan
[2]Department of Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan
[3]TASSID, Taiwan Association of the Study of Small Intestinal Disease, Taoyuan City, Taiwan
[4]Chang Gung Microbiota Therapy Center, Chang Gung Memorial Hospital, Taoyuan City, Taiwan
[5]Division of Pediatric Gastroenterology, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan
[6]Division of Pediatric Infectious Diseases, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan

Background / Aim : In managing inflammatory bowel disease (IBD), a treat-to-target strategy has proven effective, with current emphasis on achieving endoscopic remission. However, the potential role of histological remission as a target remains underexplored, particularly in Asian populations. This study aimed to investigate the impact of histological remission on clinical outcomes in patients with ulcerative colitis (UC) already in endoscopic remission.
Methods : This retrospective cohort study included patients with moderate-to-severe UC, previously treated with biologics, and in endoscopic remission (Mayo subscore 0) between June 2017 and September 2023 at Chang Gung Memorial Hospital, Linkou. Patients were grouped into histological remission (HR) and non-histological remission (non-HR) based on the histological Nancy index (NI). HR was defined as NI 0, while other scores placed patients in the non-HR group. Comparative analyses considered baseline characteristics, one-year follow-up, and clinical outcomes. Biopsy locations were active inflammatory lesions; otherwise, routine biopsies over the rectum were conducted.
Results : We enrolled 42 patients with moderate-to-severe UC in endoscopic remission. The cohort included 23 HR and 19 non-HR patients. Average follow-up was 17.6 months. In the non-HR group, NI scores were 1 point (42.1%), 2 points (31.6%), 3 points (21.1%), and 4 points (5.3%). Baseline characteristics showed no significant differences. The HR group exhibited a significantly lower endoscopic relapse rate (26.1% vs. 68.4%, P=0.006) and superior Kaplan-Meier survival analysis (log-rank P=0.015). Although not statistically significant, the HR group displayed reduced clinical relapses, emergency visits, and hospitalizations, possibly due to the study's limited sample size.
Conclusion : For individuals with moderate-to-severe UC in endoscopic remission, achieving histological remission is associated with a decreased incidence of endoscopic relapse.
Keywords : Mucosal Healing, Histological Remission, Outcomes Measure

Figure 1. Kaplan-Meier Analysis of Endoscopic Relapse-Free Survival in Patients with Histological Remission (HR) versus Non-Histological Remission (Non-HR)

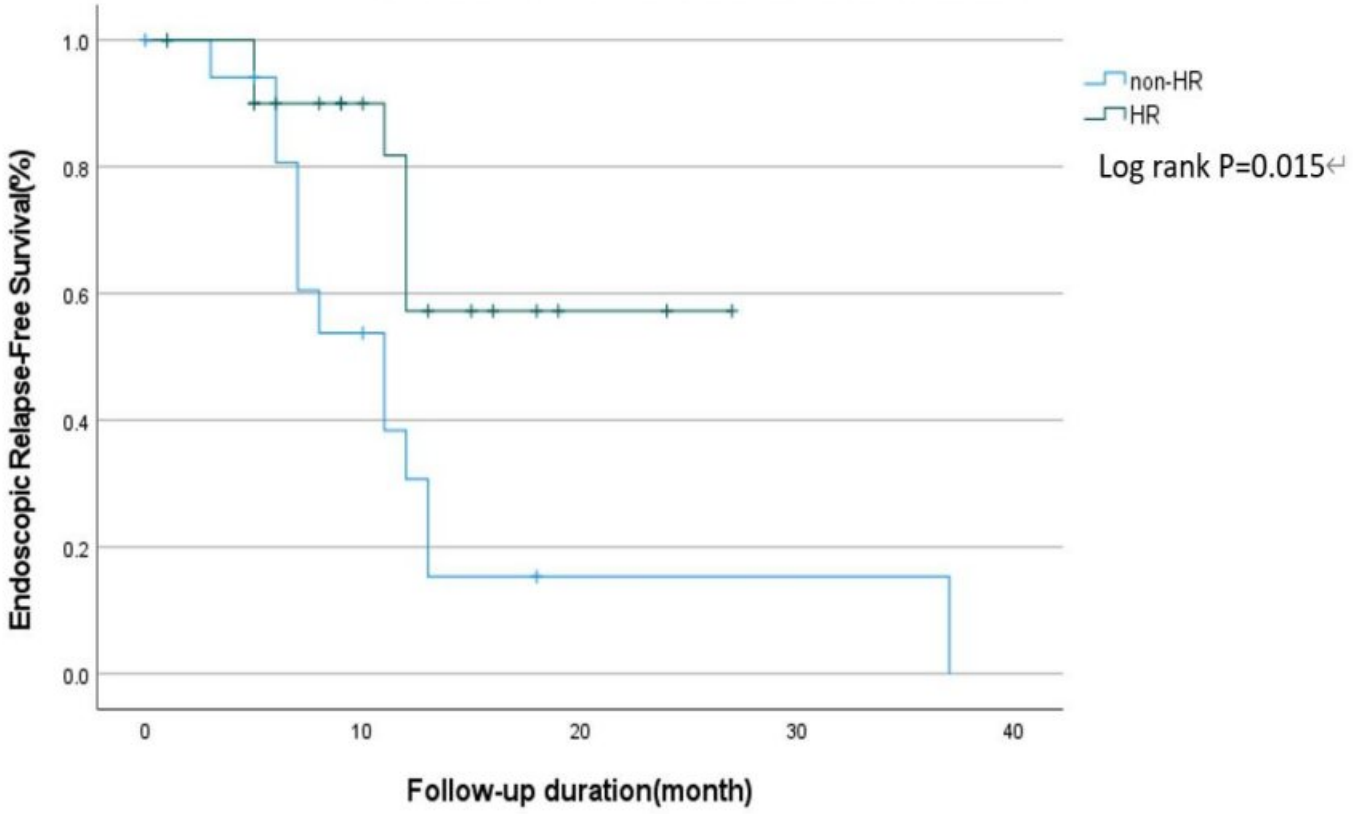


Table 1. Baseline Characteristics and Clinical Outcomes in Patients with Histological Remission (HR) versus Non-Histological Remission (Non-HR)

Baseline characteristics

	Overall(n=42)	HR(n=23)	Non-HR(n=19)	P-value
Gender, male	18(42.9%)	10(43.5%)	8(42.1%)	0.929
Age	45.88±15.44	47.04±14.87	44.47±16.39	0.597
BMI	24.01±4.15	24.46±4.47	23.47±3.77	0.46
UC duration(month)	57.74±82.39	59.57±93.11	55.53±69.68	0.877
Disease feature at UC diagnosis				
Endoscopic mayo score				
1	2(4.8%)	0	2(10.5%)	0.199
2	4(9.5%)	3(13.0%)	1(5.3%)	0.613
3	36(85.7%)	20(87.0%)	16(84.2%)	0.8
Nancy score				
1	2(4.8%)	1(4.3%)	1(5.3%)	1
2	2(4.8%)	1(4.3%)	1(5.3%)	1
3	17(40.5%)	9(39.1%)	8(42.1%)	0.616
4	19(45.2%)	12(52.2%)	7(36.8%)	0.491
Montreal classification				
E1	6(14.3%)	3(13.0%)	3(15.8%)	1
E2	14(33.3%)	7(30.4%)	7(36.8%)	0.661
E3	22(52.4%)	13(56.5%)	9(47.4%)	0.554
Disease feature, enrolled date				
Nancy score				
0	23(54.8%)	23(100%)	0	-
1	8(19.0%)	0	8(42.1%)	-
2	6(14.3%)	0	6(31.6%)	-
3	4(9.5%)	0	4(21.1%)	-
4	1(2.4%)	0	1(5.3%)	-
Lab data				
Albumin (g/dL)	4.37±0.58	4.34±0.70	4.42±0.35	0.708
CRP (mg/dL)	2.54±5.35	1.36±1.63	3.98±7.65	0.171
Medication				
5-ASA	20(47.6%)	11(47.8%)	9(47.4%)	0.226
Immunosuppresant	5(11.9%)	3(13.0%)	2(10.5%)	1
Prednisolone	4(9.5%)	2(8.7%)	2(10.5%)	1
Biologics	35(83.3%)	20(87%)	15(78.9%)	0.682
Infliximab	3(7.1%)	2(8.7%)	1(5.3%)	1
Adalimumab	2(4.8%)	0	2(10.5%)	0.199
Vedolizumab	25(59.5%)	16(69.6%)	9(47.4%)	0.145
Ustekinumab	4(9.5%)	2(8.7%)	2(10.5%)	1
Tofacitinib	0(0%)	0	0	-
Guselkumab	1(2.4%)	0	1(5.3%)	0.452

Clinical outcomes

	One year follow up			End of follow up		
	HR(n=23)	Non-HR(n=19)	P-value	HR(n=23)	Non-HR(n=19)	P-value
BMI	23.48±5.99	24.0±4.23	0.845	24.16±4.31	23.98±3.66	0.902
BMI change	-0.94±1.07	0.09±1.12	0.739	0.12±1.12	0.44±0.92	0.347
Admission (times)	0.18±0.41	0.27±0.47	0.631	0.33±0.90	0.47±1.17	0.647
ED visit (times)	0.09±0.30	0.09±0.30	1	0.04±0.21	0.42±1.22	0.197
UC related complication						
Colon Cancer	0	0	-	0	0	-
Surgery	0	0	-	0	0	-
Clinical relapse	5(21.7%)	6(31.6%)	0.67	7(30.4%)	10(52.6%)	0.145
Endoscopic relapse	4(17.4%)	6(31.6%)	0.392	6(26.1%)	13(68.4%)	0.006*
C. difficile infection	0	2(10.5%)	0.476	0	2(10.5%)	0.199
Lab data						
Albumin (g/dL)	4.40±0.23	4.41±0.20	0.928	4.28±0.59	4.41±0.30	0.454
Albumin change (g/dL)	0.36±1.25	-0.57±0.22	0.596	-0.27±1.01	0.99±0.33	0.839
CRP (mg/dL)	2.57±3.90	2.98±4.44	0.83	1.74±2.64	6.20±17.87	0.242
CRP change (mg/dL)	0.76±4.74	-2.50±4.74	0.362	0.36±2.96	5.78±19.54	0.196
Medication						
5-ASA	11(47.8%)	7(36.8%)	0.09	19(82.6%)	9(47.4%)	0.016*
Immunosuppresant	2(8.7%)	0	0.476	4(17.4%)	1(5.3%)	0.356
Prednisolone	4(17.4%)	3(15.8%)	1	5(21.7%)	2(10.5%)	0.428
Prednisolone experience	6(26.1%)	4(21.1%)	0.392	7(30.4%)	10(52.6%)	0.145
Biologics user	4(17.4%)	6(31.6%)	0.392	9(39.1%)	13(68.4%)	0.059
Infliximab	0	0	-	1(4.3%)	0	1
Adalimumab	1(4.3%)	1(5.3%)	1	1(4.3%)	1(5.3%)	1
Vedolizumab	3(13.0%)	3(15.8%)	1	5(21.7%)	8(42.1%)	0.155
Ustekinumab	0	0	-	2(8.7%)	3(15.8%)	0.644
Tofacitinib	0	1(5.3%)	1	0	1(5.3%)	0.452
Guselkumab	0	1(5.3%)	1	0	0	-
Biologics experience	10(43.5%)	8(42.1%)	0.269	22(95.7%)	16(84.2%)	0.209
Infliximab	0	1(5.3%)	1	2(8.7%)	1(5.3%)	1
Adalimumab	1(4.3%)	1(5.3%)	1	2(8.7%)	1(5.3%)	1
Vedolizumab	9(39.1%)	4(21.1%)	0.08	13(56.5%)	8(42.1%)	0.352
Ustekinumab	0	0	-	4(17.4%)	4(21.1%)	1
Tofacitinib	0	1(5.3%)	1	0	1(5.3%)	0.452
Guselkumab	0	1(5.3%)	1	0	1(5.3%)	0.452
Mortality	0	0	-	0	0	-
Follow up duration	-	-	-	15.35±11.82	20.26±18.05	0.295

Note. We used Student's t test on continuous variable and Chi-square or Fisher's exact test on categorical data

Abbreviation. BMI=body mass index, CRP=C-reactive protein, 5-ASA=Amino salicylic acid, ED=emergency department, C.difficile=Clostridiodes difficile

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-026

Changes in Cytokine Profiles after 1 Year of Treatment Affecting Infliximab Trough and Antibody Concentration in Pediatric Crohn's Disease : A Follow Up Study

Seon Young Kim[1], Yiyoung Kwon[2], Eun Sil Kim[3], Yoon Zi Kim[1], Hansol Kim[1], Yon Ho Choe[1], Mi Jin Kim[1]

[1]Pediatrics, Samsung Medical Center, Seoul, Korea
[2]Pediatrics, Inha University Hospital, Incheon, Korea
[3]Pediatrics, Kangbuk Samsung Medical Center, Seoul, Korea

Background / Aim : As a pilot study, we investigated the cytokine profile at diagnosis affecting trough concentration of infliximab in pediatric CD. As a follow-up study, we re-measured the cytokine concentration at 1 year of treatment, and evaluated the changes with investigation of clinical significance.
Methods : A total of 29 patients who followed up for a year after diagnosis of moderate to severe CD from June 2020 to June 2021 were enrolled this study. The concentration of cytokines (IL-6, TNF-α, IL-17A, and IL-10) were re-measured after 1 year of treatment. Infliximab (IFX) trough levels and total antibodies were also measured in patients who have started IFX.
Results : The mean values of concentrations of all cytokines at 1 year were lower than at the time of diagnosis with statistical significance. The IL-6, IL-17A, and IL-10 concentration at 1 year showed the same correlation each other as at the time of diagnosis, but TNF-α didn't. TNF-α concentration at 1 year showed a negative correlation with IFX trough levels as at the time of diagnosis concentration (Pearson coefficient = −0.500, p = 0.009), and a positive correlation with antibody titer concentration (Pearson coefficient = 0.510, p = 0.018). The diagnostic capability of 1 year TNF-α concentration to predict failure of deep remission had an area under the ROC of 0.802 (p = 0.008). The TNF-α concentration was set at 9.40 pg/mL as the cutoff value.
Conclusion : The cytokine concentration was actually lowered as evidence of decreased inflammatory burden after treatment of CD. Even after 1 year, TNF-α shows direct negative and positive correlations with the IFX trough level and antibody titer. As at the time of diagnosis, in patients with high TNF-α after treatment, the IFX trough level can be the under therapeutic range and the possibility of antibody formation is high, leading to failure of deep remission.
Keywords : Crohn's Disease, TNF-a, Infliximab, Cytokines

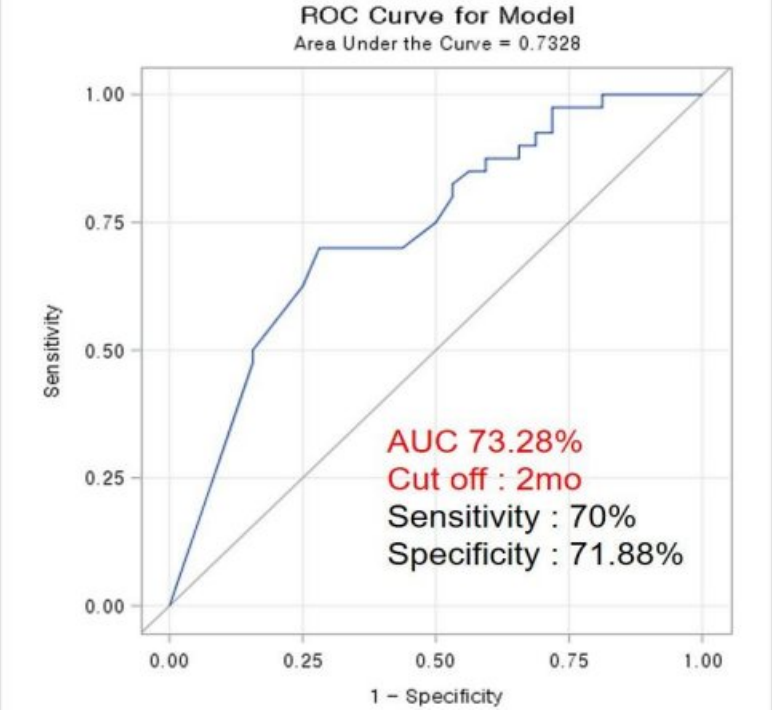
[Poster Exhibition – Inflammatory Bowel Disease]

PE1-027

Analysis of Risk Factors Affecting the Relapse Period after Discontinuation of Biologics in Pediatric Crohn's Disease Who Have Sustained Deep Remission

Hansol Kim, Yoon Zi Kim, Seon Young Kim, Mi Jin Kim, Yon Ho Choe
Pediatrics, Samsung medical center, Seoul, Korea

Background / Aim : Biologics are important therapeutic agents for pediatric crohn's disease and discontinuation of biologics is known to increase the relapse rate so it is not easy to discontinue biologics. However long-term use of biologics increases the risk of opportunistic infections and causes economical burden and psychological fatigue so it is meaningful to have a drug holiday even if the biologics cannot be completely discontinued. The goal of this study is to analyze the risk factors affecting the relapse period after discontinuation of biologics in pediatric crohn's disease.
Methods : This study retrospectively reviewed 435 pediatric crohn's disease patients who visited single center from March 2013 to March 2021. Among the patients enrolled, 357 patients had been administered biologics with a follow-up period(≥2 years). And 72 patients experienced relapse after the discontinuation of biologics. We analyzed these 72 patients data.
Results : The median relapse period was 14.5 months(IQR 8-24, min 1, max 80) and the median duration of biologics administration was 2 years(IQR 1-2.5, min 0.3, max 6.7). The findings indicated that a low ESR at the time of diagnosis(p-value 0.003), early initiation of biologics after diagnosis(p-value 0.016), and absence of concurrent oral medication at the time of biologics discontinuation(p-value 0.012) were associated with a longer duration until relapse, leading to a more prolonged maintenance of remission. Particularly if biologics were initiated after 2 months after diagnosis, there was a higher likelihood of relapse within 12 months after discontinuation of biologics.
Conclusion : In this study, we identified factors that enable to have longer remission period after discontinuation of biologics so we can try to discontinue biologics in patients with these factors after deep remission. However, since the relapse rate may increase after discontinuation of biologics, close monitoring is important and if necessary, re-administration of biologics should be actively considered.
Keywords : Crohn's Disease, Biologics, Relapse



[Poster Exhibition – Inflammatory Bowel Disease]

PE1-028

Clinical Characteristics and Long-term Disease Course in Patients with Crohn's Disease Diagnosed by Video Capsule Endoscopy; A Retrospective Multicenter Matched Case-control Study

Jun Hwa Bae[1], Su Hyun Park[1], Jung-Bin Park[1], Ji Eun Baek[1], Seung Wook Hong[1], Sung Wook Hwang[1,2], Dong-Hoon Yang[1], Byong Duk Ye[1,2], Jeong-Sik Byeon[1], Seung-Jae Myung[1], Suk-Kyun Yang[1,2], Kyeong Ok Kim[3,5], Byung Ik Jang[3,5], Mi Rae Lee[4], Eun Soo Kim[4,5], Sang Hyoung Park[1,2]

[1]Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea
[2]Inflammatory Bowel Disease Center, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea
[3]Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea
[4]Internal Medicine, School of Medicine, Kyungpook National University, Daegu, Korea
[5]CCAiD, Crohn's and Colitis Association in Daegu-Gyeongbuk, Daegu, Korea

Background / Aim : Video capsule endoscopy (VCE) is a non-invasive and accurate diagnostic modality, especially for superficial and proximal small bowel lesions of Crohn's disease (CD). In rare cases, lesions undetected by other diagnostic modalities are solely identified through VCE. We aim to evaluate the clinical characteristics and long-term outcomes of these rare cases.
Methods : This retrospective multicenter study was conducted from January 2007 to April 2023. We defined cases (VCE group) as patients with normal findings on colonoscopy and cross-sectional imaging, ultimately diagnosed with CD by VCE; the controls were patients conventionally diagnosed with CD (non-VCE group). Controls were matched to cases with a ratio of 3:1 for sex, calendar year of diagnosis, and age at diagnosis.
Results : During the study period, 24 patients were diagnosed solely by VCE. When compared to 72 matched controls, the mean duration from symptom onset to diagnosis did not significantly differ (23.9 months [SD 28.9] vs. 31.0 months [SD 56.2], p=0.555). Disease behavior differed significantly (p=0.013), with the majority of VCE group being non-stricturing and non-penetrating type (91.7%). There was no significant difference in the perianal fistula modifier (25.0% vs. 33.3%, p=0.446). Within the VCE group, 45.8% underwent the examination due to abdominal pain with diarrhea, followed by 25.0% with perianal disease. Regarding capsule findings, the ileum was mostly involved (87.5%), while the jejunum and duodenum were affected in 70.8 and 16.7% of cases, respectively. The median Lewis score was 838 [IQR 393–1803]. Concerning the cumulative incidence of clinical outcomes over 10 years, complicated behavior, need for biologics, and CD-related hospitalization and surgery were all significantly lower in the VCE group than in the non-VCE group ($p<0.05$).
Conclusion : Patients diagnosed with CD solely by VCE are rare. They exhibited different clinical characteristics and a more favorable long-term disease course compared to conventionally diagnosed CD patients.
Keywords : Crohns Disease, Capsule Endoscopy, Diagnosis

Table 1. Demographic and clinical characteristics of included patients

	VCE group	Non-VCE group	p-value
N	24	72	
Sex, male, n [%]	18 [75.0]	54 [75.0]	1.000
Age at diagnosis, yrs, mean [SD]	28.6 [9.98]	27.9 [9.51]	0.747
Age at symptom onset, yrs, mean [SD]	27.2 [10.24]	25.3 [8.88]	0.394
Duration from symptom onset to diagnosis, month, mean [SD]	23.9 [28.85]	31.0 [56.16]	0.555
BMI, kg/㎡, mean [SD]	22.3 [3.71]	20.6 [3.78]	0.055
Active smoking, n [%]	2 [8.3]	26 [36.1]	0.010
Family history of IBD, n [%]	4 [16.7]	5 [6.9]	0.221
Montreal location, n [%]			< 0.001
Ileum	21 [87.5]	26 [36.1]	
Colon	0 [0.0]	1 [1.4]	
Ileocolon	0 [0.0]	45 [62.5]	
Upper GI	13 [54.2]	19 [26.4]	
Montreal behavior, n [%]			0.013
Nonstricturing nonpenetrating	22 [91.7]	45 [62.5]	
Stricturing	2 [8.3]	8 [11.1]	
Penetrating	0 [0.0]	19 [26.4]	
Perianal fistula modifier, n [%]	6 [25.0]	24 [33.3]	0.446
5-ASA use at diagnosis, n [%]	23 [95.8]	45 [62.5]	0.002
Immunomodulator use at dignosis, n [%]	7 [29.2]	30 [41.7]	0.276
Steroid use at diagnosis, n [%]	7 [29.2]	27 [37.5]	0.460

BMI, body mass index; IBD, inflammatory bowel disease; VCE, video capsule endoscopy; 5-ASA, 5-aminosalicylic acid

Table 2. Capsule findings among patients with Crohn's disease only visible at VCE

	VCE group
Indication for VCE, n [%]	
Abdominal pain with diarrhea	11 [45.8]
Perianal disease	6 [25.0]
Unexplained anemia with iron deficiency	5 [20.8]
Hematochezia	1 [4.2]
Refractory MALToma like lesion at duodenum	1 [4.2]
Capsule findings, n [%]	
Diffuse edema	15 [62.5]
Diffuse erythema	13 [54.2]
>3 ulcers or erosions	19 [79.2]
Luminal stenosis	6 [25.0]
Topography of CD, n [%]	
Single location	9 [37.5]
Two or three locations	15 [62.5]
Duodenum	4 [16.7]
Jejunum	17 [70.8]
Ileum	21 [87.5]
Lewis score, median [IQR]	838 [393-1803]

CD, Crohn's disease; VCE, video capsule endoscopy

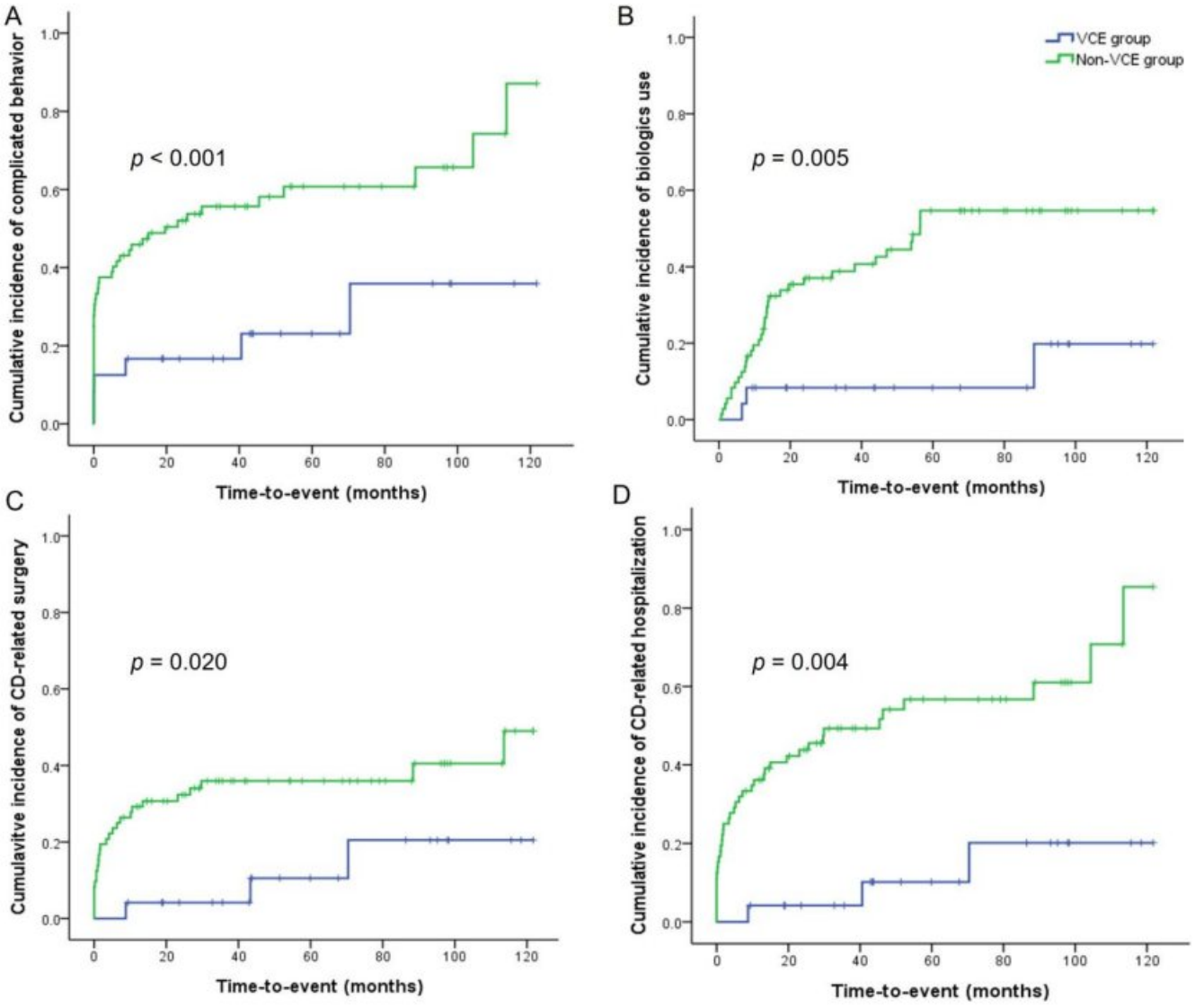


Figure 1. Cumulative incidence of clinical outcomes in VCE group and non-VCE group

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-029

Comparative Real-world Outcomes between Ustekinumab, Infliximab, and Adalimumab in Bio-nave and Bio-experienced Crohn's Disease Patients: A Retrospective Multicenter Study

Ji Eun Na[1], Youg Eun Park[1], Jong Ha Park[1], Tae-Oh Kim[1], Su Bum Park[2], Seung Bum Lee[3], Jong Hoon Lee[4]

Busan Ulsan Gyeongnam Intestinal Study Group Society (BIGS)

[1]Internal Medicine, Gastroenterology, Inje University Haeundae Paik Hospital, Busan, Korea

[2]Internal Medicine, Gastroenterology, Pusan National University Yangsan Hospital, Busan, Korea

[3]Internal Medicine, Gastroenterology, Ulsan University Hospital, Ulsan, Korea

[4]Internal Medicine, Gastroenterology, Dong-A University College of Medicine, Busan, Korea

Background / Aim : Numerous studies have compared the efficacy of ustekinumab (UST) and anti-TNF agents [infliximab (IFX) or adalimumab(ADA)] in moderate to severe Crohn's disease (CD) patients. This study aims to compare the efficacy of UST, IFX, and ADA while differentiating between bio-naïve and bio-experienced patients, which is an underexplored aspect, particularly in Asia.

Methods : We conducted a retrospective multi-center study from 2012 to 2023, categorizing patients into bio-naïve and bio-experienced groups. We evaluated clinical remission rates after induction therapy and clinical outcomes, including CD-related hospitalization, intestinal resection, and drug discontinuation during maintenance therapy.

Results : Among the 214 bio-naïve CD patients, 60 received UST, 108 received IFX, and 46 received ADA. After 1:1 propensity score matching between UST and anti-TNF agents groups, 59 patients were analyzed in each group (45 in the IFX group and 14 in the ADA group). We found no significant differences in clinical remission rates (P = 0.071), CD-related hospitalization (P = 0.800), intestinal resection (P = 0.390), or drug discontinuation (P = 0.052) between the UST, IFX, and ADA groups in bio-naïve CD patients. In bio-experienced CD patients, with 35 in the UST group and 13 in the anti-TNF agents group, the UST group showed a lower risk of drug discontinuation (P = 0.004) than the anti-TNF agents group.

Conclusion : This study suggests that UST, IFX, and ADA are equally effective in bio-naïve CD patients, while in bio-experienced patients, mostly with previous exposure to anti-TNF agents, UST may offer superior drug durability.

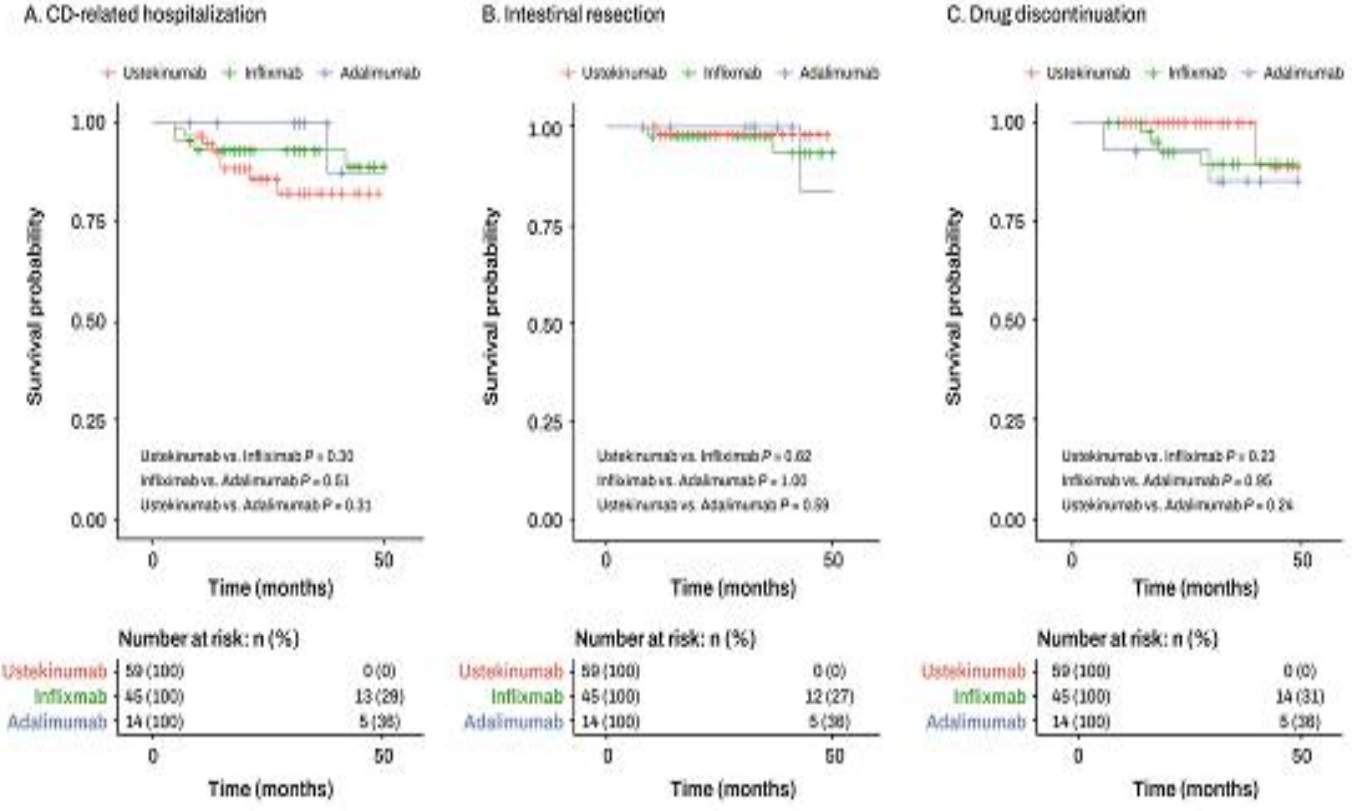
Keywords : Moderate to Severe Crohn's Disease, Bio-nave and Bio-experienced Patients, Ustekinumab and Anti-tumor Necrosis Factor Agents, Efficacy And Prognosis

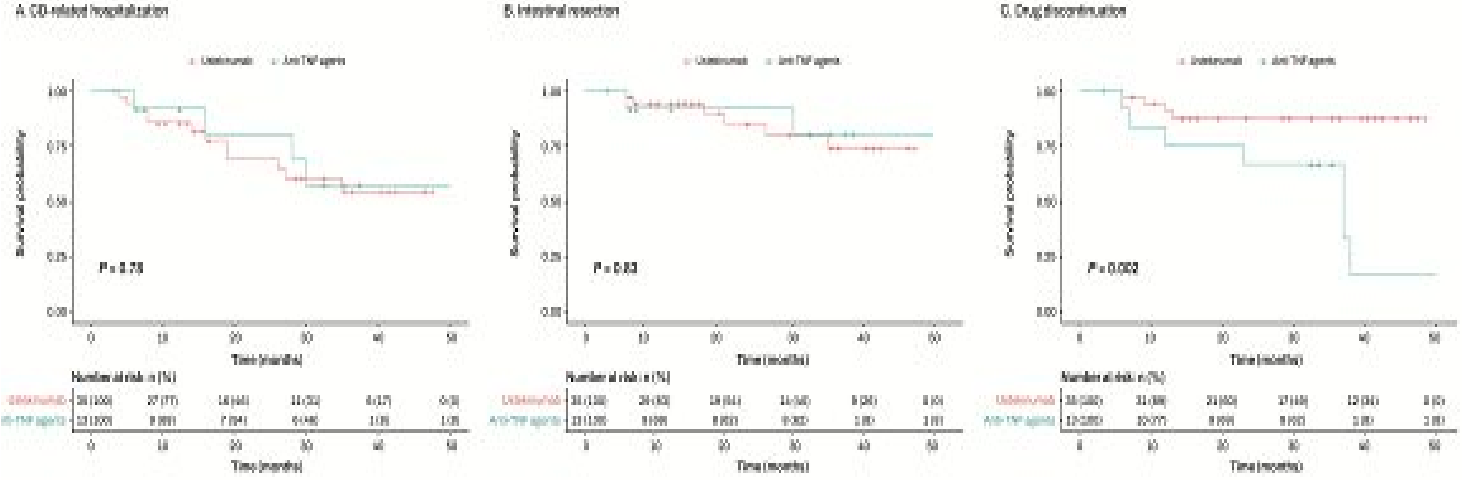
Table. Major clinical outcome rates after induction and maintenance therapy of ustekinumab and anti-tumor necrosis factor agents after propensity score matching only in bio-naïve patients

Bio-naïve patients	Ustekinumab (N = 59)	Infliximab (N = 45)	Adalimumab (N = 14)	*P* value
Clinical remission	55 (93.2)	39 (86.7)	10 (71.4)	0.071[1]
Hospitalization	8 (13.6)	6 (13.3)	1 (7.1)	0.800[1]
Intestinal resection	1 (1.7)	3 (6.7)	1 (7.1)	0.390[1]
Drug discontinuation	1 (1.7)	6 (13.3)	2 (14.3)	0.052[1]
Bio-experienced patients	Ustekinumab (N = 35)	Anti-TNF agents (N = 13)		*P* value
Clinical remission (missing value in one patient)	27 (77.1)	10 (83.3) (N = 12)		1.000[2]
Hospitalization	12 (34.3)	4 (30.8)		1.000[2]
Intestinal resection	6 (17.1)	2 (15.4)		1.000[2]
Drug discontinuation	4 (11.4)	7 (53.8)		0.004[2]

Values are expressed as n (%).

[1]Pearson chi-square, [2]Fisher's exact test




A. CD-related hospitalization
B. Intestinal resection
C. Drug discontinuation
Ustekinumab
Anti-TNF agents
Survival probability
P = 0.73
P = 0.83
P = 0.002
Time (months)
Number at risk - n (%)
Ustekinumab
Anti-TNF agents

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-030

Histologic Remission is an Important Therapeutic Target in Patients Who Achieve Endoscopic Remission of Ulcerative Colitis

Minhyeok Lee, Jun Lee, Soomin Lee, Yongjin Jang, Jaewoong Kim, Seongjung Kim
Busan Ulsan Gyeongnam Intestinal Study Group Society (BIGS)
Internal Medicine, Chosun University School of Medicine, Gwangju, Korea

Background / Aim : Histologic activity has been established as a crucial prognostic determinant in individuals diagnosed with ulcerative colitis(UC), while achieving histologic remission is increasingly recognized as a significant long-term therapeutic goal. However, the available literature still lacks adequate evidence concerning the selection of an optimal histological index and its utility in predicting prognosis.
Methods : This retrospective study involved the analysis of medical records and endoscopic results from patients diagnosed with UC between January 2015 and December 2022. Endoscopic remission was defined as a Mayo endoscopic sub-score of ≤1. Histological assessment utilized the Nancy index, with a score of ≤1 indicating histological remission. Among patients with UC who achieved endoscopic remission, the study assessed the maintenance of remission and the occurrence of recurrence based on histological remission.
Results : A total of 114 patients with UC who achieved mucosal healing were enrolled for histological evaluation. Among them, 16.7% (19/114) experienced flare-ups, and a statistically significant inverse correlation was observed with histologic remission (see Table). Multivariate analysis further identified non-histologic remission (Nancy index >2) as an independent risk factor for recurrence (Hazard ratio: 3.513, CI: 1.334-9.257, P=0.011). Particularly noteworthy was the significantly lower recurrence rate when histologic remission is achieved, especially in patients with MES 1 (see Figure)
Conclusion : Our study demonstrated a robust correlation between histologic remission assessed by the Nancy index and sustained clinical remission. The Nancy index, reflecting relatively straightforward histological activity, is considered a valuable metric that can aid in establishing treatment goals.
Keywords : Ulcerative Colitis, Histologic Remission, Endoscopic Remission

Table: The Risk Factors for Flare-up in Patients with Ulcerative Colitis in Endoscopic Remission

Characteristics (n=114)	Non flare-up (N=95)	Flare up (N=19)	p-value
Mean age (years, mean±SD)	41.65±16.74	41.16±19.49	0.909
Sex (male)	59(62.1)	15(78.9)	0.195
Disease extent			0.106
E1	38(40)	3(15.8)	
E2	25(26.3)	8(42.1)	
E3	32(33.7)	8(42.1)	
MES			0.043
MES=0	45(47.4)	4(21.1)	
MES=1	50(52.6)	15(78.9)	
Histologic classification			0.011
Nancy (0,1)	61(64.2)	6(31.6)	
Nancy (2,3,4)	34(35.8)	13(68.4)	
Mean duration of remission	49.98±48.63	31.21±25.85	0.019

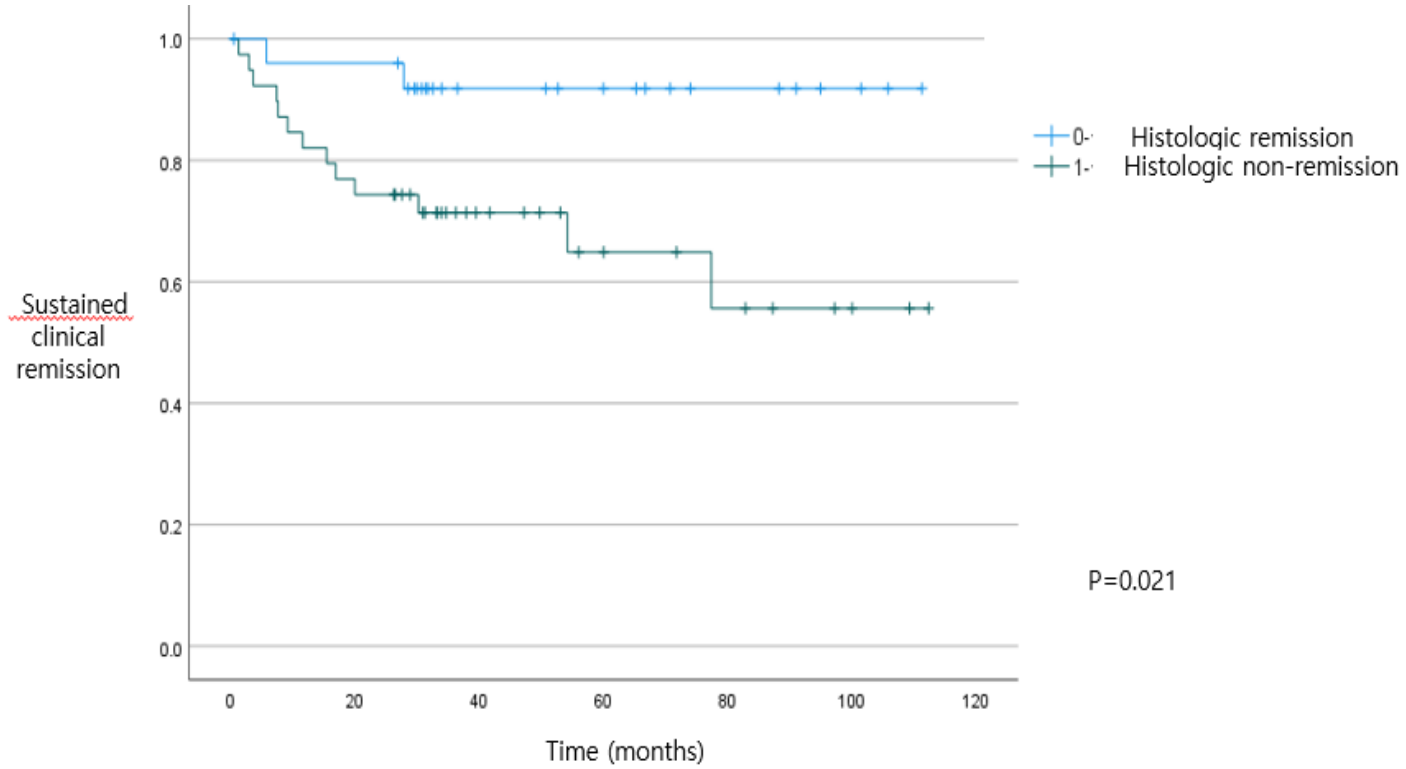


Figure. Comparison of sustained clinical remission rates according to Histologic remission (Histologic remission: Nancy index ≤ 1, Histologic non-remission: Nancy index > 2

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-031

Correlations between the SES-CD Score and Fecal Calprotectin in Pediatric Crohn's Disease

Yiyoung Kwon[1], Seo Hee Kim[2], Yoo Min Lee[3], Eun Sil Kim[4], Eun Hye Lee[5], Sujin Choi[6], Byung-Ho Choe[6], Ben Kang[6]

[1]Pediatrics, Inha University School of Medicine, Incheon, Korea
[2]Pediatrics, Chonnam National University Medical School, Chonnam, Korea
[3]Pediatrics, Soonchunhyang University Bucheon Hospital, Bucheon, Korea
[4]Pediatrics, Kangbuk Samsung Hospital, Seoul, Korea
[5]Pediatrics, Nowon Eulji Medical Center, Seoul, Korea
[6]Pediatrics, Kyungpook National University, Kyungpook, Korea

Background / Aim : Inflammatory bowel disease (IBD) requires lifelong management and has a significant impact on the patient's quality of life. Early detection and appropriate monitoring of inflammation are very important in the management of IBD. Endoscopy is the best test method, but it has the disadvantage of being expensive and invasive. Therefore, fecal calprotectin (FC), which is simple, fast, and less invasive, is being utilized.
Methods : This was a multicenter retrospective study conducted in Korea. Children and adolescents diagnosed with CD <19 years, and who had documented SES-CD scores and FC levels at both diagnosis and follow-up were included. Clinicodemographics, results from laboratory and endoscopic exams were collected, and correlations between SES-CD and factors were analyzed.
Results : The total number of patients was 154, 68.2% of whom were male, and the median SES-CD score and the median FC at the time of diagnosis were 14.0 and 1355.0 mg/kg. The median SES-CD score and the median FC at the time of follow-up were 2.0 and was 78.0 mg/kg. When the correlation between the PCDAI score, ESR, CRP, and FC and the SES-CD score was evaluated using Spearman's rank correlation test, all of them had a statistically significant correlation, but FC had the greatest correlation with a coefficient of 0.48 compared to the other items. Optimal cut-off value of FC was1585.0 mg/kg with AUC=0.785 in ROC curve analysis for the detection of severe endoscopic activity at diagnosis. Optimal cut-off value of FC was195.0 mg/kg with AUC=0.738 in ROC curve analysis for the detection of endoscopic healing at follow-up endoscopy.
Conclusion : FC is useful marker for discriminating severe endoscopic activity at CD diagnosis, and detecting endoscopic healing at follow-up.
Keywords : Crohn's Disease, SES-CD Score, Fecal Calprotectin

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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-032

Factors associated with a Minus Delta Height Z-score at 1-year Post-diagnosis in Pediatric Patients with Ulcerative Colitis

Sujin Choi[1], So Yoon Choi[2], Yon Ho Choe[3], Jin Soo Moon[4], Yeoun Joo Lee[5], Hye Ran Yan[6], Eell Ryoo[7], Yu Bin Kim[8], Tae Hyeong Kim[9], Yoo Min Lee[10], Yoon Lee[11], Ji-Sook Park[12], Minsoo Shin[13], Hong Koh[14], Ju Young Chang[15], Jung Ok Shim[16], Ben Kang[1]

[1]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Pediatrics, Kosin University Gospel Hospital, Busan, Korea
[3]Pediatrics, Samsung Medical Center, Seoul, Korea
[4]Pediatrics, Seoul National University College of Medicine, Seoul
[5]Pediatrics, Pusan National University School of Medicine, Busan, Korea
[6]Pediatrics, Seoul National University Bundang Hospital, Seongnam, Korea
[7]Pediatrics, Gachon University Gil Medical Center, Incheon, Korea
[8]Pediatrics, Ajou University School of Medicine, Suwon, Korea
[9]Pediatrics, Kyung Hee University Hospital at Gangdong, Seoul, Korea
[10]Pediatrics, Soonchunhyang University Bucheon Hospital, Bucheon, Korea
[11]Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea
[12]Pediatrics, Gyeongsang National University Hospital, Jinju, Korea
[13]Pediatrics, Korea University Medical Center Ansan Hospital, Ansan, Korea
[14]Pediatrics, Yonsei University College of Medicine, Seoul, Korea
[15]Pediatrics, Seoul National University Boramae Medical Center, Seoul, Korea
[16]Pediatrics, Korea University Guro Hospital, Seoul, Korea

Background / Aim : According to the recently published STRIDE-II recommendation, linear growth restoration has been newly added as one of the intermediate targets in children and adolescents with inflammatory bowel disease. We aimed to investigate the factors associated with a minus delta height Z-score at 1-year post-diagnosis in pediatric patients with ulcerative colitis (UC).
Methods : This was a multicenter, registry-based, inception cohort study conducted in Korea. Pediatric patients diagnosed with UC <19 years and had data on growth indicators at 1-year follow-up after diagnosis were included. Baseline clinicodemographics, Paris classification factors, results from laboratory and endoscopic exams were collected, and factors associated linear growth restoration were analyzed.
Results : A total 130 patients were included. Males comprised 63.8% (83/130) of the patients, and the median age at diagnosis was 14.8 years [interquartile range (IQR) 12.0–16.3]. The median delta height Z-score was -0.1 (IQR -0.3–0.1). Among the patients, 82 (63.1%) showed a delta 'height Z-score at 1-year follow-up minus height Z-score at diagnosis' <0. According to multivariable logistic regression analysis, male sex [odds ratio (OR) 2.42, 95% confidence interval (CI) 1.15–5.15, P = 0.021] was associated with delta 'height Z-score at 1-year follow-up minus height Z-score at diagnosis' <0.
Conclusion : Height Z-score at 1-year post-diagnosis decreased in approximately two-thirds of pediatric patients with UC. Special care should be focused on the linear growth restoration of males.
Keywords : Ulcerative Colitis, Pediatric, Linear Growth

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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-033

Factors associated with Time-to-perianal Surgery after Diagnosis in Paediatric Patients with Crohn's Disease

So Yoon Choi[1], Eell Ryoo[2], Jin Soo Moon[3], Seak Hee Oh[4], Yon Ho Choe[5], Yeoun Joo Lee[6], Hye Ran Yang[7], Jung Ok Shim[8], Minsoo Shin[9], Yu Bin Kim[10], Yoo Min Lee[11], Soon Chul Kim[12], Hong Koh[13], Yoon Lee[14], Ju Young Chang[15], Tae Hyeong Kim[16], Ji-Sook Park[17], Byung-Ho Choe[18], Ben Kang[18]

[1]Pediatrics, Kosin University Gospel Hospital, Busan, Korea
[2]Pediatrics, Gachon University Gil Medical Center, Incheon, Korea
[3]Pediatrics, Seoul National University Hospital, Seoul, Korea
[4]Pediatrics, Asan Medical Center, Seoul, Korea
[5]Pediatrics, Samsung Medical Center, Seoul, Korea
[6]Pediatrics, Pusan National University Children's Hospital, Yangsan, Korea
[7]Pediatrics, Seoul National University Bundang Hospital, Seoul, Korea
[8]Pediatrics, Korea University Guro Hospital, Seoul, Korea
[9]Pediatrics, Korea University Ansan Hospital, Ansan, Korea
[10]Pediatrics, Ajou University School of Medicine, Suwon, Korea
[11]Pediatrics, Soonchunhyang University Bucheon Hospital, Bucheon, Korea
[12]Pediatrics, Jeonbuk National University Medical School, Jeonju, Korea
[13]Pediatrics, Severance Children's Hospital, Seoul, Korea
[14]Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea
[15]Pediatrics, Seoul National University Boramae Medical Center, Seoul, Korea
[16]Pediatrics, Kyung Hee University Hospital at Gangdong, Seoul, Korea
[17]Pediatrics, Gyeongsang National University College of Medicine, Jinju, Korea
[18]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea

Background / Aim : The rate of perianal disease at diagnosis among Korean children with Crohn's disease (CD) is significantly higher than in Europe (44.8% vs. 8.2%, P < 0.001). This suggests that Korean pediatric CD patients are more likely to undergo perianal surgery after diagnosis. We aimed to investigate the factors associated with time-to-perianal surgery after diagnosis in pediatric patients with CD.
Methods : This was a multicenter, registry-based, inception cohort study conducted in Korea. Pediatric patients diagnosed with CD <19 years and had been followed for at least 1 year were included in this study. Baseline clinicodemographics, Paris classification factors, results from laboratory and endoscopic exams were collected, and factors associated with time-to-perianal surgery after diagnosis were analyzed.
Results : A total 477 patients with CD were included. Males comprised 71.5% (341/477) of the patients, and the median age at diagnosis was 14.5 years (IQR 12.7–16.1). Perianal disease modifiers comprised 48.8% (233/477) of the patients. During a median follow-up period of 727 days [interquartile range (IQR) 481–748], 33 patients (6.9%) received perianal surgery due to perianal fistulizing diseases at median 87 days (IQR 47–171) after diagnosis. Patients who had received a perianal surgery had a higher proportion of patients with perianal disease modifiers (81.8% vs 46.4%, P<0.001), higher proportion of patients with previous perianal surgery before diagnosis (48.5% vs 20.7%, P<0.001), and lower proportion of anti-TNF treatment usage (18.2% vs 55.2%, P<0.001). According to multivariate Cox proportional hazard regression analysis, perianal disease modifier (HR 3.47, 95% CI 1.23–9.81, P=0.019) and anti-tumour necrosis factor (TNF) agent usage was associated with time-to-perianal surgery (HR 0.21, 95% CI 0.08–0.54, P=0.001).
Conclusion : Among the factors associated with time-to-perianal surgery after diagnosis, anti-TNF agent usage was the only modifiable factor. Upfront anti-TNF agent usage may lower the incidence of perianal surgery after diagnosis in pediatric patients with CD.
Keywords : Crohn's Disease, Pediatric, Perianal Surgery

Table 1. Baseline characteristics

Male sex, *n (%)*	341 (71.5%)
Diagnosis age, *year*	14.5 (IQR 12.7-16.1)
Perianal disease modifiers, *n (%)*	233 (48.8%)
Follow-up period, *days*	727 (IQR 481-748)
Perianal surgery, *n (%)*	33 (6.9%)
Duration from diagnosis to perianal surgery, *days*	87 (IQR 47-171)

Table 2. Factors associated with time-to-perianal surgery.

	Univariate Cox analysis			Multivariate Cox analysis		
	HR	95% CI	*P*	HR	95% CI	*P*
Sex [male]	2.64	1.19-5.86	0.017	0.68	0.25-1.87	0.454
Age at diagnosis < 10 years [yes]	1.04	0.32-3.32	0.955			
Any colonic involvement [yes]	1.20	0.56-2.54	0.644			
Any L4 involvement [yes]	4.16	1.30-13.36	0.017	3.18	0.74-13.55	0.119
B1 behavior [yes]	1.29	0.58-2.85	0.538			
Perianal disease modifier [yes]	8.72	3.72-20.45	<0.001	3.56	1.26-10.02	0.016
Paris growth [G1]	0.64	0.29-1.43	0.279			
History of perianal surgery [yes]	3.60	2.08-6.23	<0.001	1.39	0.61-3.18	0.430
Anti-TNF usage [yes]	0.13	0.06-0.28	<0.001	0.24	0.09-0.59	0.002
PCDAI	0.99	0.97-1.02	0.624			
White blood cell count, /μl	1.00	1.00-1.00	0.017	1.00	1.00-1.00	0.041
Hematocrit, %	1.14	1.05-1.23	0.001	1.08	0.96-1.20	0.198
Platelet count, $\times 10^3$/μl	1.00	0.99-1.00	0.546			
Albumin, g/dL	2.05	1.05-4.00	0.035	0.98	0.47-2.06	0.955
CRP, mg/dL	0.86	0.75-0.98	0.028	0.96	0.81-1.14	0.627
ESR, mm/hr	0.99	0.98-1.00	0.051	1.00	0.98-1.02	0.803
Fecal calprotectin, mg/kg	1.00	1.00-1.00	0.847			
SES-CD	1.00	0.95-1.06	0.999			

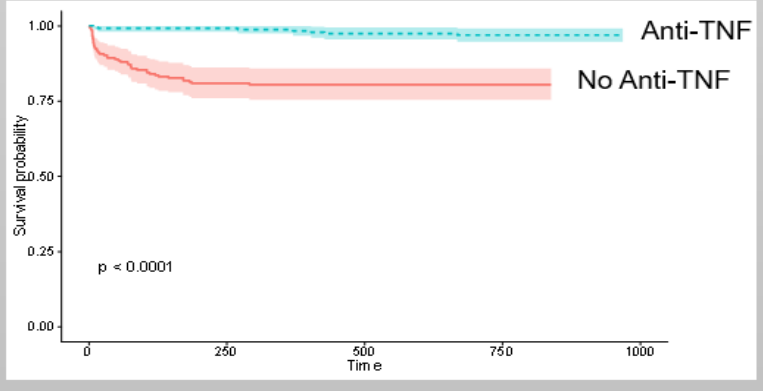


Figure 1. Survival probability according to anti-TNF usage.

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-034

Differential Diagnosis between Crohn's Disease and Intestinal Tuberculosis using an Artificial Intelligence Algorithm

Cheol-Hyung Lee[1], Min Kyu Kim[1], Ji Eun Baek[1], June Hwa Bae[1], Jung-Bin Park[1], Seung Wook Hong[1], Sung Wook Hwang[1], Sang Hyoung Park[1], Dong-Hoon Yang[1], Byong Duk Ye[1], Seung-Jae Myung[1], Suk-Kyun Yang[1], Kwangbeom Park[2], Namkug Kim[3], Jeong-Sik Byeon[1]

[1]Department of Gastroenterology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

[2]Department of Internal Medicine, Nowon Eulji Medical Center, Eulji University, Seoul, Korea

[3]Department of Convergence Medicine, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

Background / Aim : Differential diagnosis between Crohn's disease (CD) and intestinal tuberculosis (ITB) is difficult. The purpose of this study was to investigate the possibility of a convolutional neural network (CNN)-based model, utilizing colonoscopy images, to facilitate the differential diagnosis between CD and ITB.

Methods : A retrospective review of medical records of patients diagnosed with CD or ITB was conducted at a tertiary center between 2010 and 2020. The dataset of colonoscopy images comprised the training (801 CD images and 762 ITB images), validation (263 CD images and 219 ITB images), and test (68 CD images and 64 ITB images) datasets. The developed model was tested on the test dataset. The accuracy and area under the receiver operating characteristic curve (AUROC) were calculated. The performance of the CNN model was compared with expert endoscopists and trainee endoscopists. Finally, clinical applicability was investigated using a separate external dataset containing 67 CD images and 63 ITB images from other institutions. Three expert endoscopists and 3 trainee endoscopists performed human test twice with 5 week-interval with and without aid of the CNN model.

Results : The developed model exhibited an accuracy of 0.977 in the differential diagnosis between CD and ITB within the test dataset. The AUROC was 0.997 in the test dataset. The model showed an accuracy of 0.815 in the external dataset. The AUROC was 0.877 in the external dataset. The diagnostic performance of CNN model was inferior to the expert endoscopists whereas it was slightly superior to trainee endoscopists. In the human test with the external dataset, the CNN model did not improve the diagnostic performance of expert endoscopists, but it modestly improved the diagnostic performance of trainee endoscopists.

Conclusion : The CNN model using colonoscopy images could help the differential diagnosis between CD and ITB, especially for less experienced, trainee endoscopists.

Keywords : Crohn's Disease, Intestinal Tuberculosis, Artificial Intelligence

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-035

Deep Learning Model using Stool Pictures Discriminates Patients with Endoscopically Active Ulcerative Colitis from Subjects with Normal Colonoscopy

O Seong Kweon[1], Eun Soo Kim[1], Dongwon Woo[2], Kyeong Ok Kim[3], Sung Kook Kim[1], Hyun Seok Lee[1], Ben Kang[4], Yoo Jin Lee[5], Byung Ik Jang[3], Eun Young Kim[6], Hyeong Ho Jo[6], Yun Jin Chung[1], Hanjun Ryu[7], Soo-Kyung Park[8], Hosang Yu[2], Sungmoon Jeong[9]

Crohn's and Colitis Association in Daegu-Gyeongbuk (CCAiD)

[1]Internal Medicine, Kyungpook National University School of Medicine, Daegu, Korea

[2]Research Center for Artificial Intelligence in Medicine, Kyungpook National University Hospital, Daegu, Korea

[3]Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea

[4]Pediatrics, Kyungpook National University School of Medicine, Daegu, Korea

[5]Internal Medicine, Keimyung University School of Medicine, Daegu, Korea

[6]Internal Medicine, Daegu Catholic University School of Medicine, Daegu, Korea

[7]Internal Medicine, Daegu Fatima Hospital, Daegu, Korea

[8]Internal Medicine, Sungkyunkwan University School of Medicine, Seoul, Korea

[9]Medical Informatics, Kyungpook National University School of Medicine, Daegu, Korea

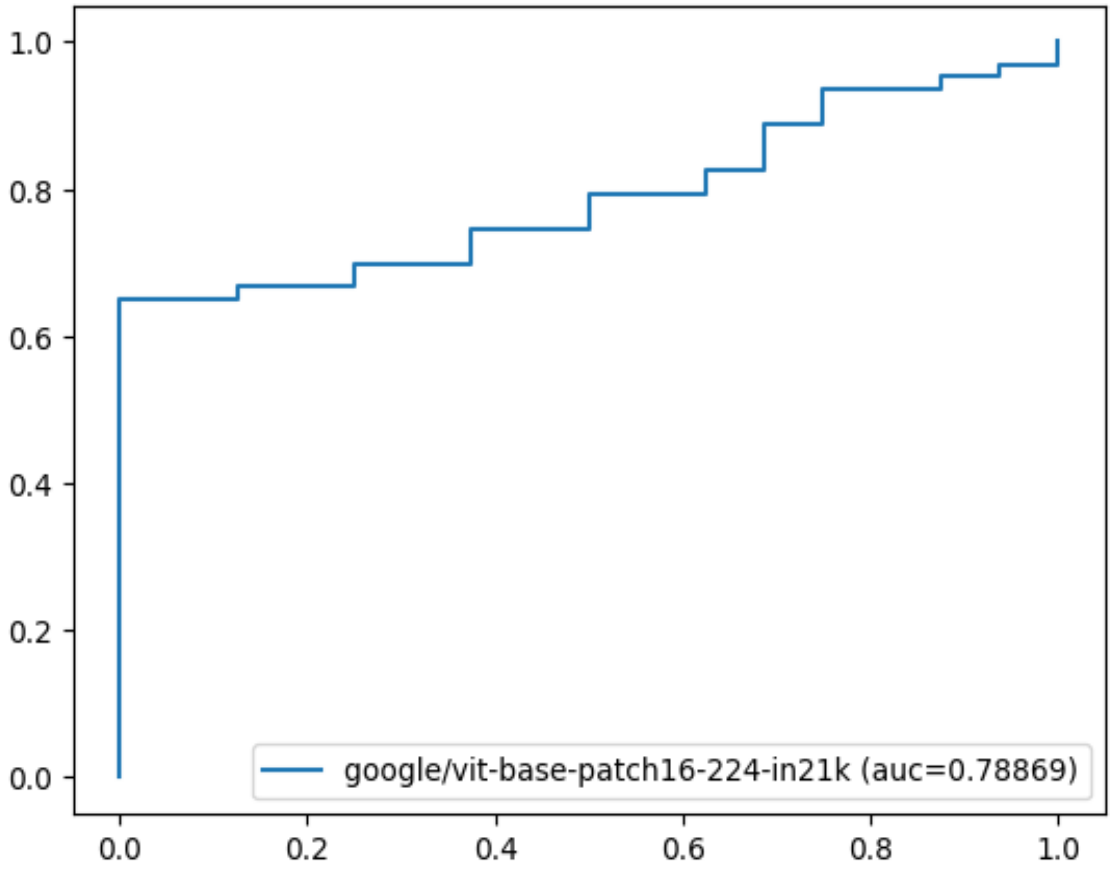
Background / Aim : Diagnosis of ulcerative colitis (UC) is challenging as there is no gold standard diagnostic tool of the disease. We previously developed deep learning model using stool photos for predicting endoscopic activity in 306 patients with UC (DLSUC). This study aimed to explore the potential of the DLSUC in the diagnosis of UC.

Methods : : Patients with endoscopically active UC and subjects for colonoscopy with various symptoms were prospectively enrolled in the study. They were asked to take stool pictures with their smartphones 1 week before undergoing endoscopy. Area under the receiver operating characteristic (AUC), sensitivity, specificity, and accuracy to discriminate UC patients from subjects without UC were estimated.

Results : 63 endoscopically active UC patients (age 46.5±16.3, male 68.3%) and 16 subjects with normal colonoscopy (mean age 42.6±10.6, male 62.5%) were included in the study. The median ulcerative colitis endoscopic index of severity (UCEIS) in patients with UC was 4 (interquartile range 3-5). Disease activity classified by Mayo score was as follows; remission 14.3%, mild 47.6%, moderate 23.8%, and severe 14.3%. 43.7% of subjects without UC had irritable bowel syndrome satisfying Rome IV criteria. AUC, sensitivity, specificity, and accuracy of DLSUC were 0.788, 0.651, 1, and 0.722. However, when UC patients with rectal sparing cases (19/63, 30.1%) were excluded, the values were increased to 0.899, 0.841, 1, and 0.883.

Conclusion : DLSUC model discriminates patients with endoscopically active UC from subjects without UC with better accuracy in patients without rectal sparing. This result indicates the potential of artificial intelligence and smartphone technology using stool photos as one of the adjunctive tools for diagnosis of typical UC.

Keywords : Ulcerative Colitis, Stool Photos, Deep Learning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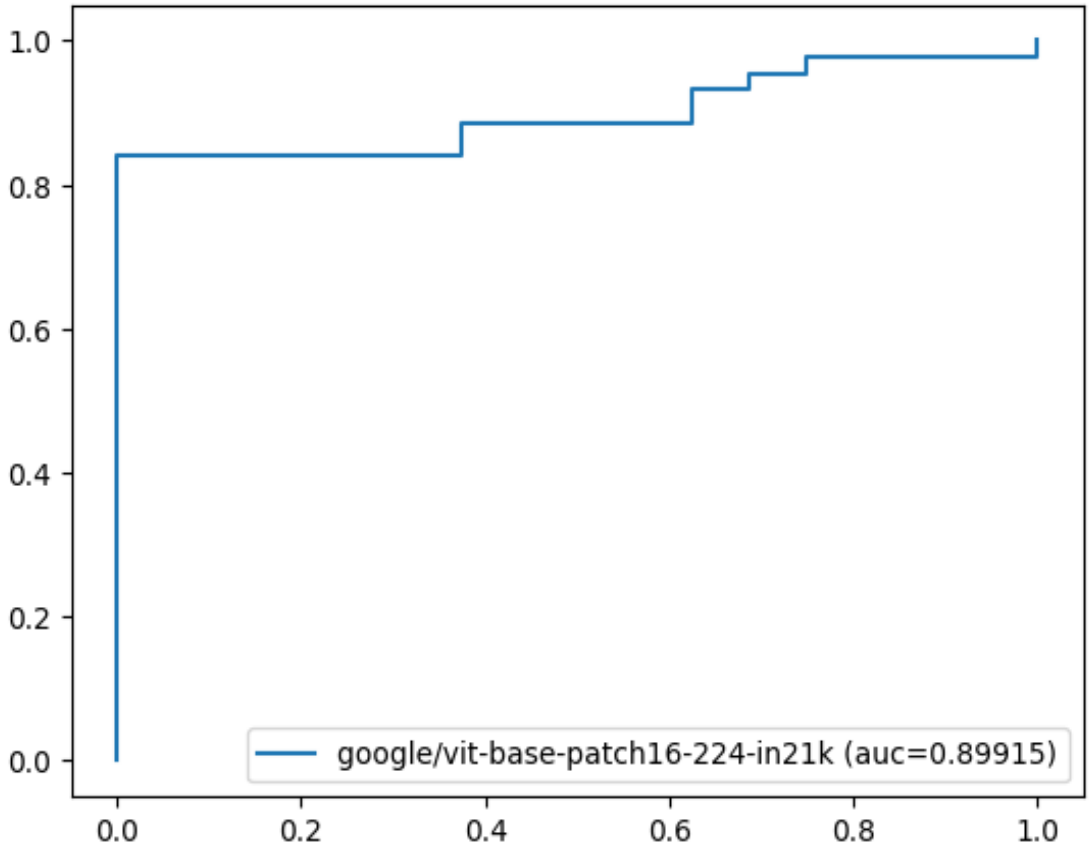
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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-036

The Timing of Anti-TNF Therapy Initiation has Different Impacts depending on the Type of Inflammatory Bowel Disease

Shin Ju Oh[1], Ji Eun Kim[1], Hyo Jong Kim[1], Min-Taek Lee[2], Sun-Young Jung[2], Chang Kyun Lee[1]
[1]Gastroenterology, Center for Crohn's and Colitis, Kyung Hee University Hospital,
Kyung Hee University College of Medicine, Seoul, Korea
[2]College of Pharmacy, Chung-Ang University, Seoul, Korea

Background / Aim : Recent management trends in inflammatory bowel disease (IBD) have focused on earlier initiation of advanced therapies like anti-TNF agents to prevent disease progression. A comprehensive study, utilizing data from the Korean National Health Insurance Service database, aimed to evaluate the relative advantages of early versus later initiation of anti-TNF therapy in IBD.
Methods : The study included all newly diagnosed IBD patients from 2004 to 2018 who received anti-TNF therapy and had at least on year of follow-up after anti-TNF initiation. The patients were divided into early and late users based on their timing of first anti-TNF exposure, with the cut-off point being two years after diagnosis. We compared the incidence rates of IBD-related surgeries, hospitalizations, emergency department (ED) visits, and drug persistence rates. Additionally, the study conducted a subgroup analysis to explore variations in outcomes with or without the concurrent use of immunomudulators.
Results : Involving 8,105 patients with ulcerative colitis (UC) and 8,465 with Crohn's disease (CD), the study found distinct outcomes based on the timing of anti-TNF therapy initiation. Among UC patients, early anti-TNF users experienced a higher rate of hospitalizations and ED visits compared to later users, indicating potential draw backs of early treatment initiation in UC. In contrast, CD patients who were early users showed a trend towards lower event rates, although this was not statistically significant (Table 1,2). A notable finding was that drug persistence was significantly longer among late users for both UC and CD. The use of immunomodulators alongside early anti-TNF therapy was linked to poorer outcomes, a trend not observed in late users.
Conclusion : This study highlights the complexity in IBD management, emphasizing that the impact of anit-TNF therapy initiation timing varies between UC and CD. It underscores the need for personalized treatment strategies, considering the IBD type, patient-specific factors, and possible interactions with other medications.
Keywords : Anti-TNF Therapy, Early Initiation, Inflammatory Bowel Disease, Ulcerative Colitis, Crohn's Disease

Figure 1. Flow chart of study population

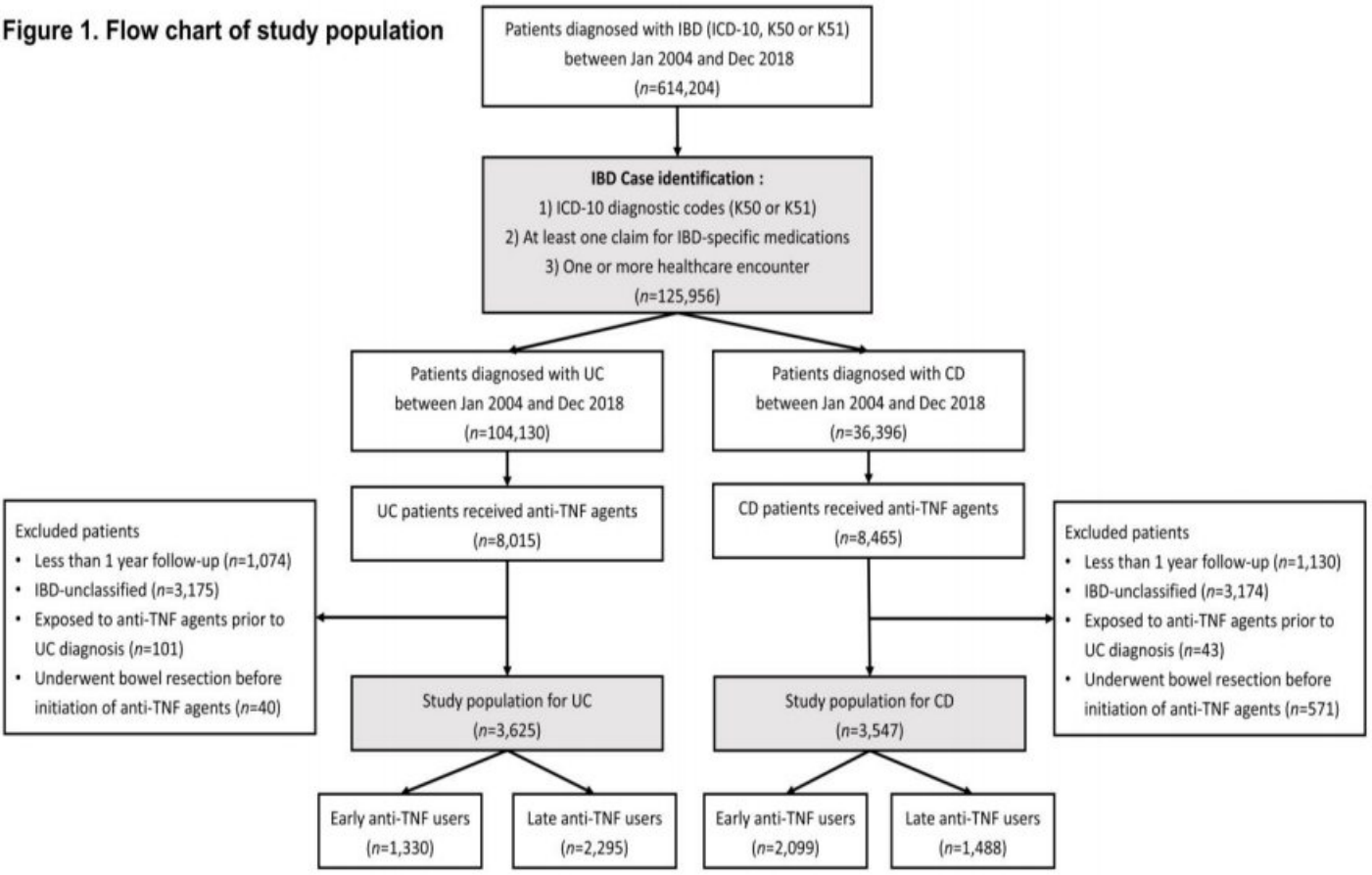


Table 2. Difference in incidence rates of events between early and later anti-TNF user with UC

	Early user			Later user			Incidence rate ratio
	Count	Person-year	Incidence rate	Count	Person-year	Incidence rate	
1. UC PS-matched (n=1,194/1,194)							
IBD-related surgery	60	4990.051	0.012 (0.009–0.015)	46	5172.567	0.009 (0.070–0.012)	1.35 (0.92–1.99)
Hospitalization							
All-cause hospitalization	821	2086.185	0.394 (0.368–0.421)	726	2554.678	0.284 (0.264–0.306)	1.38 (1.25–1.53)
IBD-specific hospitalization	77	4953.216	0.016 (0.012–0.019)	47	5184.353	0.009 (0.007–0.012)	1.71 (1.19–2.46)
Emergency room visit	612	3176.214	0.193 (0.178–0.209)	515	3594.721	0.143 (0.131–0.156)	1.34 (1.20–1.51)
Cumulative hospital visit (within 1 year)	25.1	1184.41	0.021	26.31	1188.67	0.022	0.957
Cumulative hospital visit (Total study period)	92.65	5219.69	0.018	102.9	5346.48	0.019	0.922
2. UC non-matched (n=1,330/2,295)							
IBD-related surgery	65	5565.309	0.012 (0.009–0.015)	79	10320.151	0.008 (0.006–0.010)	1.53 (1.10–2.12)
Hospitalization							
All-cause hospitalization	930	2242.105	0.415 (0.389–0.442)	1373	5167.187	0.266 (0.252–0.280)	1.56 (1.44–1.70)
IBD-specific hospitalization	82	5529.257	0.015 (0.012–0.018)	79	10342.423	0.008 (0.006–0.010)	1.94 (1.43–2.64)
Emergency room visit	693	3478.617	0.199 (0.185–0.215)	970	7240.605	0.134 (0.126–0.143)	1.49 (1.35–1.64)
Cumulative hospital visit (within 1 year)	24.83	1319.93	0.019	26.91	2283.56	0.012	1.596
Cumulative hospital visit (Total study period)	91.5	5810.1	0.016	109.8	10619.12	0.010	1.523

Table 3. Difference in incidence rates of events between early and later anti-TNF user with CD

	Early user			Later user			Incidence rate ratio
	Count	Person-year	Incidence rate	Count	Person-year	Incidence rate	
3. CD PS-matched (n=2,099/1,488)							
IBD-related surgery	233	5730.459	0.041 (0.036–0.046)	245	5630.097	0.044 (0.038–0.049)	0.93 (0.78–1.12)
Hospitalization							
All-cause hospitalization	883	2289.974	0.386 (0.361–0.412)	868	2318.634	0.374 (0.350–0.400)	1.03 (0.94–1.13)
IBD-specific hospitalization	214	5838.063	0.037 (0.032–0.042)	248	5659.548	0.044 (0.039–0.050)	0.84 (0.70–1.00)
Emergency room visit	742	3596.903	0.206 (0.192–0.222)	733	3488.569	0.210 (0.195–0.226)	0.98 (0.89–1.09)
Cumulative hospital visit (within 1 year)	20.34	1332.68	0.015	19.42	1336.07	0.015	1.050
Cumulative hospital visit (Total study period)	87.29	6847.61	0.013	89.86	6682.16	0.013	0.948
4. CD non-matched (n=1,338/1,338)							
IBD-related surgery	304	8984.608	0.034 (0.030–0.038)	265	6084.556	0.044 (0.039–0.049)	0.78 (0.66–0.92)
Hospitalization							
All-cause hospitalization	1456	3301.487	0.410 (0.419–0.464)	943	2497.478	0.378 (0.354–0.403)	1.17 (1.08–1.27)
IBD-specific hospitalization	309	9051.184	0.034 (0.031–0.038)	264	6132.296	0.043 (0.038–0.049)	0.79 (0.67–0.93)
Emergency room visit	1146	5565.952	0.206 (0.194–0.218)	788	3785.637	0.208 (0.194–0.223)	0.99 (0.90–1.08)
Cumulative hospital visit (within 1 year)	20.38	2095.24	0.010	19.94	1445.22	0.014	0.705
Cumulative hospital visit (Total study period)	84.18	10363.22	0.008	91.91	7221.45	0.013	0.638

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-037

Clinical Relapse Prevention Effect of Ustekinumab and Immunomodulator Combination Therapy in Crohn's Disease Patients Classified as Low to Intermediate-probability Responders by UST-CDST, Multicenter Cohort Study

Jongbeom Shin[1], Sung Min Kong[2], Gyeol Seong[3], Boram Cha[1], Ji Taek Hong[1], Kye Sook Kwon[1]
[1]Department of Internal Medicine, Inha University Hospital,
Inha University School of Medicine, Incheon, Korea
[2]Department of Internal Medicine, Samsung Changwon Hospital,
Sungkyunkwan University School of Medicine, Changwon, Korea
[3]Department of Internal Medicine, Nowon Eulji Medical Center,
Eulji University School of Medicine, Seoul, Korea

Background / Aim : Ustekinumab (UST) is a monoclonal antibody that has therapeutic effects in Crohn's disease (CD) by blocking interleukin 12 and 23. Controversy remains about the effectiveness of the combination of UST and azathioprine(AZA), and the criteria for patients who may benefit from the combination therapy. The aim of this study was to evaluate the effect of combination therapy on relapse in patients with CD and the usefulness of UST - Clinical Decision Support Tool (CDST) as a patient selection tool for combination therapy
Methods : Patients with moderate to severe CD who showed a clinical response after UST induction therapy and observed them until the clinical relapse. Kaplan-Meier analysis was performed to evaluate the effect of UST with AZA and to investigate the difference of combination therapy effect on clinical relapse according to UST-CDST for combination therapy selection.
Results : Among 52 patients, 10 (17.9%) experienced a clinical relapse during the median follow up period of 18.0 months of UST treatment. No patients with clinical relapse were observed among high-probability responders. There was no statistically significant difference in the cumulative clinical relapse rate according to combination therapy in all enrolled patients. (8.3% vs 30.8%, p=0.095) The cumulative relapse rates were 8.3% in combination therapy group, 43.8% in UST monotherapy group among low to intermediate-probability responders according to UST-CDST, showing a statistically significant difference. (p=0.032)
Conclusion : Combination therapy with UST and AZA seems to be effective in reducing clinical relapse rate, and it can be assumed that UST-CDST can help select patients for whom combination therapy may be helpful.
Keywords : Crohn's Disease, Ustekinuma, Clinical Relapse, Immunomodulator

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-038

Increased Bronchiectasis Risk and Related Risk Factors in Inflammatory Bowel Disease : A 10-year Korean National Cohort Study

Jun Su Lee[1], Hye Soon Shin[2], Heejung Lee[3], Bumhee Yang[4], Hyun Lee[5]
[1]Division of Gastroenterology, Department of Internal Medicine, Chungbuk National University Hospital, Chungbuk National University College of Medicine, Cheongju, Korea
[2]Department of Internal Medicine, Chungbuk National University Hospital, Chungbuk National University College of Medicine, Cheongju, Korea
[3]Department of Statistics and Data Science, Yonsei University, Seoul, Korea
[4]Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, Chungbuk National University Hospital, Chungbuk National University College of Medicine, Cheongju, Korea
[5]Division of Pulmonary Medicine and Allergy, Department of Internal Medicine, Hanyang University College of Medicine, Seoul, Korea

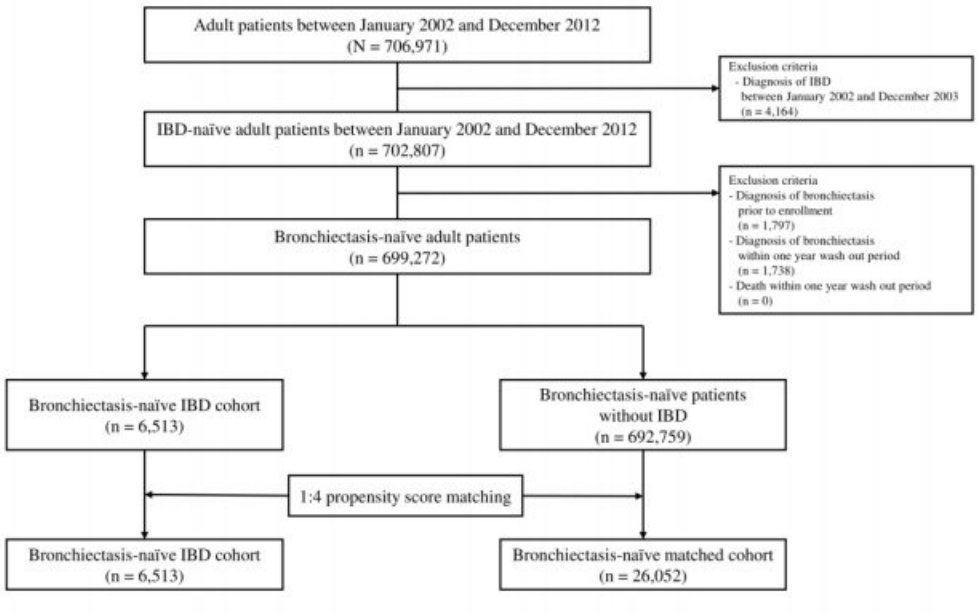
Background / Aim : The association between inflammatory bowel disease (IBD) and an increased risk of bronchiectasis, as well as contributing factors, remains unclear. Additionally, whether bronchiectasis increases disease burden in IBD remains unknown. Therefore, this study aimed to 1) assess whether IBD increases the risk of incident bronchiectasis; 2) compare the risk of bronchiectasis between individuals with Crohn's disease (CD) and those with ulcerative colitis (UC); 3) identify risk factors for bronchiectasis in individuals with IBD; and 4) examine the disease burden in individuals with IBD and bronchiectasis versus those without.
Methods : We conducted a population-based matched cohort study involving adults aged ≥20 years with IBD, using data acquired from the National Health Insurance Service-National Sample Cohort database in Korea between 2002 and 2012.
Results : During the mean follow-up duration of 9.6 years, the incidence rate of bronchiectasis was 419.63/100,000 and 309.65/100,000 person-years (PY) in the IBD and matched cohorts (adjusted hazard ratio [aHR]=1.21, 95% confidence interval [CI]=1.05–1.39), respectively. UC was associated with an increased risk of bronchiectasis (aHR=1.42, 95% CI=1.19–1.69), while CD was not. Multivariate Cox regression analyses showed that age, male sex, medical aid, underweight status, chronic obstructive pulmonary disease, and diabetes mellitus were associated with an increased risk of bronchiectasis in the IBD cohort ($p<0.05$). The mortality, emergency department visit, and hospitalization rates were significantly higher for individuals with IBD and bronchiectasis compared to those without bronchiectasis ($p<0.05$).
Conclusion : IBD is associated with increased risk of bronchiectasis, which results in a greater disease burden in individuals with IBD.
Keywords : Inflammatory Bowel Disease, Bronchiectasis, Epidemiology, Risk, Mortality

TABLE 1. Baseline characteristics of the study individuals

Variable	Total (N = 32,565)	IBD cohort (n = 6,513)	Matched cohort (n=26,052)	p-value
Age (years)				0.99
20–29	4,890 (15.0)	978 (15.0)	3,912 (15.0)	
30–39	6,235 (19.2)	1,247 (19.2)	4,988 (19.2)	
40–49	7,680 (23.6)	1,536 (23.6)	6,144 (23.6)	
50–59	5,750 (17.7)	1,150 (17.7)	4,600 (17.7)	
60–69	5,355 (16.4)	1,071 (16.4)	4,284 (16.4)	
≥70	2,655 (8.2)	531 (8.2)	2,124 (8.2)	
Sex				0.99
Male	16,175 (49.7)	3,235 (49.7)	12,940 (49.7)	
Female	16,390 (50.3)	3,278 (50.3)	13,112 (50.3)	
Type of insurance				0.99
Self-employed health insurance	14,900 (45.8)	2,980 (45.8)	11,920 (45.8)	
Employee health insurance	16,540 (50.8)	3,308 (50.8)	13,232 (50.8)	
Medical aid	1,125 (3.5)	225 (3.5)	900 (3.5)	
Body mass index				<0.01
Underweight	712 (2.2)	173 (2.7)	539 (2.1)	
Normal	20,525 (63.0)	3,846 (59.1)	16,679 (64.0)	
Overweight	4,886 (15.0)	1,098 (16.9)	3,788 (14.5)	
Obese	6,442 (19.8)	1,396 (21.4)	5,046 (19.4)	
Smoking status				<0.01
Never smoker	26,335 (80.9)	5,207 (80.0)	21,128 (81.1)	
Ex-smoker	1,632 (5.0)	406 (6.2)	1,226 (4.7)	
Current smoker	4,598 (14.1)	900 (13.8)	3,698 (14.2)	
Alcohol consumption (days/week)				0.01
None	27,310 (83.9)	5,403 (83.0)	21,907 (84.1)	
1–4	4,536 (13.9)	939 (14.4)	3,597 (13.8)	
≥5	719 (2.2)	171 (2.6)	548 (2.1)	
Physical activity (days/week)				
None	28,971 (89.0)	5,700 (87.5)	23,271 (89.3)	<0.01
1–4	2,413 (7.4)	553 (8.5)	1,860 (7.1)	
≥5	1,181 (3.6)	260 (4.0)	921 (3.5)	
CCI				<0.01
0–1	29,371 (90.2)	5,668 (87.0)	23,703 (91.0)	
≥2	3,194 (9.8)	845 (13.0)	2,349 (9.0)	
Medication				
Systemic corticosteroid use	8,566 (26.3)	2,086 (32.0)	6,480 (24.9)	<0.01
Immunomodulator	67 (0.2)	29 (0.5)	38 (0.2)	<0.01

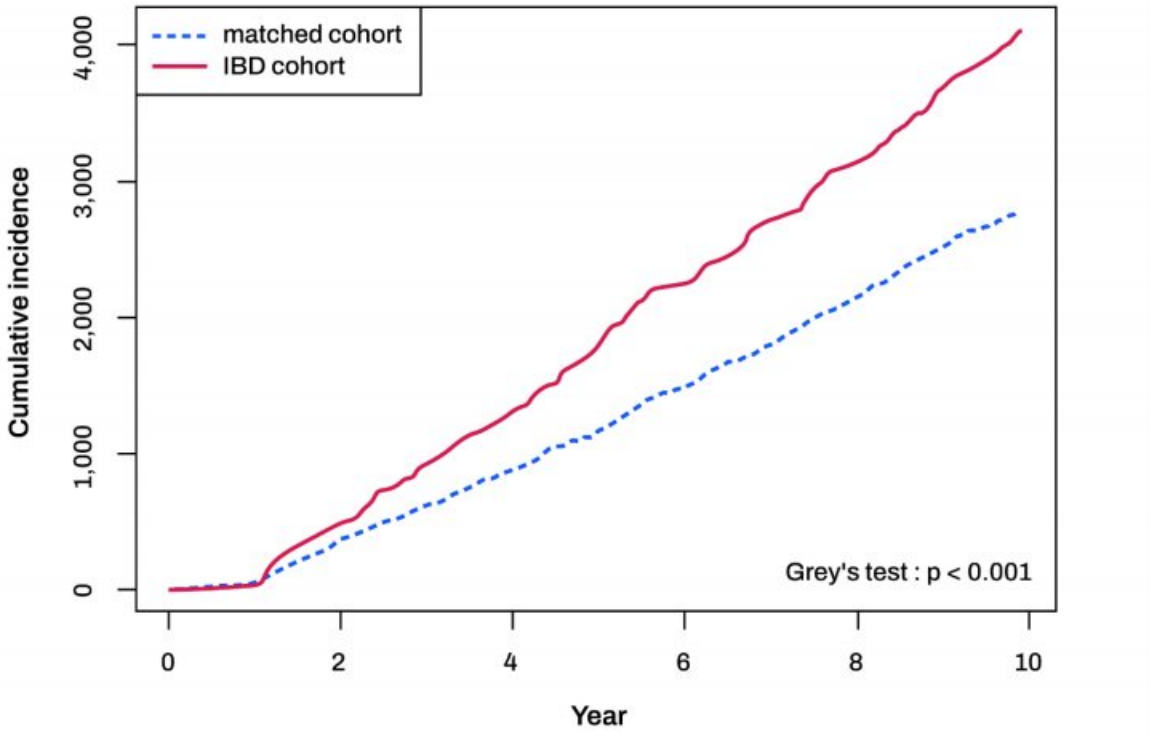
Data are presented as mean ± standard deviation, or number (%)
IBD, inflammatory bowel disease; CCI, Charlson comorbidity index

FIGURE 1. Flow chart for the study



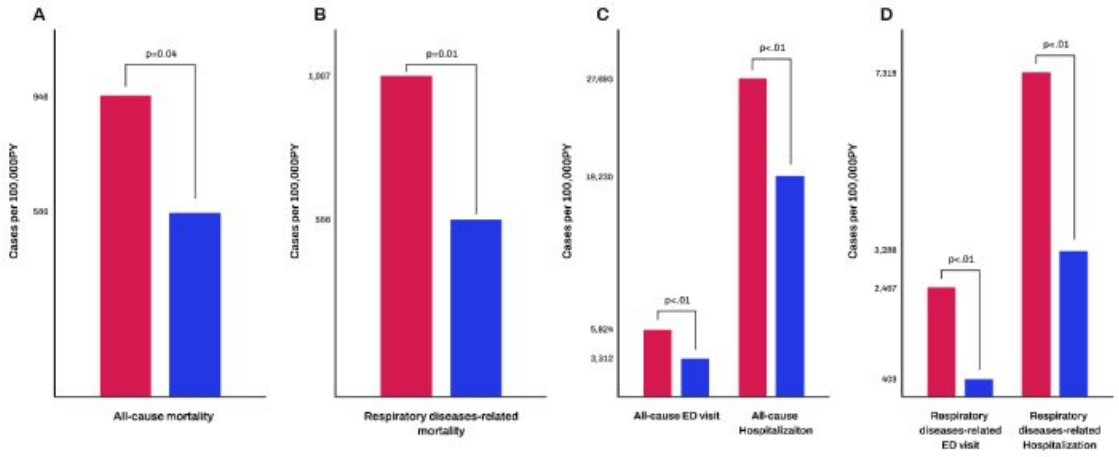
IBD, inflammatory bowel disease

FIGURE 2. Cumulative incidence for bronchiectasis (per 100,000 PY) in the IBD and matched cohorts



PY, person-years; IBD, inflammatory bowel disease

FIGURE 3. Comparison of all-cause mortality, ED visits, and hospitalizations during follow-up between individuals with IBD and bronchiectasis vs. individuals with IBD without bronchiectasis



A) All-cause mortality; B) respiratory diseases-related mortality; C) All-cause ED visits and hospitalizations; D) respiratory diseases-related ED visits and hospitalizations
ED, emergency department; IBD, inflammatory bowel disease

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-039

Diet and the Risk of Inflammatory Bowel Disease: A Retrospective Cohort Study in Taiwan

Ming Jung Meng[1,2], Jyun Huang[3], Yung Kuan Tsou[2], Yu Bin Pan[4], Cheng Tang Chiu[1,2], Yan Ting Lin[2], Puo Hsien Le[1,2]

[1]Department of Gastroenterology and Hepatology, Taiwan Association of the Study of Small Intestinal Disease, Taoyuan, Taiwan

[2]Department of Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

[3]Department of Clinical Nutrition Therapy, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

[4]Biostatistical Section, Clinical Trial Center, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

Background / Aim : In Asia, the prevalence of inflammatory bowel disease (IBD) is surging, with the Western diet being a key suspected risk factor. However, research exploring dietary patterns and IBD in Taiwan remains scarce. This study investigates the dietary practices among Taiwanese individuals, with and without IBD, to guide clinical dietary advice for patients with IBD.

Methods : This study employed structured questionnaires from February to August 2022 to gather baseline data and dietary patterns of IBD patients and healthy controls, focusing on the patients' diets three months prior to IBD diagnosis. Numerical data were presented as mean ± standard deviation, while categorical data were expressed as absolute numbers and percentages. Statistical analysis involved the Mann-Whitney U test for continuous variables and the chi-square or Fisher's exact test for categorical data. Statistical significance was defined as $p < 0.05$, and all analyses were performed using SPSS version 22.0.

Results : Overall, 98 patients with IBD (46 with Crohn’s disease [CD] and 52 with ulcerative colitis [UC]) and 184 healthy controls, were enrolled in this study. Demographic analysis revealed a male predominance in both the CD and UC groups. Cigarette smoking was significantly more common in the IBD group ($p = 0.001$). The healthy control group demonstrated a higher consumption of whole foods and antioxidant, which include rice ($p = 0.005$), whole grains ($p < 0.001$), legumes ($p = 0.004$), mushrooms ($p = 0.004$), burdock ($p = 0.001$), poultry ($p = 0.049$), fresh milk ($p < 0.001$), tea (0.043), Soy lecithin (0.02), and Vitamin (0.004). By contrast, the IBD group consumed more processed food products.

Conclusion : Whole foods and antioxidants may be linked to a lower risk of IBD in Taiwan. Nonetheless, a larger sample size is needed to validate these observations and offer more substantial insights into the relationship between dietary factors and IBD.

Keywords : Whole Food, Antioxidants, Inflammatory Bowel Disease

Table. 1 Demographic Characteristics, Frequency of Whole Food, Processed Food and Supplement Consumption

	IBD			Control	*P*-Value		
	IBD (n=98)	CD (n=46)	UC (n=52)	(n=184)	IBD VS Control	CD VS control	UC VS Control
Demographic Characteristics							
Gender					0.111	0.009*	0.983
Male	68 (69.4%)	37 (80.4%)	31 (59.6%)	110 (59.8%)			
Female	30 (30.6%)	9 (19.6%)	21 (40.4%)	74 (40.2%)			
Age (years)	41.8 ±14.8	37.2 ± 13.8	45.8 ± 14.6	39.5 ± 11.7	0.371	0.099	0.004*
Height (cm)	168.2 ± 8.7	169.5 ± 7.5	167 ± 9.6	167.5 ± 8.2	0.436	0.072	0.614
Body weight (kg)	66 ± 14.7	67.9 ± 12.2	64.3 ± 16.5	66.8 ± 13	0.763	0.355	0.19
BMI (kg/m2)	23.2 ± 4.3	23.7 ± 4.4	22.8 ± 4.3	23.7 ± 3.6	0.213	0.881	0.084
Alcohol consumption	22 (23.2%)	9 (20%)	13 (26%)	27 (14.8%)	0.081	0.387	0.062
Cigarette smoking	28 (29.5%)	16 (35.6%)	12 (24%)	23 (12.6%)	0.001*	<0.001*	0.045*
Exercise	48 (50.5%)	18 (40%)	30 (60%)	82 (45.1%)	0.386	0.541	0.061
Family history of IBD	7 (7.4%)	4 (8.9%)	3 (6%)	4 (2.2%)	0.05	0.051	0.171
Breastfeeding	48 (53.9%)	16 (39%)	32 (66.7%)	97 (54.2%)	0.968	0.08	0.121
Frequency of Whole Food Consumption							
White rice	2.04 ± 4.04	1.76 ± 3.06	2.28 ± 4.75	3.01 ± 5.1	0.005*	0.113	0.006*
Whole grains	1.12 ± 2.58	0.94 ± 1.34	1.67 ± 3.21	1.95 ± 3.83	<0.001*	<0.001*	0.119
Legumes	0.52 ± 1.13	0.47 ± 1.16	0.57 ± 1.11	0.95 ± 2.59	0.004*	0.003*	0.143
Mushroom	2.83 ± 4.72	3.5 ± 6.11	2.23 ± 2.89	3.48 ± 4.25	0.004*	0.064	0.009*
Burdock	1.35 ± 3.81	1.8 ± 4.84	0.95 ± 2.52	1.82 ± 3.97	0.001*	0.024*	0.002*
Red meat	1.64 ± 2.97	1.59 ± 2.95	1.69 ± 3.02	2.49 ± 4.47	0.107	0.324	0.135
Poultry	1.82 ± 2.51	2.23 ± 3.18	1.46 ± 1.65	2.95 ± 4.45	0.049*	0.309	0.046*
Seafood	1.58 ± 3.57	1.8 ± 4.3	1.37 ± 2.77	1.42 ± 3.15	0.182	0.499	0.166
Eggs	6.42 ± 5.75	7.42 ± 6.52	5.53 ± 4.87	5.65 ± 4.88	0.532	0.156	0.703
Fresh milk	1.04 ± 2.43	1.27 ± 3.12	0.84 ± 1.58	2.17 ± 2.47	<0.001*	<0.001*	<0.001*
Vegetables	7.22 ± 7.07	7.42 ± 7.72	7.05 ± 6.5	7.39 ± 6.54	0.639	0.796	0.641
Nuts	1.72 ± 3.8	1.85 ± 5.07	1.61 ± 2.18	1.21 ± 2.56	0.594	0.025*	0.204
Frequency of Processed Food Consumption							
Cereal	0.67 ± 1.41	0.34 ± 0.79	0.96 ± 1.74	1.18 ± 2.11	<0.001*	<0.001*	0.068
Bread	3.43 ± 4.47	4.21 ± 6.02	2.75 ± 2.24	3.54 ± 3.47	0.281	0.702	0.207
Noodles	1.53 ± 2.35	1.58 ± 1.91	1.49 ± 2.7	2.53 ± 4.3	0.014*	0.134	0.022*
French fries	0.78 ± 1.35	1.14 ± 1.78	0.44 ± 0.6	0.71 ± 0.92	0.141	0.974	0.022*
Cookies	1.09 ± 2.04	1.19 ± 2.75	1 ± 1.13	1.33 ± 1.94	0.08	0.051	0.413
Processed meat	1.06 ± 2.12	1.31 ± 2.76	0.84 ± 1.3	1.16 ± 2.7	0.705	0.753	0.389
Mock meat	0.11 ± 0.42	0.13 ± 0.56	0.08 ± 0.23	0.62 ± 2.67	0.012*	0.026*	0.106
Cheese	0.48 ± 0.83	0.42 ± 0.97	0.53 ± 0.7	0.91 ± 1.76	0.002*	0.001*	0.122
Black coffee	1.35 ± 3.79	1.19 ± 4.41	1.49 ± 3.16	2.64 ± 4.31	0.003*	0.001*	0.211
Tea	1.58 ± 3.34	1.51 ± 3.19	1.64 ± 3.5	1.62 ± 3.2	0.043*	0.111	0.125
Soymilk	1.06 ± 1.91	1.3 ± 2.27	0.84 ± 1.52	1.46 ± 2.95	0.017*	0.065	0.061
Juice	1.57 ± 2.95	2.24 ± 3.92	0.99 ± 1.52	1.09 ± 2.02	0.425	0.115	0.788
Sport drinks	0.69 ± 1.18	0.87 ± 1.51	0.54 ± 0.76	0.43 ± 0.86	0.019*	0.124	0.034*
Sweetened Beverage	0.75 ± 2.14	0.87 ± 1.66	0.65 ± 2.51	0.58 ± 1.24	0.441	0.791	0.158
Soda	0.41 ± 0.86	0.41 ± 0.77	0.41 ± 0.95	0.53 ± 1.06	0.074	0.346	0.073
Alcohol	0.11 ± 0.32	0.07 ± 0.25	0.15 ± 0.38	0.15 ± 0.44	0.205	0.134	0.627
Soy lecithin	1 (1%)	0 (0%)	1 (1.9%)	14 (7.6%)	0.020*	0.078	0.201
Vit. C or Vit. E	24 (25%)	10 (22.7%)	14 (26.9)	78(42.4%)	0.004*	0.016*	0.043*

*P<0.05

Categorical variables are presented as counts (percentages) and were analyzed using the $\chi 2$ test or Fisher's exact test, as appropriate. Continuous variables are expressed as mean ± standard deviation and were compared using the Mann–Whitney U test. The frequency of food intake is reported as times per week.

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-040

Characteristics and Outcomes of Portal Vein Thrombosis in Patients with Inflammatory Bowel Disease in Korea

Ki Jin Kim[1], Subin Song[1], Jung-Bin Park[1], June Hwa Bae[1], Ji Eun Baek[1], Ga Hee Kim[1], Minjun Kim[1], Seung Wook Hong[1], Sung Wook Hwang[1], Dong-Hoon Yang[1], Byong Duk Ye[1], Jeong-Sik Byeon[1], Seung-Jae Myung[1], Suk-Kyun Yang[1], Chang Sik Yu[2], Yong-Sik Yoon[2], Jong-Lyul Lee[2], Min Hyun Kim[2], Sang Hyoung Park[1]
[1]Gastroenterology, Asan Medical Center, Seoul, Korea
[2]Colon and Rectal Surgery, Asan Medical Center, Seoul, Korea

Background / Aim : Portal vein thrombosis (PVT) is known to occur frequently in patients with inflammatory bowel disease (IBD), particularly when compounded by factors such as abdominal infection, IBD flares, or intra-abdominal surgery. However, PVT can lead to diverse complications, causing acute issues like intestinal ischemia or necrosis and long-term problems such as portal hypertension, varices, and ascites. Nevertheless, there is a significant shortage of research regarding the characteristics and prognosis of PVT in the context of IBD. Particularly, with the rising prevalence of IBD patients in Asia, the authors conducted an evaluation of clinical presentation and prognosis of PVT in IBD patients at a large tertiary hospital in South Korea.
Methods : This study is a retrospective study conducted at a single tertiary center in South Korea. It examined patients aged 18 and above diagnosed with inflammatory bowel disease (IBD) who had confirmed portal vein thrombosis (PVT) between June 1, 1989, and December 15, 2021. The study focused on investigating patient characteristics, PVT characteristics, treatment methods, and outcomes. The diagnosis and resolution of PVT were confirmed using enhanced CT imaging.
Results : A total of 78 patients met the inclusion criteria for this study. Only 21% (16/78) received oral anticoagulants, yet nearly all patients (96%; 75/78) achieved Complete Radiologic Resolution (CRR). When comparing baseline characteristics between the anticoagulation use group and the non-use group, a trend was observed with a higher utilization of anticoagulants in cases where the main portal vein was involved rather than only the left or right portal vein (p-value 0.006). However, when conducting multivariable analysis, no factors significantly influenced CRR, especially anticoagulant use and surgery status.
Conclusion : PVT concomitant with IBD demonstrated favorable outcomes regardless of anticoagulation use.
Keywords : Inflammatory Bowel Disease, Portal Vein Thrombosis, Complete Radiologic Resolution, Anticoagulation

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-041

Optimization of Deep Learning Architectures for Differentiating Cytomegalovirus Infection in Severe Ulcerative Colitis

A Reum Choe[1], Sung-Ae Jung[1], So-Hyun Ahn[2], Jeong-Heon Kim[3], Ju Ran Byun[1], Yehyun Park[1], Eun-Mi Song[1]

[1]Department of Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea
[2]Ewha Medical Research Institute, Ewha Womans University College of Medicine, Seoul, Korea
[3]Department of Medicine, Yonsei University College of Medicine, Seoul, Korea

Background / Aim : Cytomegalovirus (CMV) reactivation is common in patients with severe ulcerative colitis (UC). Patients with UC exacerbated by reactivated CMV experience worse prognoses than those without CMV reactivation. However, CMV is primarily diagnosed through biopsies, and it can take quite time to get results, making early diagnosis challenging. To address this, we have conducted research using deep learning to differentiate CMV from severe ulcerative colitis (UC), which has similar features, through endoscopic imaging, enabling early diagnosis of CMV.

Methods : This study leveraged endoscopic imaging to classify CMV and severe UC within a dataset comprising 86 cases from Ewha Womans University hospitals, deploying 7 convolutional neural networks. The training utilized a 4:1 ratio, enhanced by a 5-fold cross-validation, to counter the dataset's constraints. Networks underwent optimization for 10 epochs, a batch size of 10, sigmoid activation, and a learning rate of 1e-4. To improve the performance of the network, we employed augmentation techniques such as random rotations and flipping, and performed brightness standardization and resizing of resolution. Additionally, to distinguish lesions that are difficult to differentiate with RGB values, we converted the images to HSV values to separately process areas of reflected light and ulcerated regions.

