IGICS: JGA Keynote Program
The 9th International Gastrointestinal Consensus Symposium (IGICS)
Gastrointestinal Infections
February 27, 2016, Keio Plaza Hotel, Tokyo, Japan

Contents

Program 91
Oral Session 1: Helicobacter pylori 93
Abstracts IO1-1–IO1-6
Oral Session 2: Diagnostic Modalities and Others 95
Abstracts IO2-1–IO2-4
Oral Session 3: Colorectal and Anal Disorders 97
Abstracts IO3-1–IO3-4
Oral Session 4: Inflammatory Bowel Disease 99
Abstracts IO4-1–IO4-4
Poster Session Gastrointestinal Infections in Asia 100
Abstracts IP1–IP7

Author Index for Abstracts 104
Outline

IGICS: JGA Keynote Program

The 9th International Gastrointestinal Consensus Symposium

Date: February 27 (Sat.), 2016
Venue: Keio Plaza Hotel Tokyo, Japan

IGICS Committee Members

IJA International Exchange Committee Members as of February 2016
Fumiaki Ueno, Japan (Chairperson of The 9th IGICS)
Shin Fukudo, Japan
Ryuichi Iwakiri, Japan
Takashi Joh, Japan
Takeshi Kamiya, Japan
Takeshi Kamiya, Japan
Yuji Naito, Japan
Hidekazu Suzuki, Japan
Shin’ichi Takahashi, Japan

IGICS International Active Members
Francis K.L. Chan, Hong Kong
Ki-Baik Hahm, Korea
Udom Kachintorn, Thailand
Kwong Ming Fock, Singapore
Abdul Aziz Rani, Indonesia
Jose D. Sollano, Philippines
Qi Zhu, China
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Chairpersons</th>
<th>Presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:40–8:45</td>
<td>Opening Remarks</td>
<td>Fumiaki Ueno (Chairman of The 9th IGICS, Ofuna Chuo Hospital, Japan)</td>
<td>8:45–9:55 Oral Session 1: <em>Helicobacter pylori</em></td>
</tr>
<tr>
<td>8:45–9:55</td>
<td>Oral Session 1: <em>Helicobacter pylori</em></td>
<td>Chairpersons: Kwong Ming Fock (Changi General Hospital, Singapore) Ki-Baik Ha姆 (CHA University School of Medicine, Korea)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IO1-1 Eradication of <em>Helicobacter pylori</em> with Sitafloxacin Plus Metronidazole Based Triple Therapy for Penicillin Allergy Patients</td>
<td>Hideki Mori (Keio University School of Medicine, Japan)</td>
<td>p. 93</td>
</tr>
<tr>
<td></td>
<td>IO1-2 The Status of Drug Resistant <em>H. pylori</em> in Past 20 Years (1995–2014) and the Usefulness of Sitafloxacin for <em>H. pylori</em> Eradication Therapy in Japan</td>
<td>Akifumi Tanaka (Kyorin University School of Medicine, Japan)</td>
<td>p. 93</td>
</tr>
<tr>
<td></td>
<td>IO1-3 Dietary Prevention of <em>Helicobacter pylori</em>-Associated Gastric Cancer with Kimchi Misyong Jeong (CHA Cancer Prevention Research Center, CHA Cancer Institute, CHA University, Korea)</td>
<td>p. 94</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IO1-4 Repressed TGF-β Signaling Through CagA-Smad3 Interaction as Pathogenic Mechanisms of <em>Helicobacter Pylori</em>-Associated Gastritis</td>
<td>Young Min Han (Laboratory of Chemoprevention Gachon University Lee Gil Ya Cancer and Diabetes Institute, Korea)</td>
<td>p. 94</td>
</tr>
<tr>
<td></td>
<td>IO1-5 Efficacy of Moxifloxacin-Based Sequential Therapy and Hybrid Therapy as First-line Eradication Regimen for <em>Helicobacter pylori</em> Infection</td>
<td>Dong Ho Lee (Seoul National University Bundang Hospital, Korea)</td>
<td>p. 94</td>
</tr>
<tr>
<td></td>
<td>IO1-6 The Administrative Project of <em>H. pylori</em> Infection Screening in Junior High School Health Screening System</td>
<td>Chika Kusano (Tokyo Medical University, Japan)</td>
<td>p. 95</td>
</tr>
<tr>
<td>9:55–10:40</td>
<td>Oral Session 2: Diagnostic Modalities and Others</td>
<td>Chairpersons: Jose D. Sollano (University of Santo Tomas, Philippines) Qi Zhu (Shanghai Jiao Tong University School of Medicine, China)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IO2-1 Refractory Gastro-Oesophageal Reflux Disease in an Asian Population: Roles of Advanced Imaging and Functional Testing in Diagnosis and Management</td>
<td>Weiquan James Li (Changi General Hospital, Singapore)</td>
<td>p. 95</td>
</tr>
<tr>
<td></td>
<td>IO2-2 Autophagy Inhibition Mediated Through Smad7 Imparted Chloroquine to Rescue from NSAID-Induced Gastric Damages</td>
<td>Jong Min Park (CHA Cancer Prevention Research Center, CHA University CHA Bio Complex, Korea)</td>
<td>p. 96</td>
</tr>
<tr>
<td></td>
<td>IO2-3 Endoscopic Characteristics of 59 Japanese Eosinophilic Esophagitis Patients</td>
<td>Elko Okimoto (Shimane University School of Medicine, Japan)</td>
<td>p. 96</td>
</tr>
<tr>
<td></td>
<td>IO2-4 Diagnostic Efficacy of Quantitative Endoscopic Ultrasound Elastography for Pancreatic Disease: A Prospective, Observational, Single Center Study</td>
<td>Su Young Kim (Gachon University, Gil Medical Center, Korea)</td>
<td>p. 97</td>
</tr>
<tr>
<td>10:40–11:25</td>
<td>Oral Session 3: Colorectal and Anal Disorders</td>
<td>Chairpersons: Ryuichi Iwakiri (Saga Medical School, Japan) Francis K. L. Chan (The Chinese University of Hong Kong, China)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IO3-1 Melatonin Treatment Modulates Intestinal Microbiota on DSS Colitis</td>
<td>Young Sook Park (Eulji University School of Medicine, Eulji Medical Center, Korea)</td>
<td>p. 97</td>
</tr>
<tr>
<td></td>
<td>IO3-2 Clinical Evaluation of Amebic Colitis</td>
<td>Taiki Aoyama (Hiroshima City Asa Citizens Hospital, Japan)</td>
<td>p. 98</td>
</tr>
</tbody>
</table>

© 2016 S. Karger AG, Basel
The Effects of Ursodeoxycholic Acid on Cell Cycle, Reactive Oxygen Species, and Proliferation of Colon Cancer Cell
Eun-Kyung Kim (Gachon University, Gil Medical Center, Korea) p. 98

Condyloma Acuminatum of the Anal Canal, Treated with Endoscopic Submucosal Dissection
Akiko Sasaki (Shonan Kamakura General Hospital, Japan) p. 98

11:25–11:40 Report on the Result of the Questionnaire
Fumiaki Ueno (Chairman of The 9th IGICS, Ofuna Chuo Hospital, Japan)

14:00–14:45 Oral Session 4: Inflammatory Bowel Disease
Chairpersons: Yuji Naito (Kyoto Prefectural University of Medicine, Japan)
Udom Kachintorn (Siriraj Hospital Mahidol University, Thailand)

The Prevalence of Clostridium Difficile Infection in Adult and Pediatric Patients with Inflammatory Bowel Disease
Weiyan Yao (Rui Jin Hospital, Shanghai Jiaotong University School of Medicine, China) p. 99

Efficacy of Fecal Microbiota Transplantation in Active Ulcerative Colitis: A Meta-Analysis
Atsushi Yoshida (Ofuna Chuo Hospital, Japan) p. 99

Nobel Epigenetic Carcinogenesis of Ulcerative Colitis Derived Colorectal Cancer
Nagahide Matsubara (Hyogo College of Medicine, Japan) p. 99

Quantitative Real-Time PCR for the Detection of Cytomegalovirus Infection in Colonic Mucosa of Ulcerative Colitis Patients Before and After Treatment of Exacerbated Colitis
Takuya Inoue (Osaka Medical College, Japan) p. 100

14:45–15:35 Poster Session Gastrointestinal Infections in Asia
Chairpersons: Takeshi Kamiya (Nagoya City University Graduate School of Medical Sciences, Japan)
Abdul Aziz Rani (University of Indonesia Cipto Mangunkusumo Hospital, Indonesia)

Comparison of Efficacy of Reverse Moxifloxacin-Based Sequential Therapy and Moxifloxacin-Based Sequential Therapy as First-Line Eradication Regimen for Helicobacter Pylori Infection
Jae Jin Hwang (Seoul National University Bundang Hospital, Korea) p. 100

Endoscopic Botulium Toxin Injection for the Treatment of Pharyngeal Dysphagia with Cricopharyngeal Dysfunction
Eui Joo Kim (Gachon University Gil Medical Center, Korea) p. 101

Characterising the Etiology of Severe Acute Gastroenteritis among Adult Hospitalized Patients using Multiplex PCR
Chi Woo Song (Eulji University, Eulji Medical Center, Korea) p. 101

Inhibitory Effect of Gut Microbiota on GLP-1 Receptor Expression in the Gastrointestinal Tract
Mo Yang (Hyogo College of Medicine, Japan) p. 102

Clostridium difficile Infection in Newly Diagnosed Pediatric Inflammatory Bowel Disease in Eastern China
Jia Huang (Rui Jin Hospital, Shanghai Jiaotong University School of Medicine, China) p. 102

Clinicopathological Analysis of 56 Patients with Intestinal Spirochetosis
Eiko Saito (Kitasato University Kitasato Institute Hospital, Japan) p. 102

Outcome of Antiviral Treatment in Patients with CMV-DNA PCR Positive Ulcerative Colitis: A Single Center Retrospective Study
Makoto Tanaka (Kyoto Prefectural University of Medicine, Japan) p. 103
Oral Session 1: *Helicobacter pylori*

Chairpersons: Kwong Ming Fock
              Ki-Baik Hahm

IO1-1

**Eradication of *Helicobacter pylori* with Sitafloxacin Plus Metronidazole Based Triple Therapy for Penicillin Allergy Patients**

Hideki Mori, Hidekazu Suzuki, Juntaro Matsuzaki, Tatsuhiro Masaoka, Takanori Kanai

Division of Gastroenterology and Hepatology, Department of Internal Medicine, Keio University School of Medicine, Tokyo, Japan

**Introduction:** Penicillin is a key drug for *Helicobacter pylori* (*H. pylori*) eradication, but some patient infected *H. pylori* have penicillin allergy. Sitafloxacin plus metronidazole based triple therapy is currently used for *H. pylori* rescue therapy. Here, we research about the efficacy of Sitafloxacin plus metronidazole based triple therapy for penicillin allergy patients.

**Methods:** From March 2014 to February 2015, a total of 31 patients with penicillin allergy were enrolled. Before beginning the treatment, *H. pylori* were isolated from gastric biopsy specimens, and the minimum inhibitory concentrations (MICs) of sitafloxacin and metronidazole were determined using agar dilution method. The susceptibility-resistance cutoff values of the MICs for sitafloxacin and metronidazole were defined as 0.12 and 8 μg/mL, respectively.

Enrolled patients were eradicated with esomeprazole 40 mg, sitafloxacin 200 mg and metronidazole 500 mg for 10 days. Successful eradication was confirmed using a 13C urea breath test or a stool culture.

**Result:** In intention-to-treat and per-protocol analysis, the eradication rate was 87.1% (27/31). The patients who have never receive eradication therapy before were all eradicated (16/16). The eradication rates of patients who received eradication treatment once and twice before were 84.6% (11/13) and 0% (0/2), respectively.

The eradication rates of sitafloxacin sensitive and resistant strains were 87.5% (14/16) and 86.7% (13/15), respectively (P=1.00). The eradication rates of metronidazole sensitive and resistant strains were 89.3% (25/28) and 33.3% (1/3), respectively (P=0.06). Adverse events were reported in 30%. The most adverse events were soft stool, rash and stomatitis.

**Conclusion:** Sitafloxacin plus metronidazole based triple therapy for penicillin allergy patients were most effective and safe for *H. pylori* eradication.

---

IO1-2

**The Status of Drug Resistant *H. pylori* in Past 20 Years (1995–2014) and the Usefulness of Sitafloxacin for *H. pylori* Eradication Therapy in Japan**

Akiyumi Tanaka, Kengo Tokunaga, Hideaki Mori, Tadakazu Hisamatsu, Shin’ichi Takahashi

The Third Department of Internal medicine, Kyorin University School of Medicine, Tokyo, Japan

**Introduction:** In Japan, *Helicobacter pylori* (*H. pylori*) eradication therapy were commonly used regimens of proton pump inhibitor (PPI) (bid) + amoxicillin (AMPC) 750 mg (bid) + clarithromycin (CAM) 200–400 mg (bid) for 7 days (first-line therapy), and a PPI (bid) + AMPC 750 mg (bid) + metronidazole (MNZ) 250 mg (bid) for 7 days (second-line therapy). The increase in bacterial resistance against CAM caused a decline in the eradication rate of first-line therapy. And, there is no standard therapy for third-line therapy and penicillin-allergic patients. In difficult cases of *H. pylori* eradication, levofloxacin (LVFX) has been widely used in western countries, but sitafloxacin (STFX) has been used recently in Japan. The aim of this study was to evaluate the current status of drug resistance of *H. pylori* and the usefulness of STFX for *H. pylori* eradication therapy in Japan.

**Methods:** We collected data on *H. pylori* eradication therapy from 1995 to 2014. The resistant rates of AMPC, CAM, and MNZ after unsuccessful therapy were increased. The primary resistant rates against CAM caused a decline in the eradication rate of first-line therapy.

**Results:** (1) After unsuccessful first-line therapy (n = 155), (2) after unsuccessful second-line therapy (n = 84). The breakpoint was set at 1 μg/mL for AMPC, CAM, STFX, and LVFX, and 16 μg/mL for MNZ.

**Conclusion:** The eradication rate of first-line therapy was 87.1% (134/155) and 32% (27/84) for second-line therapy.
are likely to encourage the trend of multi-drug resistance. It was thought that the triple therapies containing STFX would be useful as H. pylori eradication therapy for third-line therapy and penicillin-allergic patients.

IO1-3

Dietary Prevention of Helicobacter pylori-Associated Gastric Cancer with Kimchi

Migyeong Jeong1, Jong-Min Park1, Young-Min Han1, Kun Young Park2, Don Haeng Lee3, Joon-Hwan Yoo4, Joo Young Cha5, Ki-Baik Hahm1,4

1CHA Cancer Prevention Research Center, CHA Cancer Institute, CHA University, Seoul, Korea; 2College of Nutrition, Busan National University, Busan, Korea; 3Department of Gastroenterology, School of Medicine, Inha University, Incheon, Korea; 4Digestive Disease Center, CHA University Bundang Medical Center, Seongnam, Korea