Results : Among the total of 7 networks used in this study, Densenet121 showed the best performance with an accuracy of 0.8267 (Precision 0.7979). Densenet201 and MobileNetV2 also demonstrated the next best performances with accuracies of 0.7857 and 0.7143, respectively.The standardization and augmentation performed during the preprocessing process have been confirmed to improve the network's performance, and the network's robustness was verified through 5-fold cross-validation.

Conclusion : The research underscores the potential of deep learning models in differentiating CMV from severe UC through endoscopy images, indicating a promising direction for non-invasive diagnostics and timely treatment interventions.

Keywords : Uulcerativecolitis, Cytomegalovirus, Artificial Intelligence

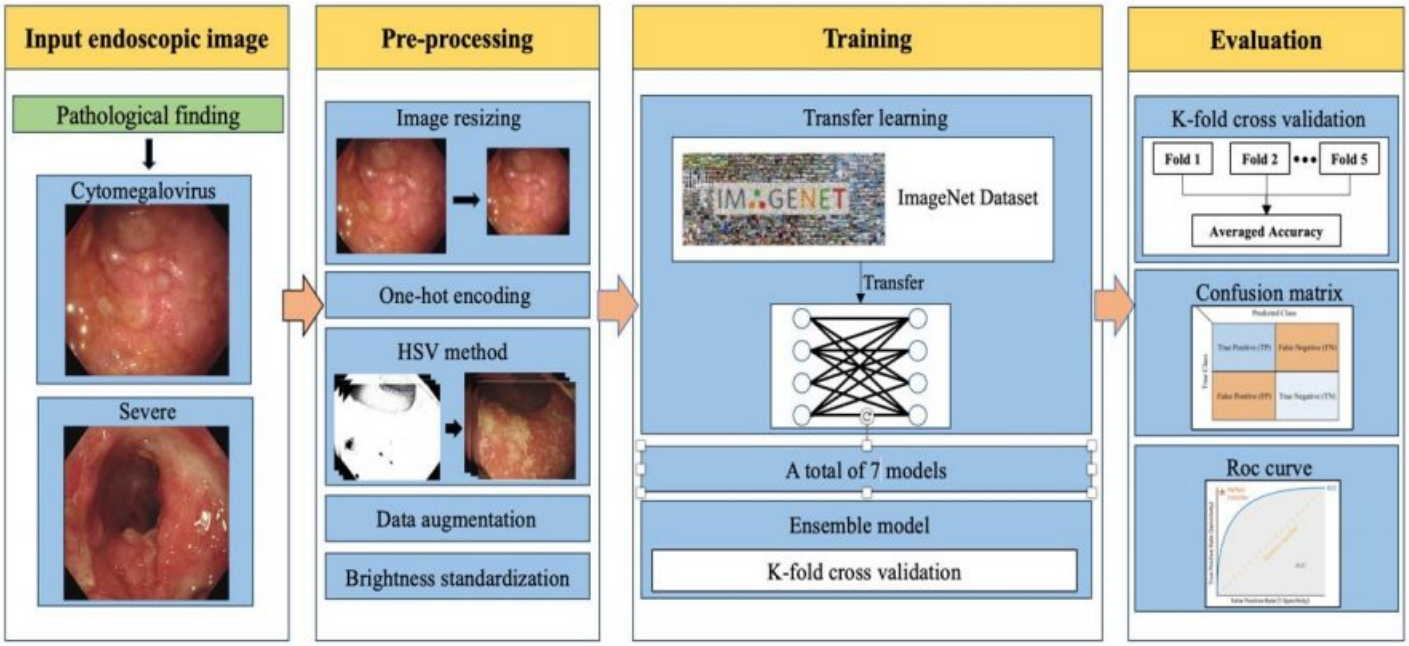


Table1. The accuracy of twelve networks

Model	Accuracy	F1-score	Precision	Recall
Densenet121	0.8267	0.8123	0.7979	0.8428
Densenet201	0.7857	0.7805	0.7743	0.8004
MobileNetV2	0.7143	0.7301	0.7510	0.7234
Resnet152V2	0.5714	0.5804	0.5788	0.5896
Resnet50	0.5714	0.5725	0.5712	0.5779
Resnet50V2	0.5000	0.4796	0.4769	0.4823
VGG19	0.3571	0.2345	0.2424	0.2143

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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-042

Development and Assessment of a Novel Ulcerative Colitisspecific Quality-of-life Questionnaire: A Prospective, Multi-institutional Study

Jihye Park[1], Hyun-Soo Zhang[2], Chung Mo Nam[2], Joo Sung Kim[3], Young-Ho Kim[4,5], Dong Il Park[6], Byong Duk Ye[7], Yoon Tae Jeen[8], Sehyun Kim[9], Jae Hee Cheon[1]

[1]Department of Internal Medicine, College of Medicine, Yonsei University, Seoul, Korea, Korea
[2]Department of Biomedical Systems Informatics, College of Medicine, Yonsei University, Seoul, Korea
[3]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea
[4]Department of Medicine, Samsung Medical Center, Seoul, Korea
[5]Department of Medicine, Sungkyunkwan University School of Medicine, Seoul, Korea
[6]Division of Gastroenterology, Department of Internal Medicine and Inflammatory Bowel Disease Center, Kangbuk Samsung Hospital, School of Medicine, Sungkyunkwan University, Seoul, Korea
[7]Department of Gastroenterology and Inflammatory Bowel Disease Center, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea
[8]Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea
[9]Graduate School, Dankook University, Yongin, Korea

Background / Aim : Interest in the quality of life (QoL) of patients with inflammatory bowel disease (IBD) has recently increased. Although measurement tools have been devised for IBD in general, there is no specific tool for measuring the QoL of patients with ulcerative colitis (UC). Therefore, we developed a QoL questionnaire specifically for patients with UC.
Methods : The Korean Ulcerative Colitis-Specific Questionnaire (K-UCSQ) was developed through item generation, raw-scale construction, focus group meetings, and multi-center field tests. 200 patients with UC were recruited for a field test of the K-UCSQ and subsequent responses to the Inflammatory Bowel Disease Questionnaire (IBDQ). After performing factor analyses to ensure construct validity, the K-UCSQ was finalized as a 4-domain, 28-item questionnaire. Subsequent analyses evaluated the reliability of the K-UCSQ in terms of Cronbach's alpha, concurrent validity in comparison with the pre-established IBDQ, and predictive validity of the area-under-the-curve (AUC) for clinically relevant QoL outcomes.
Results : The average duration since diagnosis of UC was 6.7 years among the recruited patients. Cronbach's alpha of 0.94 was obtained, which showed excellent reliability. Furthermore, correlation analyses demonstrated the concurrent validity of the K-UCSQ in comparison with the IBDQ. The K-UCSQ also showed high validity in predicting the perceived overall health (AUC of 0.812 vs. 0.797 using the IBDQ) and past 2-weeks QoL (AUC of 0.864 vs. 0.859 using the IBDQ).
Conclusion : The newly developed K-UCSQ is concise, bathroom problem-emphasizing, and UC-specific, suggesting that it could be a valid and reliable UC-specific instrument for QoL measurement.
Keywords : Ulcerative Colitis, Quality of Life, Questionnaire

Table 1: Demographic and disease-related characteristics of patients with ulcerative colitis (UC) enrolled in the development of the Korean Ulcerative Colitis-Specific Questionnaire (K-UCSQ)

Variables	UC patients
Overall N (%)	200 (100.0%)
Hospitals from where patients were enrolled, N (%)	
Asan Medical Center	35 (17.5%)
Kangbuk Samsung Medical Center	35 (17.5%)
Samsung Medical Center	35 (17.5%)
Seoul National Univ. Hospital	35 (17.5%)
Severance Hospital	60 (30.0%)
Age at study enrollment, mean (SD)	43.7 (13.1)
Sex, N (%)	
Male	123 (61.5%)
Female	77 (38.5%)
Marital status, N (%)	
Married	123 (61.5%)
Unmarried	77 (38.5%)
Smoking status, N (%)	
Never	138 (69.0%)
Former/Past	39 (19.5%)
Current (within last 6 months)	22 (11.0%)
Missing	1 (0.5%)
Alcohol consumption, N (%)	
None	119 (59.5%)
3 drinks or less per week	56 (28.0%)
4~14 drinks per week	16 (8.0%)
15 or more drinks per week	9 (4.5%)
Work or school participation, N (%)	
Yes	139 (69.5%)
No	61 (30.5%)
UC duration in years, mean (SD)	6.7 (5.4)
UC severity, N (%)	
Remission	114 (57.0%)
Mild	67 (33.5%)
Moderate	17 (8.5%)
Severe	2 (1.0%)

Abbreviations: SD, standard deviation; **UC**, ulcerative colitis.

Table 2: Factor analysis (construct validity) of the Korean Ulcerative Colitis-Specific Questionnaire (K-UCSQ) draft version 1.0

K-UCSQ draft version 1.0 [a]	Rotated factor pattern with Promax rotation [b]			
	Bowel symptoms (Factor 1)	Lavatory (Factor 2)	Functional symptoms (Factor 3)	Impact on daily life (Factor 4)
Q1	**43 ***	8	-1	8
Q2	**50 ***	26	5	5
Q3	37	-1	-22	**59 ***
Q4	**62 ***	0	12	-6
Q5	**62 ***	8	16	-14
Q6	31	-11	16	**45 ***
Q7	23	3	34	13
Q8	**43 ***	7	-6	26
Q9	31	-4	**51 ***	5
Q10	4	12	**47 ***	-5
Q11	-6	5	**48 ***	6
Q12	6	16	**69 ***	-25
Q13	22	**65 ***	5	14
Q14	12	**81 ***	-5	5
Q15	13	**82 ***	2	1
Q16	26	**67 ***	3	5
Q17	0	**87 ***	0	3
Q18	8	-8	**75 ***	10
Q19	8	-15	**73 ***	25
Q20	4	47 *	31	7
Q21	-11	39	24	11
Q22	2	22	**47 ***	26
Q23	15	36	19	38
Q24	7	25	25	**43 ***
Q25	-33	26	19	**55 ***
Q26	-42 *	25	2	**61 ***
Q27	-17	0	30	**67 ***
Q28	29	23	-12	**56 ***
Q29	27	5	-6	**69 ***
Q30	12	-2	1	**65 ***
Q31	16	1	10	**49 ***
Q32	31	1	-1	**54 ***

[a] The Korean Ulcerative Colitis-Specific Questionnaire (K-UCSQ) draft version 1.0 consists of 32 questions, from which four factors (domains) were derived via factor analysis, and 28 questions most relevant to the four factors (domains) were retained for the newly developed K-UCSQ version 1.1
[b] The Table 2 values above are standardized regression coefficients of each factor (domain) regressed upon the 32 questions, multiplied by 100 and rounded to the nearest integer. Values >0.4 are marked in bold font and flagged by an asterisk (*). The 28 out of 32 questions chosen from the K-UCSQ draft version 1.0 for the K-UCSQ version 1.1 are also marked in bold font.
Abbreviations: K-UCSQ, Korean Ulcerative Colitis-Specific Questionnaire.

Table 3: Cronbach's alpha (internal reliability) of the newly developed Korean Ulcerative Colitis-Specific Questionnaire (K-UCSQ; version 1.1)

K-UCSQ	Number of Questions	Cronbach's alpha	95% CI
Bowel symptoms domain	5	0.75	0.69 – 0.80
Lavatory domain	5	0.94	0.93 – 0.95
Functional symptoms domain	7	0.85	0.82 – 0.88
Impact on daily life domain	11	0.90	0.87 – 0.92
In total	28	0.94	0.93 – 0.95

Abbreviations: CI, confidence interval; K-UCSQ

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-043

Efficacy of Induction Upadacitinib Therapy in East Asian Patients with Moderately to Severely Active Crohn's Disease

Minhu Chen[1], Xiang Gao[2], Kenji Watanabe[3], Toshimitsu Fujii[4], Jae Hee Cheon[5], Shu-Chen Wei[6], Dennis Teng[7], Ana P Lacerda[7], Valencia P Remple[7], Hiroshi Nakase[8]

[1]Division of Gastroenterology, The First Affiliated Hospital, Sun Yat-Sen University, Guangzhou, China
[2]Department of Gastroenterology, The Sixth Affiliated Hospital of Sun Yat-Sen University, Guangzhou, China
[3]Department of Intestinal Inflammation Research, Hyogo Medical University, Nishinomiya, Japan
[4]Department of Gastroenterology and Hepatology, Tokyo Medical and Dental University, Tokyo, Japan
[5]Department of Internal Medicine and Institute of Gastroenterology, Yonsei University, Seoul, Korea
[6]Department of Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan
[7]Medical, AbbVie Inc, North Chicago, Illinois, United States
[8]Department of Gastroenterology and Hepatology, Sapporo Medical University, Sapporo, Japan

Background / Aim : Upadacitinib (UPA), an oral Janus kinase inhibitor, was effective in induction studies (U-EXCEED and U-EXCEL) and a maintenance study (U-ENDURE) for treating moderately to severely active Crohn's disease (CD)[1-3] This post hoc analysis evaluated the efficacy and safety of UPA in East Asian patients from U-EXCEED and U-EXCEL.

Methods : Patients in induction studies were randomized 2:1 to receive UPA 45 mg or placebo (PBO) for 12 weeks. Clinical remission per stool frequency (SF) and abdominal pain score (APS); clinical remission per CD Activity Index (CDAI); clinical response (CR-100); endoscopic response; endoscopic remission; and absence of draining fistulas through 12 weeks were evaluated.

Results : Of the 1021 patients, 204 East Asian patients were analyzed. Baseline demographics were similar for the UPA 45 mg and PBO groups (Table). UPA led to significantly higher clinical remission rates compared to PBO (62.5% vs 20.6% for SF/APS, and 50.7% vs 20.6% for CDAI, nominal $p < .0001$) at week 12. Clinical response (CR-100) at week 2 (33.8% vs 7.6%) and endoscopic outcomes at week 12 (endoscopic response: 61.8% vs 10.3%; endoscopic remission: 27.9% vs 5.9%, nominal $p < .0001$) were significantly better in UPA vs PBO. In corticosteroid users, 57.1% on UPA discontinued corticosteroids and achieved CDAI remission vs 20.0% on PBO (nominal $P < .0001$). For patients with draining fistulas, 28.6% on UPA had no draining of their fistulas at week 12 compared to 0% on PBO. Adverse event rates (including serious infections, opportunistic infections, and herpes zoster) were comparable between UPA and PBO groups (69.9% vs 70.6%). There were no treatment-emergent deaths, malignancies, adjudicated major cardiovascular events, or venous thromboembolic events.

Conclusion : East Asian patients with moderately to severely active CD treated with UPA 45 mg achieved higher clinical and endoscopic outcomes compared to PBO, maintaining a tolerable safety profile.

Keywords : Upadacitinib, Crohn's Disease, JAK Inhibitor, East Asian

Table. Baseline Disease Characteristics

Baseline Characteristics[a]	PBO (n = 68)	UPA 45 mg (n = 136)
Demographics		
Age (years), mean (SD)	33.1 (9.7)	32.7 (10.6)
Female, n (%)	24 (35.3)	50 (36.8)
Disease Characteristics		
Disease duration (years), mean (SD)	5.9 (3.8)	6.4 (6.1)
Corticosteroid use, n (%)	20 (29.4)	49 (36.0)
Prior biologic failures, n (%)		
0	16 (23.5)	30 (22.1)
1	35 (51.5)	71 (52.2)
2	14 (20.6)	28 (20.6)
≥3	3 (4.4)	7 (5.1)
CDAI, mean (SD)	280.8 (82.7)	284.8 (79.0)
SES-CD, mean (SD)	15.6 (6.5)	16.8 (7.8)
Average daily SF, mean (SD)	4.3 (2.4)	4.2 (2.0)
Average daily APS, mean (SD)	1.7 (0.7)	1.7 (0.8)
hs-CRP (mg/L), median (range)	11.3 (0.2–94.1)	15.0 (0.2–144.0)
FCP (µg/g), median (range)	1908 (30–18,191)	2361 (31–28,800)
Draining fistulas, n (%)	5 (7.4)	14 (10.3)

APS, abdominal pain score; CDAI, Crohn's Disease Activity Index; hs-CRP, high-sensitivity C-reactive protein; PBO, placebo; SES-CD, Simple Endoscopic Score for Crohn's Disease; SF, stool frequency, UPA, upadacitinib.

[a]The East Asian subpopulation consisted of patients in China, Japan, Korea, Malaysia, and Taiwan; patients from Hong Kong and Singapore would also be included in this analysis, but none enrolled.

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-044

Inflammatory Transcriptomic Signatures and Cell Type Compositions in Inflamed and Non-inflamed Colonic Mucosa of Ulcerative Colitis Short Title: Transcriptomic Signature of Active Ulcerative Colitis

Eun Mi Song[1], Zehra Ramsha[2], Yang Hee Joo[1], Jahanzeb Saqib[2], Chang Mo Moon[1], Junil Kim[2], Sung-Ae Jung[1]

[1]Internal Medicine, College of Medicine, Ewha Womans University, Seoul, Korea
[2]School of Systems Biomedical Science, Soongsil University, Seoul, Korea

Background / Aim : We aimed to assess distinctive transcriptomic changes associated with persistent active mucosal inflammation in Asian patients with UC despite of medical treatment.
Methods : We obtained colonic mucosa biopsies from 15 pairs of inflamed and noninflamed from 15 patients with UC and 15 normal healthy controls and performed RNA sequencing analysis. Utilizing publicly available single cell RNA sequencing data, we also identified cell types expressing differentially expressed genes from RNAseq data and performed data deconvolution using CIBERSORTx.
Results : Transcriptomics profiling revealed that inflammatory transcriptomic signature was highly enriched in the colonic mucosa of UCA compared to UCI or NC. By incorporating publicly available scRNAseq data, the genes upregulated in UCA were highly expressed in M cells, inflammatory monocytes, and inflammatory fibroblasts, while downregulated genes were prominent in BEST4+ enterocytes and WNT5B+ fibroblasts. Notably, a sub-cluster of enterocytes associated with SAA1, SLC6A14, and DUOXA2 genes exhibited high expression in UCA. Deconvolution analysis using CIBERSORTx identified significant enrichment of NK cells, inflammatory monocytes, Tuft cells, inflammatory fibroblast, WNT2B+Fos-lo1, and pericytes in UCA.
Conclusion : Our RNAseq analysis not only identified significant gene expression changes but also revealed shifts in cell type proportions associated with persistent inflammation. These findings offer valuable insights for developing novel treatment strategy for UC.
Keywords : Ulcerative Colitis, Inflammatory Bowel Disease, RNA Sequencing

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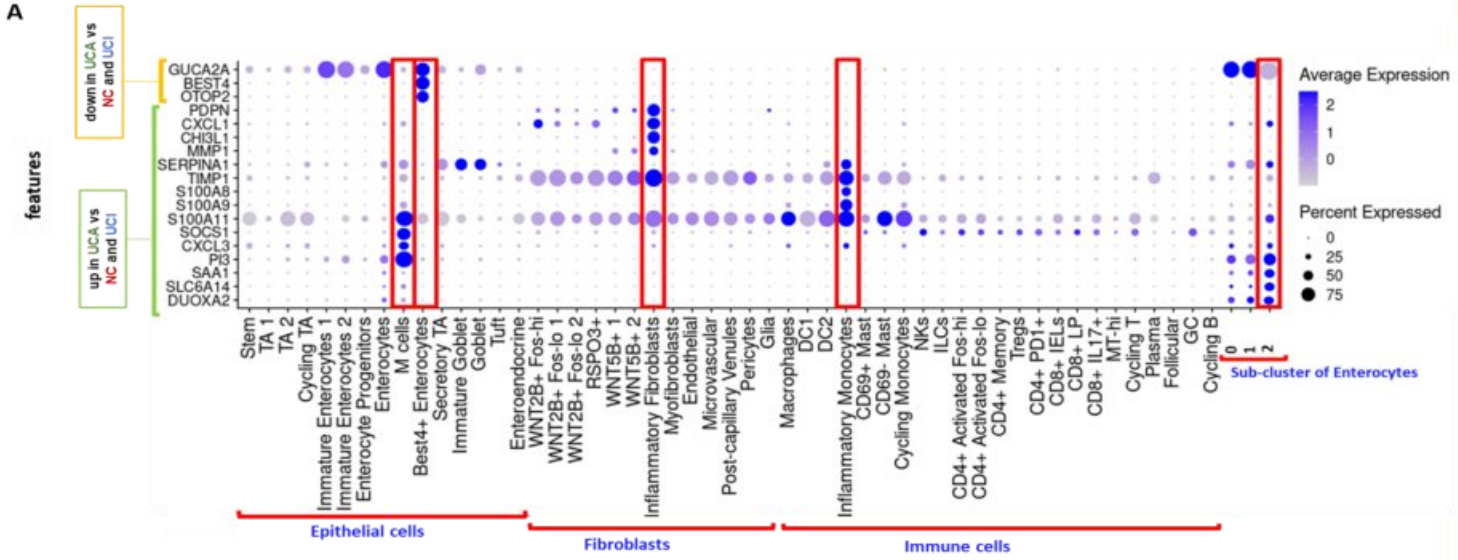
down in UCA vs NC and UCI
up in UCA vs NC and UCI
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BEST4
OTOP2
PDPN
CXCL1
CHI3L1
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SERPINA1
TIMP1
S100A8
S100A9
S100A11
SOCS1
CXCL3
PI3
SAA1
SLC6A14
DUOXA2
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1
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Percent Expressed
0
25
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Stem
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TA 2
Cycling TA
Immature Enterocytes 1
Immature Enterocytes 2
Enterocyte Progenitors
Enterocytes
M cells
Best4+ Enterocytes
Secretory TA
Immature Goblet
Goblet
Tuft
Enteroendocrine
WNT2B+ Fos-hi
WNT2B+ Fos-lo 1
WNT2B+ Fos-lo 2
RSPO3+
WNT5B+ 1
WNT5B+ 2
Inflammatory Fibroblasts
Myofibroblasts
Endothelial
Microvascular
Post-capillary Venules
Pericytes
Glia
Macrophages
DC1
DC2
Inflammatory Monocytes
CD69+ Mast
CD69- Mast
Cycling Monocytes
NKs
ILCs
CD4+ Activated Fos-hi
CD4+ Activated Fos-lo
CD4+ Memory
Tregs
CD4+ PD1+
CD8+ IELs
CD8+ LP
CD8+ IL17+
MT-hi
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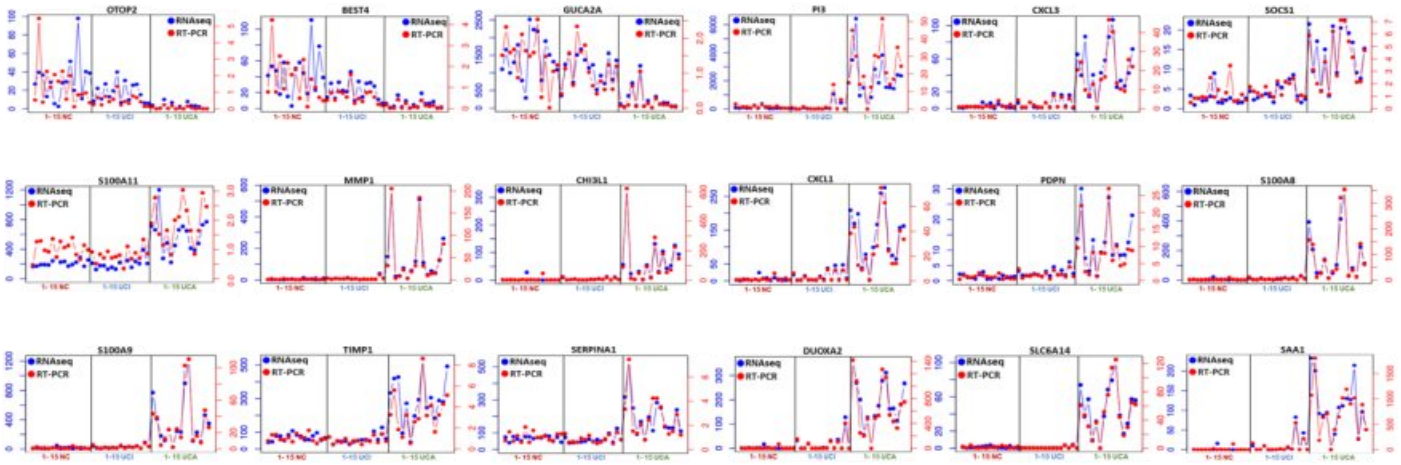
Epithelial cells
Fibroblasts
Immune cells

B


OTOP2
BEST4
GUCA2A
PI3
CXCL3
SOCS1
S100A11
MMP1
CHI3L1
CXCL1
PDPN
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S100A9
TIMP1
SERPINA1
DUOXA2
SLC6A14
SAA1
RNAseq
RT-PCR

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-045

Prevalence of Sarcopenia, as per the Revised Definition, in Patients with Ulcerative Colitis and its Relationship with Disease Activity

Pardhu Neelam, Vishal Sharma, Anupam Singh, Pankaj Gupta, Jimil Shah, Harshal Mandavdhare, Harjeet Singh, Aravind Sekar, Sanjay Bhadada, Usha Dutta
Gastroenterology, PGIMER, Chandigarh, India

Background / Aim : Ulcerative Colitis (UC) is associated with changes in body composition and myopenia. UC with reduced muscle mass is associated with failure of corticosteroids, poor surgical outcomes. We aimed to identify the frequency of sarcopenia as per the revised European consensus definition in UC and its relationship with disease activity
Methods : Consecutive patients were screened and considered for inclusion. Baseline disease variables and biochemical parameters were recorded. Complete Mayo's Score was used to assess disease activity. Grip strength was assessed with Jamar hand dynamometer, muscle mass with DEXA scan, and physical performance with 4-meter walk test. The values were compared with population-derived normal values. Probable-sarcopenia was a reduction in grip strength. Sarcopenia was a reduction of both muscle mass and strength. Severe-sarcopenia was sarcopenia with reduced gait speed (≤0.8 m/s). Acute severe colitis (ASUC) was defined as per Truelove-Witts criteria. Prevalence of sarcopenia was noted with respect to disease activity. Multivariate-analysis done to predict the factors associated with sarcopenia
Results : 114 patients (median age:34.5[26-48]years;54.4%-males) were included. As per Mayo's score 32 (28%), 46(40.4%) and 36 (31.6%) were in remission, mild-moderately active and severe disease respectively. Prevalence of probable-sarcopenia, sarcopenia, and severe-sarcopenia was 43(37.7%), 25(21.9%) and 14(12.2%) respectively. Prevalence of sarcopenia was significantly higher with active disease (2 in remission, 6 in mild-moderately active and 17 in severe, $p<0.001$). Thirteen had severe UC while 1 had mild-moderately active UC in severe-sarcopenic group. Mayo's score of >8 had 84% sensitive and 63% specific in predicting the presence of sarcopenia (AUROC:0.773). Higher Mayo scores and Lower BMI were associated with sarcopenia on multivariate analysis. Thirty-seven patients had ASUC, of them 16(43.2%) had sarcopenia. Response to steroids was similar between patients with and without sarcopenia
Conclusion : Prevalence of sarcopenia and severe-sarcopenia correlate with the disease activity. Sarcopenia unlike myopenia had no influence on short-term outcomes in ASUC
Keywords : Ulcerative Colitis, IBD, Sarcopenia, Mayo's Score, Disease Activity

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-046

A New ROS-resistant Bifidobacterium Longum Strain Protects against Murine Colitis by Enhancing Intestinal Colonization

Ji Hyung Kim[1], Seung Won Kim[1,2], Yoojin Shin[1], I Seul Park[1], Mijeong Son[1], Ki Beom Kim[1], Hyun Woo Ma[1], Jae Hee Cheon[1,2], Sang Sun Yoon[3,4], Dongeun Yong[5,6]

[1]Internal Medicine and Institute of Gastroenterology, Yonsei University College of Medicine, Seoul, Korea
[2]Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, Korea
[3]Microbiology and Immunology, Yonsei University College of Medicine, Seoul, Korea
[4]Institute for Immunology and Immunological Diseases, Yonsei University College of Medicine, Seoul, Korea
[5]Laboratory Medicine and Research Institute of Bacterial Resistance, Yonsei University College of Medicine, Seoul, Korea
[6]Microbiotix Corporation, Microbiotix Corporation, Seoul, Korea

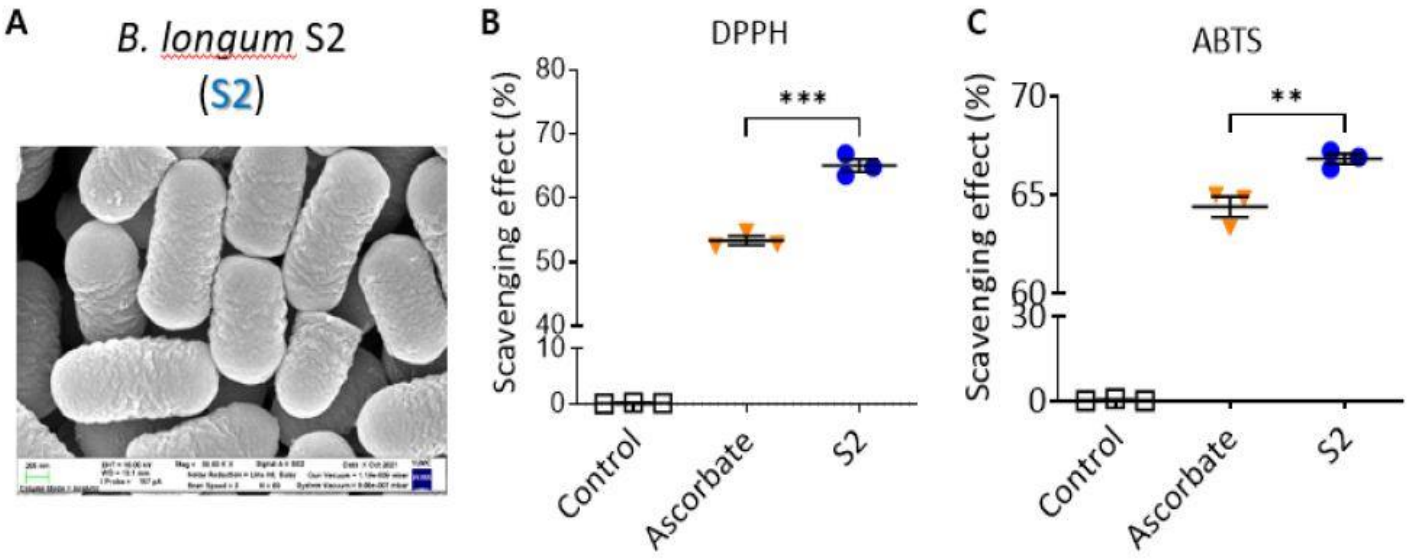
Background / Aim : Inflammatory bowel disease (IBD) is a chronic inflammatory disease of the gastrointestinal tract that results from various factors including genetic factors, inappropriate immune response, changes in gut microbiota balance, and oxidative stress. Oxidative stress elicits an unfavorable environment for the survival and colonization of beneficial probiotics as well as causing tissue damage in colitis. In this study, we aimed to identify anti-colitic effects of the newly isolated B. longum strain (B. longum S2) obtained from the feces of a healthy adult.

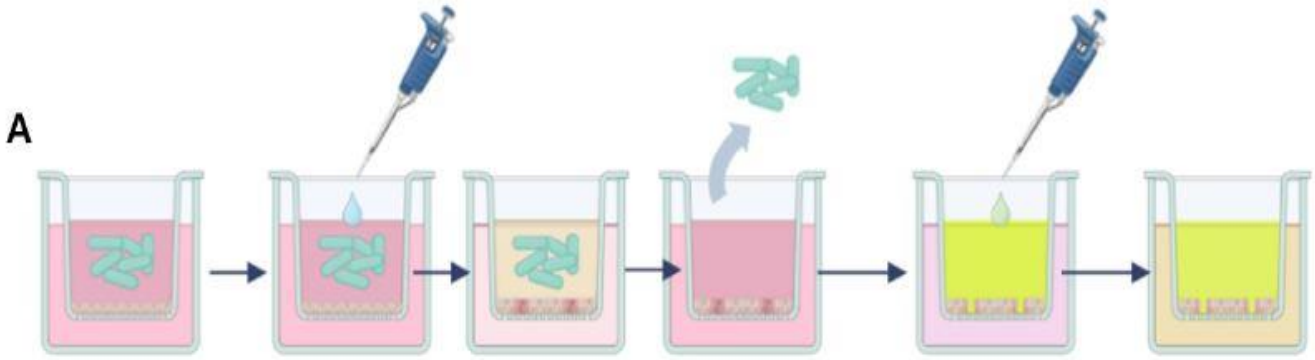
Methods : The viability of B. longum S2 against hydrogen peroxide was assessed using H_2O_2-containing media. Whole genome sequencing, data assembly, and gene analysis were performed. The anti-colitic effects were evaluated in mice using DSS-induced colitis and adoptive T cell transfer models. Barrier function was evaluated using a FITC-dextran permeability assay on Caco-2 cells.

Results : B. longum S2 colonies in H_2O_2-containing media were observed more frequently than those of other bifidobacterium strains. The antioxidant activity of B. longum S2 on ABTS and DPPH radicals was higher than that exhibited by other bifidobacterium strains. We identified that B. longum S2 possesses oxidative response genes and is a novel strain of bifidobacteria. B. longum S2-treated group showed alleviation of the colitis index compared to the control group. B. longum S2 treatment significantly decreased the loss of goblet cell and the histopathological score in colon tissues. The B. longum S2-treated group showed decreased gene expression of pro-inflammatory cytokines compared to the control group. Pre-treatment with B. longum S2 significantly reduced the TNF-α-induced permeability of intestinal epithelial cells, suggesting that B. longum S2 improves epithelial barrier function.

Conclusion : Our study revealed that the newly isolated B. longum strain, B. longum S2, possesses unique anti-colitic effects and colonization abilities. These findings strongly suggest that B. longum S2 holds great promise as a potential treatment for IBD.

Keywords : Bifidobacterium Longum, Inflammatory Bowel Disease, Reactive Oxygen Species


A
B. longum S2
(S2)
B
DPPH
Scavenging effect (%)
***
Control
Ascorbate
S2
C
ABTS
Scavenging effect (%)
**
Control
Ascorbate
S2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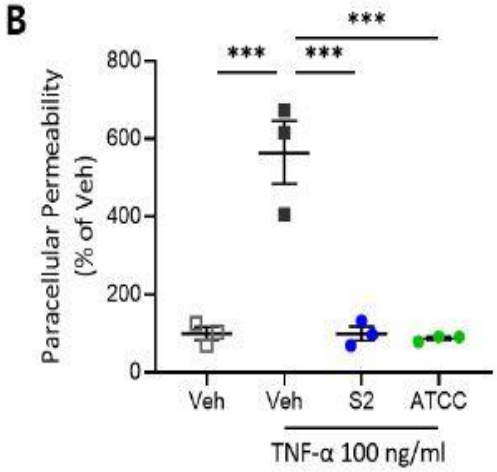
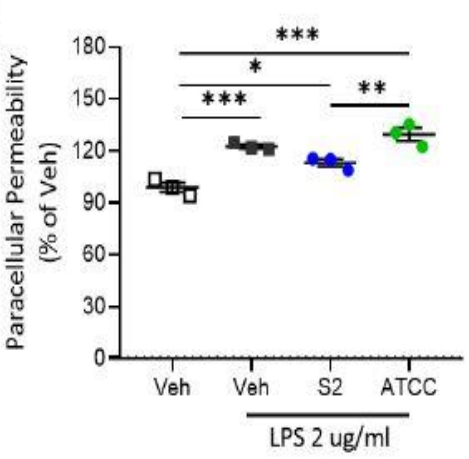
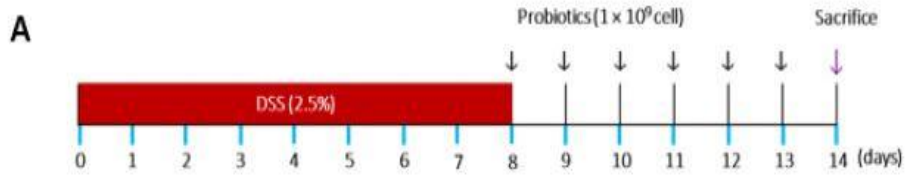
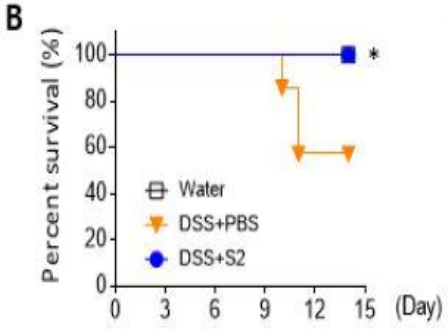
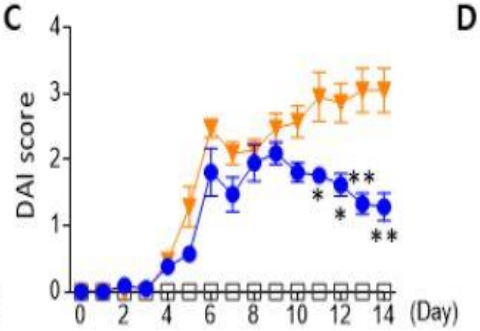
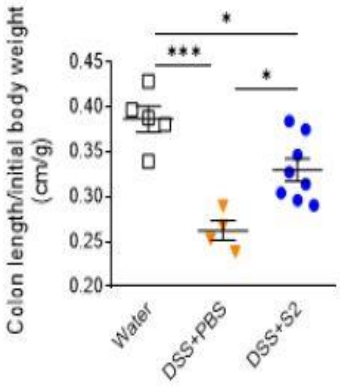

B
Paracellular Permeability
(% of Veh)
***
***
***
Veh
Veh
S2
ATCC
TNF-α 100 ng/ml

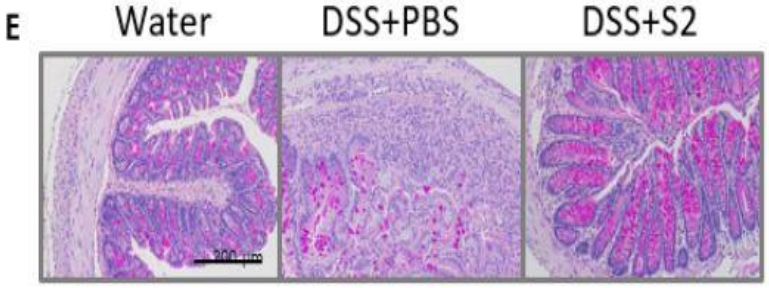

C
Paracellular Permeability
(% of Veh)
***
*
***
**
Veh
Veh
S2
ATCC
LPS 2 ug/ml

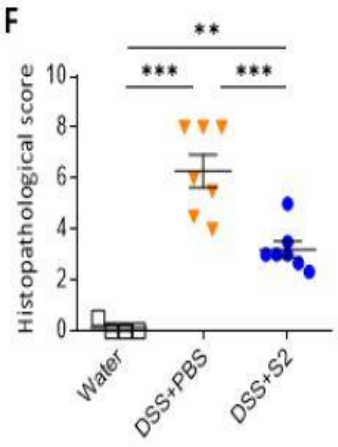

A
Probiotics (1 × 10⁹ cell)
Sacrifice
DSS (2.5%)
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 (days)

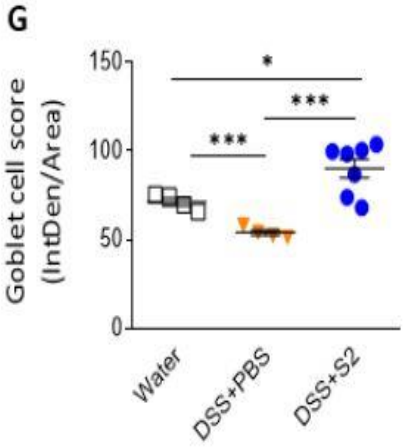

B
Percent survival (%)
Water
DSS+PBS
DSS+S2
(Day)

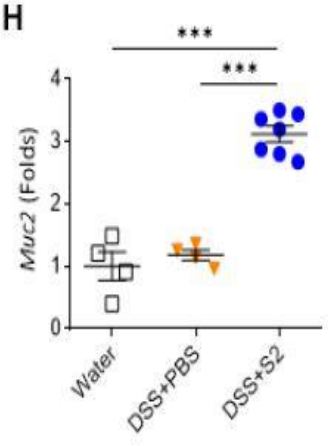

C
DAI score
(Day)

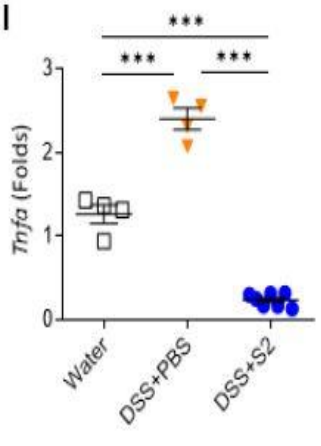

D
Colon length/initial body weight (cm/g)
Water
DSS+PBS
DSS+S2


E
Water
DSS+PBS
DSS+S2


F
Histopathological score
Water
DSS+PBS
DSS+S2


G
Goblet cell score (IntDen/Area)
Water
DSS+PBS
DSS+S2


H
Muc2 (Folds)
Water
DSS+PBS
DSS+S2


I
Tnfa (Folds)
Water
DSS+PBS
DSS+S2

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-047

Comparison of Endoscopic Healing and Durability between Combination Therapy of Infliximab Plus Azathioprine and Infliximab Monotherapy in Pediatric Crohn's Disease

Yoon Zi Kim[1], Eun Sil Kim[2], Yiyoung Kwon[3], Seon Young Kim[1], Hansol Kim[1], Yon Ho Choe[1], Mi Jin Kim[1]

[1]Pediatric, Samsung Medical Center, Seoul, Korea
[2]Pediatric, Kangbuk Samsung Hospital, Seoul, Korea
[3]Pediatric, Inha University Hospital, Incheon, Korea

Background / Aim : The comparative efficacy on endoscopic healing (EH) and durability of infliximab (IFX) and azathioprine (AZA) therapy alone or in combination for pediatric Crohn's disease (CD) have not been evaluated previously.
Methods : In this retrospective observational study, 108 patients on IFX therapy grouped into the AZA co-therapy (combo group) and IFX monotherapy (mono group) were compared based on clinical remission (CR), biochemical remission (BR), EH, transmural healing (TH) at 1-year treatment, IFX trough levels (TLs), antibodies-to-IFX (ATI) and IFX durability.
Results : Of 108 patients on IFX therapy, 85 (78.7%) received AZA co-therapy for ≥3 months and 23 (21.3%) treated IFX monotherapy. No statistically significant differences were observed between the groups in terms of CR and TH at 1-year. However, BR (92.9% vs. 66.7%, P=0.003) and EH (78.6% vs. 33.3%, P <0.001) were higher in combo group than in the mono group. In addition, the proportion of patients maintaining TLs above therapeutic drug levels was significantly higher in the combo group than in the mono group (P=0.023). ATI formation was also significantly lower in patients in combo group compared to mono group (25.0% vs. 52.2%, p=0.025). Multivariable Cox proportional hazard regression analysis showed that ATI positivity (hazard ratio (HR) 5.33, 95% CI 1.61–17.60, P=0.006) and combination therapy of IFX and AZA (HR 0.13, 95% 0.03–0.51, P=0.004) were associated with IFX durability. The Kaplan-Meier survival curves showed that the IFX durability was significantly higher in combo group (log-rank test P=0.0026).
Conclusion : Combination therapy with IFX plus AZA was associated with higher rates of EH and longer IFX durability than IFX monotherapy in pediatric patients with CD.
Keywords : Inflammatory Bowel Disease, Mucosal Healing, Combination Therapy, Antibodies to Infliximab, Anti-tumor Necrosis Factor

Table 1. Baseline characteristics

	Total (*n*=108)	**IFX mono therapy (*n*=23)**	**IFX + AZA combo therapy (*n*=85)**	***p***
Male sex, *n* (%)	87 (80.6)	19 (82.6)	68(80.0)	0.2147
Age at diagnosis, *years*	14.2±2.7	14.2±3.1	14.2±2.6	0.948
1st degree family history of IBD, *n* (%)	4 (3.7)	1 (4.4)	3 (3.5)	>0.99
Disease location, *n* (%)				>0.99
Ileal (L1)	11 (10.2)	2 (8.7)	9 (10.6)	
Colonic (L2)	5 (4.6)	1 (4.3)	4 (4.7)	
Ileocolonic (L3)	92 (85.2)	20 (87.0)	72 (84.7)	
UGI involvement, *n* (%)				0.971
None	15 (13.9)	5 (21.7)	10 (11.8)	
Proximal to the ligament of Treitz (L4a)	31 (28.7)	7 (30.5)	24 (28.2)	
Distal to the ligament of Treitz and proximal to the distal 1/3 ileum (L4b)	24 (22.2)	5 (21.7)	19 (22.4)	
Both (L4ab)	38 (35.2)	6 (26.1)	32 (37.6)	
Luminal disease behavior				0.804
Nonstricturing nonpenetrating (B1)	99 (91.7)	21 (91.2)	78 (91.8)	
Stricturing (B2)	6 (5.5)	1 (4.4)	5 (5.9)	
Penetrating (B3)	3 (2.8)	1 (4.4)	2 (2.3)	
Perianal disease, *n* (%)	67 (62.0)	14 (60.9)	53 (62.4)	0.614
Growth retardation, *n* (%)	28 (25.9)	6 (26.1)	22 (25.9)	0.970
PCDAI	32.5 (23.8, 40.0)	32.5 (30.0, 40.0)	32.5 (22.5, 40)	0.645
WBC count, $x10^3/uL$	8.9 (7.1, 10.7)	8.6 (7.6, 9.4)	9.1 (7.0, 10.8)	0.685
Hematocrit, %	37.9 ± 4.5	38.2± 5.1	37.8 ± 4.3	0.756
Platelet count, $x10^3/uL$	377.0 (308.5, 480.5)	364.0 (320.0, 453.5)	379.0 (322.0, 478.0)	0.696
ESR, *mm/hr*	37.5 (19.5, 62.0)	38.0 (25.5, 58.5)	37.0 (18.0, 64.0)	0.813
Albumin, *g/dL*	4.1±0.5	4.2±0.4	4.1±0.5	0.259
CRP, *mg/dL*	1.3 (0.3, 2.9)	1.1 (0.3, 2.5)	1.3 (0.3, 3.0)	0.626
SES-CD	15.0 (10.0, 22.0)	14.0 (10.0, 22.0)	15.0 (10.0, 22.0)	0.801

Table 2. Comparison of 1-year treatment outcomes

	Total (*n*=108)	**IFX mono therapy (*n*=23)**	**IFX + AZA combo therapy (*n*=85)**	***p***
WBC count, x10^3/*uL*	6.5 (5.5, 8.6)	6.3 (5.3, 7.9)	6.6 (5.5, 8.6)	0.679
Hematocrit, %	41.1 ± 3.8	42.7±4.3	40.7 ± 3.5	0.037
Platelet count, x10^3/*uL*	256.0 (223.0, 292.5)	250.0 (212.8, 276.0)	257.5 (225.8, 308.3)	0.179
ESR, *mm/hr*	5.0 (2.0, 10.3)	7.0 (3.8, 13.3)	4.0 (2.0, 10.0)	0.144
Albumin, *g/dL*	4.6±0.3	4.5±0.3	4.6±0.3	0.715
CRP, *mg/dL*	0.06 (0.03, 0.09)	0.04 (0.03, 0.06)	0.06 (0.03, 0.09)	0.121
SES-CD	0.0 (0.0, 3.0)	1.0 (0.0, 5.5)	0.0 (0.0, 3.0)	0.083
Clinical remission at 1 year, *n* (%)	104 (96.3)	22 (95.8)	81 (96.4)	>0.99
Biochemical remission at 1 year, *n* (%)	94 (87.0)	16 (66.7)	78 (92.9)	0.003
Endoscopic healing at 1 year, *n* (%)	74 (68.5)	8 (33.3)	66 (78.6)	<0.001
Transmural healing at 1 year, *n* (%)	26 (24.5)	3 (13.6)	23 (27.4)	0.291
IFX trough concentration (μg/mL)	4.3 (2.5, 6.5)	3.9 (1.4, 5.4)	4.6 (3.1, 7.4)	0.016
IFX trough concentration, *n* (%)				0.023
<3 (μg/mL)	29 (27.1)	11 (47.8)	18 (21.4)	
3-5 (μg/mL)	34 (31.8)	5 (21.7)	29 (34.5)	
≥5 (μg/mL)	44 (41.1)	7 (30.5)	37 (44.1)	
ATI positivity, *n* (%)	33 (30.6)	12 (52.2)	21 (25.0)	0.025

Note: Continuous variables are expressed in median (interquartile range) or mean±standard deviations.

Abbreviations: IFX, infliximab; AZA, azathioprine; 6-TGN, 6-thioguanine nucleotide; TL, trough level; ATI, antibody-to-infliximab

Table 3. Cox proportional hazard regression analysis of factors associated with Infliximab durability in patients with Crohn's disease

	Univariate Cox analysis			Multivariate analysis (*n*=108)		
	HR	95% CI	*p*	HR	95% CI	*p*
Sex [female vs. male]	0.62	0.39–1.66	0.963			
Age at diagnosis	0.95	0.85–1.06	0.366			
Disease duration at IFX initiation, *years*	0.73	0.10–1.77	0.723			
Any colonic involvement	1.66	0.25–14.48	0.528			
Any upper gastrointestinal involvement	2.713	0.98–2.55	0.522			
Disease behavior [B1 vs. B2, B3]	1.67	0.53–3.88	0.342			
PCDAI at diagnosis	1.00	0.97–1.03	0.897			
Erythrocyte sedimentation rate at diagnosis	1.00	0.99–1.01	0.393			
Albumin at diagnosis	1.03	0.53–1.98	0.941			
C-reactive protein at diagnosis	1.03	0.97–1.19	0.157			
SES-CD at diagnosis	1.03	0.92–1.16	0.566			
IFX trough concentration at 1 year	0.93	0.81–1.06	0.253			
ATI positivity	2.64	1.26–5.53	0.010	5.33	1.61–17.60	0.006
IFX combo vs. mono therapy	0.386	0.18–0.82	0.014	0.13	0.03–0.51	0.004

Abbreviations: IFX, infliximab; PCDAI, pediatric Crohn's disease activity index; SES-CD, simple endoscopic score for Crohn's disease; ATI, antibody-to-infliximab

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-048

Increased Rates of Fractures and Malignancy in Elderly Onset IBD in Singapore

Chin Kimg Tan[1], Jeannie Ong[1], Tiing Leong Ang[1], Malcolm Tan[2], Chong Teik Lim[2], Ennaliza Salazar[2], Shu Wen Tay[2], Yi Yuan Tan[2], Webber Chan[2]

[1]Department of Gastroenterology and Hepatology, Changi General Hospital, Singapore
[2]Department of Gastroenterology and Hepatology, Singapore General Hospital, Singapore

Background / Aim : Elderly onset inflammatory bowel disease (EOIBD) has variable characteristics in the published literature. This study aim to compare the disease characteristics, treatment exposure, and clinical outcomes of between EOIBD and adult onset IBD (AOIBD).

Methods : This is a retrospective study involving IBD patients seen at two tertiary hospitals in Singapore from January 2020 to September 2023. Patients were identified from the Singapore National IBD registry. Those with missing data on age of IBD diagnosis were excluded. Data on baseline demographics, disease characteristics, treatment and disease-related complications were collected. EOIBD is defined as age of diagnosis ≥ 60 years old and AOIBD as age of diagnosis from 18 to 59 years old. Data was analysed using SPSS version 27.0.

Results : 1116 patients were included in the final analysis, of which 10.6% were EOIBD. The results are shown in Figure 1 and Table 1. There is a higher proportion of Crohn's disease (CD) (45.7% vs 37.4%) amongst EOIBD. There is significantly lower use of thiopurines amongst EOIBD (34.5% vs 46.8%, p = 0.012). There is a trend of higher use of methotrexate (19.6% vs 10.6%, p = 0.067) and biologics (32.8% vs 27.1%, p = 0.205) in EOIBD. There was a lower proportion of IBD-related surgery in EOIBD (12.1 vs 18.5%, p = 0.094) with significantly lower mean number of IBD-related surgery (1.1 vs 1.6, p <0.001). Among EOIBD, there were significantly higher rates of malignancy (17% vs 6%, p <0.001) and fractures (18.1% vs 9.2%, p = 0.02); the latter observation is made despite a statistically higher mean level of vitamin D (20.9 ng/ml vs 18.3 ng/ml, p = 0.026). There were no differences in IBD-related hospitalization.

Conclusion : EOIBD is associated with increased rates of fractures and malignancy. Bone health and malignancy screening should be routinely performed in EOIBD.

Keywords : Inflammatory Bowel Disease, Elderly Onset, Ulcerative Colitis, Crohn's Disease, Elderly Onset IBD

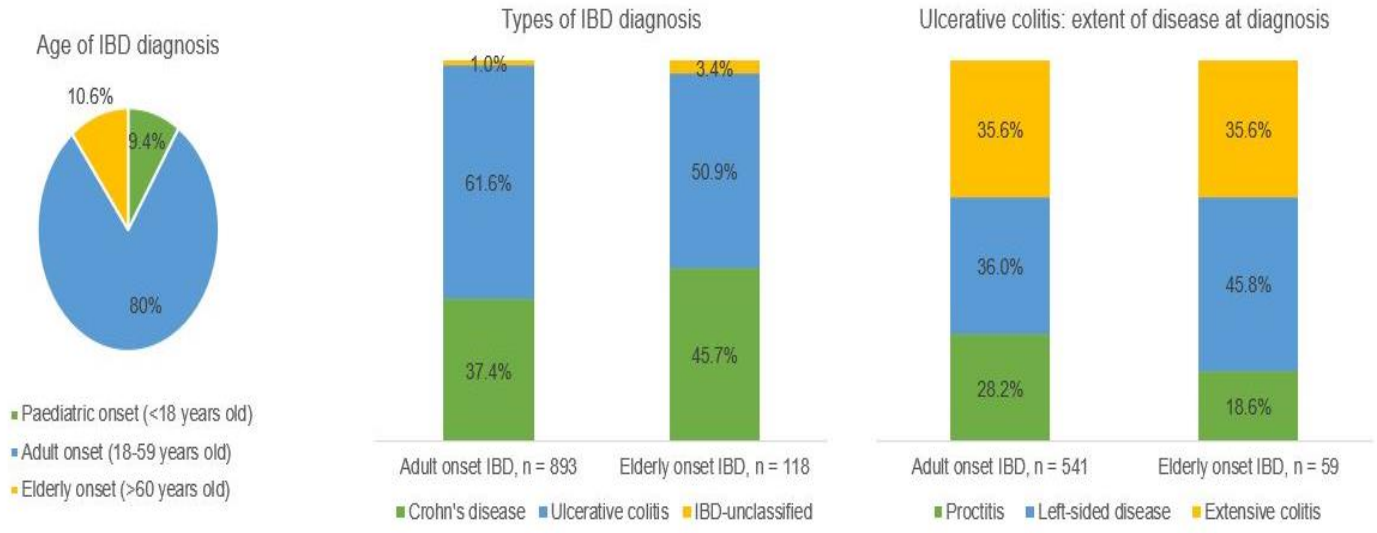


Figure 1 Comparison between elderly onset IBD and adult onset IBD.

Table 1 Baseline demographics, disease characteristics, treatment characteristics and clinical outcomes among elderly onset and adult onset IBD patients.

Characteristics	Adult onset IBD, n = 893	Elderly onset IBD, n = 118	*p* value
Demographics			
Male gender, n (%)	556/892 (62.3)	59/118 (50.0)	0.10
Disease characteristics			
Age of diagnosis, mean (±SD)	37 (± 11.6)	68 (± 6.4)	n. a
Duration of IBD in years, mean (±SD)	13.1 (± 9.7)	8.1 (± 6.5)	***< 0.001***
Change of UC extent, %	22.7	22.0	0.964
Treatment characteristics			
Steroid exposure, n (%)	547/884 (61.9)	72/116 (62.1)	0.968
Steroid dependence, n (%)	146/538 (27.1)	18/71 (25.4)	0.750
Number of steroid courses, mean (± SD)	1.9 (± 1.3)	1.6 (± 1.2)	0.209
Thiopurine use, n (%)	413/882 (46.8)	40/116 (34.5)	***0.012***
Methotrexate use, n (%)	94/883 (10.6)	19/116 (19.6)	0.067
Biologics use, n (%)	240/884 (27.1)	38/116 (32.8)	0.205
Clinical outcomes			
IBD-related surgery, n (%)	158/852 (18.5)	14/115 (12.1)	0.094
Mean number of IBD-related surgery, (± SD)	1.6 (± 0.9)	1.1 (± 0.3)	***<0.001***
IBD-related hospitalizations, n (%)	372/885 (42.0)	52/116 (44.8)	0.567
Mean number of IBD-related hospitalization, (± SD)	2.5 (± 2.5)	2.5 (± 2.2)	0.826
Mean vitamin D levels, ng/mL (± SD)	18.3 (± 8.1)	20.9 (± 8.2)	***0.026***
History of fracture, n (%)	81/882 (9.2)	21/116 (18.1)	***0.02***
History of malignancy, n (%)	53/884 (6.0)	20/116 (17.2)	***<0.001***

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-049

Impact of Age at Diagnosis on Long-term Prognosis in Patients with Intestinal Behcet's Disease

Ji Young Chang[1], Soo Jung Park[2], Jae Jun Park[2], Tae Il Kim[2], Jihye Park Park[2], Jae Hee Cheon[2]
[1]Health Promotion Medicine, Ewha Womans University Seoul Hospital, Seoul, Korea
[2]Internal Medicine, Yonsei University College of Medicine, Seoul, Korea

Background / Aim : Although age at disease onset is considered to be significant factor in the prognosis of Crohn's disease (CD), little is known about its influence on the long-term prognosis of those with intestinal Behçet's disease (BD). This study aimed to evaluate the long-term clinical outcomes of patients with intestinal BD according to age of disease onset.
Methods : Patients diagnosed with intestinal BD < 18 years, 18–60, and > 60 years of age were classified into early-, adult-, and late-onset groups, respectively. The influence of disease onset time on clinical prognosis, including specific medical requirements, BD-related intestinal surgery, hospitalization, and emergency room visits, was compared using the log-rank test in a large cohort of patients with intestinal BD.
Results : Among 780 patients, 21 (2.7%), 672 (86.2%), and 87 (11.1%) comprised the early-, adult-, and late-onset groups, respectively. Patients in the early-onset group were more likely to require immunosuppressants than those in the adult-onset group (P=0.048). Nine (42.9%), 158 (23.5%), and 18 (20.7%) patients in the early-, adult-, and late-onset groups, respectively, underwent intestinal resection. The early-onset group exhibited a higher risk for intestinal resection than the late- (P=0.043) and adult-onset (P=0.030) groups. The late-onset group exhibited a higher risk for BD-related hospitalization than the adult-onset group (P=0.023).
Conclusion : Age at diagnosis affected the clinical course of intestinal BD, including intestinal surgery, hospitalization, and specific medical requirements. Different treatment strategies should be established according to age at diagnosis.
Keywords : Intestines, Behcet's Syndrome, Age of Onset, Surgery, Immunosuppressive Agents

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-050

Identification of Specific Cell Subsets Related to Treatment Response after Anti-tumor Necrosis Factor Use in Korean Ulcerative Colitis Patients using Single Cell RNA Sequencing: A Preliminary Study

Se Ram Shin[1], Seong Ran Jeon[1], Yun Ho Jung[2], Hyun Gun Kim[1], Jin-Oh Kim[1], Seongwoo Choi[2], Bong Min Ko[1], Woo Chang Hwang[4]

[1]Institute of Digestive Research, Digestive Disease Center,
Soonchunhyang University College of Medicine, Seoul, Korea
[2]Department of Gastroenterology, Soonchunhyang University College of Medicine, Cheonan, Korea
[3]Digestive Disease Center and Research Institute, Department of Internal Medicine,
Soonchunhyang University College of Medicine, Bucheon, Korea
[4]Department of Pre Medicine- College of Medicine- Graduate School of Biomedical Science and Engineering,
Hanyang University, Seoul, Korea

Background / Aim : The epithelial barrier breakdown and mucosal homeostasis are important in ulcerative colitis (UC) development. Single-cell RNA sequencing (scRNA-seq) has been used to comprehend gene expression in intestinal cels. However, limited studies have explored Asian UC patients. This preliminary study aimed to identify the relevant cellular subsets after anti-tumor necrosis factor (anti-TNF) treatment in Korean UC patients using scRNA-seq.

Methods : This prospective study, conducted at two South Korean University hospitals, included one healthy control and nine biologic-naïve UC patients. Sigmoid colon tissue smples from patients with active moderate to severe UC were collected at baseline (n=9) and 52 weeks post-anti-TNF treatment (n=2), at which time treatment response was assessed, and scRNA-seq was performed. Treatment responder was defined as those with sustained clinical remission (a partial Mayo score of≤2 with no subscore>1 and a rectal bleeding subscore of 0) at 52 weeks.

Results : 13 clusters were discovered and cell clusters were annotated using colon marker gene after processing the scRNA-seq data. Among nine patients, two patients were treatment responder. The normalized proportion of cluster 1(stem cell-like cluster) in 52 weeks post-anti-TNF treatment tissue samples showed a significant decrease (p-value=0.03) from that found in the disease tissue samples. The proportion of cell cluster 1 from disease tissue samples dcreased from initial average percentage 30.6% to an average of 4.8% in the follow-up tissue samples(p-value=0.03), reaching a level close to that of the healthy tissue (2.7%). This signifies a change in the composition of this specific cell cluster post-anti-TNF treatment and suggests a potential restoration of this cell cluster's proportion towards a healthier state (Figure 1).

Conclusion : In Korean UC patients, this data is crucial for understanding the impact of anti-TNF treatment on the cellular composition or behavior of the stem cell-like cluster, suggesting potential effect of anti-TNF treatment on this particular cell population.

Keywords : Inflammator Bowel Disease, Ulcerative Colitis, Anti-TNF Treatment, RNA Sequencing

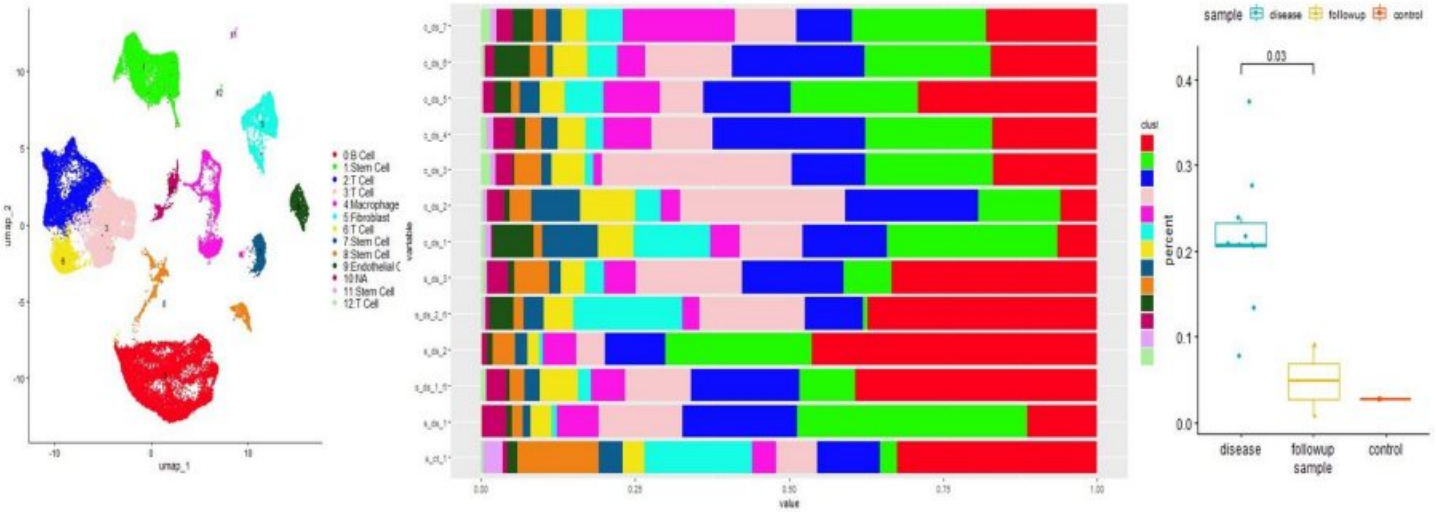


Figure 1. Single-cell RNA sequencing data from colon tissue samples in Korean ulcerative colitis (UC) patients. a) The UMAP (Uniform Manifold Approximation and Projection) plot. The dots represent cells, and the colors represent the samples. b) Proportion of each cellular subsets in patients with UC and a healthy individuals as a percentage of all cells. c) The proportion of cell cluster 1 from tissue samples of UC patients at baseline and 52 weeks follow-up after anti-tumor necrosis factor treatment, and a healthy control.

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-051

Intravenous versus Subcutaneous Infliximab in Inflammatory Bowel Disease: A Systematic Review and Meta-analysis

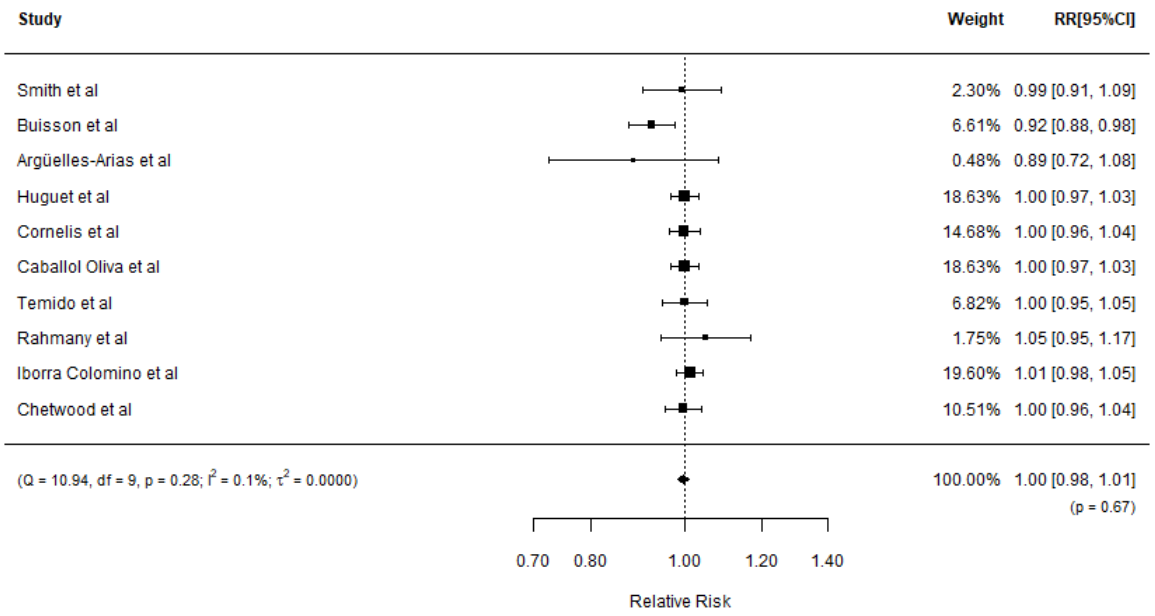
John Chetwood[1,2], Yvonne Tran[3], Sreedhar Subramanian[4], Philip Smith[5], Marisa Iborra[6], Anthony Buisson[7], Sudarshan Paramsothy[1,2,8], Rupert Leong[1,2,8]

[1]Department of Gastroenterology, Concord Repatriation General Hospital, Sydney, Australia
[2]Concord Clinical School, University of Sydney, Sydney, Australia
[3]Australian Institute of Health Innovation, Macquarie University, Sydney, Australia
[4]Department of Gastroenterology, Cambridge University Hospitals Foundation Trust, Cambridge, United Kingdom
[5]Department of Gastroenterology, Royal Liverpool Hospital, Liverpool, United Kingdom
[6]Department of Gastroenterology, La Fe University Hospital of Valencia, Valencia, Spain
[7]Service d'Hpato-Gastro Entrologie, Universit Clermont Auvergne, Clermont-Ferrand, France
[8]Faculty of Medicine and Health Sciences, Macquarie University, Sydney, Australia

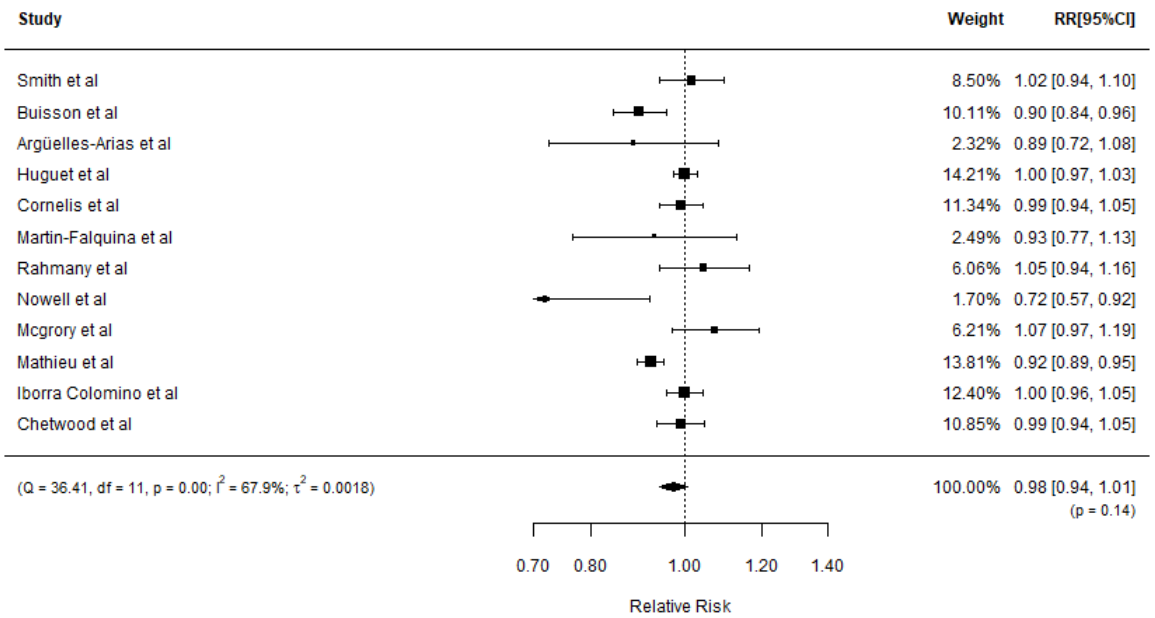
Background / Aim : The subcutaneous (SC) formulation has the potential advantages of increased patient satisfaction, healthcare savings, and an improved pharmacokinetic profile. However, there are limited data on inflammatory bowel disease (IBD) outcomes, and the wider clinical impact of this new formulation on clinical efficacy, immunogenicity and treatment persistence is unknown.
Methods : Systematic review and random-effects meta-analysis up to January 2023, 2023 to evaluate the change in clinical remission after transitioning from ≥3 months of intravenous (IV) infliximab ≤12.5mg/kg 8-weekly (or equivalent) to SC infliximab. Electronic searches were performed on MEDLINE, Embase, Scopus, and Cochrane databases, with manual searches from major IBD conferences 2017-2023. Only English language articles were included, and cohorts with baseline clinical remission ≥70%. The last search was performed in January 2023. The primary outcome was a change in clinical remission rate at 6-months after the switch.
Results : 15 studies were identified, consisting of 1351 patients and 840 patient-years of follow-up. There was no loss of clinical remission in the IBD cohort overall, Crohn's disease (CD), and perianal CD (at 9-12 months, p=0.84, p=0.57, and p=0.50, respectively). There was no loss of remission in ulcerative colitis (UC) up to 6 months (p=0.62) but a significant loss at 9-12 months (RR 0.73, 95% CI: 0.57-0.94, p=0.015). Neither prior IV dose (≤10mg/kg 6-weekly) (p=0.48) nor IBD disease subtype was associated with an increased clinical relapse rate at 6 months (p=0.48 and p=0.45 (UC vs CD), respectively).
Conclusion : Changing patients established on IV infliximab to an SC formulation is associated with a high ongoing clinical remission and low adverse event rate. Furthermore, there are no signals for adverse outcomes among different IBD disease subtypes, nor in those on escalated IV infliximab dosing schedules up to 10mg/kg 6-weekly. This data should provide patients and clinicians alike with confidence in SC infliximab use in IBD.
Keywords : Inflammatory Bowel Disease, Infliximab, Subcutaneous, CT-P13

Figure 1. Clinical efficacy of subcutaneous infliximab in IBD (overall) at:

A) 3-4 months



B) 6 months



C) 9-12 months

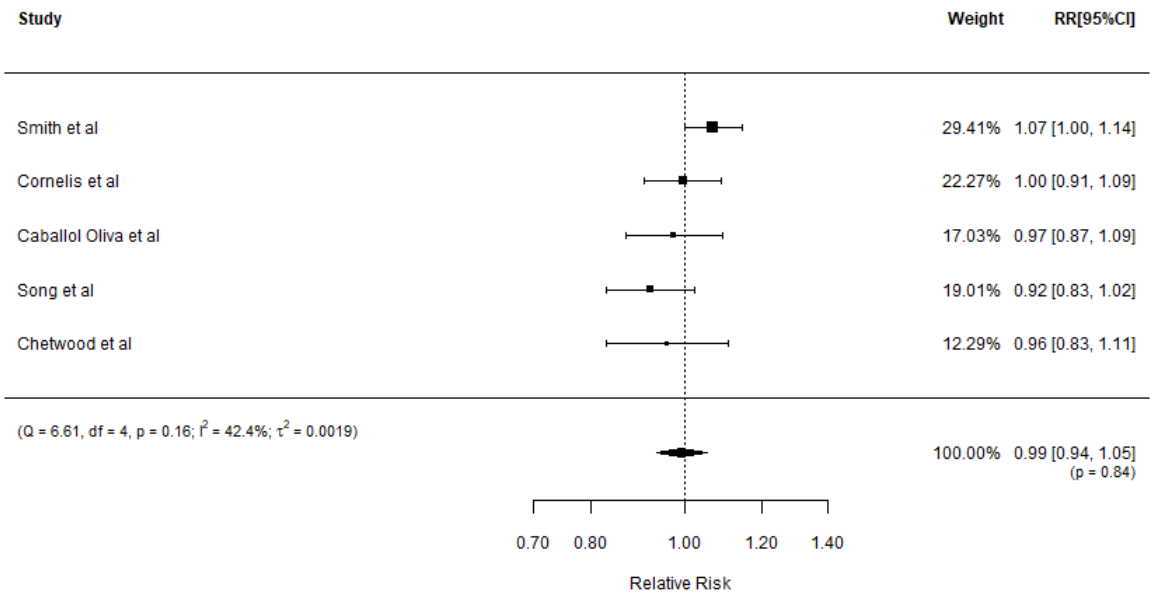
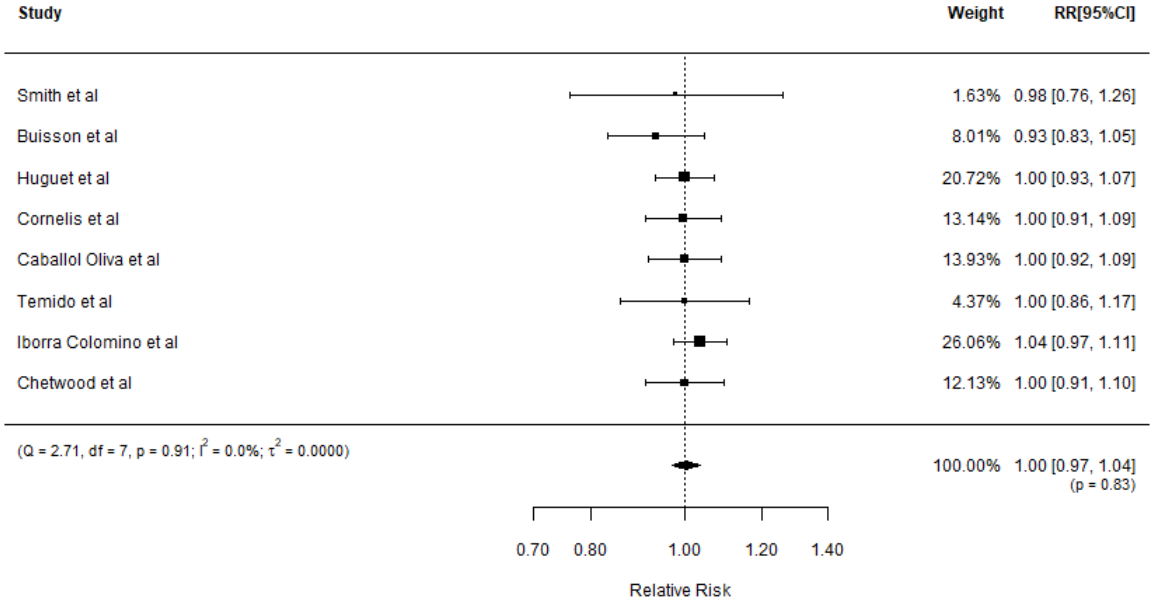
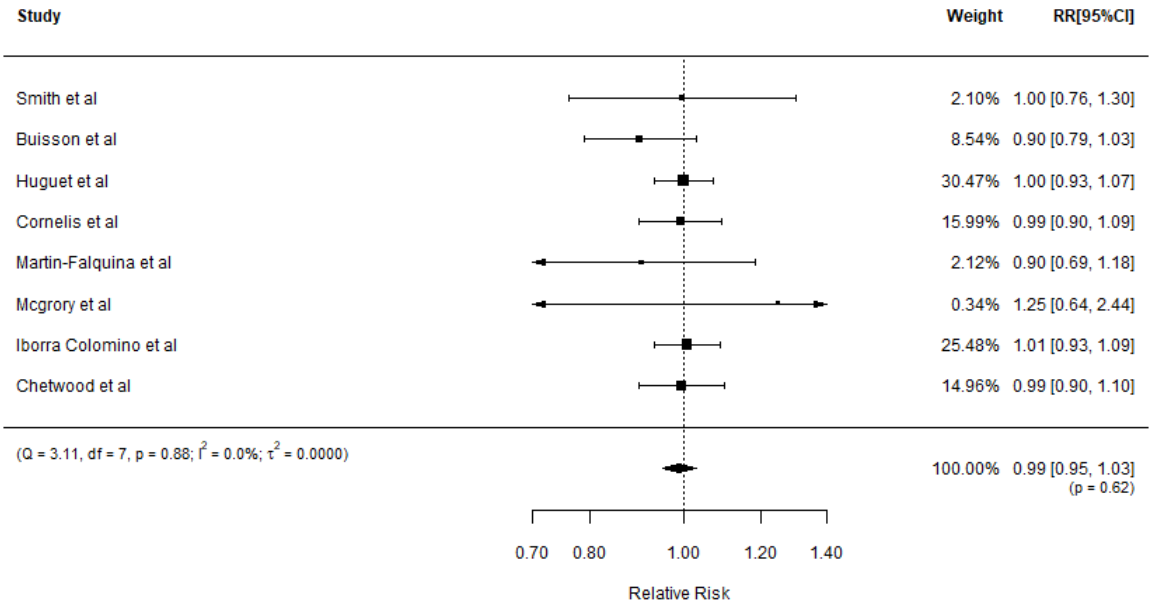


Figure 2. Clinical efficacy of subcutaneous infliximab in ulcerative colitis at:
A) 3-4 months



B) 6 months



C) 9-12 months

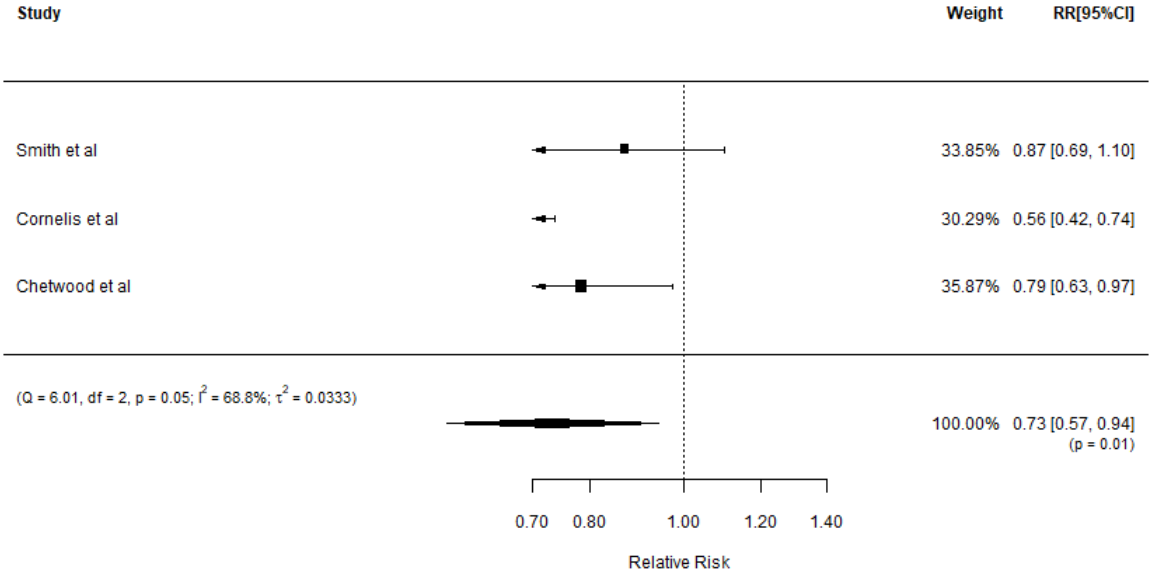
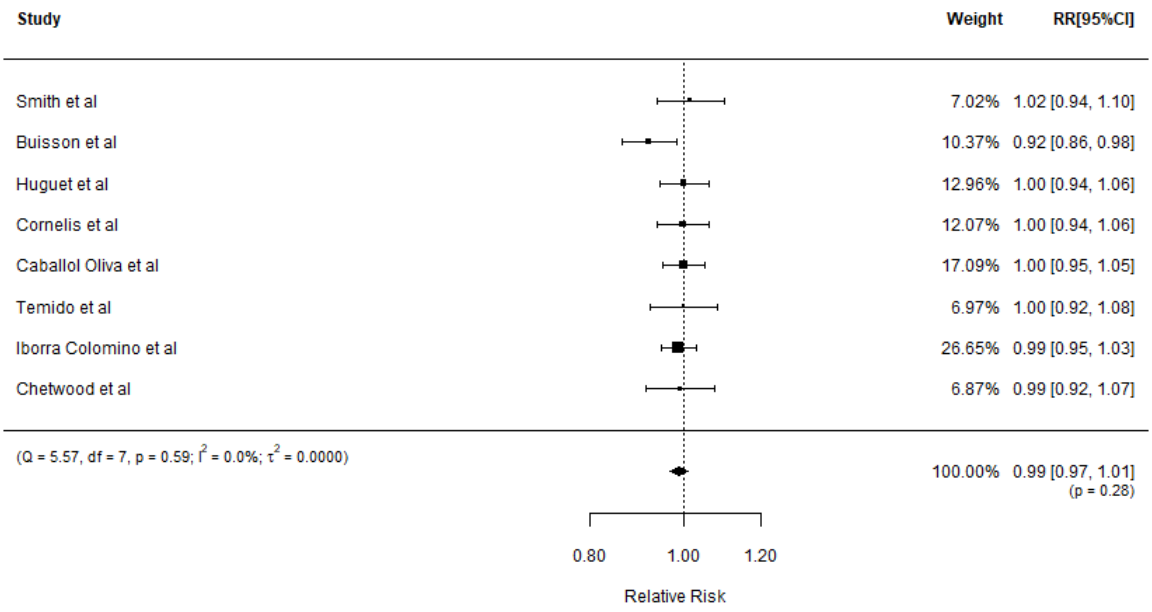
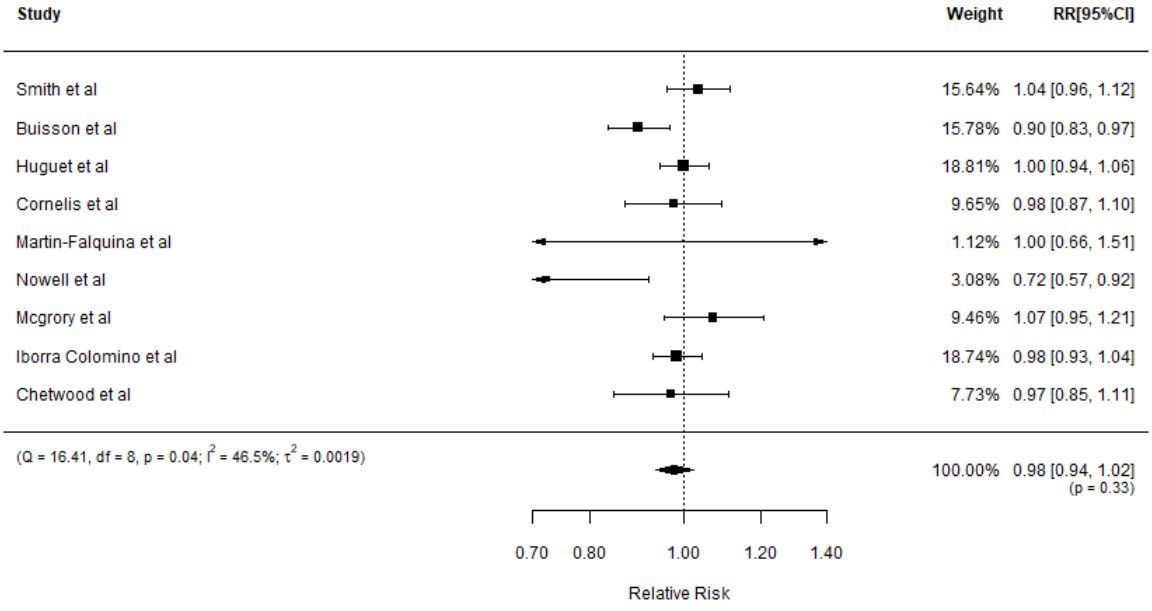


Figure 3. Clinical efficacy of subcutaneous infliximab in Crohn's disease at:

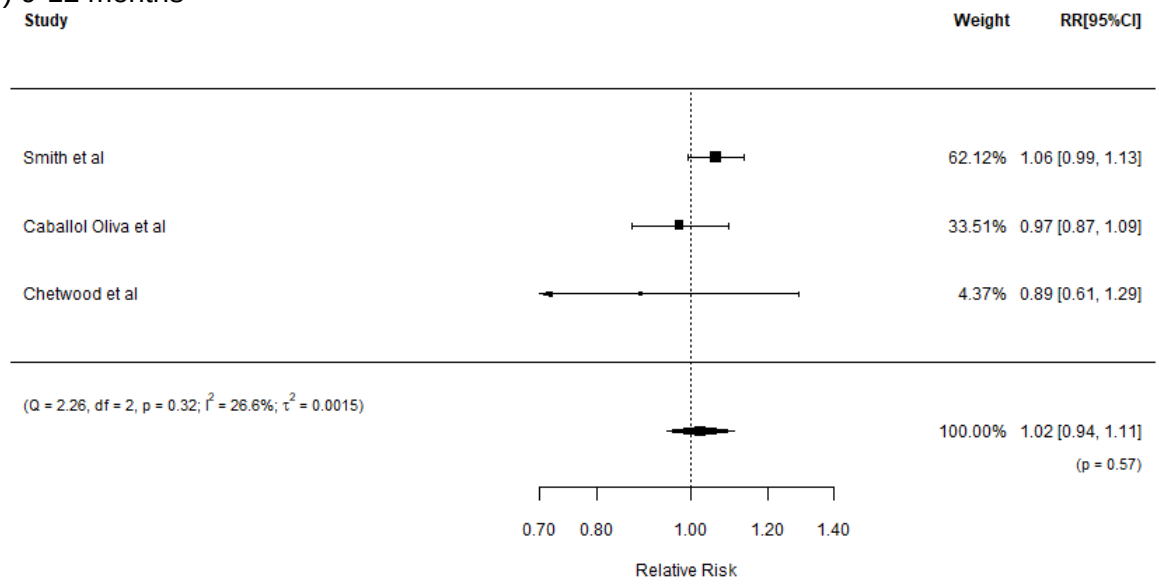
A) 3-4 months



B) 6 months



C) 9-12 months


Study
Weight
RR[95%CI]
Smith et al
62.12% 1.06 [0.99, 1.13]
Caballol Oliva et al
33.51% 0.97 [0.87, 1.09]
Chetwood et al
4.37% 0.89 [0.61, 1.29]
(Q = 2.26, df = 2, p = 0.32; I² = 26.6%; τ² = 0.0015)
100.00% 1.02 [0.94, 1.11]
(p = 0.57)
0.70
0.80
1.00
1.20
1.40
Relative Risk

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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-052

Disease Duration is associated with Endoscopic Healing in Pediatric Patients with Crohn's Disease on Treatment with Infliximab

Sujin Choi[1], So Yoon Choi[2], Yon Ho Choe[3], Jin Soo Moon[4], Yeoun Joo Lee[5], Hye Ran Yang[6], Eell Ryoo[7], Yu Bin Kim[8], Tae Hyeong Kim[9], Yoo Min Lee[10], Yoon Lee[11], Ji-Sook Park[12], Minsoo Shin[13], Hong Koh[14], Ju Young Chang[15], Jung Ok Shim[16], Ben Kang[1]

[1]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Pediatrics, Kosin University Gospel Hospital, Busan, Korea
[3]Pediatrics, Samsung Medical Center, Seoul, Korea
[4]Pediatrics, Seoul National University College of Medicine, Seoul, Korea
[5]Pediatrics, Pusan National University School of Medicine, Busan, Korea
[6]Pediatrics, Seoul National University Bundang Hospital, Seongnam, Korea
[7]Pediatrics, Gachon University Gil Medical Center, Incheon, Korea
[8]Pediatrics, Ajou University School of Medicine, Suwon, Korea
[9]Pediatrics, Kyung Hee University Hospital at Gangdong, Seoul, Korea
[10]Pediatrics, Soonchunhyang University Bucheon Hospital, Bucheon, Korea
[11]Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea
[12]Pediatrics, Gyeongsang National University Hospital, Jinju, Korea
[13]Pediatrics, Korea University Medical Center Ansan Hospital, Seoul, Korea
[14]Pediatrics, Yonsei University College of Medicine, Seoul, Korea
[15]Pediatrics, Seoul National University Boramae Medical Center, Seoul, Korea
[16]Pediatrics, Korea University Guro Hospital, Seoul, Korea

Background / Aim : With the introduction of biological agents such as infliximab (IFX), the achievement rate of endoscopic healing (EH) has increased. However, there still remains a proportion of patients who do not achieve EH despite the use of biologic agents. We aimed to investigate the factors associated EH in pediatric patients with CD on treatment with IFX.

Methods : This was a multicenter, registry-based, inception cohort study conducted in Korea. Pediatric patients diagnosed with CD <19 years, who were on IFX therapy, and had conducted a follow-up endoscopy were included in this study. Baseline clinicodemographics, Paris classification factors, results from laboratory and endoscopic exams were collected, and factors associated EH were analyzed.

Results : A total 150 patients were included. Males comprised 66.0% (99/150) of the patients, and the median age at diagnosis was 14.4 years [interquartile range (IQR) 12.4–16.0]. The median duration from diagnosis to IFX initiation was 0.23 years (IQR 0.08–0.50). At a median follow-up period of 1.20 years (IQR 1.02–1.98), 85 patients (56.7%) had achieved EH. Patients who had achieved EH had a shorter disease duration compared to those who had not (median 0.19 vs. 0.38 years, P=0.041). According to logistic regression analysis, disease duration from diagnosis to IFX was the only factor associated with EH (OR 0.21, 95% CI 0.07-0.58, P = 0.004).

Conclusion : Disease duration was the only factor associated with EH in pediatric patients with CD on treatment with IFX. Early introduction of IFX in the disease course may lead to higher rates of EH.

Keywords : Crohn's Disease, Pediatric, Infliximab, Endoscopic

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-053

Machine Learning Analysis of Microbial Dysbiosis in Pediatric Crohn's Disease: Identifying Precise Biomarkers for Early Diagnosis and Prognosis

Elfiany Elfiany[1], Burhanuddin Rusadi[2], Sitti Halimah Andriani[2], Sahnaz Vivinda Putri[3], Andi Nursanti Andi Ureng[4], Prihantini Prihantini[5]

[1]Computational Science Laboratory, Bulukumba Muhammadiyah University, Bulukumba, Indonesia
[2]Gastroenterelogy Research Unit, Gowa General Hospital, Gowa, Indonesia
[3]Health Management Laboratory, International University Semen Indonesia, Gresik, Indonesia
[4]Pharmacy, Andini Persada College of Health Sciences, Mamuju, Indonesia
[5]Machine Learning for Medicine Laboratory, Bandung Institute of Technology, Bandung, Indonesia

Background / Aim : Pediatric Crohn's Disease (CD) presents unique challenges due to its heterogeneous clinical manifestations and unpredictable disease course. This study aims to employ advanced machine learning algorithms to discern intricate patterns of microbial dysbiosis in pediatric CD patients, with the goal of identifying precise microbial biomarkers for early diagnosis and prognosis.
Methods : A meticulously curated cohort of 100 pediatric patients with confirmed Crohn's Disease, ranging from mild to severe cases, was subjected to thorough microbiome profiling using high-throughput sequencing of fecal samples. Machine learning models, including Convolutional Neural Networks (CNNs) and Support Vector Machines (SVMs), were trained on a diverse set of microbial features, such as relative abundance, diversity indices, and network connectivity metrics. The models were rigorously validated through stratified k-fold cross-validation, ensuring robust performance across distinct disease subtypes and severity levels.
Results : The machine learning models exhibited exceptional discriminatory power, achieving an AUC-ROC of 0.92 (95% CI: 0.88–0.95) for early diagnosis and 0.85 (95% CI: 0.80–0.90) for prognostication of disease severity. Specific microbial taxa, such as decreased abundance of Faecalibacterium prausnitzii and elevated levels of Enterobacteriaceae, were identified as key contributors to the predictive models. The models demonstrated sensitivity and specificity rates of 88% and 90% for early diagnosis, and 80% and 86% for severity prognostication, respectively.
Conclusion : This study employs machine learning to understand the complex microbial dysbiosis in pediatric Crohn's Disease. Identified microbial biomarkers offer unprecedented insights for early diagnosis and prognosis, enabling targeted interventions and personalized therapeutic strategies. The models' high predictive accuracy positions them as valuable tools for improving clinical decision-making in managing pediatric CD, potentially reducing disease-related complications.
Keywords : Pediatric Crohn's Disease, Machine Learning, Microbial Dysbiosis, Biomarkers, Prognosis

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-054

Regular Use of a Mobile Application for Patients with Inflammatory Bowel Disease Improves Their Quality of Life

Yong-Woo Lee[1], Eun Soo Kim[1], Hyun Seok Lee[2], Kyeong Ok Kim[3], Sung Hoon Jung[4], Sang Hyoung Park[5], Chang Hwan Choi[6], Sang-Bum Kang[7], Seong-Joon Koh[8], Dong Hyun Kim[9], Soo Jung Park[10], Yoo Jin Lee[11] IBD Research Group of KASID

[1]Department of Internal Medicine, Kyungpook National University Hospital, Daegu, Korea
[2]Department of Internal Medicine, Kyungpook National University Chilgok Hospital, Daegu, Korea
[3]Department of Internal Medicine, Yeungnam University Medical Center, Daegu, Korea
[4]Department of Internal Medicine, Eunpyeong St. Mary's Hospital, Seoul, Korea
[5]Department of Internal Medicine, Asan Medical Center, Seoul, Korea
[6]Department of Internal Medicine, Chung-Ang University Hospital, Seoul, Korea
[7]Department of Internal Medicine, Daejeon St. Mary's Hospital, Daejeon, Korea
[9]Department of Internal Medicine, Chonnam National University Hospital, Gwangju, Korea
[10]Department of Internal Medicine, Severance Hospital, Seoul, Korea
[11]Department of Internal Medicine, Keimyung University Dongsan Hospital, Daegu, Korea

Background / Aim : Inflammatory bowel disease (IBD) is a chronic inflammatory disease of unknown etiology and is divided into Crohn's disease (CD) and ulcerative colitis (UC). IBD friends, a mobile application for IBD patients was developed for patients with IBD. This application allowed patients to fill in their symptoms and to inform medication time and hospital outpatient schedules. The aim of this study was to determine the improvement in the quality of life (QOL) confirmed through a questionnaire among individuals who regularly use IBD friends on their mobile phones.

Methods : 149 patients of CD and 130 patients of UC were included at the 7 tertiary referral centers. The questionnaire to evaluate QOL included 6 questions selected from the Crohn's and Ulcerative colitis questionnaire (CUCQ-8), about tiredness, urgency, awakening at night, and frustration over the prior 2 weeks. The answers to the 6 questions were standardized and then added to the total score. The same survey was repeated after 6 months to determine the changes in scores. Gender, age, smoking history, and BMI were selected as control variables, and the partial Mayo score was added in UC. Multivariate analysis was performed using the 6-month difference in standardized questionnaire scores as the dependent variable.

Results : There was a statistically significant relationship between the increase in the use of IBD friends in patients with CD and the improvement in QOL measured through the six questions of CUCQ-8 (P=0.037). However, there was no relationship between the use of IBD friends and improvement in QOL in patients with UC. In multivariate analysis, young age and frequent use of the mobile application were found to be significant factors associated with improvement in QOL.

Conclusion : The use of mobile application is significantly associated with improvement in QOL in the patients with CD.

Keywords : Inflammatory Bowel Disease, Crohn's Disease, Ulcerative Colitis, Mobile Application

Table 1. Variables associated with changes in QOL in patients with CD

	Multivariate analysis		
Variables	**OR**	**95% CI**	**P value**
Gender	0.295	0.028–3.130	0.309
Age	1.129	1.004–1.267	0.042
Smoking	0.831	0.167–4.125	0.820
BMI	0.926	0.706–1.214	0.576
Use of mobile application	0.950	0.905–0.997	0.037

*OR less than 1 is associated with improvement in QOL

Table 2. Variables associated with changes in QOL in patients with UC

	Multivariate analysis		
Variables	**OR**	**95% CI**	**P value**
Gender	1.148	0.144–9.161	0.896
Age	0.954	0.879–1.036	0.260
Smoking	0.491	0.140–1.716	0.263
BMI	0.989	0.788–1.241	0.922
Partial Mayo score	0.280	0.164–0.478	0.000
Use of mobile application	0.996	0.959–1.033	0.809

*OR less than 1 is associated with improvement in QOL

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-055

The Diversity of Food Composition during the Weaning Period is associated with the Decreased Risk of Immune-mediated Inflammatory Diseases: A Nationwide Population-based Cohort Study

Junhyun Kwon[1], Woo-Jeong Sohn[2], Chanhyung Lee[1], Hyun Jung Lee[1], Jong Pil Im[1], Byeong Gwan Kim[3], Seong-Joon Koh[1,4]

[1]Department of Internal Medicine and Liver Research Institute,
Seoul National University College of Medicine, Seoul, Korea
[2]Department of Food and Nutrition, Seoul National University College of Human Ecology, Seoul, Korea
[3]Department of Internal Medicine, Seoul National University College of Medicine,
Seoul Metropolitan Government Seoul National University Boramae Medical Center, Seoul, Korea
[4]Laboratory of Intestinal Mucosa and Skin Immunology, Seoul, Korea

Background / Aim : Among environmental factors, dietary composition is associated with increased Immune-mediated inflammatory diseases (IMIDs). This study investigated the association between the diversity of food consumption and IMIDs.

Methods : The data was from the National Health Insurance Service (NHIS) of infants who had participated in the 1st to 3rd National Health Screening Program for Infants and Children (NHSPIC) from 2007 to 2015. According to the total scoring of food composition in the weaning period, we analyzed the impact on the risk of IMIDs using a multivariate Cox proportional hazards model.

Results : Among 1,107,179 individuals, compared to the group with fewer food composition, the risk of IMIDs was lower in the group with food-diverse groups (adjusted hazard ratio [aHR]: 0.86, 95% confidence interval [CI]: 0.792-0.936). In addition, the results showed a lower risk of IMIDs in the food-diverse group compared to the fewer food composition group for both children who had three times or more (aHR: 0.85, CI: 0.769-0.938) and fewer than three times of solid food per day (aHR: 0.87, CI: 0.794-0.950).

Conclusion : Regardless of the frequency of solid food intake per day, consuming a variety of foods in the weaning period impacted lowering IMIDs risk.

Keywords : Immune-mediated Inflammatory Disease, Infant Diet, Weaning, Food Composition

Table 1. General characteristics of the study population according to the incidence of immune-mediated inflammatory diseases

Variable	Total		IMIDs				*p*-value
			No		Yes		
	N/Mean	%/SD	N	%	N	%	
Total	**1,107,179**	**100.0**	**1,088,581**	**98.3**	**18,598**	**1.7**	
Sex							<.0001
Male	580,087	52.4	569,788	52.3	10,299	55.4	
Female	527,092	47.6	518,793	47.7	8,299	44.6	
Income Level							<.0001
Quartile 1 (Low)	119,956	10.8	117,843	10.8	2,113	11.4	
Quartile 2	253,320	22.9	248,891	22.9	4,429	23.8	
Quartile 3	452,148	40.8	444,588	40.8	7,560	40.6	
Quartile 4 (High)	281,755	25.4	277,259	25.5	4,496	24.2	
Residential Area							0.0006
Seoul	247,413	22.3	247,413	22.7	4,323	23.2	
Metropolitan	277,312	25.0	277,312	25.5	4,878	26.2	
City	268,138	24.2	268,138	24.6	4,585	24.7	
Others	295,718	26.7	295,718	27.2	4,812	25.9	
Premature birth							0.0028
No	1,066,740	96.3	1,048,897	96.4	17,843	95.9	
Yes	186,701	16.9	39,684	3.6	755	4.1	
Low birth weight							0.0691
No	1,055,438	95.3	1,037,761	95.3	17,677	95.0	
Yes	51,741	4.7	39,684	3.6	921	5.0	
BMI	16.52	1.38	16.52	1.37	16.58	1.38	0.0001

IMIDs: Immune-mediated inflammatory diseases; BMI: Body Mass Index; SD: standard deviation

Income level was classified into four different groups according to the level of household insurance premium

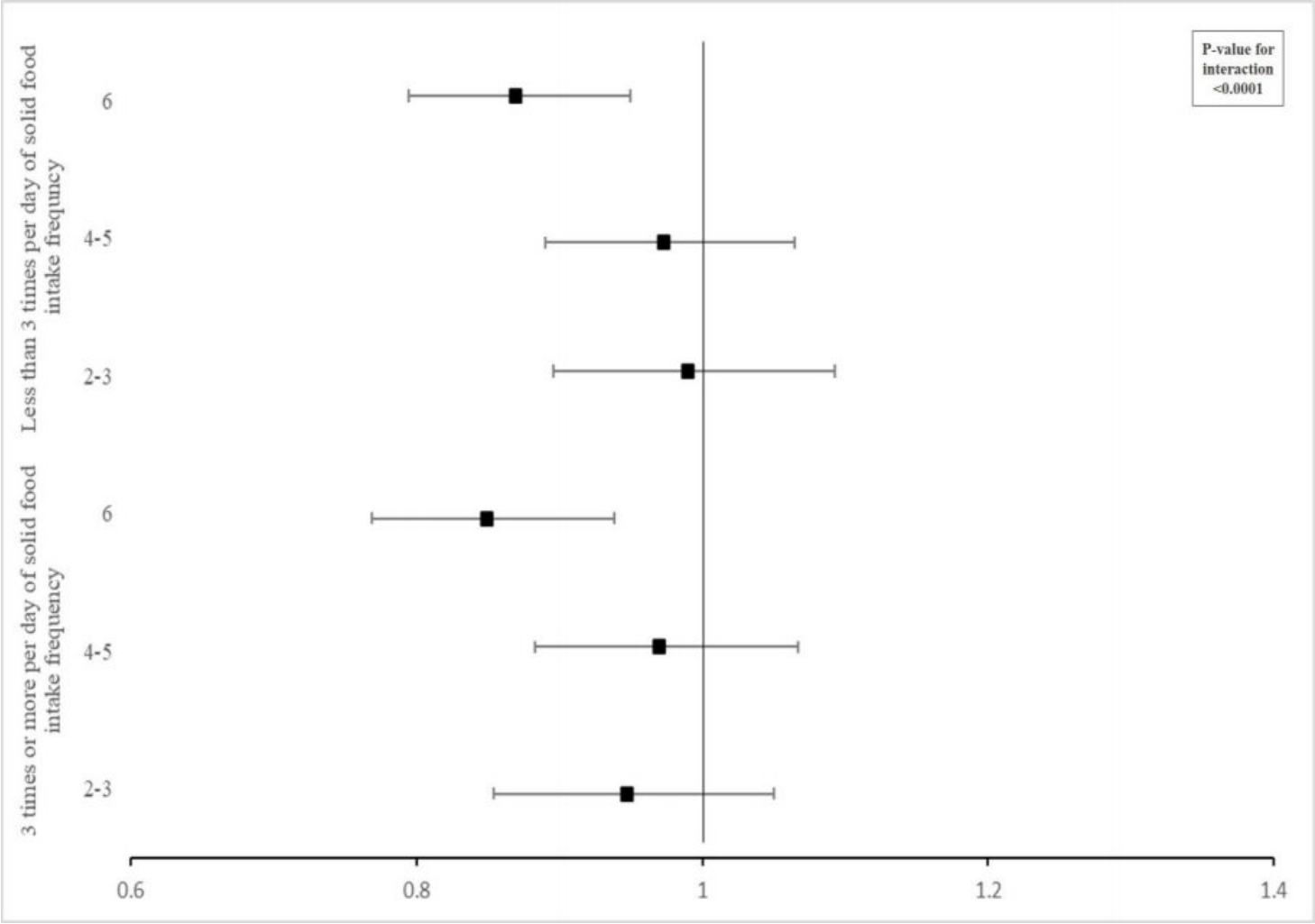
Table 2. Population description and cox proportional hazard model for association between diversity of food composition in the infants period and the risk of immune-mediated inflammatory diseases

Variable	Incidence of IMIDs		Immune-mediated inflammatory diseases						
			HR	95% CI		p-value	aHR	95% CI		p-value
	N	%		Lower	Upper			Lower	Upper	
Categories of food composition score										
6	7,585	(40.8)	0.86	(0.791	- 0.935)	0.0004	0.86	(0.792	- 0.936)	0.0004
4-5	7,682	(41.3)	0.97	(0.891	- 1.053)	0.4558	0.97	(0.891	- 1.053)	0.4609
2-3	2,735	(14.7)	0.97	(0.886	- 1.058)	0.4762	0.97	(0.886	- 1.058)	0.4805
0-1	596	(3.2)	1.00	-			1.00	-		
Food composition score										
6	7,585	(40.8)	0.85	(0.764	- 0.937)	0.0013	0.85	(0.765	0.938)	0.0014
5	4,038	(21.7)	0.94	(0.844	- 1.038)	0.2121	0.94	(0.844	- 1.039)	0.2143
4	3,644	(19.6)	0.97	(0.877	- 1.080)	0.6128	0.97	(0.877	- 1.081)	0.6216
3	2,129	(11.4)	0.96	(0.862	- 1.069)	0.4556	0.96	(0.862	- 1.070)	0.4659
2	606	(3.3)	0.93	(0.819	- 1.131)	0.2613	0.93	(0.818	1.054)	0.2527
1	391	(2.1)	1.00	-			1.00	-		
0	205	(1.1)	0.96	(0.807	- 1.131)	0.5956	0.96	(0.807	- 1.131)	0.5976

IMIDs: Immune-mediated inflammatory diseases; BMI: Body Mass Index; HR: hazard ratio; aHR: adjusted hazard ratio; CI: confidence interval

Adjusted for sex, household income level, residential area, premature birth, low birth weight, and BMI

Solid foods score were awarded a point for weaning that includes vegetables (no=0, yes=1), fruits (no=0, yes=1), grains (no=0, yes=1), meats (no=0, yes=1), fish (no=0, yes=1), and eggs (no=0, yes=1).