To prove whether dietary intervention can prevent Helicobacter pylori–induced atrophic gastritis and gastric cancer, we developed cancer preventive kimchi (cpKimchi) through special recipe and administered to chronic H. pylori–infected, high salt diet–promoted, gastric tumorigenesis mice model. H. pylori–infected C57BL/6 mice were administered with cpKimchi mixed in drinking water up to 36 weeks. Gross and pathological gastric lesions were evaluated after 24 and 36 weeks, respectively and explored underlying molecular changes to explain efficacies. Cancer preventive actions of anti-inflammatory and anti-mutagenesis were compared between standard recipe kimchi (sKimchi) and special recipe cpKimchi in vitro H. pylori–infected cell model. The erythematous and nodular changes, mucosal ulcerative and erosive lesions in the stomach were noted at 24th weeks, but cpKimchi administration significantly ameliorated. After 36th weeks, scattered nodular masses, some ulcers, and thin nodular gastric mucosa were noted in H. pylori–infected mice, whereas these gross lesions were significantly attenuated in cpKimchi group. On molecular analysis, significance expressions of COX-2 and IL-6, activated NF-kB and STAT3, increased apoptosis, and marked oxidative stresses were noted in H. pylori–infected group relevant to tumorigenesis, but these were all significantly attenuated in cpKimchi group. CPKimchi extracts imparted significant selective induction of apoptosis only in cancer cells, led to inhibition of H. pylori–induced proliferation, while no cytotoxicity through significant HO-1 induction in non-transformed gastric cells. In conclusion, daily dietary intake of cpKimchi can be an effective way either to rejuvenate H. pylori-atrophic gastritis or to prevent tumorigenesis supported with the concerted actions of anti-oxidative, anti-inflammatory, and anti-mutagenic mechanisms.
Methods: From August 2014 to January 2015, 284 patients with confirmed *H. pylori* infection randomly received 14 days of moxifloxacin-based sequential (MSQT group, n = 140) or hybrid (Hybrid group, n = 144) therapy. Successful eradication therapy for *H. pylori* infection was defined as a negative 13C-urea breath test 4 weeks after the end of eradication treatment.

Results: The eradication rates by intention-to-treat (ITT) analysis were 91.4% (128/140; 95% confidence interval [CI]: 90.2–92.9%) and 79.2% (114/138; 95% CI: 77.3–80.7%) in the MSQT and Hybrid groups, respectively (p = 0.013). The eradication rates by per-protocol (PP) analysis were 94.1% (128/136; 95% CI: 92.9–95.6%) and 82.6% (114/138; 95% CI: 80.6–84.1%) in the MSQT and Hybrid groups, respectively (p = 0.003). Compliance was good in both groups (MSQT/Hybrid group: 100%/100%). The adverse event rates were 11.8% (16/136) and 19.6% (27/138) in the MSQT and Hybrid groups, respectively, (p = 0.019).

Conclusions: The eradication rates were 91.4% and 79.2% in the MSQT and Hybrid groups by intention-to-treat (ITT) analysis. The eradication rates by per-protocol (PP) analysis were 94.1% and 82.6% in the MSQT and Hybrid groups. The 14-day moxifloxacin-based sequential therapy is effective and, moreover, shows excellent compliance and safety compared with the 14-day hybrid therapy.

Abstracts

IO1-6

**The Administrative Project of *H. pylori* Infection Screening in Junior High School Health Screening System**

Chika Kusano1,2, Takuji Gotoda3, Fuminori Moriyasu1
1Department of Gastroenterology and Hepatology, Tokyo Medical University, Tokyo, Japan; 2Department of Gastroenterology, Yuri Kumiai General Hospital, Akita, Japan; 3Division of Gastroenterology and Hepatology, Department of Medicine, Nihon University School of Medicine, Tokyo, Japan

Background and Aim: *Helicobacter pylori* (*H. pylori*) infection is common chronic infections. In the recent study, eradication of *H. pylori* was closely associated with gastric cancer. Eradication of *H. pylori* for young people is drawing an attention in terms of the gastric cancer prevention. We report the administrative project of *H. pylori* infection screening in junior high school health screening system in Akita prefecture where the incidence rate of gastric cancer is high in Japan.

Methods: A prospective cross-sectional research was performed among all junior high school students (2nd year and 3rd year students) in Yurihonjo and Nikaho city in Akita prefecture. They were first examined with a urine-based enzyme-linked immunosorbent assay (ELISA) for detection of the antibody to *H. pylori* (RAPIRAN). Students who tested positive on this screening examination visit Yuri Kumiai general hospital (Yurihonjo city) and received the urea breath test (UBT) to determine the infection.

Result: A total of 1,813 students (Yurihonjo city; 1,348, Nikaho city; 465) were included in this project. 1,765 of 1,813 students underwent a screening examination. The participation rate was 97.3%. 101 students (5.7% 101/1,765) were found to be positive with screening examination. 85 students with *H. pylori* positive (84.1% 85/101) are supposed to receive the UBT within 2015.

Conclusion: The participation rate of this project was high. It was an appropriate method to exam the infection of *H. pylori* in the junior high school health screening system. *H. pylori* infection rate for junior high school students in Akita area will prove.

**Oral Session 2: Diagnostic Modalities and Others**

Chairpersons: Jose D. Sollano
Qi Zhu

IO2-1

**Refractory Gastro-Oesophageal Reflux Disease in an Asian Population: Roles of Advanced Imaging and Functional Testing in Diagnosis and Management**

Li Weiquan James, Fock Kwong Ming, Ang Tiing Leong, Poh Choo Hean, Law Ngai Moh, Ang Daphne
Gastroenterology and Hepatology, Changi General Hospital, Singapore

Introduction: Refractory gastro-oesophageal reflux disease (GERD) is difficult to treat. Limited data exists in Asia on this condition. This study aims to evaluate the roles of advanced imaging and functional testing in refractory GERD in a real world setting.

Methods: Prospective study of outpatients with refractory GERD in a tertiary centre. Refractory GERD is defined as persistent and troublesome GERD symptoms after more than 8 weeks of standard-dose PPI. All patients underwent oesophagogastroduodenoscopy (OGD). High resolution manometry (HRM), pH and impedance studies were also offered to investigate persistent symptoms.

Result: 99 patients (male = 47; Chinese = 72; mean age 50+/−13.4 years) were recruited between February 2013 and October 2014. OGD showed oesophagitis in 25/99 (25.3%; grade A = 19, grade B = 6). PPI was doubled in these patients if not already done or switched to a more potent agent. Oesophagitis was also found in 32 more patients (32.3%) using narrow band imaging (NBI). Dilated intrapapillary capillary loops (IPCL) was the commonest finding on NBI, followed by island of mucosa and microerosions respectively. Large hiatus hernia (≥3 cm) was detected in 14/99 (14.1%). 1/99 had Barrett’s oesophagus. 85/99 underwent HRM, and 71/99 had pH and impedance studies. Non-erosive reflux disease (NERD) was found in 12 patients (mean Demeester score 19.5). 54/99 (54.5%) had non-GERD causes: 1 gastric cancer, 1 eosinophilic oesophagitis, 5 achalasia, 9 ineffective oesophageal motility, 1 nutcracker oesophagus, 37 functional heartburn. 22 patients had hypersensitive oesophagus. Patients with achalasia (4 underwent surgery, 1 oesophageal dilatation) and nutcracker oesophagus (treated with calcium channel blocker) improved with therapy.

Conclusion: Non-GERD causes and reflux sensitivity account for a significant proportion of patients with refractory GERD.
Functional testing allows accurate diagnosis and appropriate management despite similar presenting symptoms. NBI may identify more patients with insufficient acid suppression by detecting more GERD-related lesions.

**IO2-2**

**Autophagy Inhibition Mediated through Smad7 Imparted Chloroquine to Rescue from NSAID-Induced Gastric Damages**

Chan Young Ock¹, Jong Min Park¹, Young Min Han¹, Mi Gyung Jung¹, Joo Young Cho², Ho Jae Lee³, Ki Baik Hahn¹,²

¹CHA Cancer Prevention Research Center, CHA University CHA Bio Complex, Seongnam, Korea; ²Digestive Disease Center, CHA University Bundang Medical Center, Seongnam, Korea; ³Laboratory of Chemoprevention Gachon University Lee Gil Ya Cancer and Diabetes Institute, Incheon, Korea

**Background:** Non-steroidal anti-inflammatory drug (NSAID) induced troublesome cytotoxic gastric damages, in which endoplasmic reticulum (ER)-stress is one of key cytotoxic mechanisms implicated in NSAID-induced gastric damages. Alleviating these cytotoxicities can be a rescuing strategy from NSAID-induced gastric damages.

**Aims and Methods:** RGM-1 cells or transfected with shPERK, siLC3B, shATG5, smad7 as *in vitro* model and Wistar rats and LB3B−/− mice as *in vivo* model were administered with indomethacin alone or combination with 3-methyladenine (3-MA) or chloroquine (CQ) to prove the autophagy inhibition as potential rescuing strategy from NSAID-induced gastric damages.

**Results:** Following increased expressions of ER stress proteins including GRP78, ATF, and CHOP with indomethacin administration, autophagic vesicles concurrent with the increased expressions of ATG5 and microtubule-associated protein light chain 3 (LC3) were ensued, whereas genetic ablation of various ER stress genes led to significantly attenuated autophagy as well as apoptosis in spite of indomethacin (*p < 0.01*). Ultimately, knock-down of either ATG5 or LC3B also led to significant reduction of indomethacin-induced cytotoxicity (*p < 0.01*). Since indomethacin provoked autophagic cell death through smad7 degradation, pharmacological intervention of CQ significantly attenuated indomethacin-induced cytotoxicity with preservation of smad7 through repressed ubiquitination (*p < 0.01*). All of these *in vitro* results were further validated with two *in vivo* animal models, pharmacological inhibition of autophagy with 3-MA or CQ or genetic ablation of LC3B all significantly attenuated indomethacin-induced gastric ulcers (*p < 0.05*).

**Conclusions:** Autophagy in the case of NSAID administration led to cell death through smad7 degradation and preemptive autophagy inhibition can be potential strategy to alleviate NSAID-induced gastric damages.

---

**IO2-3**

**Endoscopic Characteristics of 59 Japanese Eosinophilic Esophagitis Patients**

Eiko Okimoto¹, Norihisa Ishimura¹, Daisuke Izumi¹, Hironobu Mikami¹, Masahto Aimi¹, Takashi Tanimura², Naoki Oshima¹, Shunji Ishihara¹, Kyoichi Adachi³, Yoshikazu Kinoshita¹

¹Department of Gastroenterology and Hepatology, Shimane University School of Medicine, Izumo; ²Division of Gastroenterology, Matsue City Hospital; ³Health Center, Shimane Environment and Health Public Corporation, Matsue, Japan

**Introduction:** The clinical features of eosinophilic esophagitis (EoE) are nonspecific and can overlap with those of gastroesophageal reflux diseases, making it difficult to distinguish these conditions in clinical settings. In addition, the endoscopic characteristics of Japanese EoE patients have not been fully elucidated. Here, we aimed to clarify the endoscopic features of EoE in a Japanese population.

**Methods:** Study 1. We retrospectively reviewed the medical records of patients with EoE who were diagnosed at our hospital and related institutions. Information regarding endoscopic findings and clinical parameters was reviewed.

Study 2. The specific position of linear furrows in relation to the esophageal longitudinal folds (ridge or valley) was evaluated, then the results were compared with the position of mucosal breaks in low-grade (grade A or B of the Los Angeles classification) reflux esophagitis (RE) cases.

**Result:** Study 1. We reviewed 59 cases (45 males, 14 females; mean age 48 years). Linear furrows, rings, whitish exudate, and edema were frequently observed endoscopically, with at least one of those findings seen in each patient. Linear furrows were the most frequently found endoscopic abnormality (92.3%). None of those findings were shown to be distinguished proton pump inhibitor responsive esophageal eosinophilia from EoE.

Study 2. Linear furrows were detected radially and widespread throughout the lower to upper esophagus, and found mostly in the valleys, but not the ridges of the esophageal longitudinal mucosal folds. In contrast, mucosal breaks in RE cases were predominantly located on the mucosal fold ridges (72%) and mainly found on the right anterior wall of the esophagus.

**Conclusion:** Typical endoscopic abnormalities, such as linear furrows, rings, and whitish exudate were found in all cases of EoE. Recognition of such findings, especially by focusing on linear furrows in valleys of the esophageal mucosal folds, may provide important clues for EoE diagnosis.
Diagnostic Efficacy of Quantitative Endoscopic Ultrasound Elastography for Pancreatic Disease: A Prospective, Observational, Single Center Study

Su Young Kim, Jae Hee Cho, Yoon Jae Kim, Yeon Suk Kim
Department of Gastroenterology, Gachon University, Gil Medical Center, Incheon, Korea

Background/Aims: Endoscopic ultrasound (EUS) elastography represents a new imaging procedure that allows quantification of tissue stiffness, with a high degree of accuracy for the differential diagnosis of pancreatic disease. The aim of this study was to evaluate the efficiency of quantitative EUS elastography for the differentiation of normal pancreas, chronic pancreatitis (CP), and pancreatic cancer (PC).

Methods: Between August 2014 and July 2015, 75 patients with PC, 59 patients with CP, and 344 patients without pancreatic disease who underwent EUS were prospectively enrolled. EUS elastography was performed using linear Pentax EUS and Hitachi HI VISION Preirus. The quotient $B/A$ (strain ratio; SR) is considered as the measure of the elastographic evaluation. Area A is representative of the pancreatic lesion strain. Area B refers to a soft peripancreatic tissue strain. The SR results were measured at the head and body, respectively.

Results and Conclusions: A total of 478 patients (mean age 57.9 years, 245 male) were included. The mean SR was 3.84 ± 1.37 for normal, 8.37 ± 5.45 for CP, 21.53 ± 12.44 for PC. There was not significant linear correlation between the SR and patient’s age in normal pancreas. The SR was different significantly in three groups respectively (NP vs. CP; $p < 0.001$, NP vs. PC; $p < 0.001$, CP vs. PC; $p < 0.001$). The area under the curve (AUC) of EUS elastography for diagnosing CP was 0.764 (95% confidence interval (CI) 0.719–0.810), the sensitivity and specificity was 71.2% and 75.2% (cut off SR of 5.62). The AUC of EUS elastography for PC was 0.973 (95% CI 0.952–0.994), the sensitivity and specificity was 93.3% and 96.8% (cut off SR of 9.15). In our study, we provided the reference range of SR value of normal pancreas, CP, and PC respectively as well as good parameters of the AUC analysis. Also, EUS elastography is a promising useful method for differentiating normal pancreas, CP and PC. Further prospective and multicenter research in this method is needed.

Oral Session 3: Colorectal and Anal Disorders

Melatonin Treatment Modulates Intestinal Microbiota on DSS Colitis

Young Sook Park, Seong Hwan Kim, Yun Ju Jo, Young Kwan Jo, Sang Woo Cho, Jung Hoon Ha, Ye Eun Lee
Department of Gastroenterology, Eulji University School of Medicine, Eulji Medical Center, Seoul, Korea

Background: Melatonin has strong anti-inflammatory potentials in the GI tract. On our previous study, melatonin reduces various inflammatory cytokines on colon tissues and accelerates recovery from injured mucosa. We aimed to know the effect of melatonin on intestinal microbiota.

Methods: We used 3 groups of C57BL/6 mice. Group I: control, Group II: chronic colitis group: 2% DSS for 7 days and followed 2 weeks for recovery and then readministered 2% DSS for 7 days, Group III: chronic colitis with melatonin group: add daily melatonin treatment. Melatonin (10 mg/kg) or saline was injected daily by intraperitoneal route. The mice were sacrificed on 28th day. Stool were collected during last 2 days. Genomic DNA from feces was extracted. After amplification of genomic DNA using barcoded primers targetting the V1 to V3 regions of bacterial 16S rRNA genes, pyrosequencing was performed.

Results: Fecal microbial analysis demonstrated that Firmicutes to Bacteroidetes ratio (F/B ratio) is 0.19 in Group I, 0.38 in Group II, and 0.21 in Group III. Melatonin treatment significantly decreased F/B ratio comparing with DSS colitis group ($p = 0.015$). The increase in bacteroidetes is mainly due to increased bacteroidaceae and prevotellaceae. The decrease in frmicutes is due to decreased lactobacillaceae and erysipetlochriicaceae. On principal coordinates analysis, Three groups showed clearly separated each other. A phylogenetic tree analysis using MOTHUR showed melatonin treatment group was more close to control Group.