P-value for interaction <0.0001
3 times or more per day of solid food intake frequency
6
4-5
2-3
Less than 3 times per day of solid food intake frequncy
6
4-5
2-3
0.6
0.8
1
1.2
1.4

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-056

Factors Contributing to the PREFERence of Pediatric Patients with Inflammatory Bowel Disease in Selecting an Anti-tumor Necrosis Factor Agent

You Jin Choi[1], Yoo Min Lee[2], Hyo-Jeong Jang[3], Sujin Choi[4], Byung-Ho Choe[4], Ben Kang[4]
[1]Department of Pediatrics, Ilsan Paik Hospital, Inje University College of Medicine, Goyang, Korea
[2]Department of Pediatrics, Soonchunhyang University College of Medicine, Bucheon, Korea
[3]Department of Pediatrics, Keimyung University School of Medicine Dongsan Medical Center, Daegu, Korea
[4]Department of Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea

Background / Aim : Treatment with anti-TNF agents, such as intravenous infliximab (IFX) and subcutaneous adalimumab (ADL), has increased in pediatric inflammatory bowel disease (IBD). We aimed to investigate factors contributing to the preference of pediatric patients with IBD in selecting an anti-tumor necrosis factor agent.
Methods : We investigated whether patients already using an anti-TNF agent wanted to change to another drug, which anti-TNF-naive patients preferred to use in the future, and the factors contributing to these decisions. A survey was performed among pediatric IBD patients in four tertiary referral hospitals using questionnaires.
Results : Of the total 161 pediatric IBD patients (116 boys; mean age 16.99±4.40 years), 41 were anti-TNF-naïve patients. The mean travel time from home to the hospital was 51.40±39.56 minutes. The preferences of anti-TNF-naïve patients for ADL and IFX were almost similar (46.3% vs. 53.6%). Ease-to-use, self-administration, administration interval, administration by medical staff, and discomfort in hospital visits were revealed as significant factors. Among the patients using anti-TNF agents, 27 patients (22.5%) wanted to change their drug, and the mean age of patients considering drug change was significantly higher than that of patients who did not (18.93 vs. 16.34, $P < 0.001$). Between ADL and IFX, the proportion of patients wanting to change their medication was significantly higher in those using IFX than ADL (7.1% vs. 27.2%, $P = 0.036$). Regarding the preference of drugs, the place of administration, the method of administration, and the distance traveled between home and hospital were significantly associated.
Conclusion : Anti-TNF naïve patients with IBD in Korea showed no difference in preference between subcutaneous and intravenous route of administration. Meanwhile, patients who were on intravenous IFX more often wanted to change their drug to a subcutaneous route for convenience.
Keywords : IBD, Ulcerative Colitis, Crohn Disease, Preference, Anti-TNF

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-057

Evaluating Risk Factors and Clinical Outcomes in Crohn's Disease Patients with Upper Gastrointestinal Tract Involvement: A Comprehensive Retrospective Cohort Study

Wei-Chun Hsu[1], Puo-Hsien Le[2,3], Chia-Jung Kuo[2,3], Pai-Jui Yeh[4], Ming-Wei Lai[3,4], Ren-Chin Wu[5], Chien-Ming Chen[6], Cheng-Tang Chiu[3,7], Yu-Bin Pan[8]

[1]School of Medicine, Chang Gung University, Taoyuan City, Taiwan
[2]Department of Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan City, Taiwan
[3]Taiwan Association of the Study of Small Intestinal Disease, Taoyuan, Taiwan
[4]Division of Pediatric Gastroenterology, Department of Pediatrics, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[5]Department of Anatomic Pathology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[6]Department of Medical Imaging and Interventions, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan
[7]Department of Gastroenterology and Hepatology, New Taipei City Municipal Tucheng Hospital, New Taipei City, Taiwan
[8]Biostatistical Section, Clinical Trial Centre, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

Background / Aim : Crohn's Disease (CD) affects the entire gastrointestinal tract. However, the incidence and implications of upper gastrointestinal tract involvement in CD are often underestimated and underreported, especially in Asian populations. This study provides a comprehensive evaluation of risk factors and clinical outcomes associated with UGI involvement in CD.

Methods : We conducted a retrospective cohort study at Chang Gung Memorial Hospital, Linkou, from January 2001 to September 2023. Patients were categorized into two groups based on UGI involvement: Montreal L4 and non-L4. Comparative analyses were performed between the groups regarding baseline characteristics, new-onset complications, and clinical outcomes.

Results : The study included 223 CD patients, 114 in the L4 group and 109 in the non-L4 group, with an average follow-up of 40.6 months. Initially, L4 group showed higher smoking prevalence (21.1% vs. 5.5%, P<0.001), higher Crohn's Disease Activity Index (CDAI) scores (302.6±85.6 vs. 272.8±106.3, P=0.023), increased stricture disease (Montreal B2) incidence (55% vs. 48.2%, P<0.001), and more frequent use of biologics (12.3% vs.3.7%, P=0.021) and proton pump inhibitors (64.9% vs. 52%, P=0.014). At follow-up end, the L4 group continued to exhibit higher CDAI scores (153.6±98.7 vs. 114.4±71.8, P = 0.001), increased hospitalization rates (0.6±1.1 vs. 0.3±0.5 times/year, P=0.009). The L4 group had higher incidences of most new-onset CD-related complications, including strictures (44% vs. 20.2%, P<0.001), enter enteral fistulae (11.9% vs. 3.5%, P=0.036), and intraabdominal abscesses (17.4% vs. 5.3%, P=0.009). Upper gastrointestinal involvement (OR 2.307, 95% CI 1.173-4.538) and the presence of stricture disease (OR 3.466, 95% CI 1.771-6.78) at the time of diagnosis are independently associated with an increased risk of developing new-onset strictures disease.

Conclusion : CD with UGI involvement is associated with higher disease activity and an increased risk of IBD-related complications, especially new-onset stricture. Comprehensive assessments at diagnosis and aggressive treatments are crucial for these patients to mitigate poorer outcomes.

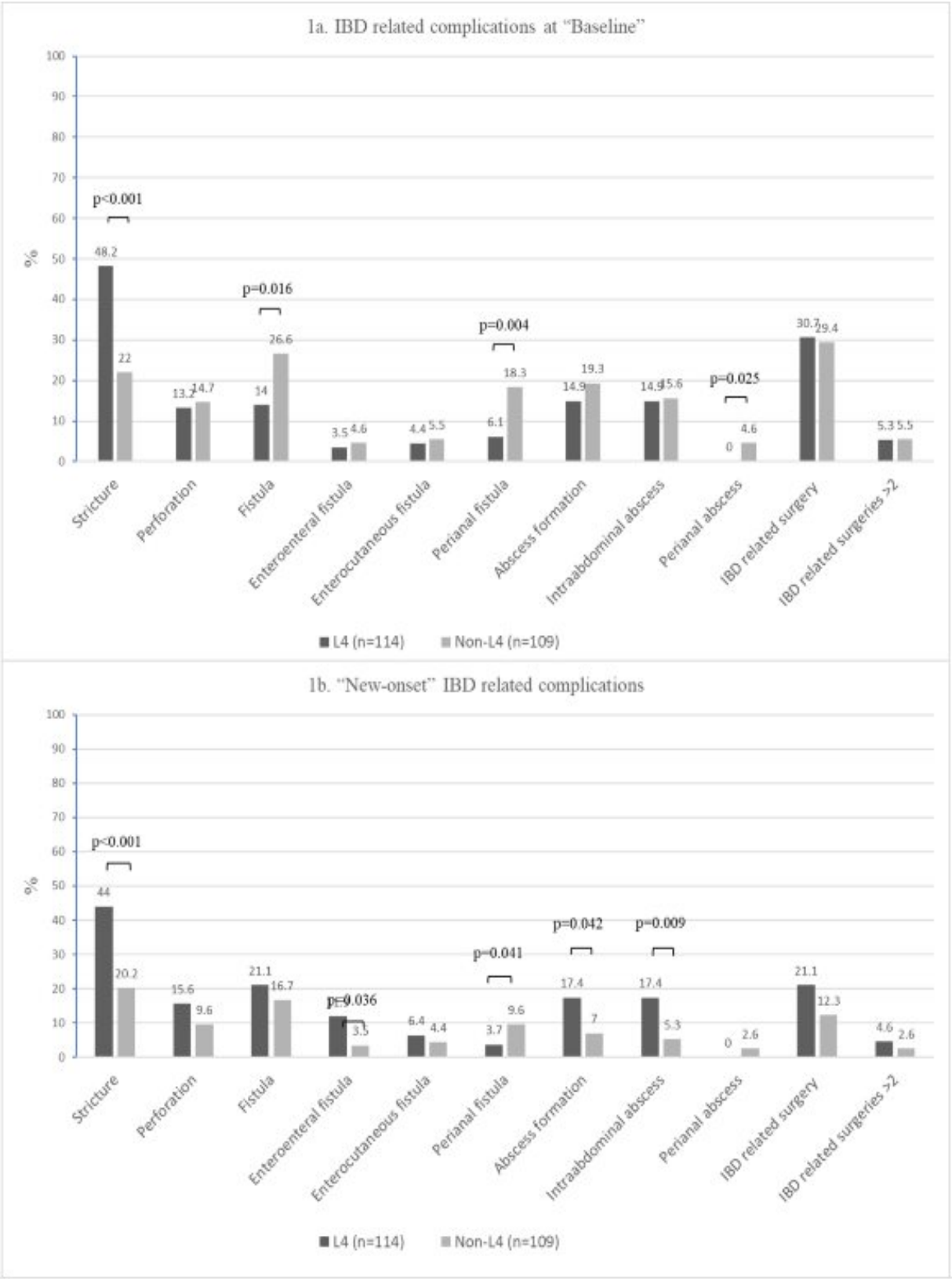
Keywords : Crohn's Disease, Upper Gastrointestinal Tract, Montreal L4

Table 1. Baseline characteristics and clinical outcomes of L4 and non-L4 Crohn's disease patients

	Overall (n=223)	L4 (n=114)	Non-L4 (n=109)	P-value
Baseline characteristics				
Age (year)	35.3±15.7	35.4±16.6	35.2±14.8	0.907
Gender, male (%)	153(68.6%)	84(73.7%)	69(63.3%)	0.95
Smoker (%)	30(13.5%)	24(21.1%)	6(5.5%)	<0.001*
BMI	21.7±4.1	21.9±4.1	21.5±4.2	0.492
CDAI	288.3±97.1	302.6±85.6	272.8±106.3	0.023*
Montreal classification (%)				
A1, age below 16 years	15(6.7%)	11(9.6%)	4(3.7%)	0.075
A2, age between 17 and 40 years	135(60.5%)	66(57.9%)	69(63.3%)	0.411
A3, age above 40 years	73(32.7%)	37(32.5%)	36(33%)	0.928
L1, ileal	78(35%)	42(36.8%)	36(33%)	0.657
L2, colonic	21(9.4%)	10(8.8%)	11(10.1%)	0.687
L3, ileocolonic	108(48.4%)	50(43.9%)	58(53.2%)	0.108
L4, isolated upper disease		114 (100%)		
L4, esophagus		8(7.1%)		
L4, gastric		42(36.8%)		
L4, duodenum		44(38.6%)		
L4, jejunum		39(34.2%)		
L4, proximal ileum		46(40.4%)		
IBD medication (%)				
5-ASA	176(78.9%)	87(76.3%)	89(81.7%)	0.157
Prednisolone	124(55.6%)	64(56.1%)	60(55%)	0.94
Prednisolone dosage (mg/day)	8.8±10.6	9.2±11.2	8.4±10	0.575
Immunosuppressants	55(24.7%)	32(28.1%)	23(21.1%)	0.227
Biologics	18(8.1%)	14(12.3%)	4(3.7%)	0.021*
PPI	126(56.5%)	74(64.9%)	52(47.7%)	0.014*
Lab data				
Hemoglobulin (g/dL)	12.1±2.9	12.1±2.8	12.1±3	0.919
Albumin (g/dl)	3.7±0.8	3.6±0.8	3.9±0.7	0.011*
CRP (mg/L)	44.7±70.7	48.8±78.7	40.3±61.2	0.381
EIM(%)	30(13.5%)	18(15.8%)	12(11%)	0.321
Clinical outcomes (end of follow-up)				
BMI	23.1±5.2	23.3±4.7	22.8±5.7	0.548
CDAI	134.9±88.9	153.6±98.7	114.4±71.8	0.001*
ER visit frequency (time/yr)	0.4±1.1	0.6±1.3	0.3±0.8	0.078
Hospitalization frequency (time/yr)	0.4±0.9	0.6±1.1	0.3±0.5	0.009*
IBD medication (%)				
Prednisolone	62(27.8%)	35(32.1%)	27(23.7%)	0.469
Prednisolone dosage (mg/day)	2.3±4.3	2.7±4.7	1.9±3.7	0.187
Immunosuppressant	68(30.5%)	34(31.2%)	34(29.8%)	0.676
Biologics users	1.2±1	1.2±0.9	1.1±1	0.347
Lab data				
Hemoglobulin (g/dL)	13.2±3	13.2±3.8	13.2±1.8	0.855
Albumin (g/dl)	4.1±0.6	4±0.7	4.2±0.4	0.018*
CRP (mg/L)	11.2±29.4	15.2±37.8	6.9±15.1	0.036*
EIM(%)	25(11.2%)	14(12.3%)	11(10.1%)	0.639
Opportunistic infection (%)				
CMV colitis	11(4.9%)	7(6.4%)	4(3.5%)	0.327
C. difficile	20(9%)	11(10.1%)	9(7.9%)	0.672
Mortality(%)	6(2.7%)	5(4.6%)	1(0.9%)	0.214
Follow up duration (months)	40.6±14.9	41.6±15.6	39.6±14.2	0.323

Note. we used the Student's t test on continuous variable and Chi-square or Fisher's exact test on categorical data

Abbreviation. BMI= body mass index, CDAI= Crohn's Disease Activity Index, CMV= Cytomegalovirus, C. difficile= Clostridioides difficile, CRP= C-reactive protein, EGD=Esophagogastroduodenoscopy, EIM= extraintestinal manifestations, ER= emergency room, IBD= inflammatory bowel disease, PPI=proton pump inhibitor, 5-ASA= Amino salicylic acids



Note. Figure 1*:* The Bar Charts of Prevalence of Inflammatory Bowel Disease Related Complications. 1a Baseline (upper); 1b. New-Onset (middle);
Abbreviation. CD= Crohn's disease, IBD= inflammatory bowel disease

Outcome: stricture (new onset)		Univariate			Multivariate		
	N	Odd ratio	95% CI	p-value	Odd ratio	95% CI	p-value
Age at diagnosis of CD	212	0.977	0.958-0.997	0.023*	0.986	0.949-1.025	0.036*
Sex	211						
female		1 (ref)					
male		1.413	0.752-2.653	0.283			
BMI							
<24	163	1 (ref)					
≥24, <27	21	1.242	0.486-3.177	0.651			
≥27	27	0.85	0.35-2.066	0.72			
CDAI	210	1.003	0.999-1.006	0.108			
Smoking	211	2.411	1.09-5.33	0.03*	1.466	0.586-3.664	0.413
Appendectomy history	212	2.983	1.192-7.464	0.02*	2.202	0.761-6.376	0.146
Underlying disease	212						
Diabetes mellitus		2.077	0.645-6.689	0.221			
Hypertension		0.815	0.338-1.966	0.649			
Chronic kidney disease		0	-	0.999			
Cancer		0.348	0.075-1.613	0.177			
Autoimmune disease		0.594	0.253-1.394	0.231			
Montreal classification							
L1, ileal	210	0.969	0.53-1.772	0.918			
L2, colonic	210	0.505	0.161-1.583	0.241			
L3, ileocolonic	210	1.294	0.728-2.3	0.38			
L4, isolated upper disease	212	2.659	1.462-4.836	0.001*	2.307	1.173-4.538	0.015*
A1, age below 16 years	15	1 (ref)					
A2, age between 17 and 40 years	130	0.691	0.236-2.025	0.501			
A3, age above 40 years	67	0.33	0.103-1.058	0.062			
IBD related complications at diagnosis							
Stricture	211	4.608	2.488-8.534	<0.001*	3.466	1.771-6.78	<0.001*
Penetrate	211	1.328	0.604-2.92	0.48			
Perianal disease	211	1.769	0.905-3.46	0.096			
Fistula	211	1.856	0.945-3.645	0.073			
Enterocutaneous fistula		1.16	0.328-4.104	0.818			
Enteroenterous fistula		1.648	0.429-6.342	0.467			
Perianal fistula		1.738	0.765-3.947	0.187			
Abscess	210	1.425	0.69-2.945	0.339			
Intraabdominal abscess		1.751	0.829-3.7	0.142			
Perianal abscess		0	-	0.999			
Opportunistic infections							
CMV colitis	123	1.426	0.379-5.368	0.6			
CMV viremia	182	0.806	0.273-2.377	0.695			
CD infection	146	0.553	0.217-1.407	0.526			
CI infectione	145	0.755	0.317-1.798	0.214			

Note. The univariate and multivariate analysis of risk factors of new-onset Crohn's disease related intestinal stricture. Multiple multivariate analysis includes age, smoking, appendectomy history, L4, stricture complication at diagnosis
Abbreviation. BMI= body mass index, CDAI= Crohn's Disease Activity Index, C. difficile= Clostridioides difficile, CMV= Cytomegalovirus,

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-058

New Genetic Biomarkers Predicting 5-aminosalicylate-induced Adverse Events in Patients with Inflammatory Bowel Diseases

Jihye Park, I Seul Park, Ji Hyung Kim, Jung Hyun Ji, Soo Jung Park, Jae Jun Park, Tae Il Kim, Seung Won Kim, Jae Hee Cheon
Department of Internal Medicine, College of Medicine, Yonsei University, Seoul, Korea

Background / Aim : Notably, 5-aminosalicylates (5-ASA) are vital in treating inflammatory bowel diseases (IBD). The adverse events of 5-ASA rarely occur, but they could be fatal. We aimed to discover new genetic biomarkers predicting 5-ASA-induced adverse events in patients with IBD.
Methods : We performed a genome-wide association study on patients with IBD in South Korea. We defined Subset 1 as 39 all adverse events and 272 controls, Subset 2 as 20 severe adverse events and 291 controls (mild adverse events and control), and Subset 3 as 20 severe adverse events and 272 controls. Logistic regression analysis was performed, and commonly found associated genes were determined as candidate single nucleotide polymorphisms predicting 5-ASA adverse events.
Results : Patients with Crohn's disease were significantly negatively associated with the development of adverse events compared to patients with ulcerative colitis (5.3% vs. 22.9%). However, sex and age at diagnosis were unassociated with the adverse events of 5-ASA. rs13898676 (OR, 20.33; 95% CI, 5.69-72.67; $p = 3.57 \times e\text{-}6$), rs12681590 (OR, 7.35; 95% CI, 2.85-19.00; $p = 3.78 \times e\text{-}5$), rs10967320 (OR, 4.51; 95% CI, 2.18-9.31; $p = 4.72 \times e\text{-}5$), and rs78726924 (OR, 3.54; 95% CI, 1.69-7.40; $p = 7.96 \times e\text{-}5$) were genetic biomarkers predicting 5-ASA induced severe adverse events in patients with IBD.
Conclusion : The adverse events of 5-ASA were more common in patients with ulcerative colitis than those with Crohn's disease in our study. We found that novel rs13898676 nearby WSB2 was the most significant genetic locus contributing to 5-ASA's adverse event risk.
Keywords : Biomarker, Pharmacogenetics, 5-Aminosalicylate, Adverse Events

401 IBD patients
- Cohort 1 (adverse events of 5-ASA): 40
- Cohort 2 (biologic agent treatment): 361

Inclusion criteria → Exclusion

Incomplete electronic medical records, changes in initial diagnosis, changes in initial diagnosis, or only a single visit
- Cohort 1 (adverse events of 5-ASA): 0
- Cohort 2 (biologic agent treatment): 47

No use of 5-ASA
- Cohort 2 (biologic agent treatment): 18

336 IBD patients
- Cohort 1 (adverse events of 5-ASA): 40
- Cohort 2 (biologic agent treatment): 296

Quality control → Exclusion
- Call rate < 95%
- MAF < 0.01
- HWE (p value < 1 × e-4)

QC failed: 25

311 IBD patients (GSA)
- Cohort 1 (adverse events of 5-ASA): 39
- Cohort 2 (biologic agent treatment): 272

Subset 1
- Control: 272
- $Case_{mild}$+$Case_{severe}$: 39

Subset 2
- $Case_{mild}$+Control: 291
- $Case_{severe}$: 20

Subset 3
- Control: 272
- $Case_{severe}$: 20

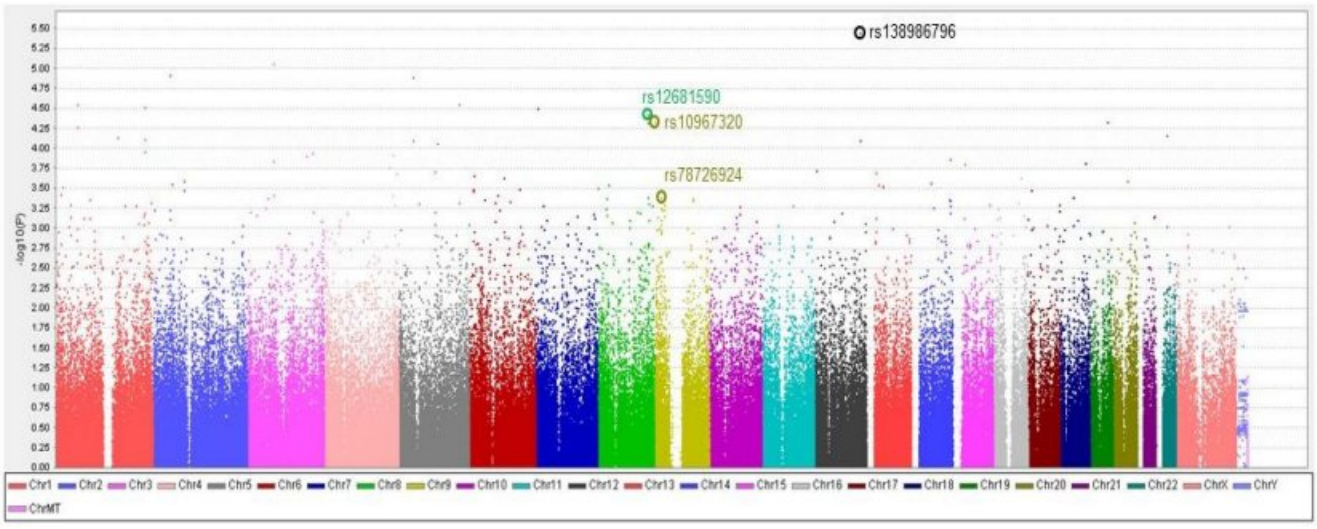
Common 11 SNPs → Exclusion

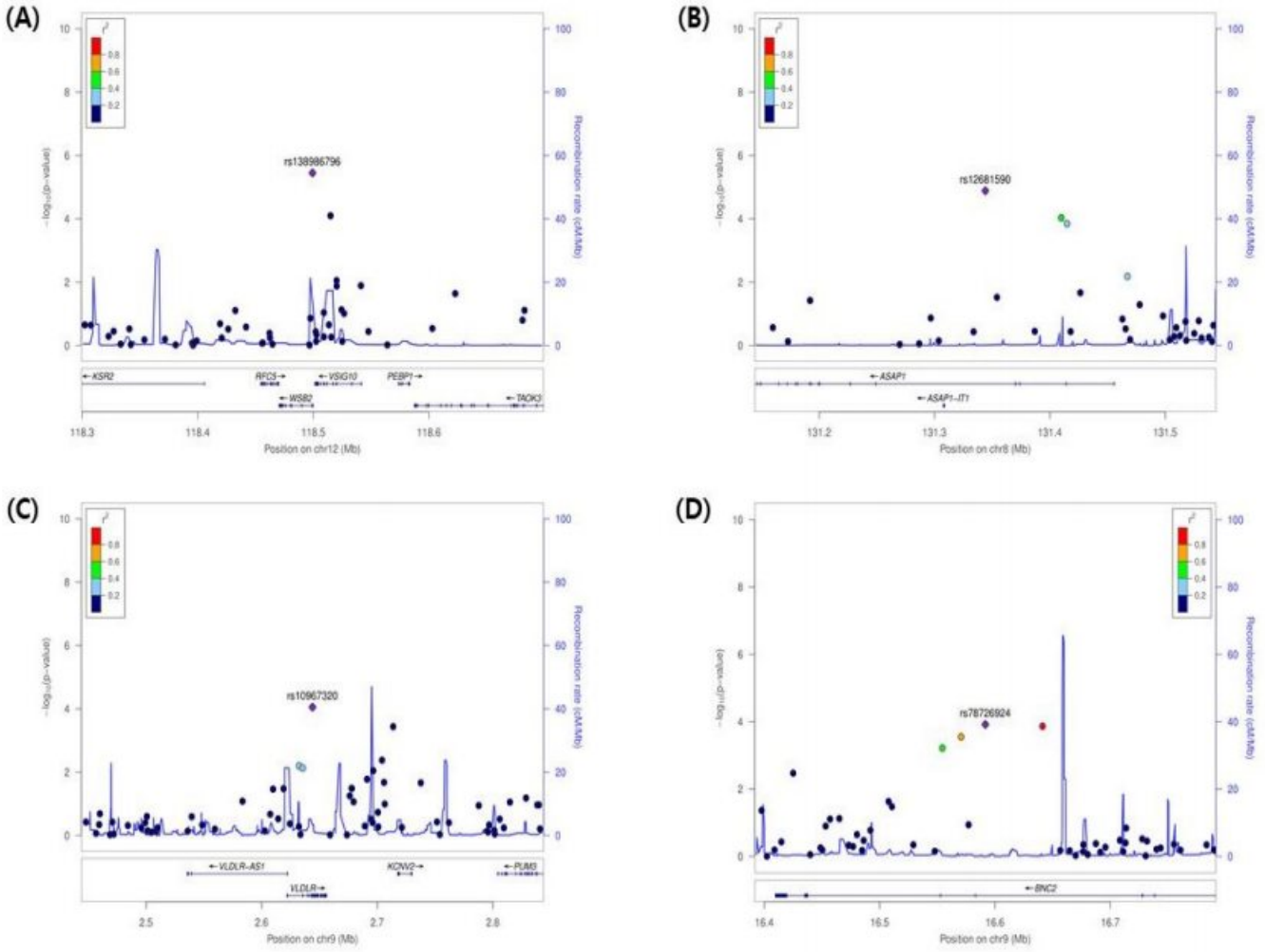
Negative correlation: 3 SNPs

Common 8 SNPs

Optimal model

4 SNPs: *WSB2, ASP1, VLDLR1, BNC2*




(A)
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KSR2
RFC3
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Position on chr12 (Mb)
(B)
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ASAP1
ASAP1-IT1
Position on chr8 (Mb)
(C)
rs10967320
VLDLR-AS1
KCNV2
PUM3
VLDLR
Position on chr9 (Mb)
(D)
rs78726924
BNC2
Position on chr9 (Mb)
Recombination rate (cM/Mb)

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-059

Genomic Structural Variation and Polygenic Risk Score for Inflammatory Bowel Disease

Yu Kyung Jun[1,2], Jibin Jeong[3], Byoung Mok Kim[3], Jinho Kim[3], Yonghoon Choi[1], Cheol Min Shin[1,2], Young Soo Park[1], Nayoung Kim[1,2], Dong Ho Lee[1,2], Sejoon Lee[3], Hyuk Yoon[1,2]

[1]Department of Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea
[2]Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea
[3]Precision Medicine Center, Seoul National University Bundang Hospital, Seongnam, Korea

Background / Aim : We evaluated large deletions induced by structural variants (SVs) in patients with inflammatory bowel disease (IBD) and the ethnic contribution to a polygenic risk score (PRS) for IBD by using genome-wide association studies (GWAS).
Methods : Seventy-five patients with IBD of Korean ancestry from Seoul National University Bundang Hospital were included. SVs involving large deletions were detected and analyzed by using the Genome Aggregation Database (gnomAD) and AnnotSV. The SVs were prioritized based on IBD-associated SNPs in the previous GWAS. The prediction performance of European- and Korean-derived PRSs for IBD was also evaluated. For calculating PRS, we applied previously published models derived from the European and Korean populations, respectively, and used the Korean Genome and Epidemiology Study (KoGES) database as the Korean controls.
Results : We found 146 SVs involving large deletions in the IBD cohort. Ten SVs were annotated as likely pathogenic, and 24 had the probability of being loss-of-function intolerant (pLI $\geq$ 0.9). We found that the frequency of large deletions that overlapped with the regions coding NOTCH1, HGF, PTPN2, and SENP7 were rare in the IBD cohort compared to the gnomAD population (Table 1). The large deletions that overlapped with the regions coding IL2RA, ITGA4, BANK1, and STAT3 were identified in the IBD cohort but not in the gnomAD population (Table 2). The PRS for IBD in the IBD cohort was significantly higher than that in the Korean controls under the Korean- or European-derived model (Figure). However, the PRSs for CD or UC were not able to distinguish patients with CD and UC in the IBD cohort.
Conclusion : Our finding suggests that SVs involving large deletion may be an important genomic variability in predicting the development of IBD. The PRS for IBD can predict IBD development without ethnic specificity.
Keywords : Inflammatory Bowel Disease, Genomic Structural Variation, Polygenic Risk Score, Genome-Wide Association Study

Table 1. Structural variants in the inflammatory bowel disease cohort which overlapped with those in gnomAD

SV region	Gene*	Overlap with transcript	Overlap with coding sequence	pLI	ACMG classi-fication	Cases (AF)	Controls (AF)	O
chr9:139427347-139427796	*NOTCH1*	+		1.000	3	0.027	0.521	0.0
chr7:81358337-81358613	*HGF*	+	+	0.999	4	0.040	0.687	0.0
chr2:160855862-160856187	*PLA2R1*	+		3.231E-30	3	0.313	0.817	0.1
chr3:101188375-101188693	*SENP7*	+		0.073	3	0.147	0.287	0.4

SV, Structural variant; pLI, probability of being loss-of-function intolerant; ACMG, American College of Medical Genetics and Genomics; AF, allele frequency; OR, odds ratio; IBD, inflammatory bowel disease; gnomAD, Genome Aggregation Database.

* The name of the gene was identified from gnomAD or annotSV.

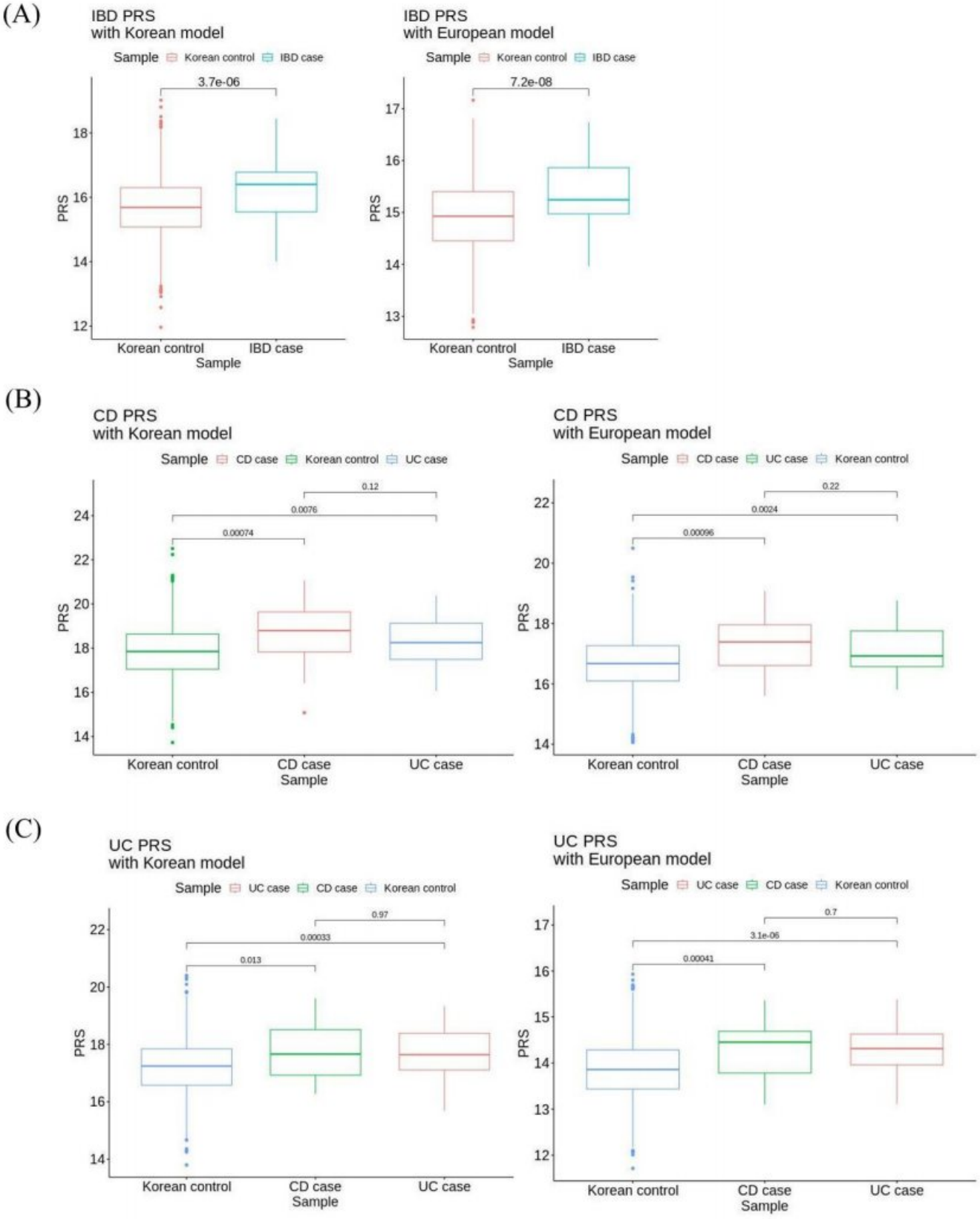
Table 2. Structural variants in the inflammatory bowel disease cohort which did not overlap with those in gnomAD

SV region	Gene*	pLI	ACMG classification	Cases (AF)
chr10:6097385-6097885	*IL2RA*	0.055	3	0.680
chr2:182355982-182356299	*ITGA4*	1.007E-04	3	0.447
chr4:102787786-102788353	*BANK1*	4.791E-12	3	0.287
chr17:40489939-40490570	*STAT3*	1.000	3	0.013

SV, Structural variant; pLI, probability of being loss-of-function intolerant; ACMG, American College of Medical Genetics and Genomics; AF, allele frequency; gnomAD, Genome Aggregation Database.

* The name of the gene was identified from gnomAD or annotSV

Figure. Boxplots of PRS in individuals of IBD cohorts and the general population. (A) PRS of IBD. (B) PRS of CD. (C) PRS of UC.



[Poster Exhibition – Inflammatory Bowel Disease]

PE1-060

Reinitiation of Ozanimod after Dose Interruption: Assessment of Effect on Heart Rate

Peijin Zhang[1], Mary Syto[1], Susan Walker[1], Giridhar Tirucherai[1], Bindu Murthy[1], Jeong-eun Park[2], Daniel Tatosian[1]

[1]Research & Development, Bristol Myers Squibb, Princeton, NJ, United States
[2]Medical, Bristol Myers Squibb, Seoul, Korea

Background / Aim : Ozanimod (OZA), is a selective sphingosine 1-phosphate (S1P) receptor 1 and 5 modulator. Treatment with OZA and other S1P receptor modulators has been associated with bradycardia likely due to pharmacologic effect of $S1P_1$ receptors on heart rate (HR). Dose titration is implemented to mitigate risk. This study evaluated HR effects of reinitiating OZA 0.92mg after washout intervals relative to dose escalation in healthy adults.

Methods : In this double-blind, placebo (PBO) controlled, adaptive phase 1 study, participants were randomised to OZA (days 1-4, 0.23mg; 5-7, 0.46mg; then 0.92mg) or PBO for 28 days, followed by a washout of 3, 7, or 14 days, and then reinitiation with a single dose of OZA 0.92mg or PBO. Change in $HR_{Nadir(0-12)}$ postdose between Day (D) 1 of initial treatment and D1 of reinitiation were analysed using an ANCOVA model with fixed effects for treatment, initial treatment D1 $HR_{Nadir(0-12)}$, sex, and treatment × initial treatment D1 $HR_{Nadir(0-12)}$; least squares (LS) mean differences between OZA/OZA and PBO/PBO with 90% CI were calculated. Safety was also assessed.

Results : Of 64 participants, 15, 16, and 15 received OZA/OZA with 3-, 7-, and 14-day washout intervals, respectively; 18 received PBO/PBO. LS mean reductions in $HR_{Nadir(0-12)}$, bpm between D1 of initial treatment and D1 of reinitiation were generally similar between OZA/OZA and combined PBO/PBO groups: 3 days = 3.51 vs 1.73, 7 days = 0.85 vs 1.87, and 14 days = 0.27 vs 1.81, respectively. LS mean differences (90% CI) were 3 days, 1.78 (-1.76, 5.32); 7 days, -1.02 (-3.88, 1.85); and 14 days, -1.54 (-4.20, 1.11). There were no serious adverse events.

Conclusion : Reinitiation of OZA 0.92mg after dose interruption of 3, 7, or 14 days was not associated with meaningful changes in HR. OZA can be safely reinitiated at 0.92mg without dose titration within 14 days of drug discontinuation.

Keywords : Ozanimod, Dose Reinitiation, Heart Rate

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-062

The Efficacy of a Restricted-duration Vedolizumab Therapy in Ulcerative Colitis

Chen-Wang Chang[1,2,4], Chi-Yu Lee[1], Wei-Chen Lin[1,2,3], Horng-Yuan Wang[1], Ming-Jen Chen[1,2,3]
Taiwan Association for the Study of Small Intestinal Diseases (TASSID)
[1]Gastroenterology and Hepatology, MacKay Memorial Hospital, Taipei, Taiwan
[2]Nursing, MacKay Medicine, Nursing and Management College, Taipei, Taiwan
[3]Medicine, MacKay Medical College, Taipei, Taiwan
[4]TASSID, Taiwan Association for the Study of Small Intestinal Diseases, Taipei, Taiwan

Background / Aim : The utility of vedolizumab for the treatment of ulcerative colitis with a restricted duration remains an area of active investigation.
Methods : This is a retrospective study and conducted at a single medical center in Taiwan, encompassing adult patients (aged ≥18 years) diagnosed with ulcerative colitis who underwent vedolizumab treatment between March 2019 and October 2023. Vedolizumab administration involved intravenous infusions (300 mg) at weeks 0, 2, and 6, followed by every 8 weeks thereafter. Dose escalation was not permitted due to reimbursement limitations. Strict reimbursement criteria imposed by the National Health Insurance program restricted vedolizumab access to a one-year period. Patients experiencing disease recurrence could be re-administered vedolizumab. Treatment effectiveness was determined based on clinical necessity and patient availability, mirroring real-world practice.
Results : A retrospective study involving 29 adult ulcerative colitis patients treated with vedolizumab revealed the following key findings: The average age of vedolizumab-treated patients was 48.8 years, with a male-to-female ratio of 1.64:1. Prior biologic exposure was reported in 4 (13.8%) patients. At treatment initiation, 55.2% of patients exhibited pancolitis, with 41.1% still having pancolitis post-treatment. However, endoscopic findings showed significant improvement. Initially, 76% of patients had a Mayo endoscopic score of 3, while only 3.4% maintained this score after treatment. The average follow-up duration was 27.7 months. Among vedolizumab-treated patients, 34.5% continued on their initial treatment course, 34.5% discontinued vedolizumab due to insurance-related reasons without experiencing recurrence, 17.2% required vedolizumab re-administration due to disease reactivation, and 13.8% lost treatment response and switched to another biologic agent.
Conclusion : Despite the restricted duration of vedolizumab treatment for ulcerative colitis, a notably high persistence rate was observed, with only 13.8% of patients experiencing a loss of treatment response. Moreover, a significant improvement in endoscopic findings was evident following treatment.
Keywords : Ulcerative Colitis, Restricted Duration, Vedolizumab

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-063

Paradoxical Reaction to Biologics in Pediatric Inflammatory Bowel Disease : A Single Center, Retrospective Study

Yoon Zi Kim, Seon Young Kim, Hansol Kim, Yon Ho Choe, Mi Jin Kim
Pediatric, Samsung Medical Center, Seoul, Korea

Background / Aim : Targeted immune-modulating treatment with biological agents has revolutionized the management of inflammatory disease, including inflammatory bowel disease (IBD). However, the use of biologic has been associated with a new class of adverse events, the so-called paradoxical reaction (PR). Here, we retrospectively reviewed the clinical characteristics of PR to biologics in pediatric IBD.
Methods : It this single center retrospective study, pediatric patients who were diagnosed with IBD and followed from January 2003 to June 2023, were included in the study. We collected data including demographic data, disease activity and laboratory results at diagnosis. In additionally, we collected duration and dose of biologics, disease activity, laboratory results at PR emerged.
Results : Most of the 718 (CD: 594; UC: 120; IBD-U: 4) included patients administered infliximab (IFX) (CD: 472 (79.5%); UC: 69 (57.5%)), followed by adalimumab (CD: 79 (13.3%), UC: 5 (4.2%)). A total of 22 (CD: 18 (3.0%); UC: 4 (3.3%)) reported a PR. Most common PR was skin manifestation such as eczematous or seborrheic eruption and psoriasiform eruption (18/22 (81.2%)). Hidradenitis supprativa (3/22 (13.6%)), vitiligo (1/22 (4.5%)) and alopecia (1/22 (4.5%)) were also reported. Median biologics duration of first PR emerged was 2.53±1.97 years in CD, and 4.14±2.1 years in UC. Most patient with PR showed low disease activity. (median PCDAI: 3.47±5.88, median PUCAI: 1.5±1.73). Median IFX dose was 6.32±1.52mg/kg and IFX trough level was 5.41±0.22ug/mL. Most PR were controlled by topical steroid, however, 8/24 (33.3%) cases changed to other biologics and 7/24 (29.2%) cases ended up to stop biologic to control the PR.
Conclusion : Our results demonstrated reported PR, clinical data and biologic dose among pediatric IBD. Even when disease activity is stable, PR must be recognized and closely monitored to ensure appropriate management and, if necessary, a prudent decision to change or discontinue the biologic.
Keywords : Inflammatory Bowel Disease, Paradoxical Reaction, Anti-TNF Alpha Agent, Trough Level

Table 1. Baseline characteristics on patients with paradoxical reaction.

	Crohn's disease	Ulcerative colitis
Total patients	2.53±1.97 (1.62-3.44)	4.14±2.10 (2.09-6.21)
Male : Female (%)	7:11 (38.9%)	1:3 (25%)
Growth imparement	3/18 (16.7%)	1/4 (25%)
WBC ($\times 10^3/\mu\ell$)	8.43±2.48 (7.29-9.58)	13.210±4.4 (9.69-16.73)
Hemoglobin (g/dℓ)	11.8±1.42 (11.15-12.45)	11.33±2.05 (9.69-12.96)
Hematocrit (%)	37.04±4.39 (35.02-39.07)	35.35±4.95 (31.39-39.31)
Platelet ($\times 10^3/\mu\ell$)	388.44±105.67 (339.68-437.26)	362.0±187.3 (212.12-511.87)
Albumin (g/dℓ)	4.16±0.41 (3.97-4.34)	4.03±0.36 (3.74-4.31)
ESR (mm/hr)	35.67±27.69 (22.88-48.46)	27.0±17.64 (12.88-41.12)
CRP (mg/dℓ)	1.77±2.71 (0.52-3.02)	3.73±4.37 (0.24-7.22)
Disease activity [c]	32.67±11.44 (27.38-37.95)	51.25±14.93 (39.30-63.20)
Endoscopic score	13.83±6.28 (11.01-16.66)	2.5±0.58 (2.04-2.96)

Table 2. Clinical, biochemical and disease activity information when paradoxical reaction first occurred.

	Crohn's disease	Ulcerative colitis
Biologic duration (years)	2.53±1.97 (1.62-3.44)	4.14±2.10 (2.09-6.21)
WBC (× 10^3/㎕)	6.80±1.71 (5.53-8.06)	7.06±0.97 (6.11-8.00)
Hematocrit (%)	13.62±1.42 (12.98-14.26)	12.48±0.54 (11.94-13.01)
Platelet (× 10^3/㎕)	278.05±58.67 (251.67-304.43)	283.75±42.94 (241.67-325.83)
Albumin (g/dℓ)	4.39±0.28 (4.26-4.52)	4.15±0.10 (4.05-4.25)
ESR (mm/hr)	17.74±17.51 (9.86-25.61)	21.25±3.59 (17.73-24.77)
CRP (mg/dℓ)	0.26±0.36 (0.10-0.42)	0.12±0.10 (0.02-0.22)
Calprotectin (mg/kg)	531.88±1352.58 (111.08-1140.07)	573.73±506.36 (77.5-1069.95)
Disease activity [c]	3.47±5.88 (0.83-6.11)	1.5±1.73 (0.11-2.89)
Biochemical remission rate (%)	13/18 (72.2%)	4/4 (100%)
IFX dose (mg/kg)	6.32±1.52 (5.13-6.72)	5.41±0.22 (5.20-5.62)
IFX TL (ug/㎖)	7.55±7.14 (4.59-11.39)	5.90±1.36 (4.57-7.23)
Adalimumab TL (ug/㎖)	6.23±5.12 (0.44-12.02)	

Note: Continuous variables are expressed in median (interquartile range) or mean ± standard deviations.

Abbreviations: ESR, Erythrocyte sedimentation rate; CRP, C-reactive protein, IFX; infliximab, TL; trough level.

Table 3. Paradoxical reaction data according to type of biological agents.

	Infliximab	Adalimumab
PR rate (%)	17/545 (3.11%)	5/84 (6.00%)
Biologic duration (years)	3.16±2.34 (2.05-4.27)	2.00±1.17 (0.85-3.14)
Biologic dose (mg/kg)	6.24±1.39 (5.57-6.90)	12.48±0.54 (11.94-13.01)
Trough level (ug/mL)	7.92±4.84 (5.62-10.21)	6.23±5.12 (0.44-12.02)
Reported biologic change case (%)	6/19 (31.6%)	2/5 (40.0%)
Reported biologic cessation case (%) *	5/19 (26.3%)	2/5 (40.0%)

Note: Continuous variables are expressed in median (interquartile range) or mean ± standard deviations.

Abbreviations: PR, paradoxical reaction

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-064

Assessment of Ulcerative Colitis Intestinal Microbiome using Endoscopic Brush

Bomee Lee[1], Bora Keum[1], Wonsuck Yoon[2], Sanghyun Kim[1], Hanjo Jeon[1], Yoontae Jeen[1], Hoonjai Chun[1]

[1]Department of Internal Medicine, Korea University Anam Hospital, Seoul, Korea
[2]Department of Allergy Immunology Center, Korea University College of Medicine, Seoul, Korea

Background / Aim : The precise pathogenesis of the UC is still unknown, but one of its cause is known to be microbial dysbiosis. The mucosa-associated microbiota are more deeply involved in the pathogenesis of UC. However, the optimal sampling of mucosa-associated microbiome has yet to be investigated. In this study, we investigated the mucosa-associated microbiome in patients with UC, using endoscopic brush samples. We hypothesized that endoscopic brushing is precise and noninvasive method to get sample of mucosa-associated microbiome.

Methods : Patients with UC who visited Korea University Anam hospital were screened for this study. Clinical data such as medical records, colonoscopy and fecal samples were reviewed. Using a stool and saliva sample collector kit respectively, the subjects provided stool and saliva samples. Brushing samples were collected during the sigmoidoscopy procedure with 3 brush strokes on the colon mucosa using the cytology brush. The samples were analyzed for microbiome in the Korea University Medical Center.

Results : From July 2022 to January 2023, we prospectively enrolled 19 patients with UC. Firmicutes, Bacteroidetes, Proteobacteria, and Actinobacteria were the most common species in microbiota of brush, stool and saliva. The microbiome between stool and brush was no significant difference in alpha and beta diversities. However, Oral microbiome was different from stool and brush in beta diversities. Patients were categorized into subgroups based on disease severity to analyze the oral microbiome. A trend was observed where increased disease severity was associated with an increase in Firmicutes.

Conclusion : The microbiome of stool and brush was no significantly different. However, the novel sampling of mucosa-associated microbiome, endoscopic brush, is not inferior compared to currently used sampling of stool. Also the analysis of the oral microbiome suggested that Firmicutes could be considered a useful biomarker for assessing disease severity. Therefore, it is necessary to conduct follow-up research by increasing the number of subjects.

Keywords : Microbiome, Endoscopic Brush, UC

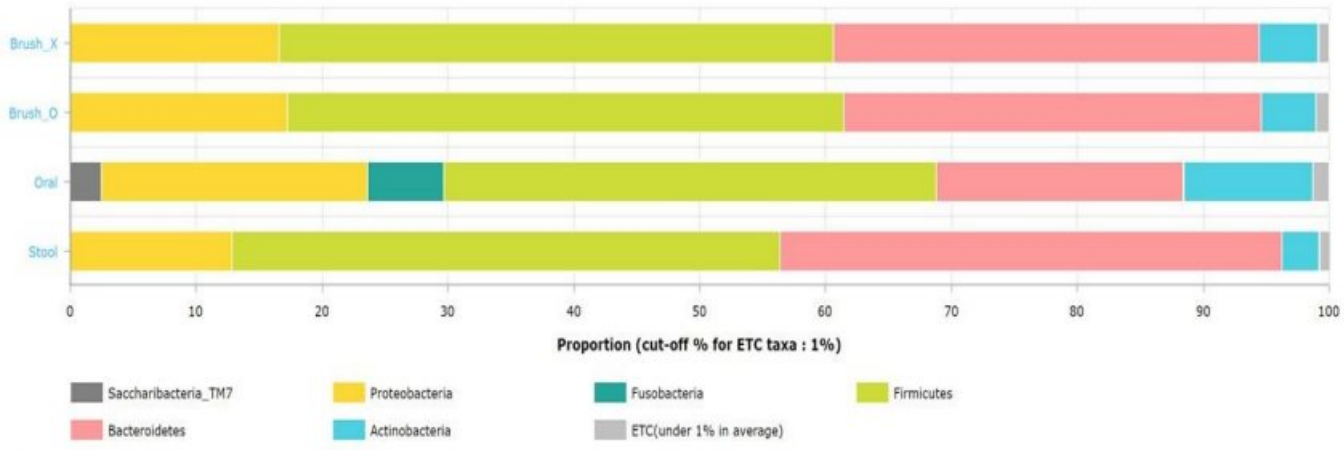


Fig. 1-1 Averaged taxonomic compositions of the MTP sets

Fig. 1-2 Boxplot of Alpha-diversity

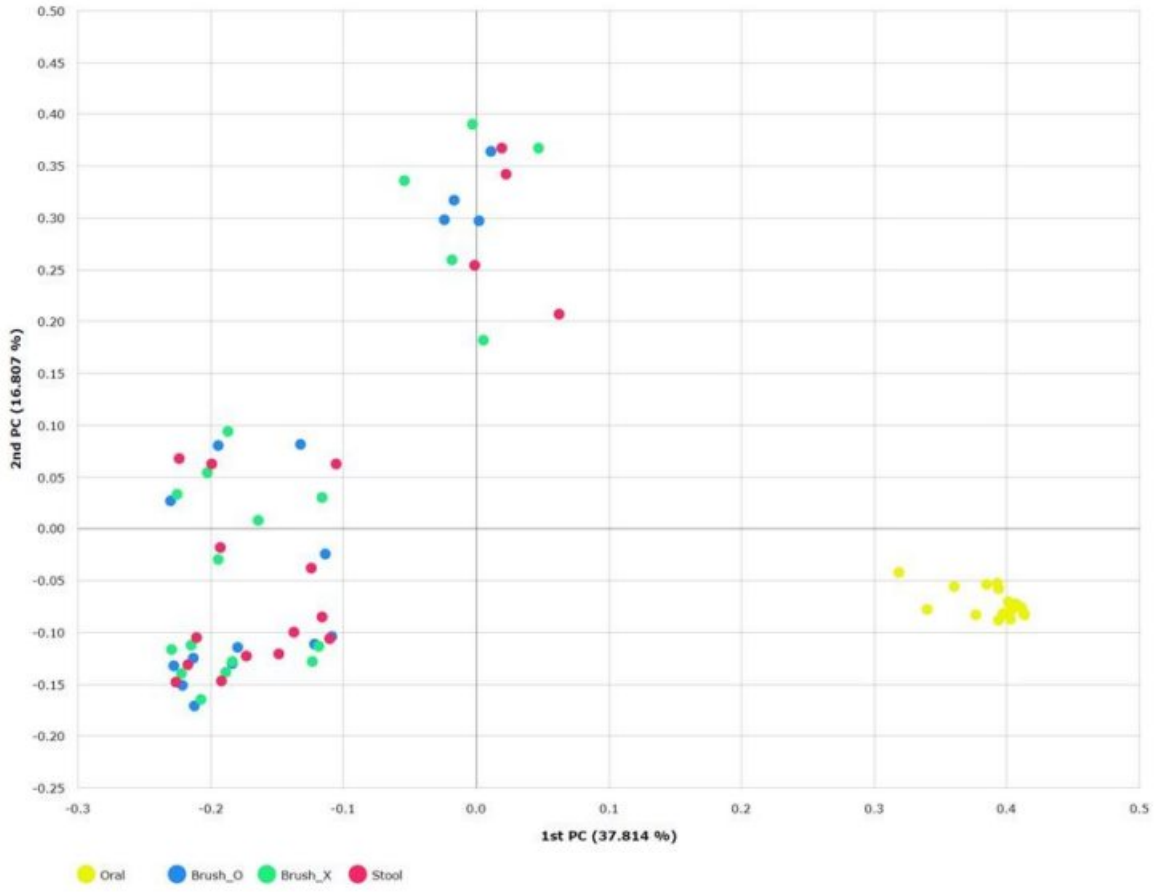
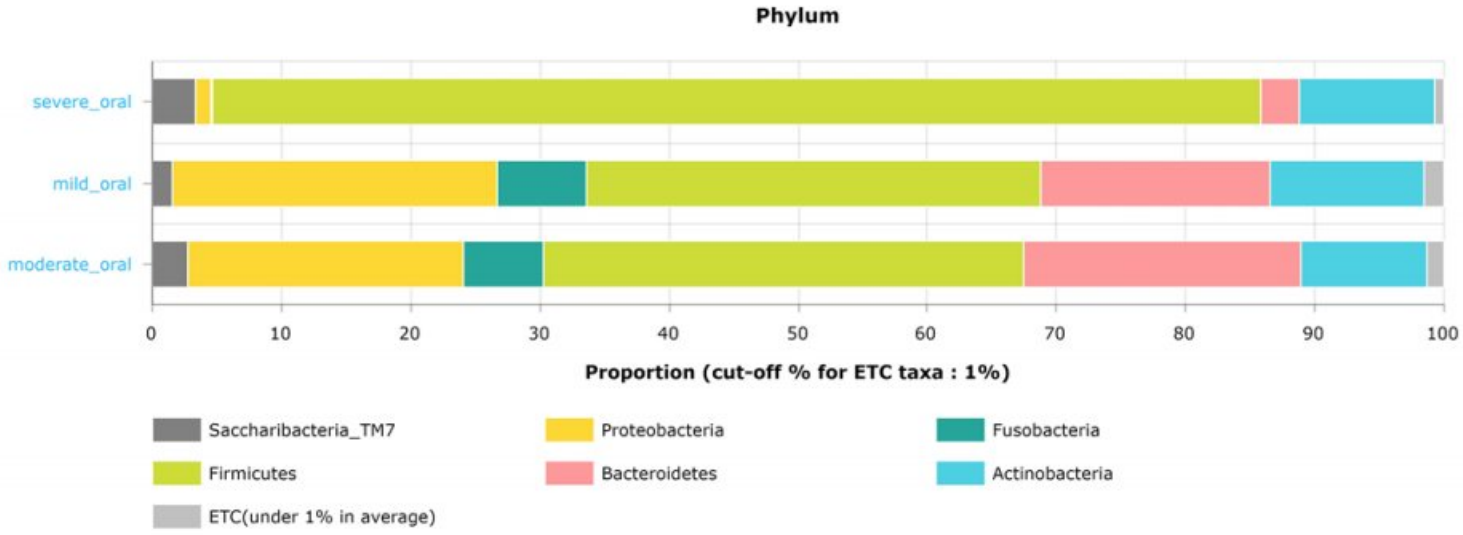


Fig. 2 Beta diversity (Principal coodinates analysis, Jesen-Shannon)



[Poster Exhibition – Inflammatory Bowel Disease]

PE1-065

Bio-naïve Patients had Higher Response Rates at Weeks 8 with Ustekinumab: Results from a Single-center Retrospective Study in China

Yu Peng, Xiaowei Liu
Department of Gastroenterology, Xiangya Hospital Central South University, Changsha, China

Background / Aim : Ustekinumab (UST) has been confirmed therapeutic effects for Crohn's disease (CD). This study's main objective was to evaluate the real-world short-term efficacy of UST in Chinese CD patients after its recent approval in 2020.
Methods : Retrospective analysis of data from resident patients diagnosed with Crohn's disease at Xiangya Hospital from July 2020 to May 2023 was performed. The inclusion criteria were moderate-to-severe CD, diagnosed according to the Chinese diagnosis consensus in inflammatory bowel disease, and treatment with UST. Clinical data were collected from the patients' medical records including age, sex, disease location, disease behavior, presence of perianal disease, CD activity index (CDAI), blood tests, and history of biologics therapy.
Results : 112 patients analyzed in the study, including 87 males (77.7%) and 25 females (22.3%), the mean age was 30.7±4.7 years. The most frequent disease type(location) was ileocolonic disease (L3, 63.7%). The most frequent disease behavior was stricturing non-penetrating type according to the Montreal Classification (B2, 47.5%). Most patients (58%) had not received biologics therapy. The clinical response rates at weeks 8 was 69%. Regarding the history of biologics therapy, the response rate was significantly higher in bio-naïve patients than bio-failure patients at week 8 (82.1% vs. 56.7%, $p<0.05$). The clinical response rates at weeks 8 were not correlated to the patient's age, sex, disease location, disease behavior, presence of perianal disease, CDAI, blood tests, and was correlated to the history of biologics therapy. There was no significant difference in the baseline clinical characteristics between the bio-naïve and bio-failure groups.
Conclusion : Bio-naïve patients had higher response rates at weeks 8 with UST which support the short-term effectiveness of UST in Chinese CD patients in real-world practice. The long-term efficacy and safety of UST should be evaluated in further studies.
Keywords : Ustekinumab, Bio-nave Patients, Therapeutic Effects, Retrospective Study

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-066

Impact of Crohn'S Disease on Working Life: Discovering the Truth in Chinese Patients

Yu Peng, Xiaowei Liu
Department of Gastroenterology, Xiangya Hospital Central South University, Changsha, China

Background / Aim : Crohn's disease (CD) is chronic disabling condition with a profound impact on social and professional life of patients, no Chinese-level data exists on patients' perspectives. The objective of this survey was to obtain an eastern perspective of the impact of CD on patients' working lives.
Methods : A cross-sectional survey was performed on patients with CD who were hospitalized at Xiangya Hospital of Central South University from January to October in 2023. Data were analyzed using Chi-squared test, Logistic regression.
Results : A total of 107 patients responded the validated questionnaire and all of them met the requirements and were used for analysis. Among the respondents,82 (76.6%) male and 25(23.4%) female. Chi-squared test showed that career change was related to the following factors: 1) educational level ($p < 0.05$);2) income of patients after onset ($p<0.05$); 3) c. the changing of occupational promotion after onset ($p < 0.001$);4) the impact of finding a new career ($p < 0.005$); 5)occupational or job discrimination ($p < 0.005$). Other variables have no significant correlation with this outcome. We further analyzed that there was a statistically significant difference in the impact of career change on family relationships among Chinese CD patients. Based on multivariate logistic regression, the independent risk factors for career change in Chinese Crohn's disease patients were income of patients after onset (odds ratio (OR): 6.226, 95% confidence interval (CI): 0.090-0.749, p=0.013), and the changing of occupational promotion after onset (OR: 7.069 95% CI: 0.105-0.711, p=0.008).
Conclusion : This is one of the few surveys on the impact of CD on professional life of chinese patients. Overall, CD had a strong negative impact on professional life. CD affects career changes, it restricts the access to occupational promotion after onset, and further influence on family life. This issue should be systematically investigated to develop adapted measures.
Keywords : Impact, Crohn's Disease, Working Life, Chinese Patients

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-067

Factors associated with Rescue Therapy in Patients with Acute Severe Ulcerative Colitis: A CHASID Multicenter Study

Kwangwoo Nam[1], Jeong Eun Shin[1], Yunho Jung[2], Dae Sung Kim[3], Hee Seok Moon[4], Sang-Bum Kang[5]
CHungcheong Association of the Study of Intestinal Diseases (CHASID)
[1]Gastroenterology, Dankook University Hospital, Cheonan, Korea
[2]Gastroenterology, Soonchunhyang University Cheonan Hospital, Cheonan, Korea
[3]Gastroenterology, Konyang University Hospital, Daejeon, Korea
[4]Gastroenterology, Chungnam National University Hospital, Daejeon, Korea
[5]Gastroenterology, The Catholic University of Korea Daejeon St. Mary's Hospital, Daejeon, Korea

Background / Aim : Although the treatment outcome of ulcerative colitis (UC) has been improved, it is still challenging to predict early outcome of acute severe UC (ASUC) in daily practice. We aimed to evaluate the factors associated with rescue therapy of ASUC.
Methods : Patients who were admitted due to ASUC between November 2005 to July 2023 in tertiary medical center were included. Demographics, clinical associated factors at diagnosis and at admission, and laboratory factors (including novel biomarkers such as NLR, PLR, CAR, and CLR) during hospitalization were evaluated. Primary outcomes were medical (infliximab use) or surgical (colectomy) rescue therapy.
Results : A total of 73 patients were enrolled in this study. Among them, 44 (60.3%) patients were male. Median age at admission were 46 years and median disease duration at admission was 4 months. Median hospital stay was 13 days and all patients were initially treated with systemic steroid. In endoscopy at admission, 56 (76.7%) patients showed extensive colitis, and 59 (80.8%) patients showed MES 3. Finally, 12 (16.4%) patients received rescue therapy during hospitalization. In multivariate analysis, BMI at admission (OR 0.649; 95% CI 0.467–0.901; P = 0.010) and NLR at day 5 (OR 1.170; 95% CI 1.033–1.325; P = 0.014) were significant factors associated with rescue therapy for ASUC.
Conclusion : Low BMI and NLR at day 5 were significant associated factors for rescue therapy in patients with ASUC, thus careful monitoring and early intervention should be needed in these patients to improve the overall outcome.
Keywords : Ulcerative Colitis, Hospitalization, Steroids, Infliximab, Colectomy

[Poster Exhibition – Inflammatory Bowel Disease]

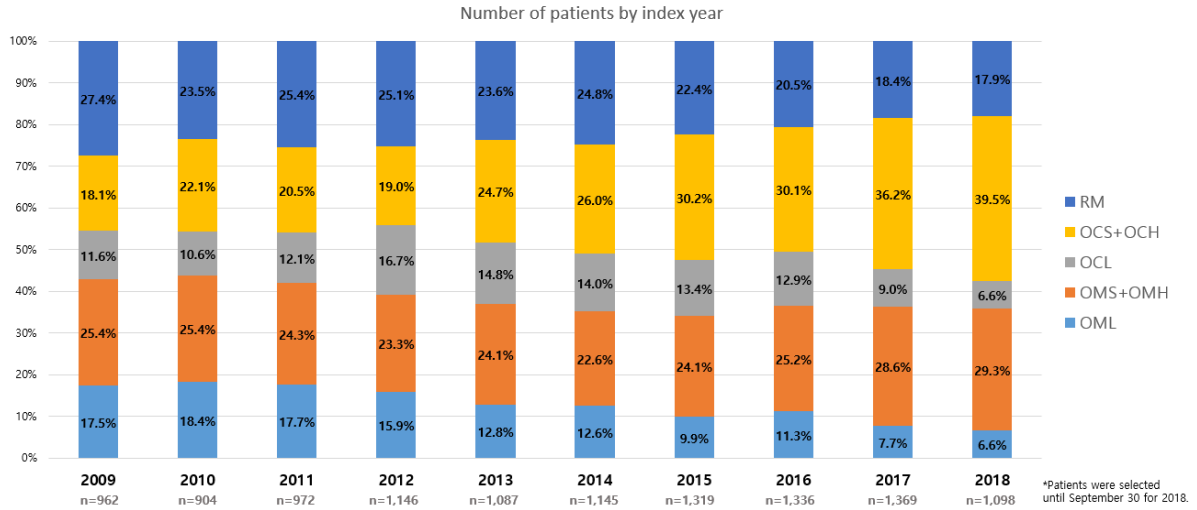
PE1-068

The Real-world Treatment Patterns and Clinical Outcomes in Daily Dose of 5-aminosalicylic Acid Treatment in Ulcerative Colitis Patients in Korea: A Population-based Retrospective Study

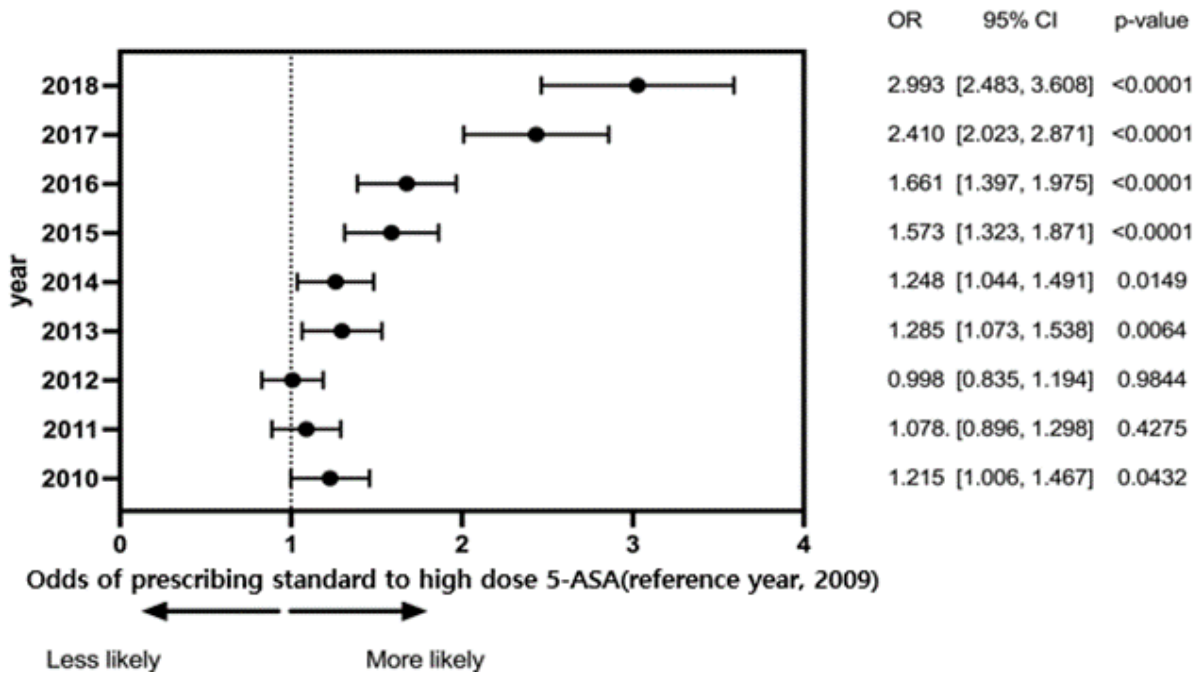
Soo Jung Park[1], Sang Won Park[2], Jae Hee Cheon[1]
[1]Department of Internal Medicine and Institute of Gastroenterology, Yonsei University College of Medicine, Seoul, Korea
[2]Ferring Pharmaceuticals Korea Co., Ltd., Seoul, Korea

Background / Aim : This retrospective study analyzed the real-world treatment patterns and clinical outcomes of 5-aminosalicylic acid (5-ASA) treatment in Korean patients with ulcerative colitis (UC) over 10 years, based on the records from Korean national health insurance claims data of HIRA.
Methods : The study included patients (aged ≥ 15 years) with newly diagnosed UC who were prescribed 5-ASA for ≥ 30 days within the first 6 months from UC diagnosis. The patients were observed for 6 months to 123 months, with the observational period ending when the patient discontinued the 5-ASA, the patient died, or the study period ended (31 March 2019), whichever occurred first. Patients were grouped into oral low-dose (<2 g/day) monotherapy (OML), oral standard-to-high dose (2-<3 g/day to ≥3 g/day) monotherapy (OMSH), oral low-dose combination therapy with rectal therapy (OCL), oral standard-to-high dose combination therapy (OCSH), and rectal monotherapy (RM) categories. The average daily dose (ADD) of 5-ASA during the first three months, prescription patterns, and the rates for non-response to 5-ASA and UC-related hospitalization were analyzed.
Results : The analysis included 11,338 patients (mean age 42.15 years; male, 59.53%)). A tendency to decrease RM proportion and increased proportions of oral + rectal combination therapies were observed. The odds of prescribing standard to high-dose 5-ASA have increased significantly since 2013. The proportion of OCSH rose from 18.1% in 2009 to 39.5% in 2018, whereas OML and OCL proportions decreased from 17.5% to 6.6% and 11.6% to 6.6%, respectively. The incidence rates for non-responses and UC-related hospitalizations (per 1000 PY(Person-Year)) were 51.16 and 13.40, respectively. 82.3% maintained 5-ASA treatment, while 17.7% were prescribed add-on or switched medications.
Conclusion : A trend toward prescribing high-dose 5-ASA as combination therapy was observed from 2009 to 2018, which is consistent with current guidelines.
Keywords : Ulcerative Colitis, 5-aminosalicylic Acid, Real-world Treatment Patterns, Clinical Outcomes, A Population-based Study

[Figure 1.] The change of average daily dose of 5-ASA during the first 3 months in patients with newly diagnosed ulcerative colitis between 2009 and 2018



[Figure2.] Odds ratios in standard to high dose 5-ASA treatment by year



[Poster Exhibition – Inflammatory Bowel Disease]

PE1-069

Antibiotic Usage within the First Year of Life Has a Protective Effect against Ulcerative Colitis in South Korea: A Nationwide Cohort Study

Yoojoong Jung, Jun Seok Park, Sungjin Woo, Hyun Jung Lee, Jong Pil Im, Joo Sung Kim, Seong-Joon Koh

Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea

Background / Aim : The incidence of inflammatory bowel disease (IBD) is rapidly increasing in newly industrialized countries, implying environmental factors play an important role in the development of IBD. Among these, dysbiosis due to antibiotic exposure is alleged to increase the risk or have a protective effect on newly diagnosed IBD. However, the results vary according to race without any conclusive findings for Asians. Thus, we conducted a nationwide, retrospective cohort study using national infant screening data of South Korea to ascertain the association between early oral antibiotic use and IBD development.

Methods : Newborns from 2007 to 2015, who underwent Health Screenings for Child within the first year of life, were followed up until death or IBD diagnosis at least after one year, or December 2021, whichever occurred first. The status of antibiotic use, the number of antibiotic classes used, cumulative days of antibiotic use, and the age of first antibiotic use were analyzed in relation to the incidence of Crohn's disease (CD) and Ulcerative Colitis (UC). Two sensitivity analyses were conducted by excluding the antibiotic prescription under gastrointestinal (GI) diseases or by incorporating additional adjustments for dietary variables.

Results : Those who used 1-2 or ≥3 antibiotic classes, or used 1-30 or ≥31 days within the first year had a decreased risk of UC development compared to those who did not use any antibiotics. Individuals who started antibiotics before 8 months of age demonstrated protection from UC. The protective effect remained statistically significant in both sensitivity analyses. Especially, when analyzed by excluding antibiotic prescription for GI issues, a negative relationship between the cumulative days of antibiotic use and UC development was observed.

Conclusion : Antibiotic use within a year after birth has a potential protective effect against the development of UC. Furthermore, the protective effect against UC appeared to be stronger with early first exposure to antibiotics.

Keywords : Antibiotics, Ulcerative Colitis, Crohn’s Disease, IBD, Infant

Table 1. Baseline characteristics of the study population.

Baseline characteristics	Antibiotics usage within a year after birth		*p value*	aSD
	No (N = 375,509)	Yes (N = 2,566,390)		
Sex, N (%)			< 0.001	0.130
Male	171,987 (45.8)	1,342,266 (52.3)		
Female	203,522 (54.2)	1,224,124 (47.7)		
Household income, quartile, N (%)			< 0.001	0.105
1st (lowest)	35,771 (9.5)	276,557 (10.8)		
2nd	75,099 (20.0)	568,067 (22.1)		
3rd	149,085 (39.7)	1,046,409 (40.8)		
4th (highest)	115,554 (30.8)	675,357 (26.3)		
BMI, mean (SD)	16.4 (1.4)	16.6 (1.4)	< 0.001	0.168
Premature birth, N (%)			< 0.001	0.037
No	358,877 (95.6)	2,471,430 (96.3)		
Yes	16,632 (4.4)	94,960 (3.7)		
Low weight birth, N (%)			< 0.001	0.055
No	353,063 (94.0)	2,444,612 (95.3)		
Yes	22,446 (6.0)	121,778 (4.7)		
APUD prescribed within a year, N (%)			< 0.001	0.149
No	369,785 (98.5)	2,464,825 (96.0)		
Yes	5,724 (1.5)	101,565 (4.0)		

N, number of people; BMI, body mass index; SD, standard deviation; aSD, absolute standardized difference; APUD, antipeptic ulcer drugs.

Chi-square test for categorical variables and two-sided t-test for continuous variable are used to check *p value*.

Table 2. Association of antibiotic use within a year with the incidence of inflammatory bowel diseases.

	Antibiotic use		Antibiotic class			*p* for trend	Antibiotic cumulative days			*p* for trend
	No	Yes	0	1-2	≥ 3		0	1-30	≥ 31	
Crohn's disease										
Events (%)	43 (8.9)	440 (91.1)	43 (8.9)	269 (55.7)	171 (35.4)		43 (8.9)	267 (55.3)	173 (35.8)	
Person-year	458	4,695	458	2,844	1,851		458	2,864	1,830	
HR (95% CI)	1.00 (reference)	1.18 (0.86 – 1.62)	1.00 (reference)	1.20 (0.87 – 1.65)	1.16 (0.83 – 1.62)	0.646	1.00 (reference)	1.21 (0.87 – 1.67)	1.15 (0.82 – 1.60)	0.734
aHR (95% CI)	1.00 (reference)	1.14 (0.83 – 1.56)	1.00 (reference)	1.17 (0.85 – 1.61)	1.10 (0.78 – 1.53)	0.954	1.00 (reference)	1.17 (0.85 – 1.62)	1.09 (0.78 – 1.52)	0.962
Ulcerative colitis										
Events (%)	20 (17.5)	94 (82.5)	20 (17.5)	59 (51.8)	35 (30.7)		20 (17.5)	57 (50.0)	37 (32.5)	
Person-year	173	913	173	600	314		173	570	343	
HR (95% CI)	1.00 (reference)	0.57 (0.35 – 0.92)	1.00 (reference)	0.59 (0.35 – 0.97)	0.54 (0.31 – 0.93)	0.062	1.00 (reference)	0.58 (0.35 – 0.97)	0.55 (0.32 – 0.95)	0.076
aHR (95% CI)	1.00 (reference)	0.58 (0.36 – 0.94)	1.00 (reference)	0.59 (0.36 – 0.99)	0.55 (0.32 – 0.96)	0.079	1.00 (reference)	0.59 (0.35 – 0.98)	0.57 (0.33 – 0.98)	0.099

HR, hazard ratio; aHR, adjusted hazard ratio; CI, confidence interval

Cox proportional hazard model was applied to estimate the coefficients and 95% confidence intervals.

Adjusted hazard ratios were calculated after adjustments for sex, household income, BMI, and antipeptic ulcer drugs.

Table 3. Association of the age of antibiotic initiation with the incidence of inflammatory bowel diseases.

	Age of first antibiotic use				*p* for trend
	≥ 1yr	8mo – 1yr	4mo – 8mo	≤ 4mo	
Crohn's disease					
Events (%)	43 (8.9)	91 (18.8)	184 (38.1)	165 (34.2)	
Person-year	458	990	1,978	1,727	
HR (95% CI)	1.00 (reference)	1.19 (0.82 – 1.70)	1.13 (0.81 – 1.57)	1.25 (0.89 – 1.75)	0.263
aHR (95% CI)	1.00 (reference)	1.17 (0.81 – 1.68)	1.09 (0.78 – 1.52)	1.18 (0.84 – 1.65)	0.471
Ulcerative colitis					
Events (%)	20 (17.5)	23 (20.2)	41 (36.0)	30 (26.3)	
Person-year	173	234	397	283	
HR (95% CI)	1.00 (reference)	0.66 (0.36 – 1.21)	0.56 (0.33 – 0.96)	0.52 (0.29 – 0.91)	0.027
aHR (95% CI)	1.00 (reference)	0.67 (0.37 – 1.21)	0.57 (0.33 – 0.98)	0.53 (0.30 – 0.94)	0.036

HR, hazard ratio; aHR, adjusted hazard ratio; CI, confidence interval

Cox proportional hazard model was applied to estimate the coefficients and 95% confidence intervals.

Adjusted hazard ratios were calculated after adjustments for sex, household income, BMI, and antipeptic ulcer drugs.

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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-070

Differences of Disease Phenotype at Diagnosis between Patients with Crohn's Disease Diagnosed before and after 17 Years of Age in Korea

Suk Jin Hong[1], Hyeong Ho Jo[2], Eun Young Kim[2], Kwang-Hae Choi[3], Hyo-Jeong Jang[4], Sujin Choi[5], Byung-Ho Choe[5], Ben Kang[5]

[1]Pediatrics, Daegu Catholic University School of Medicine, Daegu, Korea
[2]Internal Medicine, Daegu Catholic University School of Medicine, Daegu, Korea
[3]Pediatrics, Yeungnam University School of Medicine, Daegu, Korea
[4]Pediatrics, School of Medicine, Keimyung University, Daegu, Korea
[5]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea

Background / Aim : There is lack of data regarding the differences of disease phenotype at diagnosis between pediatric and adult patients with Crohn's disease (CD). We aimed to investigate the differences in disease phenotype at diagnosis between patients with Crohn's disease (CD) divided according to the age of 17.
Methods : This was a multicenter study conducted in Korea. Patients diagnosed with CD were included. Baseline clinicodemographics, results from laboratory and endoscopic exams were collected, and factors were compared between patients diagnosed <17 years and ≥17 years.
Results : A total 224 patients were included. ØMales comprised 68.8% (154/224) of the patients, and the median age at diagnosis was 14.6 years [interquartile range (IQR) 12.1–16.8]. Among the patients, 77.2% (173/224) were <17 years while 22.8% (51/224) were ≥17 years. ØPatients <17 years had a higher proportion of upper gastrointestinal tract involvement on esophagogastroduodenoscopy (67.1% vs. 49.0%, P = 0.029), higher proportion of perianal fistulizingdisease (63.6% vs. 45.1%, P = 0.028), higher white blood cell count (median 9350 vs. 7560 /μL, P = 0.001), higher platelet count (449 vs. 379 ×103/μL, P = 0.007), and higher erythrocyte sedimentation rate (median 57 vs. 40 mm/hr, P = 0.002). Meanwhile, a history of bowel resection was higher in patients ≥17 years (0.0% vs. 7.8%, P = 0.002).
Conclusion : Disease phenotype at diagnosis differs according to age groups divided by 17 years in patients with CD.
Keywords : Phenotype, Child, Adult, Crohn's Disease, Inflammatory Bowel Disease

Table 1. Baseline characteristics

Male sex, *n (%)*	154 (68.8%)
Diagnosis age, *year*	14.6 (IQR 12.1-16.8)
History of bowel resection, *n (%)*	4 (1.8%)
L3 involvement, *n (%)*	175 (78.1%)
L4 involvement on EGD, *n (%)*	141 (62.9%)
B1 disease behavior, , *n (%)*	192 (85.7%)
Perianal disease modifier, *n (%)*	130 (58.0%)

Table 2. Comparison between patients divided according to diagnosis age <17 and ≥17.

	Diagnosis age <17 (*n*=153)	Diagnosis age ≥17 (*n*=51)	*P*
Male sex, *n* (%)	118 (68.2)	36 (70.6)	0.880
Median age at diagnosis, *years [IQR]*	13.7 [11.5–15.3]	20.1 [17.8–28.5]	<0.001
History of bowel resection, *n* (%)			
LGI involvement, *n* (%) L1 L2 L3 None	25 (14.5) 11 (6.4) 137 (79.2) 0 (0.0)	5 (9.8) 6 (11.8) 38 (74.5) 2 (3.9)	0.048
UGI involvement on EGD, *n (%)*	116 (67.1)	25 (49.0)	0.029
Luminal disease behavior, *n* (%) B1 B2 B2B3 B3	151 (87.2) 18 (10.4) 3 (1.7) 1 (0.6)	41 (80.4) 7 (13.7) 2 (3.9) 1 (2.0)	0.270
Perianal disease modifier, *n* (%)	110 (63.6)	23 (45.1)	0.022
HBI score	8 (5–10)	6 (3–8)	0.014
White blood cell count, /μl	9350 (7690–12020)	7560 (6125–10400)	0.001
Hematocrit, %	36.7 ± 4.5	37.2 ± 6.2	0.592
Platelet count, ×103/μl	449 (334–523)	379 (301–454)	0.007
Albumin, g/dL	4.1 (3.8–4.4)	4.0 (3.5–4.3)	0.121
CRP, mg/dL	2.34 (0.82–5.06)	1.30 (0.65–3.37)	0.161
ESR, mm/hr	57 (32–84)	40 (21–63)	0.002
Fecal calprotectin, mg/kg	2000 (689–3374)	1858 (869–4236)	0.807
SES-CD	14 (7–21)	15 (9–18)	0.644

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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-071

A Modified Crohn's Disease Exclusion Diet in a Multi-ethnic Asian Setting

Chin Kimg Tan[1], Alvin Wong[2], Ying Xiao Huang[2], Khoon Lin Ling[1], Lai Mun Wang[3], Tiing Leong Ang[1], Jeannie Ong[1]

[1]Department of Gastroenterology and Hepatology, Changi General Hospital, Singapore
[2]Department of Dietetics, Changi General Hospital, Singapore
[3]Department of Laboratory Medicine, Changi General Hospital, Singapore

Background / Aim : Crohn's disease exclusion diet (CDED) has been shown to be well-tolerated and effective in adults with active Crohn's disease (CD). There is limited data on using CDED in Asian setting. This study was performed to evaluate the feasibility and tolerability of CDED in Asian adults.

Methods : This is a prospective observational study using 12-weeks of CDED as a nutritional intervention in adults with CD. The original CDED was adapted to foods commonly eaten in Asia. Patients were offered CDED as monotherapy or as an adjunct treatment to drug therapy. Dietary counselling was done by a dietitian and all food was prepared by individual participants or their family members. Participants were seen at baseline, week 6 and week 12. Dietary compliance was monitored by physician using direct questioning and, modified Medication Adherence Rating Scale (MARS) questionnaire. In addition, dietitian monitored compliance using 24-hour dietary recall and 3-day food journal. We monitor the disease activity using Harvey Bradshaw Index (HBI), C-reactive protein (CRP) and faecal calprotectin (FC). (Figure 1) The primary endpoint was tolerance to CDED; secondary endpoints were compliance to CDED and biomarker normalization. Intolerance was defined as refusal to continue with CDED and withdrawal from study.

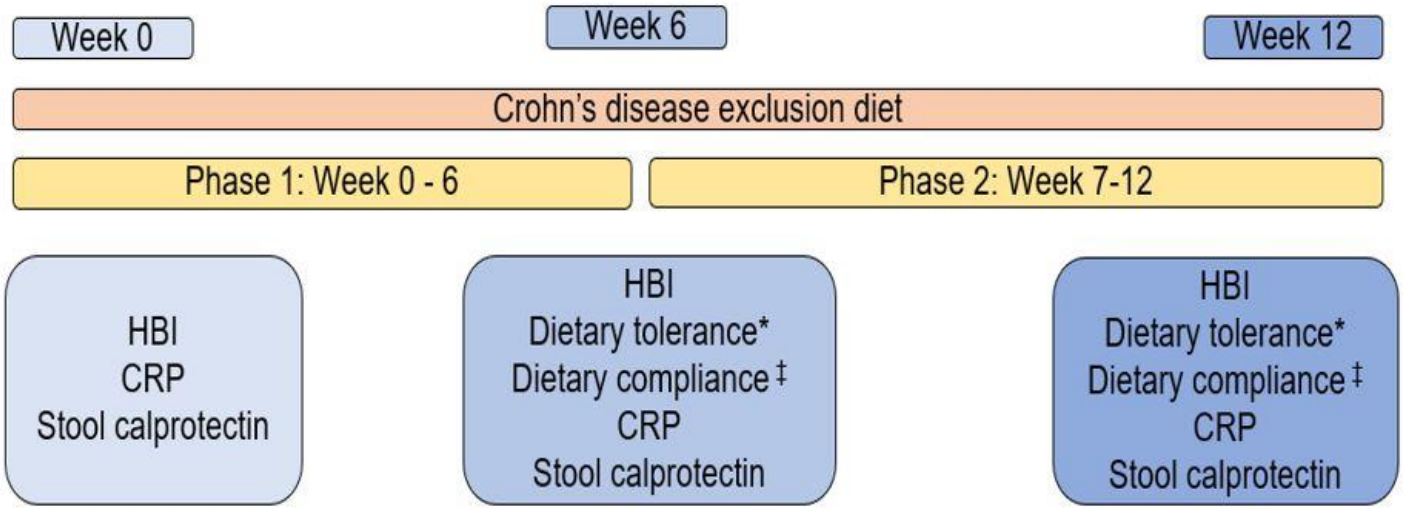
Results : A total of 6 participants were recruited from November 2022 to May 2023. Most participants were young. Four patients were on biologics. Two patients received CDED as monotherapy. All participants were able to tolerate 12 weeks of CDED and were mostly compliant to CDED. (Table 1) 5 of 6 patients had downward trend of CRP at week 12 compared to baseline. Two patients who received CDED as monotherapy had biomarker normalization at week 12.

Conclusion : Dietary intervention using CDED is well-tolerated among Asian adults with CD. More data is required to confirm the efficacy of CDED, both as monotherapy and in combination with drug therapy.

Keywords : Crohn's Disease, Crohn's Disease Exclusion Diet, Adults, CDED, Asian

No.	Age	Gender	Race	Montreal classification	Medication	Compliance at Week 6		Compliance at Week 12	
						Direct questioning	MARS questionnaire	Direct questioning	MARS questionnaire
1	26	Female	Malay	A1L3B1	Vedolizumab	Good	High	Good	High
2	29	Female	Pakistani	A2L1B1	None	Partial	High	Fair	High
3	28	Male	Malay	A2L3+4B1	Amgevita	Fair	High	Fair	High
4	28	Male	Chinese	A2L3B1	Remsima	Partial	High	Fair	High
5	60	Male	Malay	A3L2B1	None	Very	High	Very	High
6	73	Male	Indian	A3L3B2	Ustekinumab	Fair	High	Fair	High

Table 1 Participants demographics, disease characteristics and disease activity while on CDED.