Conclusion: This study showed that DSS induced colitis altered structure of intestinal microbiota. Melatonin treatments on DSS colitis modulate intestinal microbiota and change them close to control.
IO3-2

Clinical Evaluation of Amebic Colitis
Taiki Aoyama, Shinji Nagata, Akira Fukumoto, Shin-ichi Mukai, Hiroyuki Ueda
Department of Gastroenterology, Hiroshima City Asa Citizens Hospital, Hiroshima, Japan

Introduction: Amebic colitis is caused by infection with Entamoeba histolytica and is characterized by the presence of mucus and blood in the stool. We aimed to evaluate the clinical manifestations of amebic colitis.

Methods: Eleven patients (all male; mean age 57.4 years) with amebic colitis who underwent colonoscopy at our hospital between August 2007 and June 2015 were assessed. Amebic colitis was diagnosed using endoscopic, histopathologic, and serum antibody findings. We evaluated the presence of liver abscesses, clinical symptoms, laboratory data (hemoglobin levels, white cell count, and C-reactive protein), CT findings, endoscopic features, and distribution of infection for each case.

Result: Amebic infection was confirmed through pathological diagnosis in 6 patients (55%) and positive serum antibody testing in 10 patients (91%). Symptoms included hematochezia (n = 7, 64%), diarrhea (n = 7, 64%), abdominal pain (n = 4, 36%) and fever (n = 4, 36%). Three patients (27%) had a liver abscess. The mean hemoglobin level was 14.3 g/dl. The mean white cell count and C-reactive protein levels were 12933/μl and 0.09 mg/dl in patients without liver abscesses, respectively. Five patients (45%) showed local wall thickness on CT scan. Endoscopic examination revealed discrete ulcers and/or erosions with surrounding erythema in all patients. The lesions involved the cecum in 10 patients (91%) and rectum in 4 patients (36%). All lesions disappeared after 10–14 days of metronidazole therapy.

Conclusion: Cases of amebic colitis associated with liver abscesses demonstrated substantial levels of inflammation, while cases without liver abscesses showed unremarkable laboratory results. Total colonoscopy should be used for the diagnosis of amebic colitis, due to lack of specific findings on using alternative techniques.

IO3-3

The Effects of Ursodeoxycholic Acid on Cell Cycle, Reactive Oxygen Species, and Proliferation of Colon Cancer Cell
Eun-Kyung Kim, Eui Joo Kim, Jae Hee Cho, Dong Kyun Park, Kwang An Kwon, Jun Won Chung, Kyoung Oh Kim, Yoon Jae Kim
Department of Gastroenterology, Gachon University, Gil Medical Center, Incheon, Korea

Background: Regulation of reactive oxygen species (ROS) is one of the key targets on cancer treatment. In some study, ursodeoxycholic acid (UDCA) can suppress the proliferation of colon cancer cell. The aim of the study was to evaluate the effect of UDCA on proliferation and ROS of colon cancer cell.

Method: Colon cancer cell lines (HT-29 and HCT-116) were treated with UDCA. Number of total and dead cell checked using cell counter. We preformed DCF-DA staining to detect alteration of intracellular ROS using FACS. Exposure to UDCA, level of p27, p21, p18, cyclinD1, CDK6 was used Western blotting for protein state and qRT-PCR for mRNA level.

Result: We found that UDCA reduced number of total colon cancer cell but did not increase number of dead cell. UDCA was found to regulate intracellular ROS generation in colon cancer. UDCA induced expression of cell cycle inhibitors, such as p27, p21, p18. But UDCA suppressed the level of cyclin D1 and CDK6.

Conclusion: Our results indicate that UDCA suppressed proliferation of colon cancer cells and regulated the ROS generation and cell cycle.

IO3-4

Condyloma Acuminatum of the Anal Canal, Treated with Endoscopic Submucosal Dissection
Akiko Sasaki1, Hideto Egashira1, Shinnosuke Tokoro1, Chikamasa Ichita1, Sakae Masuda1, Haruki Uojima1, Kazuya Koizumi1, Takeshi Kinbara1, Kotaro Takeda2, Makoto Kako1
1Gastroenterology Medicine Center, Shonan Kamakura General Hospital, Okamoto, Kamakura City, Kanagawa, Japan; 2Diagnostic Pathology, Shonan Kamakura General Hospital, Okamoto, Kamakura City, Kanagawa, Japan

Introduction: Condyloma acuminatum (CA) is a common sexually transmitted disease caused by human papilloma virus infection. Not all individuals develop persistent, progressive disease, but careful follow-up is required with moderate to severe dysplasia to prevent progression to malignancy. Standard therapies include surgical treatments (trans-anal resection and trans-anal endoscopic microsurgery) and immunotherapeutic and topical methods (topical imiquimod); local recurrence is still a considerable problem. Here, we report a case with superficial CA of the anal canal, treated with endoscopic submucosal dissection (ESD).

Methods: A 28-year-old man presented with a chief complaint of hematochezia. Digital exam did not detect a tumor. Screening colonoscopy revealed 10-mm long whitish condyles extending from the anal canal to the lower rectum. The lesion covered almost the whole circumference, and only a small amount of normal mucosa remained. Magnifying endoscopy with narrow band imaging showed brownish hairpin-shaped, coiled capillaries. Although histopathological diagnosis by biopsy revealed CA, accurate histological differentiation between CA, papilloma, and squamous cell carcinoma can be difficult with a small specimen. Therefore, we performed diagnostic ESD, which provides a complete specimen for precise histopathological evaluation.

Result: The pathological diagnosis was CA, with moderate dysplasia (anal intraepithelial neoplasia 2). Recurrence was not observed at 16 months after the initial ESD.

Conclusion: Compared to surgical treatment, endoscopic diagnosis and resection could be performed at the same time and the
tumor margin observed clearly with a magnifying chromocolonoscopy, resulting in less recurrence. Endoscopic resection could be an alternative method for CA to prevent recurrence.

**Oral Session 4: Inflammatory Bowel Disease**
Chairpersons: Yuji Naito
Udom Kachintorn

**IO4-1**
**The Prevalence of Clostridium Difficile Infection in Adult and Pediatric Patients with Inflammatory Bowel Disease**
Yao Weiyan1, Huang Jia1, Chen Ying3, Ren Mengyun1, Zhu Qi1,2, Zhong Jie1
1Department of Gastroenterology, Rui Jin Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, China; 2Gleneagles Medical and Surgical Center, Parkway Health, Shanghai, China

*Introduction:* The incidence and the severity of Clostridium difficile infection (CDI) have increased significantly over the last decade, especially in high-risk populations such as patients with inflammatory bowel disease (IBD). CDI in children with IBD may differ from adults. We aim to compare the prevalence of CDI in hospitalized adult and pediatric IBD patients and diarrhea patients without IBD.

*Methods:* The rates of CDI per 434 IBD and non-IBD diarrhea hospitalizations between 2013 and 2015 were examined using the RuiJin Hospital Electronic Medical Record Database. Age, sex and calendar year adjusted incidence rate ratios comparing CDI in pediatric and adult IBD patients and diarrhea patients without IBD were calculated.

*Result:* CDI occurrence was significantly higher in patients with IBD compared with patients with diarrhea patients without IBD (5.83% versus 3.2%). Among children, the rate of CDI was over 2.47 times greater in IBD than non-IBD hospitalizations and among adults, the rate of CDI was 1.94 times greater in IBD than non-IBD hospitalizations. In adults, CDI was significantly higher in ulcerative colitis (UC) than Crohn’s disease (9.21% vs. 2.76%) but in children there was no difference in CDI in UC compared with Crohn’s disease (13.51% vs. 8.33%).

*Conclusion:* CDI was more common in adult patients with UC, and no difference was found between CDI and IBD type in pediatrics. CDI is frequently associated with IBD in pediatric patients.

**IO4-2**
**Efficacy of Fecal Microbiota Transplantation in Active Ulcerative Colitis: A Meta-Analysis**
Atsushi Yoshida, Toshio Morizane, Fumiaki Ueno, Kenji Kanoshima, Mayuki Shirai, Yoshihide Monkawa, Yutaka Endo
Center for Gastroenterology and Inflammatory Bowel Disease, Ofuna Chuo Hospital, Kamakura, Japan

*Background:* Several reports indicated some efficacy of fecal microbiota transplantation (FMT), but a systematic review has shown FMT is not promising for the treatment of active ulcerative colitis (UC). The results of two recent randomized controlled trials evaluating efficacy in UC were conflicting.

*Purpose:* To summarize evidence about efficacy of FMT in inducing clinical and endoscopic remission in patients with active UC.

*Data Sources:* PubMed register of controlled trials, from August 1973 to August 2015.

*Study Selection:* Double blind randomized controlled trials of FMT versus placebo or active comparator agents in patients with active UC. Studies without endoscopic outcome or of less than 12 weeks’ duration were excluded.

*Data Extraction:* All data evaluations and inclusion decisions were performed by investigators. An intention-to-treat principle was applied.

*Data Synthesis:* Investigators compared relative risk differences using the random-effects inverse-variance model to assess total clinical remission, endoscopic mucosal healing (MH) and serious adverse events. Two studies (n = 123) for induction therapy of FMT showed clinical benefit as compared to placebo control as evidenced in risk ratio (RR) of non-clinical remission (RR = 0.82; 95% CI 0.70–0.97). No difference was found concerning non-MH (RR = 0.91; 95% CI 0.74–1.12) and serious side effects (RR = 1.28; 95% CI 0.36–4.55).

*Limitation:* The eligible RCTs included a relatively small number of subjects and heterogeneity of study design, with a relatively short duration of exposure.

*Conclusion:* FMT is efficacious for inducing clinical remission, but not endoscopic remission in patients with UC refractory to prior conventional treatments.

**IO4-3**
**Nobel Epigenetic Carcinogenesis of Ulcerative Colitis Derived Colorectal Cancer**
Nagahide Matsubara, Masayoshi Kobayashi, Yutaka Nakachi, Yasushi Okazaki, Hiroki Ikeuchi, Naohiro Tomita
Department of Surgery, Hyogo College of Medicine, Hyogo, Japan

*Introduction:* Colorectal epithelium with a long-standing ulcerative colitis has an increased risk of developing cancer. The occurrence of genetic and epigenetic alteration in preexisting precursor background epithelium is not well understood. We therefore exam-
ined the epigenetic alteration occurred in colitic cancer as well as the background ulcerative colitis epithelium compare with well known two types of the sporadic colorectal cancer showing different carcinogenesis.

**Methods:** Cancer tissue samples and the counter background epithelium were obtained from the surgical specimens from 6 ulcerative colitis patients developing neoplasm. We also analyzed the 3 sporadic colorectal cancers with microsatellite instability and 3 of those without microsatellite instability. Bisulfite-converted DNA were used for hybridization on Infinium HumanMethylation 450 BeadChip, following the Illumina Infinium HD Methylation protocol.

**Result:** Unsupervised hierarchical clustering of the most variable B values with a detection p value >0.01 was performed. Several candidate CpG methylation site related to the carcinogenesis signal transduction pass way was identified. Some of them were further evaluated for the candidate marker to identify early colitic cancer lesions.

**Conclusion:** Possible unique epigenetic carcinogenesis pathway for colitic cancer was elucidated. Some of them could be a promising clinical marker for early detection of colitic cancer.

---

### 104-4

**Quantitative Real-Time PCR for the Detection of Cytomegalovirus Infection in Colonic Mucosa of Ulcerative Colitis Patients Before and after Treatment of Exacerbated Colitis**

Takuya Inoue, Kazuki Kakimoto, Azusa Hara, Yuiiro Henmi, Yoshimasa Hirata, Yutaka Naka, Sadaharu Nouda, Toshihiko Okada, Ken Kawakami, Toshihisa Takeuchi, Kazuhide Higuchi  
Second Department of Internal Medicine, Osaka Medical Collage, Takatsuki City, Osaka, Japan

**Background:** Cytomegalovirus (CMV) infection has been reported to be a cause of refractory ulcerative colitis (UC). Since specific endoscopic features of refractory UC associated with CMV infection have not been clearly described, diagnosing CMV infection at an early stage is difficult. Although quantitative real-time polymerase chain reaction (qPCR) for detecting CMV infection in colonic mucosa has shown high sensitivity, the appropriate therapeutic approach for UC patients with CMV-DNA-positive colonic mucosa remains unclear.

**Methods:** Between February 2013 and January 2015, patients admitted to our hospital with exacerbation of UC were consecutively enrolled in this retrospective, single-center study. Patients were divided based on prescribed medications before enrollment. The patients were evaluated for CMV using serology (antigenemia) and assessment of inflamed colonic mucosa obtained at admission. Colonic mucosa was evaluated by examination of H&E-stained tissue and qPCR. Patients whose specimens contained >10 CMV-DNA copies/μg DNA were considered positive for CMV infection. Endoscopic score was evaluated using Blackstone endoscopic scoring (1–9).

**Results:** There were 48 patients in this study; 13 received steroids, 6 received single- and 9 received combination-agent immunosuppressants, and 20 received other treatments. Of these, 18 patients were positive for CMV. The CMV positive ratio was significantly increased in the patients with combination-agent immunosuppressants. Endoscopic scores were significantly higher in CMV-positive than in CMV-negative patients. However, the colonoscopic features of wide mucosal defects, punched-out, longitudinal, and irregular ulcers were similarly found in CMV-positive and CMV-negative patients. All CMV-DNA-positive patients who were treated with oral tacrolimus showed clinical response and decreasing numbers of CMV-DNA copies.

**Conclusions:** CMV reactivation in patients with exacerbation of UC was associated with combination-agent immunosuppressants, and their endoscopic findings were unremarkable. Since additional treatment with tacrolimus was effective, patients with CMV-DNA-positive colonic mucosa and mild disease may recover without antiviral therapy.
Conclusions: The 14-day reverse moxifloxacin-based sequential therapy and moxifloxacin-based sequential therapy are equally effective and shows excellent compliance as a first-line eradication treatment of Helicobacter pylori infection.

IP-2
Endoscopic Botulinum Toxin Injection for the Treatment of Pharyngeal Dysphagia with Cricopharyngeal Dysfunction
Eui Joo Kim, Jae Hee Cho, Dong Kyun Park, Kwang An Kwon, Jun Won Chung, Kyoung Oh Kim, Yoon Jae Kim
Division of Gastroenterology, Department of Internal Medicine, Gachon University Gil Medical Center, Incheon, Korea

Background: The cricopharyngeus muscle (CPM) is located between the throat and the esophagus and also it is a main component of the upper esophageal sphincter. Patients with neurologic disorders including recurrent laryngeal nerve (RLN) paresis, Parkinson’s disease and brain infarction may demonstrate impaired function of CPM and swallowing. Surgical myotomy of the cricopharyngeus muscle can be an option for the treatment of hyperactivity of the upper esophageal sphincter due to neurologic disorders. However, cricopharyngeal myotomy requires general anesthesia, irreversible and is not always effective. Herein we report the usefulness of endoscopic botulinum neurotoxin injection in the cricothyroid muscles as a treatment for the dysphagia related to neurologic disorders.