Abbreviations: HBI - Harvey Bradshaw Index; CRP: C-reactive protein;
* Intolerance defined as refusal to continue with CDED and withdrawal from the study.
‡ Measured with direct questioning and physician administered modified Medication Adherence Report Scale (MARS) questionnaire, 3-day food journal and 24-hour dietary recall

Figure 1 Study workflow

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-072

Improvement of Work Productivity and Activity Impairment (WPAI) in Patients with Moderate to Severe UC using Biologics Therapy; the MOSAIK Cohort Study

Gyeol Seong[1], Yehyun Park[2], Kang-Moon Lee Lee[3], Sung-Ae Jung[2], Young Sook Park[1]
[1]Department of Internal Medicine, Nowon Eulji Hospital, Seoul, Korea
[2]Department of Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea
[3]Department of Internal Medicine, St. Vincent's Hospital, Seoul, Korea

Background / Aim : The patients with ulcerative colitis (UC) can have low quality of life and their work productivity can be also impaired. The aim of this study is to investigate the work productivity and activity impairment (WPAI) of moderate to severe UC patients with biologics treatment, using the MOSAIK cohort (ClinicalTrials.gov: NCT02229344).
Methods : In this cohort, we enrolled patients with moderate to severe UC diagnosed for the first time and collected their WPAI questionnaires annually from the time of diagnosis. WPAI questionnaires scored overall work impairment and social activity impairment from 0 to 10. We compared the scores between the patients treated with biologics and without biologics.
Results : In a total 346 patients, 69 (19.9%) patients started biologics during 5 years of observation period. 43 (12.43%) patients started biologics within 1 year from diagnosis. At baseline, mean score of overall work impairment in biologics group was higher than that of non-biologics group (4.8 and 3.8, respectively). During the treatment, both groups showed significant improvement of work productivity and social activity. At 1 year, the difference in scores of work productivity impairment between the two groups decreased (2.6 and 1.8, respectively). Finally at 5 year, the scores of work productivity impairment were similar in the biologics and non-biologics group (1.5 and 1.4, respectively).
Conclusion : In moderate to severe UC, the patients receiving biologics due to their high disease activity can experience impaired work productivity. However, work productivity and social activity can be improved with appropriate biologics treatment as much as in the non-biologics group. Therefore, it is important to start biologics timely to control the disease activity and eventually restore the patients' daily work and life.
Keywords : Ulcerative Colitis, Biologics, Work Productivity

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-073

The Role of OR51E2 in the Modulation of Chronic Colitis and Colitis-associated Cancer

Namjoo Kim, Beom Jae Lee, Seung Han Kim, Moon Kyung Joo, Jong-Jae Park
Gastroenterology, Korea University Guro Hospital, Seoul, Korea

Background / Aim : Olfactory Receptors (ORs) expression were reported in many non-olfactory organs such as tongue, heart, genital organs and GI tract . In this study, we explore the role of OR51E2 in chronic inflammation and inflammation-associated cancer using both human disease (ulcerative colitis) and mice model.
Methods : OR51E2 expression was analyzed at both mRNA and protein levels in both healthy and moderate to severe UC patients. To evaluate the role of OR51E2 in chronic colitis and CAC, DSS colitis and AOM/DSS, APC $^{min/+}$ mouse models were used in both wild-type (WT) and Olfr78 knockout (KO) mice. Colonic organoids were generated from both WT and Olfr78 KO mice, and the paracellular permeability was determined using FITC-dextran 4 kDa.
Results : OR51E2 mRNA and protein expression were significantly higher in UC patients than in healthy controls ($p<0.01$) and OR51E2 expression from IHC was positively correlated with the endoscopic mayo score. 3% DSS-induced colitis was more severe in Olfr78 knockout (KO) mice than in wild-type (WT) mice. KO mice had higher levels of pro-inflammatory cytokines (IL-1β, IL-6, and TNF-α) than WT mice ($p<0.05$). In both AOM/DSS and DSS-Apc $^{min/+}$ model, Olfr 78 KO, Apc $^{min+/-}$ -Olfr 78 KO mice had fewer and smaller tumors than WT and DSS-Apc $^{min/+}$ mice. Olfr78 deletion downregulated tight junction markers such as ZO-1, claudin-1,2, muc-1,2, and occludin and in FITC-dextran 4K DA analysis, colonic organoid from Olfr 78 KO mice had increased permeability compare to WT mice. In RNA- seq analysis, OR51E2 regulated the expression of genes involved in inflammation, innate immunity, and cancer progression.
Conclusion : This study suggest that OR51E2 (Olfr78) play important roles in the development of chronic colitis and and colitis-associated cancer by the modulation of mucosal barrier functions and its associated innate immune pathways.
Keywords : OR51E2, Colitis, Colitis Associated Cancer

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-074

Interferon-gamma-Induced Intestinal Epithelial Cell Type-Specific Cytotoxic Responses of Human Enteroids: PANoptosis and the Protective Role of Selective JAK1 Inhibitor

Sung Noh Hong, Chansu Lee, Yeo Eun Cha, Minjee Kim, Ji Eun Kim, Eun Ran Kim, Dong Kyung Chang, Young-Ho Kim
Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea

Background / Aim : Interferon-gamma (IFN-γ) plays an important role in the development of intestinal injury and inflammatory bowel disease (IBD). Using human intestinal organoid (enteorid) models, this study was investigated 1) what is the major response of intestinal epithelial cells (IECs) induced by IFN-γ to elucidate; 2) which programmed cell death (PCD) pathways cause IFN-γ-induced cell death on IECs in the absence of intestinal microbiota and immune cells; 3) how epithelial cell differentiation is altered by IFN-γ; and 4) whether there is a difference in IFN-γ-induced PCD between different epithelial cell types
Methods : Using human enteroids, the major response of IECs induced by IFN-γ was evaluated, focusing on the IFN-γ-induced PCD pathway. The intestinal epithelial cell type-specific response to IFN-γ was assessed by bulk and single-cell RNA sequencing (RNA-seq). Furthermore, the molecules to block IFN-γ-induced PCD in IECs were evaluated.
Results : As the concentration of IFN-γ in the culture media increased, disruption of organoid structure, growth arrest, and cell death were observed in IFN-γ-treated enteroids on organoid reconstitution, MTT, and EdU assay. Bulk RNA-seq and western blot were identified the activation of pyroptosis, apoptosis, and necroptosis to form the collective inflammatory cell death pathway of PANoptosis. Single-cell RNA- seq indicated that IFN-γ altered epithelial cell differentiation in human enteroids, including expansion of the intstinal stem cell (ISC) population and depletion of the enterocyte population. PCD-associated gene expression was upregulated in enterocytes and goblet cells, but not in ISCs and paneth cells. Individual PCD inhibitors may be insufficient to prevent IFN-γ-induced cytotoxicity, whereas upadacitinib interferes with the downstream signaling of IFN-γ by inhibiting the activity of JAK1 kinase, resulting in effective blocking of PANoptosis.
Conclusion : PANoptosis is the major mechanism of IFN-γ-induced IEC damage, which was blocked by a selective JAK1 inhibitor. ECs were particularly susceptible to IFN-γ-induced PANoptosis.
Keywords : Inflammatory Bowel Disease, Organoids, Interferon-gamma

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-075

Dietary Supplement Peonidin from Cranberries Reduces Ulcerative Colitis in Mice Induced by Acetic Acid via Inhibiting NFB and MPO Activity

M Singh[1], Deepika Singh[2]
[1]Department of Computer Sciences, HMFA-MIET, Handia, India
[2]Department of Pharmaceutical Sciences, SHUATS, Prayagraj, India

Background / Aim : A severe form of inflammatory bowel disease (IBD) that is mediated by the immune system, ulcerative colitis is characterized by extensive mucosal destruction and ulcers. The purpose of this research is to determine how peonidin prevents mice against acetic acid (AA), a rodent toxin that induces experimental colitis models.
Methods : Rodents were given peonidin, and mice were given acetic acid to cause ulcerative colitis (UC). Assessments were conducted regarding the body's hepatic, non-hepatic, antioxidant, pro-inflammatory, and inflammatory cytokines. In addition to its size, colonic tissue's shape and histology were measured.
Results : When taken prior to the development of colitis, peonidin dramatically decreased colonic oxidative stress. Lipid peroxidation levels were decreased and antioxidant enzymes that combat oxidative stress were elevated, which is why this occurred. Following the peonidin treatment, there was a significant decrease in inflammatory markers, including TNF-alpha, interleukin-1, interleukin-17, and myeloperoxidase activity. Consequently, peonidin significantly impacted the levels of nuclear factor-kappa B (NF-B) in the tissues that caused ulcerative colitis when AA was administered. It was discovered that colon tissue damage in mice was greatly decreased when AA + peonidin was administered.
Conclusion : It was shown that peonidin significantly reduces colonic inflammation by inhibiting NF-B, pro-inflammatory cytokines, and antioxidant responses.
Keywords : Peonidin, Ulceratis Colitis, Colon, Proinflamamtory

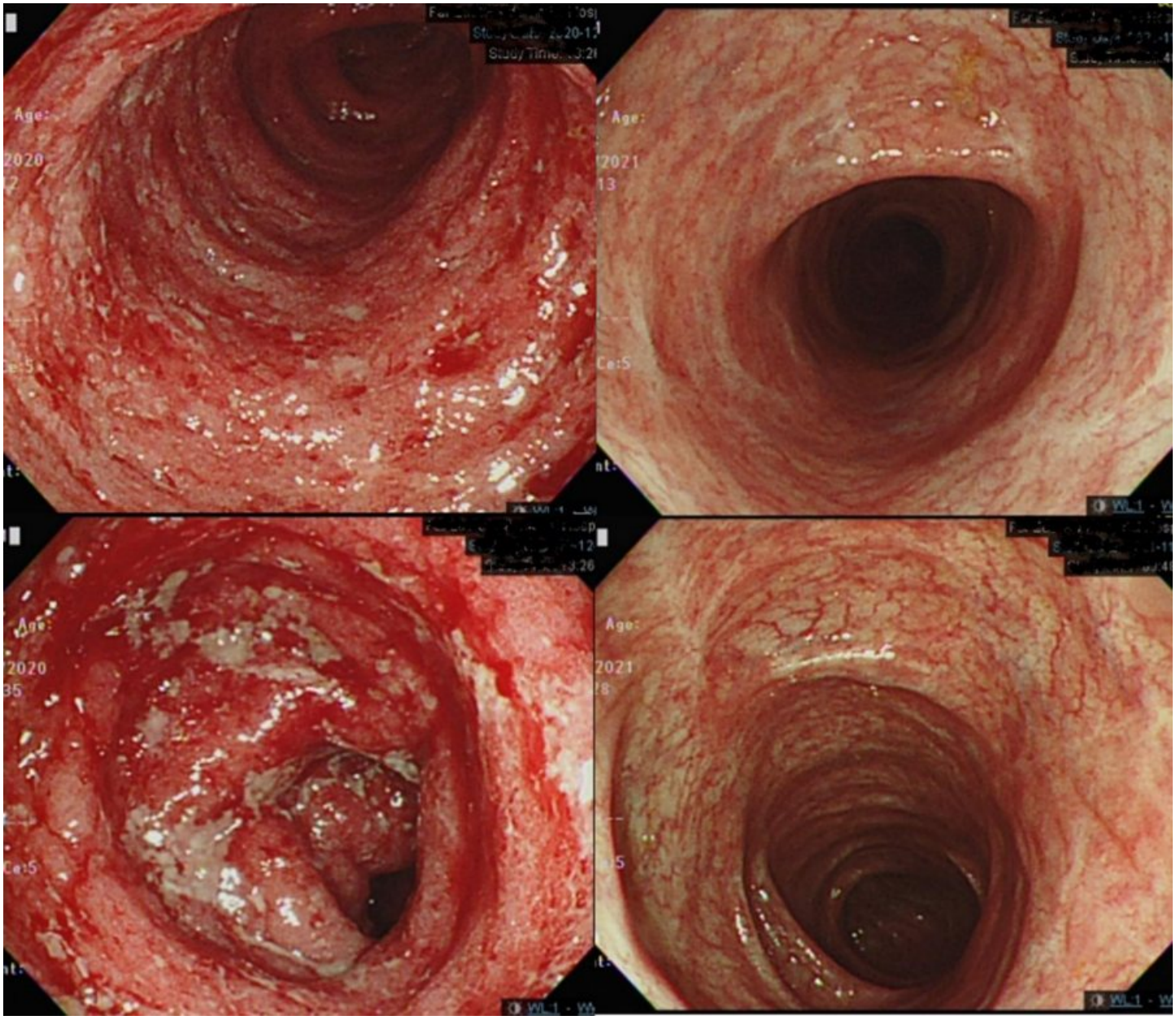
[Poster Exhibition – Inflammatory Bowel Disease]

PE1-076

Upadacitinib Salvage Therapy for Corticosteroid Refractory Acute Severe Ulcerative Colitis

Chen-Shuan Chung[1,2,3], Puo-Hsien Le[3,4], Chen-Wang Chang[3,5], Jen-Wei Chou[3,6], Tien-Yu Huang[3,7], Kuan-Yang Chen[3,8], Ming-Yao Su[3,9], Cheng-Tang Chiu[3,4]
Taiwan Association for the Study of Small Intestinal Diseases (TASSID)
[1]Division of Gastroenterology and Hepatology, Department of Internal Medicine, Far Eastern Memorial Hospital, New Taipei City, Taiwan
[2]College of Medicine, Fu Jen Catholic University, New Taipei City, Taiwan
[3]Taiwan Association for the Study of Small Intestinal Diseases, TASSID, Taoyuan, Taiwan
[4]Department of Gastroenterology and Hepatology, Linkou Chang Gung Memorial Hospital, Taoyuan, Taiwan
[5]Department of Gastroenterology and Hepatology, MacKay Memorial Hospital, Taipei, Taiwan
[6]Center of Digestive Medicine, Department of Internal Medicine, China Medical University Hospital, Taichung, Taiwan
[7]Division of Gastroenterology, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan
[8]Division of Gastroenterology and Hepatology, Department of Internal Medicine, Taipei City Hospital Yang-Ming Branch, Taipei, Taiwan
[9]Department of Gastroenterology and Hepatology, New Taipei Municipal TuCheng Hospital, Taipei, Taiwan

Background / Aim : About one-third of patients with acute severe ulcerative colitis (ASUC) fail first-line intravenous corticosteroid therapy. It is uncertain whether salvage therapy with upadacitinib, a selective Janus kinase inhibitor notably for rapid onset of action, is efficient and safe for corticosteroid refractory ASUC.
Methods : We retrospectively enrolled patients with ASUC who received oral upadacitinib after failing to respond to intravenous corticosteroid or rescue medical therapy. Clinical, biochemical and endoscopic data were analyzed.
Results : Five male patients with median age of 38.9 year-old and mean (±standard deviation, range) disease duration of 3.44 (±3.30, 0.53~7.88) years were enrolled for study. The baseline Montreal disease extent, C-reactive protein and erythrocyte sedimentation rate was four (80%) E3 and one (20%) E2 disease, 40.54 (±74.26, 2.30~172.73) mg/dl, and 24.50 (±19.09, 7~49) mm/hr. All (100%) patients had partial Mayo score and endoscopic subscore of 9 and 3, respectively. Four (80%) patients failed to respond to intravenous corticosteroid after three days and one (20%) parient un-responded to corticosteroid and infliximab rescue therapy after seven days. Daily upadacitinib 45mg were prescribed for 56 days in all patients. Clinical response and remission at week 2 and 8 were achieved in three (60%) and 5 (100%) patients, and in two (40%) and four (80%) patients, respectively. Four (80%) patients were in corticosteroid-free remission at week 8. Three was no patient experiencing upadacitinib-related adverse event, re-hospitalization or colectomy within 3-month of ASUC onset.
Conclusion : Upadacitinib is an efficient and safe salvage therapy for patients with ASUC. Studies for long term durability and bridging regimens for maintenance therapy are warranted.
Keywords : Ulcerative Colitis, Upadacitinib, Janus Kinase Inhibitor, Salvage Therapy, JAK Inhibitor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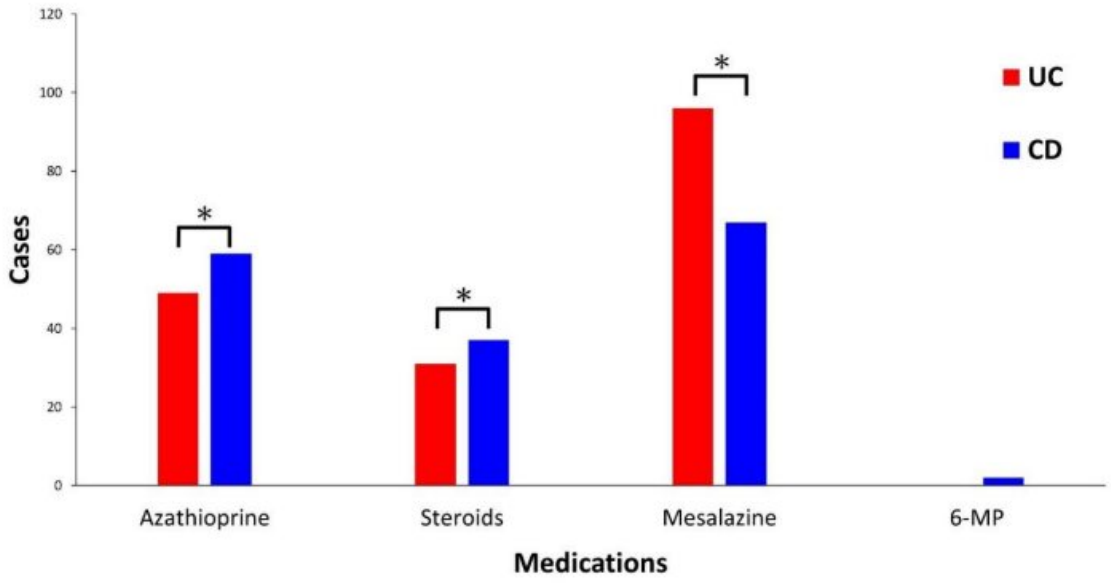
[Poster Exhibition – Inflammatory Bowel Disease]

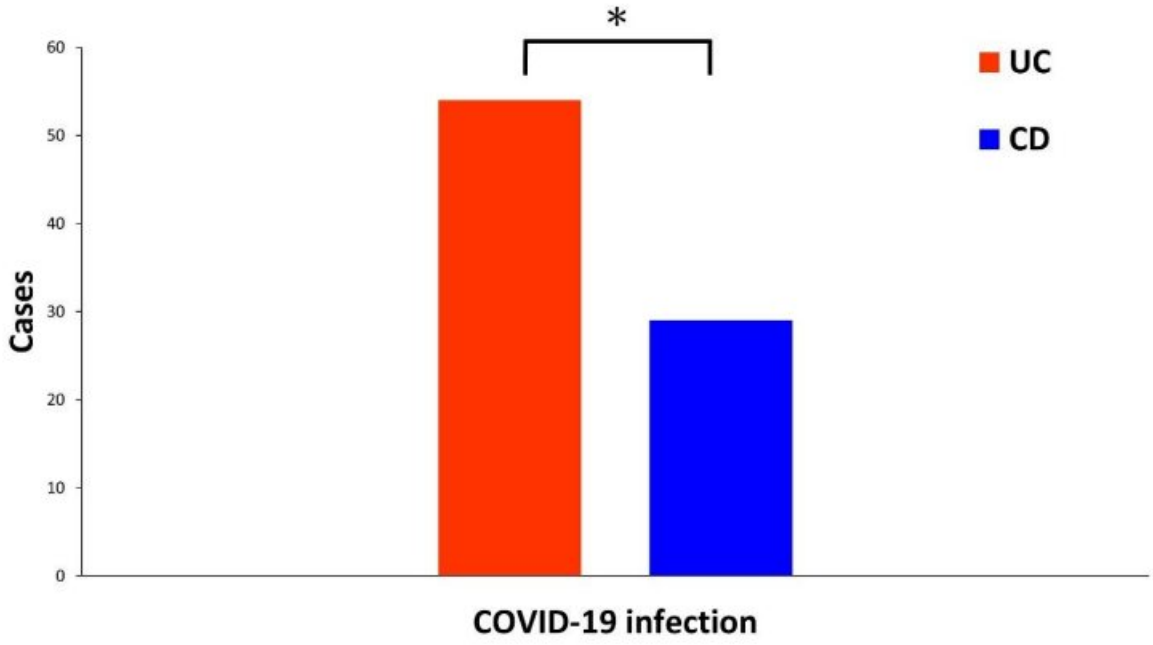
PE1-077

COVID-19 Infection Risk between Vaccinated Patients with Ulcerative Colitis and Crohn's Disease: A Retrospective Cohort Study in Taiwan

Jen-Wei Chou[1], Yi-Hua Wu[1], Po-Ju Huang[1], Chu-Ping Wang[1], Ken-Sheng Cheng[1]
[1]Center for Digestive Medicine, Department of Internal Medicine, China Medical University Hospital, Taichung, Taiwan
[2]Taiwan Association for the Study of Small Intestinal Diseases (TASSID), Taipei, Taiwan

Background / Aim : The effectiveness of coronavirus disease 2019 (COVID-19) vaccine against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in patients with inflammatory bowel disease (IBD) is well established, but it is not clear whether patients with ulcerative colitis (UC) and Crohn's disease (CD) have different risks of COVID-19 infection after vaccination. The aim of this study was to compare COVID-19 infection risk between the UC patients and CD patients.
Methods : We conducted a retrospective cohort study in adult IBD patients who had received at least two doses of COVID-19 vaccination and compared the prevalence of infection between UC patients and CD patients using the medical records of China Medical University Hospital between 1 January 2020 and 31 March 2023.
Results : 169 IBD patients (96 with UC, 73 with CD) were included in this study. UC patients were older than CD patients (44.92±13.72 vs. 37.27±15.27 years, p=0.0008). A high proportion were male (IBD 70.41%; UC 65.63%, and CD 76.71%). Most (57.4%) received three doses of COVID-19 vaccines. Azathioprine, steroid, and mesalazine medication histories were different between the groups ($p<0.05$). COVID-19 infection prevalence was 49.11% (UC 56.25%, CD 39.73%; p=0.0333). Logistic regression analysis suggested UC patients had an odds ratio of 1.95 (95% CI=1.05-3.62) and adjusted odds ratio of 2.78 (95% CI=1.20-6.44) for COVID-19 infection compared to CD patients, indicating a 1.95-fold to 2.78-fold higher risk. There was a trend towards a decreasing risk of COVID-19 infection with increasing number of vaccine doses. Medication was not identified as a risk factor.
Conclusion : Our results suggest that within the vaccinated population, UC patients have a higher risk of COVID-19 infection than CD patients.
Keywords : Crohn's Disease, Inflammatory Bowel Disease, Ulcerative Colitis, COVID-19 Infection, COVID-19 Vaccine

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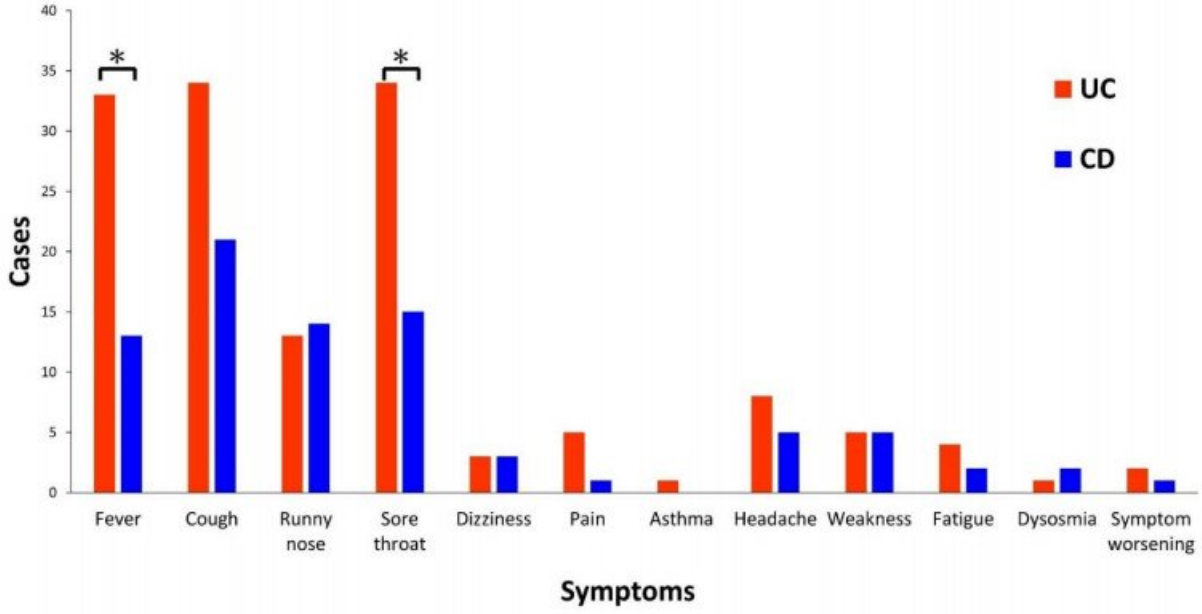
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Fever
Cough
Runny nose
Sore throat
Dizziness
Pain
Asthma
Headache
Weakness
Fatigue
Dysosmia
Symptom worsening
Symptoms

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-078

Current Status and Role of Korean Biobank Specializing in Inflammatory Bowel Disease Research

Yujin Ko[1], Mihyang Jeon[1], Eunju Kim[1], Jihyeon Lee[1], Daeun Han[1], An Na Seo[1,2]
[1]Biobank, Kyungpook National University Hospital, Daugu, Korea
[2]Department of Pathology, Kyungpook National University Hospital, Daugu, Korea

Background / Aim : Inflammatory bowel disease (IBD) is a chronic intestinal disorder characterized by recurrent relapses and remissions of inflammation, most notably Crohn's disease and ulcerative colitis. IBD can lead to dysplasia in the colon and rectum, which can increase the frequency of colorectal cancer. The progression of oncogenic mutations in IBD, involving an inflammation-dysplasia-carcinoma sequence, is believed to differ from the classic paradigm of sporadic adenoma (dysplasia)-carcinoma sequence. To understand the biological complexity of IBD pathogenesis, drug metabolism, and treatment response, and to realize precision medicine, preventive medicine, predictive medicine, and personalized medicine, a multi-omics, holistic and integrative approach of the patient's phenotype and genotype is required, and biobanking is essential for this.
Methods : IBD Human Resource Bank Network Organization and Information Standardization Project was selected as a human resource bank characterization support project by the National Institutes of Health of the Korea Centers for Disease Control and Prevention, and Kyungpook National University Hospital is conducting the project as a base bank.
Results : Currently, we have collected and stored a total of 988 IBD resources (7,308 vials) and 8,799 bottom-up resources (51,471 vials), and we are distributing and managing outputs as requested by researchers.
Conclusion : The four partner banks, including Kyungpook National University Hospital, will collect high-value IBD, colon and rectal dysplasia, and colorectal cancer resources with integrated big data information of clinical, epidemiological, imaging (endoscopy, MRI, CT), and digital pathology slide scan images through a close network of base banks and partner banks to pursue standardization of clinical and epidemiological information in Korea. In addition, they will continue to collect and distribute customized focused resources of non-neoplastic and neoplastic diseases to meet the needs of researchers.
Keywords : Inflammatory Bowel Disease, Biobank, Bottom-up Resources

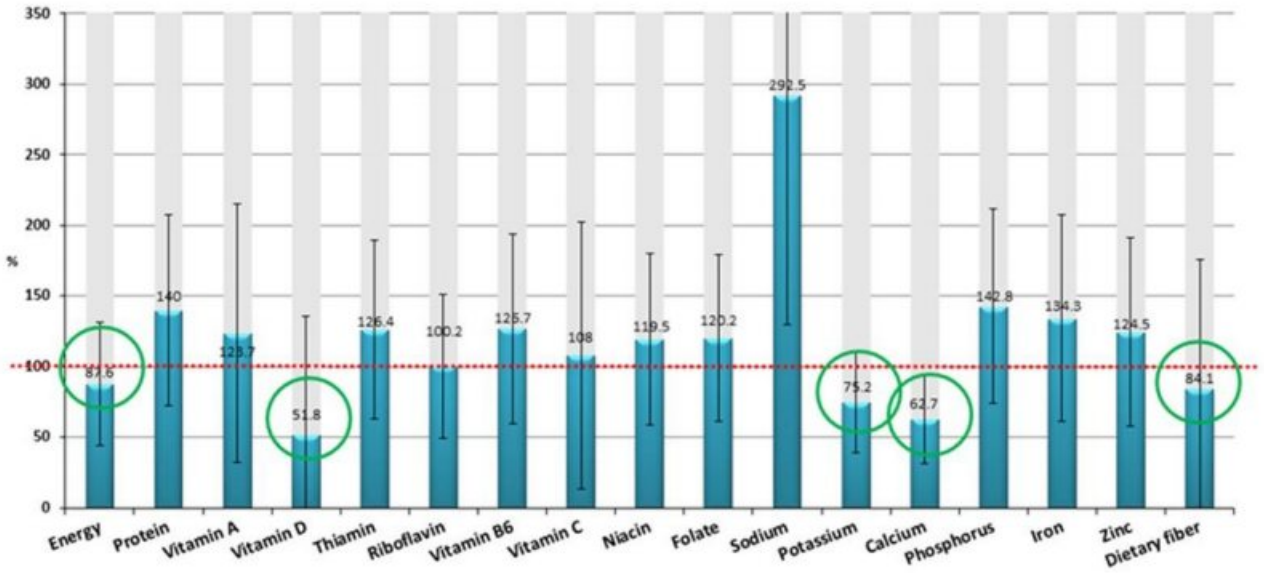
[Poster Exhibition – Inflammatory Bowel Disease]

PE1-079

Dietary Intake in Patients with Inflammatory Bowel Disease according to Food Diary

Min Sook Kang[1], Hyun Joo Song[2], Heung Up Kim[2], Ki Soo Kang[3]
[1]Department of Food & Nutrition Service Team, Jeju National University Hospital, Jeju, Korea
[2]Department of Internal Medicine, Jeju National University College of Medicine, Jeju, Korea
[3]Department of Pediatrics, Jeju National University College of Medicine, Jeju, Korea

Background / Aim : Malnutrition and micronutrient deficiencies are common in inflammatory bowel disease (IBD). Nutrient deficiency in patients with IBD can manifest in undernutrition or malabsorption. This study was performed to evaluate the nutrient intake status of IBD patients.
Methods : A total of 105 patients with IBD were enrolled prospectively in the department of gastroenterology and pediatrics at Jeju National University Hospital from June 2019 to October 2021. Among them, 84 subjects who kept a three-day meal diary were surveyed for their intake nutrients.
Results : There were 45 patients with ulcerative colitis (UC) and 39 with Crohn's disease (CD), with a gender ratio (M: F) of 42:42. The average age was 39±18 years, which was significantly lower in patients with CD than UC (29±15 vs. 47±6, $p<0.001$). The mean body mass index was 22.1 ±3.7 kg/m^2, lower in patients with CD than UC (20.9 ± 3.9 kg/m^2, vs. 23.2 ± 3.2 kg/m^2, $p=0.005$). In caloric nutrient intake, the percentage of carbohydrate intake was significantly higher in UC patients than CD (57.9±7.5%, vs. 54.4±6.1%, $p=0.022$), while the percentage of fat intake was higher in CD patients. (27.7±5.6%, vs. 24.9±6.5%, $p=0.043$). Overall, dietary calories, vitamin D, potassium, calcium, and fiber were less than the recommended dietary allowance in patients with IBD (Fig. 1). Nutrient intake was generally lower in CD patients compared to UC patients, particularly in areas of water intake, vitamin A, B_1, B_6, C, K, folate, calcium, and potassium. The index of nutritional quality was lower in magnesium, vitamin D, calcium, and potassium than 1, and CD patients tended to be lower than UC patients (Fig. 2).
Conclusion : IBD patients did not consume calories, vitamin D, potassium, or dietary fiber at the recommended level, and in particular, it was found in CD patients more than UC patients.
Keywords : Nutrition, Food, Inflammatory Bowel Disease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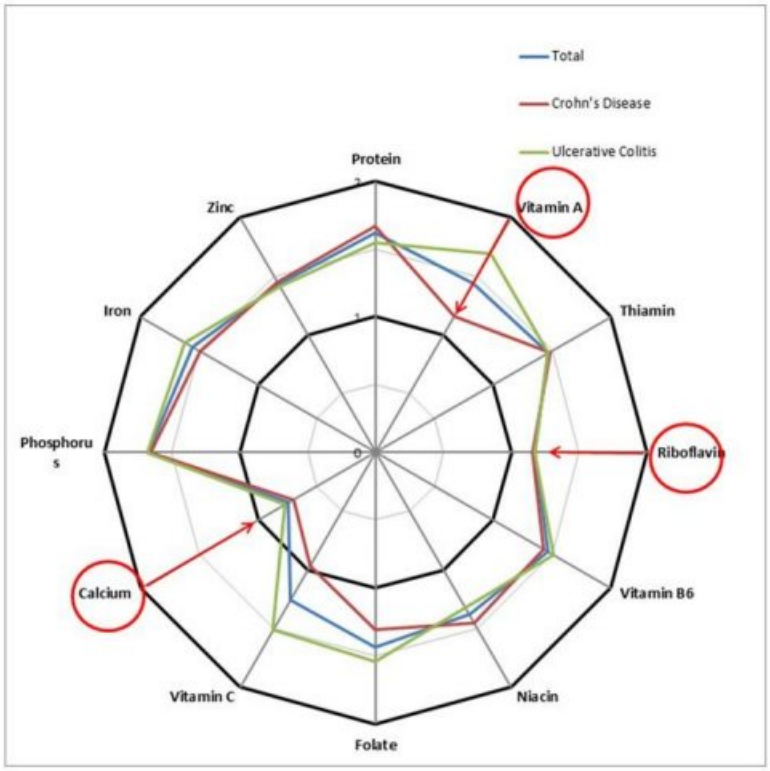
Total
Crohn's Disease
Ulcerative Colitis
Protein
Vitamin A
Thiamin
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Phosphorus
Iron
Zinc

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SHAPING THE FUTURE OF INTESTINAL RESEARCH
The 7th International Meeting on Intestinal Diseases in conjunction with The Annual Congress of the Korean Association for the Study of Intestinal Diseases
APRIL 11 (Thu) - 13 (Sat), 2024 CONRAD SEOUL, SEOUL, KOREA

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-080

Vedolizumab Long-term Treatment Persistence and Safety Results from a Multinational Extended Access Programme Study

Silvio Danese[1], Milan Lukas[2], Miroslava Volfova[3], Grazyna Rydzewska[4], Shashi Adsul[5], Dirk Lindner[6], Stephen Jones[6], Severine Vermeire[7], Hyo Jong Kim[8]

[1]Department of Gastroenterology and Digestive Endoscopy, University Vita-Salute, San Raffaele, Milan, Italy
[2]IBD Clinical and Research Centre, IBD Clinical and Research Centre, ISCARE Clinical Centre, Prague, Czech Republic
[3]Department of Hepatogastroenterology, Institute for Clinical and Experimental Medicine, Prague, Czech Republic
[4]Department of Gastroenterology, Central Clinical Hospital of Ministry of Interior and Administration of Warsaw, Warsaw, Poland
[5]Global Medical Unit, Takeda, Cambridge, United States
[6]Global Medical Affairs, Takeda, Zurich, Switzerland
[7]Department of Gastroenterology and Hepatology, University Hospitals Leuven, Leuven, Belgium
[8]Center for Crohn's and Colitis, Department of Gastroenterology, Kyung Hee University College of Medicine, Seoul, Korea

Background / Aim : Vedolizumab (VDZ) is a gut-selective humanised monoclonal anti-$\alpha_4\beta_7$ integrin antibody for ulcerative colitis (UC) and Crohn's disease (CD) treatment. The GEMINI Long-Term Safety (LTS) study demonstrated durable efficacy and safety of VDZ for inflammatory bowel disease. Patients experiencing clinical benefit from VDZ in GEMINI LTS or VERSIFY could continue VDZ in the extended access programme (XAP).
Methods : XAP was a phase 3b/4, prospective, open-label, multinational, interventional study (NCT02743806; August 2016 to January 2023) investigating long-term treatment persistence and safety of VDZ 300mg IV. Dose frequency was either reduced from every 4 weeks (Q4W) to every 8 weeks (Q8W) or maintained current Q8W/Q4W dosing.
Results : 331 patients (UC=142; CD=189) were enrolled (VERSIFY=20; GEMINI LTS=311) in XAP; 297 started on Q8W dosing; 295 received ≥1 dose. Baseline mean (SD) disease duration was UC=13.9 (6.8) and CD=13.2 (6.8) years; most patients were in clinical remission (Table 1). Most patients (95.9%) persisted on Q8W dosing for ≥6 months without relapse (UC=129/132 [97.7%]; CD=154/163 [94.5%]). Median (range) VDZ treatment duration was UC=3.8 (0-6) and CD=4.2 (0-6) years. Re-escalation from Q8W to Q4W occurred in UC=11/132 (8.3%) and CD=16/163 (9.8%) patients. Median (range) duration from last dose in qualifying study to dose escalation in XAP was UC=1.5 (0.6-3.0) and CD=1.2 (0.2-5.2) years; duration to relapse in XAP was UC=1.4 (0.4-4.0) and CD=1.2 (0.06-5.4) years. Adverse events after XAP enrolment occurred in UC=61.3% and CD=62.4% of patients (treatment-related: UC=2.1%, CD=4.2%), led to study discontinuation in UC=4.2% and CD=1.6% (treatment-related: UC=0.7%, CD=0.5%), and were serious in UC=13.4% and CD=16.4% (treatment-related: UC=0.7%, CD=0.5%). Severe infections occurred in UC=1.4% and CD=0.6% (treatment-related: UC=0, CD=0). One death (COPD) occurred.
Conclusion : This long-term, prospective study reported high persistence on VDZ Q8W after dosing frequency reduction, with low rates of re-escalation to Q4W and relapse. Safety results were consistent with the known VDZ safety profile.
Keywords : Vedolizumab, Long-term, Persistence

Table 1. Baseline Patient Characteristics

	UC VDZ N=142 from GEMINI LTS				CD VDZ N=169 from GEMINI LTS, N=20 from VERSI			
Parameter	Dose frequency reduction to Q8W (N=121)	Dose frequency escalation to Q4W (N=10)	Q4W Maintenance (N=8)	Total (N=142)[a]	Dose frequency reduction to Q8W (N=128)	Dose frequency escalation to Q4W (N=14)	Q4W Maintenance (N=26)	VERSIFY Q8W Maintenance (N=20)
Age, mean (SD), years	47.0 (11.6)	46.2 (10.7)	55.1 (13.6)	47.7 (11.8)	42.6 (11.8)	37.7 (5.70)	44.6 (13.8)	38.4 (14.6)
Clinical remission, n (%)	118 (97.5)	8 (80.0)	5 (62.5)	133 (93.7)	118 (92.2)	13 (92.9)	19 (73.1)	15 (75.0)
Partial Mayo score, mean (SD)	0.4 (0.9)	0.9 (1.3)	1.3 (1.8)	0.5 (1.0)	NA	NA	NA	NA
Harvey Bradshaw Index score, mean (SD)	NA	NA	NA	NA	1.3 (2.1)	1.8 (1.6)	3.3 (2.8)	-
Prior anti-TNFα therapy, n (%)	22 (18.2)	4 (40.0)	2 (25.0)	28 (19.7)	41 (32.0)	8 (57.1)	13 (50.0)	11 (55.0)
Concomitant medications, n (%)								
CS	5 (4.1)	1 (10.0)	0	6 (4.2)	6 (4.7)	1 (7.1)	1 (3.8)	4 (20.0)
CS + IMM	2 (1.7)	0	0	2 (1.4)	2 (1.6)	0	0	0
IMM	24 (19.8)	1 (10.0)	3 (37.5)	29 (20.4)	28 (21.9)	5 (35.7)	4 (15.4)	8 (40.0)

[a]Includes 3 patients who had multiple dose changes; [b]Includes 1 patient from GEMINI LTS who had multiple dose changes.

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-081

Extracellualr ATP Mediates Pyroptosis in the Intestinal Epithelium

Sihyun Jeong[1], Doyeon Lee[1], Geunhyung Yang[1], Youngju Do[1], Daehyun Park[1], Yunna Lee[1], Sanghoon Rhee[2], Eunok Im[1]

[1]College of Pharmacy, Pusan National University, Busan, Korea

[2]Department of Biological Sciences, Oakland University, Rochester, United States

Background / Aim : Damage-associated molecular patterns (DAMPs) are released from damaged or dying cells and contribute to inflammation and cell death processes, including pyroptosis. The role of extracellular adenosine triphosphate (ATP) in pyroptosis induction has been mainly studied in monocytes. This study aimed to investigate whether extracellular ATP acts as a DAMP to induce pyroptosis in the intestinal epithelium.

Methods : Eight-week-old C57BL6/J mice were administered dextran sodium sulfate (DSS) to induce colitis, and colon tissues were harvested to measure extracellular ATP levels and investigate pyroptosis marker protein expression. Trypan blue staining, tetramethylrhodamine ethyl ester fluorescence staining, and immunoblotting were performed to determine inflammatory and pyroptosis responses with ATP treatment in Caco-2 intestinal epithelial cells.

Results : DSS-induced colitis was confirmed by weight loss, increased disease activity, and colon length shortening. Interestingly, ATP levels increased in the colon and serum of mice with colitis, and the severity of colitis was positively correlated with ATP level change. The expression of pyroptosis mediators, including cleaved caspase 1, gasdermin D, and NLRP3, was also increased in the inflamed colon. Cell death and mitochondrial dysfunction increased with ATP treatment in Caco-2 cells. Inflammatory and pyroptosis responses were also upregulated by ATP treatment.

Conclusion : Extracellular ATP levels increased in the colon and serum of mice with colitis, along with enhanced pyroptosis responses in the colon. Additionally, ATP treatment induced pyroptosis in intestinal epithelial cells. Our findings suggest that extracellular ATP, released from inflamed and damaged cells, may act as a DAMP to induce pyroptosis in intestinal epithelial cells. This study may contribute to understanding the molecular mechanism by which intestinal inflammation mediates epithelial cells death via increased extracellular ATP.

Keywords : ATP, Intestine, Pyroptosis, Inflammation, Colitis

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-082

Novel Treatment Strategies for Ulcerative Colitis from the Treat to Target Viewpoint

Kei Moriya, Shinsaku Nagamatsu, Kohei Ohta, Yuya Matsuo, Ayana Sueki, Chisa Yamamoto, Yuya Nishio, Yusuke Komeda, Shoma Kikukawa, Kyohei Matsuura, Daisuke Kaya, Hideki Matsuo, Masakazu Uejima

Gastroenterology, Nara Prefecture General Medical Center, Nara, Japan

Background / Aim : The ultimate goal of "Treat to Target" in ulcerative colitis (UC) is to improve quality of daily life (QOL) beyond mucosal healing. Filgotinib, a JAK-1 selective inhibitor, has recently been available for UC. This study evaluated the clinical efficacy and QOL of UC patients treated with filgotinib.

Methods : The subjects were 26 UC patients (M15/F11/41.0 years) who were dependent/resistant to systemic steroids, treated with filgotinib and followed clinically for at least 3 months. Clinical efficacy (pMS ≤2 points and ≤30% reduction from pre-treatment) and remission rate (≤2 points and ≤1 point for each sub-score), adverse events, and treatment effect on extra-intestinal manifestations (EIM) were evaluated. The QOL questionnaire (IBDQ) was used to assess physical and emotional stress.

Results : Median observation period on filgotinib was 13.6 months and its medication compliance was 100% in all patients. Median pMS at induction was 5.0(IQR:5.0-6.8) and 2.0(2.0-3.0)/2.0(1.0-2.0)/0.0(0.0-2.0) at 4/8/12 weeks after treatment. The clinical efficacy rate was 80.8%/80.8%/88.5%, and the remission rate was 46.2%/69.2%/84.6%. On EIM complications (7 cases of arthritis/a case of pyoderma gangrenosum), pain and swelling resolved within 4 weeks in all the formers, and wound healing was achieved within 12 weeks in the latter. Two cases of shingles occurred after 6 months of filgotinib initiation. The median IBDQ score was 128(107-160) before treatment, which was significantly improved to 183(167-198) after 3 months of treatment. In a comparison of the four categories, the greatest improvement was in the order of 14.0 points for intestinal symptoms, 12.0 points for social life, and 11.5 points for general condition, while the lowest improvement was in psychological condition at 11.0 points.

Conclusion : Filgotinib successfully suppressed the activity of UC and EIM with safe. Filgotinib, available with thiopurine without concern for antibody production, will be useful for UC, although consideration must be given to the risk of shingles.

Keywords : Ulcerative Colitis, JAK Inhibitor, Filgotinib, IBDQ, Extra-intestinal Manifestations

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-083

Fecal Calprotectin Changes and Clinical Outcomes in Patients with Crohn's Disease

Hae Kwang Shin, Dongwoo Kim, Ja Seol Koo
Gastroenterology, Korea University Ansan Hospital, Ansan, Korea

Background / Aim : Fecal calprotectin (FC) is known to reflect disease activity in Crohn's disease (CD). It is also thought to be related with the disease progression, but only limited results were reported. This study was conducted to assess the association between changes in FC after diagnosis and clinical outcomes in CD.
Methods : The study was performed retrospectively with the patients diagnosed as CD at the Korea University Ansan Hospital between January 2015 and February 2021. Patients were included if FC was measured at the time of diagnosis and followed up within 12 months after diagnosis. Patients were divided into three groups according to follow-up FC level; (1) FC decrease, follow-up FC ≤ 250 mg/kg, (2) FC maintenance, follow-up FC ≥ 250 mg/kg, (3) FC increase, follow-up FC elevated above initial calprotectin. The rates of corticosteroid use (≥ 30 mg/d), CD-related surgery, and CD-related hospitalization during follow-up were examined in each group.
Results : A total of 99 patients were included (36/37/26 in the FC decrease/maintenance/increase groups). Corticosteroid utilization was 11.1% (4/36) in the FC decrease group, 16.2% (6/37) in the maintenance group, and 19.2% (5/26) in the increase group (p=0.279). CD-related surgery rates were 22.2% (8/36), 5.4% (2/37), and 16% (4/25), respectively (p=0.337). CD-related hospitalization rates were 16.7% (6/36), 29.8% (11/37), and 48% (12/25), respectively (p=0.009). On multivariate analysis, increased FC was significantly associated with CD-related hospitalization, but there was no significant association between FC change and corticosteroid use and CD-related surgery.
Conclusion : In CD patients, changes in FC after diagnosis provide useful information for predicting clinical outcomes, especially CD-related hospitalizations. Therefore, treatment strategies based on FC monitoring may help prevent disease progression and improve clinical outcomes.
Keywords : Crohn's Disease, Calprotectin, Monitoring

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-085

Assessment of Disease Activity in Patients with Crohn's Disease: Correlation between Magnetic Resonance Enterography and Intestinal Ultrasound

Choong-Wui Cho[1], Myung-Won You[1], Sung Kyoung Moon[1], Shin Ju Oh[2], Chang Kyun Lee[2], Seong Jin Park[1]

[1]Radiology, Kyung Hee University Hospital, Seoul, Korea
[2]Gastroenterology, Kyung Hee University Hospital, Seoul, Korea

Background / Aim : To investigate the diagnostic performance of intestinal ultrasound (IUS) and its correlation with magnetic resonance enterography (MRE) for the assessment of disease activity in patients with Crohn's disease (CD)

Methods : Between April 2020 and November 2023, patients who underwent IUS and MRE within a 3-month interval for CD were included retrospectively. We divided bowels into 7 segments; jejunum, proximal to mid ileum (PI-MI), distal to terminal ileum(DI-TI), cecum to ascending colon(A-col), transverse colon(T-col), descending colon(D-col), and rectosigmoid colon(RS-col). The presence of active inflammation in IUS and MRE was determined according to the qualitative criteria. IUS activity scores and MaRIA scores were calculated. MaRIA≥7 was defined as active and ≥11 was defined as severe inflammation.

Results : A total of 24 patients with 26 cases were included (median age: 25.5, range 9-85; M:F=19:7). Disease location was either L1(13/26,50%) or L3(13/26,50%), and all but one patient had active inflammation (MaRIA≥7). The MaRIA and IBUS-SAS scores were significantly correlated for both small and large bowel (0.576~0.875, p=0.01>). DI-TI was the most commonly affected segment with active inflammation(MRE: 76.9%, IUS: 65.4%) and complications(MRE: 34.6%, IUS: 19.2%). At the MaRIA≥11 cut-off, the diagnostic performance of the IUS was highest in DI-TI (sensitivity 94.4%, specificity 100%, and accuracy 95.4%), followed by A-col(sensitivity 85.7%, specificity 50%, and accuracy 73%). The mean IUS activity scores (IBUS-SAS) in the PI-MI (23.24 vs.0.0, p=0.001) and DI-TI (42.87 vs. 12.0, 0.001>) segments were higher in the MaRIA≥11 group compared to the MaRIA<11 group, whereas no significant differences were found between the two groups in colon. MRE detected more complications than IUS in each patient (MRE: 53.8%, IUS: 34.6%).

Conclusion : Disease activity assessed by IUS correlated well with MRE, especially distal to the terminal ileum. MRE detected more complications than IUS.

Keywords : Crohn's Disease, Disease Activity, Intestinal Ultrasound, Magnetic Resonance Enterography, Correlation

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-086

Neither Hepatic Steatosis nor Fibrosis is associated with Clinical Outcomes in Patients with Intestinal Behcet's Disease

Hye Kyung Hyun[1], Jihye Park[2], Soo Jung Park[2], Jae Jun Park[2], Tae Il Kim[2,4], Jae Seung Lee[2,3], Hye Won Lee[2,3], Beom Kyung Kim[2,3], Jun Yong Park[2,3], Do Young Kim[2,3], Sang Hoon Ahn[2,3], Seung Up Kim[2,3], Jae Hee Cheon[2,4]

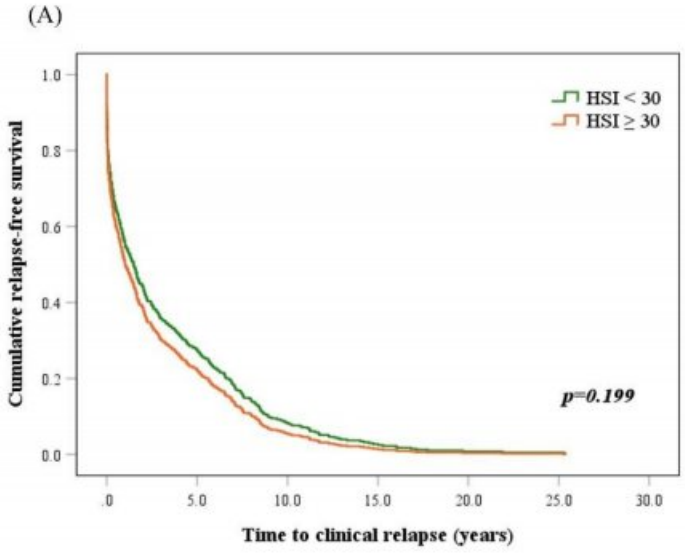
[1]Internal Medicine, Yonsei University College of Medicine, Yongin Severance Hospital, Yongin, Korea
[2]Internal Medicine, Yonsei University College of Medicine, Severance Hospital, Seoul, Korea
[3]Internal Medicine, Yonsei Liver Center, Severance Hospital, Seoul, Korea
[4]Brain Korea 21 Project, Graduate School of Medical Science, Yonsei University College of Medicine, Seoul, Korea

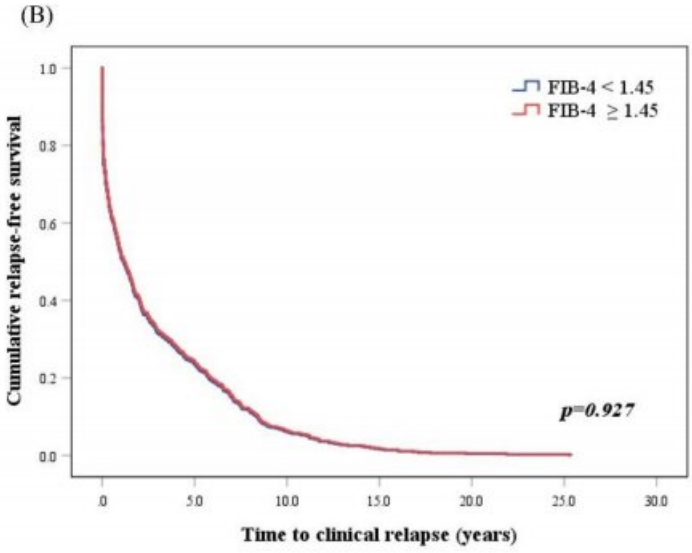
Background / Aim : Behçet's disease (BD) and nonalcoholic fatty liver disease (NAFLD) are chronic inflammatory diseases that share pathogenetic mechanisms. In this study, we investigated whether NAFLD influences the clinical outcomes in patients with intestinal BD.
Methods : Patients with intestinal BD and available hepatic steatosis index (HSI) and fibrosis-4 (FIB-4) scores were recruited between 2005 and 2022. An HSI of ≥30 and FIB-4 of ≥1.45 were used to diagnose hepatic steatosis and significant liver fibrosis, respectively. The primary outcomes were intestinal BD-related hospitalization, surgery, emergency room visits, or the first use of corticosteroids, immunomodulators, or biologic agents for intestinal BD.
Results : A total of 780 patients with BD were selected. The prevalences of hepatic steatosis and significant liver fibrosis were 72.3% and 8.8%, respectively. Multivariate analysis showed that younger age, prior smoking history, concomitant skin lesions, higher white blood cell count, and lower serum albumin levels were independently associated with an increased risk of clinical relapse (all $p < 0.05$), whereas hepatic steatosis and significant liver fibrosis were not (hazard ratio [HR] = 1.164, 95% confidence interval [CI] 0.923–1.468; $p = 0.199$ for hepatic steatosis; HR = 0.982, 95% CI 0.672–1.436; $p = 0.927$ for significant liver fibrosis).
Conclusion : Hepatic steatosis and liver fibrotic burden were not independently associated with clinical outcomes in patients with intestinal BD.
Keywords : Intestinal Behet's Disease, Nonalcoholic Fatty Liver Disease, Hepatic Steatosis, Liver Fibrosis

Table 2. Comparison of baseline characteristic between patients with and without hepatic steatosis or significant fibrosis

Variables	HSI ≥ 30 (n=527, 72.4%)	HSI < 30 (n=201, 27.6%)	*p* value	FIB-4 ≥ 1.45 (n=59, 8.1%)	FIB-4 < 1.45 (n=669, 91.9%)	*p* value
Demographic variables						
Age, years	56.1 ± 13.8	53.2 ± 13.3	0.012	67.2 ± 10.6	54.2 ± 13.5	<0.001
Male gender, n (%)	199 (37.8)	117 (58.2)	<0.001	18 (30.5)	298 (44.5)	0.040
Body mass index, kg/m^2	22.3 ± 3.2	19.6 ± 2.3	<0.001	21.2 ± 3.1	21.6 ± 3.2	0.403
Duration from BD diagnosis, years	42.4 ± 13.4	40.4 ± 13.6	0.066	55.0 ± 9.2	40.7 ± 13.2	<0.001
Hypertension, n (%)	92 (17.5)	28 (13.9)	0.266	12 (20.3)	108 (16.1)	0.463
Diabetes, n (%)	75 (14.2)	10 (4.5)	<0.001	10 (16.9)	74 (11.1)	0.199
Smoking status at diagnosis, n (%)			0.011			0.748
Non-smoker	406 (77.0)	133 (66.2)		46 (78.0)	493 (73.7)	
Ex-smoker	86 (16.4)	51 (25.4)		10 (16.9)	127 (19.0)	
Current smoker	35 (6.6)	17 (8.5)		3 (5.1)	49 (7.3)	
Clinical manifestations, n (%)						
Eye	41(7.8)	19 (9.5)	0.547	4 (6.8)	56 (8.4)	0.809
Skin lesion	88 (16.7)	27 (13.4)	0.308	6 (10.2)	109 (16.3)	0.266
Genital ulcer	67 (12.7)	18 (9.0)	0.196	6 (10.2)	79 (11.8)	0.835
Arthritis	138 (26.2)	38 (18.9)	0.042	13 (22.0)	163 (24.4)	0.753
Fistula	4 (0.8)	1 (0.5)	1.000	1 (1.7)	4 (0.6)	0.345
Fever	30 (5.7)	14 (7.0)	0.602	4 (6.8)	40 (6.0)	1.000
DAIBD score	42.3 ± 33.4	48.2 ± 36.2	0.042	42.9 ± 36.5	44.1 ± 34.1	0.797
Laboratory variables						
White blood cell count, 10^9/L	7.2 ± 2.6	8.2 ± 3.4	<0.001	5.3 ± 1.9	7.7 ± 2.9	<0.001
Hemoglobin, g/dL	12.6 ± 1.7	12.4 ± 1.9	0.326	12.1 ± 1.9	12.6 ± 1.8	0.040
Platelet count, 10^9/L	283.9 ± 90.3	295.1 ± 112.3	0.163	167.4 ± 64.1	297.5 ± 92.2	<0.001
Erythrocyte sedimentation rate, mm/hr	34.1 ± 27.6	38.6 ± 34.5	0.070	45.1 ± 34.4	34.5 ± 29.2	0.025
Serum C-reactive protein, mg/L	10.2 ± 28.6	17.0 ± 34.8	0.007	24.4 ± 53.7	11.0 ± 27.5	0.063
Serum albumin, g/dL	4.3 ± 0.4	4.2 ± 0.5	0.002	4.1 ± 0.5	4.3 ± 0.5	0.007
Total bilirubin, mg/dL	0.6 ± 0.3	0.6 ± 0.3	0.916	0.7 ± 0.3	0.6 ± 0.3	0.044
Aspartate aminotransferase, IU/L	19.3 ± 8.2	19.7 ± 9.4	0.532	27.6 ± 14.0	18.7 ± 7.5	<0.001
Alanine aminotransferase, IU/L	16.8 ± 11.3	25.6 ± 16.9	<0.001	23.5 ± 18.5	18.8 ± 13.1	0.061
Gamma-glutamyl transferase, IU/L	50.4 ± 78.7	48.8 ± 61.1	0.863	64.6 ± 63.9	48.5 ± 74.0	0.294
Total cholesterol, mg/dL	169.0 ± 36.2	167.5 ± 39.8	0.633	172.4 ± 39.2	168.2 ± 37.0	0.413
Triglyceride, mg/dL	129.7 ± 99.5	111.0 ± 51.6	0.087	139.8 ± 129.3	122.8 ± 83.4	0.285
HDL-cholesterol, mg/dL	52.8 ± 16.4	50.8 ± 15.7	0.352	50.5 ± 18.5	52.5 ± 16.0	0.504
LDL-cholesterol, mg/dL	116.3 ± 41.6	104.0 ± 45.8	0.086	122.6 ± 46.1	111.9 ± 42.6	0.285
HLAB51	39 (7.4)	26 (12.9)	0.021	6 (10.2)	59 (8.8)	0.811

BD, Behçet's disease; DAIBD, disease activity index for intestinal Behçet's disease; HDL, high density lipoprotein; LDL, low density lipoprotein; HLA B-51, human leukocyte antigen B51; HSI, hepatic steatosis index; FIB-4, fibrosis 4 score.





[Poster Exhibition – Inflammatory Bowel Disease]

PE1-087

Temporal Trends of Inflammatory Bowel Diseases in Taiwan from 2016 to 2020: A Population-based Study

Yao-Wei Kuo[1,2], Chia-Jung Kuo[1,2], Puo-Hsien Le[1,2], Chen-Tang Chiu[1,2], Ming-Yao Su[2,3]
[1]Department of Gastroenterology and Hepatology, Linkou Chang Gung Memorial Hospital, Taoyuan, Taiwan
[2]Taiwan Association for the Study of Small Intestinal Diseases, Taipei, Taiwan
[3]Department of Gastroenterology and Hepatology, New Taipei City Municipal Tucheng Hospital, New Taipei City, Taiwan

Background / Aim : There are scanty population-based studies investigating the incidence and prevalence rates of inflammatory bowel disease (IBD) in Taiwan. This study aimed to estimate the nationwide prevalence and incidence of IBD and identify its noticeable trends in Taiwan between 2016 and 2020.
Methods : A retrospective study by analyzing the data from the National Health Insurance Research Database of Taiwan.
Results : A total of 2,595 patients with catastrophic IBD illness were registered from 2016 to 2020 in Taiwan (CD, 880; UC, 1715). The male-to-female ratio in the study sample was 1.83 for CD and 1.69 for UC. The median age of those registered with CD and UC was 37 and 47 years, respectively. The incidence rate of CD was 0.65 per 100,000 persons in 2016 and it was increased to 0.81 per 100,000 persons in 2020. The incidence rate of UC was 1.16 per 100,000 persons in 2016 and it was increased to 1.53 in 2020. Overall, the incidence of IBD was increase from 1.81 per 100,000 persons to 2.34 per 100,000 persons between 2016 and 2020. Overall, the prevalence rates of IBD increase from 14.95 per 100,000 persons to 20.02 per 100,000 persons between 2016 and 2020.
Conclusion : The epidemiological stages of IBD in Taiwan was considered in the acceleration in incidence stage, during which incidence rises and prevalence is relatively low. Understanding these geographical differences is important for the rising global burden of IBD.
Keywords : Crohn’s Disease, Ulcerative Colitis, Epidemiology

Table. Clinical Features of Patients with Newly Registered IBD in 2016 to 2020

	CD		UC	
	N	%	N	%
No. of cases	880		1715	
Age (yr)				
Mean	40.15		46.6	
Median	37		47	
Age groups				
<20	97	11.02	67	3.91
20-39	388	44.09	517	30.15
40-59	228	25.91	739	43.09
60-79	159	18.07	365	21.28
>=80	8	0.91	27	1.57
Male/female ratio	1.83		1.69	
2016	2.45		1.44	
2017	1.69		1.74	
2018	1.45		1.88	
2019	1.59		1.84	
2020	2.25		1.53	

Fig. 1. Incidence of IBD from 2016 to 2020 in Taiwan

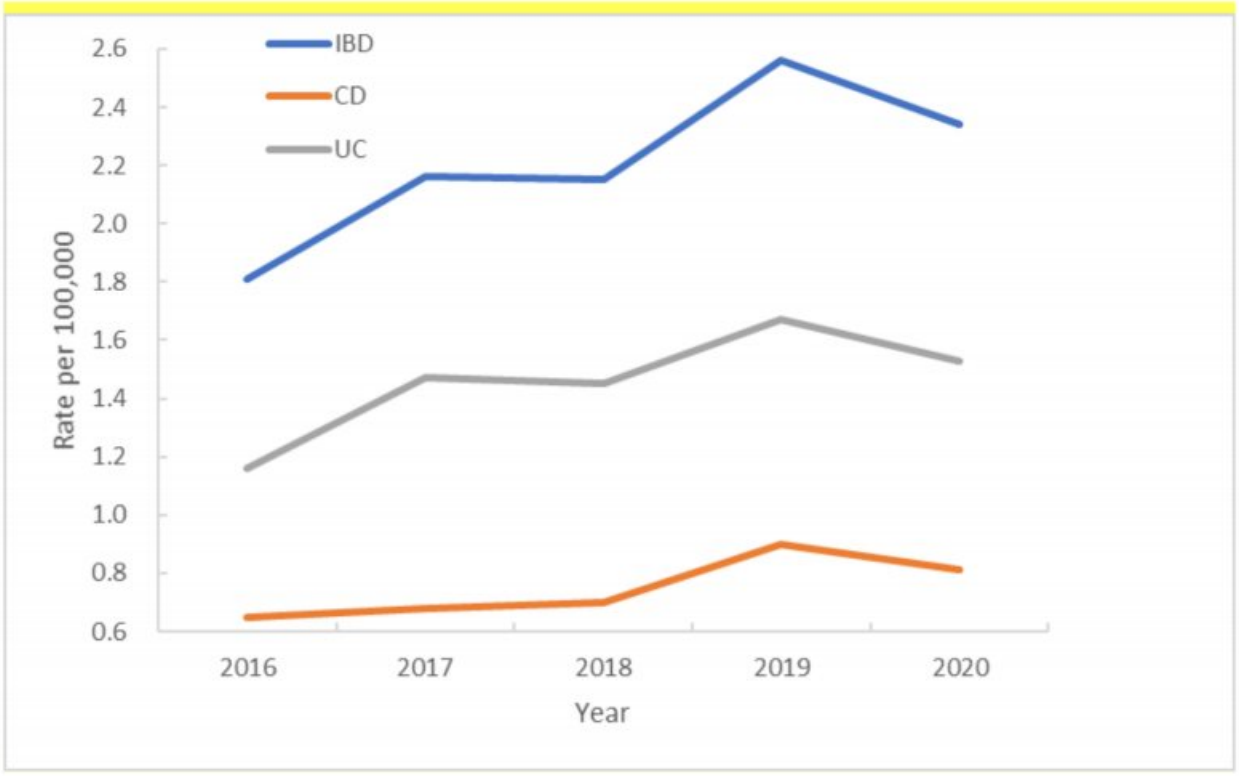
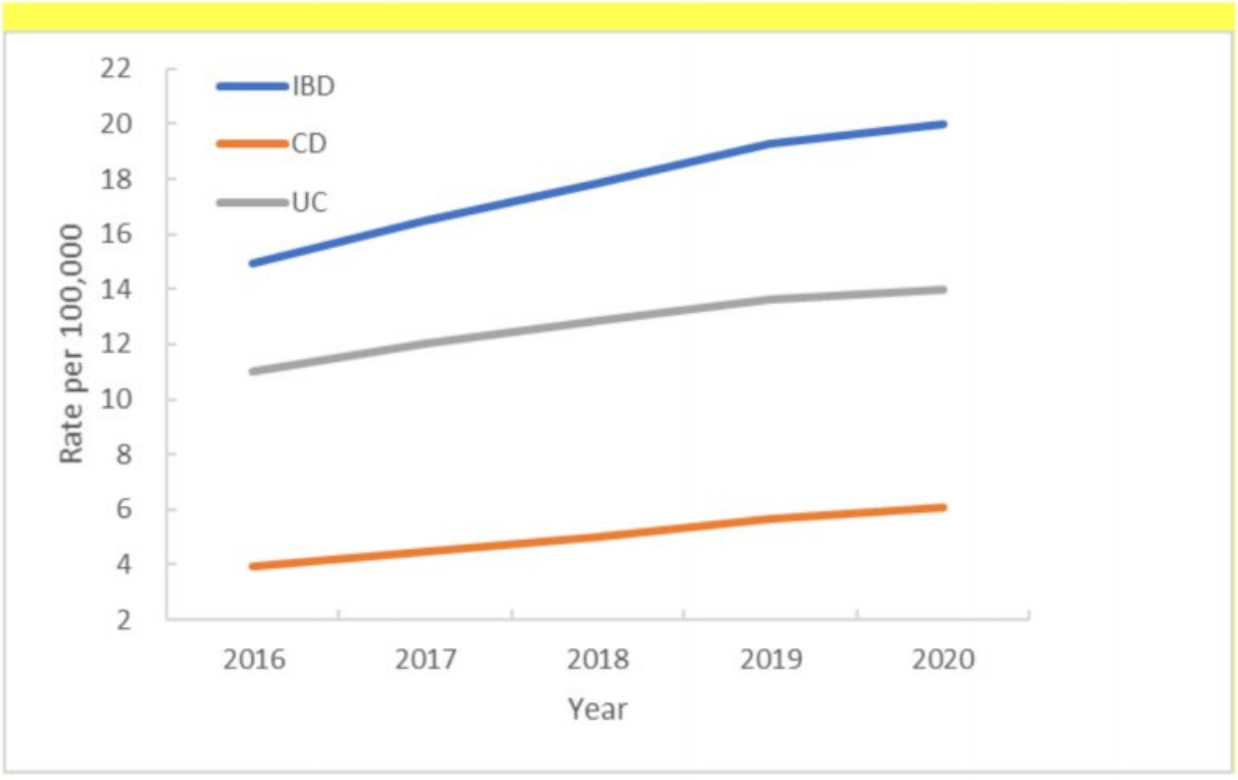


Fig. 2. Prevalence of IBD from 2016 to 2020 in Taiwan.



[Poster Exhibition – Inflammatory Bowel Disease]

PE1-088

Comparison of Ustekinumab and Vedolizumab in the Efficacy for Moderate to Severe Ulcerative Colitis with Prior Failure of Biologics or Small Molecule Drugs

Seung Min Hong, Dong Hoon Baek, Geun Am Song, Dong Chan Joo, Tae In Kim, Gwang Ha Kim, Bong Eun Lee, Cheolung Kim, Hyeon Tae Cho

Department of Internal Medicine, Pusan National University School of Medicine and Biomedical Research Institute, Pusan National University Hospital, Busan, Korea

Background / Aim : Ustekinumab (UST) and vedolizumab (VDZ) are both well-known to be effective in the treatment of moderate to severe ulcerative colitis. This study retrospectively compared the effectiveness of UST and VDZ in patients with moderate to severe ulcerative colitis who have previously failed treatment with biologics or small molecule drugs (SMDs).

Methods : The study retrospectively analyzed the medical records of a total of 43 patients with moderate to severe ulcerative colitis, comprising 15 patients in the UST group and 28 in the VDZ group. All of these patients had previously experienced failure with treatments involving biologics or SMDs.

Results : There were no statistically significant differences in the baseline characteristics between the UST group and the VDZ group. At week 52 following the initiation of UST or VDZ treatment, there were no statistically significant differences between the two groups in terms of the clinical remission rate (UST group 60.0% vs. VDZ group 67.9%, p = 0.606) and the corticosteroid-free remission rate (UST group 46.7% vs. VDZ group 57.1%, p = 0.512). At the time of response evaluation following the induction phase, the proportion of patients showing an endoscopic response did not demonstrate a statistically significant difference between the two groups (UST group 80.0% vs. VDZ group 78.6%, p = 1.000). However, at week 52, the drug survival rate was significantly higher in the UST group at 93.3% compared to 71.4% in the VDZ group (p = 0.031). There were no significant differences in adverse events between the two groups.

Conclusion : In patients with moderate to severe ulcerative colitis who had previously failed treatment with biologics or small SMDs, UST demonstrated a superior drug survival rate compared to VDZ. Other clinical efficacies and safety profiles were similar in both groups.

Keywords : Ulcerative Colitis, Biologics, Small Molecule Drugs, Ustekinumab, Vedolizumab

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-089

Perception of Pediatric Gastrointestinal Specialists on Anti-tumor Necrosis Factor Therapy in Patients with Pediatric Crohn's Disease

Eun Sil Kim[1], Yoon Lee[2], Ben Kang[3]
[1]Department of Pediatrics, Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine, Seoul, Korea
[2]Department of Pediatrics, Korea University Medical Center Anam Hospital, Seoul, Korea
[3]Department of Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea

Background / Aim : There is lack of data regarding the perception of gastrointestinal (GI) specialists on anti-tumor necrosis factor (TNF) therapy in patients with pediatric Crohn's disease (CD). We aimed to investigate the perception of pediatric GI specialists on anti-TNF therapy in patients with pediatric CD.
Methods : A survey was conducted among pediatric GI specialists who were treating pediatric patients with CD in Korea. The questionnaire consisted of 17 questions regarding anti- TNF therapy in pediatric CD.
Results : Among the 45 institutions where the survey was applied, 42 (93.3 %) responded. Among the responders, 50.0% (21/42) were males and the age of the responders were 44.9 ± 7.6 years. The median duration of CD patient care was 10 years [interquartile range (IQR) 4–11 years, and the median number of CD patients under care was 30 patients (IQR 16–70). Regarding anti-TNF treatment strategy, 81.0% (34/42) answered that an upfront or accelerated step-up approach was the appropriate strategy for pediatric CD, while 19.0% (8/42) answered that the conventional step-up approach was the appropriate treatment strategy. However, only 50% (21/42) answered that they actually were prescribing anti-TNF therapy by an upfront or accelerated step-up approach. Regarding the selection between infliximab and adalimumab, the main factors affecting decisions were disease severity of the patient (40.5%), preference of the patient (23.8%), quick resolution of clinical symptoms and laboratory results (21.4%), and injection route and intervals of the drugs (14.3%). Regarding biosimilars, 90.5% (38/42) answered that both drugs had comparable efficacy, and 97.6% (41/42) answered that both drugs had similar safety profiles.
Conclusion : The majority of pediatric GI specialists considered an upfront or accelerated step-up approach as the appropriate treatment strategy for pediatric CD. The Korean national insurance policy should be able to support the perception of Korean pediatric GI specialists.
Keywords : Anti-tumor Necrosis Factor, Crohn's Disease, Pediatric

Figure 1. Proportion of responses to which anti-TNF treatment strategy is appropriate for the treatment of pediatric Crohn's disease

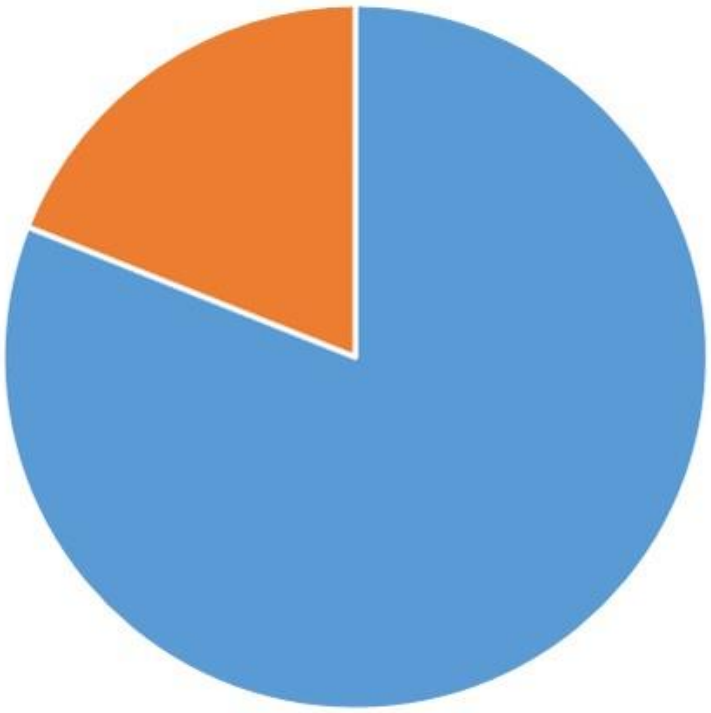
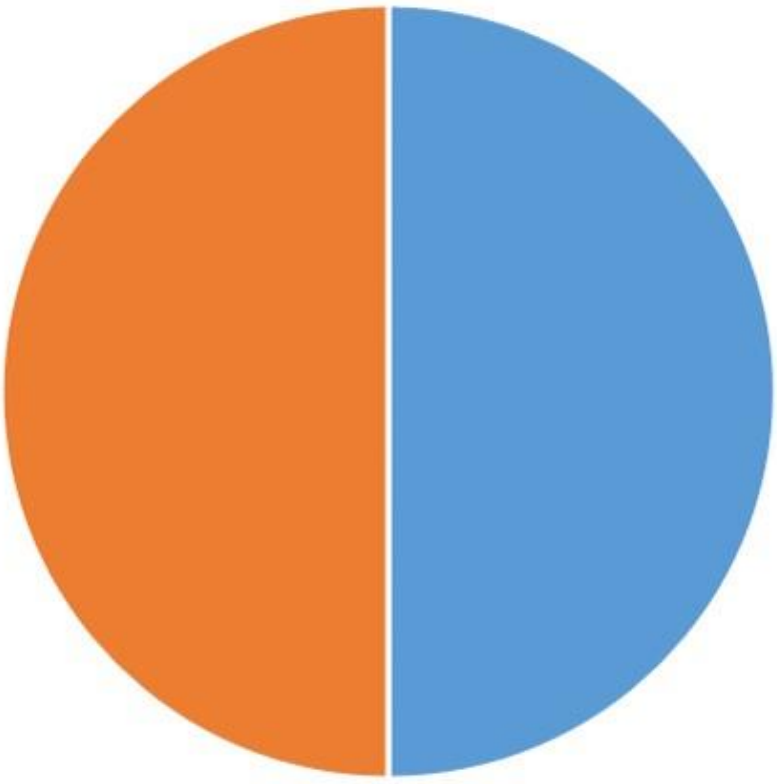


Figure 2. Proportion of responses to which anti-TNF strategy was actually prescribed for the treatment of pediatric Crohn's disease



[Poster Exhibition – Inflammatory Bowel Disease]

PE1-090

Genotype- Phenotype Correlation in IBD: Unveiling Putative Inhibitors for IL10RA and IRF5 Variants

Jeyakumar Natarajan, Treesa Bency Evthonis
Dept of Bioinformatics, Bharathiar University, Coimbatore, India

Background / Aim : Despite recent advances, the majority of the susceptibility genes for inflammatory bowel disease (IBD), a chronic inflammatory disorder that affects the gastrointestinal tract and is commonly diagnosed as Crohn's disease and ulcerative colitis, are still unknown. Empirical data indicates that the human IL10RA mutation could impact the regulation of the gut inflammatory response, with IRF5 being a key player in controlling mucosal inflammation in IBD
Methods : Notably compounds such as Aloin, Andrographolide, Incensole, and Curcumin show up as leading contenders that are significantly contributing to anti-inflammation and a natural adjuvant therapy for IBD. Nevertheless, the exact chemical process by which these substances block IL10RA and IRF5 is still unknown. In order to close this gap, we carried out molecular interaction and MD Simulation experiments to understand how synthetic and herbal drugs interact with IL10RA and IRF5 variants
Results : Molecular docking experiments have demonstrated that Aloin (-9.0268 kcal/mol) has the highest binding affinities when compared to Mesalazine (-7.215 kcal/mol), a synthetic drug. These findings suggest that Aloin as a promising inhibitors of IL10RA and IRF5 variants. Additional insights from 10 ns molecular dynamics simulations that include structural studies and RMSD analysis shows that Aloin is more stable than synthesized drugs
Conclusion : Aloin have an inhibitory effect on IL10RA and IRF5 variants and it could be a potential drug candidate for IBD treatment in the future
Keywords : Inflammatory Bowel Disease, Aloin, Molecular Interaction, Natural Inhibitor

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-091

Pediatric Ulcerative Colitis Presents with a More Severe Phenotype at Diagnosis compared to Adult Ulcerative Colitis in Korea

Suk Jin Hong[1], Hyeong Ho Jo[2], Eun Young Kim[2], Kwang-Hae Choi[3], Hyo-Jeong Jang[4], Sujin Choi[5], Byung-Ho Choe[5], Ben Kang[5]

[1]Pediatrics, Daegu Catholic University School of Medicine, Daegu, Korea
[2]Internal Medicine, Daegu Catholic University School of Medicine, Daegu, Korea
[3]Pediatrics, Yeungnam University School of Medicine, Daegu, Korea
[4]Pediatrics, School of Medicine, Keimyung University, Daegu, Korea
[5]Pediatrics, School of Medicine, Kyungpook National University, Daegu, Korea

Background / Aim : Studies from western countries have shown that ulcerative colitis (UC) in childhood presents with a more severe phenotype at diagnosis compared to adults. However, relevant data is lacking in Korea. We aimed to investigate whether pediatric UC presents with a more severe phenotype at diagnosis compared to adult UC in Korea.
Methods : This was a multicenter study conducted in Korea. Patients diagnosed with UC were included. Baseline clinicodemographics, results from laboratory and endoscopic exams were collected, and factors were compared between patients diagnosed <19 years and ≥19 years.
Results : A total 108 patients were included. Males comprised 57.4% (62/108) of the patients, and the median age at diagnosis was 21.5 years [interquartile range (IQR) 14.7–42.9]. Among the patients, 48.1% (52/108) were <19 years while 51.9% (56/108) were ≥19 years. Patients <19 years had a higher proportion of extensive disease according to the Montreal classification (55.8% vs. 26.8%, P = 0.004), higher Mayo score (median 6 vs. 5, P = 0.001), higher white blood cell count (median 7585 vs. 6400 /μL, P = 0.040) and higher platelet count (median 333 vs. 276 ×103/μL, P < 0.001).
Conclusion : Pediatric ulcerative colitis presents with a more severe phenotype at diagnosis compared to adult ulcerative colitis in Korea.
Keywords : Phenotype, Child, Adult, Ulcerative Colitis, Inflammatory Bowel Disease

Table 1. Baseline characteristics

Male sex, *n (%)*	62 (57.4%)
Diagnosis age, *year*	21.5 (IQR 14.7-42.9)
E3 disease extent (Montreal)	44 (40.7%)
E4 disease extent (Paris)	35 (32.4%)
Mayo score	5 (4-7)

Table 2. Comparison between patients divided according to diagnosis age <19 and ≥19.

	Diagnosis age <19 (*n*=52)	Diagnosis age ≥19 (*n*=56)	*P*
Male sex, *n* (%)	30 (57.7)	32 (57.1)	1.000
Median age at diagnosis, *years [IQR]*	14.7 [12.0–16.9]	42.9 [31.6–60.0]	<0.001
Disease extent (Montreal), *n* (%) E1 E2 E3	 10 (19.2) 13 (25.0) 29 (55.8)	 25 (44.6) 16 (28.6) 15 (26.8)	0.004
Disease extent (Paris), n (%) E1 E2 E3 E4	 10 (19.2) 13 (25.0) 7 (13.5) 22 (42.3)	 25 (44.6) 16 (28.6) 2 (3.6) 13 (23.2)	0.008
Mayo score	6 (4–9)	5 (3–6)	0.001
White blood cell count, /μl	7585 (6150–9215)	6400 (5800–7850)	0.040
Hematocrit, %	38.5 (34.1–41.5)	41.1 (37.2–44.1)	0.008
Platelet count, $\times 10^3$/μl	333 (286–427)	276 (222–332)	<0.001
Albumin, g/dL	4.5 (4.2–4.7)	4.5 (4.2–4.7)	0.997
CRP, mg/dL	2.47 (0.85–4.74)	1.63 (0.76–4.29)	0.276
ESR, mm/hr	13 (6–35)	20 (9–39)	0.130
Fecal calprotectin, mg/kg	931 (212–4223)	902 (344–1951)	0.748
UCEIS	4 (2–5)	3 (3–21)	0.776

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-092

Clinical Characteristics and Treatment of Inflammatory Bowel Disease at the Gastroenterology-hepatobiliary Center in Bach Mai Hospital from 2022 to 2023

Tan Tran Thi[1], Long Nguyen Cong[1,2], Nam Nguyen Hoai[1,2]
[1]Gastroenterology-Hepatology Center, Bachmai Hospital, Hanoi, Vietnam
[2]Internal Gastroenterology Department, University of Medicine and Pharmacy - Hanoi National University, Hanoi, Vietnam

Background / Aim : The Gastroenterology-Hepatobiliary Center at Bach mai Hospital, located in northern Vietnam, is a major facility for the treatment of inflammatory bowel disease (IBD). A study was conducted to characterize patients with IBD who were managed as inpatients
Methods : This is a cross-sectional description of the patients with plate number 172 IBD from January 2022 to August 2023
Results : The age range was between 16 and 83, with an average age of 41.2 years old. The male to female ratio was 1.4 to 1. The study found that 54.1% of patients had Crohn disease (CD), 43.6% had ulcerative colitis (UC), and 2.3% had an unclassified form of IBD. The average age at which patients received their diagnosis was 37.2, and 32% of them were first diagnosis. Common symptoms were bloody stools (37.2%), diarrhea (47.1%), abdominal pain (44.2%), and weight loss (8.7%). There has 84.3% of patients had at least one severe prognostic feature, with 58.7% being under the age of 40, surgery was required for 32.6% of patients due to complications such as perforation, fistula, stenosis, or abscess, and 45.9% had extensive intestinal lesions. For patients with UC, the lesion location was classified as E1 (30.0%), E2 (12.9%), and E3 (57.1%). For patients with CD, the lesion location was L1 (14.3%), L2 (59.2%), L3 (21.4%), and L4 (5.1%), and the disease phenotype was B1 (68.4%), B2 (15.3%), B3 (16.3%), with 13.4% having perianal lesions. The initial treatment therapy had 26.3% of patients receiving 5-ASA, 54.4% receiving corticosteroids combined with azathioprine, and 19.3% receiving biological drugs. After an average follow-up of 12.0 months (n=106), 27.3% of patients had to upgrade therapy, and 16.0% of patients required surgery due to complications.
Conclusion : IBD patients receiving inpatient care at Bach Mai Hospital often have severe symptoms and require treatment with immunosuppressive drugs or biological drugs.
Keywords : Inflamatory Bowel Disease, Bachmai Hospital, Biotherapies, Crohn Disease, Ulcer Colitis

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-093

Clinical Usefulness of Immune Profiling for Differential Diagnosis between Crohns Disease, Intestinal Tuberculosis, and Behcets Disease

Jae Seung Soh[1], Sung Wook Hwang[2]
[1]Department of Internal Medicine, Hallym University Sacred Heart Hospital, Anyang, Korea
[2]Department of Internal Medicine, Asan Medical Center, Seoul, Korea

Background / Aim : It is important to make a differential diagnosis between inflammatory diseases of the bowel with similar clinical and endoscopic features. Misdiagnosis or delayed diagnosis can affect patients' therapeutic outcomes and prognosis. The profiling of immune cells could be helpful for accurately diagnosing inflammatory diseases. We compared immune marker expression between Crohn's disease (CD), intestinal Behcet's disease (BD), and intestinal tuberculosis (TB) and evaluated the usefulness of immune profiling in differentiating the diseases.
Methods : Biopsy specimens were acquired around ulcerations on the terminal ileum or cecum from five patients with each disease. Panel 1 included multiplexed immunohistochemistry staining for CD8, CD4, Foxp3, CD20, programmed death-1, and granzyme B. CD56, CD68, CD163, CD11c, and HLA-DR were analyzed in panel 2. Cell density was used to compare the expression levels of immune cells.
Results : The expression of immune cells in panel 1 was not different between diseases. Differences in cytotoxic T cells, helper T cells, and regulatory T cells identified by the double-positivity method were also not significant. However, the expression of CD68+ cells in panel 2 was the highest in intestinal BD among bowel diseases. In the co-expression method, the expression levels of M1 macrophages and dendritic cells were significantly different ($P = 0.001$, $P = 0.012$, respectively).
Conclusion : The expression of immune cells, including M1 macrophages and dendritic cells, was different between CD, intestinal BD, and intestinal TB. Immune profiling can be helpful for differential diagnoses of inflammatory bowel diseases.
Keywords : Immune Cell, Inflammatory Bowel Disease, Immunohistochemistry, Quantitative Evaluation, Differential Diagnosis

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-094

The Impact of Education on Health Beliefs and Pregnancy Knowledge among Patients with Inflammatory Bowel Disease

Eunsoo Choi, Eunsoo Kim
Gastroenterology, Kyungpook National University Hospital, Daegu, Korea

Background / Aim : Inflammatory bowel disease can occur at young age impacting birth and delivery. There is a lack of evidence focusing on pregnancy and childbirth education for patients with IBD including both genders. This study aimed to evaluate the effectiveness of the educational intervention on pregnancy knowledges and health beliefs in both male and female patients with IBD.
Methods : A randomized controlled trial was conducted in patients who visited the outpatient clinic of a tertiary hospital between 2021 and 2022. This study developed the educational materials on IBD medications during pregnancy based on the guidelines of the FDA and ECCO. Patients were randomly assigned and experimental group received individualized face-to-face education lasting 60minutes by a designated nurse, while the control group received only the supplementary materials without any additional intervention. The CCPKnow and Health Belief survey were performed two times before and after face-to-face intervention to assess the impact of education.
Results : Overall, 61 patients were included in the study (the education group 31 [male 41.9%, mean age 27.5±4.9], the control 30 [53.3%, 28.7±6]). Both groups showed improvement in their knowledge scores regarding drugs related to pregnancy in the 2nd CCPKnow. However, the experimental group showed significantly higher difference in scores, with a mean difference of 6.94±3.16 compared to 1.47±2.33 in the control group($t=9.29$, $p<.001$). Furthermore, in the 2nd Health Beliefs survey, the experimental group showed a significant improvement in the domain of belief regarding the effectiveness of medications compared to the control group ($t=2.347$, $p=.022$), and a significant improvement was observed in the total score ($p<.01$).
Conclusion : The face-to-face education on IBD medication related to pregnancy increased the level of knowledge and health belief scores. This study, by targeting the entire reproductive-age population, including men and women, with individualized education, is expected to contribute to safer pregnancies and childbirths for patients with IBD.
Keywords : IBD, Education, Pregnancy, CCPknow, HBM

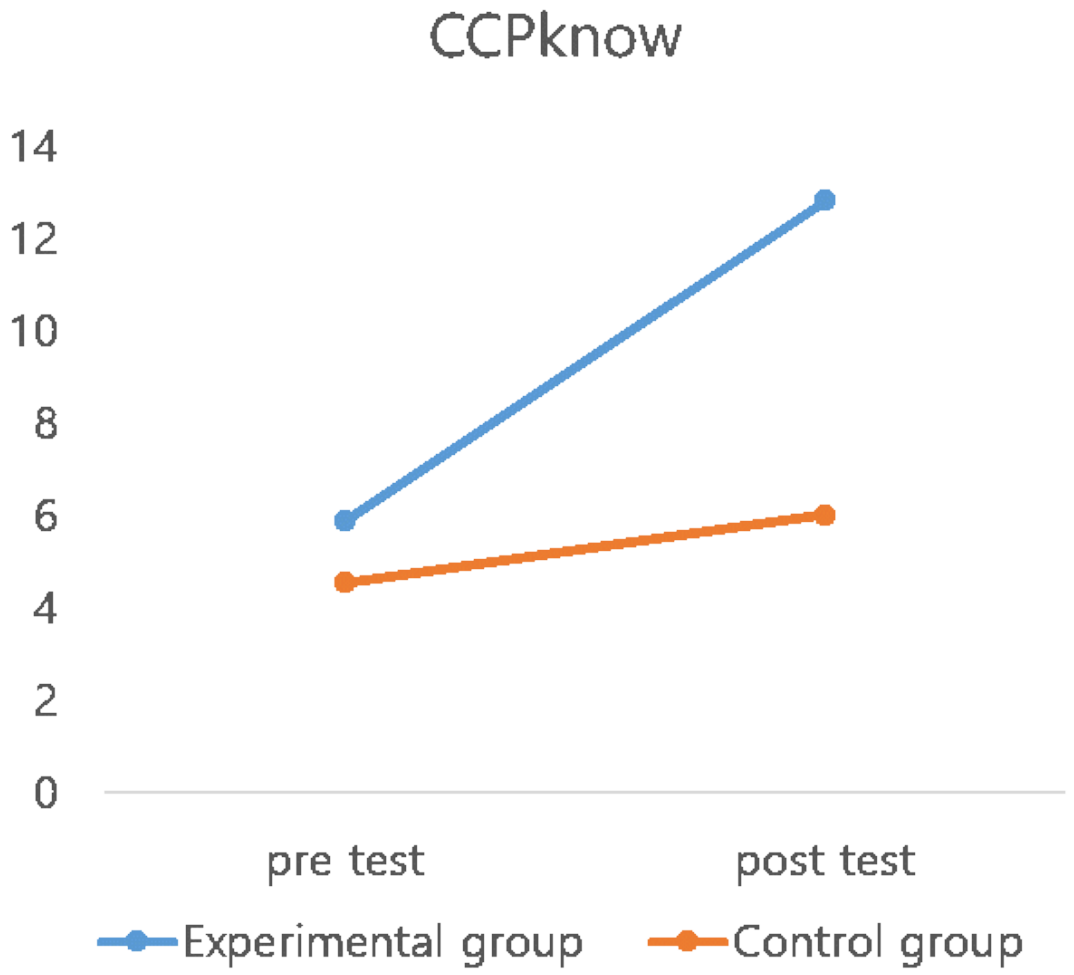


Table 1. Comparison of CCPknow between the Two Groups (N=61)

Group	Pre-test	Post-test	t	p	Difference	t	p
	Mean ± SD	Mean ± SD			Mean ± SD		
Experimental (n=31)	5.90±3.85	12.84±2.41	12.21	< .001	6.94±3.16	9.29	< .001
Control (n=30)	4.57±3.56	6.03±3.26	3.45	.002	1.47±2.33		

Table 2. Comparison of Beliefs between the Two Groups (N=61)

Characteristics	Group	Pre-test	Post-test	t	p	Difference	t	p
		Mean ± SD	Mean ± SD			Mean ± SD		
Total	Exp (n=31)	105.68 ± 8.272	108.32 ± 8.856	3.166	.004	2.645 ± 4.652	1.784	.079
	Con (n=30)	106.23 ± 12.159	103.90 ± 10.460	-1.105	.278	-2.333 ± 11.562		
Distrusts of medication	Exp (n=31)	23.03 ± 3.005	24.65 ± 3.231	3.613	.001	1.613 ± 2.486	1.744	.086
	Con (n=30)	22.73 ± 3.921	23.10 ± 3.680	0.613	.544	0.367 ± 3.275		
Perceptions of Seriousness	Exp (n=31)	17.06 ± 2.839	15.97 ± 3.178	3.512	.001	-1.09 ± 1.739	-1.648	.105
	Con (n=30)	17.00 ± 3.195	17.33±3.294	-0.86	.397	0.333 ± 2.123		
Beliefs of medication effects	Exp (n=31)	23.23 ± 3.870	23.68 ± 2.891	0.795	.436	0.452 ± 3.182	2.347	.022
	Con (n=30)	22.63 ± 3.296	21.80 ± 3.347	-1.695	.101	-0.833 ± 2.692		
Concerns about medication	Exp (n=31)	6.32 ± 1.620	7.00 ± 1.770	2.038	.05	0.677 ± 1.851	1.352	.182
	Con (n=30)	6.67 ± 1.90	6.40 ± 1.694	-0.795	.433	-0.267 ± 1.837		
Unclassified	Exp (n=31)	36.03 ± 4.191	37.03 ± 3.781	1.616	.117	1.000 ± 3.445	1.698	.095
	Con (n=30)	37.20 ± 7.774	35.27 ± 4.331	-1.319	.197	-1.933 ± 8.026		

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-095

Long-term Seton Drainage as a Definite Treatment in Crohn's Perianal Fistula: A Systematic Review and Meta-anaylsis

Sunseok Yoon[1], Ja Seol Koo[2], Woong Bae Ji[1], Jun Won Um[1], Kwang Dae Hong[1]
[1]Colorectal Surgery, Korea University Ansan Hospital, Ansan, Korea
[2]Gastroenterology and Hepatology, Korea University Ansan Hospital, Ansan, Korea

Background / Aim : Perianal fistulizing Crohn's Disease (PFCD) is a complex condition with high recurrence. The definitive draining seton (DDS) is a treatment strategy that provides effective management of local sepsis while preserving sphincter function, thereby reducing surgical morbidity. This approach may offer a viable standalone treatment option for PFCD. Our objective is to evaluate the success rate of DDS placement in controlling PFCD.
Methods : We conducted a systematic review following PRISMA guidelines. DDS was defined as seton placement for over 6 months, excluding its use as a bridge procedure to other surgeries. Data collection encompassed study information, patient demographics, primary outcomes, incontinence rates, and recurrence rates. The primary outcome was defined as overall symptom improvement, including complete remission (fistula closure) and partial response (relief from drainage and perianal pain), to evaluate DDS effectiveness. We also compared DDS outcomes with other procedures, evaluated fecal incontinence rates, and assessed recurrence rates.
Results : Our analysis included 26 studies assessing the use of DDS for PFCD involving 835 patients (Fig. 1). The weighted mean patient age was 32.9 ± 10.4 years, with 55.7% being male. The average follow-up duration was 32.6 ± 14.1 months. The pooled success rate of DDS was 62.12% (95% CI 52.51-71.73) (Fig. 2). Reported incontinence rates of DDS varied between 0% and 12%. When compared to other procedures, the log odds ratio was 0.80 (95%CI 0.27-1.32).
Conclusion : DDS is a viable treatment option for PFCD and its utility as both definitive and bridge therapy makes DDS a valuable choice for patients and physicians.
Keywords : Anal Fistula, Crohn's Disease, Crohn's Perianal Fistula, Seton, Meta-analysis

Figure 1.

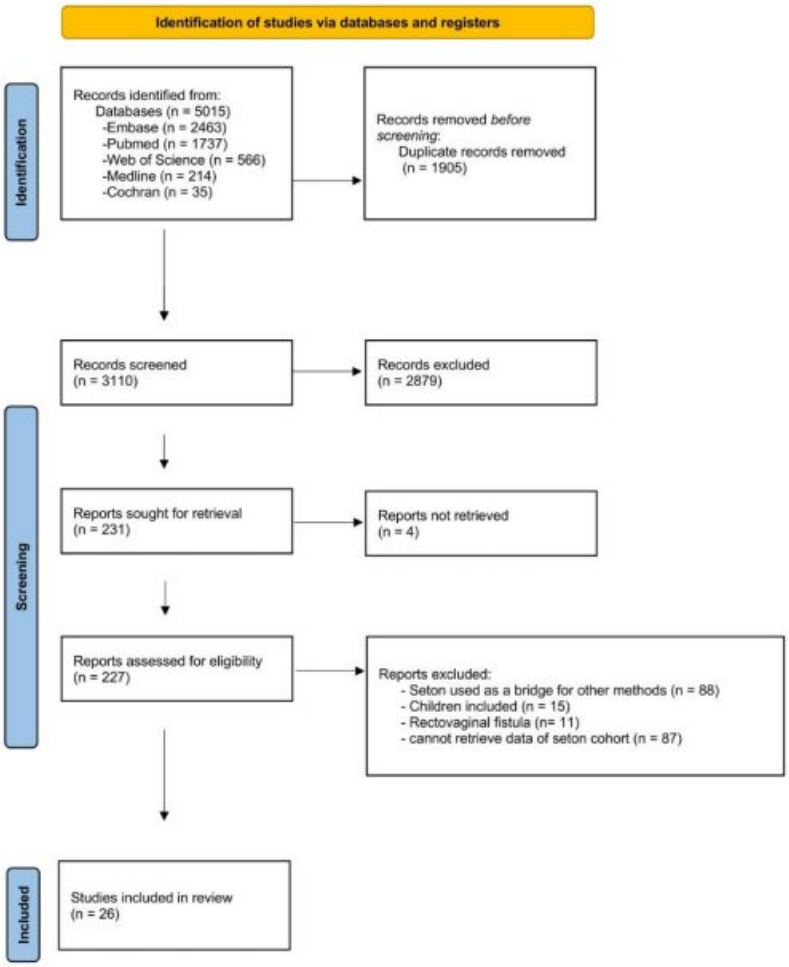
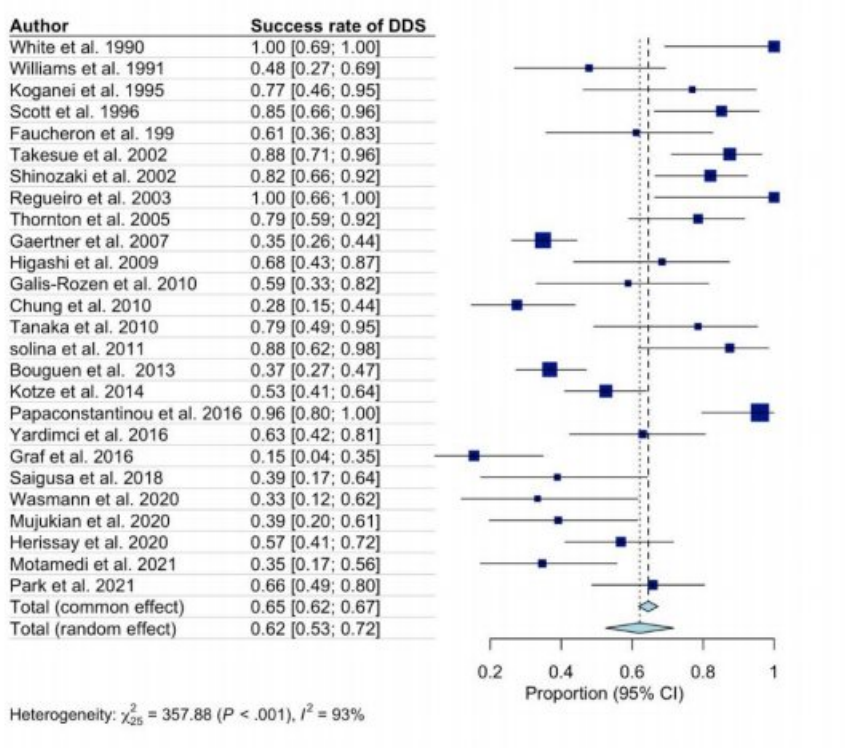


Figure 2.



[Poster Exhibition – Inflammatory Bowel Disease]

PE1-096

The Relationship between Inflammatory Bowel Disease and Income Level

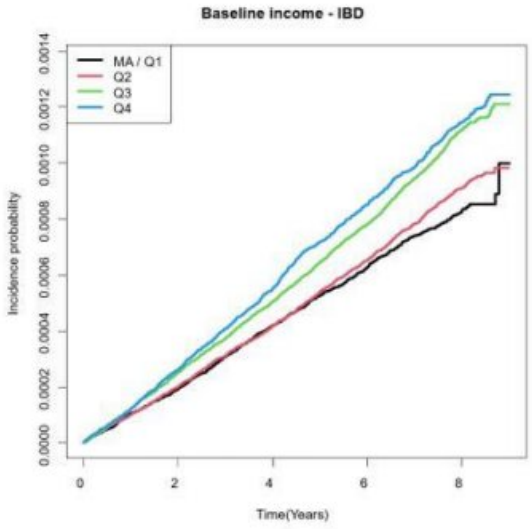
Ock Kim, Hosun Yu, Hyun Jung Lee, Jong Pil Im, Byeong Gwan Kim, Joosung Kim, Seongjoon Koh
Department of Internal Medicine and Liver Research Institute, Seoul National University College of Medicine, Seoul, Korea

Background / Aim : Although the etiology is believed to involve a complex interplay of genetic and environmental factors and dysregulation of the immune response to intestinal microbiota, the exact cause remains unclear. Historically, IBD has been more prevalent in developed Western countries, while being relatively rare in Eastern countries, including Korea. However, recent trends indicate a gradual increase in the incidence of IBD in East Asia. This study aims to analyze the impact of income levels on the occurrence of inflammatory bowel disease.
Methods : This study analyzed data from the National Health Insurance Service of Korea. The study compared 5,921,978 individuals aged 20-39 who underwent health check-ups from 2009 to 2012, serving as the control group, with 5,404 individuals diagnosed with IBD. Income levels were estimated based on insurance premiums paid in the five years preceding the health examination. Additionally, other factors that could influence the onset of IBD, such as age, gender, smoking, alcohol consumption, exercise, diabetes, hypertension, hyperlipidemia, and renal dysfunction, were adjusted to analyze the correlation between income levels and IBD occurrence.
Results : The analysis, conducted by dividing income levels into four quartiles, revealed that as income quartiles increased, the incidence of IBD also increased. Particularly, when analyzing IBD subtypes—Crohn's disease and ulcerative colitis—the relationship between income levels and disease incidence was more pronounced in ulcerative colitis. This association persisted even after adjusting for potential confounding variables.
Conclusion : The incidence of IBD increases with higher income levels and is predominantly prevalent in high-income developed countries. Further studies are needed to evaluate the outcomes of IBD according to socioeconomic status.
Keywords : IBD, Income, Incidence

Table 1. Baseline characteristics of participants with and without IBD

	IBD		
	0	1	p
n	5921978	5404	
Age, years	30.92±5	30.79±4.91	0.0555
Sex			<.0001
Male	3490275(58.94)	3750(69.39)	
Female	2431703(41.06)	1654(30.61)	
Income, Q1(Lowest)	1212587(20.48)	902(16.69)	<.0001
Smoking			<.0001
Non	3207203(54.16)	2599(48.09)	
Ex	627854(10.6)	879(16.27)	
Current	2086921(35.24)	1926(35.64)	
Drinking			0.1159
Non	2181865(36.84)	2011(37.21)	
Mild	3201067(54.05)	2945(54.5)	
Heavy	539046(9.1)	448(8.29)	
Regular exercise	766546(12.94)	681(12.6)	0.4537
Diabetes mellitus	116103(1.96)	72(1.33)	0.0009
Hypertension	445864(7.53)	368(6.81)	0.0452
Dyslipidemia	416782(7.04)	293(5.42)	<.0001
BMI, kg/m^2	23.03±3.63	22.53±3.28	<.0001
Waist circumference, cm	77.56±10.07	77.28±9.24	0.0356
Fasting glucose, mg/dL	90.95±16.74	89.79±12.85	<.0001
SBP, mmHg	117.77±13.22	117.24±12.56	0.0032
DBP, mmHg	73.81±9.49	73.38±9.06	0.0007
Total Cholesterol, mg/dL	184.78±33.8	179.47±34.34	<.0001
HDL Cholesterol, mg/dL	57.44±21.97	56.02±22.69	<.0001
LDL Cholesterol, mg/dL	104.72±34.42	102.42±33.27	<.0001
eGFR, ml/min/1.73m^2	96.08±49.98	97.23±64.19	0.092
* Triglyceride, mg/dL	96.87(96.82-96.91)	93.33(91.99-94.7)	<.0001

Figure 1. The differences in the incidence rate of inflammatory bowel disease based on income levels



[Poster Exhibition – Inflammatory Bowel Disease]

PE1-097

Optimal Interval for Therapeutic Drug Monitoring in Patients with Inflammatory Bowel Disease Receiving Stable Infliximab Maintenance Treatment

Sung Noh Hong, Yujin Lim, Boram Park, Ok Soon Jung, Dong Kyung Chang, Young-Ho Kim
Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea

Background / Aim : Recent studies suggest that proactive therapeutic drug monitoring (TDM) in patients with inflammatory bowel disease (IBD) receiving infliximab (IFX) improves clinical outcomes. However, as proactive TDM may lead to increased medical costs, we aimed to determine the optimal interval for TDM during infliximab maintenance therapy in IBD patients.
Methods : We conducted a retrospective analysis of a prospective cohort comprising 103 patients with IBD on IFX maintenance therapy who went through proactive TDM between February 2020 and May 2023. Following dose optimization till achieving a therapeutic trough level (TL) of 3 to 10 ug/mL, we applied the Kaplan-Meier (KM) method to calculate the time to subtherapeutic IFX TL (two consecutive IFX TLs below 3 ug/mL).
Results : 90% of patients had a sustained therapeutic IFX TL for 10.3 months, whilst 80% had it for 14.3 months. In multivariable analysis, IFX TL at enrollment had a association with the risk of subtherapeutic IFX TL (P=0.025). Persistence rates for therapeutic IFX TL were significantly lower in patients with IFX TL from 3 to 5 µg/mL at recruitment than in those with IFX TL >5 µg/mL (P=0.017). For patients who had IFX TL between 3 to 5 µg/mL upon enrollment, the percentage of those who maintained therapeutic IFX TL was 80% after 12.0 months. The group with IFX TL greater than 5 µg/mL had a persistence rate of 90% after 12.3 months.
Conclusion : These results suggest that conducting annual measurement of IFX TL in patients with IBD who are on stable maintenance therapy with IFX, which may reduce the cost of proactive TDM.
Keywords : Inflammatory Bowel Disease, Therapeutic Drug Monitoring, Infliximab

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-098

Correlation of Serum 25-hydroxyvitamin D Value with Disease Activity in Crohn's Disease Patients

Roland Helmizar[1], Nana Liana[2], Ruhsyahadati Ajisman[3], Sri Nani Jelmila[4], Rahma Triyana[5], Dian Puspita[6], Melya Susanti[7]

[1]Internal Medicine, Baiturrahmah University, Padang, Indonesia
[2]Pathology Anatomic, Baiturrahmah University, Padang, Indonesia
[3]Clinical Microbiology, Baiturrahmah University, Padang, Indonesia
[4]Nutrition, Baiturrahmah University, Padang, Indonesia
[5]Clinical Parasitology, Baiturrahmah University, Padang, Indonesia
[6]Cardiovascular, Baiturrahmah University, Padang, Indonesia
[7]Anatomy, Baiturrahmah University, Padang, Indonesia

Background / Aim : Vitamin D deficiency impacts the activity levels of individuals with inflammatory bowel disease (IBD). Numerous investigations suggest that vitamin D plays a role in enhancing remission rates among IBD patients. Conversely, some research indicates that there isn't a noteworthy association between the clinical activity of IBD and vitamin D deficiency. The objective of this study is to assess the correlation of serum 25-hydroxyvitamin D level with disease activity in Crohn's Disease patients.
Methods : In this cross-sectional investigation, individuals with inflammatory bowel disease (IBD) visiting the internal medicine clinic underwent testing for their 25-hydroxyvitamin D (25-OH-D) levels. Patients diagnosed with Crohn's Disease were evaluated for clinical activity utilizing the Crohn's Disease Activity Index (CDAI), categorizing a score < 150 as indicative of remission. The study included an analysis of the mean 25-OH-D levels, comparing those in remission to those in an active state among individuals with Crohn's Disease.
Results : A total of 25 subjects had Crohn's Disease. There was no significant median difference between subjects with Crohn's Disease in remission (18,07 (10,35 – 30,65) ng/ml) and active (23,03 (12,53 – 31,47) ng/ml) (p = 0,723).
Conclusion : There was no significant difference in 25-OH-D levels in patients with active Crohn's Disease compared with remission.
Keywords : 25-OH-D, Inflammatory Bowel Disease, Crohn's Disease, Disease Activity

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-099

Relationship between Irritable Bowel Syndrome on Sleep Quality, Anxiety, Depression and Quality of Life in among School Going Adolescent

Arun Kumar Rao, Rohit Rajput, Anil Gaur
Internal Medicine, Shakuntla Hospital and Research Center, Delhi, India

Background / Aim : Irritable bowel syndrome (IBS) is the most prevalent functional gastrointestinal disorders (FGIDs) that affects in different aspects of life and patients experienced depression and anxiety more than others. There have been few Asian studies regarding anxiety and depression associated IBS. The aim of this study was to evaluate the frequency, magnitude and importance of anxiety, sleep quality and depression in among school going adolescent with IBS.
Methods : A Cross-sectional survey of students of four classes from 9^{th} to 12^{th} studying in ten different government schools in Delhi metro city, India. In each school, for each of the four classes, a section was randomly selected again by the lottery method. Forty students were selected from each school reaching sample size of 470. This clinical trial study was done in IBS patients (with mild-to-moderate symptoms) divided into two case and control groups. All participants were asked to complete self-administered questionnaires: one addressing symptom severity and the hospital anxiety and depression scale (HADS). The patients were also asked to complete the IBS-specific quality of life (IBS-QOL) questionnaire.
Results : Anxiety and depression were observed in 32.1% and 34.5% of IBS patients, respectively, and in 26.6% and 17.2% of healthy subjects, respectively ($p<0.05$ for both) in school adolescent. Both anxiety and depression were associated with self-reported symptom severity ($p<0.05$ and $p<0.05$, respectively). As determined by multivariate analysis, symptom severity was the most important factor in the prediction of anxiety and depression. Self-reported symptom severity and depression were clearly and independently associated with the overall IBS-QOL score.
Conclusion : Our data suggest that assessing anxiety and depression is important when evaluating IBS patients. There is a need for early and effective identification of anxiety, depression that can prevent many psychiatric disorders at their nascent stage with irritable bowel syndrome.
Keywords : Irritable Bowel Syndrome, Depression, Adolescent Students

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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-100

Comparison between Pediatric Crohn's Disease Patients Presenting with a Single Perianal Fistula and Multiple Perianal Fistulas at Diagnosis

Seo-Hee Kim[1], Sangjun Sohn[2], Yeoun Joo Lee[2], Soon Chul Kim[3], Sujin Choi[4], Byung-Ho Choe[4], Ben Kang[4]

[1]Department of Pediatrics, Chonnam National University Medical School, Gwang-ju, Korea
[2]Department of Pediatrics, Pusan National University School of Medicine, Busan, Korea
[3]Department of Pediatrics, Chonbuk National University Medical School, Jeonju, Korea
[4]Department of Pediatrics, Kyungpook National University, Daegu, Korea

Background / Aim : Perianal fistulizing disease is present in a significant proportion of children with Crohn's disease (CD) and can be a major source of disability and psychological distress for children. We aimed to investigate the differences between pediatric Crohn's disease (CD) patients presenting with a single perianal fistula and multiple perianal fistulas at diagnosis.
Methods : This was a multicenter retrospective study conducted in 4 centers in Korea. Children and adolescents diagnosed with CD <19 years, and who had documented perianal fistulas at diagnosis were included. Clinicodemographics, results from laboratory, endoscopic, and radiologic exams were collected, and comparison was conducted between patients presenting with a single perianal fistula and multiple perianal fistulas.
Results : A total 161 patients were included. Males comprised 77.6% (125/161) of the patients and the median age at diagnosis was 14.4 years [interquartile range (IQR) 12.1–16.5]. Among the 161 patients, 94 (58.4%) had a single fistula, while 67 (41.6%) had multiple fistulas. Among the 67 patients with multiple fistulas, 54 (80.6%) had 2 fistulas, 11 (16.4%) had 3 fistulas, 1 (1.5%) had 4 fistulas, and 1 (1.5%) had 5 fistulas. Comparison between patients with single fistula and multiple fistulas revealed a significantly younger age at diagnosis in patients with multiple perianal fistulas (median 14.9 vs. 13.7 years, P = 0.011). The proportion of patients with accompanying perianal abscesses were also significantly higher in patients with multiple perianal fistulas (25.5% vs. 43.3%, P = 0.028). No other significant differences in laboratory, endoscopic, and radiologic exams were observed between the 2 groups.
Conclusion : Pediatric CD patients with multiple perianal fistulas at diagnosis are more likely to accompany perianal abscesses compared to those with single perianal fistulas.
Keywords : Crohn's Disease, Children, Perianal Fistula, Abscess

Male sex, *n (%)*	125 (77.6%)
Diagnosis age, *year*	14.4 (IQR 12.1-16.5)
Single fistula, *n (%)*	94 (58.4%)
Multiple fistulas, *n (%)*	67 (41.6%)
Perianal abscess, *n (%)*	53 (32.9%)

	Single fistula (*n*=94)	Multiple fistulas (*n*=67)	*P*
Male sex, *n* (%)	73 (77.7)	52 (77.6)	1.000
Median age at diagnosis, *years [IQR]*	14.9 [12.5–16.5]	13.7 [11.6–15.4]	0.011
Lower GI tract involvement, *n* (%)			0.916
L1	10 (10.6)	5 (7.5)	
L2	3 (3.2)	2 (3.0)	
L3	80 (85.1)	60 (89.6)	
None	1 (1.1)	0 (0.0)	
Upper GI tract involvement, *n* (%)			0.278
No involvement	13 (13.8)	6 (9.0)	
L4a	31 (33.0)	16 (23.9)	
L4ab	39 (41.5)	38 (56.7)	
L4b	11 (11.7)	7 (10.5)	
Luminal behavior, *n* (%)			0.465
B1	78 (83.0)	57 (85.1)	
B2	8 (8.5)	8 (11.9)	
B3/B2B3	8 (8.5)	2 (3.0)	
Perianal abscess, *n* (%)	24 (25.5)	29 (43.3)	0.028
History of perianal surgery before diagnosis, *n (%)*	43 (45.7)	33 (49.3)	0.780
PCDAI	45.7 ± 17.3	44.7 ± 16.2	0.708
White blood cell count, /μl	9866 ± 3101	9914 ± 2856	0.920
Hematocrit, %	37.3 ± 5.2	37.0 ± 4.4	0.625
Platelet count, $\times 10^3$/μl	410 (330–504)	424 (369–498)	0.327
Albumin, g/dL	4.1 (3.7–4.4)	4.2 (3.8–4.3)	0.229
CRP, mg/dL	2.47 (0.85–4.74)	1.63 (0.76–4.29)	0.276
ESR, mm/hr	54 (30–83)	51 (35–87)	0.734
Fecal calprotectin, mg/kg	1696 (713–3501)	1375 (444–2997)	0.368
SES-CD	17 (12–23)	15 (9–21)	0.181

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-102

Association of Inflammatory Bowel Disease with the Risk of Parkinson's Disease

Salman Hussain[1], Sidra Zayed[2]
[1]Department of Internal Medicine, Jamia Hamdard, New Delhi, India
[2]Department of Pharmacology, Jamia Hamdard, New Delhi, India

Background / Aim : Recent epidemiological studies found a high risk of Parkinson's disease (PD) in patients with inflammatory bowel disease (IBD). However, some studies found little or no risk of PD in patients with IBD. It remains controversial whether IBD enhances the risk of PD. So, this study aimed to compute the risk of PD associated with the presence of IBD

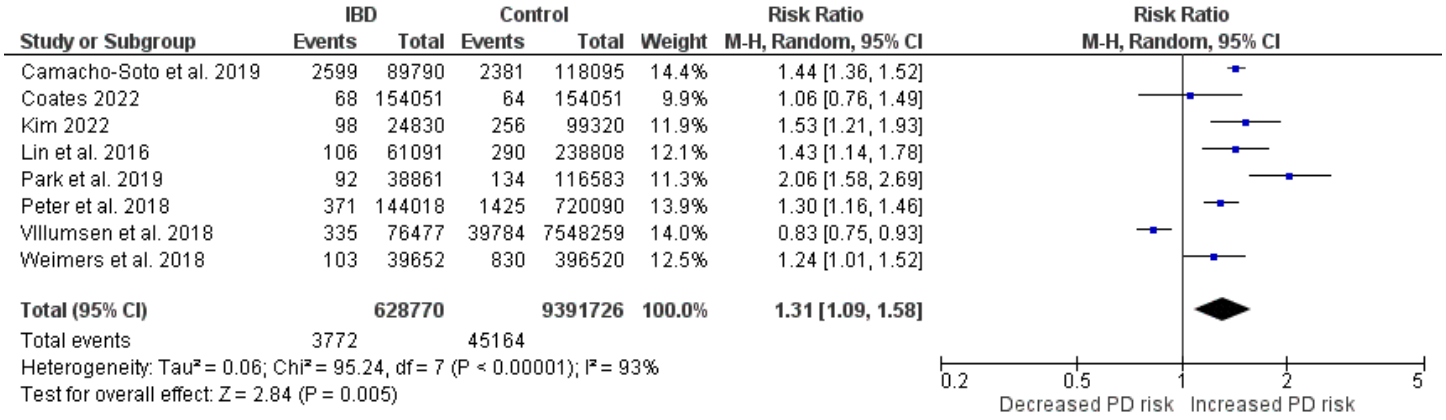
Methods : An extensive literature search was performed in PubMed, Embase, and Cochrane central from inception till December 2023. We included all the cohort and case-control studies assessing the incidence or diagnosis of PD in IBD patients. Data were extracted by one reviewer and checked by another reviewer. The quality of the studies was evaluated using Newcastle-Ottawa scale. Sensitivity analysis was performed by leave one out method. Review Manager (RevMan) was used for the statistical analysis

Results : This meta-analysis comprised of eight studies with 628770 patients with IBD and 9391726 patients with non-IBD. The study was conducted in the US (3), Denmark (1), Sweden (1), Taiwan (1), and Korea (2). The included studies were of high quality. Outcomes (PD cases) were identified using the international classification of diseases code 332 in the majority of the included studies. IBD was found to be significantly associated with an increased risk of PD with a relative risk (RR) of 1.31 (95% CI: 1.09 – 1.58), p = 0.005 [figure 1]. Similarly, significantly higher PD risk was found among patients with ulcerative colitis with RR of 1.38 (95% CI: 1.18 – 1.58), p = <0.05, while risk of PD was non-significant with Crohn's disease. Subgroup analysis revealed significantly higher PD risk based on sex, and in elderly ≥ 60 years.

Conclusion : This meta-analysis found an increased risk of PD in patients with IBD as well as in ulcerative colitis.

Keywords : Inflammatory Bowel Disease, IBD, Complication, Systematic Review, Meta-analysis

Figure 1.