Method: A total of 12 patients who underwent endoscopic botulinum neurotoxin injection due to CPM dysfunction with neurologic disorders at a single tertiary medical center, from 2006 to 2014 were reviewed, retrospectively. Botulinum neurotoxin was injected under direct vision of endoscopy into the cricopharyngeus muscles of 12 patients with dysphagia, chronic cough, reflux of food material, aspiration pneumonia and who was confirmed cricopharyngus dysfunction due to brain infarction, two patients due to brain hemorrhage, and one patient due to bulbar palsy. 10 out of 12 patients (83%) were successfully managed with endoscopic botulinum neurotoxin injection. Three of the patients were confirmed clinically and nine of the patients were confirmed by VFSS. Two of the 12 patients (17%) were not improved despite endoscopic botulinum toxin injection.

Results: The study included 12 patients (10 males and 2 females) and the mean age was 60 years old (43–82). Nine patients had CPM dysfunction due to brain infarction, two patients due to brain hemorrhage, and one patient due to bulbar palsy. 10 out of 12 patients (83%) were successfully managed with endoscopic botulinum neurotoxin injection. Three of the patients were confirmed clinically and nine of the patients were confirmed by VFSS. Two of the 12 patients (17%) were not improved despite endoscopic botulinum toxin injection.

Conclusion: Endoscopic botulinum toxin injection might be a good treatment option for the patients with dysphagia due to neurologic disorders. Because the effect of the botulinum toxin might be temporary, further long term follow up is needed.

IP-3
Characterising the Etiology of Severe Acute Gastroenteritis among Adult Hospitalized Patients Using Multiplex PCR
Chi Woo Song1, Young Sook Park1, Jeong Don Chae2
1Department of Internal Medicine, Eulji University, Eulji Medical Center, Seoul, South Korea; 2Department of Laboratory Medicine, Eulji University, Eulji Medical Center, Seoul, South Korea

Background: Acute gastroenteritis (AGE) is a common cause of clinic visits and hospitalizations. Infectious causes has various pathogens, including viruses, bacteria, and parasites. But, there is little data on etiology in adults. In this study, we evaluated etiology and clinical feature using culture and multiplex PCR applied on stool specimens directly to diagnose pathogen.

Methods: We performed a prospective, admission–based study of 380 adults with Acute diarrhea. Clinical parameters, Serum samples and stool specimens were evaluated for patients who were hospitalized due to severe symptoms including abdominal pain, fever and dehydration from July 2014 to July 2015. Stool specimens were tested, using fecal leukocytes, stool culture and stool multiplex PCR, for a panel of 4 viral (norovirus, adenovirus, astrovirus and rotavirus), 6 bacterial pathogens. (Salmonella spp., Shigella spp., Vibrio spp., Campylobacter spp., E. coli 0157:H7, VTEC, Yersinia enterocolitica) and Toxin (Clostridium difficile Toxin B).

Results: Viral and bacterial pathogens were detected in 27 (7.1%) and 156 (41%) of the 380 patients respectively. Pathogens were detected significantly more often from stool multiplex PCR than stool culture. The most commonly detected pathogens were Campylobacter spp.(27.3%), Clostridium perfringens (19.7%), Clostridium difficile Toxin (16.4%) and Salmonella spp.(8.2%). Among viral pathogens, Norovirus (8.1%) was the most commonly detected. Incidence of Campylobacter was increasing, especially in young adults. and Clostridium difficile was important cause at old age.

Conclusions: Stool multiplex PCR improved the detection of pathogens and was useful to assess the etiology of acute infectious diarrhea. Campylobacter species was important cause of acute severe infectious diarrhea in adults. But viral pathogen was not a major role in adults. Among old age, Clostridium species must be considered.
IP-4

Inhibitory Effect of Gut Microbiota on GLP-1 Receptor Expression in the Gastrointestinal Tract

Mo Yang, Hirokazu Fukui, Hirotsugu Eda, Mio Kodani, Toshikko Tomita, Tadayuki Oshima, Jiro Watari, Hiroto Miwa

Division of Gastroenterology, Department of Internal Medicine, Hyogo College of Medicine, Hyogo, Japan

Introduction: Glucagon-like peptide 1 (GLP-1) is an incretin hormone produced by intestinal endocrine cells, and its signaling acts via GLP-1 receptor to regulate not only glucose homeostasis but also gastrointestinal motility. However, the localization of GLP-1 receptor in the gastrointestinal tract is remained unclear. Furthermore, although GLP-1 signaling must be affected by gut microbiota, this hypothesis is also remained to be elucidated. Therefore, in the present study, we examined the role of gut microbiota in GLP-1 receptor expression and motility in the gastrointestinal tract.

Methods: Germ free (GF) mice (6 weeks-old, male) was inoculated with fecal suspensions, which was freshly prepared from specific pathogen-free (SPF) mice. Thereafter, the GF mice with fecal transplantation (FT) were housed for 28 days under SPF conditions and killed in a time dependent manner. The expression of GLP-1 and its receptor in the gastrointestinal tissues was examined by immunohistochemistry. To evaluate the gastrointestinal motility, the mice received orally carmine-red solution, and the gastrointestinal transient time (GITT) was measured.

Result: GLP-1 was expressed in the endocrine cells in the lower gastrointestinal tract. GLP-1 receptor was mainly expressed in the neuron cells throughout the gastrointestinal wall. Twenty-eight days after FT, GF mice with FT showed a significant increase in number of GLP-1 receptor-positive cells throughout the gastrointestinal wall when compared with GF mice without reconstitution of gut microbiota. Moreover, the GITT in GF mice with FT was significantly shorter than that in control GF mice without FT.

Conclusion: Gut microbiota has an inhibitory effect on GLP-1 receptor expression throughout the gastrointestinal wall and possibly affects the gastrointestinal motility.

IP-5

Clostridium difficile Infection in Newly Diagnosed Pediatric Inflammatory Bowel Disease in eastern China

Huang Jia1, Yao Weiyan1, Chen Ying1, Ren Mengyun1, Zhong Jie1, Zhu Qi1,2

1Department of Gastroenterology, Rui Jin Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China; 2Gleneagles Medical and Surgical Center, Parkway Health, Shanghai, China

Introduction: The incidence of Clostridium difficile infection (CDI) in inflammatory bowel disease (IBD) is increasing, and CDI has a negative impact on IBD outcomes with both increased morbidity and mortality. We sought to investigate CDI in pediatric patients with new-onset IBD in comparison with a group of children with celiac disease in eastern China.

Methods: 51 pediatric patients with IBD were enrolled between January 1, 2013 and May 31, 2015 and tested for the presence of C. difficile toxins A and B in their stools with enzyme immunoassay. During the same study period, stool specimens for C. difficile toxins analysis were collected from 42 children with celiac disease as controls. Antibiotic exposure before testing was extracted from the charts.

Result: Of the 51 enrolled pediatric IBD patients, 29 were new IBD cases and had documented testing for C difficile around the time of diagnosis. There were 20 patients with CD, 1 with IBDU, and 8 with UC. 3 cases were positive for C difficile of the 29 tested, while 2 cases of the celiac patients were positive. C difficile occurrence was significantly higher in new IBD patients compared with patients with celiac disease (10.3% versus 4.7%). Antibiotic exposure before testing was documented in the three positive cases. 16 of the 26 C difficile-negative patients with IBD at the time of diagnosis (61.5%) had documentation of previous antibiotic use.

Conclusion: Consequently, this study demonstrates that pediatric IBD is associated with increased C difficile detection. CDI was associated with a significantly higher exposure to antibiotics in the new IBD cases.

IP-6

Clinicopathological Analysis of 56 Patients with Intestinal Spirochetosis

Eiko Saito, Satoko Umeda, Taku Kobayashi, Hiroshi Serizawa, Takahiko Toyonaga, Masaru Nakano, Toshifumi Hibi

Department of Gastroenterology, Kitasato University Kitasato Institute Hospital, Tokyo, Japan

Introduction: Human intestinal spirochetosis (HIS) is an infectious gastrointestinal disease caused by Brachyspira aalborgi/pilosicoli. Higher prevalence is reported in developing regions compared with developed countries, however, recent reports suggest the increasing number of cases with HIS in Japan. Clinical significance of HIS remains unclear, since it lacks specific clinical symptoms.