[Poster Exhibition – Inflammatory Bowel Disease]

PE1-103

Protective Effect of Resveratrol Mediated Silver Nanoparticles against DSS Induced Colitis in Rodents

Ekta Yadav
Shalom Institute of Health and Allied Sciences, Sam Higginbottom University of Agriculture Technology and Sciences, Allahabad, India

Background / Aim : Oxidative stress majorly contributes in inflammatory bowel disease (IBD) etiology. Inclusion of nanocarriers for targeted delivery of natural therapeutic compounds rich in antioxidant activity may present as a promising approach for IBD treatment. In current study the colonic antioxidant and anti-inflammatory properties of resveratrol silver nanoparticles (RAgNP) were explored by using dextran sulfate sodium (DSS)-induced colitis model.
Methods : After induction of colitis, RAgNP efficacy and underlying mechanism were assessed by accounting the lesion severity, status of oxidative stress, inflammatory response along with histopathology and immunohistochemistry of colonic tissues.
Results : Results revealed that RAgNP significantly decreased the index of disease activity and fecal calprotectin marker as compared to the colitic group at higher dose level. Additionally, RAgNP also reversed oxidant / antioxidant status (ROS, SOD, CAT, GPX, H2O2 and MDA) in a dose dependent manner. RAgNP significantly reduced Nrf2 and HO-1 gene expression in addition with iNOS and COX2 expression in colonic tissues. RAgNP accelerated genes encoding occludin, JAM and MUC-2, and alleviated the level of pro-inflammatory cytokines. Histopathological study supported the protective effect of RAgNP by showing the normal architecture of colonic tissues.
Conclusion : In conclusion, the results suggested that RAgNP could act as a beneficial tool for treatment of IBD.
Keywords : Oxidative Stress, Nanoparticles, Colitis

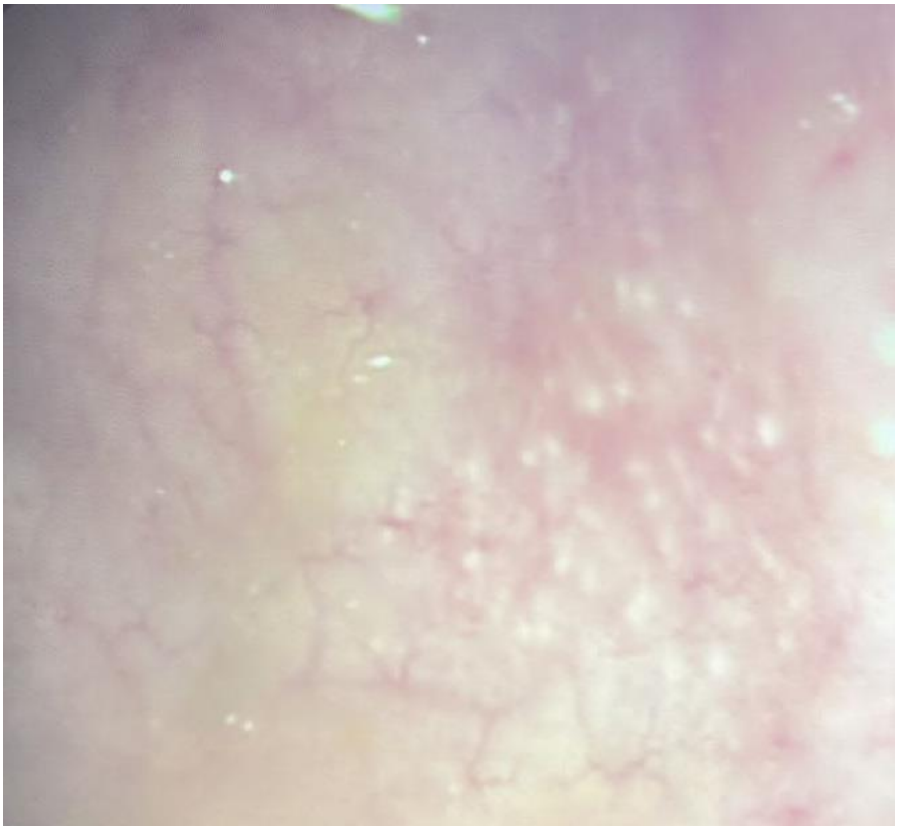
[Poster Exhibition – Inflammatory Bowel Disease]

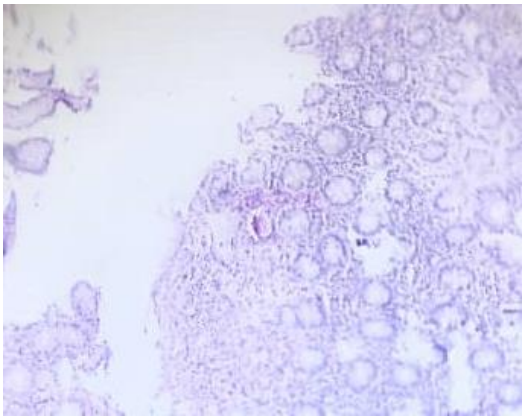
PE1-104

Schistosomal Colitis Mimicking Inflammatory Bowel Disease in a Sudanese Patient: A Case Report

Mohamed Alajab[3], Ahmed Rafei[1], Sana Dafaalla[4], Abdelmoneim Abdo[2]
[1]Research, National Center for Gastrointestinal and Liver Diseases, Khartoum, Sudan
[2]The director, National Center for Gastrointestinal and Liver Diseases, Khartoum, Sudan
[3]Internal Medicine, University of Gezira, Wad Madni, Sudan
[4]Histopathology, Histocare Center, Wad Madni, Sudan

Introduction: Schistosomiasis, a neglected tropical disease, disproportionately affects Sub-Saharan Africa, causing significant morbidity and mortality. In Sudan, where the burden is high, colonic involvement is rare, presenting diagnostic challenges. This case contributes valuable insights to the literature, highlighting the importance of recognizing schistosomal colitis in endemic regions.
Case Presentation: A 23-year-old male farmer from central Sudan presented with a six-month history of bloody diarrhea and left lower abdominal pain. Despite multiple misdiagnoses, colonoscopy revealed eosinophilic colitis due to Schistosoma infection. Praziquantel treatment resulted in rapid symptom resolution, emphasizing the critical role of accurate diagnosis and timely intervention.
Discussion: Schistosomiasis, caused by Schistosoma mansoni, often presents with nonspecific symptoms, complicating diagnosis. Colonic involvement, though rare, can lead to severe complications. The report discusses challenges in differentiating schistosomal colitis from other gastrointestinal conditions. Diagnostic methods, including stool examination, quantitative sampling, and colonoscopy, are explored. Chronic schistosomiasis induces granulomatous inflammation, potentially leading to fibrosis and precancerous disease. Diarrhea, abdominal pain, and obstructive symptoms vary in prevalence, emphasizing the need for a comprehensive diagnostic approach. Colonoscopic findings, such as edematous mucosa and schistosomal nodules, aid diagnosis, but misdiagnosis as inflammatory bowel disease is common.
Conclusion: This case emphasizes the importance of recognizing schistosomiasis in infectious colitis diagnoses in endemic areas. Healthcare providers should maintain a high index of suspicion, ensuring timely intervention. Early diagnosis and treatment are crucial to prevent complications and improve patient outcomes in regions with endemic schistosomiasis.
Keywords : Schistosomiasis, Colitis, Bilharzia, Case Report, Sudan





[Poster Exhibition – Inflammatory Bowel Disease]

PE1-105

Impact of Early Use of Immunomodulator on the Outcomes of Crohn's Disease: A Systematic Review and Meta-analysis

Jun Hwan Yoo[1], Jiyoung Yoon[2], Yu Kyung Jun[3], Hye Sun Lee[4], Jae Jun Park[5]
Information Committee of KASID
[1]Gastroenterology, CHA Bundang Medical Center, CHA University School of Medicine, Seongnam, Korea
[2]Internal Medicine, Kangdong Sacred Heart Hospital, Seoul, Korea
[3]Internal Medicine, Seoul National University Bundang Hospital, Seongnam, Korea
[4]Biostatics Collaboration Unit, Yonsei University College of Medicine, Seoul, Korea
[5]Internal Medicine, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea

Background / Aim : Although immunomodulators play a crucial role in the treatment of Crohn's disease, robust evidence regarding the impact of early use of immunomodulators on its outcomes is still limited. We aimed to conduct a systematic review and meta-analysis to assess the combined effects of early immunomodulator use on the clinical outcomes of Crohn's disease.
Methods : We searched MEDLINE, EMBASE, and the COCHRANE library to identify articles analyzing clinical outcomes according to the timing of immunomodulator administration in Crohn's disease. A meta-analysis was performed using a random-effects model to pool estimates and report hazard ratios [HRs]. Types of immunomodulators include thiopurines or methotrexate.
Results : A total of 7 studies were identified as eligible for the meta-analysis. Early immunomodulator administration within 1 to 3 years after diagnosis was associated with a lower risk of bowel resection surgery (HRs 0.57, 95% confidence interval [CI] 0.45-0.71), but it was not associated with a lower risk of perianal surgery (HRs 0.62, 95% CI 0.27 - 1.39). In subgroup analyses, early immunomodulators were effective in lowering the risk of intestinal resection in both adults and the young population.
Conclusion : Early administration of immunomodulators in Crohn's patients is associated with a lower risk of bowel resection surgery. This finding suggests that when immunomodulators are administered within an optimal therapeutic window, they possess the potential to alter the disease course in Crohn's patients.
Keywords : Crohn's Disease, Immunomodulator, Timing, Early Use, Clinical Outcome

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-106

Statins Use and the Risk of Colorectal Cancer in Patients with Inflammatory Bowel Disease: A Systematic Review and Meta-analysis

Byung Wook Jung[1], Won Myung Lee[2], Seoyoon Choi[3], Hye Sun Lee[4], Jae Jun Park[3]
[1]Internal Medicine - Gastroenterology, Hanyang University Guri Hospital, Hanyang University College of Medicine, Guri, Korea
[2]Internal Medicine - Gastroenterology, SoonChunHyang University Hospital, Bucheon, Korea
[3]Internal Medicine - Gastroenterology, Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
[4]Biostatics Collaboration Unit, Yonsei University College of Medicine, Seoul, Korea

Background / Aim : Statin use has been linked to a reduced risk of advanced colorectal adenomas; however, its association with colitis-associated dysplasia and cancer is not well-defined. We aimed to perform a systematic review and meta-analysis to assess the pooled association of statin exposure with dysplasia and colorectal cancer in patients with inflammatory bowel disease (IBD).
Methods : We searched MEDLINE, EMBASE, and the COCHRANE library to identify full text articles analyzing the risk of CRC or dysplasia development based on statin use in patients with IBD. A meta-analysis was performed using a random-effects model to pool estimates and report hazard ratios [HRs] or odds ratios [ORs], following the data format specified in the individual studies.
Results : A total of 4 studies were identified as eligible for the meta-analysis. In the analysis of studies presented with time-to-event outcomes, statin use was associated with a statistically significant reduction in risk of colorectal cancer (HR 0.76, 95% confidence interval [CI] 0.61-0.95, P=0.016). Meanwhile, in the analysis of non-time-to-event study results, statin use was associated with a trend towards lower colorectal cancer risk (OR 0.28, 95% CI 0.07-1.10, P=0.068).
Conclusion : Statin use appears to be associated with a reduced risk of colorectal cancer in patients with inflammatory bowel disease. Statins may serve as potential chemopreventive agents for long-standing IBD patients, and further large-scale prospective studies will be needed to confirm its potential benefit.
Keywords : Ulcerative Colitis, Colorectal Cancer, Statin, Chemoprevention

[Poster Exhibition – Inflammatory Bowel Disease]

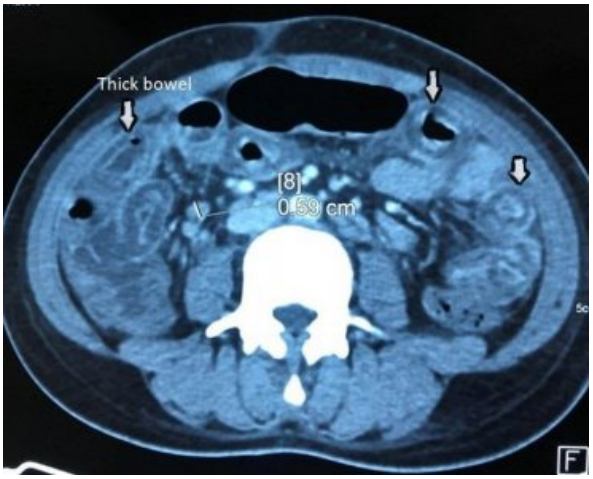
PE1-108

Systemic Lupus Erythematosus Related Small Bowel Diseases: A Case Report

Nguyen Quynh
Gastroenterology, 108 Military Central Hospital, Ha Noi, Vietnam

Systemic lupus erythematosus (SLE) is an autoimmune inflammatory disease characterized by the presence of a plethora of autoantibodies and immune complex formation. Virtually every system and organ can be affected by SLE. Lupus enteritis involving the entire gastrointestinal tract from the esophagus and stomach to the rectum. The diagnosis of SLE can be challenging, and no single clinical feature or lab abnormality can confirm SLE diagnosis. Most descriptions of enteritis involve the small bowel and SLE- related small bowel diseases is very responsive to treatment but can had devastating consequences if not detected. Gastrointestinal symptoms was not as common as lupus nephritis. This patient was young women at 38 years old. She had been not diagnosed Lupus before. When she was 35 years old, she had gone to hospital with acute abdomen pain have been check laparoscopic surgery because mistake diagnosis was acute appendicitis. After that patient had stable body. This time, the main symptoms of this patient were acute abdominal pain, and mild fever. The CT- scanner abdomen recognized thick small bowel and not arteriovenous thrombosis. After this patient tested urine test, immune test in blood, and biochemical others as protein, albumin. Result of test had protein and blood in urine test; ANA and DNA positive, reduce complement. This was the case report of SLE–related small bowel diseases diagnosis which was rare presence in 108 Military Central Hospital.

Keywords : Systemic Lupus Erythematous, Lupus Enteritis, Small Bowel Diseases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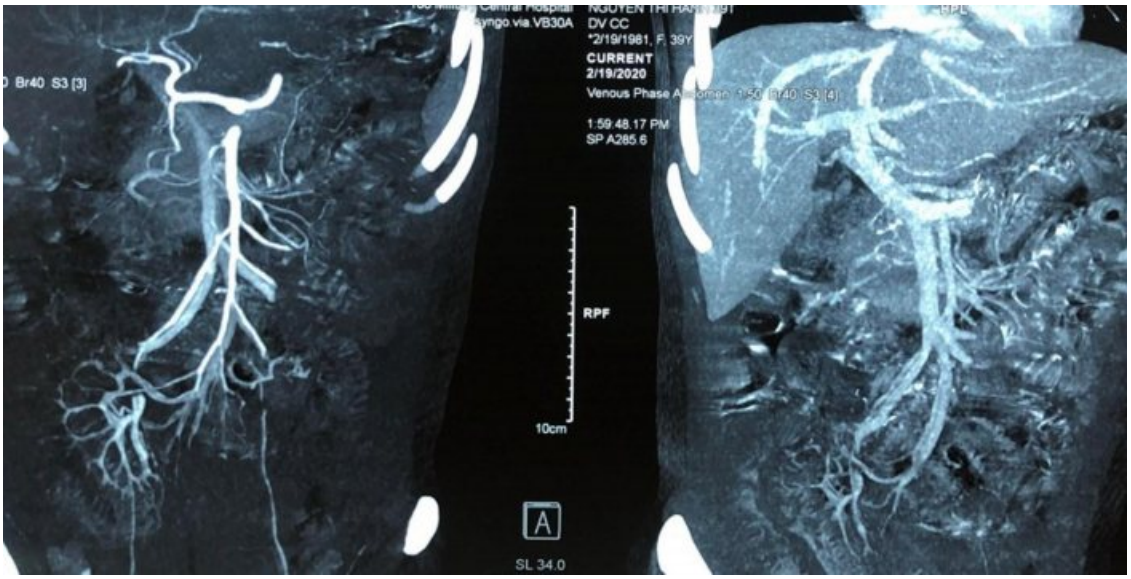
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[Poster Exhibition – Inflammatory Bowel Disease]

PE1-109

Quality of Life of Patients in Inflammatory Bowel Disease Literature Review

Derizal Derizal[1], Putri Ayu[2], Roland Helmizar[3]
[1]Tourism, IP Trisakti, Jakarta, Indonesia
[2]Economics, Andalas University, Padang, Indonesia
[3]Health, Baiturrahmah University, Padang, Indonesia

Background / Aim : Inflammatory Bowel Disease (IBD) has recently increased a lot globally in adolescents and adults. Based on the type of IBD that are attacked, e two most common forms of IBD are Crohn's disease and ulcerative colitis. IBD cannot be completely cured but the sufferer can achieve remission through medical therapy, one of which is suppressing the immune system. However, the impact of treatment therapy will affect the patient's quality of life. This study aims to identify the quality of life in Crohn's disease and ulcerative colitis and provide recommendations.
Methods : The method used is identify 15 papers published from 2010-2019. The study was using cross-sectional studies and longitudinal studies and compare the quality of life IBD patients.
Results : The results show that there were any indicators that showed the quality of life of patients based on HRQoL (SF-36v2), Short Form-36 (SF-36 PCS / MCS) and EuroQol 5-dimensional 3-level (EQ-5D- 3L) and self-questionnaire itself. Female, mixed-race, family history are likely to get IBD disease. This study shows that the indicators of Physical Functioning, Systemic Functioning, Social Functioning, Bowel Functioning and emotional Functioning affect the quality of life of patients after treatment. The indicator of financial difficulties also showed a decrease after treatment. Patients who have a low level of education is not needed a long time to recovery of level of fatigue, emotional and physical functioning them.
Conclusion : On an average of several articles, Physical Functioning, Systemic Functioning, Social Functioning, Bowel Functioning and emotional Functioning decline are a real impact for people with IBD on QoL. So, in addition to patients paying attention to treatment it is necessary to pay attention to quality of life with the support of care, nutrition and education for sufferers.
Keywords : Quality of Life, Inflammatory Bowel Disease, Literature Review

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-113

A Prospective Study on the Effects of Ramadan Intermittent Fasting on Inflammatory Markers, Disease Severity, Depression, and Quality of Life in Patients with Inflammatory Bowel Diseases

Andi Makkasau[1], Andi Tenrilia[3], Andi Nursanti[2]
[1]Management of Health, Alami GSB, Polewali Mandar, Indonesia
[2]Pharmachy, Andini Persada College of Health Sciences, Mamuju, Indonesia
[3]Computer Science, Al Asyaria Mandar University, Polewali Mandar, Indonesia

Background / Aim : Intermittent fasting (IF) during the month of Ramadan is part of the Muslim religious ritual. The effect of intermittent fasting on disease activity in inflammatory bowel disease (IBD) remains unknown. This is the first study to assess the effect of IF during Ramadan on inflammatory markers in patients diagnosed with IBD. The impact on clinical disease activity, quality of life, and depression levels was also assessed through a review of previous studies.
Methods : The study used secondary data reviewing the diagnoses of patients with ulcerative colitis (UC) or Crohn's disease (CD) who intended to fast during Ramadan. Assessment before and after Ramadan: Serum CRP and fecal calprotectin, Mayo partial score, Harvey Bradshaw index (HBI), simple IBD questionnaire (SIBDQ), and Hamilton depression scale questionnaire.
Results : Twenty CD and sixty UC individuals with a diagnosis of IBD were enrolled. Before and after fasting, there were no significant differences in serum CRP or fecal calprotectin levels (median CRP 0.53 vs 0.50, P value = 0.27; calprotectin 163 vs 218, P value = 0.62, respectively). A statistically significant improvement was observed in the Mayo partial score (mean: 1.79 vs 2.33, median 1 before vs 1 after fasting; P value = 0.02). The median Harvey-Bradshaw index was 4 vs. 5 (P=0.4), indicating no change was seen after fasting. Age and baseline calprotectin level were associated with greater changes in Mayo score after fasting, according to multiple linear regression analysis (P values = 0.02 and 0.01 for each condition).
Conclusion : IF during Ramadan is associated with worsening clinical parameters in patients with a diagnosis of UC; this impact is particularly evident in elderly patients and patients with higher baseline calprotectin levels. However, IF did not appear to impair objective inflammatory markers (CRP and calprotectin) throughout Ramadan.
Keywords : Intermittent Fasting, Inflammatory Bowel Disease, Ramadan

[Poster Exhibition – Inflammatory Bowel Disease]

PE1-116

Gastrointestinal Distress was Brought on by a Bacteria Infection and an Event. Inflammatory Bowel Disease: A Comprehensive Analysis

Balwan Singh
Department of Pharmacy, KIET School of Pharmacy, KIET Group of Institutions, Delhi-NCR, Ghaziabad, UP, India-201206;, Ghaziabad, India

Background / Aim : The main objective we had in conducting this comprehensive analysis was to define the significance of GI sickness in occurrence inflammatory bowel disease (IBD) risk. Our secondary goal was to synthesize the available clinical data in order to offer physiological background information for the correlations across GI infections and IBD threat.
Methods : Up to December 2022, we methodically examined electronic databases. Included were clinical trials that offered risk estimates for the correlation between GI infections and incident IBD. For clinical investigations seeking to characterize the processes behind GI pathogens and the susceptibility to or defense against IBD, the inclusion requirements were more expansive
Results : Among the research investigations found, 21 satisfied all eligibility requirements. Particularly, Salmonella species and Campylobacter species showed persistent positive correlations with the incidence of occurrence IBD in trials involving clinical gastroenteritis. Among viruses, norovirus was linked to a higher chance of CD incidents. A thorough review of the clinical data indicates that several microbial and immunologic channels are involved in the hypothesized processes.
Conclusion : This comprehensive study indicates that while some enteric infections may be protective, others are linked to an elevated risk of incident IBD. In addition to any potential therapeutic or preventive benefits, prospective studies are necessary to elucidate the clinical consequences of these enteric bacteria on the development and progression of IBD.
Keywords : Inflammatory Bowel Disease, Infection, Epidemiology, Prevalence

[Poster Exhibition – Colorectal Neoplasia]

PE2-001

The Role of Rab Coupling Protein (RCP) in Metastasis and Infiltration of Colorectal Cancer: A CHASID Multicenter Study

Jieun Ryu[1], Kyu Chan Huh[2], Jeong Eun Shin[3], Yunho Jung[4], Sang-Bum Kang[5]
[1]Healthcare center, Konyang University Hospital, Daejeon, Korea
[2]Internal Medicine, Konyang University College of Medicine, Daejeon, Korea
[3]Internal Medicine, Dankook University College of Medicine, Cheonan, Korea
[4]Internal Medicine, Soonchunhyang University College of Medicine, Cheonan, Korea
[5]Internal Medicine, Daejeon St. Mary's Hospital, College of Medicine, Daejeon, Korea

Background / Aim : The critical role of Rab coupling protein (RCP) which increases cellular invasion and induces metastasis via controlling cell-permeable proteins is known for breast, ovary, stomach and nasopharynx cancer. On the contrary, in esophageal and Her2-positive breast cancer, RCP acts the opposite way. However, little is known about the mechanism of RCP in colorectal cancer. This is the first study to investigate RCP expression in colorectal cancer and establish a hypothesis for the role of RCP in control mechanism of colorectal cancer metastasis.
Methods : Tissues via operation from 120 patients (30 patients for each 1 to 4 cancer stage) diagnosed with colorectal cancer were analyzed. Immunohistochemistry (IHC) was used to detect the presence of RCP and epidermal growth factor receptor (EGFR). The subclassified IHC staining was divided into 4 scores of 0 to 3, where the total proportion of cells staining positively at any intensity was scored as 0 (no cell staining), 1 (1%-25%; weak staining), 2 (26%-50%; moderate) and 3 (over 50%; strong).
Results : The expression of RCP was significantly and inversely correlated with malignant progression and stage of tumor. As the cancer stage increases, the proportion of subjects with low RCP score tends to increase. In stage 4, the percentage of score 0 was 10%, which was highest of all stages. In particular, for stage 1, there was no subject with score 0 or 1. Meanwhile, the difference in EGFR expression level according to the stage is not statistically significant. Additionally, as stage increased, CEA and CA 19-9 marker level increased by linear, statistically significantly.
Conclusion : Our study showed that in colorectal cancer, RCP inhibits cancer metastasis and invasion similar to esophageal cancer. Further studies on RCP-related transcription factors in the mechanism of colon cancer metastasis are needed.
Keywords : Cancer Progression, Rab Coupling Protein, Colorectal Neoplasia

Image 1. IHC score of RCP expression according to colon cancer stage

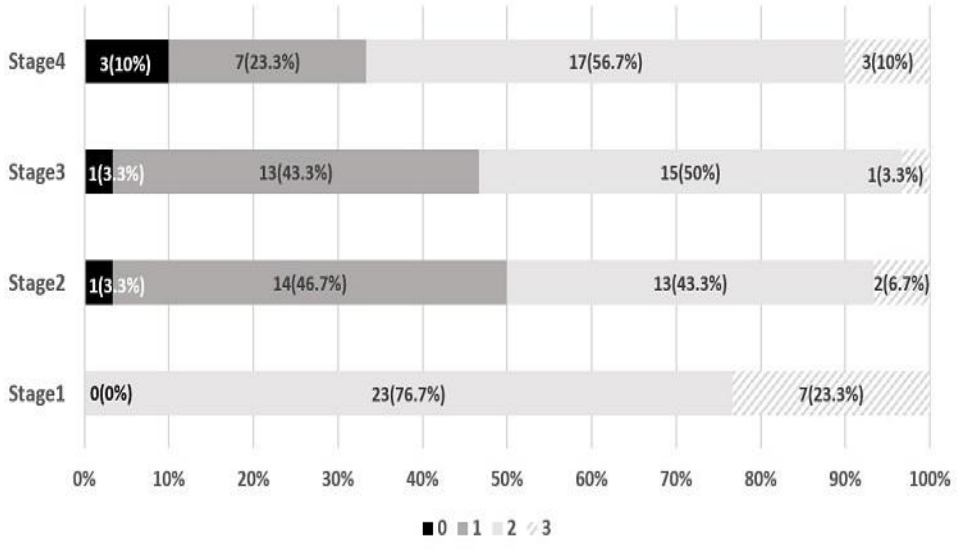

Image 2. IHC score of EGFR expression according to colon cancer stage

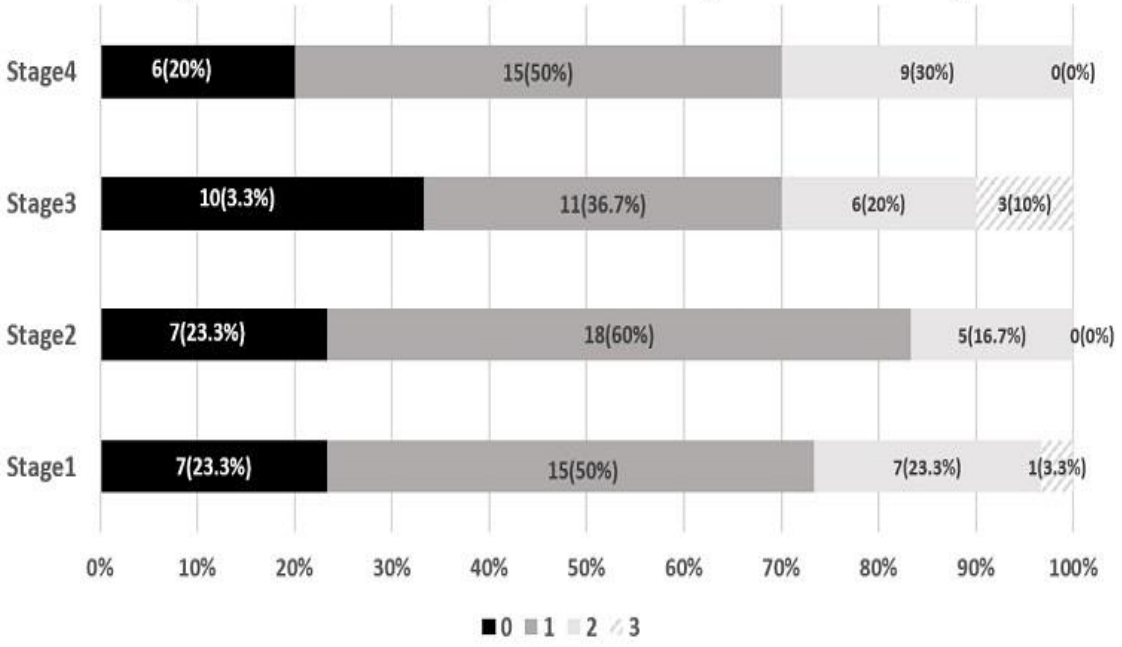

Table 1. The linear association of CEA and CA 19-9 with colon cancer stage

	Stage	N	Average	SD	p-value
CEA	1	30	2.07	1.16	<0.000
(ng/ml)	2	30	4.58	5.03	
	3	30	10.93	31.12	
	4	29	30.05	70.00	
CA 19-9	1	29	9.18	5.28	<0.000
(U/ml)	2	26	13.78	17.44	
	3	30	18.14	21.64	
	4	28	308.07	592.59	

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[Poster Exhibition – Colorectal Neoplasia]

PE2-002

Risk of Perforation of Self-expandable Metal Stents Who Received Bevacizumab compared to Stent Alone or Non-bevacizumab Chemotherapy in Patients with Advanced Colorectal Cancer: A Systematic Review and Meta-analysis

Soo-Young Na[1], Seong Jung Kim[2], Eun Sun Kim[3], Yunho Jung[4]
[1]Internal Medicine, College of Medicine, The Catholic University of Korea, Incheon, Korea
[2]Internal Medicine, College of Medicine, Chosun University, Gwangju, Korea
[3]Internal Medicine, College of Medicine, Korea University, Seoul, Korea
[4]Internal Medicine, College of Medicine, Soonchunhyang University, Cheonan, Korea

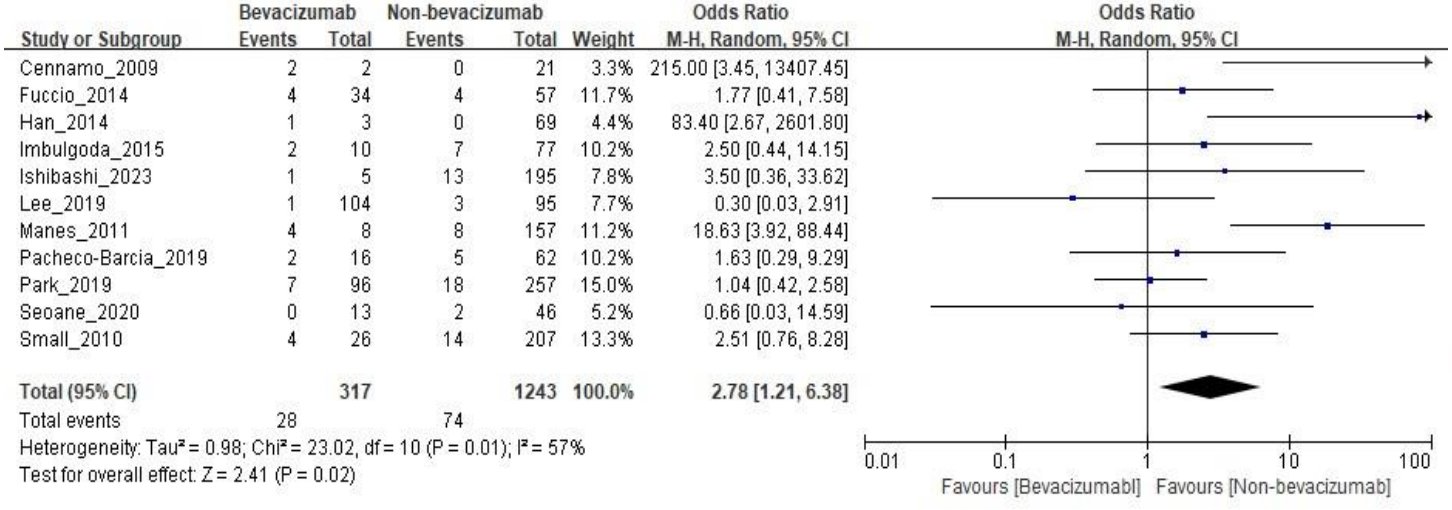
Background / Aim : Bevacizumab is an anti-angiogenic monoclonal antibody targeting vascular endothelial growth factor used to treat advanced colorectal cancer (CRC). Self-expandable metal stents (SEMS) are employed in cases of advanced obstructive CRC but are linked to adverse events like bleeding, stent migration, and bowel perforation. To date, it is unclear whether bevacizumab-based chemotherapy increases the risk of perforation in patients with SEMS. Therefore, we conducted a systematic review and meta-analysis to evaluate the risk of bevacizumab-related perforation in these patients.

Methods : We conducted a comprehensive literature search from major databases until December 2023. We identified all potential studies that evaluated the risk of colonic perforation in patients with bevacizumab-based chemotherapy after SEMS insertion. We compared the risk of colonic perforation in patients who received bevacizumab-based chemotherapy with patients who received chemotherapy without bevacizumab or best supportive. We calculated the odds ratio (OR) and 95% confidence interval (CI) using a M-H random-effects model and I-square method.

Results : Twelve studies, including 1,599 patients, met our inclusion criteria and were included in the meta-analysis. Of 1,559 SEMS patients, 320 received bevacizumab-based chemotherapy, and 1,274 received chemotherapy without bevacizumab or best supportive care. A total of 106 perforations have been reported. The risk ratio for colonic perforation in bevacizumab-based chemotherapy was 2.78 (95% CI: 1.21-6.38, p=0.02; I^2=57%) when compared to non-bevacizumab-based therapy (Fig. 1). In sub-group analysis, bevacizumab-based chemotherapy showed increased risk of perforation when compared with chemotherapy without bevacizumab (OR, 3.71; 95% CI: 1.43-93.5; p=0.007; I^2=0), but no statistically significant difference when compared with SEMS alone (OR, 3.75; 95% CI: 0.64-22.08; p=0.14; I^2=62%).

Conclusion : Bevacizumab-based chemotherapy appears to increase the risk of perforation in advanced CRC patients after SEMS compared with non-bevacizumab-based therapy. These results were especially pronounced in chemotherapy without bevacizumab than in SEMS alone.

Keywords : Colorectal Cancer, Self-expandable Metal Stent, Bevacizumab, Perforation



[Poster Exhibition – Colorectal Neoplasia]

PE2-003

TRAIL Resistance-mediated CD44 Expression Facilitates Cancer Stemness of Colon Cancer Cells and Lung Metastasis of Colon Cancer in Animal Models

Se Lim Kim, Min Woo Shin, Seung Young Seo, Byung Chul Jin, Sang Wook Kim
Department of Internal Medicine Research Institute of Clinical Medicine,
Jeonbuk National University Hospital, Jeonbuk National University Medical School, Jeonju, Korea

Background / Aim : Accumulating evidence suggests that tumors are composed of a heterogeneous cell population with a small subset of cancer stem cells (CSCs) that sustain great tumorigenicity. Moreover, CSCs are closely correlated with drug resistance, tumor relapse and poor prognosis. Tumor necrosis factor–related apoptosis–inducing ligand (TRAIL) is being evaluated as an attractive target for various malignancies. However, resistance to TRAIL has been reported in a number of clinical trials. In this study, we investigated whether TRAIL resistance contributes to subpopulation of CSCs, the role of CSCs in colon cancer cells, and metastasis in preclinical models.
Methods : We established TRAIL resistant HCT116 human CRC cells (HCT116-TR) by repeatedly treating. The characteristics of cancer stemness were assessed by FACs analysis, sphere formation and western blotting. Isolation of $CD44^+$ population in HCT116-TR cells was done using fluorescence-activated cell sorter. The metastatic capacities of CRC cells were evaluated by in vivo lung metastatic models induced by tail vein injection.
Results : We found that HCT116 cells (highly sensitive to TRAIL) became resistant to TRAIL by repeated treatment. The HCT116-TR cells displayed higher levels of sphere formation, cell motility and increased the ratios of $CD44^+$. After sorting of CD44 high expressing HCT116-TR cells, the cells consistently maintained high level of CD44. Then, we observed more spheres formation, higher TRAIL resistance, aggressiveness and the levels of cancer stemness marker in $CD44^+$ HCT116-TR cells, compared to HCT116-TR cells. Interestingly, $CD44^+$ HCT116-TR cells showed highly activated STAT3 and SPHK1, which interact with CD44 during cancer progression. We also found that TRAIL sensitivity and cancer stemness in $CD44^+$ HCT116-TR cells are diminished by CD44 depletion. Using animal models, we demonstrated that CD44 showed great metastatic capacity and knockout of CD44 attenuates lung metastasis.
Conclusion : These data implicates that targeted therapy against the CD44 could be applied to overcome TRAIL resistance and inhibit CRC metastasis.
Keywords : TRAIL, Resistance, CD44, Cancer Stem Cells, Metastasis

[Poster Exhibition – Colorectal Neoplasia]

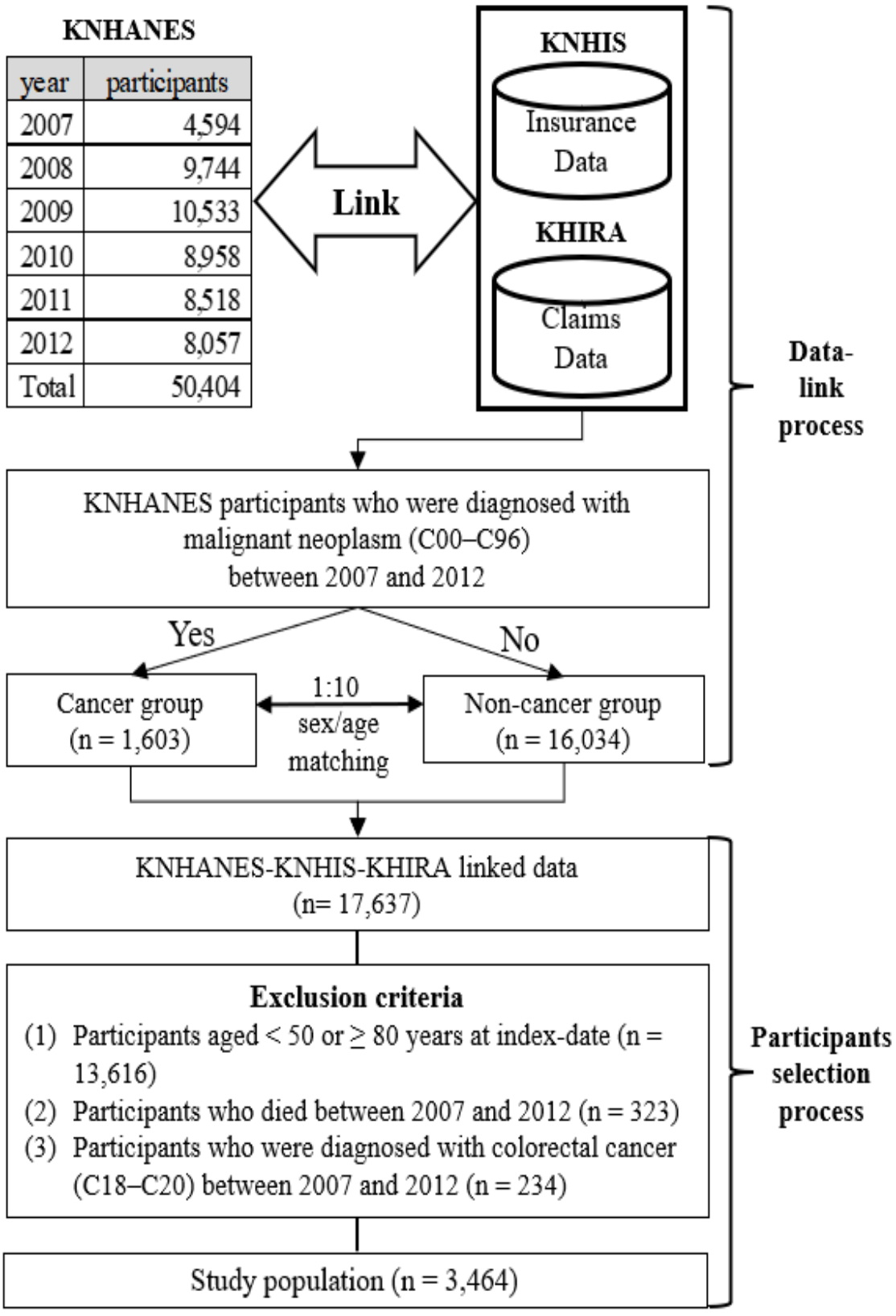
PE2-004

Factors Affecting Adherence to National Colorectal Cancer Screening: A 12-year Longitudinal Study using Multi-institutional Pooled Data in Korea

Dae Sung Kim[1], Jeeyoung Hong[2], Jong-Yeup Kim[3]
[1]Gastroenterology, Konyang University College of Medicine, Daejeon, Korea
[2]Biomedical Research Institute, Konyang University Medical Center, Daejeon, Korea
[3]Department of Biomedical Informatics, Konyang University College of Medicine, Daejeon, Korea

Background / Aim : Consistent uptake of colorectal cancer (CRC) screening is important to reduce the incidence and mortality from advanced-stage CRC and increase the survival rate of the patients. We conducted a longitudinal study to determine the factors affecting CRC screening compliance in Korean adults using individual-level linked data from the Korean National Health and Nutrition Examination Survey (KNHANES), Korean National Health Insurance Service (KNHIS), and Korean Health Insurance Review and Assessment Service (KHIRA).
Methods : We selected 3,464 adults aged 50–79 years as the study population and followed them for 12 years (Jan 2007–Dec 2018). The outcome variable was the level of adherence to CRC screening, categorized as nonadherent, intermittently adherent, and consistently adherent. An ordinal logistic regression model was designed to determine the socioeconomic factors, family history of CRC, and medical conditions that could facilitate the consistent uptake of CRC screening.
Results : The results showed a significant and positive association between consistent uptake of colorectal cancer (CRC) screening and the 100–150% income category (odds ratio [OR], 1.710; 95% confidence interval (CI) 1.401–2.088); clerical, sales and service job category (OR, 1.962; 95% CI, 1.582–2.433); residency at medium-sized cities (OR, 1.295; 95% CI, 1.094–1.532); high-school graduation (OR, 1.440; 95% CI, 1.210–1.713); married status (OR, 2.281; 95% CI, 1.946–2.674); use of employment-based national health insurance (OR, 1.820; 95% CI, 1.261–2.626]); use of private insurance (OR, 2.259, 95% CI, 1.970–2.589); no disability (OR, 1.428; 95% CI, 1.175–1.737); family history of CRC (OR, 2.027, 95% CI, 1.514–2.714); and history of colorectal neoplasm (OR, 1.216; 95% CI; 1.039–1.422).
Conclusion : The lack of regular participation in CRC screening programs in the Republic of Korea was found to be an issue that requires attention. Policies on CRC screening must place increased emphasis on strengthening educational and public relations initiatives.
Keywords : Colorectal Cancer, Cancer Screening, Secondary Prevention, Follow Up Studies

Colorectal Cancer



Variables	Odd ratios (95% Confidence interval)
Women (vs men)	0.916 (0.802–1.046)
Age at year 2007, years (vs 50–59)	
60–69	0.961 (0.826-1.117)
70–79	0.211 (0.175-0.254)
Household income / median income (vs <50% (the poorest))	
50 to <100%	1.356 (1.156-1.590)
100 to <150%	1.710 (1.401-2.088)
150 to <200%	1.390 (1.060-1.823)
≥200%	1.384 (1.050-1.826)
Occupational class (vs Never worked and others)	
Self-employed entrepreneurs and farmers	1.481 (1.117-1.962)
Manual workers	1.010 (0.812-1.257)
Clerical, sales and service workers	1.962 (1.582-2.433)
Low-level professionals	1.309 (1.048-1.635)
High-level professionals and managers	1.493 (1.101-2.024)
Place of residence (vs Rural)	
Small-medium cities	1.295 (1.094-1.532)
Metropolitan cities	1.252 (1.065-1.473)
Education level (vs Elementary school graduate or less)	
Middle school graduate	1.427 (1.178-1.728)
High school graduate	1.440 (1.210-1.713)
College graduate or higher	1.101 (0.900-1.346)
Marital status (vs Unmarried, separated or divorced)	2.281 (1.946-2.674)
Type of public health insurance (vs Medicaid)	
National health insurance, self-employed	1.650 (1.136-2.398)
National health insurance, employed	1.820 (1.261-2.626)
Private health insurance (vs Not having)	2.259 (1.970-2.589)
Disability (vs Disabled)	1.428 (1.175-1.737)
Services through local public health organization (vs Not having)	0.856 (0.677-1.081)
History of all cancer except colorectal cancer (vs Not having)	1.040 (0.893-1.211)
Family history of colorectal cancer (vs Not having)	2.027 (1.514-2.714)
Having gastrointestinal hemorrhage (vs Not having)	1.051 (0.851-1.298)
Having bowel habit change (vs Not having)	0.998 (0.869-1.147)
Having neoplasm of colon or rectum (vs Not having)	1.216 (1.039-1.422)
Having inflammatory bowel diseases (vs Not having)	1.077 (0.781-1.483)

[Poster Exhibition – Colorectal Neoplasia]

PE2-005

Association between Colonoscopy and Colorectal Cancer Mortality and All-cause Mortality according to Different Age Group: A Population-based Cohort Study in a South Korea

Ji Young Lee[1], Jae Myung Cha[2], Su Bee Park[2], Jin Young Youn[2], Min Seob Kwak[2], Hun Hee Lee[3]
[1]Health Screening and Promotion Center, Asan Medical Center, College of Medicine, University of Ulsan, Seoul, Korea
[2]Internal Medicine, Kyung Hee University Hospital at Gang Dong, Kyung Hee University School of Medicine, Seoul, Korea
[3]Big Data Center, Kyung Hee University Hospital at Gang Dong, Seoul, Korea

Background / Aim : This study aimed to evaluate the association between colonoscopy and colorectal cancer (CRC) incidence and CRC related mortality in the elderly population in South Korea.
Methods : We conducted a propensity-score matched, retrospective, nationwide, population-based cohort study. Participants aged ≥40 years who underwent colonoscopy from January 2010 to December 2013 were enrolled. Subsequently, 1:1 propensity-score matching was performed with individuals from the general population who did not receive a colonoscopy. Participants were then followed up for ten years. The primary outcomes were CRC development and CRC-related mortality, and the secondary outcome was all-cause mortality, comparing the colonoscopy group with the non-colonoscopy group.
Results : Of the 748,986 participants with an average follow-up of 9.64 ± 0.99 years, colonoscopy reduced the risk of CRC development by 46% and CRC related mortality by 71%, with most benefits observed in the middle-aged group (50-65 years). However, the reduction in all-cause mortality was modest for those aged 40-75 and not significant for participants over 75 years.
Conclusion : Colonoscopy effectively reduces CRC incidence and mortality in overall population. However, its benefits in reducing all-cause mortality are limited in the participants aged ≥ 76 years, suggesting the need for age-specific CRC screening approaches in older populations.
Keywords : Screening, Colonoscopy, Colorectal Neoplasm, Old Age

[Poster Exhibition – Colorectal Neoplasia]

PE2-006

Clinical Outcome of Colorectal Neoplasm with Positive Resection Margin after Endoscopic Submucosal Dissection

Hyung-Hoon Oh, Dong-Hyun Kim, Dae-Seong Myung, Hyun-Soo Kim, Young-Eun Joo
Department of Internal Medicine, Chonnam National University Medical School, Gwangju, Korea

Background / Aim : A positive or indeterminate resection margin after endoscopic submucosal dissection (ESD) of a colorectal neoplasm warrants intensive follow-up as it is associated with an increased risk of local recurrence. However, it may be caused by cauterization or tangenitial cutting of the specimen. We aimed to find the clinical significance of positive resection margin in colorectal neoplasms after ESD.
Methods : We enrolled 632 patients who underwent enbloc colorectal ESD at two hospitals in between 2015 to 2020. The inclusion criteria were: 1) enbloc resected 2) show positive or indeterminate margin status in vertical and/or horizontal margin 3) had at least 1 follow up colonoscopy. The recurrence rates and presence or absence of residual tumor at surgical specimen were evaluated
Results : This study included 411 patients with noninvasive lesions and 218 patients with carcinoma in situ and T1 colorectal cancers. 557 patients had complete resection without margin involvement and 75 patients had incomplete resection with positive or indeterminate resection margin. Among 75 patients with incomplete resection, 55 patient underwent surveillance colonoscopy and 20 patients underwent surgical resection. High risk resection was considered as followings: 1) Deep margin positive 2) more than 1000μm submucosal invasion depth 3) lympho-vascular invasion 4) undifferentiated cancer 5) high tumor budding grade. Residual tumor was found in 7 patients and all of them had at least two risk factors. Recurrence rate was 0.4% for complete resection and 2.7% for incomplete resection which was statistically significant, but they were all cured with subsequent operation. In patients with noninvasive lesions, all 411 patients including both complete and incomplete resection had no recurrence.
Conclusion : A positive resection margin after en bloc ESD for noninvasive lesions was not associated with recurrence. In T1 colorectal cancer with positive deep resection margin, salvage surgery can be considered in selected patients with additional risk factors.
Keywords : Colorectal Cancer, ESD, Colorectal Neoplasm, Positive Margin

Table1. Baseline characteristics of enrolled patients

Patients	complete resection	Incomplete resection	P value
Number of patients	557	75	
Age	65.7±10.4	64.0±10.8	0.359
Sex			
Male	334 (60)	43 (57.3)	0.654
Female	223 (40)	32 (42.7)	
Polyp morphology			
Type I	105 (18.8)	19 (25.3)	0.182
Type II	452 (81.2)	56 (74.4)	

Central ulceration or depression	138 (24.7)	20 (26.7)	0.716
Location			
1: cecum	52 (9.3)	6 (8.0)	0.267
2: Ascending colon	121 (21.9)	14 (18.7)	
3: Transverse colon	95 (17.0)	9 (12.0)	
4: Descending colon	24 (4.3)	2 (2.7)	
5: Sigmoid colon	122 (21.9)	24 (32.0)	
6: Rectum	143 (25.6)	20 (26.6)	
Fibrosis			
None	348 (62.4)	45 (60)	0.726
mild	141 (25.4)	22.4 (25.3)	
severe	68 (12.2)	11 (14.7)	
Non-lifting sign			
well lifting	389 (69.7)	48 (64.0)	0.496
mild non lifting	115 (20.8)	17 (22.7)	
severer non lifting	53 (9.5)	10 (13.3)	
Polyp size			
Long axis	21.5±10.4	23.7±13.9	0.179
Short axis	18.4±9.7	19.8±11.2	0.583
> 30mm	116 (20.8)	22 (29.3)	0.092
> 40mm	36 (6.5)	7 (9.3)	0.352
>50 mm	10 (1.8)	1 (1.3)	0.775
Final diagnosis			
HP	7 (1.3)	0 (0)	
SSL	16 (2.9)	2 (2.7)	
LGD	202 (36.2)	19 (25.3)	
SSL with dysplasia	11 (2.0)	1 (1.3)	
TSA	3 (0.5)	0 (0)	
HGD	135 (24.7)	18 (24.0)	
superficical carcinoma	153 (27.4)	14 (18.7)	
Deep invasive carcinoma	30 (5.4)	21 (28.0)	
Margin status			
lateral margin		20 (26.7)	
deep margin		15 (20.0)	
both margin		5 (6.7)	
indeterminate		35 (46.7)	
Follow up months	25.5±65.6	26.6±19.9	0.698
Number of follow up colonoscopy	2.2±1.5	2.1±1.4	0.178
Recurrence	2 (0.4)	2 (2.7)	0.018

Table 2. Pathological parameters and the presence of residual tumor in patients who underwent additional surgery

	Complete resection (residual tumor at surgical specimen)	Incomplete resection (residual tumor at surgical specimen)
Number of operation	20/557 (3.6)	22/75 (31.9)
Reason for operation		
Deep margin positive only		4 (0)
>1000μm submucosal invasion depth	12 (0)	6 (0)
deep margin positive + other risk factors	0	11 (7)
>1000um submucosal invasion depth and other risk factors	3 (1)	
Undifferentiated cancer	1 (0)	
Recurrence	2 (2)	2 (2)
Tumor budding	2 (0)	
non specific	0 (0)	1 (0)

[Poster Exhibition – Colorectal Neoplasia]

PE2-007

Detection Rate and Risk Factors of Isolated Terminal Ileal Ulcer during Colonoscopy: A Single-center Cross-sectional Study

Dongshuai Su, Jie Han, Rongrong Cao, Chengkun Li, Yingchao Li, Cong Gao, Xiaodong Shao, Xingshun Qi

Department of Gastroenterology, General Hospital of Northern Theater Command, Shenyang, China

Background / Aim : There is an increase in the detection rate of isolated terminal ileal ulcer (ITIU) during colonoscopy. However, its clinical significance remains unknown. This study aimed to explore the detection rate and risk factors of ITIU in individuals undergoing colonoscopy.

Methods : Overall, 11504 consecutive individuals who underwent colonoscopy at our department from July 1, 2021 to December 31, 2022 were retrospectively screened. Among the individuals who completed terminal ileum (TI) intubation, the detection rate of ITIU was calculated. Among the individuals with complete baseline data, age, gender, body mass index (BMI), clinical features, and endoscopic findings were compared between ITIU and non-ITIU groups. Logistic regression analyses were performed to identify the independent factors associated with ITIU. Odds ratios (ORs) with their 95% confidence intervals (CIs) were calculated.

Results : Overall, 9649 individuals completed TI intubation with an ITIU detection rate of 1.3% (123/9649). Among them, 2314 individuals had complete baseline data. Compared with the non-ITIU group, the ITIU group was significantly younger (46.81±15.47 vs. 51.94±14.30, P=0.006) and had significantly higher proportions of BMI ≥28 kg/m^2 (22.0% vs. 12.3%, P=0.026) and ileocecal valvulitis/colitis (27.1% vs. 15.6%, P=0.017). Multivariate logistic regression analyses showed that age ≤50 years (OR=1.721, 95%CI=1.016-2.913, P=0.043), BMI <18.5 kg/m^2 (OR=2.731, 95%CI=1.127-6.620, P=0.026), BMI ≥28.0 kg/m^2 (OR=2.035, 95%CI=1.068-3.875, P=0.031), and ileocecal valvulitis/colitis (OR=1.924, 95%CI=1.068-3.466, P=0.029) were independently associated with ITIU.

Conclusion : ITIU is common during colonoscopy, suggesting the necessity of TI intubation. Young individuals who are underweight or obese may have a higher probability of suffering from ITIU.

Keywords : Isolated Terminal Ileal Ulcer, Terminal Ileum Intubation, Age, Body Mass Index, Inflammatory Bowel Disease

[Poster Exhibition – Colorectal Neoplasia]

PE2-008

Sedated Colonoscopy may Not be Beneficial for Polyp/Adenoma Detection

Jie Han, Rongrong Cao, Dongshuai Su, Yingchao Li, Cong Gao, Ke Wang, Fei Gao, Xingshun Qi
Department of Gastroenterology, General Hospital of Northern Theater Command, Shenyang, China

Background / Aim : Sedated colonoscopy has been increasingly selected. However, the effect of sedated colonoscopy on polyp/adenoma detection rate (PDR/ADR) remains controversial among studies.
Methods : We retrospectively collected the medical records of 11504 consecutive patients who underwent colonoscopy at our department from July 1, 2021 to December 31, 2022. Patients were divided into sedated and unsedated groups according to the use of intravenous sedation during colonoscopy. Overall PDR/ADR, right-side, transverse, and left-side colon PDR/ADR, and single and multiple PDR/ADR were calculated. By adjusting for age, gender, body mass index, inpatient, screening/surveillance, cecal intubation time, and colonoscopy withdrawal time, multivariate logistic regression analyses were performed to evaluate the association of sedated colonoscopy with overall PDR/ADR, right-side, transverse, and left-side colon PDR/ADR, and single and multiple polyps/adenomas detection, where the absence of PDR/ADR was used as reference. Odds ratios (ORs) with their 95% confidence intervals (CIs) were calculated.
Results : Overall, 2275 patients were included, of whom 293 and 1982 underwent sedated and unsedated colonoscopy, respectively. Multivariate logistic regression analyses showed that sedated colonoscopy was independently associated with lower overall PDR/ADR (OR=0.699, 95%CI=0.505-0.968, P=0.031), right-side colon PDR/ADR (OR=0.581, 95%CI=0.411-0.823, P=0.002), and multiple polyps/adenomas detection (OR=0.634, 95%CI=0.436-0.921, P=0.017), but not transverse or left-side colon PDR/ADR or single polyp/adenoma detection.
Conclusion : Sedated colonoscopy may not be beneficial in terms of overall PDR/ADR, right-side colon PDR/ADR, and multiple polyps/adenomas detection. Thus, it should be selectively recommended. Additionally, it should be necessary to explore how to improve the quality of sedated colonoscopy.
Keywords : Sedated Colonoscopy, Unsedated Colonoscopy, Polyp Detection Rate, Adenoma Detection Rate

[Poster Exhibition – Colorectal Neoplasia]

PE2-009

Risk Factors of Residual Tumors in Histologically Incompletely Resected Rectal Neuroendocrine Tumors

Jung-Bin Park, Seung Wook Hong, Sung Wook Hwang, Sang Hyoung Park, Byong Duk Ye, Jeong-Sik Byeon, Seung-Jae Myung, Suk-Kyun Yang, Dong-Hoon Yang
Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

Background / Aim : Salvage resection for incompletely resected rectal neuroendocrine tumors (NETs) are frequently performed. However, the salvage resection specimen may reveal no residual tumor in histology. We aimed to identify the incidence and risk factors of histologic residual NETs in the salvage resection of the incompletely resected rectal NETs.
Methods : We retrospectively reviewed the clinical data of patients who underwent salvage endoscopic resections for incompletely resected rectal NETs between January 2020 and August 2023.
Results : Out of the 378 patients referred from outside hospitals with pathology slides, 95 underwent salvage resection. Salvage resection specimens contained residual NETs in 46 patients (48.4%). The frequency of residual NETs was 70% (21/30) in cases in which primary treatment was cold forceps polypectomy (CFP), 40% (10/25) in cases of cold snare polypectomy with or without saline injection, and 42.9% (15/35) in cases of hot snare polypectomy with or without saline injection. There were no remaining lesions in cases in which removal was carried out with modified endoscopic mucosal resection (EMR) or endoscopic submucosal dissection (ESD) (n=5). Univariate and multivariate analyses were performed to evaluate the risk factors associated with residual tumors in histologically incompletely resected rectal NETs. Residual tumors were associated with the initial resected specimen not including submucosa (OR 3.91, CI 0.93–16.53; P=0.057), endoscopic suspicion of residual tumors before salvage resection (OR 15.56, CI 2.94–82.35, P=0.002), and CFP as the initial resection method (OR 3.60, CI 0.90–14.42, P=0.043).
Conclusion : Among incompletely resected rectal NETs, the rates of residual tumors in salvage resection specimens were significantly higher in those treated by CFP, snare polypectomy, and EMR compared to those treated by modified EMR or ESD. Endoscopic suspicion of residual tumors before salvage resection, the initial resected specimen not including submucosa, along with CFP as the initial resection method, are associated with residual tumors in histologically incompletely resected rectal NETs.
Keywords : Rectal Neuroendocrine Tumor, Salvage Resection, R1 Resection

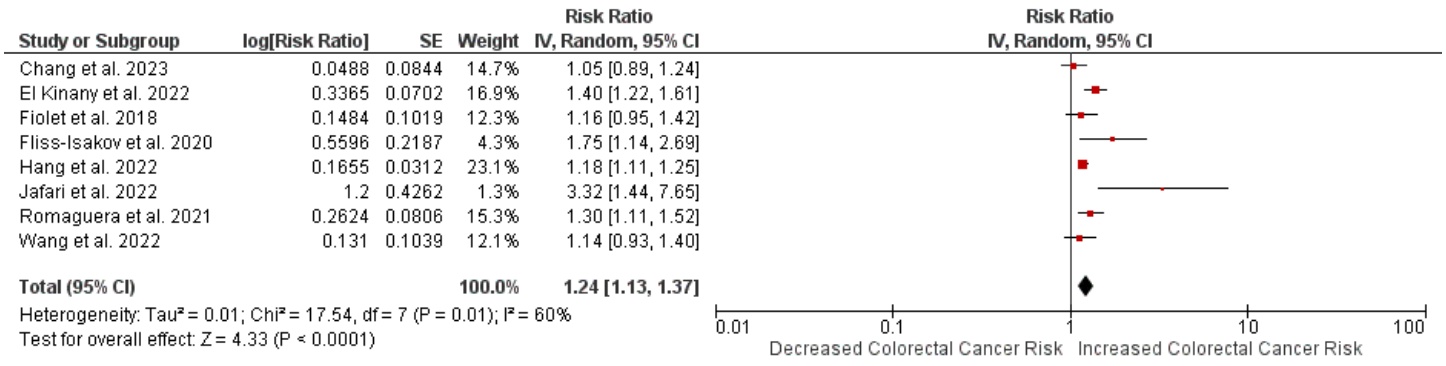
[Poster Exhibition – Colorectal Neoplasia]

PE2-011

Association of High Ultra-Processed Food Consumption and Risk of Colorectal Cancer: A Meta-Analysis of Real-world Evidence

Sidra Zayed[1], Salman Hussain[2]
[1]Department of Pharmacology, Jamia Hamdard, New Delhi, India
[2]Department of Internal Medicine, Jamia Hamdard, New Delhi, India

Background / Aim : Evidence from published epidemiological studies found inconsistent evidence on the association between ultra-processed food consumption and risk of colorectal cancer. The present study was aimed to understand the association between ultra-processed food consumption and risk of developing colorectal cancer.
Methods : Electronic databases PubMed, and Embase were searched till December 2023 for studies assessing the association between ultra-processed food consumption and risk of colorectal cancer by two independent investigators. Study selection, data extraction and risk of bias were assessed by investigators independently. Newcastle-Ottawa Scale (NOS) was used to assess the risk of bias. The primary outcome was to compute the pooled colorectal cancer risk due to ultra-processed food consumption after adjusting for multiple confounding factors. Secondary outcomes include colorectal cancer risk based on study design, sample size, age group, and others in uptake of ultra-processed food. Certainty of evidence was evaluated using GRADE evaluation methodology.
Results : This meta-analysis was based on eight studies with a total of 661560 patients. Included studies were of moderate to low risk of bias. A significantly increased risk of colorectal cancer risk was found in the highest level of ultra-processed food consumption group as compared to the low consumption group with a pooled relative risk (RR) of 1.24 (95% CI: 1.13 – 1.37), p <0.0001 (Figure.1). Subgroup analysis based on study design also revealed significantly increased colorectal cancer risk in high ultra-processed food consumption group as compared to the low consumption group (cohort studies: RR 1.16, 95% CI: 1.10 – 1.23; case-control studies: RR 1.45, 95% CI: 1.22 – 1.73). Evidence was of low certainty as per the GRADE rating system.
Conclusion : High consumption of ultra-processed food was found to be significantly associated with the increased risk of colorectal cancer. Clinicians and nutritionist should advise the patients to limit the total consumption of ultra-processed food.
Keywords : Colorectal Cancer, Epidmiology, Meta-analysis, Ultra-processed Food



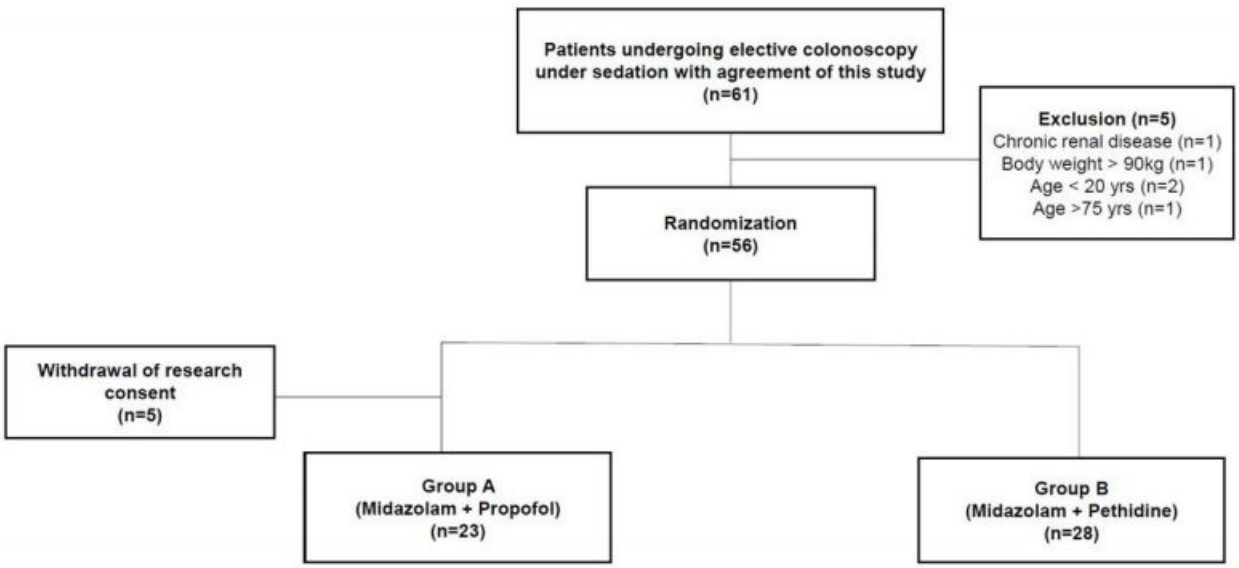
[Poster Exhibition – Colorectal Neoplasia]

PE2-012

Comparison of Synergistic Sedation with Midazolam and Propofol versus Midazolam and Pethidine in Colonoscopies: A Prospective, Randomized Controlled Study

Yohan Lee, Hyun-Soo Kim, Seon-Young Park, Dong-Hyun Kim
Division of Gastroenterology, Department of Internal Medicine,
Chonnam National University Hospital and Medical School, Gwangju, Korea

Background / Aim : Colonoscopy is crucial for the early detection of colorectal cancer. However, discomfort associated with this procedure often necessitates sedation, and the optimal sedation method remains unclear.
Methods : We conducted a prospective randomized controlled study in which patients undergoing colonoscopy were randomly assigned to one of two treatment regimens. Group A received midazolam and propofol, while group B received midazolam and pethidine.
Results : A total of 51 patients were included in the analysis, with 23 and 28 patients in groups A and B, respectively. Adverse events did not significantly differ between the two groups. Additionally, there were no differences in cecal intubation and total procedural times. However, group A demonstrated a lower frequency of postural changes (1.0±0.7 vs. 1.5±0.7, p=0.02) and a reduced rate of manual compression (52.2% vs. 82.1%, p=0.02). There were no significant differences between the two groups in terms of subjective pain or satisfaction.
Conclusion : Both sedation methods demonstrated similar safety profiles and satisfactory outcomes. The combination of midazolam and propofol showed comfortable insertion by minimizing the need for patient repositioning and manual compression during colonoscopy.
Keywords : Colonoscopy, Conscious Sedation, Endoscopy, Midazolam, Propofol



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[Poster Exhibition – Colorectal Neoplasia]

PE2-013

Endoscopic Ultrasonography for Submucosal Cushion Measurement to Determine Eligibility for Endoscopic Submucosal Dissection in Ulcerative Colitis-associated Dysplasia: A Case Series

Kyuwon Kim[1], Seung Wook Hong[2], Sung Wook Hwang[2], Sang Hyoung Park[2], Byong Duk Ye[2], Jeong-Sik Byeon[2], Seung-Jae Myung[2], Suk-Kyun Yang[2], Dong-Hoon Yang[2]
[1]Gastroenterology, Chung-Ang University Hospital, Seoul, Korea
[2]Gastroenterology, Asan Medical Center, Seoul, Korea

Background / Aim : Endoscopic submucosal dissection (ESD) has gained traction as an effective therapy for ulcerative colitis (UC)-associated dysplasia, yet identifying fitting ESD candidates is challenging by substantial submucosal (SM) fibrosis from chronic inflammation. We report our experience utilizing endoscopic ultrasonography (EUS) to assess ESD eligibility by measuring SM cushion thickness.
Methods : Retrospective case-series includes nine patients who were diagnosed with UC-associated dysplasia in surveillance colonoscopies between August 2017 and October 2023. After scanning dysplastic lesions, saline or diluted hyaluronic acid solution was injected into the SM layer. EUS with a mini-probe quantified SM cushion beneath the dysplastic lesion. Shallow (less than 2.0 mm) SM cushion at diffuse area was considered ineligible for ESD.
Results : A total of ten lesions from nine patients were evaluated before ESD, as shown on Table 1. Median disease duration was 19 years, and median age at diagnosis of UC-associated dysplasia was 50 years. Median SM cushion thickness of ESD-eligible lesions was 4.2 mm at the thinnest site and 6.9 mm at the thickest site (Table 2). Eight lesions met the criteria and underwent ESD, while two lesions were regarded as unsuitable for ESD due to insufficient SM cushion thickness. Median resection time was 50 minutes, and median size of resected specimens and lesions were 31.5 x 24.5 mm and 16.0 x 12.5 mm, respectively. En bloc resection was achieved in all cases, with an 87.5% (7/8) R0 resection rate. No perforation occurred but delayed bleeding occurred in one patient.
Conclusion : EUS-measured SM cushion thickness provides objective information of the lifting status after submucosal injection and may indicate the resectability of UC-associated dysplasia.
Keywords : Endoscopic Ultrasonography, Endoscopic Submucosal Dissection, Ulcerative Colitis, Dysplasia

Table 1. Baseline characteristics of the patients and endoscopic features of UC-associated dysplasia

	Sex	Age[a]	Disease duration, yr	Disease extent[b]	No. of dysplasia	Endoscopic features of dysplastic lesions						
						Location	Peri-lesional UCEIS	Paris classification	Kudo's Pit pattern	JNET type	Surface ulcer	Border of lesion
Patient 1	F	58	19	Extensive	1	Rectum	2	IIa	IV, Vi mild	2A	N	Distinct
Patient 2	F	38	12	Extensive	1	Rectum	1	IIa	III_L	2A	N	Distinct
Patient 3	M	50	3	Extensive	2	Rectosigmoid junction	2	IIa	III_S, III_L, IV	2A	N	Distinct
						Sigmoid	2	IIa	III_L	2A	N	Distinct
Patient 4	M	37	16	Left-sided	1	Sigmoid	1	IIa+Is	IV	2A	N	Distinct
Patient 5	M	61	21	Extensive	1	Sigmoid	1	IIa	II, III_L	2A	N	Distinct
Patient 6	M	63	10	Extensive	1	Rectum	2	IIa	III_L	2B	N	Distinct
Patient 7	M	59	33	Extensive	1	Sigmoid	2	IIb	II, III_S	3	N	Indistinct under chromoendoscopy
Patient 8	M	44	21	Extensive	1	Rectum	2	IIa	III_L	2B	N	Distinct
Patient 9	M	49	19	Extensive	1	Sigmoid	1	IIa+Is	III_L	2B	N	Distinct

Abbreviations. UC, ulcerative colitis; yr, year; No., number; UCEIS, Ulcerative Colitis Endoscopic Index of Severity; JNET, Japan NBI Expert Team; M, male; F, female; Y, yes; N, no
[a]Age at diagnosis of the dysplasia was presented.
[b]Disease extent at diagnosis of the dysplasia was presented.

Table 2. Procedure-related features and outcomes

	Procedure-related features									Histologic result	Complications	
	SM cushion (range), mm	Size of the specimen, mm		Size of the lesions, mm		ESD time, min	*En bloc* resection	R0 resection	SM fibrosis	Final histology	Delayed bleeding	Perforation
		long axis	short axis	long axis	short axis							
Patient 1	2.7–5.8	24	20	7	6	29	Y	Y	Mild	HGD	N	N
Patient 2	4.9–5.7	33	28	16	14	57	Y	Y	Mild	LGD	N	N
Patient 3[a] Lesion #1	4.1–8.6	34	23	14	11	43	Y	Y	Mild	LGD	N	N
Patient 3[a] Lesion #2	1.5–5.1 (mostly 1.5)	*NA*	*NA*	16[b]	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
Patient 4	1.7–4.6 (1.7 at a very focal area)	30	24	15	12	41	Y	Y	Severe	LGD	N	N
Patient 5	4.3–4.6	54	34	34	20	100	Y	Y	Mild	SSL	Y, POD#4	N
Patient 6	6.0–8.0	29	21	25	10	60	Y	Y	Severe	LGD	N	N
Patient 7[c]	1.3–1.9 (mostly 1.3)	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	Multiple HGDs and LGDs	*NA*	*NA*
Patient 8	9.9–10.7	26	25	16	13	30	Y	Y	Mild	HGD	N	N
Patient 9	2.5–8.9	59	55	53	44	210	Y	Lateral margin involved by LGD	Severe	Superficial SM cancer	N	N

Abbreviations. SM, submucosal; ESD, endoscopic submucosal dissection; min, minute; Y, yes; N, no; HGD, high grade dysplasia; LGD, low grade dysplasia; SSL, sessile serrated lesion; NA, not available or not applicable; POD, postoperative day
[a]Considering 1.5 mm of SM cushion thickness of lesion #2, Patient 3 underwent ESD only for lesion #1.
[b]In Patient 3, the size of Lesion #2 was estimated under endoscopy.
[c]Considering the average 1.3 mm of SM cushion thickness, Patient 7 was deemed unsuitable for ESD and underwent surgery.

[Poster Exhibition – Colorectal Neoplasia]

PE2-014

Risk of Developing Metachronous Advanced Colorectal Neoplasia at Follow-up Colonoscopy in Patients with Nonadvanced Adenomas

Jung Kim, Ji Yeon Seo, Jung Ho Bae
Internal Medicine, Healthcare System Gangnam Center, Seoul National University Hospital, Seoul, Korea

Background / Aim : The US Multi-Society Task Force recommend 3-5 years surveillance interval for 3-4 nonadvanced adenomas (NAAs), but European Society of Gastrointestinal Endoscopy guidelines recommend 10-year screening. We analyzed the risk of metachronous advanced colorectal neoplasia (ACRN) stratified by the number of NAAs in baseline colonoscopy.
Methods : 17999 pairs of colonoscopies from 11321 patients, aged 50-75 years, who underwent colonoscopies at least twice with an interval more than 1 year from January 2004 to December 2019 were analyzed. Patients with advanced adenoma, sessile serrated lesion, traditional serrated adenoma, or cancer detected at the baseline colonoscopy were excluded. We categorized pairs of colonoscopies according to the number of baseline NAAs. Group 1, no adenoma (n = 10728); group2, 1-2 NAAs (n = 5967); group3, 3-4 NAAs (n = 1048); group4, ≥5 NAAs (n = 256).
Results : Compared with group2, the adjusted hazard ratios (HR) (95% confidence interval) for ACRN was 0.40 (0.33-0.49), 2.15 (1.54-2.99), 4.37 (2.75-6.94) for group 1, 3, 4, respectively. Compared with group3, the adjusted HR for ACRN was 2.00 (1.61-2.48) for group 4. Cumulative incidence for ACRN in group 1,2,3,4 was 0.39%, 1.41%, 2.39%, 5.86% in 3 years, 1.25%, 2.66%, 4.01%, 6.64% in 5 years, and 2.10%, 2.88%, 4.01%, 7.42% in 7 years.
Conclusion : We found that patients with 3-4 NAAs had a higher metachronous ACRN risk compared with patients with 1-2 NAAs and lower risk compared with patients with ≥5 NAAs. The guidelines should consider extending surveillance intervals rather than screening in patients with 3-4 NAAs.
Keywords : Metachronous Advanced Adenoma, Number of Nonadvanced Adenoma, Colonoscopy, Follow-up

[Poster Exhibition – Colorectal Neoplasia]

PE2-015

Enhancing Sensitivity and Efficiency in cfDNA Library Preparation for Improved Detection of ctDNA in Colorectal Cancer Patients

Sang Hyun Kim[1], Bora Keum[1], Han Jo Jeon[1], Hyuk Soon Choi[1], Eun Sun Kim[1], Yoon Tae Jeen[1], Hoon Jai Chun[1], Hwayeon Jeong[2], Eunyoung Cho[2], Hana Kim[2], Jina Seo[3], Daechan Park[3], Cheulhee Jung[2]

[1]Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea
[2]Department of Biotechnology, Korea University, Seoul, Korea
[3]Department of Molecular Science and Technology, Ajou University, Suwon, Korea

Background / Aim : Circulating cell-free DNA (cfDNA) has emerged as a prominent biomarker in cancer diagnosis and monitoring. cfDNA offers distinct advantages, including its non-invasive collection method, enabling repetitive testing, and its relatively short half-life, which closely reflects the current disease status.
Methods : Currently, targeted deep sequencing is the predominant approach for cfDNA analysis, yet there is a growing effort to employ whole-genome sequencing (WGS) to assess cancer-related alterations comprehensively. However, achieving WGS analysis requires substantial sequencing data production, thus necessitating considerable costs and high sample preparation efficiency. Consequently, this highlights the need for research into efficient methods for preparing samples suitable for next-generation sequencing (NGS) analysis. In this study, we developed a method for preparing NGS libraries based on a highly efficient ligation technique to analyze tiny quantities of cfDNA. Our approach involved the stepwise attachment of adaptors to the blunt-end of templates, thereby increasing the overall efficiency of library preparation and minimizing the occurrence of undesirable by-product. The enhanced efficiency of NGS library preparation was verified using gel retardation assays. Additionally, we assessed the feasibility of analyzing low levels of genetic variations through NGS using artificial cfDNA (horizon discovery). Finally, we applied this method to analyze clinical cfDNA samples collected from patients with colorectal cancer.
Results : Through this study, we have increased the efficiency of template and adaptor ligation. Subsequently, we applied this improvement to the NGS library preparation method, confirming its enhanced efficiency compared to conventional approaches. Furthermore, we conducted comparative analyses of WGS results from clinical samples prepared using the developed and conventional NGS preparation methods. This has provided evidence for improved sensitivity and the potential utility of WGS analysis for cfDNA.
Conclusion : In this research, we aim to improve the efficiency of cfDNA library preparation and apply it to clinical practice for more accurate diagnosis and monitoring of colorectal cancer patients.
Keywords : Circulating Tumor DNA, Next-generation Sequencing, Colorectal Cancer

[Poster Exhibition – Colorectal Neoplasia]

PE2-016

Optimization of Single-Nucleotide Variant On-Off Discrimination-PCR and Its Clinical Application in Colorectal Cancer Patients

Sang Hyun Kim[1], Bora Keum[1], Han Jo Jeon[1], Hyuk Soon Choi[1], Eun Sun Kim[1], Yoon Tae Jeen[1], Hoon Jai Chun[1], Heekyung Lee[2], Doyeon Kim[2], Jina Seo[3], Daechan Park[3], Cheulhee Jung[2]
[1]Department of Internal Medicine, Korea University College of Medicine, Seoul, Korea
[2]Department of Biotechnology, Korea University, Seoul, Korea
[3]Department of Molecular Science and Technology, Ajou University, Suwon, Korea

Background / Aim : It is crucial to accurately detect genes with mutations in the diagnosis of cancer. To achieve this, we introduced a method called Single-nucleotide variant on-off discrimination-PCR (Soo-PCR) using a 3' end tailing primer to distinguish low-abundance mutant type targets in an on-off manner.
Methods : Soo-PCR, which includes 3' end tailing, has only one mismatch with the wild-type target. As a result, amplification does not occur in the wild-type target, while it does in the mutant type target. To maximize discrimination through the on-off mechanism, we conducted experiments to optimize the 3' tailing sequence. Using the optimized 3' tailing sequence conditions, we conducted clinical trials on circulating cell-free DNA (cfDNA) from ten colorectal cancer patients using Soo-PCR.
Results : Based on whole-genome sequencing results from these ten patients' cfDNA, we selected biomarkers by filtering, focusing on the genes with the highest mutation frequency among the ten. When we conducted clinical trials using the selected biomarkers as targets, we were able to detect mutations with over 90% accuracy.
Conclusion : This demonstrates the potential utility of this method in the actual diagnosis of cancer and its ability to easily detect low-abundance mutations with high accuracy.
Keywords : Cell-free DNA, Colorectal Cancer, Single-nucleotide Variant On-off Discrimination-PCR

[Poster Exhibition – Colorectal Neoplasia]

PE2-017

Sociodemographic Factors and Their Impacts on the Prognosis and Stage of Patients with Colorectal Cancer: A 20-Year Population-based Study

Nisrina Nabila
Basic Science, Universitas Islam Indonesia, Yogyakarta, Indonesia

Background / Aim : Colorectal cancer (CRC) is the third most diagnosed cancer worldwide. 153,020 cases in the United States are predicted for 2023, with an estimated 52,550 deaths. This study aims to determine the impact of sociodemographic factors on the prognosis and stage of patients with CRC.
Methods : This study gained data from the Surveillance, Epidemiology, and End Results (SEER) database that contains 17 registries for November 2022 and covered approximately 26.5% of the U.S. population. Eligible patients with CRC from 2000 to 2020 were selected using SEER*Stat 8.4.1.2 software. This study included patients over 20 years old who were histologically confirmed to have CRC. The sociodemographic factors recorded in this study were age, sex, race, and marital status. The prognosis of the cancer was classified into two types: bad (dead because of CRC) and good (alive). The stage of the cancer was divided into early and end stages. The statistical analysis was performed using SPSS 25.
Results : A total of 18,754 eligible patients aged 20 to 90 years old were included in this study. CRC mostly affected 71-year-old patients at a mean age of 65.49 years old. Most of the patients (55.3%) were over 65 years old. CRC mostly impacted males (53.3%), white people (86.8%), and married people (56.8%). Mainly patients (85.7%) had a good prognosis. Early-stage cancer was found in the majority of patients (88.1%). The data analysis using the Chi-square test found the significant impact of all sociodemographic factors on the prognosis of patients with CRC ($p < 0.05$). Most of the sociodemographic factors had a significant impact on the stage of patients with CRC ($p < 0.05$), except for the sex factor ($p > 0.05$).
Conclusion : Sociodemographic factors had an impact on the prognosis and stage of patients with CRC, except for the sex factor on the stage of CRC.
Keywords : Sociodemographic Factors, Prognosis, Stage, Colorectal Cancer

Table 1. Bivariate analysis of sociodemographic factors and prognosis

Variable	Good Prognosis		Bad Prognosis		Total		OR	95% CI	*P value*
	N	%	N	%	N	%			
Age									
<65	7607	47.3	775	28.9	8382	44.7	2.213	2.024-2.419	0.00
≥65	8464	52.7	1908	71.1	10372	55.3			
Total	16071	100	2683	100	18754	100			
Sex									
Female	7559	47	1202	44.8	8761	46.7	1.094	1.008-1.188	0.032
Male	8512	53	1481	55.2	9993	53.3			
Total	16071	100	2683	100	18754	100			
Race									
White	14020	87.2	2261	84.3	16281	86.8	1.276	1.139-1.430	0.00
Black	2051	12.8	422	15.7	2473	13.2			
Total	16071	100	2683	100	18754	100			
Marital Status									
Single	6636	41.3	1458	54.3	8094	43.2	0.591	0.544-0.642	0.00
Married	9435	58.7	1225	45.7	10660	56.8			
Total	16071	100	2683	100	18754	100			

Table 2. Bivariate analysis of sociodemographic factors and stages

Variable	Early Stage		End Stage		Total		OR	95% CI	*P value*
	N	%	N	%	N	%			
Age									
<65	7296	44.2	1086	48.5	8382	44.7	0.842	0.771-0.920	0.00
≥65	9217	55.8	1155	51.5	10372	55.3			
Total	16071	100	2683	100	18754	100			
Sex									
Female	7746	46.9	1015	45.3	8761	46.7	1.067	0.977-1.166	0.150
Male	8767	53.1	1226	54.7	9993	53.3			
Total	16513	100	2241	100	18754	100			
Race									
White	14429	87.4	1852	82.6	16281	86.8	1.454	1.292-1.637	0.00
Black	2084	12.6	389	17.4	2473	13.2			
Total	16513	100	2241	100	18754	100			
Marital Status									
Single	6966	42.2	1128	50.3	8094	43.2	0.720	0.659-0.786	0.00
Married	9547	57.8	1113	49.7	10660	56.8			
Total	16071	100	2683	100	18754	100			

[Poster Exhibition – Colorectal Neoplasia]

PE2-018

Clinical Outcomes associated with Additional Resection of a Positive Resection Margin after Endoscopic Submucosal Resection with Band Ligation of Small Rectal Neuroendocrine Tumor: A Single-center Retrospective Study

Min Cheol Kim, Kyeong Ok Kim, Si Hyung Lee, Byung Ik Jang
Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea

Background / Aim : The optimal strategy for small rectal neuroendocrine tumors (NETs) with positive margins after resection by endoscopic submucosal resection with band ligation (ESMR-L) has not been established yet. This study aimed to analyze clinical outcomes based on whether additional resection was performed for a positive resection margin after ESMR-L of small (≤ 10 mm) NETs, comparing it with endoscopic mucosal resection (EMR).
Methods : We retrospectively analyzed 295 patients who underwent EMR or ESMR-L for small rectal NETs at Yeungnam University Hospital from January 2009 to December 2021. Incomplete resection was defined as positive resection margins after EMR or ESMR-L. We analyzed the clinical outcomes of patients who underwent additional resection or follow-up without additional resection in cases of incomplete resection after EMR or ESMR-L.
Results : Among the 295 patients, 46 (15.6%) were treated with EMR, and 249 (84.4%) were treated with ESMR-L. The mean size of the lesions was 4.24 mm, with 292 (99.0%) lesions confined to the submucosa layer. According to the WHO classification, 287 (97.3%) lesions were classified as grade 1. The en-bloc resection rate was 100%, and the complete resection rate was 30.4% (14/46) for EMR and 92.0% (243/249) for ESMR-L. Among patients who underwent additional surgical or endoscopic resection after incomplete resection (25/32 in EMR and 7/20 in ESMR-L), residual tumor was noted in 48.0% (12/25) in the EMR group, whereas no residual tumors were observed in the ESMR-L group. For patients followed for more than 2 years without additional resection after incomplete resection (7/32 in EMR and 13/20 in ESMR-L), there was one local recurrence in the EMR group, but no local recurrences or lymph node metastasis were observed in the ESMR-L group.
Conclusion : For rectal neuroendocrine tumors smaller than 10 mm, follow-up observation without additional resection can be considered even if complete resection is not achieved after ESMR-L.
Keywords : Neuroendocrine Tumor, Rectum, Endoscopic Resection

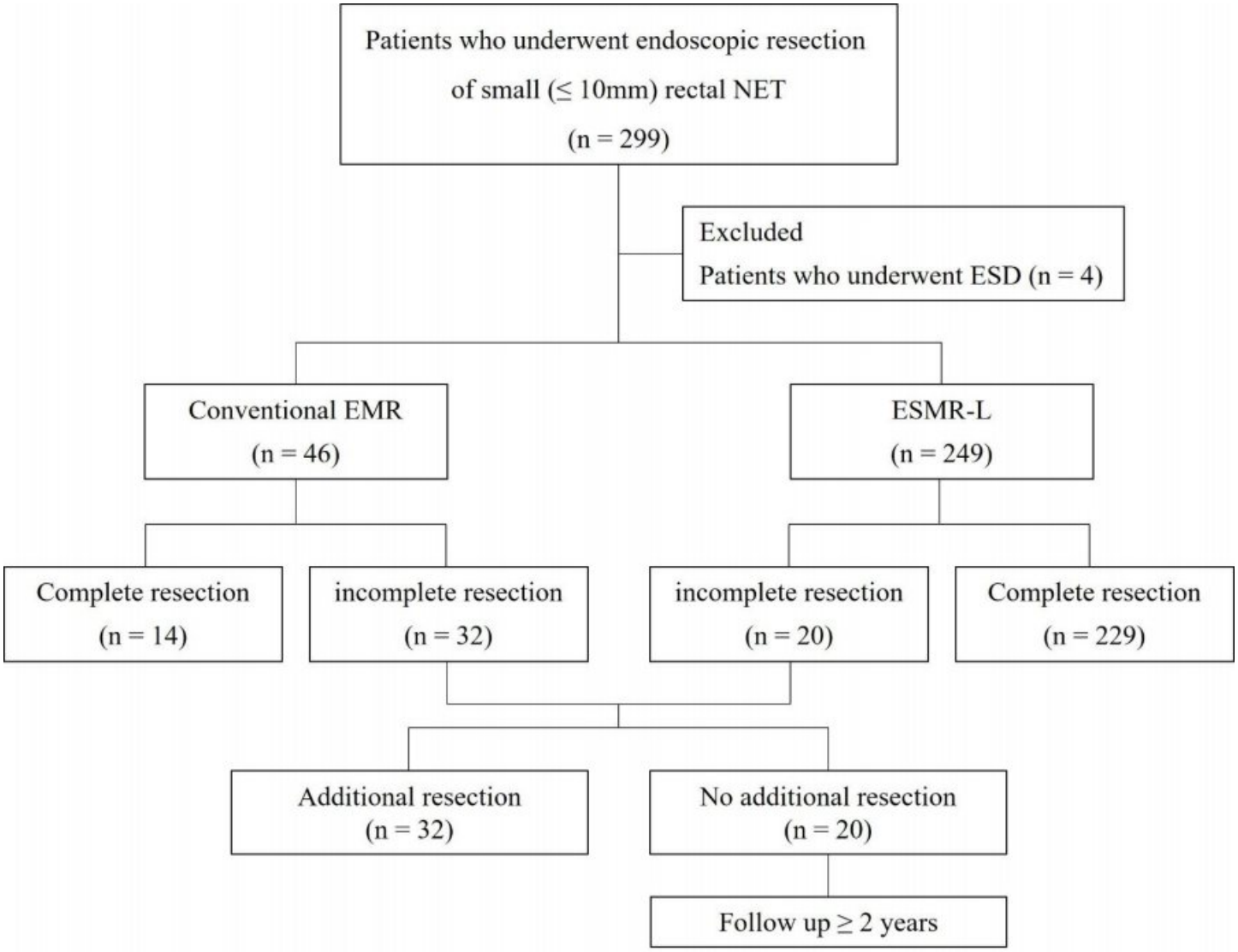

Patients who underwent endoscopic resection of small (≤ 10mm) rectal NET (n = 299)
Excluded
Patients who underwent ESD (n = 4)
Conventional EMR (n = 46)
ESMR-L (n = 249)
Complete resection (n = 14)
incomplete resection (n = 32)
incomplete resection (n = 20)
Complete resection (n = 229)
Additional resection (n = 32)
No additional resection (n = 20)
Follow up ≥ 2 years

Table 1. Baseline characteristics of patients and tumors

	Conventional EMR (n = 46)	ESMR-L (n = 249)	*P*
Age	54.7 ± 16.1	51.0 ± 11.6	0.061
Gender			0.415
Male	15 (32.6)	97 (39.0%)	
Female	31 (67.4)	152 (61.0%)	
Biopsy before resection	7 (15.2)	152 (61)	< 0.001
Diagnosis via biopsy	6 (85.7)	128 (84.2)	1.000
Endoscopic morphology			0.006
Protruded	22 (47.8)	67 (26.9)	
Flat	24 (52.2)	182 (73.1)	
Mucosal ulceration	0 (0.0)	1 (0.4)	1.000
Histologic evaluation			
Tumor size, mm	4.5 ± 2.2	4.2 ± 1.9	0.317
≤ 5mm	33 (71.7)	188 (75.5)	0.589
> 5mm, ≤ 10mm	13 (28.3)	61 (24.5)	
Tumor depth			0.400
Limited to mucosa	1 (2.2)	2 (0.8)	
Submucosa	45 (97.8)	247 (99.2)	
Resection margin			< 0.001
Negative	14 (30.4)	229 (92.0)	
Positive	32 (69.6)	20 (8.0)	
Lymphovascular invasion			1.000
Negative	45 (97.8)	246 (98.8)	
Positive	1 (2.2)	3 (1.2)	
WHO Grade			0.615
Grade 1	44 (95.7%)	243 (97.6%)	
Grade 2	2 (4.3%)	6 (2.4%)	
En bloc resection	46 (100)	249 (100)	1.000
Complete resection	14 (30.4)	229 (92.0)	< 0.001
Procedure-related complication			
Bleeding	0 (0)	14 (5.6)	0.137
Perforation	0 (0)	1 (0.4)	1.000

EMR, endoscopic mucosal resection; CT, computed tomography

Table 2. Risk factors for incomplete resection during endoscopic resection of rectal neuroendocrine tumor

Variables	Univariate analysis		Multivariate analysis	
	OR (95% CI)	P	OR (95% CI)	P
Age				
≤ 50	1		1	
> 50	0.54 (0.24 – 1.18)	0.119	0.60 (0.28 – 1.30)	0.194
Gender				
Female	1		1	
Male	1.92 (0.83 – 4.42)	0.128	1.98 (0.88 – 4.47)	0.102
Biopsy before resection				
No	1		1	
Yes	0.85 (0.37 – 1.96)	0.704	0.85 (0.37 – 1.96)	0.853
Endoscopic morphology				
Protruded	1		1	
Flat	1.65 (0.67 – 4.07)	0.281	1.65 (0.67 – 4.08)	0.275
Tumor size				
≤ 5mm	1		1	
> 5mm, ≤ 10mm	2.04 (0.83 – 5.00)	0.119	1.59 (0.70 – 3.64)	0.277
Tumor depth				
Limited to mucosa	1		1	
Submucosa	0.56 (0.03 – 10.94)	0.703	0.56 (0.03 – 10.94)	0.703
WHO Grade				
Grade 1	1		1	
Grade 2	0.23 (0.02 – 3.55)	0.295	0.21 (0.01 – 3.23)	0.264
Resection method				
Conventional EMR	1		1	
ESMR-L	0.03 (0.01 – 0.08)	< 0.001	0.04 (0.02 – 0.08)	< 0.001

Table 3. Clinical outcomes after additional resection of incompletely resected rectal neuroendocrine tumor

	Conventional EMR (n = 32)	ESMR-L (n = 20)	*P*
No additional resection	7 (21.9%)	13 (65.0%)	0.002
Additional resection	25 (78.1%)	7 (35.0%)	
Endoscopic resection	11 (34.4%)	2 (10.0%)	0.671
EMR with ligation	9 (81.8%)	0 (0.0%)	0.077
ESD	2 (18.2%)	2 (100.0%)	
Surgical resection	14 (43.8%)	5 (25.0%)	0.671
TAE	13 (92.9%)	5 (100.0%)	1.000
TAMIS	1 (7.1%)	0 (0.0%)	
Residual tumor after additional resection	12 (48.0%)	0 (0.0%)	0.029
Residual tumor size, mm	1.28 ± 1.88	0	0.002

Table 4. Clinical outcomes of follow-up of incompletely resected rectal neuroendocrine tumor without additional resection

	Conventional EMR (n = 7)	ESMR-L (n = 13)
Follow-up period (months), median (range)	33 (25 – 121)	35 (24 – 123)
Local recurrence	1	0
Lymph node metastasis	0	0

[Poster Exhibition – Colorectal Neoplasia]

PE2-019

Factors of Surgical Complexity in Radical Resection for Colorectal Cancer: A Retrospective Analysis

Ximo Wang[1], Yukai Chen[1,2], Linyan Lyu[1], Kehang Guo[1,2], Yongliang Zhao[1,2], Honglei Wang[2]
[1]Graduate School, Tianjin Medical University, Tianjin, China
[2]Department of Gastrointestinal Surgery, Tianjin Hospital of ITCWM, Tianjin, China

Background / Aim : Surgical resection remains the cornerstone of treatment for localized colorectal cancer (CRC), yet increased surgical complexity correlates with more complications and a poorer prognosis. This study identifies risk factors contributing to the difficulty of radical CRC resection.
Methods : We retrospectively analyzed 158 patients who underwent CRC resection between January 2019 and October 2023. Surgical complexity was assessed using surgical duration, intraoperative blood loss, and the need for blood transfusions. Risk factors for these indicators were evaluated using univariate and multivariate linear regression and logistic analyses.
Results : Surgical duration was significantly associated with preoperative intestinal obstruction, plasma prothrombin time International Normalized Ratio (PT-INR), and body mass index (BMI), with respective correlation coefficients of 26.627(95%CI: 1.105, 52.149), 16.587(95%CI: 40.658, 280.516), and 3.591(95%CI: 0.161, 7.02). Similarly, intraoperative blood loss correlated with BMI and the monocyte-to-lymphocyte ratio (MLR), with coefficients of 160.587(95%CI: 1.843, 11.753) and 100.403(95%CI: 60.96, 139.846). Multivariate analysis revealed that preoperative PT-INR was an independent risk factor of prolonged surgical duration (OR = 1002.57, 95%CI: 11.535, 87141.837), and MLR was independently predictive of the need for intraoperative transfusion (OR = 12.507, 95%CI: 2.102, 74.425).
Conclusion : Our findings suggest that intestinal obstruction, preoperative PT-INR, and BMI are predictors of longer surgical duration in CRC radical resection, while MLR and BMI predict greater intraoperative blood loss. In conclusion, preoperative BMI and hematological parameters such as MLR and PT-INR may be used to anticipate the complexity of CRC surgery.
Keywords : Colorectal Cancer, Surgical Duration, Monocyte-to-lymphocyte Ratio (MLR), International Normalized Ratio (PT-INR)

Table 1 Linear regression analysis of surgical duration

	univariate				multivariate			
	Coeffi-cients	95%CI		P	Coeffi-cients	95%CI		P
(constant)					9.93	-123.925	143.785	0.884
Bowel obstruction	26.627	1.105	52.149	0.041	28.604	5.222	51.985	0.017
PT-INR	160.587	40.658	280.516	0.009	162.845	51.841	273.849	0.004
BMI	3.591	0.161	7.02	0.04	3.943	0.928	6.958	0.011
L3-SMA	0.475	0.002	0.947	0.049				
L3-SMI	1.832	0.15	3.515	0.033				
CA199	0.088	0.009	0.167	0.029	0.086	0.016	0.156	0.016
Open surgery	-46.764	-73.189	-20.339	0.001	-61.996	-86.715	-37.278	0
Associate professor as chief operator	41.24	4.262	78.219	0.029	36.672	3.315	70.029	0.031
Professor as first assistant	-30.834	-55.607	-6.061	0.015	-27.829	-50.067	-5.592	0.015

Table 2 Linear regression analysis of intraoperative blood loss

	univariate				multivariate			
	Coeffi-cients	95%CI		P	Coeffi-cients	95%CI		P
(constant)					-73.379	-151.729	75.113	0.506
MLR	100.403	60.96	139.846	0	104.299	67.329	143.436	0
BMI	160.587	1.843	11.753	0.007	6.613	0.942	10.173	0.019
CA19-9	-0.088	-0.204	0.027	0.134	-0.136	-0.219	-0.001	0.047
Body mass reduction%	-493.105	-952.451	-33.76	0.036	-390.849	-813.557	31.86	0.07
M1	-51.241	-101.222	-1.26	0.045	-31.85	-78.53	14.83	0.18
Bowel obstruction	-8.055	-45.762	29.652	0.674				

Table 3 Logistic regression of prolonged surgical duration

	univariate				multivariate			
	OR	95%CI		P	OR	95%CI		P
PT-INR	112.169	2.531	4970.597	0.015	1002.57	11.535	87141.837	0.002
Surgical approaches*				0.039				0.006
Laparosco-pic	2.61	1.248	5.46	0.011	3.89	1.691	8.947	0.001
Robotic	3346340746	0	.	0.999	6932518583	0	.	0.999
Participa-tion of surgical residents	3.403	1.146	10.104	0.027	2.535	0.849	7.57	0.096
constant					0			0.001

*reference: open surgery

[Poster Exhibition – Colorectal Neoplasia]

PE2-020

A Novel Multi-marker NGS Methylation Panel Enhances the Sensitivity of Blood-based Colorectal Cancer Screening

Hae-Jin Hu[1], Wonsub Kim[1], Gyeong Ryeong Kim[1], Jung-Ho Park[2]
[1]Endomics, Inc, Gyeonggi-do, Seongnam-si, Korea
[2]Internal Medicine, Kangbuk Samsung Hospital, Sungkyunkwan University College of Medicine, Seoul, Korea

Background / Aim : Blood-based CRC screening is a minimally invasive method to detect CRC at earlier stages. However, it is known to be less sensitive than stool-based tests. To improve the sensitivity of blood-based test, we found multiple methylation markers in a targeted NGS panel.
Methods : Candidate methylation markers were discovered in two phases. In phase 1, an 84 Mb Human Methyl-Seq panel (3.7 M CpGs) was applied using a small number of case and control samples (10 CRCs versus 10 controls). In phase 2, we designed an NGS panel containing a 7.5 Mb region (354K CpGs) and performed statistical and AI-based analysis against the discovery data (32 CRCs, 31 advanced adenomas, 27 non-advanced adenomas and 43 controls). We finally designed an NGS panel with a region of 60 Kb (64 CRCs, 54 advanced adenomas, 46 non-advanced adenomas and 73 controls).
Results : The targeted NGS panel with multiple methylation markers showed an overall sensitivity of 90.6% in CRC (0–IV) detection and 90.7% specificity in the discovery data. Sensitivity for detecting early stages (0-II) was 86.7% (13/15). This test also detected 45.2 % (14/31) and 40.7% (11/27) of advanced and non-advanced adenomas, respectively. In the validation data, the overall sensitivity of 89.1% in CRC (0–IV) detection and specificity of 90.4% were shown. Sensitivity for detecting early stages (0-II) was 85.2% (23/27). This test also detected 44.4% (24/54) and 39.1% (18/46) of advanced and non-advanced adenomas, respectively.
Conclusion : Blood-based multi-marker methylation test using NGS panel is a suitable tool for CRC screening in those who choose not to undergo CRC screening with guideline-recommended methods such as colonoscopy or fecal occult blood test.
Keywords : Colorectal Cancer, NGS, DNA Methylation

[Poster Exhibition – Colorectal Neoplasia]

PE2-021

Anticoagulant as a Risk Factor of Post Colorectal Endoscopic Submucosal Dissection Delayed Bleeding: A HASID Multicenter Study

Seong-Jung Kim[1], Jun Lee[1], Hyo Yeop Song[2], Geom-Seog Seo[2], Byung-Chul Jin[3], Sang-Wook Kim[3], Dong Hyun Kim[4], Hyun-Soo Kim[4], Hyung Hoon Oh[4], Dae-Seong Myung[4], Young-Eun Joo[4]
A group of Honam Association for the Study of Intestinal Disease (HASID)
[1]Department of Internal Medicine, College of Medicine, Chosun University, Gwangju, Korea
[2]Department of Internal Medicine, College of Medicine, Wonkwang University, Iksan, Korea
[3]Department of Internal Medicine, College of Medicine, Jeonbuk National University, Jeonju, Korea
[4]Department of Internal Medicine, College of Medicine, Chonnam National University, Gwangju, Korea

Background / Aim : Delayed bleeding is a significant complication after colorectal endoscopic submucosal dissection (ESD). Nonetheless, the role of anticoagulants as a contributing factor to delayed bleeding remains a contentious topic.
Methods : Our study conducted a retrospective review of 1,708 patients who underwent colorectal ESD across five university hospitals from January 2015 to December 2020. The objective was to discern risk determinants for post-ESD delayed hemorrhage, with a specific focus on assessing the impact of anticoagulant use.
Results : Out of 1,708 patients, 40 (2.3%) experienced delayed bleeding. The risk factors of delayed bleeding included the use of antithrombotic agents (Odds ratio [OR], 6.155; 95% confidence intervals [CI], 3.201-11.825; p<0.001), antiplatelet medications (OR, 4.609; 95% CI, 2.200-9.658; p<0.001), anticoagulants (OR, 8.286; 95% CI, 2.934-23.402; p<0.001), and the presence of tumors in the rectal region (OR, 2.055; 95% CI, 1.085-3.897; p=0.027). Excluding those on antiplatelet therapy, the incidence of delayed bleeding remained higher in individuals on anticoagulants (1.6% without antithrombotic agent vs 12.5% with anticoagulants, p<0.001). The delayed bleeding rates did not significantly differ between types of anticoagulants (4.2% for direct oral anticoagulants vs 25.0% for warfarin, p=0.138), nor did the clinical outcomes based on the anticoagulant type used.
Conclusion : Anticoagulants use was a risk factor for delayed bleeding after colonic ESD, and there was no difference in the risk of delayed bleeding based on the type of anticoagulants.
Keywords : Colorectal Neoplasm, Endoscopic Submucosal Dissection, Hemorrhage, Anticoagulants

	Non-delayed bleeding (n=1,668)	Delayed bleeding (n=40)	p-value
Age (mean±SD)	63.24±12.13	64.44±9.61	0.444
Male, n (%)	993 (59.5)	29 (72.5)	0.098
CCI (>2), n (%)	141 (8.5)	5 (12.5)	0.366
Antithrombotic agents, n (%)	188 (11.2)	16 (40.0)	<0.001
Antiplatelet agents, n (%)	153 (9.1)	11 (27.5)	<0.001
Anticoagulants, n (%)	35 (2.1)	5 (12.5)	<0.001
Tumor location, n (%)			0.039
Right colon	729 (43.7)	12 (30)	
Left colon	329 (19.7)	7 (17.5)	
Rectum	610 (36.6)	21 (52.5)	
Tumor morphology, n (%)			0.481
0-Is/0-IIa/0-Is + IIa	1,027 (61.6)	23 (57.5)	
0-IIb/0-IIa + IIc	333 (20.0)	11 (27.5)	
Subepithelial tumors	308 (18.5)	6 (15.0)	
Tumor size (≥40 mm), n (%)	289 (17.3)	13 (32.5)	0.013
Histopathology, n (%)			0.403
Benign lesions	738 (44.2)	17 (42.5)	
Advanced colon polyps*	527 (31.6)	12 (30.0)	
Cancer	403 (24.2)	11 (27.5)	
Subepithelial tumors†	308 (18.5)	6 (15.0)	
Submucosal fibrosis, n (%)	484 (29.0)	11 (27.5)	0.834
ESD procedure time (mean±SD)	48.49±65.16	54.05±57.05	0.528
En-bloc resection, n (%)	1,523 (91.3)	38 (95.0)	0.411
Intra-procedural bleeding, n (%)	402 (24.1)	12 (30.0)	0.390
Post-ESD prophylactic coagulation, n (%)	1,385 (83)	35 (87.5)	0.456
Post-ESD prophylactic coagulation time, min (mean±SD)	4.32±4.30	4.80±4.80	0.487

Risk factors	Odds ratio	95% Confidential interval	p-value
Antithrombotic agents	6.155	3.201-11.825	<0.001
Antiplatelet agents	4.609	2.200-9.658	<0.001
Anticoagulants	8.286	2.934-23.402	<0.001
Tumor location in the rectum	2.055	1.085-3.897	0.027

	Patients not taking antithrombotic agents (n = 1,504)	Patient taking anticoagulants (n = 40)	p-value
Age (mean±SD)	64.32±18.65	69.86±6.77	0.061
Male, n (%)	877 (58.3)	27 (67.5)	0.244
CCI (>2), n (%)	98 (6.5)	5 (12.5)	0.134
Tumor location, n (%)			0.646
Right colon	646 (43.0)	15 (37.5)	
Left colon	293 (19.5)	10 (25.0)	
Rectum	565 (37.6)	15 (37.5)	
Tumor morphology, n (%)			0.318
0-Is/0-IIa/0-Is + IIa	911 (60.6)	27 (67.5)	
0-IIb/0-IIa + IIc/IIc	292 (19.4)	9 (22.5)	
Subepithelial tumors	301 (20.0)	4 (10)	
Tumor size (≥40 mm), n (%)	262 (17.4)	10 (25.0)	0.214
Histopathology, n (%)			0.098
Benign lesions	659 (43.8)	20 (50.0)	
Advanced colon polyps*	461 (30.7)	16 (40.0)	
Cancer	83 (5.5)	3 (7.5)	
Subepithelial tumors†	301 (20.0)	1 (2.5)	
Submucosal fibrosis, n (%)	421 (28.0)	13 (32.5)	0.531
ESD procedure time (mean±SD)	47.82±67.45	48.85±47.91	0.924
En-bloc resection, n (%)	1,376 (91.5)	37 (92.5)	0.821
Intra-procedural bleeding, n (%)	348 (23.1)	14 (35.0)	0.081
Post-ESD prophylactic coagulation, n (%)	1,249 (83.0)	31 (77.5)	0.358
Post-ESD prophylactic coagulation time, min (mean±SD)	4.32±4.30	4.43±4.55	0.885
Delayed bleeding, n (%)	24 (1.6)	5 (12.5)	<0.001

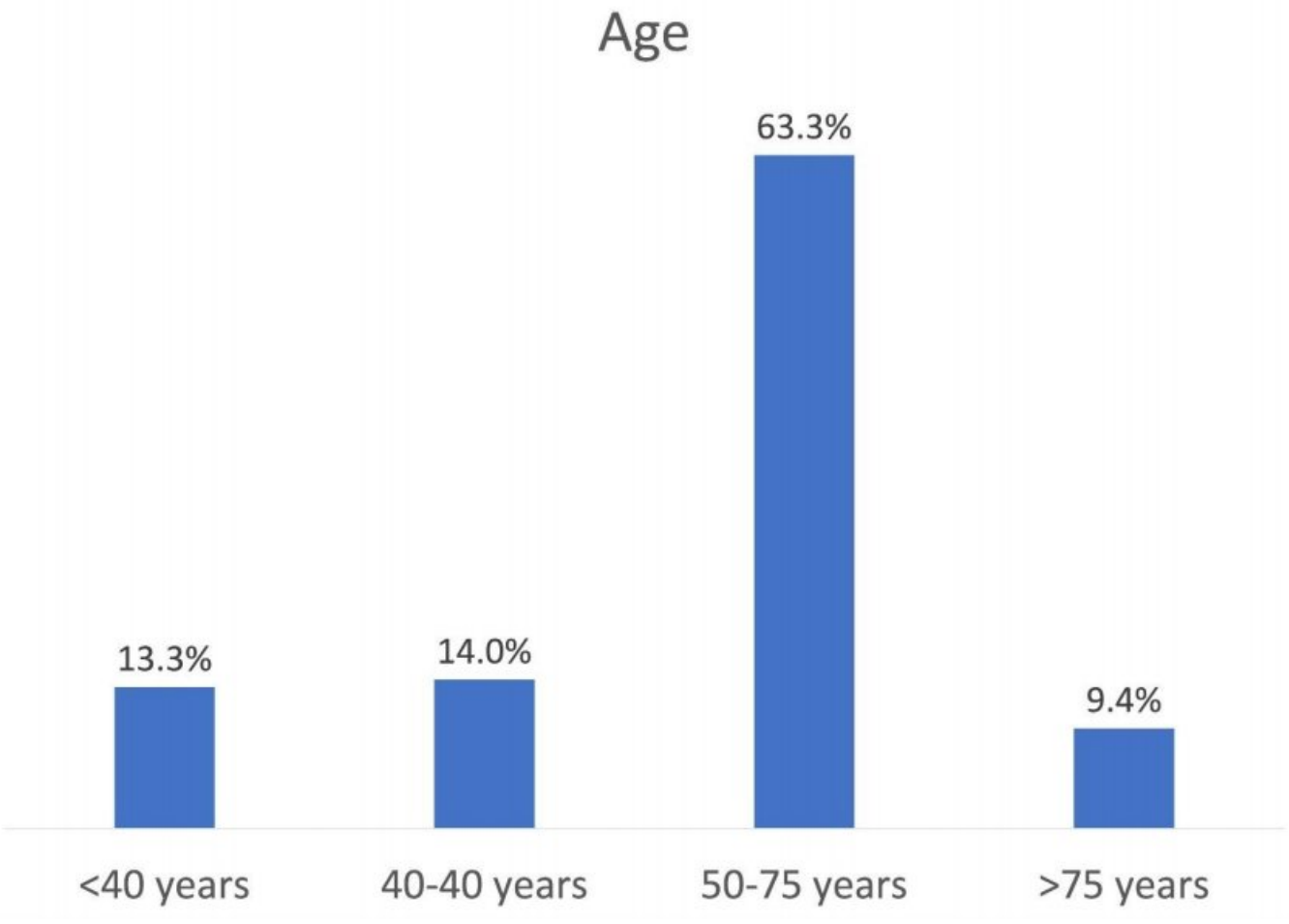
[Poster Exhibition – Colorectal Neoplasia]

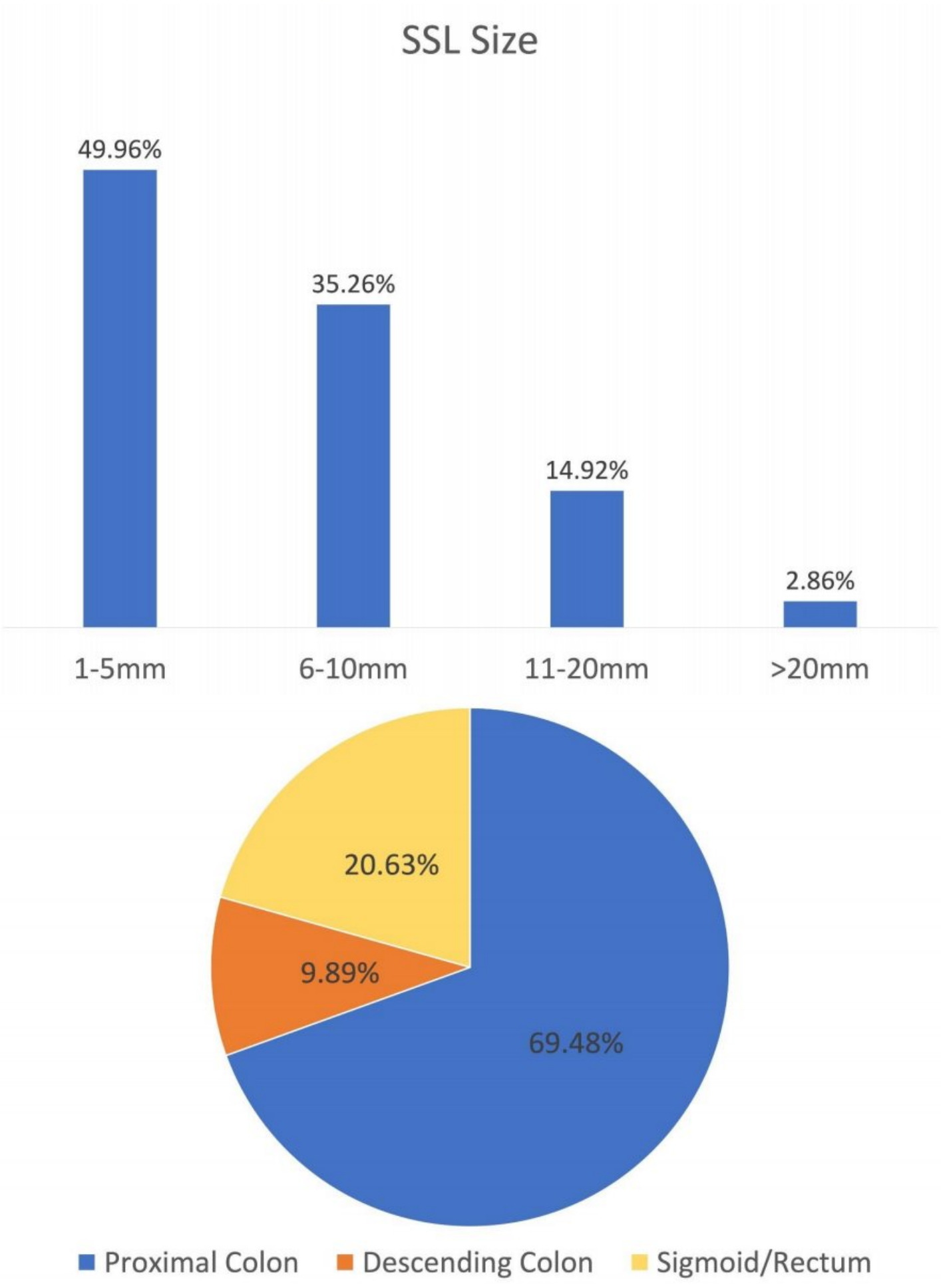
PE2-022

Prevalence and Risk Factors for Sessile Serrated Lesions: An Australian Experience

Deloshaan Subhaharan, Karan Shukla, Roney Shibu, Benjamin Mckillen, Sneha John
Department of Digestive Health, Gold Coast University Hospital, Gold Coast, Australia

Background / Aim : Sessile serrated lesions (SSL) are known precursors for colorectal cancer. Their prevalence varies across populations. We aimed to investigate their prevalence and characteristics in the Australian population. In particular, we assessed their prevalence in the younger cohort and follow up findings of patients identified to have at least one SSL at index colonoscopy.
Methods : All adult patients undergoing colonoscopy at the Gold Coast Health Service between 2015 and 2021 were retrospectively identified. Analysis included patient demographics, number of SSLs, location, size, dysplasia, and follow-up findings.
Results : Within 20,293 procedures analysed, 6058 (29.9%) SSLs were identified in 4095 patients. 54.5% were female. 13.3% were under 40 years and 14.0% were between 40-49 years. 69.5% of lesions were found in the proximal colon and 17.8% were >10mm in size. Dysplasia was present in 2.9%. 1490 patients (36.4%) underwent a follow-up procedure of whom 533 (35.8%) had another SSL detected. 24 (4.5%) patients had dysplasia on follow-up.
Conclusion : There is a high prevalence of SSLs in the regional Australian population. Colorectal cancer screening commences at 50 years in Australia and interestingly, our study identified 27% of these polyps in the < 50 years cohort. Aetiological factors for a high prevalence of SSLs require further investigation to identify individuals who are at higher risk of incidence and progression.
Keywords : Sessile Serrated Lesion, Surveillance, Screening, Colonoscopy

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49.96%
35.26%
14.92%
2.86%
1-5mm
6-10mm
11-20mm
>20mm
20.63%
9.89%
69.48%
Proximal Colon
Descending Colon
Sigmoid/Rectum

[Poster Exhibition – Colorectal Neoplasia]

PE2-023

Incidence of Colorectal Neopalasia Incidence in India: A Analysis from Colorectal Cancer Registries

Md Sarfaraj Hussain
Department of Pharmacy, Lord Buddha Koshi Medical College and Hospital, Biajnathpur, Saharsa, Bihar, India

Background / Aim : Colorectal cancer (CRC) represents a major cause of morbidity and mortality in Western countries, and results in a substantial economic burden due to costs for surgery, chemotherapy and terminal care. Burden of colorectal cancer incidence in India is considerable. Colorectal cancer leads not only humanistic economic burden but also impact the healthcare system. It decreases both the quality and quantity of life. So, it is important to understand the colorectal cancer incidence in India to deal with this devastating disease.
Methods : We captured the latest available data from the Population-based cancer registries of India. The primary outcome of interest was to compute the crude incidence of cancer during 2016 – 2022, age-adjusted and truncated incidence rate per 100,000 populations. Secondary outcomes were to compute the cumulative incidence rate, cumulative risk. All the analysis was performed using STATA v12.
Results : A total number of 174,693 cancer cases (50% male) were reported during 2016 – 2022 from all the existing population-based registries in India. Northeastern state reported the highest crude incidence rate per 100,000 populations among both male (204.6 cases) and female (160.7 cases). The age-adjusted rate per 100,000 populations in male ranges from 40.9 to 230.4 cases, while in the female it was ranged from 52 to 207.7 cases. Overall, the truncated incidence rate per 100,000 populations ranged from 76.7 cases to 560.6 cases. Risk of developing cancer (cumulative risk) during the life period of 0-64 years of age was lying between 2.8% to 17.9%.
Conclusion : In a systematic review, we found a high prevalence of colorectal neoplasia among some populations. The present study concludes higher incidence of colorectal cancer in India. The government should frame policies to tackle the rising incidence.
Keywords : Colorectal Cancer, Incidence, Epidemiology, Prevalence, India

[Poster Exhibition – Colorectal Neoplasia]

PE2-025

The Comparison of Sentinel and Regional Lymph Node Biopsy Procedure to Detect Colorectal Cancer : A Population-based Study

Anindya Amanda Damayanti
Department of Internal Medicine, Universitas Islam Indonesia, Yogyakarta, Indonesia

Background / Aim : Colorectal cancer is the second largest cause of cancer death worldwide. Early cases may start as a noncancerous polyp which does not cause any symptoms, however the growth of abnormal cells in colon and rectum can develop into cancer that metastasize rapidly. Earlier confirmed diagnosis would improve the prognosis and survival rate. Studies have shown that the accuracy of sentinel lymph node (SLN) to diagnose colorectal cancer varies from 89% to 100%. This study aimed to determine the comparison of sentinel and regional lymph node biopsy to detect colorectal cancer in any stages.
Methods : This was a retrospective cohort study. The data obtained from Surveillance, Epidemiology, and End Results (SEER) database. Incidence SEER research data contains 22 registries for November 2022 (2000-2022), which covered approximately 28% of the U.S population. The eligibility criteria are patients with colorectal cancer from 2000-2020 who have been diagnosed colorectal cancer with Sentinel and Regional lymph node biopsy procedure. The data were analyzed using SPSS 23.
Results : Sixty six thousand patients were included in this study. Results showed that 99.7% of colorectal cancer cases in America were diagnosed with regional lymph node biopsy, meanwhile SLN biopsy procedure was used in only 181 cases (0,3%). Due to its controversial issue, the use of SLN detection compared to regional biopsy method is still minimal. This procedure requires a radioactive solution to identify the sentinel nodes, before the nodes are removed and tested for signs of cancer.
Conclusion : SLN biopsy has a high level of accuracy in detecting colorectal cancer. Based on SEER data in America population the use of SLN is still very minimal, therefore further studies are needed to determine the safety level of this procedure.
Keywords : Biopsy, Cancer, Colorectal, Sentinel

[Poster Exhibition – Colorectal Neoplasia]

PE2-026

The Impact of Therapeutic Factors in the Occurrence of Death in Colorectal Cancer Patients as: SEER Population-based Study

Amany Wardhani
Basic Science, Universitas Islam Indonesia, Yogyakarta, Indonesia

Background / Aim : The third most common and second most deadly type of cancer worldwide is colorectal cancer (CRC). It cause 0.9 million deaths and 1.9 million incidence cases globally by 2020. In 2020, CRC was the cause of close to 930,000 cancer-related deaths. Radiation therapy, systemic therapy, endoscopic and surgical excision, and other improved treatment options are the result of research on the pathophysiology of colorectal cancer. The influence of therapeutic factors on the occurence of death among patients with colorectal cancer, however, has never been evaluated.
Methods : This study was a retrospective study of 183,077 CRC survival from the surveillance, epidemiology, and results program database. Eligible patients with CRC from 2000 to 2020 were selected using SEER*Stat 8.4.1.2 software. This study included patients histologically confirmed to have CRC as a primary cancer (ICD-0-3). The therapeutic factor recorded in this study was radiation and systemic therapy combined with surgery. Death is described as death attributable to CRC. We performed the statistical analysis using SPSS 25.
Results : This study included 49,488 eligible patients in total. A total of 43,173 (23.58%) and 32,384 (17.69%) died because of not receiving treatment for both radiation and cancer-directed surgery and no systemic therapy and surgical procedure. The lowest number of deaths were from surgery, which occurred both before and after radiation therapy 44 (0.09%) and after systemic therapy 116 (0.24%).
Conclusion : Therapeutic factors had an impact on the occurrence of death in colorectal cancer patients.
Keywords : Colorectal Cancer, Death, Surgery, Systemic Therapy, Radiation

Table 1. Kruskal-Wallis analysis

Variable	Group	N	Percentage (%)	P value
Radiation and surgery				
Death due to CRC	No radiation and/or cancer-directed surgery	43173	87.24	**0.000**
	Radiation prior to surgery	4464	9.02	
	Radiation after surgery	1624	3.28	
	Radiation before and after surgery	183	0.37	
	Surgery both before and after radiation	44	0.09	
	Total	49488	100	
Systemic therapy and surgery				
Death due to CRC	No systemic therapy and/or surgical procedures	32384	65.44	**0.000**
	Systemic therapy before surgery	3406	6.88	
	Systemic therapy after surgery	11339	22.91	
	Systemic therapy both before and after surgery	2243	4.53	
	Surgery both before and after systemic therapy	116	0.24	
	Total	49488	100	

[Poster Exhibition – Colorectal Neoplasia]

PE2-027

Analysis of Urbanization and Frequency of Colorectal Cancers Disease Association with Heavy Metals Level in River Water Index in Pune District in Rural Population

Ranbir Singh, Sumit Rajput, Priya Tiwari
Physiology, B V Deemed University Medical College, Pune, India

Background / Aim : Unveiling to heavy metals is recognized as the main threat to biological systems, human health, and it may be the main reason for diseases like cancers. To study correlation between serum heavy metals level and colorectal cancers rate in industrial area of Pune district in rural population.
Methods : One case-control research was carried out on 160 colorectal cancerous patients admitted in city hospital with 65 healthy individuals. All were from the industrial area of Pune district located near the river and used river water for swimming and other daily purposes. Determination of serum heavy metals level of cadmium (Cd), cobalt (Co), copper (Cu), iron (Fe), arsenic (As), chromium (Cr), lead (Pb), and zinc (Zn) was performed by an inductively coupled plasma atomic absorption spectrophotometer.
Results : The study detects the concentration of heavy metals in both the group of colorectal cancerous patients and healthy individuals. Serum heavy metals level of Cu, Fe, and Pb was higher in colorectal cancer affected group as compared with the healthy group in unremarkable different ($P > 0.05$) for Pb, while, serum level of zinc was higher in the healthy group in comparing with colorectal cancer affected group ($P > 0.05$). Whereas remarkable ($P < 0.05$) for Fe and Cu. Higher serum Cd level was analyzed in the healthy group in comparison with colorectal cancer affected group. There is no difference in As and Cr serum levels analysis between both groups. The serum level of Zn was unremarkable higher in the healthy group compared with colorectal cancer affected group ($P > 0.05$).
Conclusion : Variances in the serum heavy metal levels of colorectal cancer affected group as compared to the healthy group may explain the relationship of heavy metal as a contributory factor of carcinogenicity in these polluted areas.
Keywords : Serum Heavy Metal, River Water, Colorectal Cancers Rate, Industrial Area

[Poster Exhibition – Colorectal Neoplasia]

PE2-028

Indications and Spectrum of Lower Gastrointestinal Diseases as Determined by Colonoscopy; Descriptive Cross-sectional Study from a Tertiary Care Hospital in Pakistan

Mian Shah Yousaf, Om Parkash, Fatima Majid, Shameel Shafqat
Gastroenterology, Aga Khan University Hospital, Karachi, Pakistan

Background / Aim : One great challenge in the developing world is to perform invasive procedures with defined indications and to have definitive outcomes. Most colonoscopies are done due to the indications of per-rectal bleed and most among them account for negative pathology. This study aims to document indications of colonoscopy and patterns of colonic diseases in this part of the world, which will help in improving the indications and thus planning colonoscopy activity.
Methods : This is a cross-sectional study done at Aga Khan University Hospital Karachi, Pakistan in which charts of all patients aged 18 years or above who underwent colonoscopy from 1st January 2020 to 30th June 2021 were reviewed. Data was collected on a pre-designed proforma to assess the demographic factors, indications, and findings of colonoscopy and analyzed using SPSS version 20
Results : A total of 2336 charts were reviewed, of which 1985 patients were included, 1172 (59%) were male, with a mean age of 47.8 ±16.1 years. The most common indication was bleeding per rectum (n=556, 28%), followed by chronic diarrhea (n=264, 13.3%), screening (n=154, 7.8%), constipation (n=153, 7.7%), anemia (n= 152, 7.7%), altered bowel habits (n=139, 7.0%), surveillance (n=136, 6.9%), abdominal pain (n=135, 6.8%) and others (n=296, 14.9%). Our most common finding was of normality, which was 30% (596/1985), followed by hamorrhoids (n=425, 21.4%), Colitis/Proctitis (n=315, 15.9%), Polyps (n=248, 12.5%), Mass/Growth (n=107, 5.4%), Colonic ulcer (n=80, 4%), rectal ulcer (n=73, 3.7%), diverticulosis (n=71, 3.6%). Polyp Detection Rate (PDR) was 17.9 % (n=355) and Adenoma Detection Rate (ADR) was 9.9 % (n=197).
Conclusion : We need to redefine the indications of colonoscopy in our region because of the lower rate of carcinoma and the increased rate of the non-adenomatous type of polyps in our society. Properly defined indications will increase the diagnostic yield of colonoscopy and will be cost-effective in the developing world.
Keywords : Colonoscopy, Adenoma Detection Rate, Polyp Detection Rate

Table 1: Baseline characteristics of patients (n=1985)

Variables	N = 1985; n (%)
Age (years) ± S.D. Median age (range)	47.8 ± 16.2 48.0 (19-88)
Age Groups	
< 50 years ≥ 50 years	1051 (52.9) 934 (47.1)
Sex	
Male Female	1172 (59) 813 (41)
Indications for Colonoscopy	
Bleeding per Rectum Loose Stools Screening Constipation Anemia Altered Bowels (Mixed Pattern) Surveillance Abdominal Pain Others*	556 (28) 264 (13.3) 154 (7.8) 153 (7.7) 152 (7.7) 139 (7.0) 136 (6.9) 135 (6.8) 296 (14.9)

Table 2: Colonoscopy and histology Findings (n=1985)

Variables	N = 1985; n (%)
Colonoscopy Findings	
Normal	596 (30.0)
Hemorrhoids	425 (21.4)
Polyp	248 (12.5)
Growth/Mass	107 (5.4)
Colitis/Proctitis	315 (15.9)
Diverticulosis	71 (3.6)
Others*	223 (11.2)
Histopathology Findings	
None (Normal)	1094 (55.1)
Non-specific Colitis	498 (25.1)
Adenoma	118 (5.9)
Polyp (Hyperplastic/ Inflammatory/ Retention)	76 (3.9)
Ulcerative Colitis/IBD	49 (2.5)
Carcinoma	79 (4.0)
Others*	71 (3.5)

*Others in:

Colonoscopic Finding includes Rectal Ulcer, Colonic Ulcer, and Terminal Ileum Ulcer. Histopathology Findings include Infectious Colitis, Solitary Rectal Ulcer, Melanoma, Lymphoma, Granulomatous Inflammation, Lipoma, Neuroendocrine Tumor, and Collagenous Colitis.

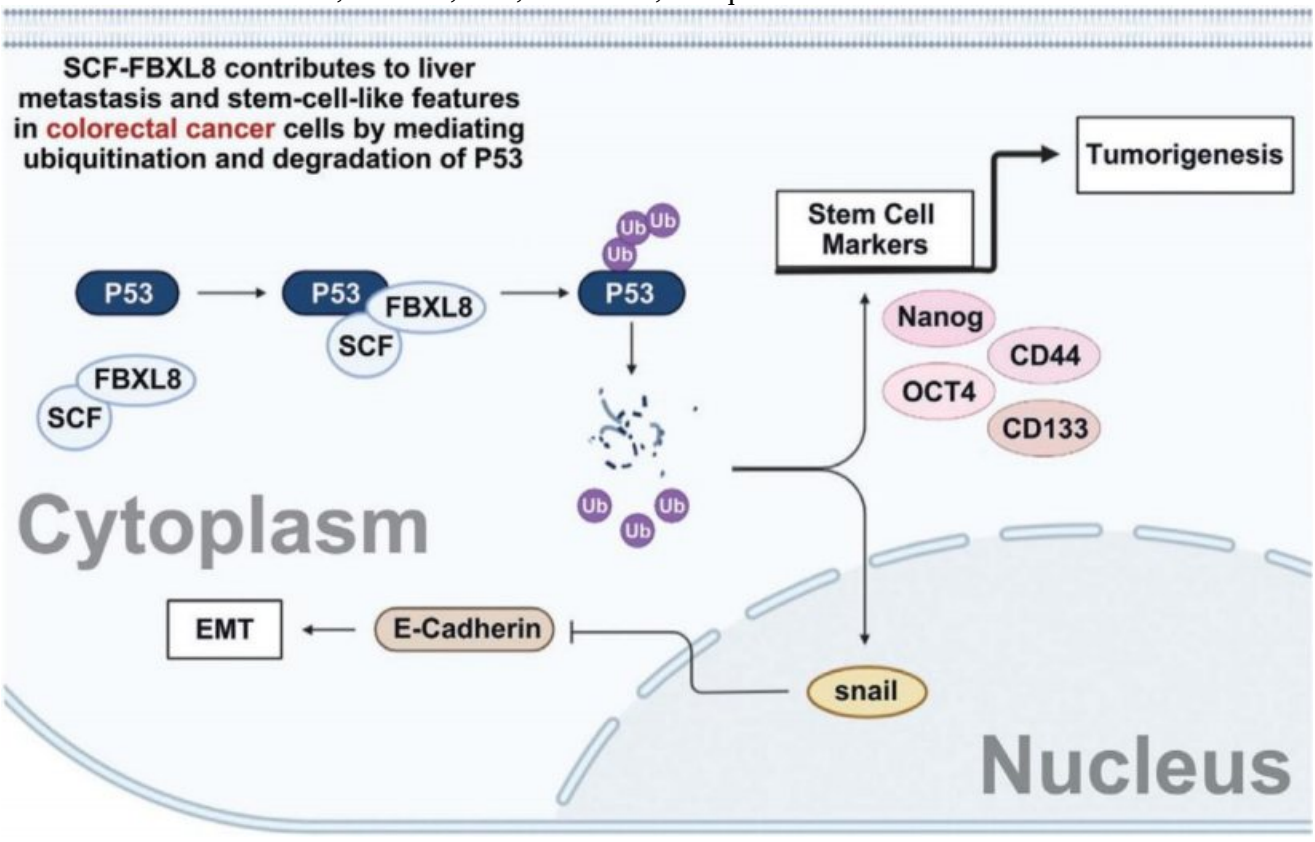
[Poster Exhibition – Colorectal Neoplasia]

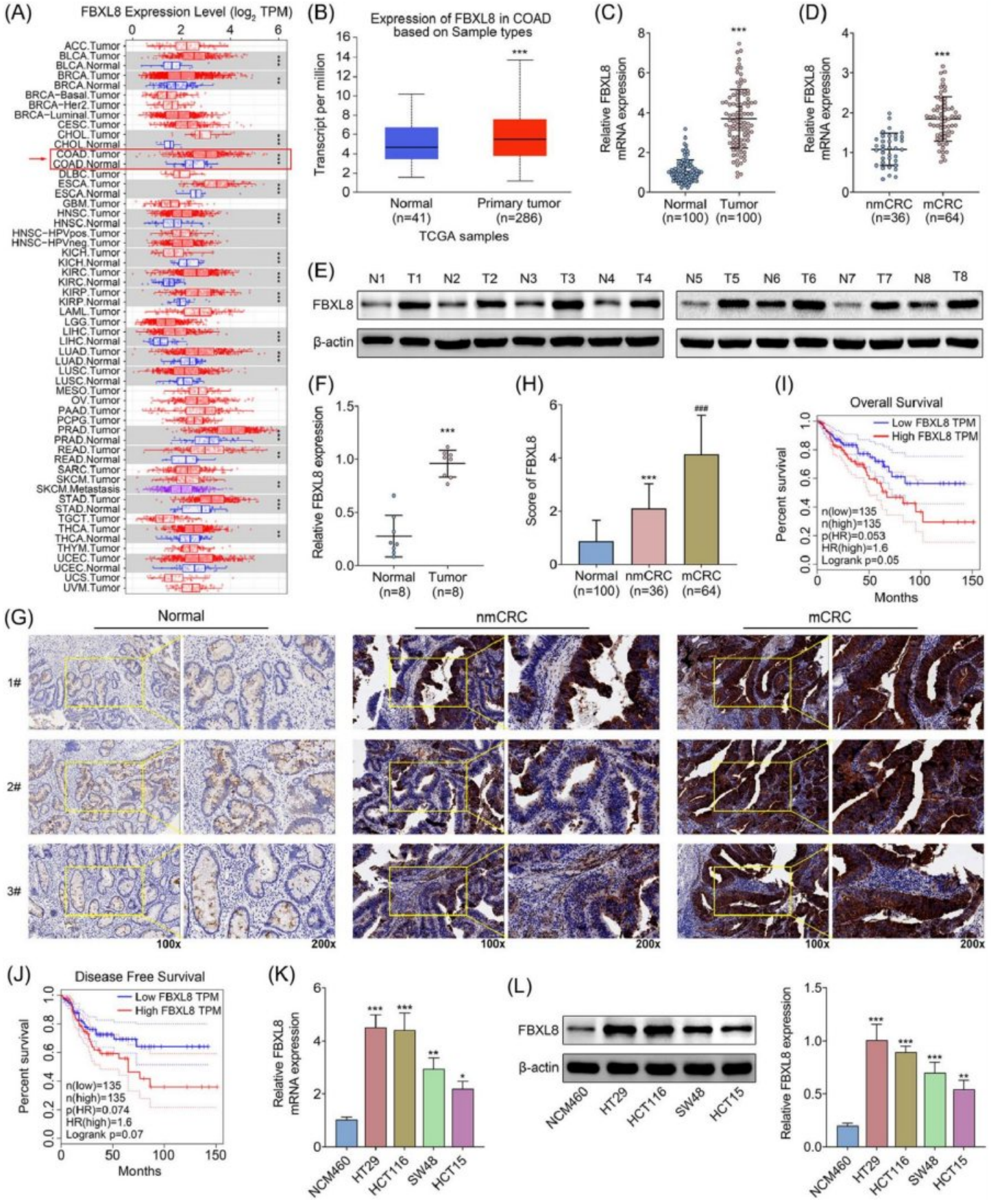
PE2-029

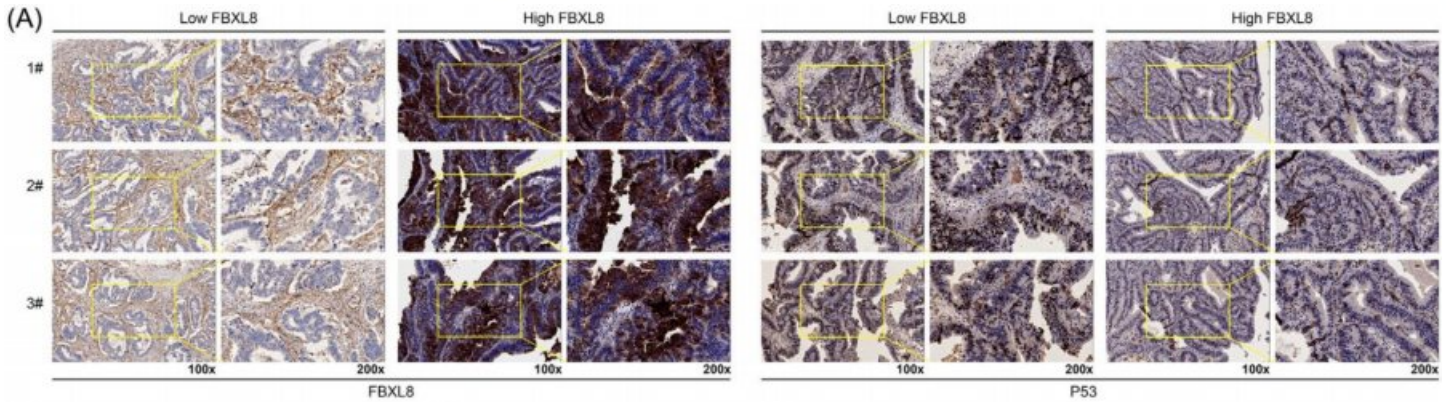
SCF-FBXL8 Contributes to Liver Metastasis and Stem-cell-like Features in Colorectal Cancer Cells by Mediating Ubiquitination and Degradation of TP53

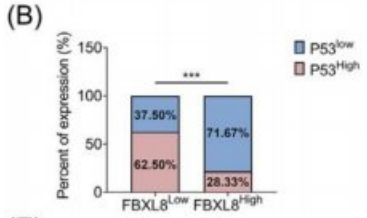
Zhengyun Zhang
Surgery, Shanghai Sixth People's Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, Shanghai, China

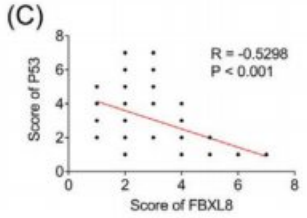
Background / Aim : FBXL8 is a conserved F-box protein, belonging to the ubiquitin ligase complex, which promotes the development and progression of tumours. However, the regulation function and mechanism of FBXL8's involvement in colorectal cancer (CRC) remain unclear.
Methods : RT–PCR is used to detect gene expression levels. Protein levels were determined by western blotting and flow cytometry. The bindings of FBXL8 and p53 and ubiquitination levels were detected by cell transfection and immunoprecipitation. The transwell assay was used to measure the ability of cells to migrate and invade. Animal studies were used to verify the function of FBXL8 in vivo.
Results : The expression of FBXL8 was up-regulated in CRC tissues, and its overexpression was associated with poor prognosis in CRC patients. The up regulation of FBXL8 promoted the proliferation, invasion and migration of CRC tumour cells and maintained the stem-cell characteristics of colorectal tumour cells. Further analysis demonstrated that FBXL8 targeted p53 and reduced its stability through ubiquitination. Knockout of FBXL8 down-regulated the proliferation, migration and stem-like properties of tumour cells. CRC mouse xenograft tumour model confirmed that FBXL8 gene knockout inhibited tumour formation and liver metastasis.
Conclusion : FBXL8 was highly expressed in CRC. Mechanism studies have shown that FBXL8 degraded tumour suppressor gene p53 by ubiquitination. FBXL8 knockout inhibited the proliferation and stem characteristics of CRC cells, so SCF-FBXL8-TP53 has potential to be used as a therapeutic target for CRC in subsequent studies.
Keywords : Colorectal Cancer, FBXL8, P53, Stem-cell, Ubiquitination

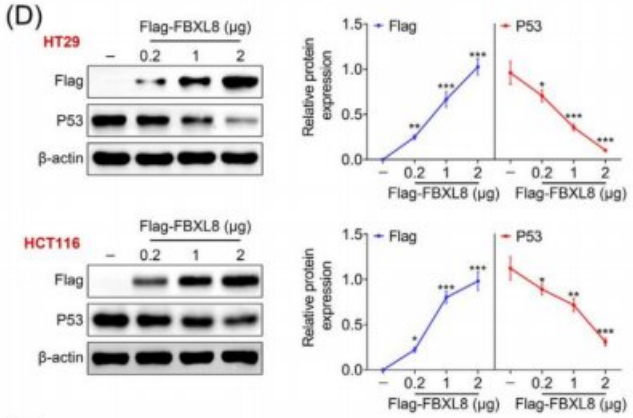


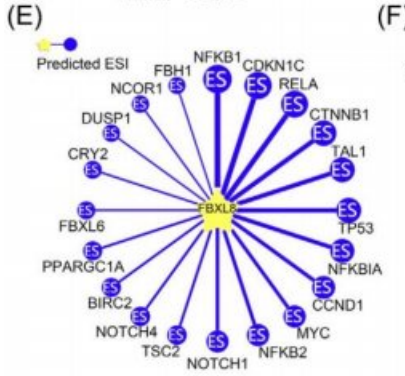

(A)
FBXL8 Expression Level (log2 TPM)
(B)
Expression of FBXL8 in COAD based on Sample types
Transcript per million
Normal (n=41)
Primary tumor (n=286)
TCGA samples
(C)
Relative FBXL8 mRNA expression
Normal (n=100)
Tumor (n=100)
(D)
Relative FBXL8 mRNA expression
nmCRC (n=36)
mCRC (n=64)
(E)
N1 T1 N2 T2 N3 T3 N4 T4 N5 T5 N6 T6 N7 T7 N8 T8
FBXL8
β-actin
(F)
Relative FBXL8 expression
Normal (n=8)
Tumor (n=8)
(H)
Score of FBXL8
Normal (n=100)
nmCRC (n=36)
mCRC (n=64)
(I)
Overall Survival
Low FBXL8 TPM
High FBXL8 TPM
Percent survival
n(low)=135
n(high)=135
p(HR)=0.053
HR(high)=1.6
Logrank p=0.05
Months
(G)
Normal
nmCRC
mCRC
1#
2#
3#
100x
200x
(J)
Disease Free Survival
Low FBXL8 TPM
High FBXL8 TPM
Percent survival
n(low)=135
n(high)=135
p(HR)=0.074
HR(high)=1.6
Logrank p=0.07
Months
(K)
Relative FBXL8 mRNA expression
NCM460
HT29
HCT116
SW48
HCT15
(L)
FBXL8
β-actin
NCM460
HT29
HCT116
SW48
HCT15
Relative FBXL8 expression

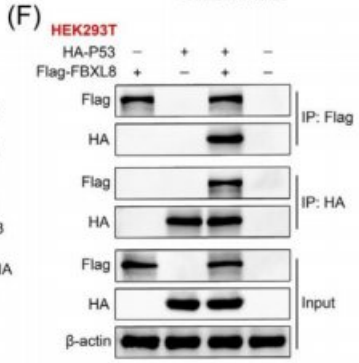

(A)
Low FBXL8
High FBXL8
Low FBXL8
High FBXL8
1#
2#
3#
100x
200x
FBXL8
P53

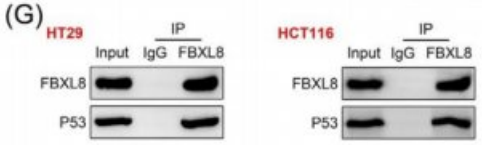

(B)
Percent of expression (%)
P53low
P53High
***
37.50%
62.50%
71.67%
28.33%
FBXL8Low
FBXL8High

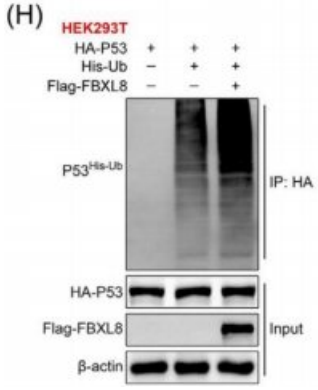

(C)
Score of P53
Score of FBXL8
R = -0.5298
P < 0.001

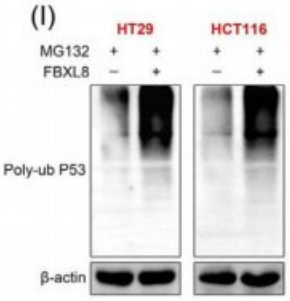

(D)
HT29
Flag-FBXL8 (μg)
Flag
P53
β-actin
Relative protein expression
HCT116

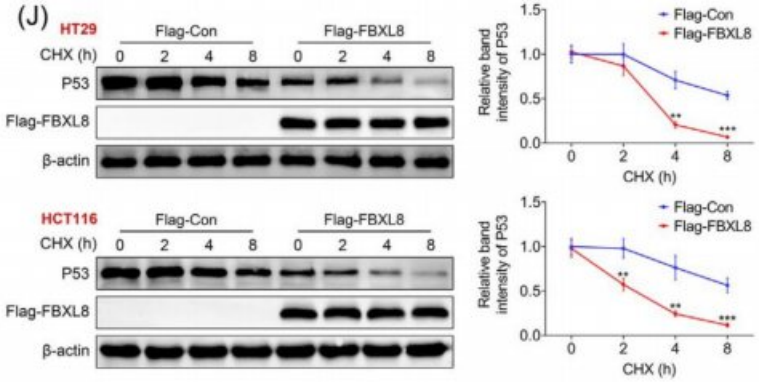

(E)
Predicted ESI
FBXL8
NFKB1
FBH1
CDKN1C
NCOR1
RELA
DUSP1
CTNNB1
CRY2
TAL1
FBXL6
TP53
PPARGC1A
NFKBIA
BIRC2
CCND1
NOTCH4
MYC
TSC2
NFKB2
NOTCH1


(F)
HEK293T
HA-P53
Flag-FBXL8
Flag
HA
IP: Flag
IP: HA
Input
β-actin


(G)
HT29
HCT116
IP
Input
IgG
FBXL8
P53


(H)
HEK293T
HA-P53
His-Ub
Flag-FBXL8
P53His-Ub
IP: HA
Input
β-actin


(I)
HT29
HCT116
MG132
FBXL8
Poly-ub P53
β-actin


(J)
HT29
Flag-Con
Flag-FBXL8
CHX (h)
P53
Flag-FBXL8
β-actin
HCT116
Relative band intensity of P53
CHX (h)

[Poster Exhibition – Colorectal Neoplasia]

PE2-030

Enhancing Colorectal Cancer Monitoring: A Comparative Study of Circulating Tumor Cells Isolation Methods

Murdani Abdullah[1,2], Dimas Noor[2], Saskia Nursyirwan[1,2], Ikhwan Rinaldi[2,3], Wifanto Jeo[3,4], Anom Bowolaksono[5], Astari Dwiranti[5], Sovya Salsabila[5], Resica Anastasya[5]

[1]Department of Internal Medicine, Cipto Mangunkusumo Hospital, Faculty of Medicine, Universitas Indonesia, Division of Gastroenterology, Pancreatobiliary, and Digestive Endoscopy, Jakarta, Indonesia

[2]Faculty of Medicine, Universitas Indonesia, Human Cancer Research Center, Indonesia Medical Education and Research Institute, Jakarta, Indonesia

[3]Department of Internal Medicine, Cipto Mangunkusomo National General Hospital, Faculty of Medicine, Universitas Indonesia, Division of Hematology and Medical Oncology, Jakarta, Indonesia

[4]Department of Surgery, Dr. Cipto Mangunkusumo Hospital, Jakarta, Indonesia, Division of Digestive Surgery, Jakarta, Indonesia

[5]Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Indonesia, Jakarta, Indonesia

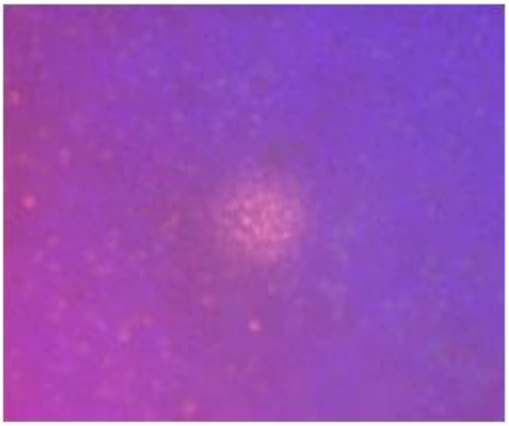
Background / Aim : Colorectal cancer, a frequently diagnosed and highly lethal disease, presents challenges due to heterogeneous patient responses to treatment. Despite its potential in disease monitoring, the exploration of circulating tumor cells (CTC) is limited by isolation difficulties. This study aims to isolate and identify CTC by comparing the efficacy of density gradient with erythrolysis.

Methods : Blood samples (6 ml) were collected from five confirmed colorectal cancer patients via endoscopy, utilizing lithium heparin tubes. Two healthy controls were recruited. CTCs were isolated using density gradient (lymphoprep, Stem cell technologies, Canada) and erythrolysis with a 3:1 ammonium chloride ratio (stem cell technologies). Fixed and permeabilized with Cytofix-Cytoperm reagent (BD), cells were transferred to a 96-well plate and stained with Cytokeratin 20-PE conjugated (Santacruz, USA). Results were observed at 20x and 40x magnification using laser capture microdissection systems (LCM, Carl Zeiss, Germany).

Results : Erythrolysis demonstrated superior CTC CK20+ enrichment compared to density gradient. CK20+ was consistently present in all colorectal cancer subjects and absent in healthy controls. CTC isolated using erythrolysis formed either as aggregates or single cell caused the cells to be much more easier to be counted using image processing software for further analysis.

Conclusion : Erythrolysis emerges as a rapid and efficient method for specific CTC enrichment in colorectal cancer. Its potential in disease monitoring and exploring single-cell CTC characteristics using laser capture microdissection systems holds promise, paving the way for collaborative efforts and improved colorectal cancer monitoring in the future.

Keywords : Circulating Tumor Cells, Density Gradient, Erytolysis, Colorectal Cancer



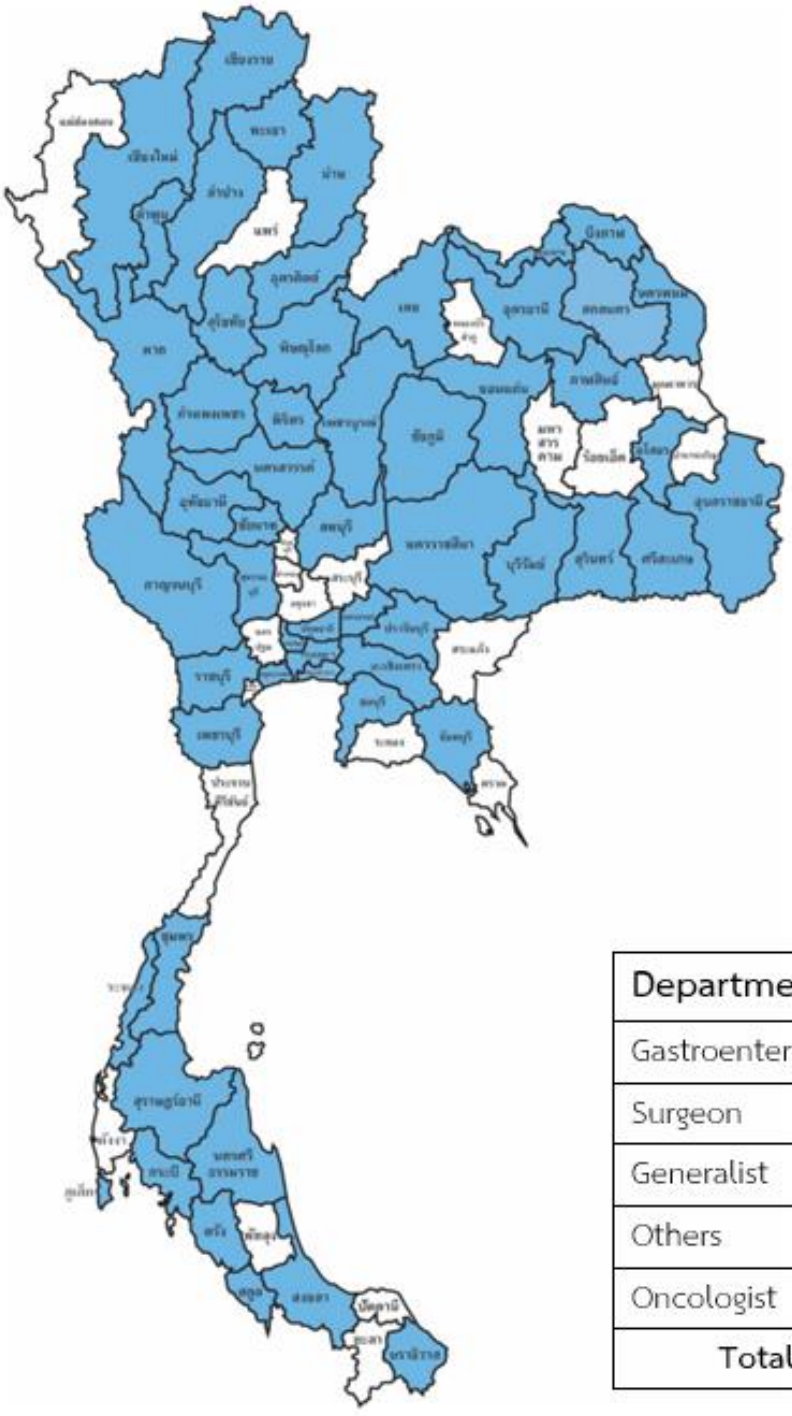
[Poster Exhibition – Colorectal Neoplasia]

PE2-031

The Quality of Colorectal Cancer Screening for First Degree Relatives of Patients with Colorectal Cancer in Thailand

Thippawan Saengnoi, Taya Kitiyakara
Gastrointestinal and Hepatology Department, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand

Background / Aim : First degree relatives (FDR) of patients with colorectal cancer (CRC) are at increased risk of CRC. National guidelines, including Thailand's, recommend early colonoscopy screening but this is rarely performed. In this study physicians nationwide were sent a questionnaire about their set up for screening FDRs.
Methods : A Google-form questionnaire about details of FDR screening was sent to various medical specialties involved with CRC nationwide during December 2021 to February 2022. The questionnaire was sent to social media platforms containing members of the Gastroenterology Association of Thailand, Thai Association of Gastrointestinal Endoscopy, Royal College of Surgeons, the head of the Oncology society and to the author's social networks. The answers were analyzed together.
Results : 176 physicians responded from 56 out of 77 provinces in Thailand, of whom were GI 33.3%, Surgeon 27.9%, oncologist 2.8%, generalist 27.8% other 6.8%. 84% came from government hospitals including primary care hospitals 23.7%, secondary care hospitals 22%, tertiary care hospitals 22.6%, and academic hospitals 22.6%. Most (88%) reported advising FDRs to have screening, and 81% of physicians did this mostly by asking CRC patients to pass on the information to their FDR. Nearly all (95.5%), gave only verbal advice. 98.6% did not know of any FDR register, and 96% did not know how many had been screened, while 75.1% estimated < 30% of FDR's had been screened. The most important screening barriers were thought to be the FDR's lack of awareness of the need for screening (67.8%), the lack of accessibility (59%), and difficulty of communicating with the FDRs (58.8%). Colonoscopy was recommended by 94.9%, FIT test by 62.1%.
Conclusion : FDRs mainly received screening advice via the CRC patients and nearly always as verbal advice only. There was very little knowledge of how many FDRs needed screening, with most respondents estimating < 30%.
Keywords : Colorectal Screening, FDR, CRC



Departments	Number (%)
Gastroenterologist	59 (33.3%)
Surgeon	49 (27.9%)
Generalist	49 (27.9%)
Others	12 (6.8%)
Oncologist	5 (2.8%)
Total	**176 (%)**

Fig 1. Map of Thailand. Provinces with respondents are shown in blue. Table 1 shows the specialty of the respondents.

Table 2: Replies to the questionnaire

Questions	Yes	No
Do you regularly advise FDRs for CRC screening?	88.7%	11.3%
In more than 50% of time, was the advice was given to CRC patient to pass on to the FDR?	81%	19%
Do you just give verbal advice (=no written advice)?	95.5%	4.5%
Do you know how many FDRs should have screening at your hospital (or know of any FDR registry)?	1.7%	98%
Do you have any data on the percentage of FDR's already screened?	3.42%	96%
Does your hospital have genetic testing?	20%	78%
What the percentage of FDR do you estimate have been screened? (percentage of respondents replying more than 50%)	7.6%	92.4%
Correctly answering the question on the timing of screening for FDRs according to American College of Gastroenterology 2021 guideline?	7.38%	92.6%
Correctly answering the question on the timing of screening for FDRs according to Thailand' s National Cancer Institute 2015 guideline?	4.54%	95.45%

[Poster Exhibition – Colorectal Neoplasia]

PE2-032

Analysis of Colonoscopic Polypectomy Results in the Family Medical Hospital in Ulaanbaatar, Mongolia

Buyantogtokh Purevdorj, Javkhlan Tsengenbayar, Udval Mashbat
Internal Medicine, Endoscopic Division, Family Medical Hospital, Ulaanbaatar, Mongolia

Background / Aim : Colorectal cancer is the third most common cancer type worldwide, from the report from International Agency for Research on Cancer in 2022. According to the latest WHO data published in 2020 colon-rectum cancers deaths in Mongolia reached 93 of 0.42% of total deaths. The age adjusted Death Rate is 4.43per 100.000 of the population ranking Mongolia 155th in the world. Currently, there is a lack of research on colon polyp in Mongolia, which is the reason for this study.
Methods : We retrospectively analyzed the polypectomy procedure of 555 polyps from 293 patients who underwent colonoscopy at Family Medical Hospital's Endoscopy Department from January 2022 till December 2023. Patients gender, age,polyps localization, size, number and histopathological features of polyps were recorded. Data were expressed using SPSS software package version 23.0 and described using mean standart deviation.
Results : According to gender, 157 (53.58%) were men and 136 (46.42%) were women, and mean age was 57.05 ±5.58. In terms of age and location, the polyps most commonly located at the sigmoid colon of the patient whose age were 41 to 50 years olds (Table 1). According to their size, 363 polyps (65.41%) were 0.1-0.5cm, 152 (27.39%) were 0.6-0.9 cm, and 40 (4.86%) were more than 1cm. The histological type after polypectomy was adenoma 254 (45.76%), hyperplastic polyp 277 (49.91%), adenocarcinoma 10 (1.8%), neuroendocrine tumor 8 (1.44%), and benign tumors 6 (1.08%) respectively (Table 2). As for endoscopic procedures, 417 (75.14%) were snare polypectomy, 69 (12.43%) were EMR,1 (0.18%) were ESD and 68 (12.25%) were performed using forceps (Table 3).
Conclusion : Colonoscopic polypectomy effectively reduces the risk of colorectal cancer by removing precancerous polyps. Tubular adenoma was the most common neoplastic polyp. Most procedures were used hot snare polypectomy. In our country, a multicenter prospective study with many participants is required to characterize polyps.
Keywords : Colonoscopy, Polypectomy, Colonic Polyp, Colonic Cancer, Adenoma

Table 1. Colonic lesions location and age groups.

Age groups	20-30 n=11	31-40 n=64	41-50 n=85	51-60 n=69	61-70 n=43	71-80 n=20	81-90 n=1	Total n=293
Rectum	5	31	30	20	13	6	0	105
Sigmoid	4	33	55	46	28	25	4	195
Descending	3	19	31	24	16	11	3	107
Transverse	1	4	23	25	13	6	0	72
Ascending	0	6	10	15	18	11	0	60
Caecum	0	2	6	3	4	1	0	16
Total	13	95	155	133	92	60	7	555
Percentage	2.34%	17%	28%	24%	17%	11%	1.26%	100%

Table 2: Histological type

№	Histopathology			Number	Percentage %
1	**Neoplastic**	1	Tubular adenoma	84	15.16
			Tubular adenoma low grade	130	23.45
			Tubular adenoma high grade	2	0.36
		2	Tubulovillous adenoma	25	4.5
		3	Villous adenoma low grade	2	0.36
		4	Sessile serrated adenoma	6	1.08
		5	Traditional serrated adenoma	2	0.36
		6	Serrated polyp	3	0.54
2	**Non-neoplastic**	7	Hyperplastic polyp	277	49.9
		8	Lymphagioma	1	0.18
		9	Inflammatory polyp	1	0.18
		10	Celiac polyp	2	0.36
		11	Fibroid polyp	2	0.36
3	**Adenocarcinoma**	12	Adenocarcinoma	10	1.8
		13	NET	8	1.44
			total	555	100

Table 3: Procedure

	total	percentage
Hot snare polypectomy	417	75.14
Forcep polypectomy	68	12.25
EMR	69	12.43
ESD	1	0.18
total	555	100

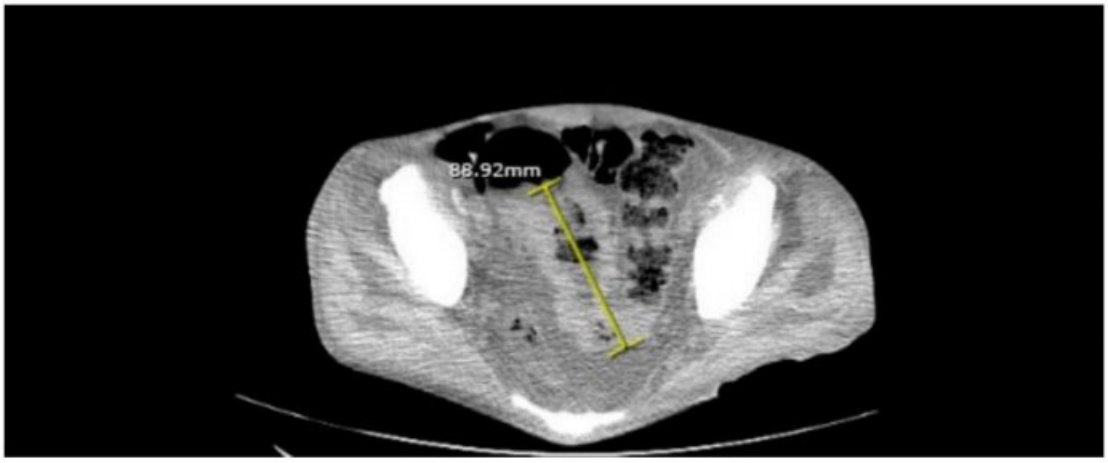
[Poster Exhibition – Colorectal Neoplasia]

PE2-033

A Case of Colon Cancer Presenting as: Colovesical Fistula (CVF)

Monika Jain[1], Amar Ranjan[2], Kalpana Panigrahi[1]
[1]Internal Medicine, Interfaith Medical Center One Brooklyn Health, New York, United States
[2]Pathology, AIIMS, Delhi, India

Background / Aim : CVF is an uncommon presentation of Colon cancer
Methods : Case study
Results : A 58-year-old male with persistent fatigue, shortness of breath, and 35-pound weight loss over six months. A previous visit with a CT scan on 9/21/20 uncovered a sigmoid colon displaying an apple-core appearance. The patient refused the treatment and signed ama. Now presented with watery diarrhea, fatigue, and urinary symptoms. Labs on 11/19/2023 revealed severe hypochromic microcytic anemia (Hb 3.4 g/dL). A CT abdomen with contrast disclosed abnormal irregular lobular mural thickening of the distal sigmoid colon (1.9 cm), suggestive of malignancy. Notably, transmural exophytic invasion of the bladder with a probable enterovesicular fistula, and extensive hepatic metastatic disease were found. Urinalysis confirmed a UTI, with fecal matter in urine. The colonoscopic biopsy was pursued, exposing intramucosal adenocarcinoma associated with serrated adenoma. This precipitated the development of gross hematuria and blood in the stool, leading to the suspension of Lovenox due to bleeding concerns. A critical turn occurs with the emergence of Pulmonary Embolism, confirmed by an ECHO, revealing thrombi in the inferior vena cava, causing dilation. Subsequent CT angiography affirmed pulmonary emboli in the right lung without right heart strain. Despite the PE, therapeutic Lovenox was refused, and the patient adhered to prophylactic doses. However, hematuria worsened with anticoagulation, resulting in the discontinuation of Lovenox. Further assessment disclosed global hypokinesis of the left ventricle, hindering immediate surgery. Urology proposed palliative radiation for bladder involvement, acknowledging the impracticality of diverting colectomy.
Conclusion : Imaging studies help in the timely detection of CVF, with insights into the intricacies of the fistula, surrounding anatomical structures, directing the subsequent treatment plan. This case accentuates the importance of contemplating CVF in patients grappling with advanced colon cancer and presenting with urinary symptoms. It underscores the urgency of timely imaging and a multidisciplinary approach to patient management.
Keywords : Advanced Colon Cancer, Colovesical Fistula, Patietn Education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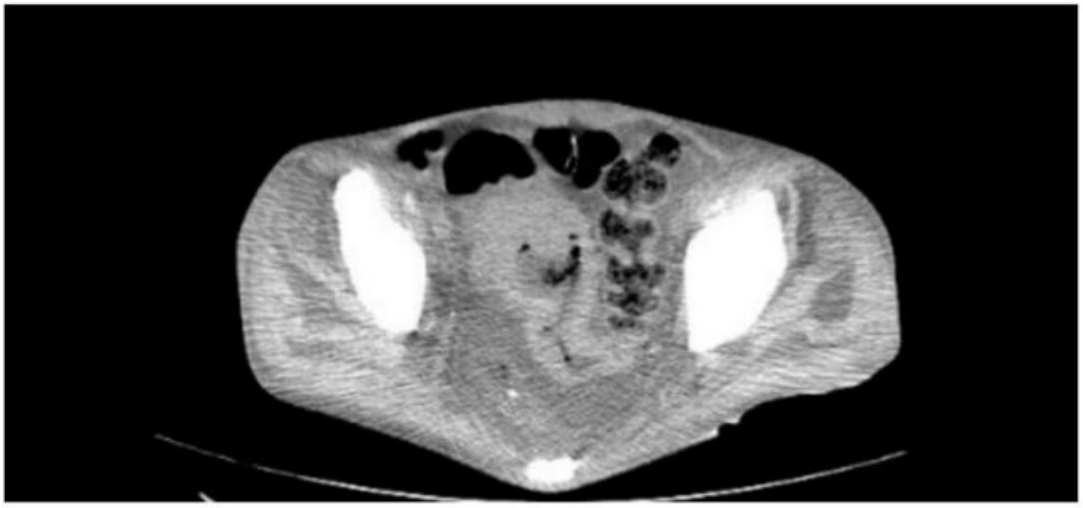


[Poster Exhibition – Colorectal Neoplasia]

PE2-034

The Quality of Life of Colorectal Cancer Patients Post-colostomy: A Literature Review

Derizal Derizal[1], Roland Helmizar[2]
[1]Tourism, IP of Trisakti, South Jakarta, Indonesia
[2]Health, Baiturrahmah University, Padang, Indonesia

Background / Aim : In cases of colorectal cancer, the main complaints of patients that often arise are abdominal pain, changes in bowel habits, rectal bleeding, and iron deficiency anemia. Treatments that can be carried out for colorectal cancer include surgery, radiotherapy and adjuvant chemotherapy followed by making a hole/stoma, also known as a colostomy. This study aims to look at the quality of life of post-colostomy colorectal cancer patients.
Methods : The method used is identify papers and reports published from 2010-2022. The study was using cross-sectional studies and longitudinal studies and compared the quality of life of Colorectal Cancer Post Colostomy.
Results : The results show that improved physical function corresponds to improved post-colostomy adaptation. When a colostomy is installed, you experience pain, anxiety, worry about your weight, flatulence and embarrassment, become limited in carrying out daily activities, have limitations during sexual and social relations, have various negative feelings after having an end-stoma, experience financial difficulties, experiencing changes in the fulfillment of rest and sleep, physical and complications, having hopes that must be achieved after undergoing an end stoma, physical problems, psychological problems, social relationships, environmental impacts.
Conclusion : So, there is a decrease in the quality of life for Colorectal Cancer after Colostomy, both in terms of physical function, emotional function, financial function, social function and environment. Therefore, there is a need for nursing care for Colorectal Cancer patients after colostomy.
Keywords : Quality of Life, Colorectal Cancer, Post-Colostomy

[Poster Exhibition – Colorectal Neoplasia]

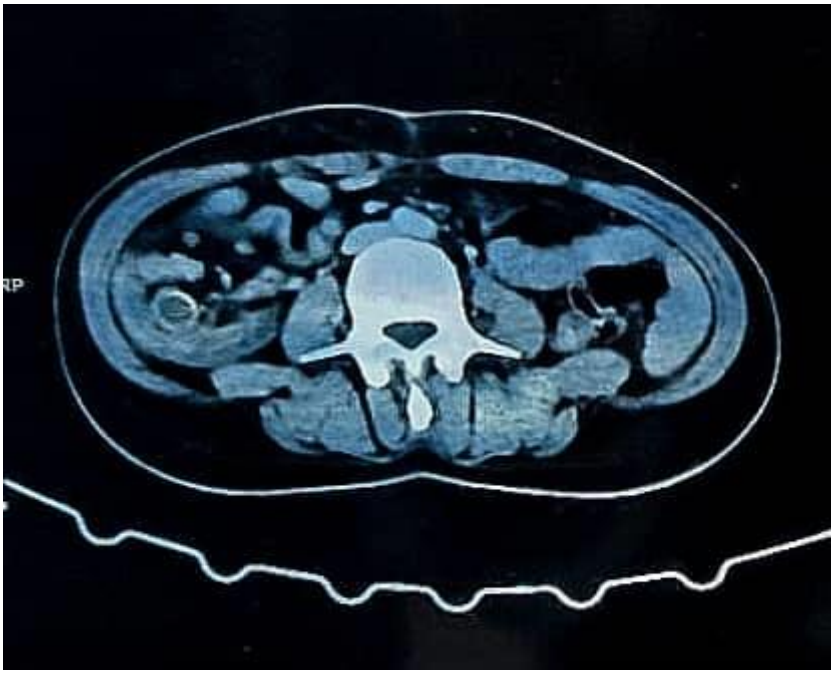
PE2-035

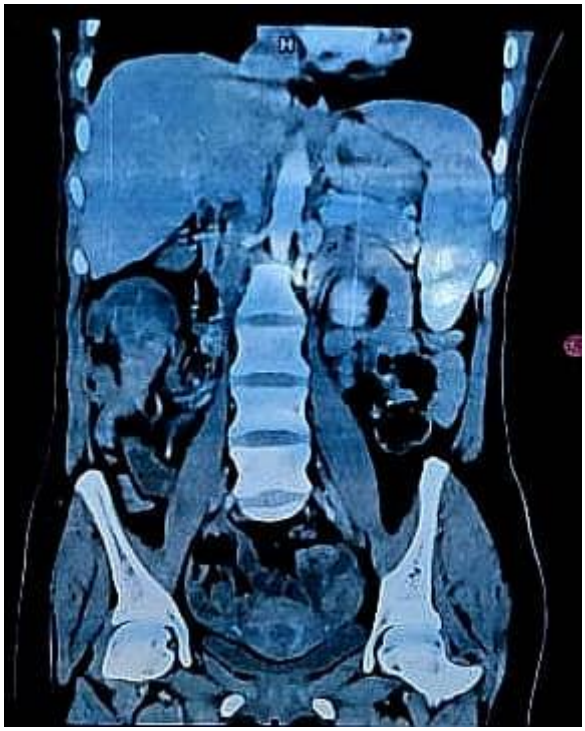
Ileocecal Intussusception as an Unusual Presentation of Ascending Colon Adenocarcinoma: A Case Report from Sudan

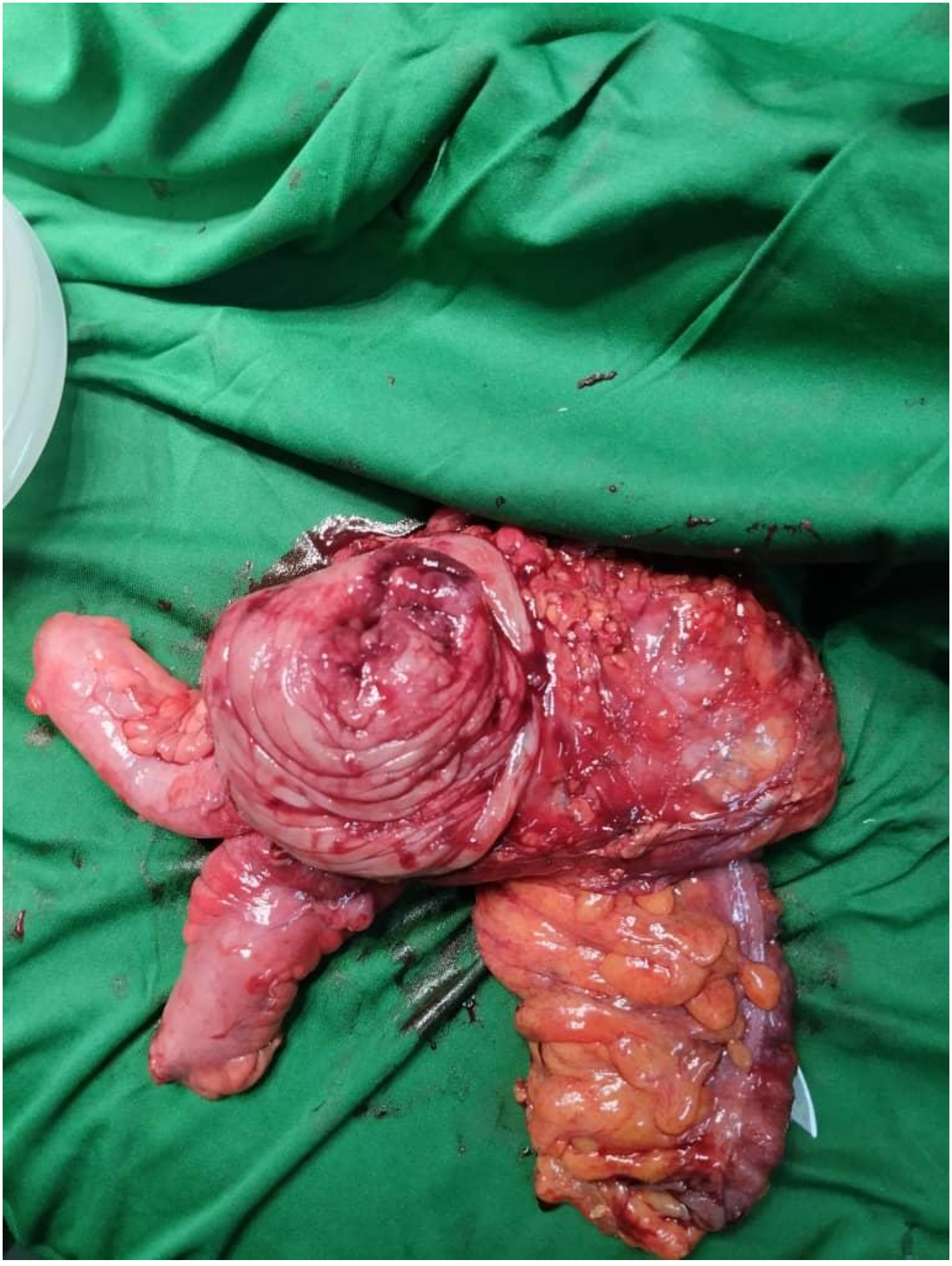
Ahmed Rafei[1], Nadir Hilal[2]
[1]Research, National Center for Gastrointestinal and Liver Diseases, Khartoum, Sudan
[2]Colorectal Surgery, National Center for Gastrointestinal and Liver Diseases, Khartoum, Sudan

Introduction: Colonic intussusception in adults is a rare occurrence, representing only 1–5% of all instances of adult intestinal obstructions. Unlike pediatric cases, adult intussusception often involves organic pathologies, with colonic tumors as the leading cause. This case study adds to the literature by presenting a unique case of ileocecal intussusception in a 42-year-old woman with ascending colon adenocarcinoma, emphasizing the importance of recognizing nonspecific symptoms in adults for prompt diagnosis. Case Presentation The patient presented with a 2-month history of severe fatigability, weight loss, right hypochondrial pain, intermittent diarrhea, and rectal bleeding. The patient had a strong family history of colon cancer, as her twin sister passed away due to colon cancer three years ago. Physical examination revealed cachexia and a palpable mass in the right hypochondrium. Colonoscopy revealed an obstructive mass in the ascending colon, confirmed as invasive adenocarcinoma. An abdominal CT suggested intussusception without metastasis. A laparoscopic right hemicolectomy was performed successfully without reduction of the intussusception. Discussion Adult intussusception categorization depends on location; this case involved ileocecal intussusception. Unlike children, adults may present with nonspecific abdominal symptoms, leading to delayed diagnosis. Preoperative diagnostic techniques, including CT and colonoscopy, are crucial for identifying the underlying cause, often malignancy. In this case, primary colon adenocarcinoma triggered intussusception. Right hemicolectomy is a recommended intervention for cases involving malignancy. Despite socioeconomic challenges and war-related constraints, emphasis on early detection through genetic testing is crucial for at-risk family members, potentially guiding interventions for hereditary conditions like Lynch syndrome. Conclusion: This case underscores the significance of considering malignancy, in adult colonic intussusception. Recognition of nonspecific symptoms and timely diagnostic approaches, such as CT and colonoscopy, are crucial for optimal patient outcomes. The patient's familial history of colon cancer raises concerns about hereditary factors, warranting further screening for first-degree relatives.

Keywords : Inussusception, Colorectal Cancer, Sudan, Case Report







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[Poster Exhibition – Colorectal Neoplasia]

PE2-036

Uncommon Ureteric Metastasis from Rectosigmoidal Cancer:

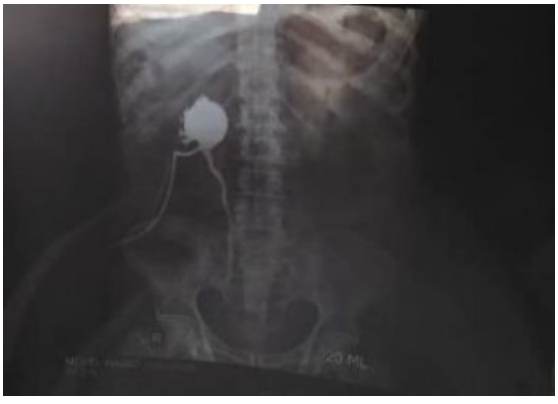
A Case Report and Review of Literature

Ahmed Rafei[1], Muntasir Mukhtar[2], Almigdad Musa[2], Abdulwahab Abdulkarim[3], Hind Hassabelrasoul[5], Mohamed Soud[4]

[1]Research, National Center for Gastrointestinal and Liver Diseases, Khartoum, Sudan
[2]Su, Omdurman Islamic University, Khartoum, Sudan
[3]Medicine, Hayatt University College, Khartoum, Sudan
[4]Surgery, University of Gezira, Wad Madni, Sudan
[5]Su, Iqraa University College, Wad Madni, Sudan

Introduction: Colorectal cancer (CRC) is a globally prevalent malignancy, ranking as the third most common cancer and the second leading cause of cancer-related deaths. Despite its prominence, ureteric metastasis from CRC is an exceedingly rare phenomenon, with few documented cases in the medical literature. We present an uncommon case of right ureteric metastasis originating from rectosigmoidal cancer, shedding light on the scarcity and clinical significance of this presentation. Case Presentation: A 63-year-old male with advanced-stage rectosigmoidal cancer developed severe constipation, prompting diversion colostomy. Subsequently, he experienced fever, right flank pain, and suprapubic discomfort, alongside darkened urine and reduced output. Evaluation revealed right ureteric hydronephrosis, necessitating a percutaneous nephrostomy. Referral to our surgery department disclosed rectal bleeding, lower abdominal pain, and weight loss. Blood tests revealed anemia, and histopathological examination confirmed early invasive adenocarcinoma. Laparotomy uncovered a rectosigmoidal mass invading the ileocecal junction and bladder, obstructing the right ureter and causing hydronephrosis. Discussion: Ureteric metastasis from colorectal cancer is exceptionally rare, with only a handful of documented cases. A comprehensive analysis identified 265 cases of metastatic malignant disease involving the ureter, primarily originating from sites such as the prostate, bladder, breast, gastrointestinal tract, and lymphoma. A small subset of cases demonstrated metastasis from small and large bowel to the ureter. Prior reports emphasize the varied presentation of ureteric involvement, including obstructive manifestations similar to our case. Timely detection is crucial, considering potential renal damage. Surgical interventions such as radical nephroureterectomy and segmental ureterectomy with ureteroureterostomy have been employed in analogous cases, underlining the importance of tailored approaches. Conclusion: This case underscores the rarity of colorectal cancer metastasizing to the ureter. Surgical interventions, including nephroureterectomy, highlight the need for tailored approaches. Regular monitoring during follow-up is essential, emphasizing the scarcity of standardized protocols for this uncommon complication.

Keywords : Ureteric Metastases, Colorectal Cancer, Rectosigmoidal Cancer, Case Report, Sudan



[Poster Exhibition – Colorectal Neoplasia]

PE2-037

Potential of Circulating MicroRNAs as a Novel Non-invasive Biomarker for the Diagnosis and Prognosis of Colorectal Cancer Patients: A Review

Nadyatul Husna
Medical Doctor/ General Practitioner, Alumnus of Universitas Andalas, Padang, Indonesia

Background / Aim : Colorectal cancer (CRC) had the third rank of cancer incidence world. The poor prognosis of CRC occur due to the delayed detection of malignant disease. The current application of imaging, biopsy, and biomarkers for diagnosis is considered ineffective because of the high cost, technical difficulties, invasive, poor specificity and sensitivity for CRC detection. Nowadays, spesific types of Circulating MicroRNAs (MiRNAs), a class of small non-coding RNA expressed by various cancer cells to biofluids, found to be a non-invasive indicator for diagnostic and prognostic of CRC. To evaluate the diagnostic and prognostic value of circulating MiRNA in CRC compared to chronic pancreatitis and normal individuals.
Methods : This systematic review collects literatures from PubMed, Science Direct, Directory of Open Access Journal (DOAJ), NLM, and Epistemonikos using standardized methods by cochrane guideline for systematic review to evaluate the diagnostic value of circulating MiRNAs as biomarkers for CRC by its sensitivity, specificity, and Area Under the Curve (AUC) score.
Results : The reviewed studies show that it is possible to use circulating MiRNAs as non-invasive diagnostic and prognostic biomarker for CRC as well as discriminating CRC from chronic pancreatitis patients and normal individuals with reasonable sensitivity, specificity, AUC, and prognosis of CRC.
Conclusion : Circulating MiRNAs isolated from human plasma, serum, and blood can be use as noninvasive diagnostic and prognostic biormarker for CRC.
Keywords : Circulating Micrornas, Colorectal Cancer, Diagnostic, Prognostic, Systematic Review

[Poster Exhibition – Colorectal Neoplasia]

PE2-038

Salvage Treatment for Rectal Neuroendocrine Tumor with Positive Resection Margin Resected by Endoscopy

Youngeun Seo[1], Hyunghoon Oh[1], Donghyun Kim[2], Daeseong Myung[1], Hyunsoo Kim[2], Youngeun Joo[1]
[1]Gastrointestinal Medicine, Chonnam National University Hwasun Hospital, Hwasun, Korea
[2]Gastrointestinal Medicine, Chonnam National University Hospital, Gwangju, Korea

Background / Aim : It is well known that modified endoscopic mucosal resection (EMR) or endoscopic submucosal dissection warrants higher complete resection rates than cold snare polypectomy or conventional EMR in treating rectal neuroendocrine tumors(NETs). However, cold snare polypectomy or conventional EMR methods are still used without perceived NET with pathological report of incomplete resection. We aimed to find the clinical outcomes of incompletely resected rectal NETs.
Methods : This study included 157 patients who showed positive or indeterminate resection margin after endoscopic removal of rectal NET at two tertiary hospitals from 2008 to 2020. Primary treatment was done at local clinics or at two tertiary hospitals. The recurrence rates and presence or absence of residual tumor after salvage treatment were evaluated.
Results : Among 157 patients, 54 patients received salvage treatment and 103 patients that showed no remnant tumor at the colonoscopy and underwent close follow-up. In 54 patients who received salvage treatment, remnant tumor was found at 17 patients (31.5%). During a median follow-up of 34.5 months, there were 1 (1.9%) local recurrence and 1 (1.9%) synchronous lesion. In 103 patients who underwent close follow-up, there was no local recurrence but there were 2 (1.3%) distant metastases and 2 (1.3%) synchronous lesions. Patients who had endoscopic resection at non-tertiary medical center, without perceived NET and non-modified EMR or ESD method were associated with remnant tumor after salvage treatment. ($p<0.001$, $p=0.005$, $p<0.001$ respectively)
Conclusion : Patients with positive resection margin after endoscopic removal of rectal NET at non-tertiary medical center, without perceived NET and used non-modified EMR or ESD method should consider salvage treatment.
Keywords : Rectal Neuroendocrine Tumor, Remnant Tumor, Salvage Treatment

[Poster Exhibition – Colorectal Neoplasia]

PE2-043

Therapeutic Potential of Pachypodol in the Medicine for the Treatment of Colon Cancer with Their Molecular Mechanism

Kanika Patel, Dinesh Kumar Patel
Department of Pharmaceutical Sciences, Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj, India

Background / Aim : Flavonoids are a group of polyphenolic compounds diverse in chemical structure and characteristics. Flavonoids occur naturally in fruit and vegetables and are an integral part of the human diet. Pachypodol is a natural dietary flavonoid, which is isolated from Pogostemon cablin Benth and reported to exhibited antioxidant and antimicrobial activities.
Methods : Present work investigated the biological potential and therapeutic effectiveness of pachypodol against colon cancer through scientific data analysis of various scientific research works and summarized scientific data of pachypodol in order to know the biological potential of pachypodol on colon cancer. Biological effect of pachypodol on colon cancer has been investigated in the scientific research work and the data has been collected and analyzed in the present work. Other pharmacological activities scientific data has been also analyzed in order to know the biological importance of pachypodol on colon cancer.
Results : Pachypodol also called 5,4'-dihydroxy-3,7,3'-trimethoxyflavone has been isolated from the leaves of Calycopteris floribunda Lam, Syzygium aromaticum and Miliusa balansae. Anticancer potential of pachypodol has been determined in the scientific research work through brine shrimp lethality assay, and colon cancer cell line and revealed significant potential in the medicine. In another scientific study pachypodol revealed cytotoxic activity against human cell lines.
Conclusion : Scientific data analysis signified the biological potential of pachypodol on colon cancer.
Keywords : Pachypodol, Medicine, Colon Cancer, Therapeutic Benefit

[Poster Exhibition – Small Bowel Disease & Nutrition]

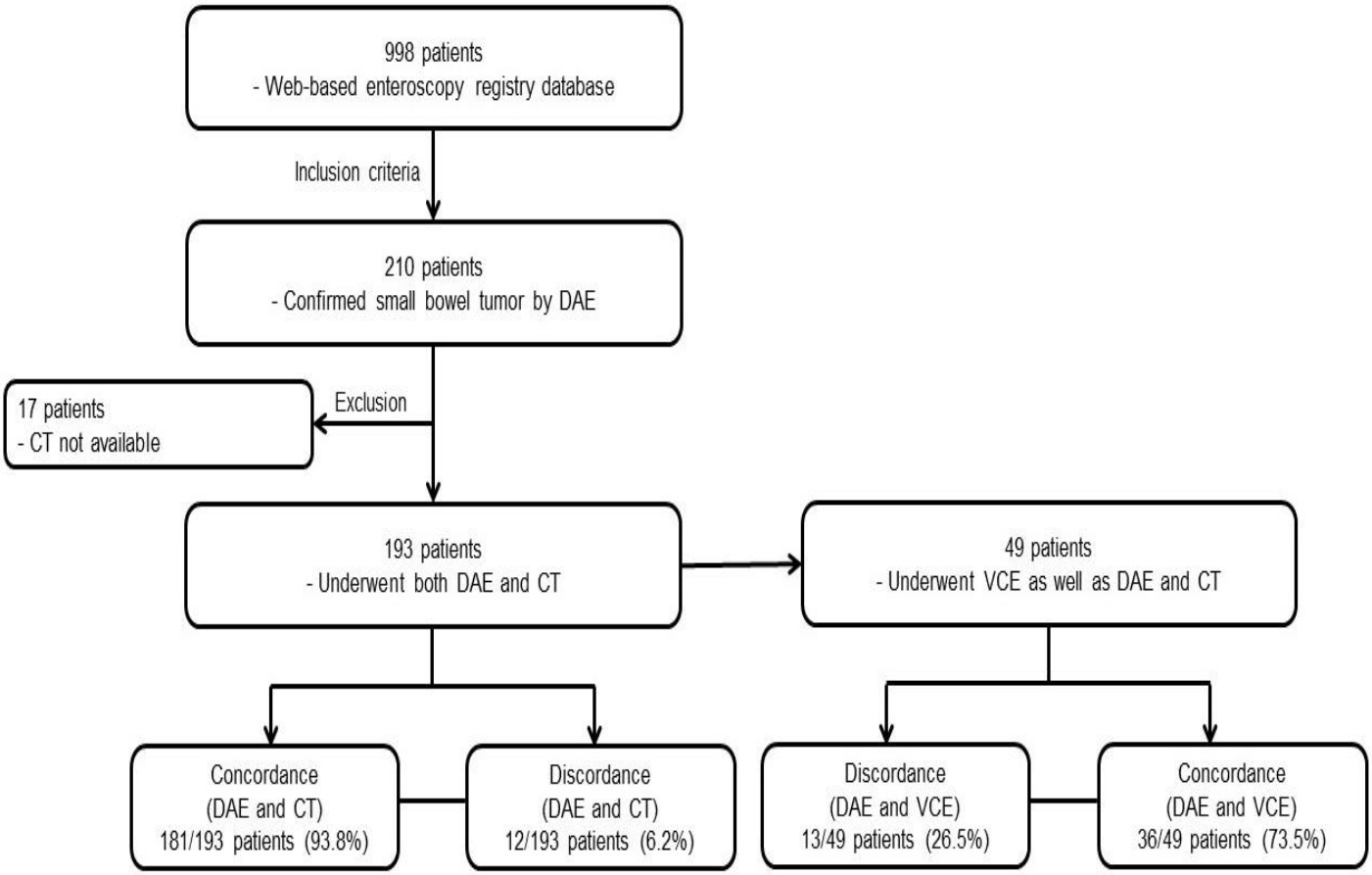
PE3-001

Discordance Rate and Risk Factor of Other Diagnostic Modalities for Small Bowel Tumors Detected by Device-assisted Enteroscopy: A Korean Association for the Study of Intestinal Disease (KASID) Multicenter Study

Jihye Park[1], Jin Su Kim[2], Joo Hye Song[3], Kwangwoo Nam[4], Seong-Eun Kim[5], Eui Sun Jeong[5], Jae Hyun Kim[6], Seong Ran Jeon[7]

[1]Department of Internal Medicine, Sinchon Severance Hospital, Yonsei University College of Medicine, Seoul, Korea
[2]Department of Internal Medicine, Eunpyeong St. Mary's Hospital, College of Medicine, The Catholic University of Korea, Seoul, Korea
[3]Department of Internal Medicine, Konkuk University School of Medicine, Seoul, Korea
[4]Department of Internal Medicine, Dankook University Hospital, Dankook University College of Medicine, Cheonan, Korea
[5]Department of Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea
[6]Department of Internal Medicine, Kosin University College of Medicine, Busan, Korea
[7]Department of Internal Medicine, Soonchunhyang University College of Medicine, Seoul, Korea

Background / Aim : Despite advances in imaging and endoscopic technology, various diagnostic modalities are performed simultaneously for the diagnosis of small bowel tumors. We investigated the discrepancy rate between each modality and predictive factors of discrepancy in patients with definite small bowel tumor.
Methods : Patients data with definite small bowel tumors underwent both Device-assisted enteroscopy (DAE) and computed tomography (CT) were retrieved from web-based enteroscopy registry database in Korea. Predictive risk factors associated with discrepancy were analyzed using the logistic regression analysis.
Results : Of these 998 patients, the 210 patients (21.0%) diagnosed small bowel tumor by DAE. 193 patients diagnosed definite small bowel tumor underwent both DAE and CT. Of 193 patients underwent both DAE and CT examination, 12 patients (6.2%) showed discrepancy between examinations. Of 49 patients underwent both DAE and video capsule endoscopy (VCE) examination, 13 patients (26.5%) showed discrepancy between examinations. There were no significant independent risk factors associated with concordance between DAE and CT in multivariate logistic regression analysis in patients with small bowel tumor. In multivariate logistic regression analysis, red blood cell transfusion was negatively associated with concordance between DAE and VCE in patients with small bowel tumor (odds ratio [OR]: 0.163; 95% confidence interval [CI]: 0.026-1.004; p value = 0.050).
Conclusion : The discrepancy rate between DAE and CT was 6.2%, and the discrepancy rate between DAE and VCE was 26.5% of small bowel tumors. Despite developments in cross-sectional imaging, VCE and DAE modalities, discrepancies still exist. In patients with small bowel bleeding who required a considerable transfusion while showing insignificant VCE findings, DAE should be considered as the next diagnostic approach considering the possibility of missed small bowel tumor.
Keywords : Device-assisted Enteroscopy, Computed Tomography, Video Capsule Endoscopy, Small Bowel Tumors


998 patients
- Web-based enteroscopy registry database
Inclusion criteria
210 patients
- Confirmed small bowel tumor by DAE
Exclusion
17 patients
- CT not available
193 patients
- Underwent both DAE and CT
49 patients
- Underwent VCE as well as DAE and CT
Concordance
(DAE and CT)
181/193 patients (93.8%)
Discordance
(DAE and CT)
12/193 patients (6.2%)
Discordance
(DAE and VCE)
13/49 patients (26.5%)
Concordance
(DAE and VCE)
36/49 patients (73.5%)

[Poster Exhibition – Small Bowel Disease & Nutrition]

PE3-002

Efficacy of Mucoprotective Agents on Recurrence of Non-steroidal Anti-inflammatory Drug-induced Enteropathy based on Severity: Multi-center Retrospective Study

Kyewhon Kim[1], Kyeong Ok Kim[1], Hyun Joo Jang[2], Sin Hee Kim[3], Su Hwan Kim[4], Ji Hyung Nam[5], Young Joo Yang[6], Sang-Bum Kang[7]

KSGE, Research Group of Capsule Endoscopy and Artificial Intelligence in Imaging

[1]Department of Internal Medicine, Yeungnam University College of Medicine, Deagu, Korea

[2]Department of Internal Medicine, Hallym University Dongtan Sacred Heart Hospital, Hwaseong, Korea

[3]Digestive Disease Center and Research Institute, Department of Internal Medicine, Soonchunhyang University Bucheon Hospital, Bucheon, Korea

[4]Department of Internal Medicine, Seoul Metropolitan Government Seoul National University Boramae Medical Center, Seoul, Korea

[5]Department of Internal Medicine, Dongguk University Ilsan Hospital, Goyang, Korea

[6]Department of Internal Medicine, Hallym University College of Medicine, Chuncheon, Korea

[7]Department of Internal Medicine, Daejeon St. Mary's Hospital, Daejeon, Korea

Background / Aim : There is limited evidence regarding clinical outcome of non-steroidal anti-inflammatory drugs(NSAIDs)- induced enteropathy. We aimed to investigate the clinical feature, treatment, incidence and risk factors of recurrence, and clinical relevance of mucoprotectants in NSAIDs-induced enteropathy.

Methods : This is a multicenter retrospective study from 7 university hospital in Korea. From 2004 to 2021, medical records of 135 patients were reviewed retrospectively. Clinical feature, diagnostic modality, location and findings of lesion, clinical outcomes are evaluated. Additionally, we also compared clinical outcomes between the mucoprotective agent presecription or not.

Results : Median age was 69 years (IQR : 59.0-76.0) and74 patients (54.8%) were male. The most often used NSAIDs among diagnosed patients was aspirin (76, 56.3%), followed by non-selective NSAIDs (41, 30.4%), COX2-selective NSAIDs (9, 6.7%), Mucoprotective agents were used in only 22 patients (16.3%) initially. Of total 135 patients, 107 patients presented with gross bleeding as initial symptom, others with abdominal pain (10, 7.4%) and anemia (15, 11.1%). Endoscopy including esophagogastroduodenoscopy, colonoscopy, capsule endoscopy and balloon assisted enteroscopy were performed in 114 (84.4%) patients. NSAID discontinuation was done in 112 (83%) patients. Recurrence after discontinuation was noted in 26 (23%) of the 112 patients. and 22 (95%) of the 23 patients continuously using medications experienced relapse(p value = 0.039). There was no significant factors associated with recurrence. However, when we analyzed in patients with severe endoscopic lesion, the incidence of unfavorable outcomes defined as necessity intervention, recurrence or death was significantly lower in patients who continued mucoprotectants compared with those without (p value = 0.034).

Conclusion : Of 135 patients with NSAIDs induced enteropathy, recurrence occurred in 27 (20%), and discontinuation of NSAIDs was the only risk factor for recurrence. Using mucoprotectant in patients with severe endoscopic lesion to reduce the occurrence of unfavorable outcome.

Keywords : NSAIDs Induced Enteropathy, Mucoprotectant, NSAIDs

Table 1. Clinical characteristics of patients

Age (mean±SD)	67.4±13.2
Sex, male	74 (54.8%)
Underlying disease	
Hypertension	78 (57.7%)
Cardiovascular disease	43 (31.8%)
Diabetes mellitus	33 (24.4%)
Cerebrovascular disease	23 (17.0%)
Arthritis	17 (12.5%)
Others*	10 (7.4%)
NSAIDs	
Aspirin	76 (56.3%)
Non-selective COX inhibitor	41 (30.4%)
Cox-2 inhibitor	9 (6.7%)
Both	9 (6.7%)
Anti-platelet/Anti-coagulation medication	
Anti-platelet	41 (30.4%)
Anti-coagulant	9 (6.7%)
Initial concurrent medication	
Protein pump inhibitor	27 (20.0%)
H2 blocker	19 (14.0%)
Rebamipide	14 (10.3%)
Misoprostol	1 (0.7%)
Initial symptom	
Overt bleeding	107(79.3%)
Anemia	15(11.1%)
Abdominal pain/discomfort	10(7.4%)
Occult bleeding	2(1.5%)
Hemoglobin (g/dL)	8.9±2.6

*Others : Hematologic disease, Malignancy, Chronic renal disease

Table 2. Endoscopic findings	
Diagnostic Modalities	
Video Capsule endoscopy	115 (85.2%)
Enteroscopy	6 (4.4%)
Both	14 (10.4%)
Location	
Jejunum	58 (42.9%)
Ileum	38 (28.1%)
More than 2 locations	35(25.9%)
Duodenum	4 (2.9%)
Characteristics of Lesion	
Red spots	13 (9.6%)
Single erosion	9 (6.7%)
Multiple erosions	75 (55.6%)
Ulcer	32 (23.7%)
Stricture	4 (3.0%)
Active bleeding	2 (1.5%)

Table 3. Treatment and outcome of NSAID enteropathy	
Discontinue NSAIDs	113 (83.7%)
Additional medication for treatment	
Protein pump inhibitor	72 (53.3%)
Mucoprotective agent	94 (69.6%)
Other	12 (8.8%)
Need for endoscopic therapy	16 (11.9%)
Need for surgical therapy	2 (1.5%)
Intensive care unit admission	16 (11.9%)
Hospital day (mean±SD)	9±7.0
Recurrence	27 (20.0%)
Death	2 (1.5%)

[Poster Exhibition – Small Bowel Disease & Nutrition]

PE3-003

Predictive Factors for Achieving Complete Enteroscopy via a Single Route in Single-balloon Enteroscopy: Insights from a Medical Center's Experience with 621 Procedures in Taiwan

Chi-Yu Lee[1,4], Wei-Chen Lin[1,2,3], Horng-Yuan Wang[1,3,4], Ching-Wei Chang[1,2,3], Ming-Jen Chen[1,3,4], Chen-Wang Chang[1,2,4]

[1]Division of Gastroenterology, Department of Internal Medicine, MacKay Memorial Hospital, Taipei City, Taiwan

[2]Department of Nursing, MacKay Medicine, Nursing and Management College, Taipei City, Taiwan

[3]Department of Medicine, MacKay Medical College, New Taipei City, Taiwan

[4]Study Group, Taiwan Association for the Study of Small Intestinal Diseases (TASSID), Taipei City, Taiwan

Background / Aim : Complete enteroscopy is crucial for evaluating the entire small intestine and can be done via a single or bi-directional route. The single route may offer shorter procedure times, less patient discomfort, and potential cost savings. However, factors influencing success with a single route are unknown, motivating this study to identify such factors.

Methods : We conducted a retrospective analysis of all patients with suspected of small bowel diseases, who underwent single-balloon enteroscopy (SBE) at MacKay Memorial Hospital, a tertiary medical center in Taiwan, from November 2008 to April 2023. Patients achieving complete enteroscopy were categorized into two groups: one achieving it through a single route and the other through a bi-directional route. We compared the characteristics of patients between the two groups, as well as differences in indications for SBE, procedure times, insertion length, and diagnostic rates.

Results : We performed SBE for 621 times on 440 patients with suspected small bowel disease. Of these, 88 achieved complete enteroscopy, with 84 using a bi-directional route and 4 via a single route. Among the latter group, three patients underwent an anterograde approach, while one patient underwent a retrograde approach (Figure 1A: anterograde fluoroscopic image; Figure 1B: retrograde fluoroscopic image; Figure 2: image of the anus obtained through anterograde SBE). Characteristics in Table 1 reveal the single route group has more females, lower weight, body mass index (BMI), and shorter SBE procedure times than the bi-directional route group. However, no significant differences were observed in underlying diseases, SBE indications, diagnostic rates, or complications between the two groups.

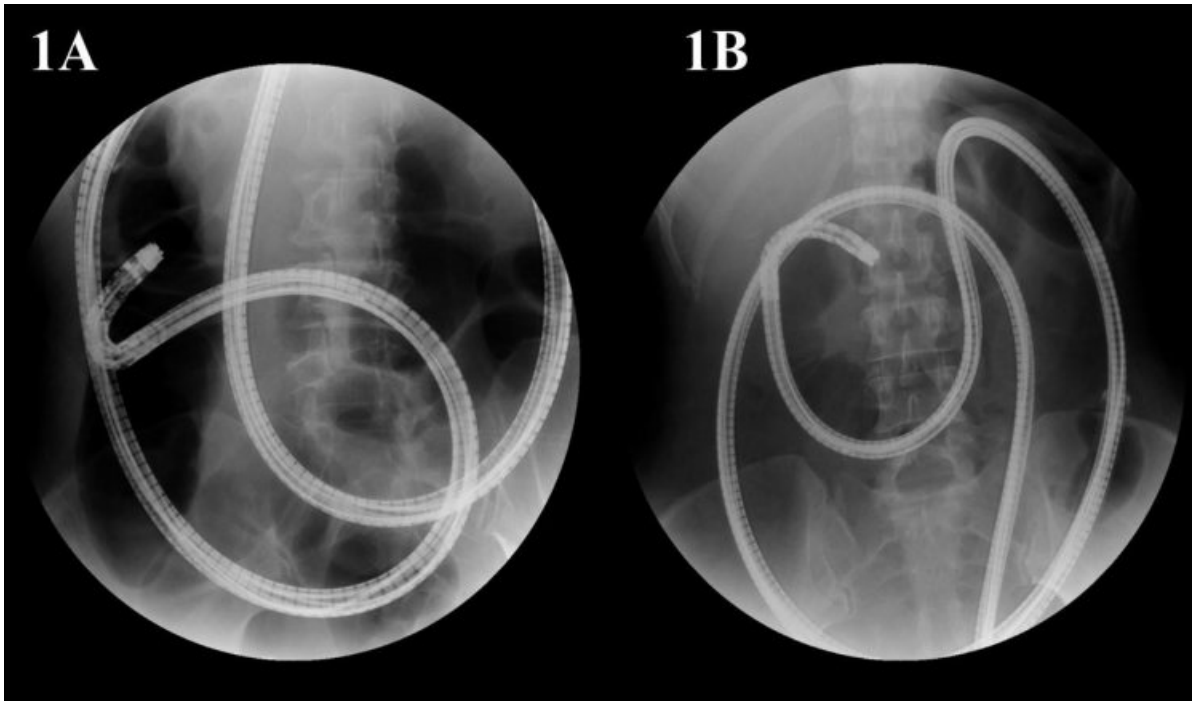
Conclusion : Conclusively, identifying factors such as gender, body weight, and BMI may inform the preference for a single route, offering potential advantages in achieving complete enteroscopy with shorter procedure times compared to bi-directional approaches.

Keywords : Single-balloon Enteroscopy, Complete Enteroscopy, Comparison

Table 1: The Characteristics of patients, indication, procedure times, insertion depth, complication of SBE and diagnostic rate between 2 groups.