Methods: Clinical characteristics of 56 patients (male:female = 48:8, mean age 56.1 (29–80)) who were diagnosed with HIS in our institution between March 2010 and May 2015 were retrospectively analyzed.

Result: Diagnosis was made based on the histological examination of the biopsy specimen taken colonoscopically. Colonoscopic findings were mostly non-specific (redness, erosions, etc.). Immunohistochemistry using anti-Treponema Pallidum antibody was used to confirm the diagnosis following H-E and PAS staining. Microscopic observation was positive in all 8 patients whose luminal fluids were collected during the colonoscopy. Symptom of initial presentation was absent in 48 patients and 8 patients had modest gastrointestinal symptoms such as lower abdominal pain, constipation, and loose stool. Co-existing medical conditions included diabetes in 8 cases, ulcerative colitis in 4 cases. There were 3 cases in whom intestinal amebiasis was also diagnosed simultaneously, suggesting its role...
for sexually transmitted disease. A total of 16 cases were treated with antibiotics (ampicillin and/or metronidazole) while 40 cases were not. Endoscopic findings were improved in 7 out of 10 patients who were followed up by the colonoscopy after antibiotic treatment.

**Conclusion:** There were no specific clinical presentations or endoscopic findings to HIS. Confirming histological diagnosis with immunohistochecmistry and direct microscopic observation seems useful. Clinical impact of antibiotic treatment remains unclear yet in our series, although acute fulminant cases have been also reported. Therefore, it is important to keep our attention to HIS and unravel its clinical significance.

**IP-7**

**Outcome of Antiviral Treatment in Patients with CMV-DNA PCR Positive Ulcerative Colitis: A Single Center Retrospective Study**

M. Tanaka, Y. Toyokawa, Y. Hotta, K. Uchiyama, T. Takagi, Y. Naito, Y. Itoh

Department of Molecular Gastroenterology and Hepatology, Kyoto Prefectural University of Medicine, Graduate School of Medical Science, Kyoto, Japan

**Introduction:** CMV reactivation has been reported as important exacerbating and refractory factor of the ulcerative colitis (UC), but the standard for treatment is not established and the clinical significance of CMV reactivation remains controversial. We examined usefulness of the antiviral treatment for the UC patients diagnosed as positive CMV-DNA PCR.

**Methods:** The data of clinical database, including a cohort of 28 patients with CMV-DNA PCR positive at Kyoto Prefectural University of Medicine between 2010 and 2013 was used for this single center retrospective study. Clinical parameters (age, sex, disease extent, and disease activity (CAI: Lichtiger index) on admission) were evaluated in 28 patients. The difference of clinical parameters between 18 patients with combination of induction therapy for UC with treatment for CMV infection (treatment group) and 10 patients with induction therapy for UC alone (non-treatment group) were evaluated.

**Result:** Clinical parameters such as age, sex, disease extent, and disease activity on admission showed no difference between two groups. The induction of remission rate and the rate of colectomy shows no significant difference between two groups. In the treatment group, the change of CAI after the induction therapy of UC was 2.8±2.54, whereas 2.7±3.16 in the non-treatment group.

**Conclusion:** It was suggested that the antiviral treatment could not assist the induction of remission for UC patients based on the mucosal CMV-DNA PCR positive.
Author Index for Abstracts

Numbers refer to abstract numbers

Adachi, K. IO2-3
Aimi, M. IO2-3
Aoyama, T. IO3-2
Chae, J.D. IP-3
Cho, J.H. IO2-4, IO3-3, IP-2
Cho, J.Y. IO1-3, IO2-2
Cho, S.W. IO3-1
Chung, J.W. IO3-3, IP-2
Daphne, A. IO2-1
Eda, H. IP-4
Egashira, H. IO3-4
Endo, Y. IO4-2
Fukui, H. IP-4
Fukumoto, A. IO3-2
Gotoda, T. IO1-6
Ha, J.H. IO3-1
Hahn, K.-B. IO1-3
Hahn, K.B. IO1-4, IO2-2
Han, Y.-M. IO1-3
Han, Y.M. IO1-4, IO2-2
Hara, A. IO4-4
Hean, P.C. IO2-1
Henni, Y. IO4-4
Hibi, T. IP-6
Higuchi, K. IO4-4
Hirata, Y. IO4-4
Hisamatsu, T. IO1-2
Hotta, Y. IP-7
Hwang, J.J. IO1-5, IP-1
Ichita, C. IO3-4
Ikeuchi, H. IO4-3
Inoue, T. IO4-4
Ishihara, S. IO2-3
Ishimura, N. IO2-3
Itoh, Y. IP-7
Izumi, D. IO2-3
James, L.W. IO2-1
Jeong, M. IO1-3
Jia, H. IO4-1, IP-5
Jie, Z. IO4-1, IP-5
Jo, Y.J. IO3-1
Jo, Y.K. IO3-1
Jung, M. IO2-2
Kakimoto, K. IO4-4
Kako, M. IO3-4
Kanai, T. IO1-1
Kanoshima, K. IO4-2
Kawakami, K. IO4-4
Kim, E.J. IO3-3, IP-2
Kim, E.-K. IO3-3
Kim, K.O. IO3-2, IP-2
Kim, S.H. IO3-1
Kim, S.Y. IO2-4
Kim, Y.J. IO2-4, IO3-3, IP-2
Kim, Y.S. IO2-4
Kinbara, T. IO3-4
Kinoshita, Y. IO2-3
Kobayashi, M. IO4-3
Kobayashi, T. IP-6
Kodani, M. IP-4
Koizumi, K. IO3-4
Kusano, C. IO1-6
Kwon, K.A. IO3-3, IP-2
Lee, D.H. IO1-3, IO1-5, IP-1
Lee, H.-J. IO1-4
Lee, H.J. IO2-2
Lee, Y.E. IO3-1
Leong, A.T. IO2-1
Masaoka, T. IO1-1
Masuda, S. IO3-4
Matsubara, N. IO4-3
Matsuzaki, J. IO1-1
Mengyun, R. IO4-1, IP-5
Mikami, H. IO2-3
Ming, F.K. IO2-1
Miwa, H. IP-4
Moh, L.N. IO2-1
Mori, H. IO1-1, IO1-2
Morikawa, Y. IO4-2
Moriyasu, F. IO1-6
Morizane, T. IO4-2
Mukai, S. IO3-2
Nagata, S. IO3-2
Naito, Y. IP-7
Naka, Y. IO4-4
Nakachi, Y. IO4-3
Nakano, M. IP-6
Nouda, S. IO4-4
Ock, C.Y. IO2-2
Okada, T. IO4-4
Okazaki, Y. IO4-3
Okimoto, E. IO2-3
Oshima, N. IO2-3
Oshima, T. IP-4
Park, D.K. IO3-3, IP-2
Park, J.-M. IO1-3
Park, J.M. IO1-4, IO2-2
Park, K.Y. IO1-3
Park, Y.S. IO3-1, IP-3
Qi, Z. IO4-1, IP-5
Saito, E. IP-6
Sakasai, A. IO3-4
Serizawa, H. IP-6
Shirai, M. IO4-2
Song, C.W. IP-3
Suzuki, H. IO1-1
Takahashi, S. IO1-2
Takeda, K. IO3-4
Takeuchi, T. IO4-4
Tanaka, A. IO1-2
Tanaka, M. IP-7
Tanimura, T. IO2-3
Tokoro, S. IO3-4
Tokunaga, K. IO1-2
Tomita, N. IO4-3
Tomita, T. IP-4
Toyokawa, Y. IP-7
Toyonaga, T. IP-6
Uchiyama, K. IP-7
Ueda, H. IO3-2
Ueno, F. IO4-2
Umeda, S. IP-6
Uojima, H. IO3-4
Watari, J. IP-4
Weiyan, J. IP-5
Weiyan, Y. IO4-1
Yang, M. IP-4
Ying, C. IO4-1, IP-5
Yoo, J.-H. IO1-3
Yoshida, A. IO4-2