Variable	Bi-directional route (n=84)	Single route (n=4)	*P*-value
	Mean ± SD or N (%)	Mean ± SD or N (%)	
Male	51 (60.7%)	0 (0%)	0.028 [a]
Age	52.6 ± 16.0	45.8 ± 9.7	0.266 [b]
Body height	161.6 ± 9.0	157.8 ± 6.6	0.432 [b]
Body weight	62.0 ± 13.5	47.5 ± 6.4	0.024 [b]
Body mass index	23.7 ± 34.8	19.1 ± 2.7	0.036 [b]
Diabetes mellitus	11 (13.1%)	0 (0%)	> 0.999 [a]
Coronary artery disease	9 (10.7%)	0 (0%)	> 0.999 [a]
Cirrhosis	2 (2.4%)	0 (0%)	> 0.999 [a]
End-stage renal disease	5 (6.0%)	0 (0%)	> 0.999 [a]
Have received abdominal operation	9 (10.7%)	1 (25.0%)	0.388 [a]
Have received bowel resection	3 (3.6%)	1 (25.0%)	0.173 [a]
Indication of SBE			0.585 [a]
Obscure gastrointestinal bleeding	32 (38.1%)	2 (50.0%)	
Tumor	4 (4.8%)	0 (0%)	
Abdominal pain	37 (44.0%)	1 (25.0%)	
Chronic diarrhea	11 (13.1%)	1 (25.0%)	
Total procedure time of SBE (m)	134.0 ± 53.1	85.5 ± 34.1	0.043 [b]
Total insertion depth of SBE (cm)	412.3 ± 69.1	362.5 ± 75.0	0.156 [b]
Diagnosis of SBE	44 (52.4%)	2 (50.0%)	> 0.999 [a]
Complication of SBE	1 (1.2%)	0 (0%)	> 0.999 [a]

The p-values were analyzed with Fisher's exact test[a]; Mann-Whitney U test[b].
Abbreviations: cm, centimeter; m, minutes; N, number of patients; SBE, single-balloon enteroscopy; SD, standard deviation.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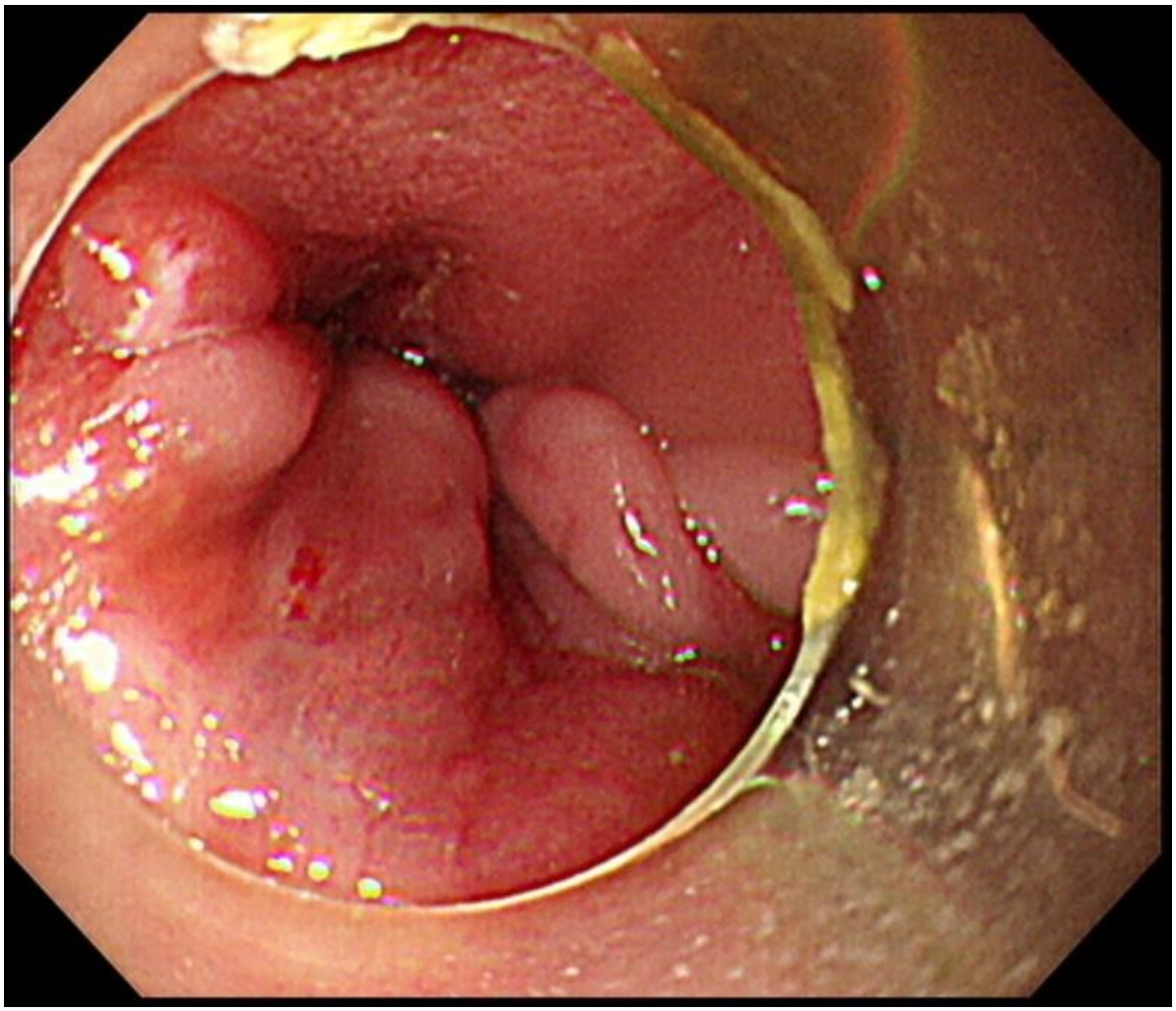


[Poster Exhibition – Small Bowel Disease & Nutrition]

PE3-004

Clinical Spectrum of Celiac Disease among Adult Population: Experience from Largest Tertiary Care Hospital of Karachi, Pakistan

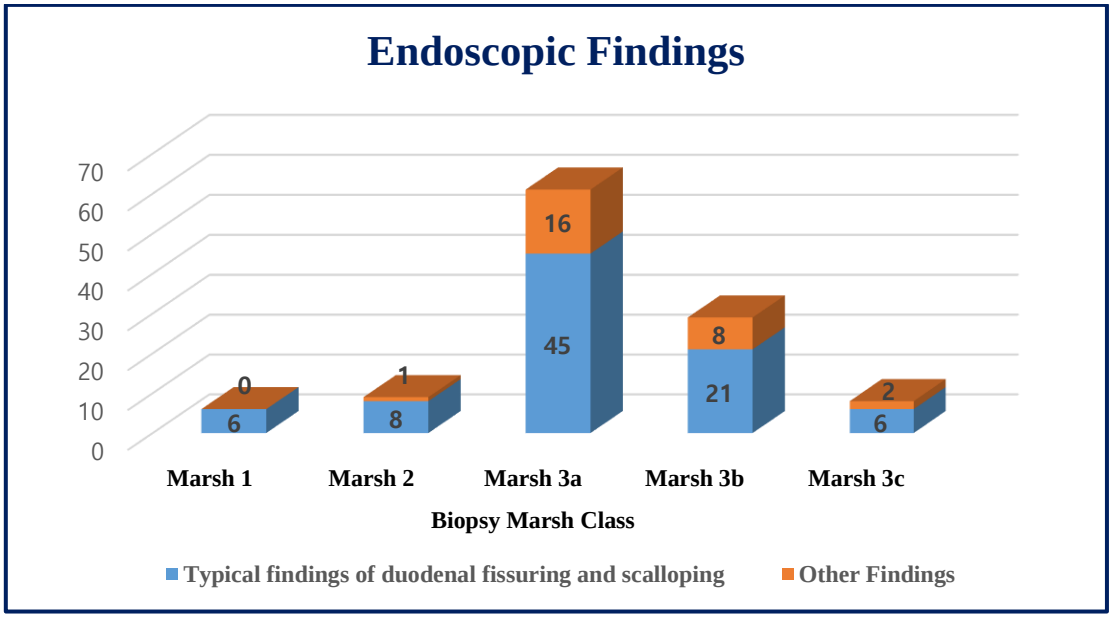
Bushra Shahid
Gastroenterology and Hepatology, Jinnah Post Graduate Medical Centre, Karachi, Pakistan

Background / Aim : Celiac disease (CD) is an autoimmune enteropathy triggered by dietary gluten in genetically susceptible individuals. Celiac disease affects 0.6 to 1.0% of the population worldwide. The prevalence of celiac disease in Pakistan is yet unknown due to under diagnosis and lack of awareness.Thus the aim of this study is to determine vast variety of presenting features in subtypes of Celiac Disease (CD) to overcome the burden of disease.
Methods : This was a prospective, cross sectional study conducted at Gastroenterology department of Jinnah Postgraduate Medical Centre, Karachi from Dec. 2022 till june 2023. This study included all adult patients ≥18 years diagnosed with CD on the basis of clinical presentation, positive IgA and IgG anti-transglutaminase antibodies (value >12 IU/ml detected by ELISA, and histopathological findings consistent with CD. CD was then classified on the basis of OSLO criteria as (Classical CD) and Non Classical (NCCD).The data obtained was analyzed on SPSS version 23.Descriptive statistics were obtained by frequencies and percentages.
Results : 142 patients were enrolled in the study, 103 (91.5%) had CCD whereas 36(25%) had NCCD. 89 (62.7%) were females and 53 (37.3%) were males. The mean age was found to be 23±6 years. Abdominal bloating was the most prevalent digestive complaint reported in 117(82.4%), followed by abdominal pain 100(70.3%); others included diarrhea 92(64%), steatorrhea 15(10%) and unexplained weight loss 14(9.9%). Nutritional deficiencies including anemia, B12, folate, osteopenia and low BMI <18 was found more in CCD group as compared to NCCD group with significant P values. Titres of anti-TTG between CCD and NCCD were not statistically significant. Hypothyroidism and PCOS were the most common associated conditions observed in adult CD patients
Conclusion : Celiac disease in adults has diverse presentations. Adults with unexplained extra intestinal symptoms like anemia and bone pain should be investigated for celiac disease.
Keywords : Chronic Diarrhea, Iron Deficiency Anemia, Osteopenia

Table 1: Association of Celiac disease types with study variables

Study Variables		Classical (n=103)	Non-Classical (n=36)	Silent (n=3)	p-value
BMI	< 18	11 (10.7%)	4 (11.1%)	0 (0.0%)	0.014*
	18 -25	92 (89.3%)	28 (77.8%)	3 (100.0%)	
	26 - 32	0 (0.0%)	4 (11.1%)	0 (0.0%)	
Abdominal Pain	Yes	81 (78.6%)	16 (44.4%)	3 (100.0%)	< 0.001*
	No	22 (21.4%)	20 (55.6%)	0 (0.0%)	
Diarrhea	Yes	91 (88.3%)	1 (2.8%)	0 (0.0%)	< 0.001*
	No	12 (11.7%)	35 (97.2%)	3 (100.0%)	
Noc diarrhea	Yes	35 (34.0%)	1 (2.8%)	0 (0.0%)	0.001*
	No	68 (66.0%)	35 (97.2%)	3 (100.0%)	
Steatorrhea	Yes	15 (14.6%)	0 (0.0%)	0 (0.0%)	0.042*
	No	88 (85.4%)	36 (100.0%)	3 (100.0%)	
Watery diarrhea	Yes	57 (55.3%)	3 (8.3%)	0 (0.0%)	< 0.001*
	No	46 (44.7%)	33 (91.7%)	3 (100.0%)	
Bleeding PR	Yes	6 (5.8%)	0 (0.0%)	0 (0.0%)	0.305
	No	97 (94.2%)	36 (100.0%)	3 (100.0%)	
Mucus	Yes	12 (11.7%)	0 (0.0%)	0 (0.0%)	0.084
	No	91 (88.3%)	36 (100.0%)	3 (100.0%)	
Fatigue	Yes	89 (86.4%)	27 (75.0%)	0 (0.0%)	< 0.001*
	No	14 (13.6%)	9 (25.0%)	3 (100.0%)	
SOB	Yes	49 (47.6%)	10 (27.8%)	0 (0.0%)	0.039*
	No	54 (52.4%)	26 (72.2%)	3 (100.0%)	
Bone Pain	Yes	47 (45.6%)	7 (19.4%)	0 (0.0%)	0.008*
	No	56 (54.4%)	29 (80.6%)	3 (100.0%)	
Proximal myopathy	Yes	14 (13.6%)	1 (2.8%)	0 (0.0%)	0.161
	No	89 (86.4%)	35 (97.2%)	3 (100.0%)	
Fever	Yes	33 (32.0%)	2 (5.6%)	0 (0.0%)	0.004*
	No	70 (68.0%)	34 (94.4%)	3 (100.0%)	
Anemia	Yes	72 (70.6%)	27 (75.0%)	0 (0.0%)	0.024*
	No	30 (29.4%)	9 (25.0%)	3 (100.0%)	
B12 -deficiency	Yes	22 (21.4%)	1 (2.8%)	0 (0.0%)	0.025*
	No	81 (78.6%)	35 (97.2%)	3 (100.0%)	
IgA	Increase	72 (69.9%)	23 (63.9%)	2 (66.7%)	0.799
	Normal	31 (30.1%)	13 (36.1%)	1 (33.3%)	
IgG	Increase	71 (68.9%)	19 (52.8%)	2 (66.7%)	0.217
	Normal	32 (31.1%)	17 (47.2%)	1 (33.3%)	

P-value calculated by Chi-square / Fisher's exact test. *Significant if $p \leq 0.05$



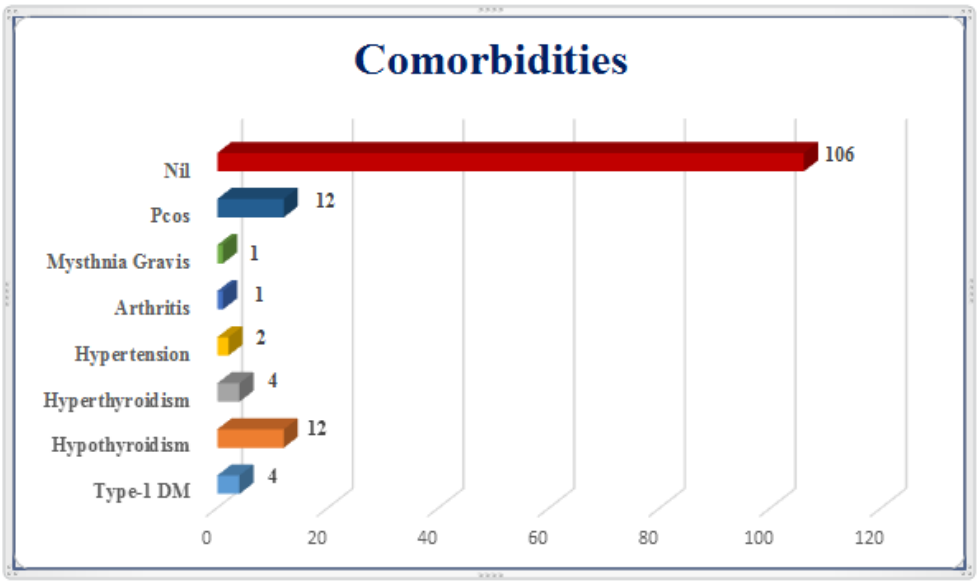


Figure 1: Presentation of Comorbidities

[Poster Exhibition – Small Bowel Disease & Nutrition]

PE3-005

Potential Effects of Consumption of Phytosterols on Fecal Characteristics and Gut Microbiota in Constipated Middle aged Women

Pardeep Kumar, Sagar Lavania
Biochemistry, F H Medical College & Hospital, Agra, India

Background / Aim : The aim of this study was to investigate effects of phytosterols on bowel movements (stool form and frequency), plasma bile acids, quality of life, and gut microbiota of constipated middle-aged women.
Methods : A randomized, double-blind, placebo-controlled, and parallel trial was performed on 104 constipated middle-aged women (41.9 ± 6.3 years old) with minimum 4 bowel movements every week, wherein above 50% of their stool was between the Bristol stool scale (BSS) value of 5 and 6. Volunteers were randomized to treatment with placebo. Treatment consisted of 4 weeks supplementation with 25 g/d phytosterols (fiber group) or maltodextrin (placebo group). Abdominal discomfort, flatulence, stool consistency, and bowel movements were evaluated by a recorded daily questionnaire and a weekly interview. Changes in fecal bacterial population and short chain fatty acids were assessed by real-time PCR and gas chromatography, respectively.
Results : Intake of the phytosterols for one month significantly improved stool form, evaluated using BSS, and had no effects on stool frequency. BSS was significantly normalized in the group consuming the phytosterols compared with the placebo. Comprehensive fecal microbiome analysis by the 16S rRNA-sequence method detected significant changes in the ratio of some bacteria, such as an increase of Bifidobacterium in the phytosterols group. There were no changes in fecal short chain fatty acid profile.
Conclusion : Our results suggest that intake of phytosterols improves human stool form via regulating intestinal microbiota. A higher consumption of phytosterols allows a substantial increase in well-tolerated dietary fiber, which may in turn improve food-related behavior. Moreover, it leads to beneficial modifications of the gut microbiota composition and function.
Keywords : Gut Microbiota, Phytosterols, Bowel Movements

[Poster Exhibition – Small Bowel Disease & Nutrition]

PE3-006

Elucidation of Effect of Interleukin-15 Inhibitor in Experimental Model of Celiac Disease

Bikash Medhi[1], Ashutosh Singh[1], Rahul Singh[1], Ajay Prakash[1], Kaushal Kishor Prasad[2]
[1]Pharmacology, PGIMER, Chandigarh, India
[2]Gastroenterology, PGIMER, Chandigarh, India

Background / Aim : Drug therapies for Celiac disease are still under preclinical and clinical phases. Among all the drug targets for the disease, IL-15 is involved in the etiology of Celiac disease which results in an immune-mediated response characterized by inflammation of the small intestinal mucosa. IL-15 has shown to be a promising target as inactivation of IL-15 leads to prevent the Celiac disease pathogenesis.
Methods : The study followed parallel study design. C57BL/6 mice of either sex were randomly divided into 5 groups: Control group (n=6) - administered vehicle only; pIC group (n=6) - administered polyinosinic: polycytidylic acid (pIC) on day 7 through intraperitoneal (ip) route; THY 1-pIC group (n=6) - administered Thymulin (0.075mg/kg/d) ip for 7 days and given pIC on day 7; THY 2-pICgroup (n=6) - administered Thymulin (0.150mg/kg/d) ip for 7 days and given pIC on day 7; THY 3-pICgroup (n=6) - Given Thymulin (0.300mg/kg/d) ip for 7 days and given pIC on day 7. Further the study evaluated the histological parameters (Inflammation using H&E staining, Localization of TG2 protein using immunohistochemistry), Serum level of proteins like TG2, Pro-inflammatory markers (IL-15, IFNα and IFNγ) using ELISA, gene expression of NK cell receptor RAE-1 by Real Time PCR and also evaluated the oxidative stress.
Results : Serum level of protein TG2 and Pro-inflammatory markers (IL-15, IFNα and IFNγ), RAE-1expression and Oxidative stress level significantly differ ($p<0.05$) in high dose of Thymulin (0.300mg/kg/d) and pIC treated model group. Villus crypt ratio was significantly different in drugs treated group as compared to model group. Localisation of TG2 was significantly different in drug treated and model group.
Conclusion : The study concluded beneficial effect of Thymulin (0.300mg/kg/d) in the experimental model of CD and strongly advocated its future prospect in the clinical trial.
Keywords : Celiac Disease, IL-15 Inhibitor, Drug Therapy, Experimental Model, Histology

[Poster Exhibition – Small Bowel Disease & Nutrition]

PE3-007

Analysing the Utility of IgA anti-tTG Co-localisation for Identification of Extra-intestinal Celiac Disease (CeD)

Rimlee Dutta[1], Alka Singh[2], Prasenjit Das[1], Siddhartha Datta Gupta[1], Govind Makharia[2]
[1]Pathology, All India Institute of Medical Sciences (AIIMS), New Delhi, India
[2]Gastroenterology and Human Nutrition, All India Institute of Medical Sciences (AIIMS), New Delhi, India

Background / Aim : Diagnosis of CeD is achieved by observing histological changes in duodenal biopsies in correlation to serological and endoscopic findings. However, diagnosis of extra-intestinal CeD is difficult and depends primarily on clinical suspicion of the association of two pathologies. In this study, we analysed the co-localization patterns of IgA/ IgG anti-tissue transglutaminase 2 (anti-tTG2) antibodies in biopsies from various organs with suspected celiac association, as well as in their corresponding intestinal biopsies.
Methods : Colocalization study was performed by using both IgA/anti-tTG dual immunohistochemical (IHC) and dual confocal immunofluorescence (IF) techniques on archived formalin fixed paraffin embedded tissue blocks of various organs with suspected celiac association. For validation, 18 serum samples from known cases of treatment naive CeD and 13 samples from patients with other enteropathies were analysed for anti-EMA antibodies. Cases included (Table1) were selected randomly.
Results : All duodenal biopsies with proven CeD showed IgA/anti-tTG colocalization by dual IHC technique. Amongst 36 non-celiac enteropathies, only 3 and 4 cases showed weak IgA/anti-tTG colocalization by dual IHC and dual IF techniques respectively. Colocalization in hepatic tissue was noted in 85.6% cases by dual IHC and 92.8% by dual confocal IF. 85% and 90% of extra-duodenal intestinal biopsies in CeD showed IgA/anti-tTG colocalization with dual IHC and dual IF techniques while 75% and 73.6% cases of first degree relatives of CeD patients showed colocalization by respective techniques. Skin biopsies with dermatitis herpetiformis showed colocalization in 80% to 90% cases by two techniques. 60% of IgA nephropathy patients showed IgA/anti-tTG colocalization by dual IHC and 80% by dual IF technique. All cases of treatment naive CeD showed anti-EMA positivity by IIF, while all cases with non-celiac enteropathy were negative.
Conclusion : Deposition of circulating IgA/anti-tTG antibodies in extra-intestinal and extra-duodenal tissues in suspected patients of CeD can prove to be a reliable indicator for proving their celiac association.
Keywords : Celiac Disease, Extra-intestinal Celiac Disease, IgA Anti-tTG Co-localisation, Dual Immunohistochemistry, Dual Confocal Immunofluorescence

Table 1: Table showing detail of cases included in this study

Patients with CeD	Disease groups whose association with CeD have been described	CONTROLS	
		DISEASE CONTROLS	NORMAL CONTROLS
Patients with CeD: DUODENAL biopsy CeD (n=33) + FDR (n=1)	Dermatitis Herpetiformis SKIN biopsy (n=10)	DUODENAL biopsies from Non-celiac enteropathy: [Nonspecific Duodenitis (n=13) Giardiasis (n=5) IPSID (n=7) CVID (n=2) Tropical Sprue (n=16)]	Normal renal parenchyma (n=10) [SECTIONS from normal renal parenchyma]
LIVER biopsy in patients with CeD n=28	IgA Nephropathy KIDNEY biopsy (n=50)		Histologically unremarkable SKIN biopsy (n=5)
Other site biopsy in patients with CeD: ESOPHAGUS (n=18) + JEJUNUM (n=1) + RECTUM (n=1)		Other Nephropathies KIDNEY biopsy: [MCD (n=21) MGN (n=7) MPGN (n=2)]	
Potential CeD (First degree relatives with high serum tTG level) DUODENAL biopsy (n=19)		Other liver pathologies: LIVER biopsy [AIH (n=1) NASH (n=1) Cirrhosis, HBV associated (n=2), Chronic hepatitis (n=1)]	

AIH- Autoimmune hepatitis, HBV- Hepatitis B Virus, CVID- Common Variable Immunodeficiency, IPSID- Immunoproliferative small intestinal disorder, FDR- First degree relatives, MCD- Minimal change disease, MGN- Membranous glomerulonephritis, MPGN- Membranoproliferative glomerulonephritis, NASH- Non alcoholic steatohepatitis.

[Poster Exhibition – Small Bowel Disease & Nutrition]

PE3-008

Anti-cancer Activity of Heat-inactivated Bacteria on Stomach, Colon and Gallbladder Cancer Cells Lines

Ankush Kumar, Anil Gaur
Internal Medicine, Shakuntla Hospital and Research Center, Delhi, India

Background / Aim : Cancers of the gastrointestinal track are a serious global health problem. The human GI tract is home to trillions of microorganisms that known as gut microbiota and have established a symbiotic relationship with the host. Bacterial infections are one of the promoting factors in cancer development. The present study was carried out to study effects of heat-killed bacteria on cancer cell lines GC1415, HCT 116 and OCUG-1.
Methods : To this purpose, five bacterial strains including Enterococcus faecalis and Staphylococcus hominis Salmonella typhi, Escherichia coli and Pseudomonas aeruginosa were assayed. Thermal inactivation method was used to kill the bacteria and preserve the bacterial surface proteins unchangeable. The concentrations of 0.01, 0.1, 0.5 and 1 mg/ml of inactivated bacteria were prepared to evaluate the effects of heat-inactivated bacterial solutions on GC1415, HCT 116 and OCUG-1 cell lines. MTT assay was used to measure the cell viability of cancer cells treated with different concentration of inactivated bacterial solutions.
Results : The MTT assay results after 48 hours showed that the heat-killed bacterial solutions were able to induce the proliferation of stomach, colon and gallbladder cancer cell lines. In addition, the most cell viability in OCUG-1 cell line was seen in samples treated with S. hominis, while in HCT 116 cells, the most one was seen in S. typhi treated samples.
Conclusion : It was concluded that bacterial infections are cancer-deteriorating agents, and any species of bacteria is specific to certain cancerous tissue.
Keywords : Heat Inactivation, Chronic Infections, Bacterial Infections, Cancer

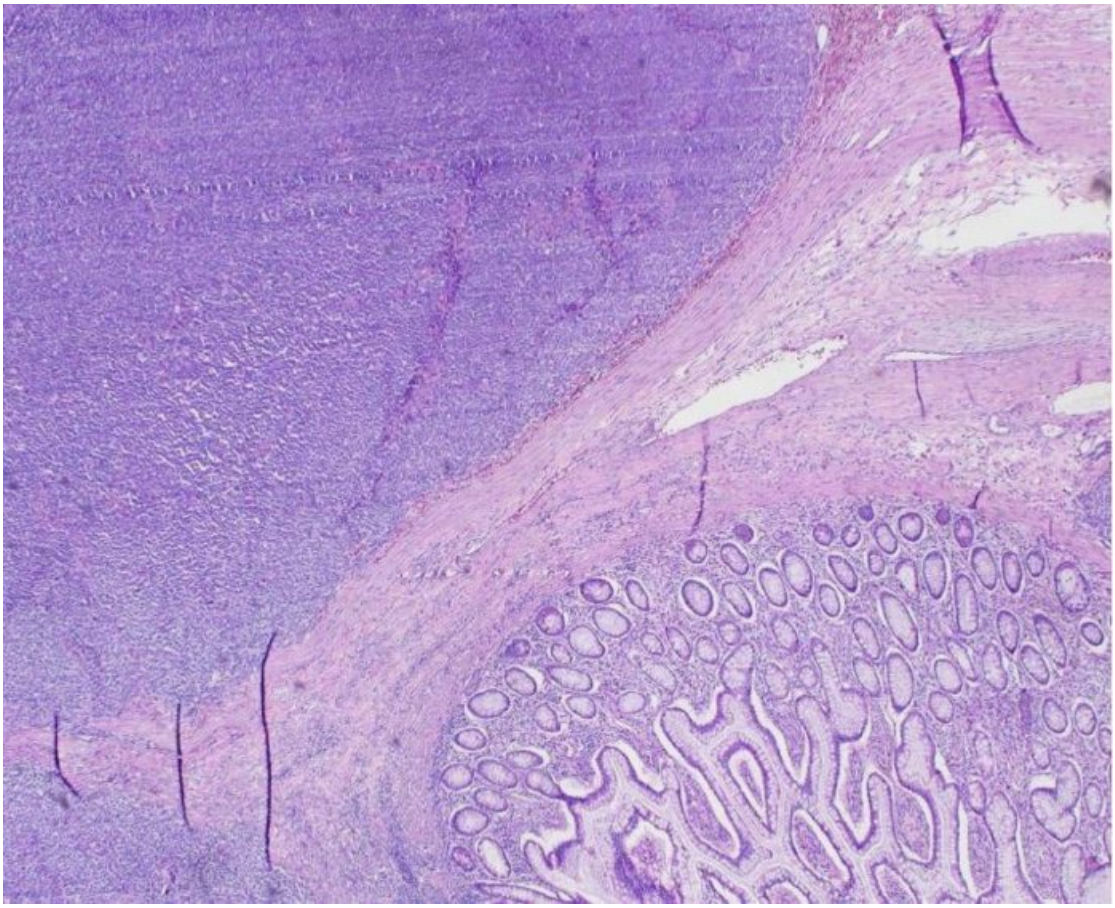
[Poster Exhibition – Small Bowel Disease & Nutrition]

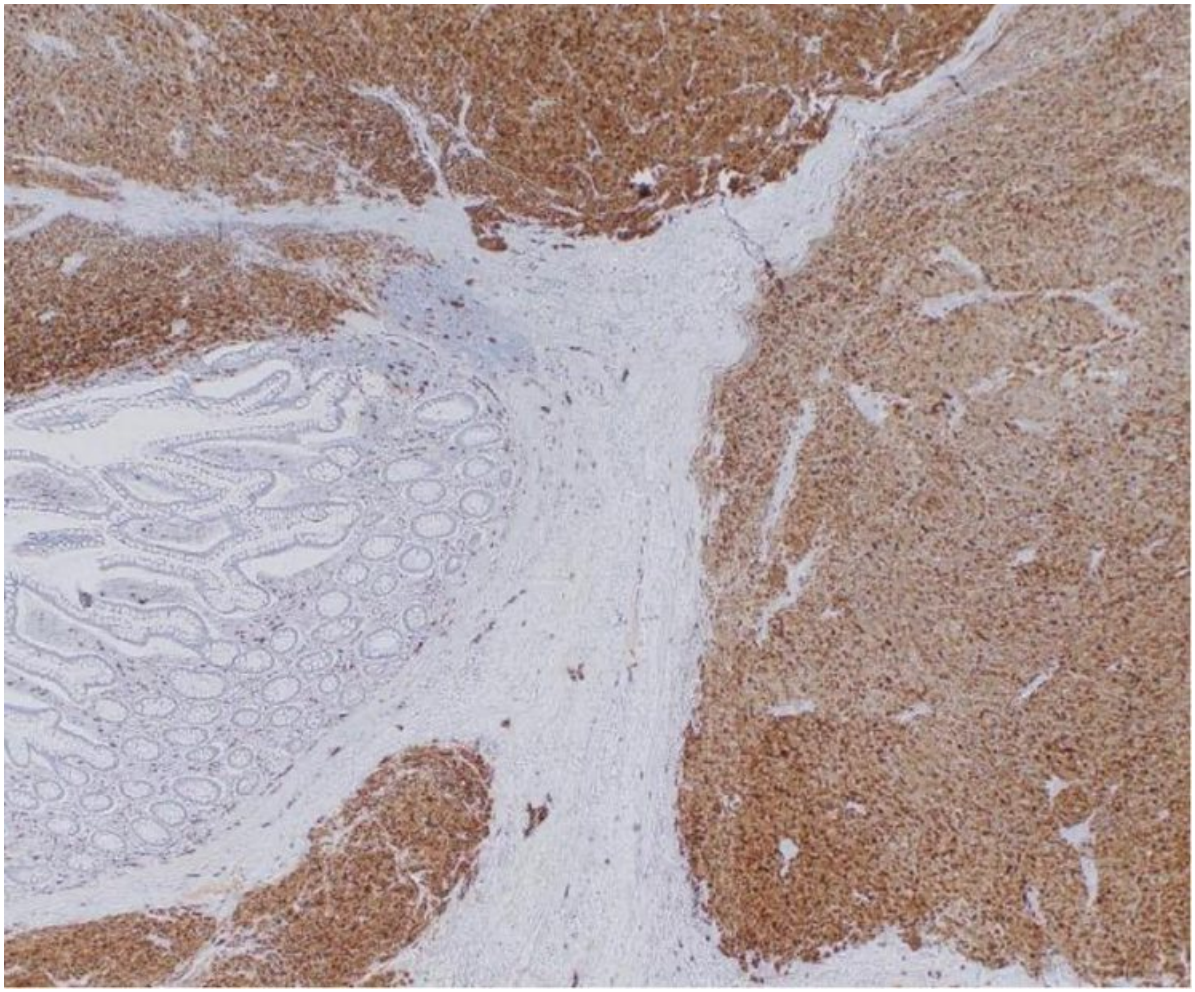
PE3-009

Metastatic Amelanotic Melanoma Presenting as Recurrent Intussusception in a Pediatric Patient

Ariane Marielle Valle[1], Jasher Chua[1], Ceri Jane Talan-Tampus[2], B. Januario Antonio Veloso[1]
[1]Laboratories, Philippine General Hospital, Manila, Philippines
[2]Pediatrics, Philippine General Hospital, Manila, Philippines

Background / Aim : This study aims to report a case of an 18-year-old male presenting with recurrent ileal intussusception with intraoperative findings of multiple ileal polypoid lesions. Histopathologic evaluation of these lesions reveal malignant melanoma.
Methods : This is a case report providing a descriptive summary of the clinical presentation and histopathologic results of the patient.
Results : This is a case of an 18-year-old male initially presenting with progressive abdominal pain and pallor. Consult at a local hospital showed jejuno-ileal and ileo-ileal intussusception, which prompted to patient to undergo ileal resection revealing multiple mucosal polypoid lesions. Histopathologic examination of the tumor reveal sheets of ovoid to round cells with hyperchromatic nuclei, prominent nucleoli, and pushing borders, located in the submucosal layer. No pigmentation appreciated. Initial consideration was a lymphoproliferative lesion, however, immunohistochemistry showed strong immunoreactivity for S100, but negative for Pancytokeratin, CD45 and CD30. Additional stains or HMB45 and Melan-A were requested which were both positive, supporting the diagnosis of malignant melanoma. Further inquiry on the history revealed a suspicious nevus that may have been the primary lesion. In the interim, there was recurrence of intussusception and the patient underwent reoperation. An intestinal segment was resected showing eight nodular masses, with similar histomorphologic characteristics as the previous specimen. Patient was subjected to chemotherapy. However, further imaging studies showed dubious lesions in the brain, lungs and abdominal area suggesting a metastatic process. Patient eventually succumbed to the disease despite exhaustion of medical efforts.
Conclusion : In summary, this study demonstrates the difficulty in diagnosing malignant melanoma, especially in cases of unusual presentation and morphologic characteristics. Dubbed as the great mimicker, malignant melanoma presenting as intestinal tumor in the pediatric population is quite rare, especially with intussusception as the initial presentation. Prognosis is usually poor in cases of metastatic disease.
Keywords : Melanoma, Intussusception, Small Intestine





[Poster Exhibition – Small Bowel Disease & Nutrition]

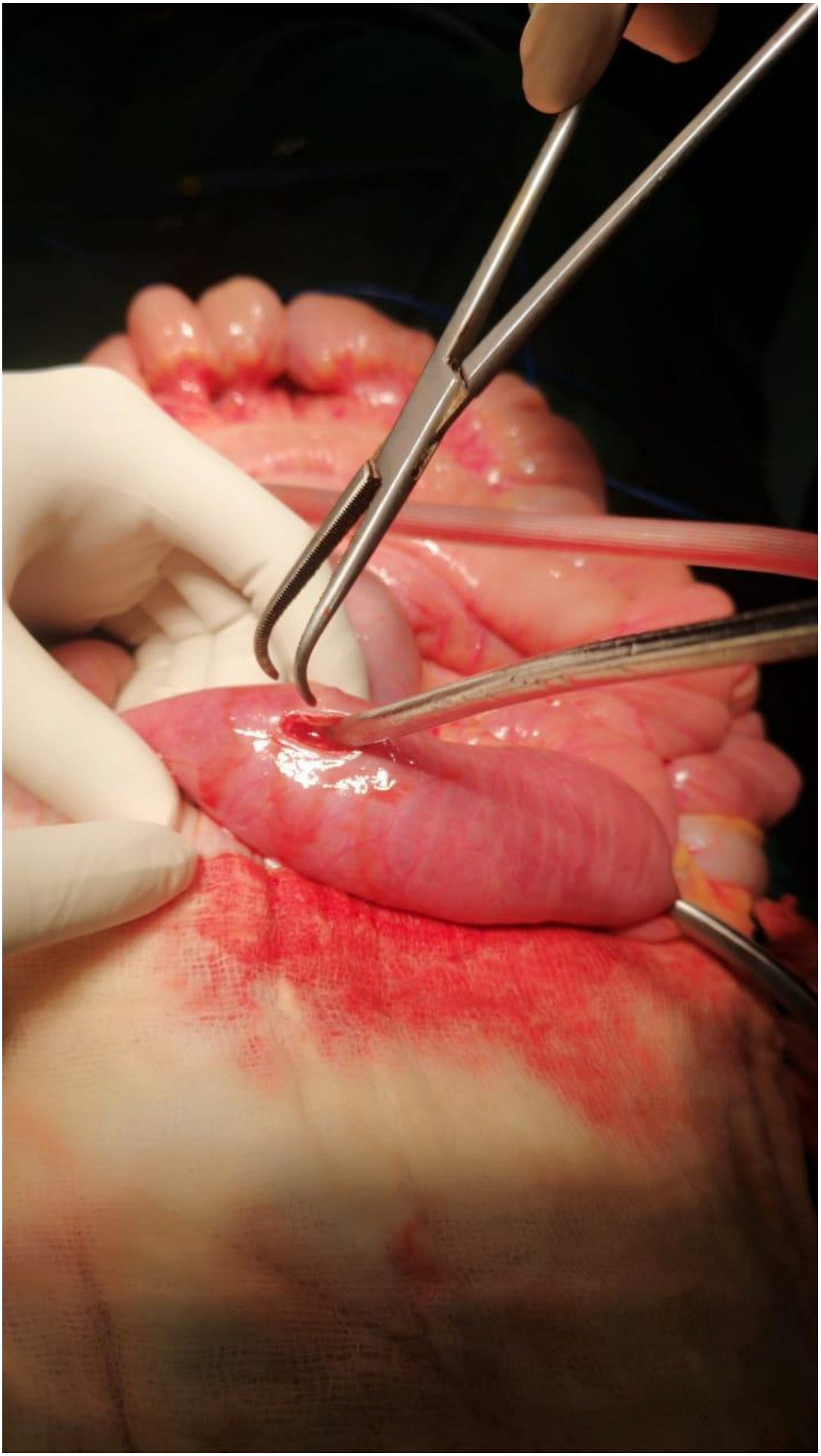
PE3-010

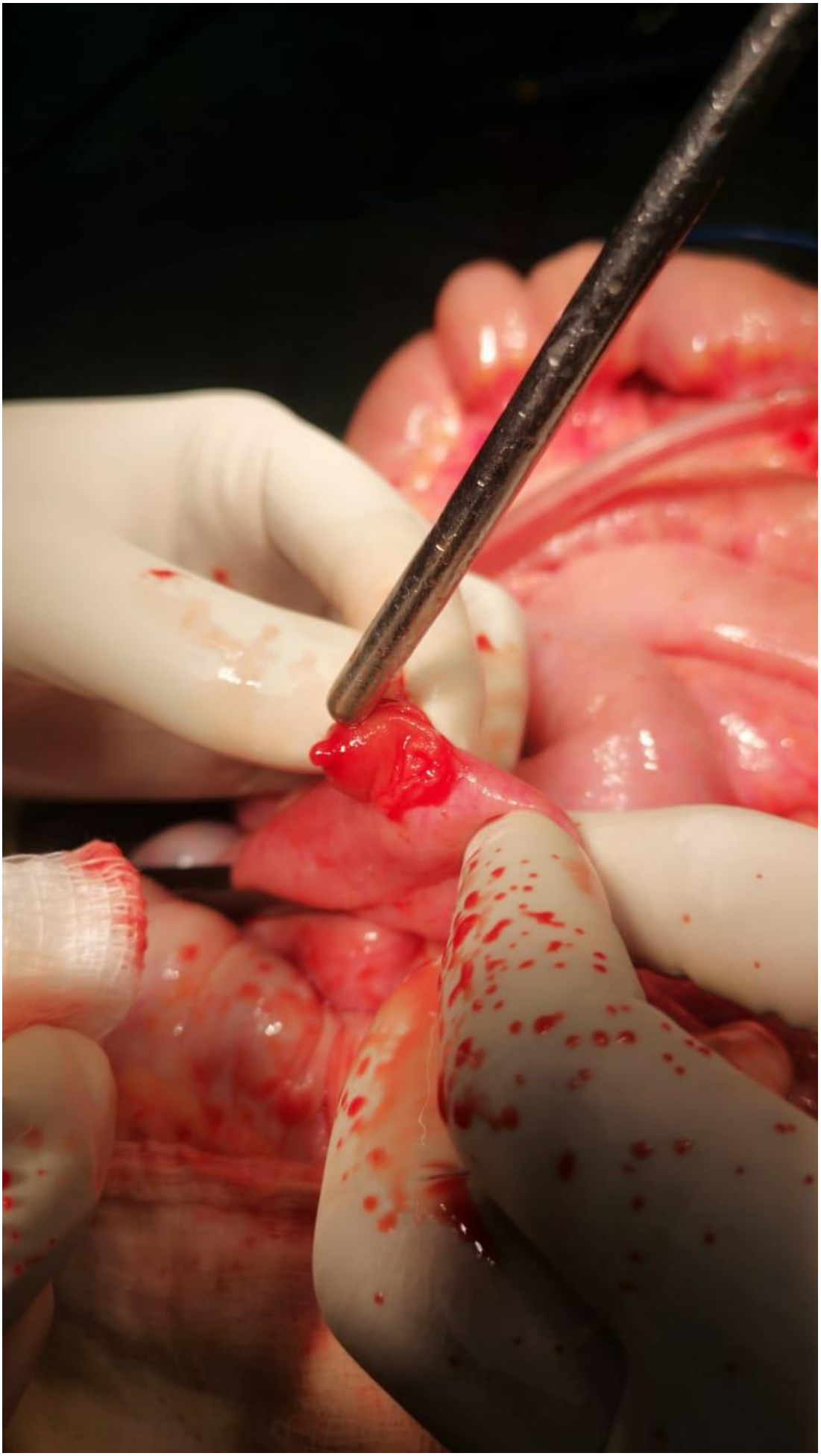
Jejunal Angiodysplasia: Surgery as a Life-saving Intervention: A Case Report and Management Approach

Abderrahaim Dabora[1], Alaedeen Nogoud[1], Muntasir Abdulsakhi[1], Ahmed Rafei[2], Hossam Khalifa[1]
[1]Hepatobiliary, IBN Sina Specialized Hospital, Khartoum, Sudan
[2]Research, National Center for Gastroentestinal and Liver Diseases, Khartoum, Sudan

Introduction: Angiodysplasia, a rare cause of gastrointestinal bleeding, presents a spectrum of clinical manifestations from anemia to life-threatening hemorrhage. This case study emphasizes the significance of considering intestinal vascular malformations as a differential diagnosis, especially in the context of chronic anemia and gastrointestinal bleeding. Jejunal angiodysplasia, though infrequent, poses diagnostic challenges due to the hidden nature of the small bowel in the gastrointestinal system. Case Presentation: A 23-year-old male presented with acute hematochezia and melena, necessitating prompt intervention. Despite a normal esophagogastroduodenoscopy and colonoscopy was hindered, leading to the identification of the bleeding source through CT angiography. Surgical exploration revealed a mucosal vascular lesion in the jejunum, prompting resection and anastomosis. The patient's post-operative course was uneventful, reinforcing the importance of swift diagnosis and intervention. Clinical Discussion: Angiodysplasia's pathogenesis remains unclear, with hypotheses implicating vascular endothelial growth factor (VEGF) and submucosal changes. Challenges in management revolve around lesion localization and stabilizing hemodynamics, necessitating a multidisciplinary approach. While endoscopy is often diagnostic and therapeutic, advanced modalities such as CT angiography may be required. Literature review highlights diverse presentations and successful interventions, including embolization and surgical resection. Conclusion: Jejunal angiodysplasia demands a comprehensive diagnostic and therapeutic strategy. The presented case underscores the pivotal role of endoscopy, embolization, and surgery in managing this condition. Timely diagnosis and intervention are crucial for mitigating the impact of angiodysplasia, necessitating further research and collaborative efforts for improved management of this rare condition.

Keywords : Angiodysplasia, Small Intestine, Case Report, Sudan





[Poster Exhibition – Small Bowel Disease & Nutrition]

PE3-011

Intestinal Tuberculosis Masquerading as Acute Appendicitis: A Case Report

Vihanga Chamod Wickramasinghe, Keddsgoda Gamage Vinod Saranga, Sumudumali Arundhathi Piyarathne, Jasenthu Kankanamge Ganindu Madhawa, Ambawatta Hewage Anil Prashantha, Manoharan Krishni
Surgery, Colombo South Teaching Hospital, Kalubowila, Sri Lanka

Introduction: Tuberculosis is a significant global health concern, and extra-pulmonary tuberculosis, though less frequent, can affect various organ systems. Intestinal tuberculosis, specifically, can mimic acute appendicitis, leading to diagnostic challenges. This case report aims to highlight the suspicion of tuberculosis in a patient initially presenting with symptoms suggestive of acute appendicitis, leading to the diagnosis of intestinal tuberculosis. Case Presentation: A 32-year-old male patient presented with abdominal pain, low-grade fever, and elevated blood pressure. The patient had a history of open appendicectomy 7 months ago. Initially, the symptoms were suggestive of acute appendicitis, leading to surgical intervention. However, histopathological examination of the appendix revealed suppurative granulomatous inflammation nodules, consistent with intestinal tuberculosis. Following the diagnosis of intestinal tuberculosis, the patient was initiated on the initial intensive phase of anti-tuberculosis drug therapy, following the Cat 1 REGIME. The treatment resulted in clinical improvement, with resolution of constitutional symptoms and reduction in the size of tuberculous lesions on imaging studies. Concurrent management of hypertension was provided using antihypertensive medications. Discussion: This case emphasizes the importance of considering tuberculosis as a differential diagnosis in patients presenting with symptoms suggestive of acute appendicitis, particularly in areas with a high tuberculosis burden. The misdiagnosis of intestinal tuberculosis as acute appendicitis highlights the need for a high index of suspicion, especially when patients do not respond to initial appendectomy. Histopathological examination plays a crucial role in confirming the diagnosis and guiding appropriate treatment. Early suspicion, appropriate diagnostic workup, and histopathological examination are vital for accurate diagnosis and timely initiation of anti-tuberculosis treatment.

Keywords : Extra-pulmonary Tuberculosis, Acute Appendicitis, Granulomatous Inflammation, Intestinal Tuberculosis

[Poster Exhibition – Small Bowel Disease & Nutrition]

PE3-012

Managing Obscure Gastrointestinal Bleeding: A Laparoscopic Approach to Jejunal Diverticulum - A Case Report

Keddagoda Gamage Vinod Saranga, Nilanka Harshana Pemanthu Hewa
Colombo South Teaching Hospital, Post Graduate Institute of Medicine, Colombo, Sri Lanka

Introduction: This case report recounts the diagnostic journey of a 38-year-old male with hematochezia and declining hemoglobin levels. Initial inconclusive findings from upper GI endoscopy and colonoscopy prompted further investigation into the elusive source of bleeding. Case Presentation: The patient exhibited meal-triggered symptoms, posing a diagnostic challenge. Traditional endoscopic tools, including CT angiogram, failed to pinpoint the bleeding source, and the unavailability of enteroscopy and capsule endoscopy added complexity. Management and Outcome: Faced with ongoing bleeding and a deteriorating clinical condition, the decision was made to proceed with laparoscopy. The procedure uncovered a jejunal diverticulum as the culprit, leading to segmental resection and end-to-end anastomosis. This intervention resulted in the immediate resolution of symptoms. Histological examination confirmed normal intestinal mucosa, and the patient responded positively to treatment. Discussion: This case illuminates the intricacies of diagnosing obscure gastrointestinal bleeding, highlighting the limitations of conventional endoscopic methods in specific clinical scenarios. The successful identification of a rare bleeding source through laparoscopy, involving segmental resection and end-to-end anastomosis, emphasizes its critical role in challenging cases. Conclusion: Laparoscopy emerged as a crucial tool in both diagnosing and treating obscure gastrointestinal bleeding, demonstrating efficacy where traditional endoscopic approaches fell short. This case emphasizes the importance of considering alternative diagnostic methods in complex clinical presentations. Successful laparoscopic interventions underscore the potential for effective, minimally invasive treatments when diagnosing obscure gastrointestinal bleeding. The versatility of laparoscopy, coupled with interventions like segmental resection and end-to-end anastomosis, showcases its pivotal role in achieving favorable outcomes, particularly in challenging and intricate cases.

Keywords : Jejunal Diverticulum, Obscure Gastrointestinal Bleeding, Laparoscopy, Case Report, Segmental Resection

[Poster Exhibition – Small Bowel Disease & Nutrition]

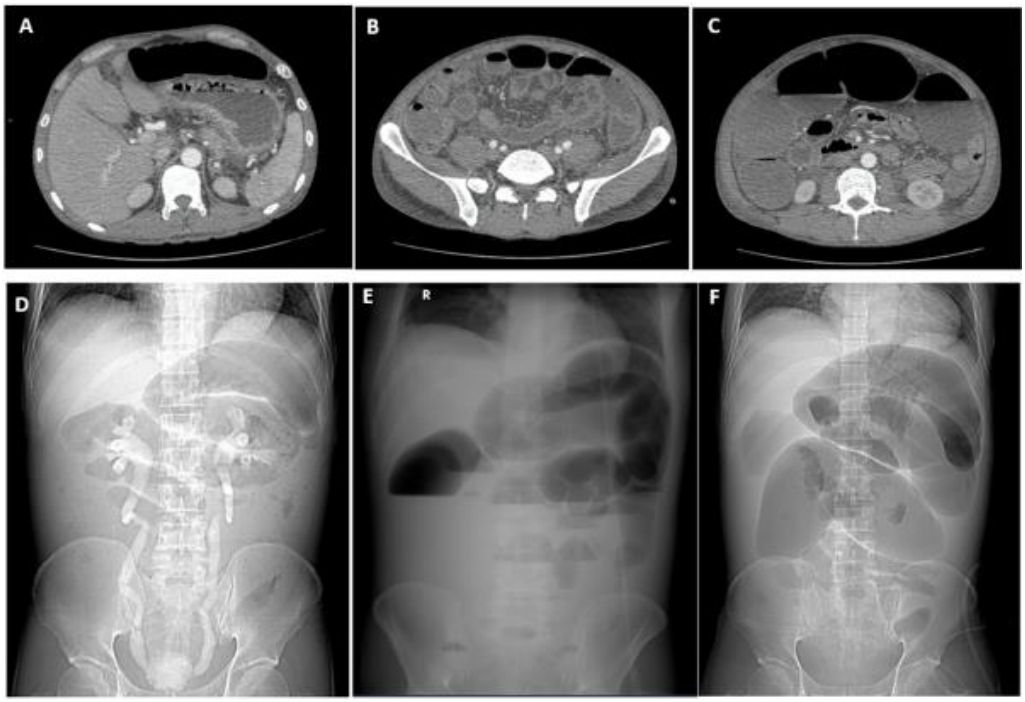
PE3-013

A Case Report of Systemic Lupus Erythematosus Presenting with Enteritis and Cystitis Simultaneously

Doan Nguyen[1,2], Huong Nguyen[3], Uyen Ha[5], Luu Le[4]
[1]General Internal Medicine, University of Medicine and Pharmacy at Ho Chi Minh City, Ho Chi Minh, Vietnam
[2]Gastroenterology Department, Nguyen Tri Phuong Hospital, Ho Chi Minh, Vietnam
[3]Rheumatology Department, Nguyen Tri Phuong Hospital, Ho Chi Minh, Vietnam
[4]Gastroenterological Surgery Department, Nguyen Tri Phuong Hospital, Ho Chi Minh, Vietnam
[5]General Internal Medicine, Pham Ngoc Thach Medical University, Ho Chi Minh, Vietnam

We presented a case of systemic lupus erythematosus (SLE) presenting with Lupus enteritis and cystitis simultaneously. 5 months ago after appendicitis surgery, a 40-year-old male patient complained of diarrhea, abdominal pain with nausea, vomiting, and weight loss of 16 kg. 1 week before admission, he had abdominal cramps, distension, constipation, dysuria, frequency, and urgency. Imaging test of the abdomen and pelvis on CTscan showed diffuse gastric, intestinal, and colon wall thickening, ureteral dilatation, bilateral hydronephrosis, and 10-mm-thickening of the cystic wall. Because of the paralytic ileus, the patient underwent an endoscopic laparostomy to diagnose the condition, but the procedure revealed only pseudo-obstruction, diffuse enteritis, and collected fluid in the abdominal cavity. Autoimmune tests were consistent with SLE according to EULAR/ACR 2019 with a SLEIDAI severity score of 18 points (ANA IFT+, anti dsDNA -, anti sm+, anti-Scl70-, anti centromere-, pANCA- cANCA-, leukopenia, thrombocytopenia, low C3 and C4, proteinuria 11g/24h and RBC casts). Even though we did not perform the cystoscopy and the IGRA test was positive, tuberculosis was excluded because PCR tuberculosis in urine and abdominal fluid were negative. ADA test of the cavity fluid was in a normal range and the biopsy of the ileum and five parts of the colon showed no sign of tuberculosis or IBD. He responded well with Methylprednisolone 40 mg/day, Rifampicin 600 mg/day (for latent tuberculosis) and Hydroxychloroquine 200mg. He gained 8 kg one month after discharge and refused to experience any bladder dysfunction and abdominal discomfort. The abdominal ultrasound found no thickening of the bladder and the gut. However, urinary analysis indicated Lupus nephritis but the patient refused to perform the kidney biopsy. Lupus enteritis and cystitis can simultaneously manifest in SLE because the bladder and intestinal wall have numerous small vessels where circulating immune complexes can also be deposited.

Keywords : Lupus Enteritis, Lupus Cystitis, Pseudo-obstruction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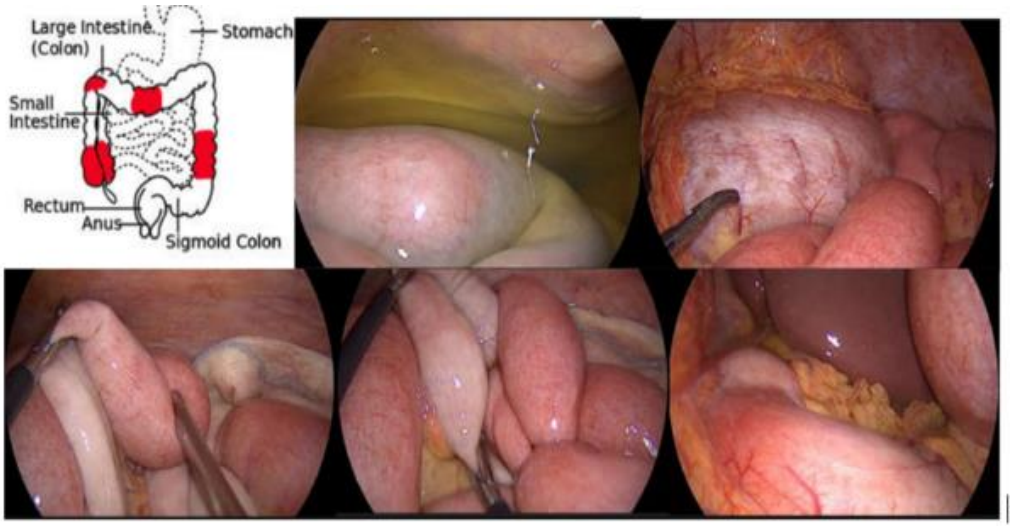
Large Intestine
(Colon)
Stomach
Small
Intestine
Rectum
Anus
Sigmoid Colon

[Poster Exhibition – General Topics]

PE4-001

Synergistic Effect of Phytochemicals Combination including Ginsenosides and Curcumin on Recovery from Radiation-induced Toxicity

Seong Eun Kim[1], Min-Sung Kim[2], Ryung-Ah Lee[3], Su-Jeong Yang[2], Tae-Yong Lee[2], So-Youn Woo[4]
[1]Department of Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea
[2]Central Research Center, CORESTEMCHEMON Inc, Seoul, Korea
[3]Department of Surgery, Ewha Womans University College of Medicine, Seoul, Korea
[4]Department of Microbiology, Ewha Womans University College of Medicine, Seoul, Korea

Background / Aim : This in vitro experiment, as an initial trial, evaluated the single and combined efficacy of ginsenoside, curcumin, butyric acid, and sucralfate compounds in treating radiation-induced proctitis.
Methods : Cell viability and migration assay, endothelial cell tube formation assay were performed using human colon cancer cell lines, dermal fibroblasts, keratinocytes, and human umbilical vein endothelial cells, which were exposed to radiation. In addition, Inflammatory cytokine assay for CXCL10, CCL2, CCL8, IFN-γ, IL-4, IL-12, and IL-21 is performed using human monocytes and LPS treatment. In all assay, the single and combined efficacy of ginsenoside, curcumin, butyric acid, and sucralfate were analyzed.
Results : While the candidate compounds did not affect the proliferation and migration of cancer cells, they promoted the recovery of cell activity, including motility. They exhibited anti-inflammatory effects on human dermal fibroblasts or human umbilical vein endothelial cells within in vitro disease models. When each compound was tested, curcumin and ginsenoside were the most effective in cell recovery and promoted the migration of human dermal fibroblasts and cell restoration of human umbilical vein endothelial cells. The combination of ginsenoside and curcumin resulted in cell migration recovery of approximately 54%. In addition, there was a significant improvement in the length of the endothelial tube, with an increase of approximately 25%, suggesting that the ginsenoside-curcumin-containing combination was the most effective against radiation-induced damage. Furthermore, it was shown that the combination could alleviate radiation-induced inflammation by reducing the concentrations of IFN-γ and IL-12, associated with activated macrophages among LPS-induced inflammatory cytokines, by approximately 20% and 45%, respectively.
Conclusion : Our study provides valuable insights into using curcumin and ginsenoside as potential compounds for the effective treatment of radiation-induced injuries and highlights the promising therapeutic benefits of combining these two compounds.
Keywords : Radiation, Proctitis, Phytochemicals, Ginsenoside, Curcumin

[Poster Exhibition – General Topics]

PE4-002

Different Differentiation of Intestinal Stem Cell according to SOX2 Phosphorylation

Dong Keon Kim, Yoojung Seo, Hyeonhee Lee, Tae Il Kim
Department of Gastroenterology, Severance Hospital, Seoul, Korea

Background / Aim : SOX2, recognized as one of the stem cell markers and termed a 'Yamanaka factor,' is implicated in the maintenance and differentiation of stem cells. It has been reported to play a role in tissue regeneration and cell differentiation. However, its specific function in colon tissue regeneration and cell differentiation is still not well understood. Consequently, we have conducted research on the mechanisms of colonic cell differentiation using normal colonic organoids.
Methods : We induced the expression of Sox2 in normal mouse colonic organoids and used tandem mass spectrometry to confirm the post-translational modifications of Sox2. We developed vectors for Sox2 mutants that either activate or deactivate these PTMs. These vectors were then introduced into normal colonic organoids. The resulting organoids were subjected to differentiation conditions to observe the effects of SOX2 PTMs on colonic epithelial cell markers.
Results : We identified a novel phosphorylation site on Sox2 at serine 74 (S74). To explore its function, we developed doxycycline-dependent organoids expressing either the active (S74D) or inactive (S74A) phosphorylated, Flag-tagged Sox2. To assess differentiation, we cultured them both with and without Wnt. In the presence of Wnt, Sox2 WT and S74D organoids exhibited significantly higher markers for enterocytes, goblet, and chromaffin cells compared to normal and S74A. Conversely, in the absence of Wnt, S74A organoids displayed increased chromaffin cell markers compared to both WT and S74D. In differentiation signals, S74A differentiated into chromaffin cells than the WT, and S74D.
Conclusion : In our observations of normal mouse colonic organoids, we noted that cell differentiation into specific types varied with the expression of Sox2 and the presence or absence of phosphorylation at the S74 site. In future studies, our objective is to determine the role of S74 phosphorylation on Sox2 during tissue regeneration in injured tissue. We plan to investigate this through orthotopic implantation in the mouse colon.
Keywords : SOX2, Posttranslational Modification, Phosphorylation, Colon Oraganoid, Differentiation

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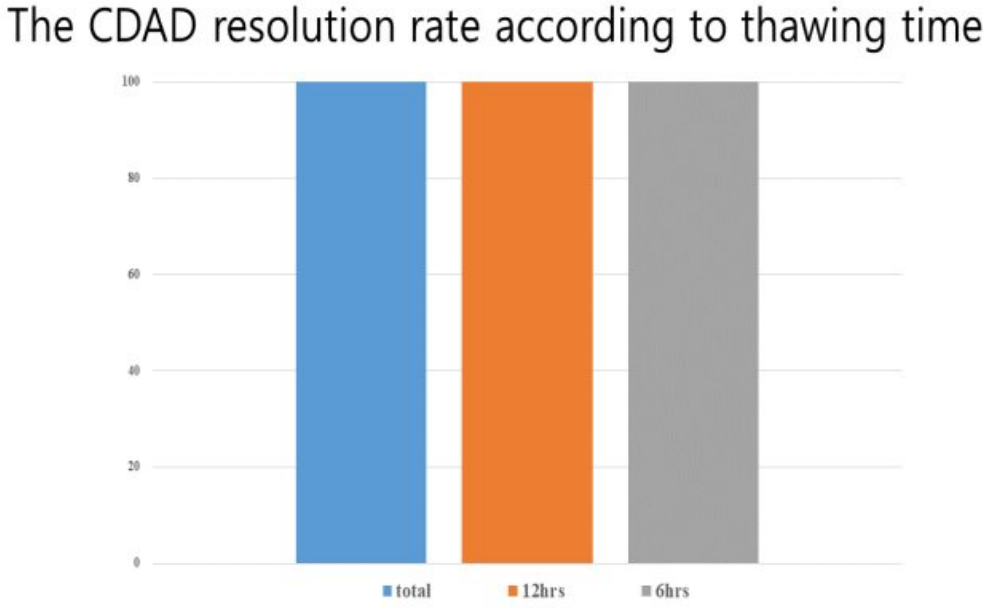
[Poster Exhibition – General Topics]

PE4-003

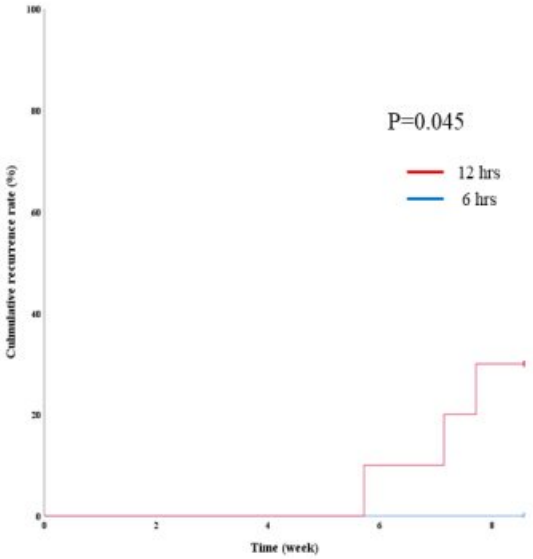
Effect of Thawing Time for Fecal Microbiota Transplantation on Treatment Effect of Recurrent Clostridioides Difficile Infection

Jongbeom Shin[1], Boram Cha[1], Ji-Taek Hong[1], Soo-Hyun Park[2], Jung-Hwan Lee[2,1], Kye Sook Kwon[1]
[1]Division of Gastroenterology, Department of Internal Medicine, Inha University Hospital, Inha University School of Medicine, Incheon, Korea
[2]Department of Neurology, Kangdong Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea

Background / Aim : Fecal microbiota transplantation (FMT) is most effective treatment for recurrent clostridioides difficile infection (rCDI). Some factors associated with donor, recipients and FMT protocols (amount of feces, infusion route, number of infusion, time of thaw) affect FMT outcome. However, the appropriate FMT protocol is still being studied, and research on the most effective thawing time is lacking. The purpose of this study was to optimize the effect of thawing time of frozen FMT stool on rCDI.
Methods : This prospective, single center and randomized controlled trial was performed from October 2022 to December 2023. Patients were randomly assigned to groups that received stool for FMT thawed 4 hours at room temperature (4HTG) or thawed 12 hours in a refrigerator(12HTG). Stools were donated from single healthy donor. Each donation was diluted in glycerol-saline solution (12.5% glycerol in 0.90% w/v NaCl in water) and thoroughly homogenized. A 250 mL formulation containing 60g of stool was stored at -80 °C and administered via colonoscopy within 4 months. The primary outcome was the cumulative recurrence rate of Clostridioides difficile-associated diarrhea (CDAD) at week 8. The CDAD resolution rate at 1 week, adverse events related to thawing time were also evaluated.
Results : Total of 22 patients were randomized into 4HTG (n=12) vs 12HTG (n=10). CDAD resolution was achieved in all patients regardless of thawing time (100% vs100%, p<0.001). On the other hand, the cumulative recurrence rate was significantly lower in 4HTG compared to 12HTG. (0% vs 30%, p=0.045). There was no reported FMT-related adverse events during study period.
Conclusion : This study demonstrated that thawing time did not affect CDAD resolution but did make a difference in recurrence rate. This is the first study to show that the thawing time of frozen stools affects the CDAD recurrence rate and that 4-hour room temperature thawing should be preferred.
Keywords : CDI, CDAD, FMT



Cumulative recurrence rate, according to thawing time



[Poster Exhibition – General Topics]

PE4-004

Clinical Outcomes of *Clostridium Difficile* Infection in Patients with Acute Severe Ulcerative Colitis

Ki Young Lim[1], Kyeong Ok Kim[1], Yoo Jin Lee[2], Dong Hyun Kim[3], Hyun Soo Kim[3], Sang Hyoung Park[4], Kyung Hwan Oh[4], Eun Soo Kim[5], Seong Jung Kim[6], Jun Lee[6], Eun Mi Song[7], Dae Sung Kim[8]

IBD Research Group of the Korean Association for the Study of Intestinal Diseases

[1]Internal Medicine, Yeungnam University College of Medicine, Daegu, Korea
[2]Internal Medicine, Keimyung University School of Medicine, Daegu, Korea
[3]Internal Medicine, Chonnam National University college of Medicine, Gwangju, Korea
[4]Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea
[5]Internal Medicine, Kyungpook National University, School of Medicine, Daegu, Korea
[6]Internal Medicine, Chosun University College of Medicine, Gwangju, Korea
[7]Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea
[8]Internal Medicine, Konyang University College of Medicine, Daejeon, Korea

Background / Aim : Several Western studies have shown that *Clostridium difficile* infection (CDI) increases the risk of colectomy in acute severe ulcerative colitis (ASUC) patients. However, there are insufficient data in Asia, including Korea. Determining the impact of CDI in Korean patients with ASUC could be helpful in improving clinical outcome. The aim of this study was to investigate the clinical features, outcomes and risk factors of CDI in patients with ASUC in Korea.

Methods : A retrospective multicenter study was conducted with patients with ASUC between September 2010 and February 2022 in a tertiary hospital in Korea. We compared clinical features, response to treatment and clinical outcomes between *C.difficile*-positive (CDI group) and negative patients (Non-CDI group).

Results : Among 230 patients with ASUC, 25 were accompanied by CDI. Although there was no significant difference, patients with CDI had more frequent history of hospitalization, previous or current use of thiopurine and steroid than those without CDI. Patients with CDI showed higher UCEIS score at admission (p=0.026) and more likely to have pancolitis. Response rate to initial steroid therapy was lower in CDI group. The duration of hospitalization was also significantly longer in CDI (p=0.005). But there was no significant difference regarding colectomy, DVT development and mortality between the groups. After discharge, patients with CDI had a greater number of infections such as cytomegalovirus infection in the year following initial infection. Steroid dependency was also significantly higher in CDI group than non-CDI group. In addition, readmission rate due to UC was higher and the time to readmission was shorter in patients with CDI.

Conclusion : Recent use of thiopurine or steroid and high score of UCEIS at admission was a risk factor of CDI in patients with ASUC. CDI was a risk factor of longer hospitalization, poor response to therapy, reinfection, steroid dependency and higher readmission in patients with ASUC.

Keywords : *Clostridium Difficile*, Acute Severe Ulcerative Colitis, Inflammatory Bowel Disease

Table 1. Baseline characteristics of the study population

	CDI (n=25)	No CDI (n=205)	*p*	No CDI (n=75)	*p*
Age at first diagnosis of IBD, years, median ± SD	45.0 ± 18.4	40.8 ± 16.7	0.243	45.3 ± 17.6	0.949
Age at infection, years, median ± SD	48.3 ± 17.8	43.8 ± 16.8	0.210	47.6 ± 18.1	0.867
Male, n (%)	15 (60.0)	116 (56.6)	0.832	42 (56.0)	0.818
BMI (kg/m^2), mean ± SD	22.0 ± 3.2	21.8 ± 3.5	0.883	21.6 ± 3.7	0.693
Extent at diagnosis, n (%)			0.911		0.947
Rectum	3 (12.0)	26 (12.7)		10 (13.3)	
Left sided	7 (28.0)	68 (33.2)		23 (30.7)	
Extensive	15 (60.0)	111 (54.1)		42 (56.0)	
Extent at admission, n (%)			0.095		0.136
Rectum	0 (0.0)	6 (2.9)		2 (2.7)	
Left sided	4 (16.0)	72 (35.1)		27 (36.0)	
Extensive	21 (84.0)	127 (62.0)		46 (61.3)	
Previous admission	10 (40.0)	62 (30.2)	0.363	21 (28.0)	0.320
Previous steroid	14 (56.0)	75 (36.6)	0.081	26 (34.7)	0.098
Recent steroid	11 (44.0)	62 (30.2)	0.177	25 (33.3)	0.347
Thiopurine exposure	6 (24.0)	29 (14.1)	0.234	12 (16.0)	0.378
Blood in stool at admission	1.8 ± 0.6	1.9 ± 0.7	0.731	2.0 ± 0.6	0.352
Disease activity at admission	2.6 ± 0.5	2.6 ± 0.5	0.490	2.5 ± 0.6	0.258
Extraintestinal manifestation	4 (16.0)	13 (6.3)	0.097	2 (2.7)	0.033
Concurrent 5-ASA	14 (56.0)	119 (58.0)	0.834	45 (60.0)	0.816
Concurrent Thiopurine	8 (32.0)	19 (9.3)	0.004	7 (9.3)	0.010
Concurrent biologics	3 (12.0)	15 (7.3)	0.424	7 (9.3)	0.708
Concurrent steroid	11 (44.0)	51 (24.9)	0.055	19 (25.3)	0.085
MES	2.8 ± 0.4	2.7 ± 0.5	0.056	2.8 ± 0.4	0.483
UCEIS total score	6.4 ± 1.2	5.8 ± 1.5	0.026	5.9 ± 1.4	0.064
Calprotectin	4106.5 ± 3647.4	3944.5 ± 9841.4	0.911	3692.6 ± 4407.9	0.762
Hemoglobin	10.6 ± 2.0	11.9 ± 2.3	0.008	11.9 ± 1.8	0.004
CMV infection	5 (20.0)	31 (15.1)	0.559	13 (17.3)	0.769

[Poster Exhibition – General Topics]

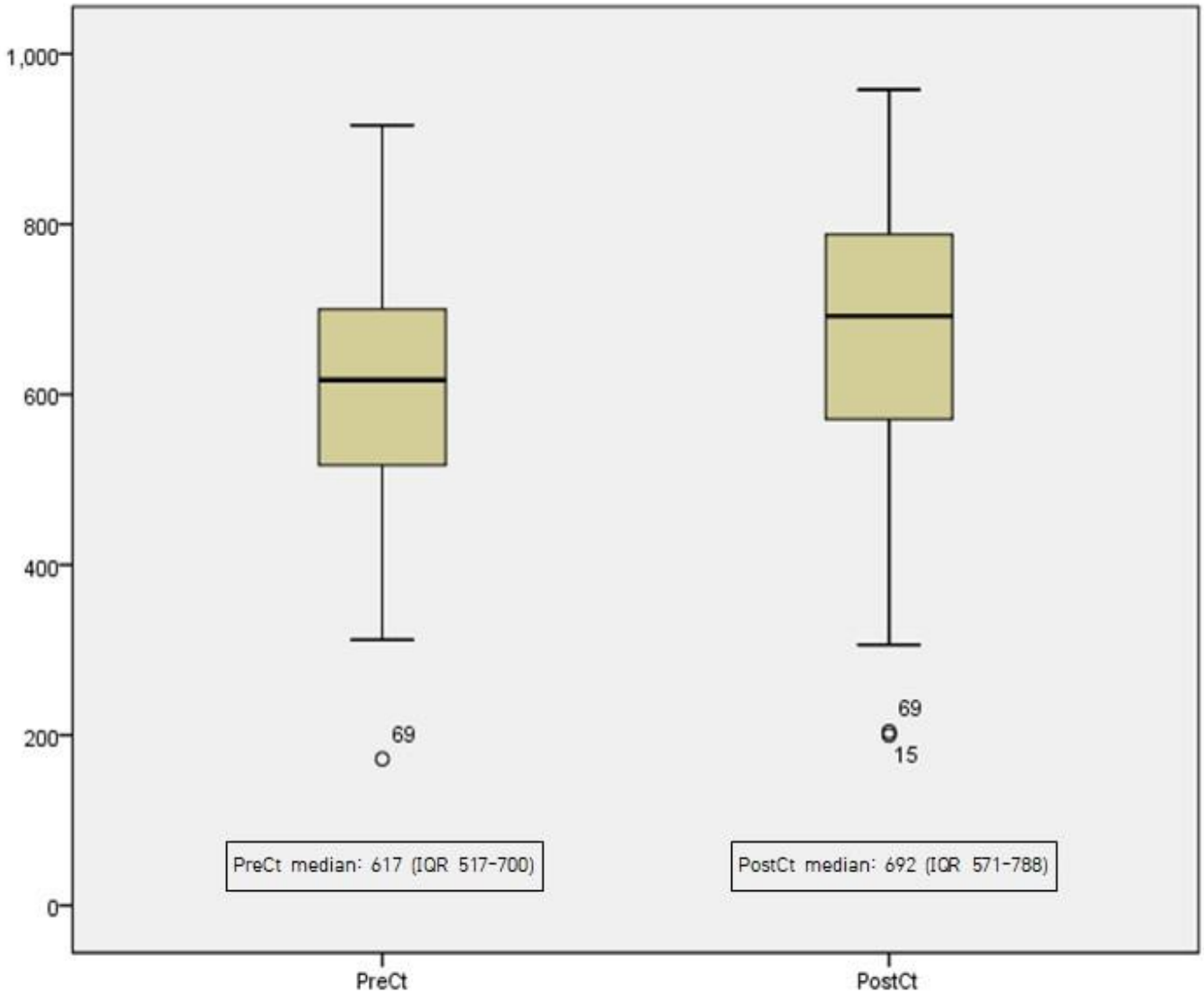
PE4-005

Stool Pictures of Patients Improve Trainees' and Nurses' Self-confidence on the Diagnosis of Gastrointestinal Bleeding

Eunbi Lee[1], Eunsoo Kim[1], Sungkook Kim[1], Ohsung Kwon[1], Mirae Lee[1], Yoojin Lee[2], Kyeongok Kim[3]
[1]Gastroenterology, Kyungpook National University Hospital, Daegu, Korea
[2]Gastroenterology, Keimyung University Dongsan Hospital, Daegu, Korea
[3]Gastroenterology, Yeungnam University Hospital, Daegu, Korea

Background / Aim : Whether stool pictures of patients affect medical personnel's approach to gastrointestinal bleeding is not known. The aim of this study was to determine the effect of stool picture of patients on the diagnostic approach of residents and nurses for patients with suspected GIB.
Methods : Among 165 patients with melena or hematochezia who visited the emergency room of a tertiary referral hospital from February 2023 to June 2023, 27 cases of patients with stool photos taken at home or in the hospital were included for the test. Residents working at the department of internal medicine and nurses working at GI ward were invited to participate in the test. With detailed medical history and initial vital sign of each case being given, they were asked regarding GIB diagnosis and their confidence on their answers and these questions repeated after showing patients' stool photos. The pre- and post-scores of correct diagnosis and confidence level were compared with Wilcoxon signed rank test.
Results : Overall, 57 residents (R1, n=21, R2, n=22, and R3, n=14) and 16 nurses participated in the study. There was no significant difference in the score of the correct diagnosis of GIB between before and after showing stool photos in all participants. However, the total sum of the confidence degree on their diagnostic decision significantly improved after showing the stool image (median degree 617 (IQR 517-700) vs. 692 (IQR 571-788), $p<0.0001$). In the subgroup analysis, the score of correct diagnosis of GIB in the 2nd test of R2 was significantly higher than that in the 1st test (median score 12 (IQR 11-13) vs. 12 (IQR 9-12), $p=0.024$) whereas for the other groups, there was no significant difference between pre- and post-correct diagnosis score.
Conclusion : The stool photos have a positive effect on the residents' and nurses' diagnostic approach in patients with suspected GIB.
Keywords : Stool Picture, Gastrointestinal Bleeding, Score of Correct Diagnosis, Confidence Degree

Figure 1. The total sum of the confidence degree of pre test and post test



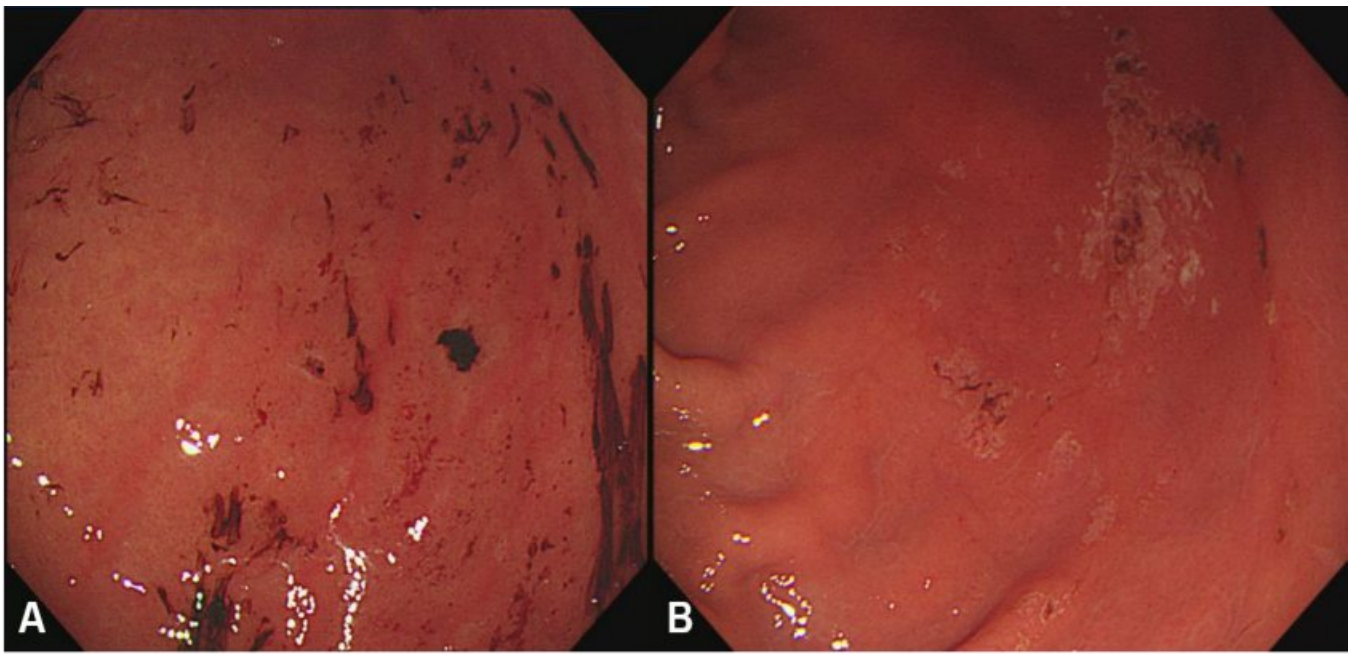
[Poster Exhibition – General Topics]

PE4-006

Acute Gastropathy associated with Bowel Preparation using Oral Sulfate Tablet versus 1 L Polyethylene Glycol with Ascorbic Acid in Healthy Subjects

Yun Jin Yum, Su Bee Park, Jin Young Youn, Jae Myung Cha
Internal Medicine, Kyung Hee University Hospital at Gang Dong, Seoul, Korea

Background / Aim : Utilization of low-volume preparation agents is increasing to improve patient willingness to undergo repeat colonoscopies. However, gastric safety data associated with preparation agents are limited. This study evaluated the efficacy of and acute gastropathy associated with bowel preparation agents.
Methods : This retrospective study enrolled healthy subjects who underwent both esophagogastroduodenoscopy and colonoscopy screening on the same day. Baseline patient characteristics, bowel preparation efficacy, acute gastropathy, and polyp and adenoma detection rates were evaluated for 1 L polyethylene glycol/ascorbic acid (1 L PEG/Asc) and oral sulfate tablet (OST) groups.
Results : The rates of successful cleansing and high-quality cleansing were similar between the OST group (n=2,463) and the 1 L PEG/Asc group (n=2,060). Polyp and adenoma detection rates were significantly higher in the OST group than in the 1L PEG/Asc group ($p < 0.001$ and $p = 0.013$). The incidence of acute gastric mucosal lesion-like hematins, erosions at greater curvature side of antrum or body, multiple erosions, and overlying mucosal erythema or edema were all significantly higher in the OST group than in the 1 L PEG/Asc group (all $p < 0.001$). Additionally, high and indeterminate probability scores of preparation agent-induced gastropathy ($p = 0.001$) and mean Lanza scores were significantly higher in the OST group than in the 1 L PEG/Asc group (1.3 vs 0.4, $p < 0.001$).
Conclusion : Compared with 1L PEG/Asc, OSTs were significantly associated with acute gastropathy during bowel preparation. Physicians should pay attention to gastropathy associated with preparation agents, especially for OST users.
Keywords : Bowel Preparation Solution, Colonoscopy, Gastropathy, Oral Sulfate Tablet, Polyethylene Glycol



Example of acute gastropathy associated with bowel preparation, such as acute gastric Mucosal lesion-like hematins (A) or superficial gastric ulceration (B).

TABLE 1, 2. Bowel preparation efficacy and colonoscopy

Colonoscopy findings	Oral sulfate tablet (n=2,643)	1 L PEG/Asc (n=2,060)	P value
Boston Bowel Preparation Scale, mean ± SD			
Total score (0-9)	7.9 ± 1.5	7.8 ± 1.5	0.152
Right-sided colon (0-3)	2.5 ± 0.6	2.5 ± 0.6	0.148
Transverse colon (0-3)	2.8 ± 0.5	2.8 ± 0.5	0.169
Left-sided colon (0-3)	2.6 ± 0.6	2.6 ± 0.6	0.396
Successful cleansing (all segment ≥ 2), n (%)	2,443 (92.4)	1,896 (92.0)	0.783
High-quality cleansing (all segment ≥ 3), n (%)	1,396 (52.7)	1,061 (51.5)	0.409
Termination due to inadequate preparation, n (%)	2 (0.1)	3 (0.1)	0.659
Colonoscopy outcome, n (%)			
Cecal intubation rate	2,640 (99.9)	2057 (99.9)	1.000
Polyp detection rate	1,505 (56.9)	1,055 (51.2)	< 0.001
Adenoma detection rate	967 (36.6)	681 (33.1)	0.013
Colorectal cancer detection rate	3 (0.1)	1 (0.0)	0.637

PEG/Asc, polyethylene glycol/ascorbic acid; SD, standard deviation

TABLE 3. Acute gastropathy associated with bowel preparation

Acute gastropathy	Oral sulfate tablet (n=2,643)	1 L PEG/Asc (n=2,060)	P value
*Acute gastropathy, n (%)			
1) AGML-like hematins	458 (17.3)	98 (4.8)	< 0.001
2) Erosions at GC side of antrum/body	1031 (39.0)	232 (11.3)	< 0.001
3) Multiple erosions	971 (36.7)	245 (11.9)	< 0.001
4) Overlying mucosal erythema or edema	272 (10.3)	66 (3.2)	< 0.001
Total LANZA score, mean ± SD	1.3 ± 1.5	0.4 ± 1.0	< 0.001
Probability of association with preparation, n (%)			< 0.001
High score (≥ 4)	535 (20.2)	108 (5.2)	
Indeterminate score (2-3)	525 (19.9)	147 (7.1)	
Low score (≤ 1)	1,583 (59.9)	1,801 (87.4)	
Retention of fluid ≥ 200 ml, n (%)	163 (4.9)	195 (9.5)	< 0.001

* All overlapping cases are included.

AGML, acute gastric mucosal lesion; GC, greater curvature

[Poster Exhibition – General Topics]

PE4-007

Diagnosis of Intestinal Tuberculosis: A Systematic Review and Meta-analysis

Pubet Weeranawin, Tanawat Geeratragool, Wanruchada Katchamart, Julajak Limsrivilai
Internal Medicine, Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok, Thailand

Background / Aim : Diagnosis of intestinal tuberculosis (TB) is challenging. Histopathology and microbiological examination remain gold standard diagnostic methods, but previous studies show varied diagnostic performance of the tests. We aimed to systematically evaluate the accuracy of tests to diagnose intestinal tuberculosis.
Methods : We searched MEDLINE and EMBASE from inception to August 2023. All studies enrolling at least 10 patients with information regarding intestinal tuberculosis diagnosis based on endoscopic biopsy specimens, stool, and blood tests were included. We performed meta-analysis using a random-effects model to estimate each test's pooled sensitivity, specificity, and summary receiver operating characteristic (SROC) curve. Risk of bias was assessed using the QUADAS-2.
Results : Total of 57 studies with 5,946 participants were included (Figure 1). As shown in Table 1, endoscopic tissue biopsy for AFB, the presence of caseous granuloma, PCR for TB, mycobacterial culture, and GeneXpert showed pooled sensitivity of 11% (95%CI 7-17), 17% (95%CI 11-26), 58% (95%CI 44-71), 24% (95%CI 11-44) and 29% (95%CI 17-46). The pooled specificities were 100%, except the tissue PCR for TB of which was 98%. The liquid medium culture showed higher sensitivity than Löwenstein–Jensen medium [32% (95%CI 26-39) and 6% (95%CI 3-13)]. Pooled sensitivity and specificity of stool PCR for TB were 73% (95%CI 43-90) and 95% (95%CI 79-99). Additionally, pooled sensitivity and specificity of interferon-gamma release assay (IGRA) were 85% (95%CI 79-89) and 86% (95%CI 82-89); the T-SPOT TB test showed slightly higher sensitivity with lower specificity (Table 1). Most studies have low risk of bias.
Conclusion : Endoscopic tissue biopsy samples had limited sensitivity in diagnosing intestinal TB. IGRA and stool PCR showed good accuracy and may be used in conjunction with other methods to improve the diagnostic yield; however, the results should be interpreted with caution due to a limited number of included studies and potentially false positive results from pulmonary tuberculosis.
Keywords : Intestinal Tuberculosis, Colonic Tuberculosis, Diagnostic Accuracy

Figure 1: Study disposition

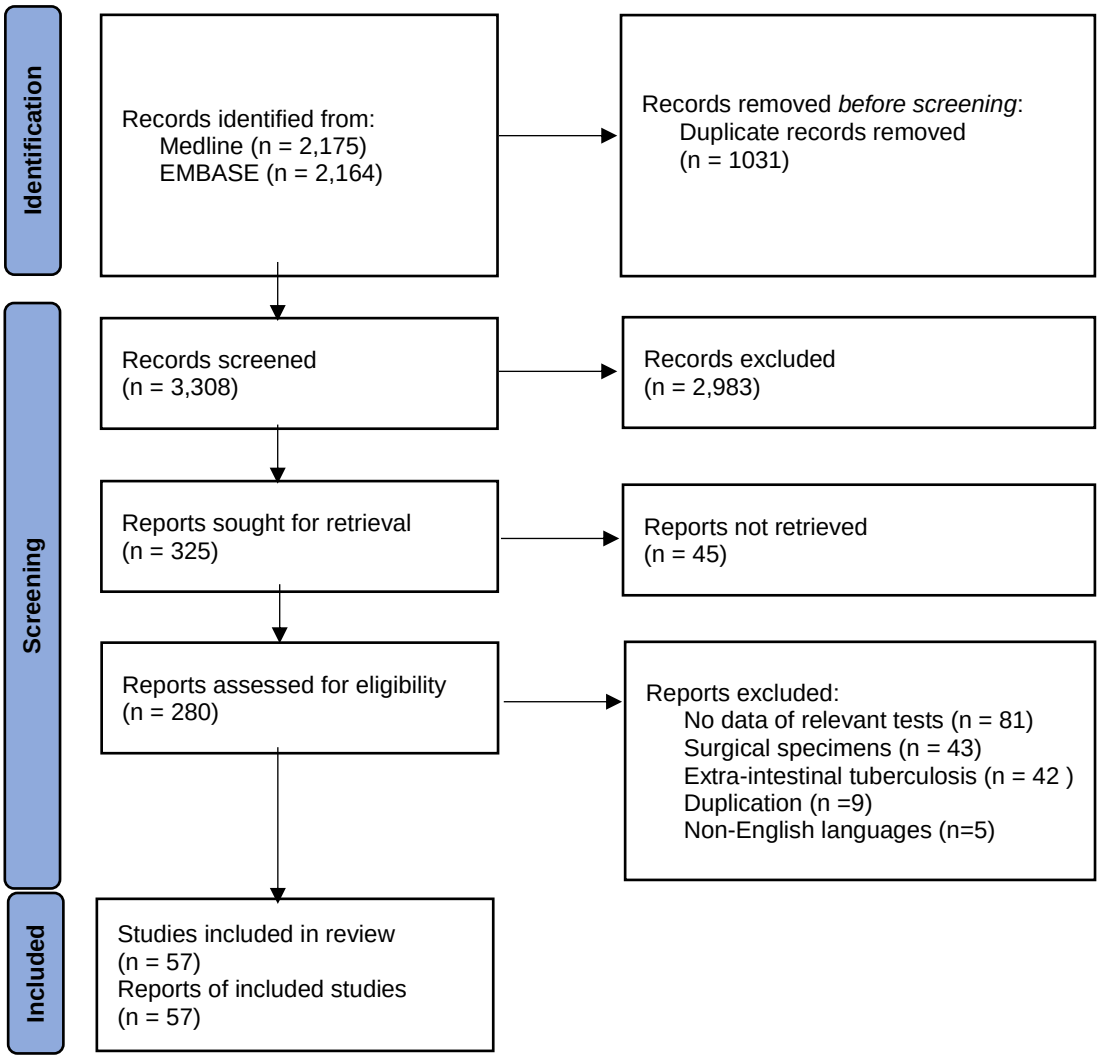


Table 1: Pooled diagnostic performance

Diagnostic Test	No of Study	n	Heterogeneity	Pool Diagnostic Performance					
			I^2	Pool Sensitivity	Pool Specificity	Pool PLR	Pool NLR	Pool DOR	SROC-AUROC
1. Tissue									
1.1 AFB	20	1,941	0.01	0.11 (0.07-0.17)	1.00 (0.00-1.00)	N/A	N/A	N/A	N/A
1.2 Pathology	22	1,817	0.00	0.17 (0.11-0.26)	1.00 (0.97-1.00)	N/A	N/A	N/A	N/A
1.3 PCR	18	1,316	54.08	0.58 (0.44-0.71)	0.98 (0.94-0.99)	25.9 (9.8-68.2)	0.43 (0.31-0.59)	60 (19-188)	0.96 (0.94-0.98)
1.4 Culture									
- Total	15	1,531	0.00	0.24 (0.11-0.44)	1.00 (0.00-1.00)	N/A	N/A	N/A	N/A
- LJ medium	4	308	0.00	0.06 (0.03-0.13)	1.00 (0.00-1.00)	N/A	N/A	N/A	N/A
- Liquid medium	6	406	0.00	0.32 (0.26-0.39)	1.00 (0.00-1.00)	N/A	N/A	N/A	N/A
1.5 GeneXpert	7	837	0.31	0.29 (0.17-0.46)	1.00 (0.75-1.00)	N/A	N/A	N/A	N/A
2. Stool									
2.1 PCR	4	403	43.57	0.73 (0.43-0.90)	0.95 (0.79-0.99)	N/A	N/A	N/A	N/A
3. Serum									
3.1 IGRA									
- Total	26	3,242	70.66	0.85 (0.79-0.89)	0.86 (0.82-0.89)	6.0 (4.6-8.0)	0.18 (0.12-0.25)	34 (20-59)	0.92 (0.89-0.94)
- T-SPOT	11	1,651	62.72	0.88 (0.83-0.92)	0.83 (0.74-0.90)	5.2 (3.2-8.6)	0.14 (0.09-0.22)	36 (15-86)	0.92 (0.90-0.94)
- QFT	11	849	41.17	0.75 (0.60-0.86)	0.88 (0.84-0.91)	6.2 (4.4-8.7)	0.28 (0.17-0.48)	22 (10-48)	0.90 (0.87-0.92)

AFB; acid fast bacilli, AUROC; area under receiver operating curve, DOR; diagnostic odds ratio, NLR; negative likelihood ratio, PCR; polymerase chain reaction, PLR; positive likelihood ratio, LJ; Löwenstein–Jensen medium, IGAR; interferon gamma releasing assay, T-SPOT; T-SPOT TB, QFT; QuantiFERON-TB Gold, SROC; summary receiver operating characteristic

[Poster Exhibition – General Topics]

PE4-008

Chemoprotective Effect of Umbelliferone against 1,2 Dimethylhydrazine Induced Colon Cancer via Alteration the Oxidative Stress, Inflammatory Reaction and Gut Microbiota

Vikas Kumar[1], Firoz Anwar[2]
[1]Pharmaceutical Sciences, Sam Higginbottom University of Agriculture, Technology & Sciences, Allahabad, India
[2]Biochemistry, King Abdulaziz University, Jeddah, Saudi Arabia

Background / Aim : Colorectal cancer (CRC) is the 3rd leading cause of cancer death globally and its prevalence is gradually increasing in developing countries. Umbelliferone (coumarin derivative) already proof antioxidant and anti-inflammatory effect against various rodent model. The current investigation was scrutinized the chemoprotective effect of umbelliferone against1,2 Dimethylhydrazine (DMH) Induced colon cancer in rats and explore the possible underlying mechanism.
Methods : The DMH (20 mg/kg) were used for the induction of CRC in rats except normal group rats and the rats received the oral administration of umbelliferone for 12 weeks. The food, water and body weight of all group rats were estimated at regular time interval. At end of the study, the biochemical parameters such as inflammatory cytokines, inflammatory parameters and antioxidant enzymes were scrutinized. The faces of the rats were collected to scrutinized the gut microbiota.
Results : Umbelliferone significantly ($P<0.001$) suppressed the tumor incidence, tumor weight and increased the body weight. Umbelliferone significantly ($P<0.001$) decreased the LPO level and boosted the GSH, SOD, GPx, SOD level; phase I and phase II enzymes. Umbelliferone significantly ($P<0.001$) decreased the level of TNF-α, IL-6, INF-γ, IL-1β and increased the level of IL-4, IL-10. Umbelliferone significantly ($P<0.001$) suppressed the level of inflammatory parameters such as PGE2, COX-2, iNOS and increased the level of apoptosis parameters such as caspase-3, caspase-8 and caspase-9. Moreover, umbelliferone considerably suppressed the Staphylocccus and boosted the level of Bifidobacterium, Akkermansia and Lactobacillus.
Conclusion : Collectively, we can say that umbelliferone exhibited the chemoprotective effect via suppression of oxidative stress, inflammatory reaction and altered the level of gut microbiota.
Keywords : Colorectal Cancer, Umbelliferone, Oxidative Stress, Inflammation, Gut Microbiota

[Poster Exhibition – General Topics]

PE4-009

Therapeutic Effects of Curcumin and Ginsenoside Combination in a Animal Model of Radiation Proctitis

Seong Eun Kim[1], Min-Sung Kim[2], Ryung-Ah Lee[3], Su-Jeong Yang[2], Tae-Yong Lee[2], So-Youn Woo[4]
[1]Department of Internal Medicine, Ewha Womans University College of Medicine, Seoul, Korea
[2]Central Research Center, CORESTEMCHEMON Inc., Seoul, Korea
[3]Department of Surgery, Ewha Womans University College of Medicine, Seoul, Korea
[4]Department of Microbiology, Ewha Womans University College of Medicine, Seoul, Korea

Background / Aim : This study aimed to investigate using an animal model whether the combination of curcumin and ginsenoside could be an effective treatment or preventive agent for progressive rectal inflammation caused by radiation.
Methods : C57BL/6 mice were exposed to gamma irradiation at 27 Gy (3 Gy/min) in the lower abdominal (rectal) region, establishing an animal model with acute radiation proctitis. A combination hydrogel containing 5 mM curcumin and 1 mM ginsenoside Rh1 was administered into the inflammed rectum. This administration was repeated every 2 to 3 days after radiation exposure for a total of 6 times. Two weeks after radiation exposure, the irradiated tissue samples were obtained. The histological and molecular evaluations were performed using Terminal deoxynucleotidyl transferase dUTP nick end labeling (TUNEL) analysis, Proliferating Cell Nuclear Antigen (PCNA) staining, immunohistochemistry, and qPCR.
Results : The murine group treated with the combination hydrogel showed significant restoration of the damaged rectal mucosa induced by radiation, including recovery of the mucosal layer and villi, mitigation of epithelial loss, and repair of crypt damage, compared to control group. Additionally, at the cellular level, a comparative analysis of apoptosis and proliferation within the tissues through TUNEL and PCNA staining demonstrated the combination hydrogel not only significantly inhibited cell death but also significantly increased cell proliferation. The gene expression of inflammatory cytokines in rectal tissue, including IL-6 and IFN-γ was significantly decreased in the treatment group. The infiltration of immune cells including T cells (CD4) and macrophages (CD68), which are important components in the pathogenesis of radiation proctitis, as shown by immunohistochemistry of tissue samples, was significantly reduced in the treatment group compared to the control group.
Conclusion : These promising results suggest that the combination of curcumin and ginsenosides has therapeutic potential for the management of radiation proctitis and provide valuable insights into new therapeutic strategies in clinical applications.
Keywords : Radiation, Proctitis, Curcumin, Ginsenoside

[Poster Exhibition – General Topics]

PE4-010

Successful Hemostasis of Refractory Lower GI Bleeding using a Novel Hemostatic Powder, UI-EWD, : A Muticenter Study

Gyeol Seong[3], Boram Cha[1], Jongbeom Shin[1], Sung Min Kong[2], Ji Taek Hong[1], Kye Sook Kwon[1]

[1]Department of Internal Medicine, Inha University Hospital, Inha University School of Medicine, Incheon, Korea

[2]Department of Internal Medicine, Samsung Changwon Hospital, Sungkyunkwan University School of Medicine, Changwon, Korea

[3]Department of Internal Medicine, Nowon Eulji Medical Center, Eulji University School of Medicine, Seoul, Korea

Background / Aim : Lower gastrointestinal bleeding (LGIB) is a common cause of emergency hospitalization and may require readmission for re-bleeding. Recently, a novel adhesive endoscopic hemostatic powder (UI-EWD/Nexpowder™, Nextbiomedical, Incheon, South Korea) was developed and applied for the control of LGIB. The aim of the current study was to assess the efficacy of UI-EWD as a rescue therapy for the treatment of refractory LGIB.

Methods : A total of 59 consecutive patients with LGIB who failed to initial hemostasis with conventional endoscopic therapy and had undergone applied with UI-EWD for hemostasis in refractory LGIB were enrolled in this study. We evaluated the success rate of immediate hemostasis, re-bleeding rate within 30 days and adverse events related to UI-EWD.

Results : All enrolled patients applied successfully UI-EWD at the bleeding site. Immediate hemostasis occurred in 59 patients (100%). The cumulative re-bleeding rate within 30 days was 8.5% (5/59) in patients who had achieved immediate hemostasis. There were no UI-EWD-related adverse events, such as perforation or embolism.

Conclusion : Based on our results, the application of UI-EWD has an excellence success rate for immediate hemostasis in refractory LGIB and showed promising results in reducing of re-bleeding rate. In particular, UI-EWD shows a favorable safety profile in all colonic segments of refractory LGIB.

Keywords : Lower GI Bleeding, Hemostasis, Hemostatic Powder, Rescue Therapy

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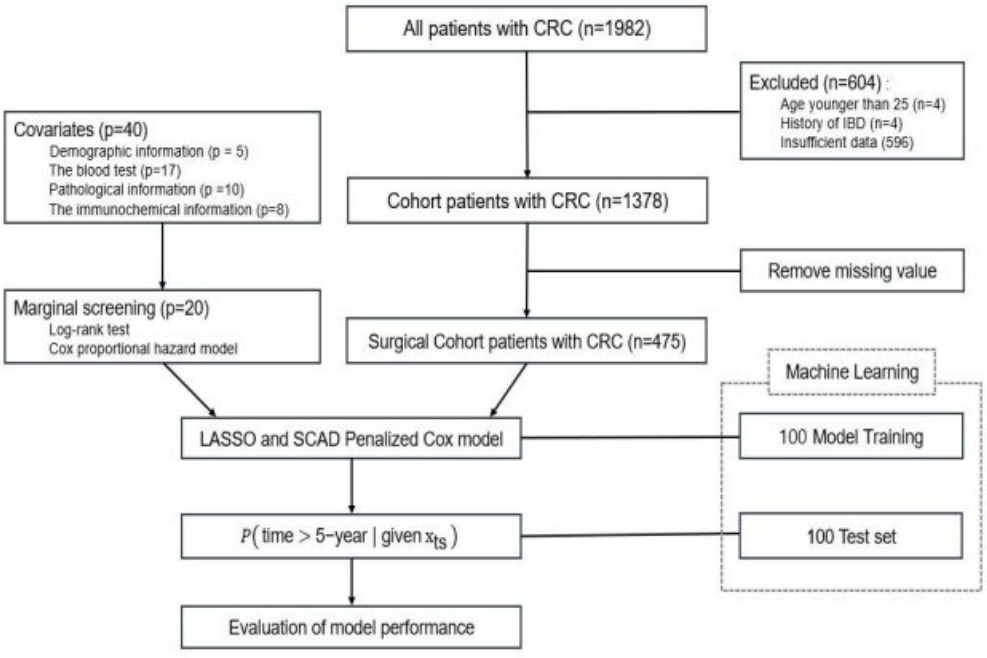
[Poster Exhibition – General Topics]

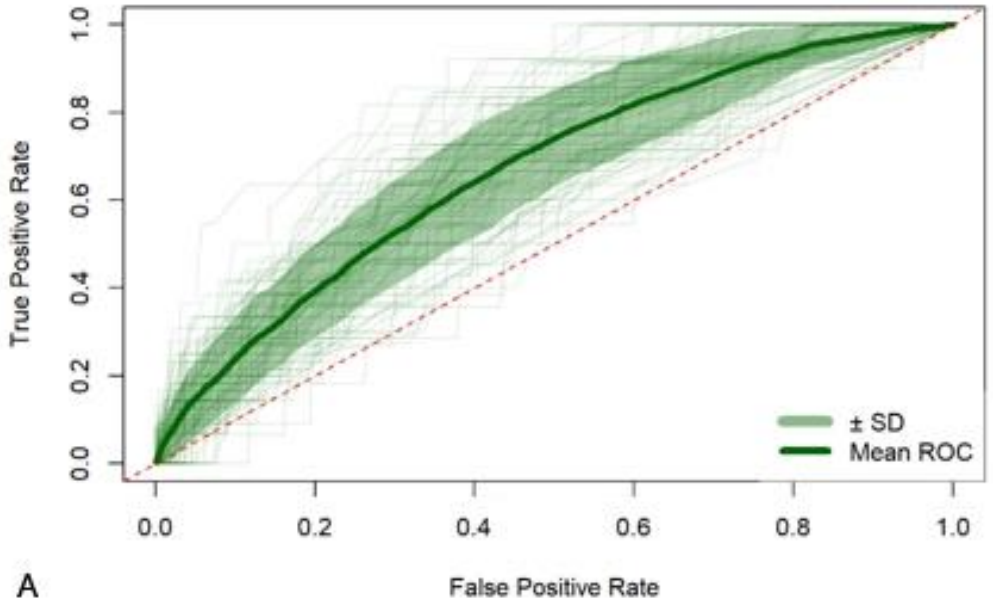
PE4-011

Personalized Prediction of Survival Rate with Combination of Penalized Cox Models and Machine Learning in Patients with Colorectal Cancer

Jae Myung Cha[1], Seung Jun Shin[2], Seon Hwa Lee[3]
[1]Department of Internal Medicine, Kyung Hee University Hospital at Gangdong, Seoul, Korea
[2]Department of Data Statistics, Korea University, Seoul, Korea
[3]Medical Big Data Research Center, Kyung Hee University Hospital at Gangdong, Seoul, Korea

Background / Aim : Previous studies on survival rates after colorectal cancer (CRC) surgery mostly have focused on survival rates less than 5 years for the patient population as a whole, rather than examining individual survival rates. This study aims to evaluate the performance of machine learning algorithm in predicting survival rates more than 5 years for individual patients with CRC using a penalized Cox regression model.
Methods : A retrospective analysis was conducted on a single-center database, including a total of 475 patients who underwent surgery for CRC and had complete data. The primary outcome measured individuals' survival rates more than 5 years using a machine learning based on penalized Cox regression. We conducted thorough calculations to measure the individual's survival rate more than 5 years for performance evaluation, and identified solutions to address the interpretability challenges stemming from the black box nature of machine learning.
Results : Among the 100 models constructed using LASSO penalized Cox regression, 19 models had the highest frequency of selecting 8 variables. Using SCAD penalized Cox regression, 23 models had the highest frequency of selecting 5 variables. This indicates that SCAD, which selected fewer variables, was found to be the superior model. Five most frequently selected variables in the 100 model fittings within LASSO and SCAD methods were neural invasion, number of lymph node involvement, CA19-9, lymphatic invasion, and hemoglobin level, which were most important predictors for CRC patients
Conclusion : Penalized Cox model is more efficient and leads to a more generalized model selection compared to the unpenalized Cox model as a prognosis prediction model for CRC.
Keywords : Colorectal Cancer, Machine Learning, Penalized Cox Model, Personalized Prediction, Survival Rate

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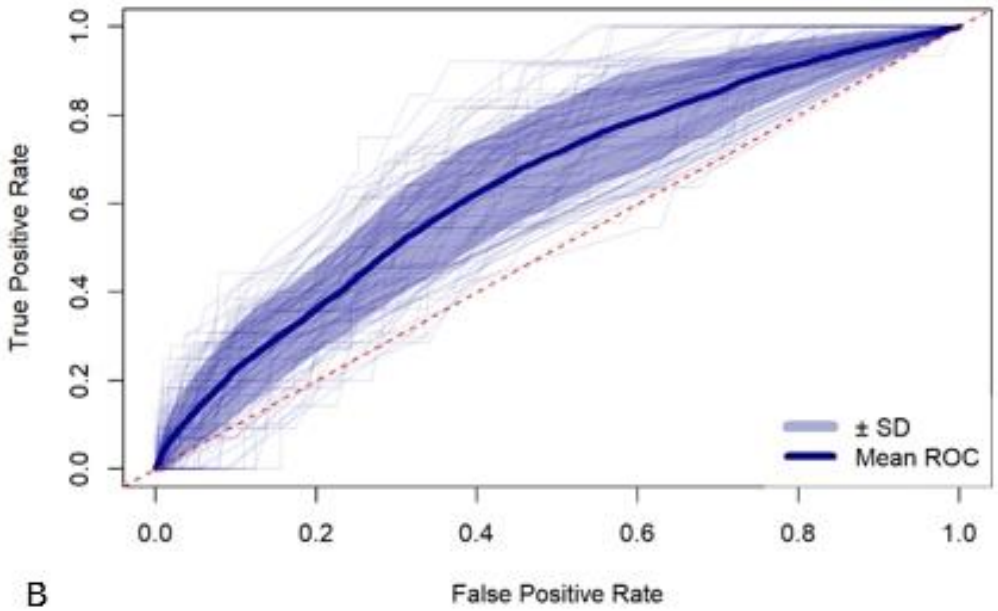
± SD
Mean ROC
False Positive Rate

A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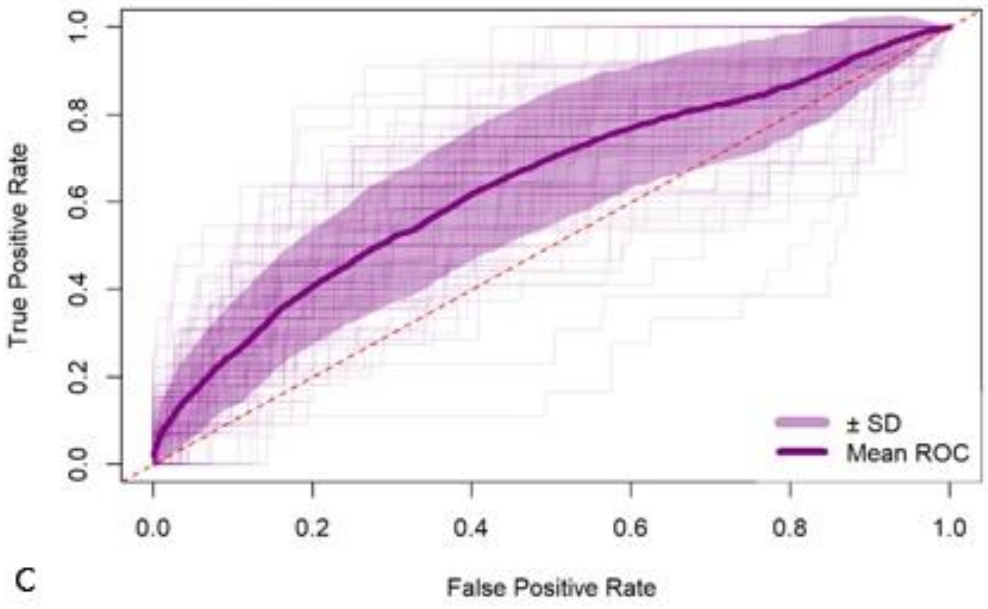

True Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
± SD
Mean ROC
False Positive Rate

C

Table 1. Clinical characteristics of CRC patients

Clinical and patholgical characteristics	Original data	Study data
Duration of follow-up (days), median [IQR]	1592.1, [732.8-2167.0]	1439.1, [734-1828]
Death during follow-up	99 (7.2)	26 (5.4)
Age at diagnosis (years)	63.7 ± 12.0	66.6 ± 11.4
Laboratory characteristics*		
No. of total patients	1378	478
Body mass index (kg/ m^2)	23.3 ± 3.6	23.31 ± 3.6
Hemoglobin (g/dL)	12.4 ± 2.3	12.0 ± 2.5
Platelet count (×10^3/$\mu\ell$)	261.2 ± 97.2	285.4 ± 95.4
Lymphocyte (%)	25.8 ± 10.5	23.9 ± 10.5
Neutrophil (%)	63.9 ± 12.5	66.2 ± 12.7
Albumin (mg/dL)	4.0 ± 0.5	4.0 ± 0.5
Carcinoembryonic antigen (ng/mL)	27.2 ± 235.9	26.7 ± 258.0
Carbohydrate antigen 19-9 (ng/mL)	76.5 ± 571.7	71.1 ± 603.2
C-reactive protein (mg/dL)	2.6 ± 5.3	3.2 ± 6.0
Neutrophil-to-lymphocyte ratio (NLR)	3.7 ± 4.8	4.3 ± 4.9
Protein-albumin ratio (PAR)	1.8 ± 0.2	1.8 ± 0.2
Lymphocyte-to-C reactive protein ratio (LCR)	12324.5 ± 21866.2	9205.7 ± 17986.9
Pathologic characteristics**		
No. of total patients	910	478
T stage, n (%)		
T0-1	143 (16.0)	62 (13.1)
T2	98 (11.0)	46 (9.7)
T3	512 (57.1)	288 (60.3)
T4	131 (14.6)	79 (16.8)

Unknown	12 (1.3)	3 (0.1)
N stage, n (%)		
N0	519 (57.9)	269 (56.3)
N1	217 (24.2)	127 (26.5)
N2	154 (17.1)	82 (17.2)
Unknown	7 (0.8)	0 (0.0)
pTNM stage, n (%)		
Stage I	207 (23.0)	95 (19.9)
Stage II	294 (32.6)	166 (34.8)
Stage III	329 (36.5)	179 (37.5)
Stage IV	60 (6.7)	37 (7.7)
Unknown	11 (1.2)	1 (0.1)
No. of LN involvement, mean ± SD	2.0 ± 4.2	2.0 ± 4.2
Lymphatic invasion, n (%)	261 (30.2)	159 (33.3)
Vascular invasion, n (%)	50 (5.8)	36 (7.5)
Neural invasion, n (%)	80 (10.1)	53 (11.1)

Mean ± SD or N (%)

Laboratory data* were missing from 0.9%-34.8% for each variable and pathologic data** also missing from 1.0%-12.5%. After excluding "unknown" cases, a total of 475 patients with colorectal cancer were used for the model.

[Poster Exhibition – General Topics]

PE4-012

Reduced Risk of Gastrointestinal Bleeding associated with Eupatilin in Aspirin Plus Acid Suppressant Users: Nationwide Population-based Study

Hyun Seok Lee[1], Ji Hyung Nam[2], Dong Jun Oh[2], Yeo Rae Moon[3], Yun Jeong Lim[2]
[1]Internal Medicine, School of Medicine, Kyungpook National University, Daegu, Korea
[2]Internal Medicine, Dongguk University College of Medicine, Goyang, Korea
[3]Data Platform Division, KakaoHealthcare Corp., Seongnam, Korea

Background / Aim : Mucoprotective agents (MPAs), such as eupatilin, are often prescribed to prevent gastrointestinal (GI) bleeding in addition to an acid suppressant despite the absence of a large-scale study. We evaluated the additional effect of eupatilin on the prevention of GI bleeding in both the upper and lower GI tract in concomitant aspirin and acid suppressant users using the nationwide database of national claims data from the Korean National Health Insurance Service (NHIS).
Methods : An aspirin cohort was constructed using the NHIS claims data from 2013 to 2020. Patients who manifested with hematemesis, melena, or hematochezia were considered to have GI bleeding. A Cox proportional hazards regression model was used to determine the risk factors for GI bleeding associated with the concomitant use of GI drugs and other covariates among aspirin users.
Results : Overall, a total of 432,208 aspirin users were included. The concurrent use of an acid suppressant and eupatilin (hazard ratio [HR] = 0.85, p = 0.016, vs. acid suppressant only) was a statistically significant preventive factor for GI bleeding. Moreover, a more than 3-month duration (HR = 0.88, p = 0.030) of acid suppressant and eupatilin prescription (vs. acid suppressant only) was a statistically significant preventive factor for GI bleeding.
Conclusion : Eupatilin administration for ≥3 months showed additional preventive effect on GI bleeding in concomitant aspirin and acid suppressant users. Thus, cotreatment with eupatilin with a duration of 3 months or longer is recommended for reducing GI bleeding among aspirin plus acid suppressant users.
Keywords : Aspirin, Eupatilin, Anti-ulcer Agent, Gastrointestinal Hemorrhage

[Poster Exhibition – General Topics]

PE4-013

Novel Risk Score for 30-day Adverse Events Following Colonoscopy in the Elderly

Min-Jae Kim, Jie-Hyun Kim, Young Hoon Youn, Hyojin Park, Jaeyoung Chun
Internal Medicine, Yonsei University College of Medicine, Seoul, Korea

Background / Aim : Elderly individuals are at risk of adverse events related to colonoscopy. Hence, physicians need to make individualized decisions that balance the benefits and risks of the procedure. To determine risk factors of adverse events in elderly individuals who underwent screening and diagnostic colonoscopy, and develop a novel risk score for prediction of 30-day colonoscopy-related adverse events.
Methods : This was a single-center retrospective cohort study conducted from August 2017 to August 2022. Participants were consecutive patients aged 60 years or older who underwent screening and diagnostic colonoscopy. Patients who underwent planned or emergent therapeutic colonoscopy or had insufficient medical records were excluded. The primary outcome was 30-day adverse event, which was defined as emergency room visits or unplanned hospitalizations within 30 days following colonoscopy. The frailty index calculated by laboratory findings (FI-LAB) was derived from components of blood test results and vital signs. A risk score was developed from the multivariate logistic regression model for prediction of 30-day adverse events following colonoscopy.
Results : We enrolled 8,154 patients aged ≥60 years (4,354 males [53.4%]). The mean age was 67.9 years (range, 60–94). The incidence of 30-day adverse events following colonoscopy was 1.4% (115/8,154). Colonoscopy-related adverse events were independently associated with use of aspirin (adjusted odds ratio [aOR], 2.24; 95% confidence interval [CI], 1.42–3.55), P2Y12 inhibitors (aOR, 1.79; 95% CI, 1.14–2.79), or anticoagulants (aOR, 2.47; 95% CI, 1.61–3.79), and with moderate (aOR, 4.54; 95% CI, 2.99–6.90) or high FI-LAB (aOR, 11.40; 95% CI, 6.38–20.52). The incidence rates of 30-day colonoscopy-related adverse events in the low, moderate, and high risk groups were 0.3%, 2.2%, and 10.7%, respectively ($p<0.001$).
Conclusion : Colonoscopy-related adverse events were significantly associated with frailty and medications, but not age, in elderly individuals. The novel risk score may be a promising tool for making individualized decisions about colonoscopy in the elderly.
Keywords : Colonoscopy, Adverse Events, Elderly Patients, Frailty Index

Table 1. Risk factors for 30-day adverse events following colonoscopic procedures

Variable	Number	Adverse events(%)	Univariate analysis		Multivariate analysis	
			OR (95% CI)	p-value	Adjusted OR (95% CI)	p-value
Age, years				<0.001		
<75	6,768	72 (1.1)	1 (reference)			
≥75	1,386	43 (3.1)	2.98 (2.03-4.36)			
Sex				0.004		
Female	3,800	38 (1.0)	1 (reference)			
Male	4,354	77 (1.8)	1.78 (1.21-2.64)			
Colonoscopic procedures				<0.001		
Diagnostic colonoscopy	6,828	83 (1.2)	1 (reference)			
Colonoscopic polypectomy	1,326	32 (2.4)	2.01 (1.33-3.04)			
Medications						
Aspirin	2,301	73 (3.2)	4.53 (3.09-6.65)	<0.001	2.24 (1.42-3.55)	0.001
P2Y12 inhibitors	1,228	48 (3.9)	4.16 (2.86-6.06)	<0.001	1.79 (1.14-2.79)	0.011
PDE inhibitor	538	13 (2.4)	1.82 (1.02-3.27)	0.044		
Anticoagulants	748	44 (5.9)	6.46 (4.40-9.48)	<0.001	2.47 (1.61-3.79)	<0.001
CCI				<0.001		
0-3	5,368	40 (0.7)	1 (reference)			
≥4	2,786	75 (2.7)	3.69 (2.50-5.42)			
FI-LAB				<0.001		<0.001
Low (<0.25)	7,030	53 (0.8)	1 (reference)		1 (reference)	
Moderate (0.25-0.40)	969	44 (4.5)	6.26 (4.17-9.39)		4.54 (2.99-6.90)	
High (>0.40)	155	18 (11.6)	17.30 (9.87-30.30)		11.40 (6.38-20.52)	

CCI, Charlson comorbidity index; CI, confidence interval; FI-LAB, frailty index calculated by laboratory findings; OR, odds ratio; PDE, phosphodiesterase

Table 2. Incidence and risk for 30-day adverse events following colonoscopy based on elderly colonoscopy risk scores

Elderly colonoscopy risk scores	Scores	Number	Adverse events (%)	OR (95% CI)	p-value
Low risk	0	4,877	13 (0.3)	1 (reference)	<0.001
Moderate risk	1-3	2,922	64 (2.2)	8.38 (4.61-15.24)	
High risk	4-6	355	38 (10.7)	44.9 (23.65-85.05)	

CI, confidence interval; OR, odds ratio.

[Poster Exhibition – General Topics]

PE4-014

A Randomized Clinical Trial of Synbiotics in Irritable Bowel Syndrome: Dose-Dependent Effects on Gastrointestinal Symptoms and Fatigue

Sang-Hoon Lee[1], Doo-Yeoun Cho[2], Seok-Hoon Lee[2], Kyung-Sun Han[2], Sung-Won Yang[2], Jin-Ho Kim[2], Su-Hyun Lee[2], Soo-Min Kim[2], Kyu-Nam Kim[2]

[1]Department of Family Medicine and Functional Medicine, Greencross I-Med Gangnam Medical Center, Seoul, Korea

[2]Department of Family Practice and Community Health, Ajou University School of Medicine, Suwon, Korea

Background / Aim : This double-blind, randomized controlled design study aimed to assess the dose-dependent effects of synbiotics on gastrointestinal symptoms of and fatigue in irritable bowel syndrome (IBS).

Methods : Thirty subjects with IBS were randomly assigned into the following three groups and received 2 capsules a day for 8 weeks: (1) high-dose (2 capsules of synbiotics); (2) low-dose (1 capsule of synbiotics and 1 capsule of placebo); and (3) placebo (2 capsules of placebo). At baseline and 8 weeks, they completed the study questionnaires.

Results : Two subjects in the high-dose group were lost to follow-up, leaving a total of 28 patients for the analysis. After 8 weeks, abdominal discomfort, abdominal bloating, frequency of formed stool, fatigue Visual Analog Scale (VAS), and Multidimensional Fatigue Inventory were significantly different among the groups (P=0.002, 0.006, 0.007, 0.028, and 0.041, respectively, by Kruskal-Wallis test). However, only abdominal discomfort, abdominal bloating, frequency of formed stool, and fatigue VAS were significantly improved in the high-dose group compared with those in the placebo group (P=0.002, 0.003, 0.002, and 0.013, respectively) by Mann-Whitney test with Bonferroni correction. No adverse drug reactions were reported.

Conclusion : High-dose synbiotics were superior to placebo in improving bowel symptoms and fatigue of IBS patients, suggesting that synbiotic dosage plays an important role in the treatment of IBS.

Keywords : Irritable Bowel Syndrome, Synbiotics, Fatigue, Dose-Response Relationship, Probiotics

Table 1. Clinical variables of the study subjects at the last visit, 8 weeks after baseline (n=28)

Variable	Placebo (n=10)	Low-dose (n=10)	High-dose (n=8)	P-value
Abdominal discomfort score	5.4±2.3	3.3±0.9	2.0±1.1	0.002*
Abdominal bloating score	5.4±2.0	4.3±1.8	2.1±1.6	0.006*
Formed stool frequency (per 10 times)	3.4±1.6	5.9±2.7	7.4±2.3	0.007*
Epigastric soreness score	2.9±2.1	2.9±1.9	1.8±2.2	0.379
Nausea score	1.3±1.5	0.9±1.4	0.4±0.5	0.476
Fatigue Severity Scale	42.9±8.3	34.8±10.3	34.0±9.6	0.115
Fatigue Visual Analog Scale	4.9±1.6	3.5±2.2	2.4±1.6	0.028*
Multidimensional Fatigue Inventory	86.0±12.7	74.3±15.2	73.4±13.6	0.041*
White blood cell ($\times10^3$/uL)	8.0±1.9	6.4±1.0	6.5±1.0	0.116
Hemoglobin (g/dL)	14.6±1.5	14.2±0.7	13.8±1.2	0.382
Hematocrit (%)	44.5±4.2	43.3±2.3	41.5±3.2	0.299
Platelet ($\times10^3$/uL)	232.8±42.2	257.8±40.0	220.0±32.4	0.144
Aspartate aminotransferase (U/L)	30.8±9.4	29.5±11.1	28.1±8.3	0.720
Alanine aminotransferase (U/L)	29.0±19.7	23.3±14.7	18.1±6.7	0.359
γ-Glutamyltranspeptidase (U/L)	28.4±18.0	20.1±8.5	18.4±6.1	0.701
Blood urea nitrogen (mg/dL)	12.0±2.0	13.4±2.4	15.8±5.2	0.186
Creatinine (mg/dL)	0.9±0.2	0.8±0.1	0.9±0.1	0.181

Values are presented as mean±standard deviation. P-values from the Kruskal-Wallis test.
*P<0.05.

Table 2. Comparison of clinical variables between study groups at 8 weeks (n=28)

Variable	Placebo vs. LD	Placebo vs. HD	LD vs. HD
Abdominal discomfort	0.058	0.002*	0.021
Abdominal bloating	0.187	0.003*	0.024
Frequency of formed stool	0.039	0.002*	0.244
Fatigue Visual Analog Scale	0.096	0.013*	0.197
Multidimensional Fatigue Inventory	0.028	0.037	0.721

Values are presented as the P-values from the Mann-Whitney test with Bonferroni correction.
LD, low-dose; HD, high-dose.
*P-values <0.017 were considered to indicate statistical significance by Bonferroni correction.

Table 3. Spearman's correlation analysis between study groups at 8 weeks (n=28)

	Abdominal discomfort	Abdominal bloating	Frequency of formed stool	Fatigue Visual Analog Scale	Multidimensional Fatigue Inventory
r	-0.668	-0.604	0.605	-0.513	-0.408
P-value	<0.001*	0.001*	0.001*	0.005*	0.031*

*P<0.05.

[Poster Exhibition – General Topics]

PE4-015

Outcome Predictors for Sigmoid Volvulus: A Retrospective Cohort Study

Seo Yoon Choi[1], Jung Hyun Ji[1], Ji Hye Park[1], Soo Jung Park[1], Jae Hee Cheon[1], Tae Il Kim[1], Hye Kyung Hyun[2], Hyun Chul Lim[2], Jae Jun Park[1]

[1]Department of Internal Medicine, Division of Gastroenterology, Yonsei Univerity College of Medicine, Severance Hospital, Seoul, Korea

[2]Department of Internal Medicine, Division of Gastroenterology, Yongin Severance Hospital, Yongin, Korea

Background / Aim : Although sigmoid volvulus is potentially life-threatening condition in elderly patients, prognostic factors for sigmoid volvulus are not well known. We aimed to evaluate clinical outcomes and investigate prognostic factors for patients with sigmoid volvulus.

Methods : This was a retrospective cohort study, reviewing 102 patients who were treated with sigmoid volvulus from January 2005 to January 2023 at two tertiary referral centers. After exclusion of patients who received emergency bowel resection surgery or improved by supportive treatment alone, a total of 75 patients were included. Patient and abdominal computed tomography (CT)-related factors potentially associated with endoscopic detorsion failure were analyzed by logistic analysis. Eventually, 22 patients developed with sigmoid volvulus again during the follow up period. To identify factors associated with recurrence, cox regression analysis was performed.

Results : Endoscopic decompression failure occurred in 15 patients, which comprises 20% of total 75 patients. Logistic regression analysis was performed to identify factors potentially associated with endoscopic detorsion failure. Age<65 (odds ratio 11.093, 95% CI 2.490-49.430), and larger (>85mm) cross-sectional diameter of distended colon (odds ratio 4.497, 95% CI 1.066-18.974) were related with initial endoscopic treatment failure. Then we analysed factors for recurrence after successful endoscopic detorsion to identify factors potentially associated with endoscopic detorsion failure. Patients showing calculated value of cross-sectional diameter of distended colon multiplied by maximal longitudinal axis length of twisted colon /1000 more than 20.0 were related with volvulus recurrence (Log Rank P=0.017).

Conclusion : Early surgical backup consultation may be needed in patients having factors related with failure of endoscopic decompression therapy. Elective surgical treatment after improvement on initial endoscopic therapy may be considered in patients showing high risk features for recurrence on CT scan.

Keywords : Sigmoid Volvulus, Prognostic Factor, Endoscopic Therapy

Table 1. Baseline characteristics

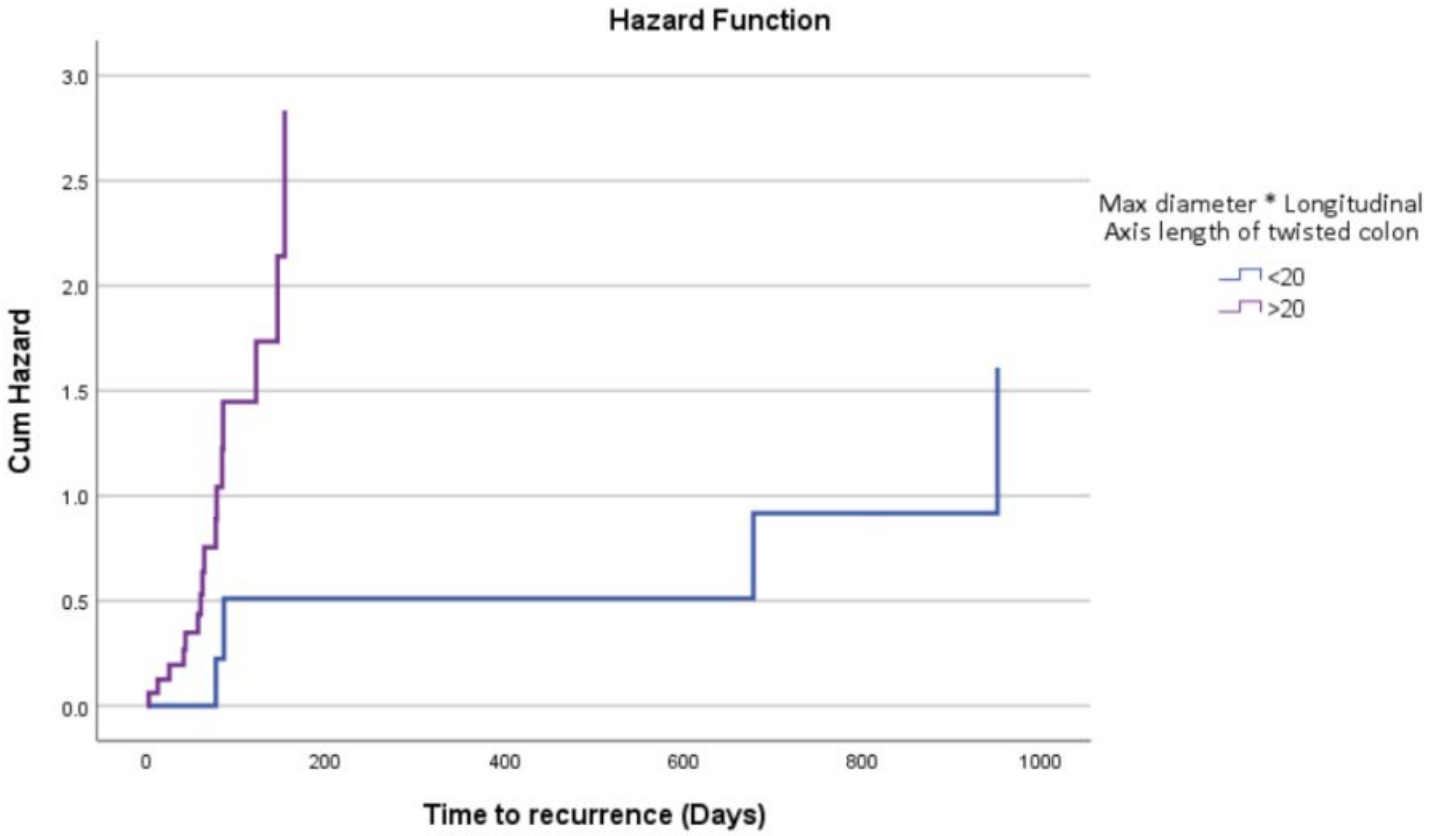
Variables	Total	Endoscopic Detorsion		*p value
		Success (n=60)	Fail (n=15)	
Observation period (days)	706.81±949	543.77±727.73	1155±1366.36	0.02*
Recurrence (+)	25 (33.3%)	22 (36.7%)	3 (20.0%)	0.221
Age at diagnosis (years)	67.5±17.86	70.67±17.30	55.8±18.83	0.011*
Sex (male)	49 (65.3%)	41 (68.3%)	8 (53.3%)	0.275
Image findings				
Maximal Bowel distension at diagnosis (Abdomen X-ray)	98.85±27.31	96.98±26.37	106.07±29.40	0.288
Air-fluid level (+) (Abdomen X-ray)	34 (45.3%)	25 (42.4%)	9 (60.0%)	0.221
Maximal Bowel distension at diagnosis (APCT) : A	82.95±25.18	79.75±24.80	94.73±28.51	0.077
Axis length of twisted colon, Longitudinal at diagnosis (APCT) : B	223.44±67.82	221.42±72.54	232.14±66.46	0.599
Axis length of twisted colon, Horizontal at diagnosis (APCT)	145.16±39.77	145.53±41.86	154.93±34.48	0.388
A*B/1000	19.86±11.27	18.96±11.40	24.13±11.90	0.156
Suspected bowel ischemia at diagnosis (APCT)	10 (13.3%)	5 (8.3%)	5 (33.3%)	0.023*
Concurrent disease				
Dementia	2 (2.7%)	2 (3.4%)	0 (0.0%)	1
Parkinson disease	13 (17.3%)	11 (18.6%)	2 (13.3%)	1
Previous history of bowel surgery	24 (32.9%)	16 (27.1%)	8 (57.1%)	0.055
Previous history of sigmoid volvulus	23 (31.9%)	16 (27.6%)	7 (50.0%)	0.122
Previous history of nursing facility admission	9 (12.2%)	8 (13.3%)	1 (7.1%)	1

Table 2. Logistic regression analysis for endoscopic detorsion failure (N=75)

Variables	Univariate analysis	Multivariate analysis		
	*p value	OR	95% CI	*p value
Sex (male)	0.275			
Age at diagnosis (<65years)	0.001*	11.093	2.490-49.430	0.002*
Image findings				
Air-fluid level (+) (Abdomen X-ray)	0.221			
Maximal Bowel distension at diagnosis (APCT) ≥85mm	0.026*	4.497	1.066-18.974	0.041*
Axis length of twisted colon, Longitudinal (APCT)≥230mm	0.603			
A*B/1000	0.244			
Suspected bowel ischemia at diagnosis (APCT)	0.011*	5.687	0.773-41.833	0.088
Concurrent disease				
Alzheimer's disease	1.000			
Parkinson disease	1.000			
Current medication				
Anticholinergics				
Previous history of bowel surgery	0.055			
Previous history of sigmoid volvulus	0.122			
Perfomance status	0.379			

APCT, Abdomen Pelvic Computed Tomography; OR, odds ratio; CI, confidence interval

Graph1. Cumulative hazard for recurrence according to calculated value of max diameter multiplied by longitudinal axis length of twisted colon (N=60)



[Poster Exhibition – General Topics]

PE4-016

Comparison of Clinical Characteristics and Long-term Prognosis of Focal Hypoganglionosis with Adult-onset Megacolon and Chronic Intestinal Pseudo-obstruction

Jung-Bin Park[1], Kee Wook Jung[1], June Hwa Bae[1], Kyuwon Kim[2], Seung Wook Hong[1], Sung Wook Hwang[1], Sang Hyoung Park[1], Dong-Hoon Yang[1], Byong Duk Ye[1], Jeong-Sik Byeon[1], Suk-Kyun Yang[1], Jong Lyul Lee[3], Yong Sik Yoon[3], Chan Wook Kim[3], Chang Sik Yu[3], Seung-Jae Myung[1]

[1]Department of Gastroenterology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

[2]Department of Gastroenterology, Chung-Ang University College of Medicine, Seoul, Korea

[3]Department of Colon and Rectal Surgery, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea

Background / Aim : Chronic intestinal pseudo-obstruction (CIPO) is characterized by distended bowel loops and reduced small intestine contractility, leading to an overall poor prognosis. Focal hypoganglionosis with adult-onset megacolon (FHAM) is characterized by dilatation of the colon proximal to a short area of reduced luminal diameter, while small bowel motility remains normal. Although these diseases have similar initial symptoms, surgery might be preferable over medical treatment for FHAM without recurrence of symptoms. The long-term prognosis of FHAM has not been adequately examined. We compared the clinical features and prognosis of FHAM to those of CIPO.

Methods : We reviewed the clinical data for 60 patients with FHAM and 13 patients with CIPO between January 2017 and February 2023. The median follow-up period was 3.0 years (IQR, 1.0–6.1) for FHAM and 2.8 years (IQR, 1.0–9.8) for CIPO.

Results : The patient population was predominantly female (70% in FHAM and 53.8% in CIPO). The median age at diagnosis for FHAM was 54.5 years (IQR, 43.1–63.0) and 45.3 years (IQR, 23.9–63.7) for CIPO ($p = 0.458$). Surgery was performed on 24 (40%) patients with FHAM and 9 (69.2%) patients with CIPO. No patient with FHAM required total parenteral nutrition (TPN) for more than a month following surgery, two patients experienced hospitalization after surgery, and only one patient necessitated re-operation. However, re-operation was required in six out of nine patients (66.7%) with CIPO who underwent surgery; all patients needed frequent hospitalization, and six patients (66.7%) required TPN after surgery ($p < 0.001$). Body mass index at last follow-up was significantly different between the two groups (21.3 kg/m^2 [IQR, 19.2–23.3] vs 17.3 kg/m^2 [IQR, 16.1–18.9], $p < 0.001$).

Conclusion : In comparison to CIPO, FHAM had a better long-term prognosis without recurrence following surgery, emphasizing the necessity of identifying the two diseases and carefully selecting surgical candidates.

Keywords : Pseudo-obstruction, Hypoganglionosis, Motility, Prognosis

[Poster Exhibition – General Topics]

PE4-017

Unveiling the Shield: Exploring Antigenic Epitopes of *Campylobacter Jejuni* Virulence Factors for a Potent Multiepitope Vaccine

Rian Ka Praja[1], Reny Rosalina[2]
[1]Microbiology, Faculty of Medicine, Universitas Palangka Raya, Indonesia
[2]Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Palangka Raya, Indonesia

Background / Aim : *Campylobacter jejuni* is a prominent causative agent of global bacterial gastroenteritis, necessitating the formulation of effective preventive measures. This investigation aimed to scrutinize the epitopes within three pivotal virulence factors of *C. jejuni*, namely flagellin B, outer membrane protein, and phospholipase A, with the intention of utilizing them as foundational components for vaccine candidates.
Methods : Employing an array of bioinformatics tools encompassing sequence analysis, antigenicity prediction, and immunoinformatics, we identified antigenic regions within these proteins. B- and T-cell epitopes were forecasted using the ABCpred and IEDB databases, respectively. The recognized epitopes underwent additional scrutiny based on parameters such as antigenicity score, immunogenicity score, allergenicity, and toxicity. Moreover, an assessment of the global population coverage of T-cell epitopes was conducted.
Results : Our study successfully pinpointed B- and T-cell epitopes for the three virulence factors of *C. jejuni*, characterized by antigenicity scores ranging from 0.46 to 1.55, and all epitopes demonstrated non-allergenic and non-toxic properties. Furthermore, the T-cell epitopes exhibited an impressive global population coverage of 96.74%.
Conclusion : In summary, our investigation provides a comprehensive exploration of the epitopes within flagellin B, outer membrane protein, and phospholipase A of *C. jejuni*, proposing them as potential constituents for multi-epitope vaccine candidates. The identified epitopes exhibit notable antigenic properties, presenting promise as viable candidates for a *C. jejuni* vaccine, thus representing a potential solution to address this substantial public health concern. Subsequent experimental validation and preclinical studies are imperative to assess the efficacy of these identified epitopes.
Keywords : *Campylobacter Jejuni*, Epitope, Vaccine, Virulence Factor

Table 1 Predicted cytotoxic T lymphocyte epitopes from flagellin B, outer membrane protein, and phospholipase A proteins to design multi-epitope vaccine construct with their immunogenic properties

Protein	Allele	Start	End	Epitope	Antigenicity	Immunogenicity	Allergenicity	Toxicity
Flagellin B	HLA-A*68:01	472	480	ETAGVTTLK	1.2077	0.14982	Non-Allergen	Non-Toxic
OMP	HLA-A*68:01	33	41	DVSGVLRYR	0.5151	0.05168	Non-Allergen	Non-Toxic
Phospholipase A	HLA-A*23:01	103	112	NYFLPFAYSF	1.1653	0.06709	Non-Allergen	Non-Toxic

Table 2 Predicted helper T lymphocyte epitopes from flagellin B, outer membrane protein, and phospholipase A proteins to design multi-epitope vaccine construct with their immunogenic properties

Protein	Allele	Start	End	Epitope	Antigenicity	Allergenicity	Toxicity
Flagellin B	HLA-DRB1*09:01	553	567	GSYAMSQANAVQQNV	0.5460	Non-Allergen	Non-Toxic
OMP	HLA-DRB3*02:02	340	354	YVTGGYTFNETVRVG	0.4651	Non-Allergen	Non-Toxic
Phospholipase A	HLA-DPA1*01:03 /DPB1*04:01	166	180	ETNYQPEFFIDLPLY	1.5593	Non-Allergen	Non-Toxic

Table 3 Predicted B cell epitopes from flagellin B, outer membrane protein, and phospholipase A proteins to design multi-epitope vaccine construct with their immunogenic properties

Protein	Start	End	Epitope	Score	Antigenicity	Allergenicity	Toxicity
Flagellin B	363	378	VSLRESKGRFDANIAD	0.94	0.922	Non-Allergen	Non-Toxic
OMP	318	333	GEEIFYTTGSRLNGDT	0.92	0.657	Non-Allergen	Non-Toxic
Phospholipase A	306	321	GIKIDGNIGGGAFINA	0.9	1.3757	Non-Allergen	Non-Toxic

[Poster Exhibition – General Topics]

PE4-019

Comparative Study on Changes of Clinical Aspects in Patients Taking Bowel Cleansers (Oral Sulfate Tablet vs Low PEG vs Very Low PEG)

Youngcheon Ra, Eunsun Kim, Hoonjai Chun, Hongsik Lee, Yoontae Jeen, Bora Keum, Hyuksoon Choi, Jaemin Lee, Hanjo Jeon, Sanghyun Kim, Kangwon Lee, Jiyoung Yoon, Bomee Lee
Division of Gastroenterology and Hepatology, Department of Internal Medicine,
Korea University Anam Hospital, Korea University College of Medicine, Seoul, Korea

Background / Aim : Ever since oral sulfate tablets (OST) were developed and approved as a bowel cleanser in Korea, they are being more frequently used. There were not many studies that compared blood test results with each group in real world. Several studies have been published on safety and efficacy in elderly patients, but no conclusions have been reached. In this regard, we attempted to conduct a retrospective comparative study on changes of clinical aspects obtained from patients
Methods : Data collection was prospectively conducted on patients aged 18 to 80, who visited Anam Hospital for colonoscopy over the past year (January 2022 - January 2023). The main evaluation variables are electrolyte changes, BUN/Cr, BBPS score, adenoma detection rate, adverse effects, and survey after colonoscopy.
Results : There were no significant differences in bowel cleanliness and adenoma detection rate. The most common side effects were nausea and vomiting in 60% of patients. When patients took OST, they often took them all, and it was found that taking them was much easier. There was no significant electrolyte differences between comparison groups. Especially, there was no difference in adverse effects caused by bowel preparation in elderly patients(Aged >65).
Conclusion : When the OST is used in various patient groups, adverse effects such as nausea and vomiting are less common, and dry mouth were the more common side effects. In real world, compared to classical bowel cleansing agents such as low PEG and very low PEG, OST's efficacy and safety is not inferior. Also electrolyte imbalance and increased creatinine are rarely seen. Based on this study's survey, if this is a group of patients who had difficulty with bowel preparation due to previous PEG, and additional colonoscopy is required, it would be a good idea to consider OST for the next examination.
Keywords : Colonoscopy, Bowel Preparation, Oral Sulfate Tablet, PEG, Change of Clinical Aspects

Figure 1. Electrolyte, BUN, Creatinine results of total patients

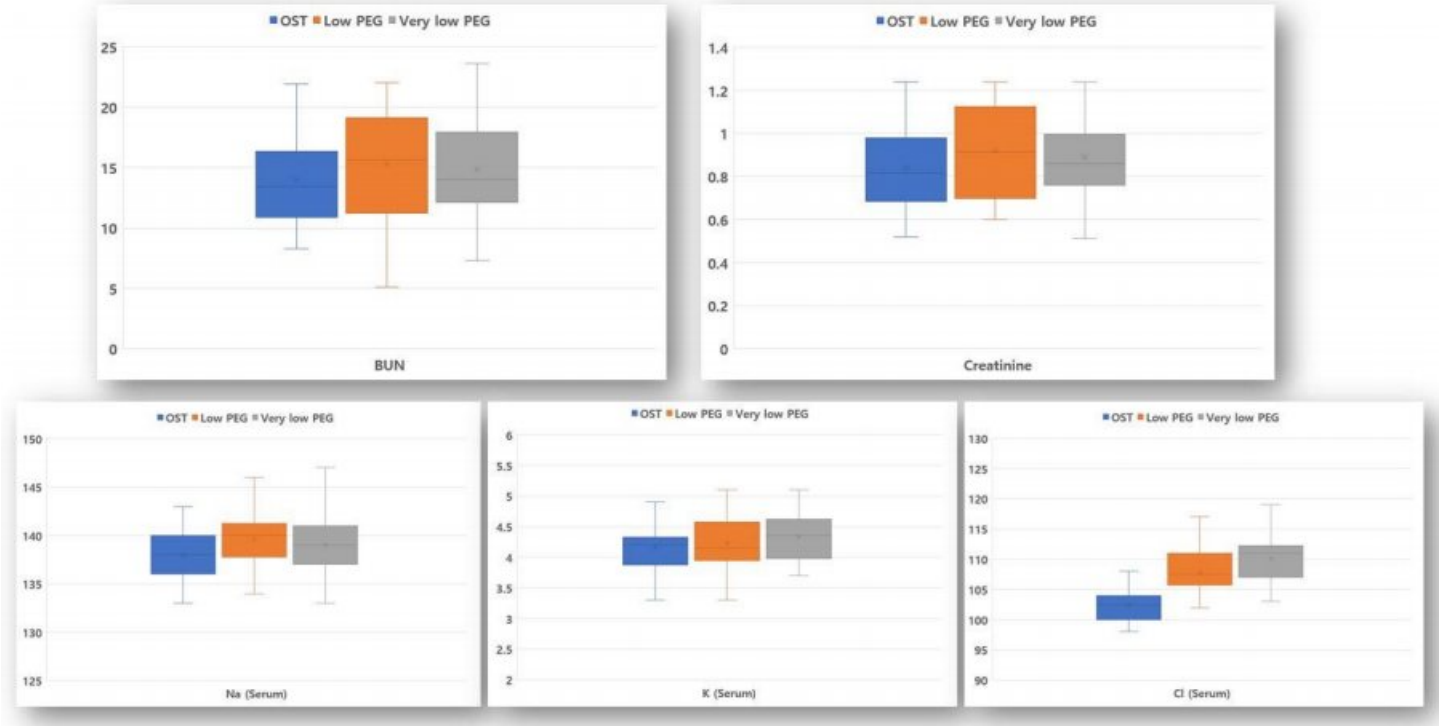


Figure 2. Electrolyte, BUN, Creatinine results of Elderlys(Aged >65)

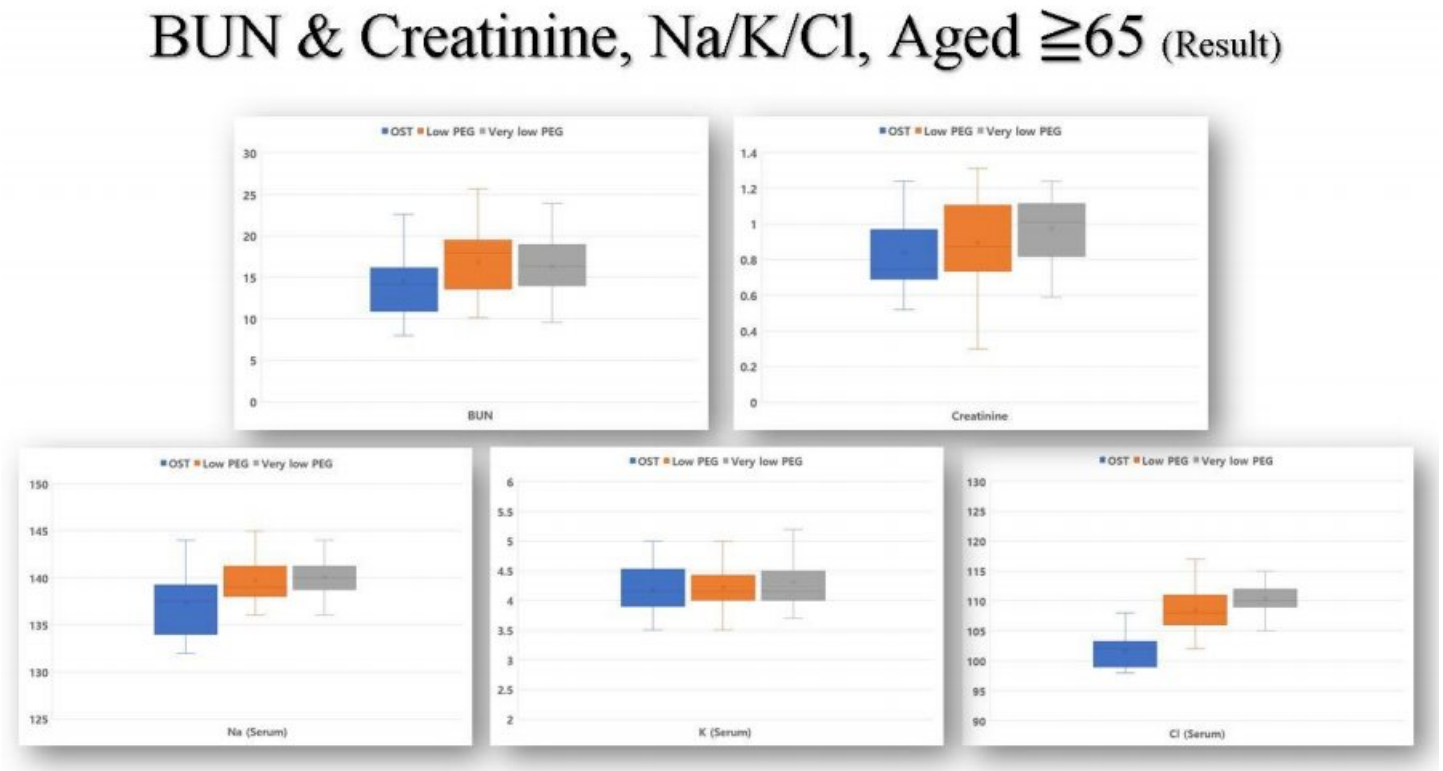
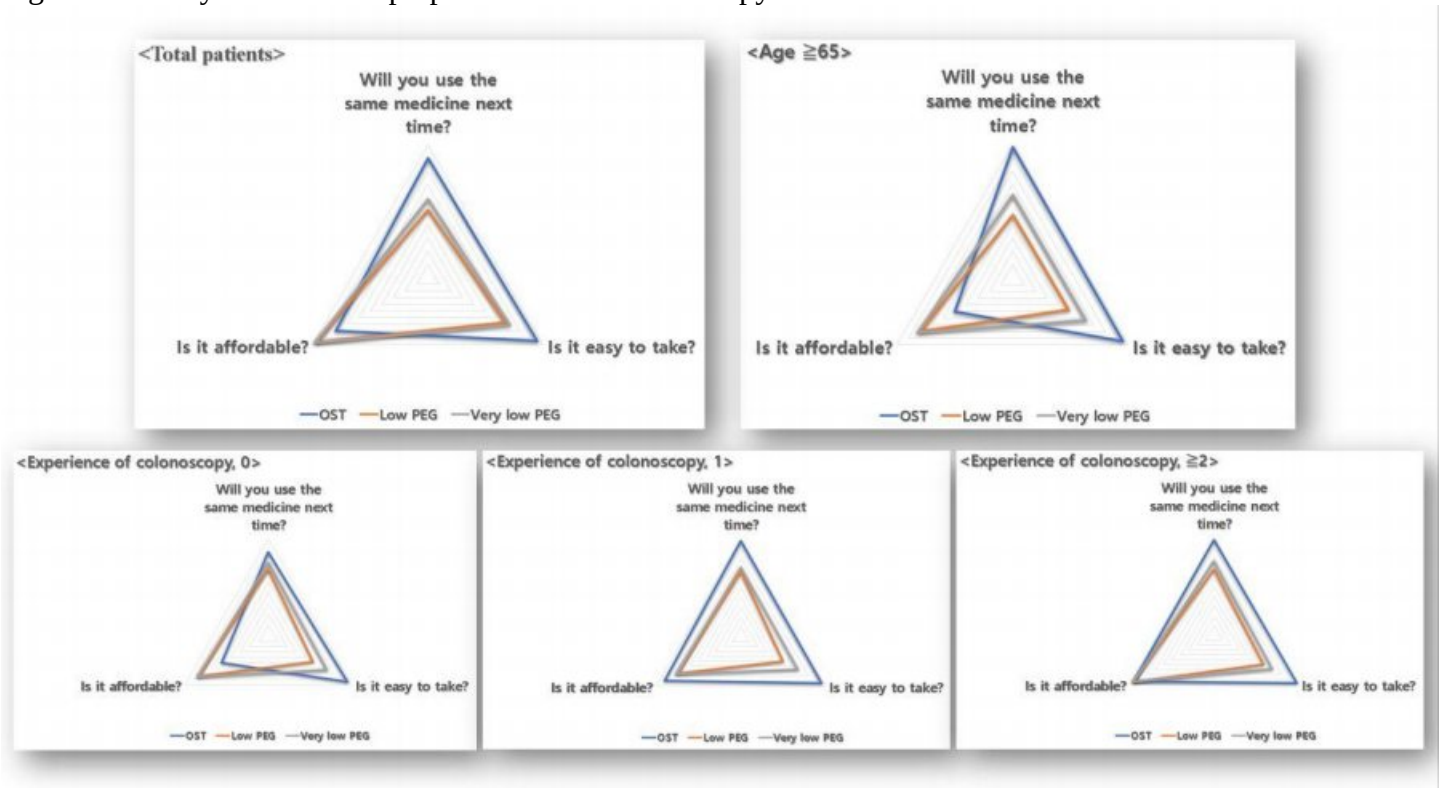


Figure 3. Survey about bowel preparation after colonoscopy



[Poster Exhibition – General Topics]

PE4-020

Diagnostic Performance of Non-invasive Tests for Cytomegalovirus Colitis: A Systematic Review and Meta-analysis

Onuma Sattayalertyanyong, Thanaboon Chaemsupaphan, Julajak Limsrivilai
Department of Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

Background / Aim : Diagnosis of cytomegalovirus (CMV) colitis requires colonoscopy with tissue biopsy as the gold standard. Utilizing blood and fecal tests to diagnose CMV colitis has been increasingly studied; however, the reported performances are varied and have not been systematically evaluated. We aimed to systematically assess the diagnostic accuracies of the blood and stool tests compared to the gold standards.
Methods : Prospective and retrospective studies evaluating the performance of serum CMV-PCR, serum CMV-Antigen (Ag), and stool CMV-PCR in diagnosing CMV colitis were included.(Figure1) Tissue H&E, tissue CMV-IHC, or tissue CMV-PCR served as reference standards. Meta-analysis using a random-effects model was performed. Each serum and stool test's pooled sensitivity, specificity, and summary receiver operating characteristic (SROC) curves were calculated. Heterogeneity was assessed by I^2 statistics. The risk of bias was assessed using the QUADAS-2 tool.
Results : A total of 35 studies with 3,368 tests were included in this meta-analysis. There were 22 studies of serum CMV-PCR, 9 of serum CMV-Ag, and 7 of fecal CMV-PCR. As shown in Table 1, the pooled sensitivity, specificity, and SROC were 63% (95% CI 51-73), 90% (95% CI 79-95), and 0.81 for serum CMV-PCR, 38% (95% CI 26-51), 94% (95% CI 70-99), and 0.56 for serum CMV-Ag, and 53% (95% CI 35-70), 91% (95% CI 84-95), and 0.84 for stool CMV-PCR. Only one study used a combination of serum and stool CMV-PCR, yielding a sensitivity of 81.5% for either positive and a specificity of 96% for both positives.
Conclusion : Serum and stool tests cannot replace colonoscopy with tissue biopsy for diagnosing CMV colitis because of their low sensitivities. However, they may be helpful if colonoscopy is not feasible. Positive tests may help to diagnose CMV colitis, given their substantially high specificities. The use of serum and stool CMV-PCR in combination may improve diagnostic performance but needs more studies.
Keywords : Cytomegalovirus, CMV, Colitis, Diagnostic Performance, Meta-analysis

Figure 1: Flow diagram of study selection

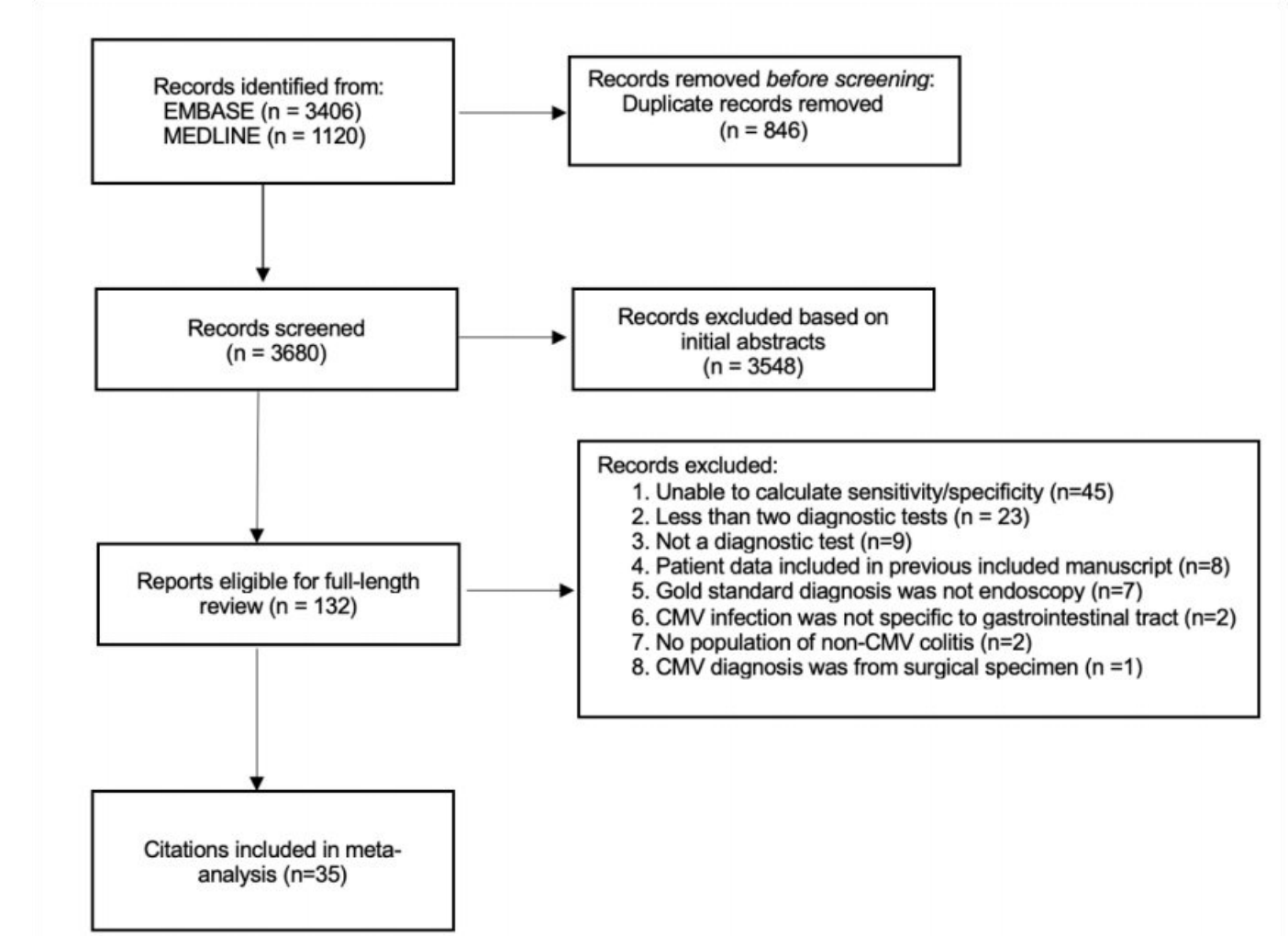


Table 1: Diagnostic accuracies of non-invasive methods to identify cytomegalovirus colitis

Diagnostic tests	N of study	N of test	I^2	Pooled sensitivity	Pooled specificity	PLR	NLR	DOR	SROC
Tissue histopathology (H&E and/or CMV-IHC) and/or tissue CMV-PCR as reference standards									
Serum CMV-PCR	22	2252	63.57	0.63 (0.51-0.73)	0.90 (0.79-0.95)	6.1	0.41	15	0.81
Serum CMV-Ag	9	699	0.02	0.38 (0.26-0.51)	0.94 (0.70-0.99)	6.6	0.66	10	0.56
Stool CMV-PCR	7	417	41.25	0.53 (0.35-0.70)	0.91 (0.84-0.95)	5.9	0.52	12	0.84
Tissue histopathology (H&E and/or CMV-IHC) as a reference standard									
Serum CMV PCR	14	1571	66.61	0.64 (0.52-0.75)	0.84 (0.70-0.93)	4.1	0.43	10	0.77
Serum CMV-Ag	6	558	0	0.47 (0.37-0.56)	0.82 (0.51-0.95)	2.5	0.65	4	0.54
Stool CMV-PCR	3	276	0.02	0.48 (0.23-0.74)	0.86 (0.78-0.91)	3.4	0.6	6	0.83
Tissue CMV-PCR as a reference standard									
Serum CMV-PCR	5	486	33.43	0.60 (0.30-0.84)	0.99 (0.73-1.00)	47.2	0.41	116	0.91
Serum CMV-Ag	2	90		0.28 (0.16-0.43)	0.98 (0.87-1.00)				
Stool CMV-PCR	3	141	0	0.56 (0.33-0.77)	0.97 (0.90-0.99)	18.6	0.45	41	0.95

CMV, cytomegalovirus; PLR, positive likelihood ratio; NLR, negative likelihood ratio; DOR, diagnostic odds ratio; SROC, summary receiver operating characteristic; IHC, immunohistochemistry; PCR, polymerase chain reaction; H&E; hematoxylin and eosin

[Poster Exhibition – General Topics]

PE4-021

Clinical Characteristics of Acute Mesenteric Ischemia in Young Adults: A KASID Multicenter Study

Kwangwoo Nam[1], Se Ram Shin[2], Seong Ran Jeon[2], Joo Hye Song[3], Seong-Eun Kim[4]
Small Intestinal Research Group of the Korean Association for the Study of Intestinal Disease
[1]Gastroenterology, Dankook University College of Medicine, Cheonan, Korea
[2]Gastroenterology, Soonchunhyang University College of Medicine, Seoul, Korea
[3]Gastroenterology, Konkuk University School of Medicine, Seoul, Korea
[4]Gastroenterology, Ewha Womans University College of Medicine, Seoul, Korea

Background / Aim : Acute mesenteric ischemia occurs mainly in the elderly, but it can also occur in young adults, and some patients experience poor disease course. This study aimed to assess the clinical characteristics of acute mesenteric ischemia in young adults.
Methods : We retrospectively reviewed young adult patients aged 20–39 diagnosed with acute mesenteric ischemia in four tertiary medical centers. Their clinical characteristics were compared with those of middle-aged adults aged 40-49.
Results : A total of 86 patients were included in this study. Median age of them was 42 years, and 71% were male. Twenty-three percent of patients had a history of prior abdominal procedure or surgery. The most prevalent cause of acute mesenteric ischemia was mesenteric venous thromboembolism (33.7%), followed by mesenteric artery thromboembolism (30.2%), non-occlusive mesenteric ischemia (18.6%), and mesenteric artery dissection (17.4%). When comparing the two age groups, patients aged 20–39 were more frequently affected by mesenteric venous thromboembolism (44.0% vs. 26.0%), while less frequently affected by mesenteric arterial thromboembolism (13.9% vs. 42%) compared to patients aged 40-49 (P = 0.013). No significant differences were observed in terms of disease involvement, treatment method, and treatment outcome.
Conclusion : Mesenteric ischemia in young adults may exhibit a distinct clinical course compared to that in elderly adults. Venous thromboembolism emerges as a more prominent etiology in young adults with acute mesenteric ischemia.
Keywords : Acute Mesenteric Ischemia, Young Adults, Mesenteric Venous Thromboembolism

[Poster Exhibition – General Topics]

PE4-023

The Role of Immunohistochemistry in Diagnosing Cytomegalovirus Disease in the Gastrointestinal Tract

Puo-Hsien Le[1,2], Pai-Jui Yeh[3], Ren-Chin Wu[4], Cheng-Tang Chiu[1,2]

[1]Department of Gastroenterology and Hepatology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

[2]TASSID, Taiwan Association of the Study of Small Intestinal Disease, Taoyuan, Taiwan

[3]Department of Pediatric Gastroenterology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

[4]Department of Pathology, Chang Gung Memorial Hospital, Linkou Branch, Taoyuan, Taiwan

Background / Aim : Accurate diagnosis of invasive Cytomegalovirus (CMV) diseases is crucial. Existing research on the effectiveness of Hematoxylin and eosin (H&E) staining and the role of immunohistochemistry (IHC) staining in diagnosing various CMV diseases of the gastrointestinal (GI) tract is limited.

Methods : We examined GI tract specimens using H&E and IHC staining, sourced from a pathology database. Patients were categorized into two groups: those suspected of CMV infection (HEs) and those with no evidence of CMV infection (HEn). IHC staining served as the benchmark for assessing sensitivity (SE), specificity (SP), positive predictive value (PPV), and negative predictive value (NPV).

Results : Out of 1448 specimens, the SE/SP (%) of H&E staining for the entire GI tract, esophagus, stomach, small intestine, and colon were 76.1%/82.1%, 76.1%/70%, 85.5%/71.7%, 60%/94.2%, and 75%/87%, respectively. The corresponding PPV/NPV (%) values were 58%/91.3%, 39.3%/92%, 51.2%/93.5%, 69.2%/91.5%, and 68%/90.4%, respectively.

Conclusion : In cases with a high clinical suspicion of CMV, IHC staining is vital for accurate diagnosis. This study underscores the limitations of H&E staining and highlights the necessity of IHC staining in certain clinical scenarios.

Keywords : Cytomegalovirus, Hematoxylin And Eosin Stain, Immunohistochemistry Stain, Gastrointestinal Tract

Figure 1. (A) Sensitivity (SE) of the hematoxylin and eosin stain in diagnosing cytomegalovirus diseases among different gastrointestinal segments (B) Specificity (SP) of hematoxylin and eosin stain in diagnosing cytomegalovirus diseases among different gastrointestinal segments (C) Positive predictive value (PPV) of the hematoxylin and eosin stain in diagnosing cytomegalovirus diseases among different gastrointestinal segments (D) Negative predictive value (NPV) of the hematoxylin and eosin stain in diagnosing cytomegalovirus diseases among different gastrointestinal segments. SE, sensitivity; SI, small intestine; SP, specificity; NPV, negative predictive value; PPV, positive predictive value.

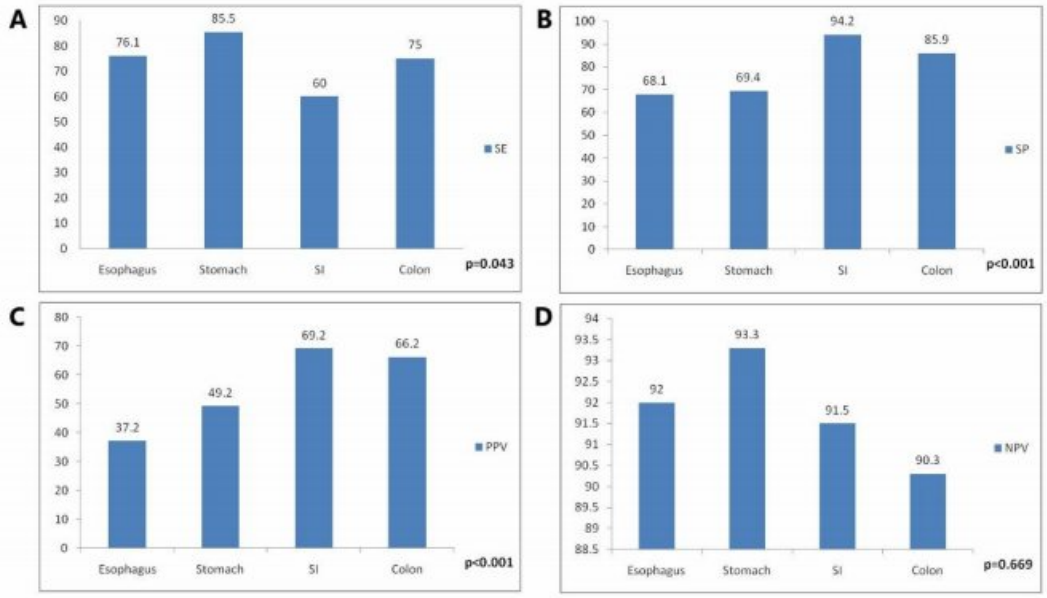


Table 1. The accuracy of H&E stain in diagnosing cytomegalovirus disease among different segments of the gastrointestinal tract

	Overall	Esophagus	Stomach	SI	Colon	*P*-value
SE (%)	76.1	76.1	85.5	60.0	75.0	0.043*
SP (%)	82.1	70.0	71.7	94.2	87.0	<0.001*
PPV (%)	58.0	39.3	51.2	69.2	68.0	<0.001*
NPV (%)	91.3	92.0	93.5	91.5	90.4	0.669

Abbreviations: H&E, hematoxylin and eosin; NPV, negative predictive value; PPV, positive predictive value; SI, small intestine; SE, sensitivity; SP, specificity.

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[Poster Exhibition – General Topics]

PE4-024

Usefulness of Stool Multiplex Polymerase Chain Reaction Testing in Patients with Acute Diarrhea

Seo Hyun Kim[1,3], You Sun Kim[2,3], Seung Hyuk Kim[3], Won Eui Yoon[3], Hee Jun Myung[3], Jeong Seop Moon[3]

[1]Internal Medicine, Seoul Won Hospital, Seoul, Korea
[2]Internal Medicine, Kangdong Sacred Heart Hospital, Hallym University College of Medicine, Seoul, Korea
[3]Internal Medicine, Seoul Paik Hospital, Inje University College of Medicine, Seoul, Korea

Background / Aim : Recently, the use of stool multiplex PCR assay-based diagnostic tests in patients with acute diarrhea has increased. We used multiplex PCR assays to analyze the distribution of diarrhea-causing bacteria and viruses, and the clinical characteristics of patients with acute diarrhea.
Methods : We retrospectively reviewed stool samples from inpatients presenting with acute diarrhea from October 2018 to July 2020. The stool samples were tested for 11 bacterial species (*Campylobacter* spp., *Clostridioides difficile* toxin B, *Salmonella* spp., *Shigella* spp., Vibrio spp., *Aeromonas* spp., *Clostridium perfringens*, *Escherichia* coli H7, *Escherichia coli* O157, Verocytotoxin-producing *Escherichia coli*, and *Yersinia enterocolitica*) and 6 types of viruses (Adenovirus, Astrovirus, Norovirus Group 1, Norovirus Group 2, Rotavirus, and Sapovirus) using multiplex PCR assays.
Results : A total of 414 stool samples from 346 patients were tested, and 152 pathogens were detected in 131 stool samples (131/414, 31.6%). Co-infection was detected in 20 patients (20/346, 5.8%) (Figure 1). The most common pathogens detected as the causes of acute diarrhea, including co-infections, were *Clostridium perfringens* (34.9%), *Clostridioides difficile* (19.7%), and *Campylobacter* spp. (18.4%). Compared with the PCR-negative group, the mean age of patients in the PCR-positive group was younger (p=0.001), had more abdominal pain (p=0.011), and higher fecal WBC and fecal OB positivity (p=0.002, p<0.001) (Table 1). In patients with suspected *Clostridioides difficile* infection (CDI), the RT-PCR for toxin gene assay was performed on 370 stool samples, of which 35 (9.5%) were positive. In addition, 16 of the 35 samples were positive on the multiplex PCR assay (45.7%).
Conclusion : The multiplex PCR assay revealed that *Clostridium perfringens* was the most common cause of inpatients presenting with acute diarrhea . In addition, in patients with suspected CDI, the multiplex PCR assay alone was not sensitive enough to detect pathogens and a conventional CDI test was additionally required.
Keywords : Diarrhea, Multiplex Polymerase Chain Reaction, Bacteria, Viruses

Figure 1. Flow diagram of acute diarrheal patients who underwent stool multiplex polymerase chain reaction assays.

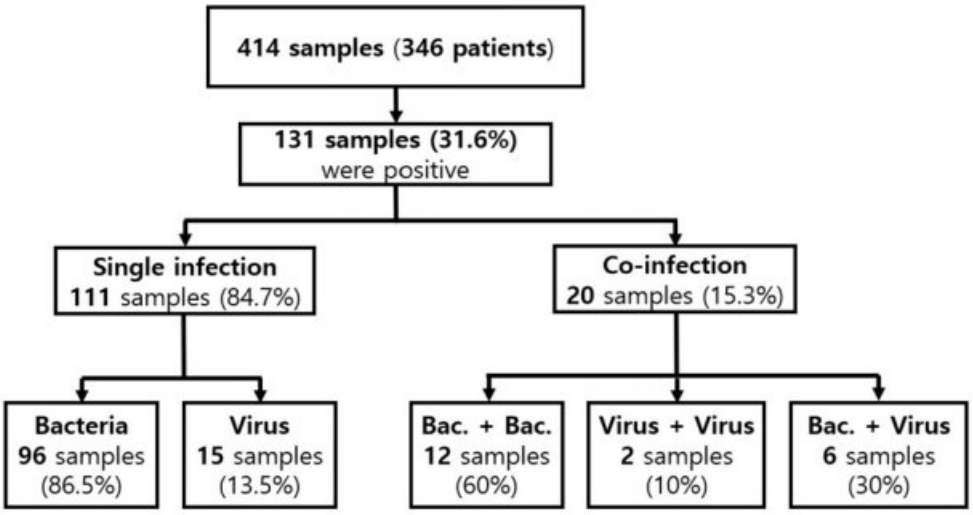


Table 1. Epidemiological Characteristics of the Enrolled Patients

Variable	All	PCR positive	PCR negative	p-value	Adjusted p-value[a]
Number	346	117	229		
Age (years)	63.35±21.70	57.41±24.35	66.38±19.53	0.001	
Gender, female	177 (51.2)	52 (44.4)	125 (54.6)	0.074	
Underlying disease					
HTN	135 (39.0)	37 (31.6)	98 (42.8)	0.044	0.506
DM	95 (27.4)	25 (21.3)	70 (30.6)	0.070	0.376
LC	14 (4.0)	4 (3.4)	10 (4.4)	0.672	0.821
CKD	33 (9.5)	10 (8.5)	23 (10.0)	0.654	0.973
IBD	28 (8.1)	9 (7.7)	19 (8.3)	0.845	0.155
Symptoms					
Fever	65 (18.7)	24 (20.5)	41 (17.9)	0.483	
Abdominal pain	145 (41.9)	59 (50.4)	86 (37.6)	0.011	
WBC (/mm^3)	8.57±4.79	8.64±3.86	8.54±5.21	0.865	
Hb (g/dL)	11.82±2.37	12.19±2.65	11.63±2.19	0.050	
BUN (mg/dL)	20.41±15.99	19.52±14.68	20.86±16.62	0.464	
Cr (mg/dL)	1.18±1.50	1.17±1.47	1.18±1.52	0.973	
CRP (mg/dL)	5.15±6.68	4.99±5.96	5.24±7.03	0.750	
Stool					
OB	48/297 (16.2)	24/93 (25.8)	24/204 (11.8)	0.002	
WBC	29/320 (1.1)	20/106 (18.9)	9/214 (4.2)	<0.001	

Values are presented as number (%) or mean±standard deviation.
HTN, hypertension; DM, diabetes mellitus; LC, liver cirrhosis; CKD, chronic kidney disease; IBD, inflammatory bowel disease; WBC, white blood cell; Hb, hemoglobin; BUN, blood urea nitrogen; Cr, creatinine; CRP, C-reactive protein; OB, occult blood.
[a]Adjusted for age.

[Poster Exhibition – General Topics]

PE4-025

The Case of Cronkhite-cancada Syndrome Accompanied by Unexplained Diarrhea

Hee Jun Jang, Geom-Seog Seo, Dong Han Yeom, Hyo Yeop Song
Internal Medicine, Wonkwang University College of Medicine, Iksan, Korea

Introduction: Cronkhite-cancada syndrome (CCS) is rare nonfamilial polyposis syndrome, which the etiology is not clear. Typical clinical features of CCS include hypogeusia, diarrhea, and alopecia. Herein, we report an interesting case with CCS identified by active approach in clinical condition and endoscopic approach.
Case report: A 69-year-old male was admitted due to persistent diarrhea for 10 days. He had hypertension and atrial fibrillation. He drank 6 bottles of Soju in a week. The diarrhea was watery and there was loss of appetite. Alopecia began rapidly a week ago and there was hyperpigmentation at both hands. His laboratory data showed following: hemoglobin, 14.8g/dL; leukocyte, 7140/uL; albumin 3.6 g/dL; BUN 11mg/dL; creatine 0.87mg/dL; ASCA IgA positive. There were no specific findings in the stool lab. On abdominal pelvis computed tomography, no prominent polyp findings were seen and there were no unusual findings other than wall enhancement at small bowel and colon suggesting inflammation. On esophagogastroduodenoscopy, the redness, swelling, and edematous mucosa were seen throughout the stomach and duodenum. Also, diffusely distributed, and multiple various sized polypoid lesions are seen in the stomach. On sigmoidoscopy, diffuse hyperemic mucosa was seen, and there were multiple variable shaped and sized polyps throughout the colon. So, we performed the biopsy for differential diagnosis, and the results were eosinophilic colitis and CMV was negative. The clinical features and endoscopic results support the possibility of CCS. We used the steroid as treatment of CCS, and the patient's symptoms improved.
Discussion: CCS is diagnosed based on typical symptoms with endoscopic findings and biopsy. Because CCS is rare disease, the treatment of CCS has not yet been established, and we can use steroid with nutritional support. Therefore, if we see a patient with unexplained diarrhea accompanied by alopecia and hyperpigmentation, etc., the CCS should be considered.
Keywords : Cronkhite-cancada Syndrome, Diarrhea, Endoscopy

Figure 1. EGD: The redness, swelling, and multiple various sized polypoid lesions are seen in the stomach.

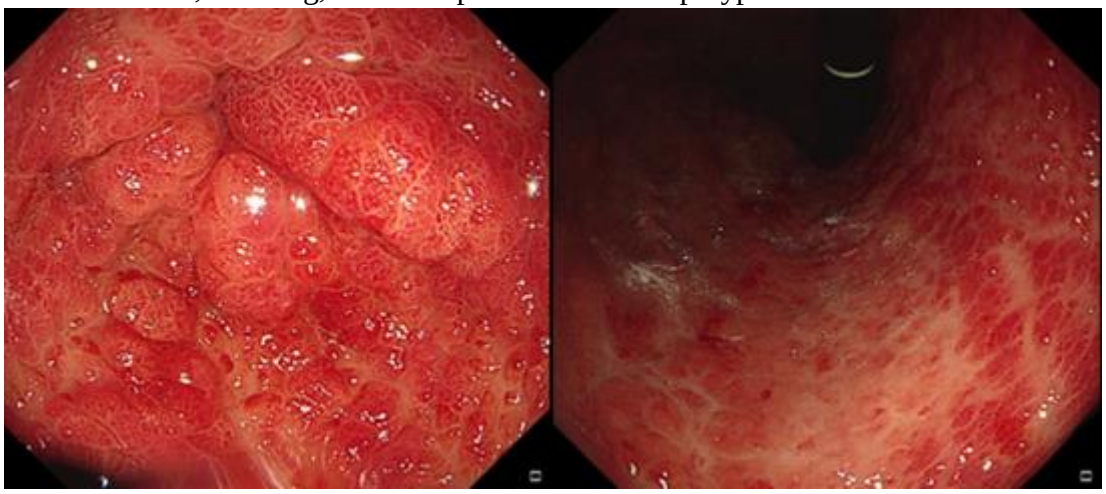
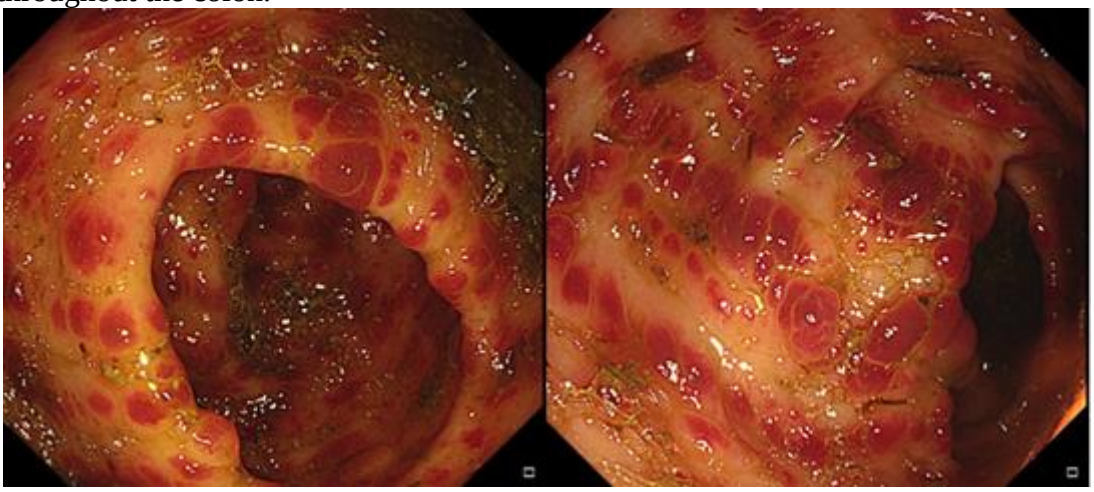


Figure 2. Sigmoidoscopy: diffuse hyperemic mucosa was seen, and there were multiple variable shaped and sized polyps throughout the colon.



[Poster Exhibition – General Topics]

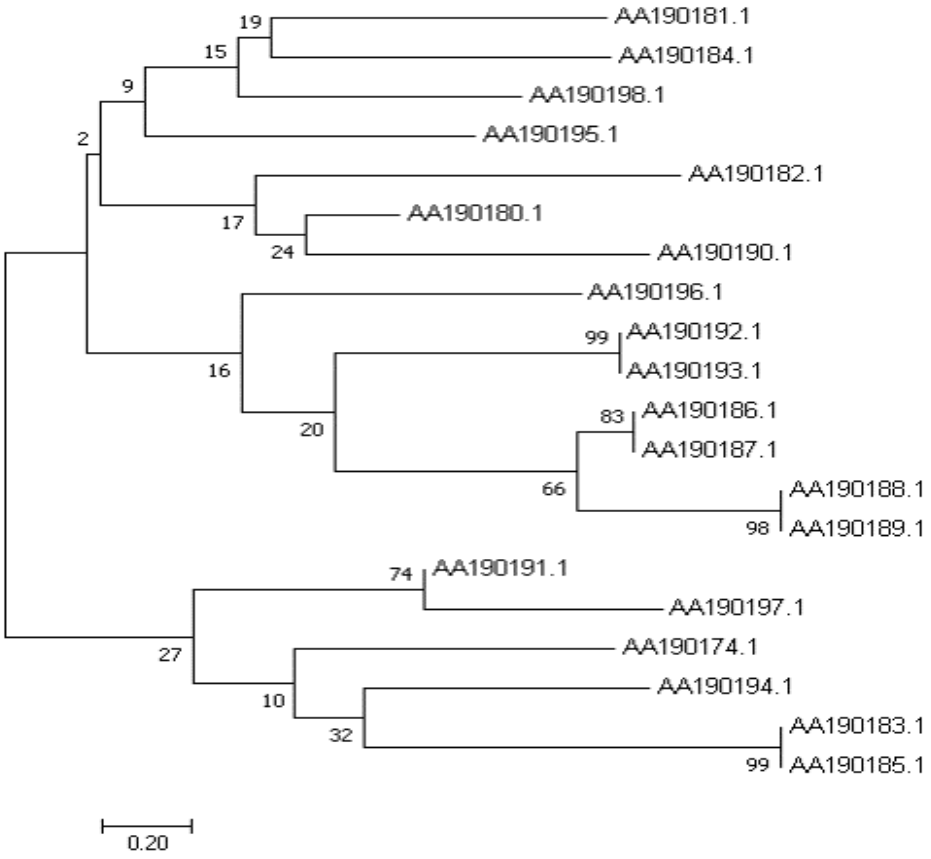
PE4-026

Genetic Analysis of Human Ulcerative Colitis Mucosa Express Library Homo Sapiens cDNA 5', mRNA Sequence

Ramlah Ramlah[1], Haerani Haerani[2]
[1]Educational of Biology, Universitas Sulawesi Barat, Majene, Indonesia
[2]Public Health, STIKes Bina Bangsa Majene, Majene, Indonesia

Background / Aim : Genetic analysis is essential in evolution as it allows natural selection to increase or decrease the frequency of alleles already in the population. Congenital disease is mainly caused by familiarity with the genetic code. Genes can be used as markers for cell recruitment, activation, and mucosal synthesis of immunoregulatory molecules. Involvement of mucosal cells in inflammatory bowel disease (IBD) may be a sequenced process, and the molecular difference between involved and uninvolved cells implicates a possible mechanism in the disease process. This study aims to evaluate the Genetic Analysis of Human Ulcerative Colitis Mucosa Express Library Homo sapiens cDNA 5', mRNA sequence.
Methods : Data obtained from 20 accession of human ulcerative colitis mucosa sequence on secondary data form on https://www.ncbi.nlm.nih.gov/ and 17 selected articles journal evaluated by searching in PubMed, EMBASE, and chosen articles journal evaluated by searching in PubMed, EMBASE, and the Cochrane Library database that have been carried out in the last seven years (2017-2023). The phylogeny analysis and relationships of DNA sequences was constructed with neighbor-joining by Bootstrap 1000x using MEGA 7.0 software.
Results : Based on the analysis, it is known that on the dendrogram, 20 specimens are divided into two main clusters (figure.1), namely cluster A, consisting of 14 specimens, and cluster B, consisting of 6 specimens. This grouping is based on a similar genetic makeup equation with a high bootstrap value indicating the degree of kinship between specimens and the strength of the phylogenies trees. Specimens that are in the same sub-cluster show a degree of close kinship. On the other hand, specimens from different sub-clusters display distant kinship. Clustering was achieved based on differences in expression levels across individual specimens.
Conclusion : The genetic analysis of human ulcerative colitis mucosa has high variation analysis. Information about kinship can be used as an informative source to assemble superior genes.
Keywords : Genetic Analysis, Ulcerative Colitis, CDNA, MRNA Sequence

Figure1. The Phylogenetic tree analysis



[Poster Exhibition – General Topics]

PE4-027

Impact of Portulaca Oleracea L. Extract in Patients with Irritable Bowel Syndrome

Kwangwoo Nam[1], Jeong Eun Shin[1], Yong Sung Kim[2]
[1]Gastroenterology, Dankook University College of Medicine, Cheonan, Korea
[2]Gastroenterology, Wonkwang University College of Medicine, Iksan, Korea

Background / Aim : Portulaca oleracea (P. oleracea) or purslane has been used as traditional remedy for various disease. P. oleracea is known to have anti-inflammatory and immunomoregulatory effect, and also showed positive effect on complete spontaneous bowel movement (CSBM) and bowel symptoms in patient with chronic constipation in previous studies. Thus, we aimed to investigate the impact of P. oleracea in patients with irritable bowel syndrome (IBS).
Methods : Patients with IBS defined by ROME IV criteria were enrolled between July 2022 and April 2023. Patients were randomly assigned to P. oleracea group or placebo group, and took medications for 8 weeks. Clinical data including gastrointestinal (GI) and IBS symptoms, laboratory test including inflammatory and immunologic laboratory markers, and stool test including fecal calprotectin and stool microbial analysis were evaluated at the baseline, after 4 weeks, and after 8 weeks.
Results : A total of 108 patients were initially enrolled and 101 patients were finally included in the analysis. In the aspect of GI and IBS symptom, there was significant improvement during 8 weeks in P. oleracea group compared to placebo group (GSRS total: P. oleracea group 44.1 -> 31.7 vs. placebo group 41.4 -> 39.9; IBS-SSS total: P. oleracea group 232 -> 121 vs. placebo group 203 -> 178), especially in the aspect of abdominal pain. CSBM was also significantly improved during 8 weeks in P. oleracea group compared to placebo group. IL-6 was significantly decreased during 8 weeks in P. oleracea group, although there was no significant difference at each time point between two groups. In addition, increase in IL-6 was significantly associated with microbial dysbiosis in stool analysis. There was no significant adverse event in P. oleracea group.
Conclusion : P. oleracea might have positive impact in patients with IBS, especially abdominal pain and immunologic cytokine, without significant adverse effect.
Keywords : Portulaca, Irritable Bowel Syndrome, Abdominal Pain, Defecation

[Poster Exhibition – General Topics]

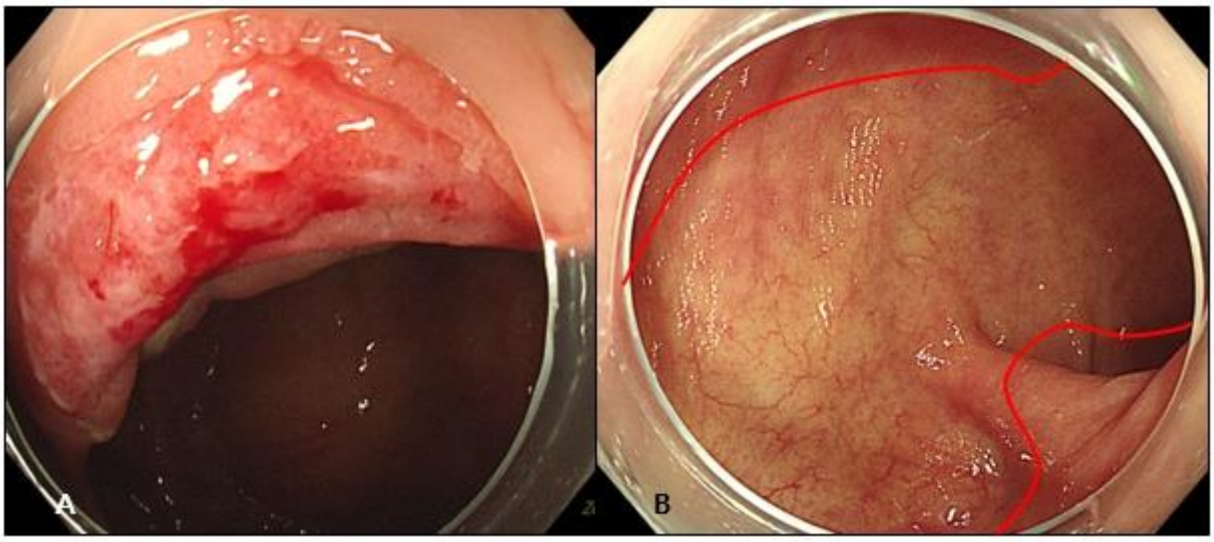
PE4-028

A Case of Intestinal Schistosomiasis Infection Diagnosed by Computed Tomography Scan

Se Im Cho, Seong Jung Kim, Jun Lee
Department of Internal Medicine, Chosun University, Gwangju, Korea

Background Schistosomiasis, This disease presents a wide spectrum of symptoms and affects multiple target organs. Schistosomal infection is primarily diagnosed by demonstrating evidence of infestation through parasitological or serological methods using samples like stool, urine, blood and tissue specimens. Diagnostic imaging modalities, such as ultrasound and CT, play a crucial role in diagnosing the disease and assessing its severity. In this report, we introduce a case where schistosomiasis was diagnosed and treated based on pathological findings and CT imaging in a patient presenting with abdominal pain and diarrhea. Case report A 50-year-old female patient visited our hospital with abdominal pain and diarrhea that had occurred 1 year prior to admission. She had reported a history of traveling to the Philippines a year ago. Although her laboratory data were normal, a colonoscopy revealed an ulcer at the ileocolic valve and whitish mucosal discoloration with telangiectasia in the sigmoid colon, prompting a biopsy. (Figure 1) Histological examination showed eosinophil infiltration and numerous parasite egg shells (Figure 2). Abdominal CT imaging revealed geographical calcification in the liver and bowel wall calcification in the descending and sigmoid colon (Figure 3). Subsequent serologic tests confirmed a Schistosoma Mansoni infection, leading to a final diagnosis of hepatic and intestinal schistosomiasis. Treatment with Praziquantel at 60mg/kg was administered over two days, which improved the clinical symptoms. Conclusion Intestinal schistosomiasis is a rare disease and can be difficult to diagnose if it is not suspected. In patients with symptoms and a history of travel to endemic regions, differentiating for schistosomiasis is imperative. Particularly, as demonstrated in this case, if CT scans confirm geographical calcification of the liver or bowel wall calcification, it is crucial to evaluate for schistosomiasis infection through serologic tests using feces, urine, or blood, or through tissue evaluation via colonoscopy.

Keywords : Schistosomiasis, Parasite Egg Shell, Geographical Calcification, Bowel Wall Calcification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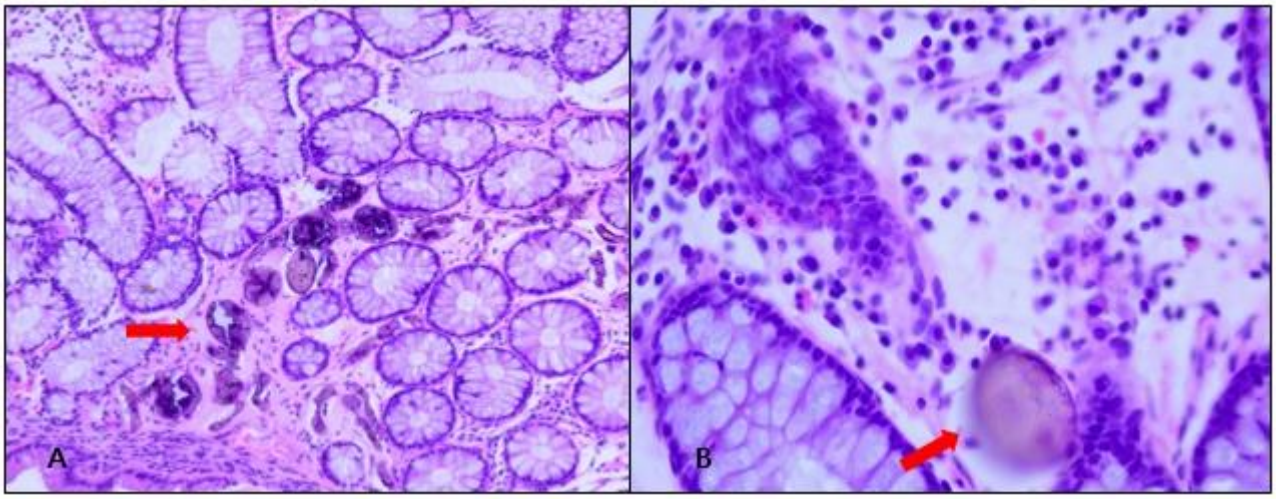
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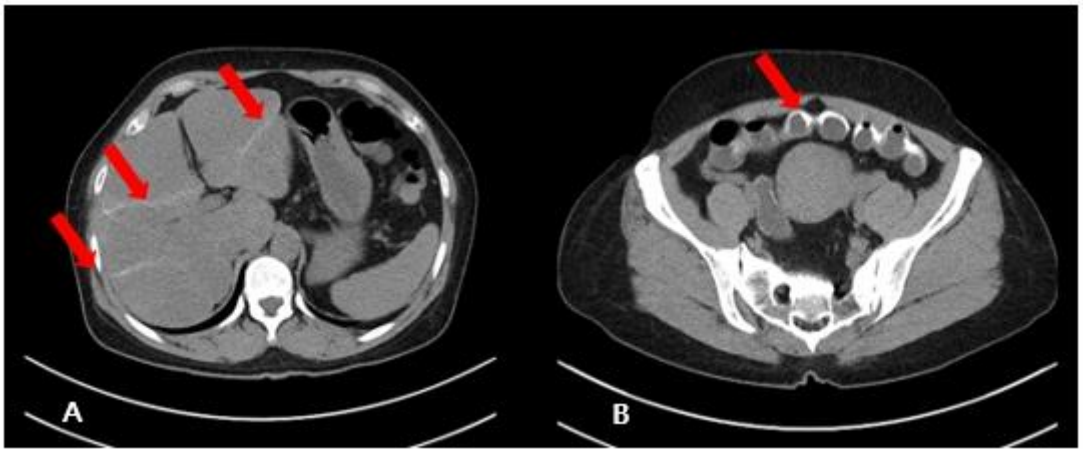
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[Poster Exhibition – General Topics]

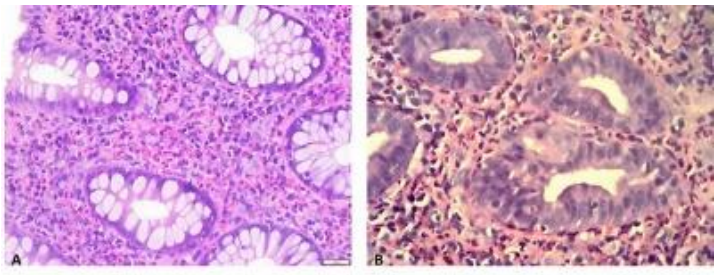
PE4-030

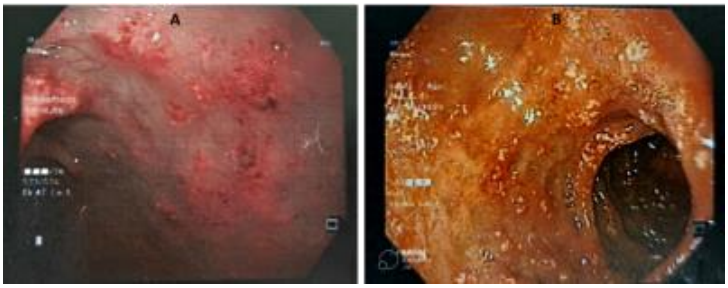
Eosinophilic Colitis: An Uncommon Etiology of Chronic Diarrhea

Nhan Trung Phan
Department of Gastroenterology, Cho Ray Hospital, Ho Chi Minh, Vietnam

Eosinophilic gastrointestinal disorders, including eosinophilic esophagitis, gastroenteritis, and colitis, are rare conditions marked by an unusual accumulation of eosinophils in the GI tract. These disorders can affect any part of the GI tract, with symptoms varying based on the depth of eosinophilic infiltration. While eosinophilic colitis is an uncommon cause of chronic diarrhea, the prognosis is generally favorable. A case in point is a 63-year-old male patient who was admitted to our hospital following two months of diarrhea. The patient experienced approximately 10 daily bowel movements, predominantly nocturnal, accompanied by mild abdominal cramps that were alleviated by defecation. The patient had no significant medical history and denied any long-term medication use. A hematological examination revealed eosinophilia, with a peripheral blood eosinophil count of 5300/mm3. Endoscopic examinations, including colonoscopy and gastroduodenoscopy, revealed patchy superficial ulcerations in the rectal, sigmoid, and transverse colon, and multiple ulcers in the duodenal bulb. Histopathological examination of biopsied colon and duodenal mucosa demonstrated eosinophilic infiltration in the lamina propria of the rectum (>50 eosinophils/high-powered field), and duodenal bulb (>120 eosinophils/high-powered field). After ruling out secondary causes such as parasitic infections, connective tissue diseases, hypereosinophilic syndrome, vasculitis, and inflammatory bowel disease, a diagnosis of primary eosinophilic colitis and eosinophilic gastroenteritis was established. The patient was prescribed an oral regimen of 24 mg methylprednisolone, 1 mg ketotifen, and 40 mg pantoprazole daily during the initial week. This treatment resulted in a significant reduction in bowel movements to once daily by the third day. The patient was subsequently discharged for outpatient monitoring. The forthcoming plan involves gradually reducing the methylprednisolone dosage and repeated endoscopic examinations for healing mucosa assessment. Eosinophilic colitis should be considered as a potential cause of chronic diarrhea, particularly in cases presenting with peripheral blood eosinophilia and gastrointestinal tract ulcerations.

Keywords : Eosinophilic Gastroenteritis, Chronic Diarrhea, Ulceration





Variable	Reference range	Value
Blood		
Hemoglobin (g/L)	120 – 170	126
White-cell count (per µL)	4000 – 11000	12600
Differential count (per µL)		
Neutrophils	1800 – 8250	4200
Lymphocytes	800 – 4400	2300
Monocytes	160 – 1100	800
Eosinophils	80 – 880	5300
Basophils	0 – 220	0
Platelet count (per µL)	200000 – 400000	225000
Glucose (mg/dl)	70 – 110	90
Alanine aminotransferase (U/L)	5 – 49	8
Aspartate aminotransferase (U/L)	9 – 48	15
Blood urea nitrogen (mg/dl)	7 – 20	12
Creatinin (mg/dl)	0.7 – 1.5	1.12
Natri (mmol/L)	135 – 150	136
Kali (mmol/L)	3.5 – 5.5	3.7
Albumin (g/dL)	3.5 – 5.5	3.1
C-reactive protein (mg/L)	<6	3.2
FT4 (pg/mL)	8 – 20	14.07
TSH (mIU/L)	0.4 – 5	1.349
Hs troponin I (pg/mL)	<34.2	<2.5
ANA		negative
Anti ds-DNA (IU/mL)	<25	1.12
C3 (mg/dL)	90 – 180	64.4
C4 (mg/dL)	10 – 40	12.1
Cortisol (ng/ml)	50 – 230	88
ANCA		negative
HIV antibody test		negative
Entamoeba histolytica antibody		negative
Toxocara canis IgG		negative
Strongyloides IgG		negative
Fasciola IgG		negative
QuantiFERON		negative
HbsAg		negative
Anti HCV		negative
Bone marrow		
Blast cells (%)	1 – 3	1
Neutrophil (%)	10 – 30	25
Lymphocytes (%)	10 – 15	11
Eosinophils (%)	0 – 5	34
FIP1L1-PDGFRA mutation		negative
Stool		
Fecal calprotectin	<50 µg/g	278
Clostridium difficile PCR		negative
Culture		Normal flora
Ova and parasites		none

[Poster Exhibition – General Topics]

PE4-031

A Pediatric Case of Omental Infarction Successfully Treated with Conservative Management

Hyo-Jeong Jang
Department of Pediatrics, Keimyung University College of Medicine Dongsan Medical Center, Daegu, Korea

Omental infarction (OI) is a rare gastrointestinal disease in children usually presented with acute abdomen. There is no gold standard for OI treatment so far, which could either be conservative or surgical management. Here we report a case of omental infarction which was successfully treated conservatively without any comlication. An 11-year-old female patient was admitted for her abdominal pain which lasted for 2 days. Her abdominal pain was aggravated and fever was developed at the day of visit. Her vital signs were stable except for mild grade fever, and her physical examination revealed tenderness especially on epigastric and right upper quadrant. The abdominal ultrasonography(USG) showed increased echogenicity of omental fat in right upper quadrant and periomental infiltration, which was consistent with omental infarction. The CT scan showed omental infarction involving the great omentum in the RUQ, 82*32*34mm. The laboratory finding showed elevation of CRP and otherwise unremarkable. The intravenous antibiotics along with hydration was started and the patient was discharged after a week with improvement of symptoms and signs. On follow-up clinic, she was free of gastrointestinal and systemic symptoms and signs and was well being. Follow-up abdominal USG was done in 2 months and it showed improvement of sign of omental infarction. In 6 months the last follow-up USG was clean and the patient was consistently free of symptom and signs. OI is a rare disease in children and is usually reported with high risk factors especially obesity. The case did not have any risk or family history related to OI and was successfully treated with medical conservative treatment. Although being rare, OI should be included in pediatric acute abdomen and treatment should be weighed carefully between conservative versus surgical approach.
Keywords : Omental Infarction, Treatment, Children

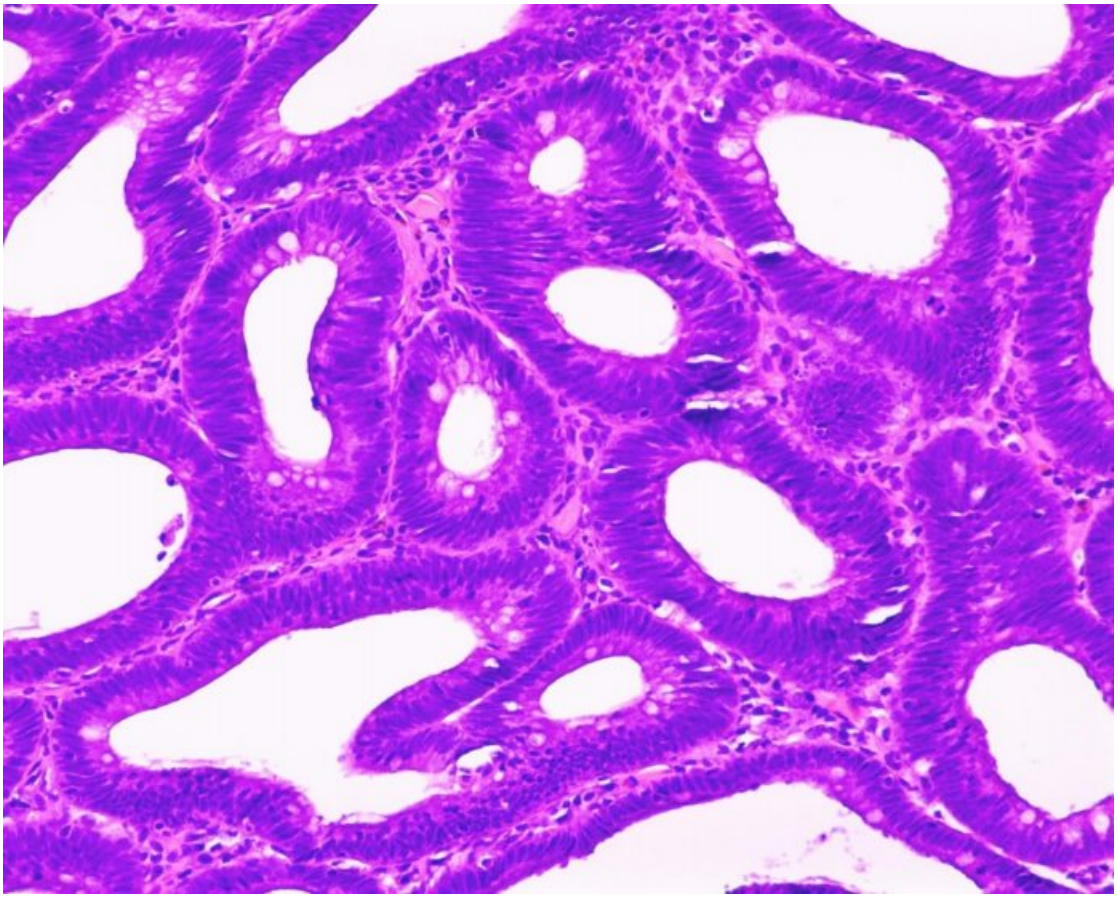
[Poster Exhibition – General Topics]

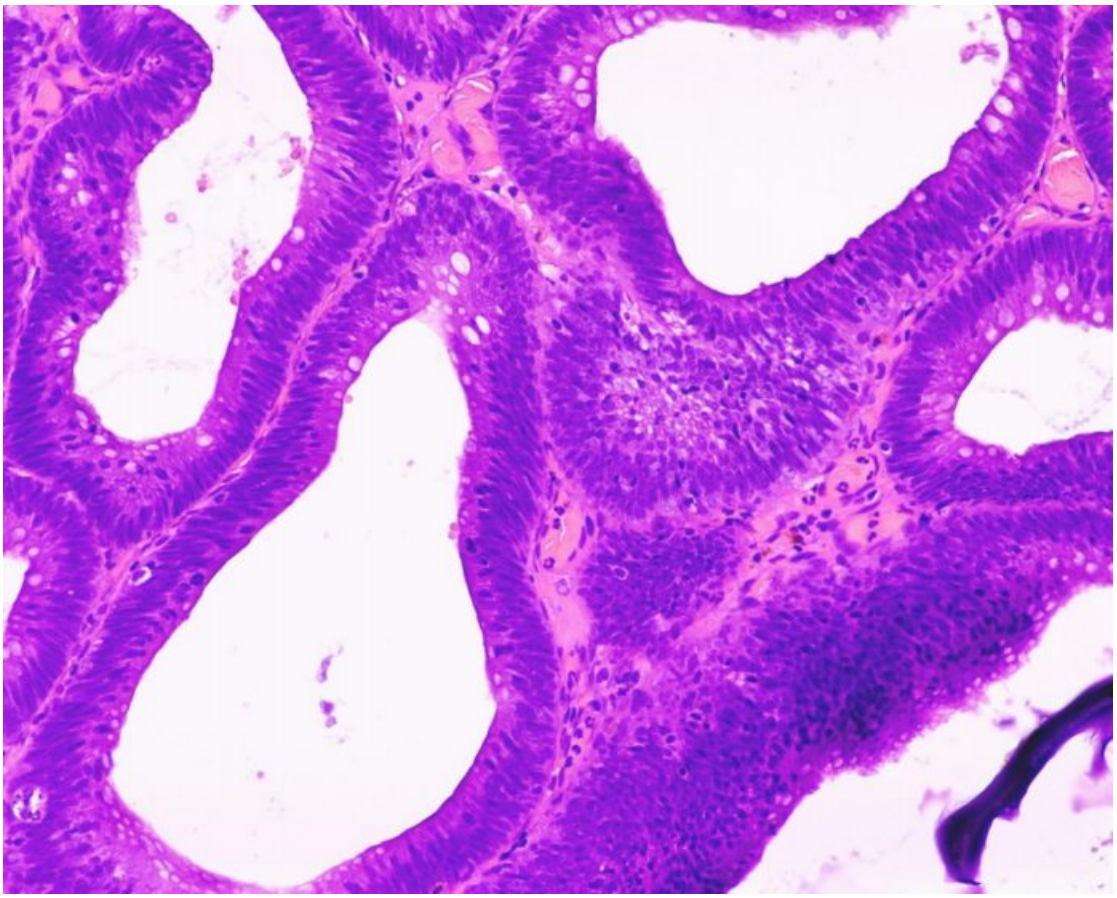
PE4-033

The Pediatric Case of Controversial Hereditary Polyposis Syndrome in an 8-year-old Child

Zilola Khadjieva[1,2], Rustam Anvarov[1,2], Khashim Sultanov[2,1], Saodat Kamilova[2,1], Sukhrob Tashmatov[2,1]
[1]Pediatrics, Central Asian University, Tashkent, Uzbekistan
[2]Pediatric Gastroenterology, National Children Medical Center, Tashkent, Uzbekistan

Background / Aim : Gastrointestinal polyps are benign tumors outgrowths of the bowel's epithelial tissue. Hamartomatous polyps are the most common type of polyps that are a result of disordered native tissue development. In contrast, adenomatous polyps derive from glandular epithelial dysplasia, exhibiting potential for malignant transformation. Colonic polyps most commonly present with rectal bleeding in children. Some children and adolescents with polyps have an underlying predisposition to develop colorectal cancer (CRC).
Methods : 8-year-old boy presented to the clinic with his mother complaining about haematochezia, general fatigue and increased irritability. On admission, the patient was sick for 2-3 days, 3 episode of haematochezia. Objectively the patient is in a severe condition but conscious. All vital signs were in the normal range. Blood analysis showed a slight decrease in RBC count and Hb. On the ultrasound, there were no signs of free fluid in the peritoneal cavity. Following the initial rectoscopy, a polyp measuring 1.0 x 1.0 cm was identified at a depth of 6 cm, along the 6 o'clock position within the rectum.
Results : Following multiple colonoscopies and upper gastrointestinal (GIT) endoscopies, the findings revealed the presence of numerous sesile and pedunculated polyps in the rectum, sigmoid colon, and duodenum, with diameters ranging from 0.1 to 2.0 cm. During the interventions, up to 20 polyps with diameters exceeding 1.5 cm were resected and subsequently submitted for biopsy. The results of the biopsy indicated that the obtained tissue samples were of adenomatous origin with the low grade of displasia
Conclusion : Numerous sessile adenomatous polyps, distributed not only within the rectum and sigmoid colon but also throughout other segments of the gastrointestinal tract, notably the small intestines, indicate a heightened risk of malignant transformation and colorectal carcinoma, the preferred intervention is total colonectomy. Further investigations and genetic testing is required to establish an accurate diagnosis.
Keywords : Hamartomatous, Colorectal Cancer, Familial Adenomatous Polyps, Colonectomy





[Poster Exhibition – General Topics]

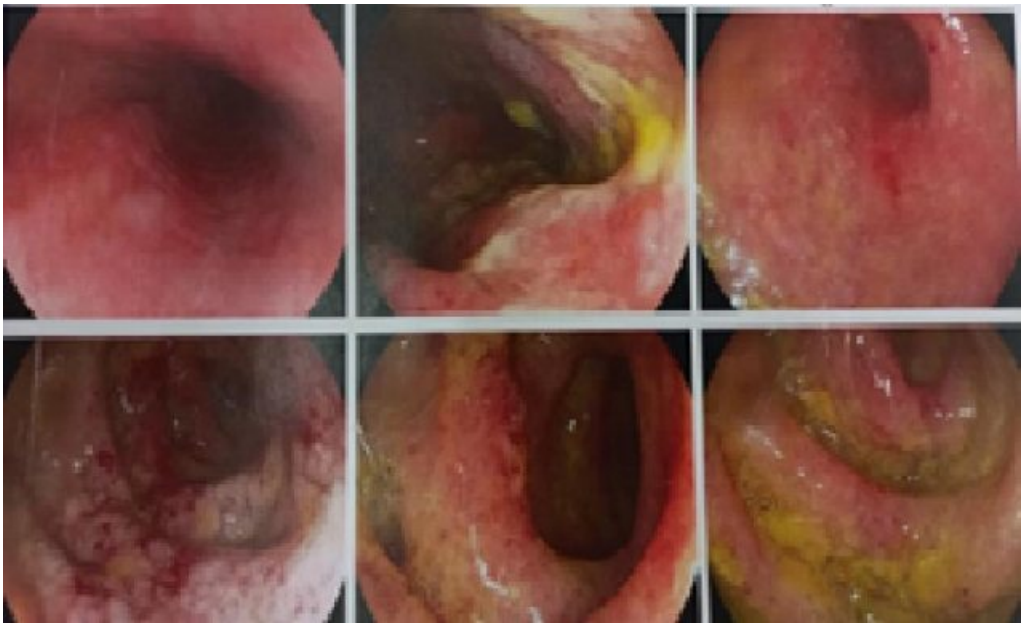
PE4-034

Case Report: Strongyloides Stercoralis Hyperinfection in a Patient with Long-term Corticosteroid Exposure

Quyen Pham
Gastroenterology, Cho Ray Hospital, Ho Chi Minh City, Vietnam

Background: Strongyloidiasis is a common parasitic infection in Vietnam. In a majority of cases, Strongyloides stercoralis infection is asymptomatic or manifested as mild symptoms. However, in patients with impaired T-cell immunity, fatal hyperinfection or dissemination can occur. We report a case of Strongyloides stercoralis hyperinfection in patient with a history of long-term corticosteroid exposure. Case report: A 64-year-old man who had been on prednisolone for arthritis presented to our hospital with a chief complaint of epigastric pain. He developed dull epigastric pain associated with anorexia, dyspepsia, alternating diarrhea and constipation for two months. He had round face, thin and bruised skin, peripheral pitting edema and marked muscle atrophy. On physical examination, his abdomen was slightly distended. Laboratory tests revealed the absence of eosinophilia, (the white blood cell count was 5080/mm3 with eosinophil 1.1%), anemia (hemoglobin 105 g/L), hyponatremia (125 mmol/L), hypoalbuminemia (19 g/L), and normal cortisol level (128 ng/mL). Upper gastrointestinal endoscopy showed pseudomembranes, edema and erythema of the gastric and duodenal mucosa. Strongyloides stercoralis larvae were found in the biopsy specimens from the stomach and duodenum as well as stool samples. The final diagnosis was established as Strongyloides stercoralis hyperinfection. The patient was received ivermectin 200 mcg/kg/day for 14 days. After 2 weeks, he recovered and was discharged. Discussion: Strongyloidiasis has a wide spectrum of manifestations. Our patient had apparent gastrointestinal symptoms and was suffered from hyperinfection – a severe form of Strongyloides stercoralis infection. Eosinophilia is found in 75% of patients with Strongyloidiasis but may be absent in cases of hyperinfection or dissemination. Conclusion: Strongyloides stercoralis infection in immunosuppressed patients is a life-threatening condition. Early diagnosis and treatment can reduce the mortality rate.

Keywords : Strongyloides Stercoralis, Hyperinfection, Corticosteroids



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1F Haeoreum Bldg., 16, Yeoksam-ro 17-gil, Gangnam-gu, Seoul, 06246, Korea
Tel. +82-2-566-6031 **Fax.** +82-2-566-6087 **E-mail.** info@imkasid.kr

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