

Poster

Colonic and Anorectal Disorders

P-001

Effect of visceral obesity on lymph node metastasis in colon cancer

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Objective: An association between obesity and unfavorable outcomes for various types of malignancy has been established. However, the relationship between fat distribution and lymph node metastasis has not been well studied. The aim of our study is to determine the impact of visceral obesity on lymph node metastasis and overall survival in colon cancer.

Methods: This study reviewed medical records for consecutive patients who underwent radical resection for colon cancer between 2003 and 2008. Metastatic lymph node ratio (MLR) was defined as the number of involved nodes by tumor divided to the total number of resected lymph nodes. Visceral obesity was determined by measuring abdominal fat volume distribution via CT scan and then calculating the percentage of visceral fat (VF%) to total fat area. **Results:** 278 patients were divided into two groups: VFs (VF% ≤ 29, n = 81) and VFv (VF% > 29, n = 197). The baseline characteristics showed some differences between two groups with respect to body mass index, total cholesterol and the proportion of MLR. In the multivariate analysis, MLR significantly decreased with the higher VF% (OR = 0.406, 95% CI = 0.206–0.801, P = 0.009). In addition, MLR was significantly associated with HbA1c, differentiation, lymphovascular invasion and perineural invasion. There was significant difference in overall survival between patients with VF% ≤ 29 and those with VF% > 29 (P = 0.009). **Conclusion:** A higher ratio of visceral fat was associated with a decreased ratio of metastatic lymph nodes and increased overall survival.

Key Word(s): 1. visceral obesity; 2. lymph node metastasis; 3. colon cancer

Colonic and Anorectal Disorders

P-002

The clinical features of intussusception in adults

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Objective: Intussusception is extremely rare in adults. Many of the causes are reported by tumoral lesions of the intestinal tract. We elucidate clinical feature of intussusception of adult. **Methods:** From 2005 to 2013, 29 cases of intussusception were diagnosed at Ehime Prefectural Central Hospital (69.0 ± 16.5 years old). We evaluated their clinical backgrounds.

Results: Average age was 69.0 ± 16.5 years old (range: 16–89, male : female = 15:14). Intussusception of small intestine were in 10 (34.5%), ileocecal region in 3 (10.3%), and colon in 16 (55.2%). In colon cases, the location was ascending colon in 13 (44.8%), transverse in 2 (6.9%), and descending in 1 (3.4%). All 29 cases could be divided into 2 types; with and without tumors. Seventeen (58.6%) were caused by tumors. Colonic cancer: 11 (37.9%), malignant lymphoma: 3 (10.3%), lipoma: 2 (6.9%), GIST : 1 (3.4%). Twelve were without tumors, postoperative adhesion were 4 (13.8%), appendicitis were 2 (6.9%) and others (inflammation: 2, dietary by egg-plant: 1, colonic anisakis: 1, ileus tube: 1, small-intestine tumor: 1) were 6. Four were treated conservatively (13.8%), 19 were treated with resection (65.5%), 2 could not be treated due to bad general condition (6.9%), and 1 was cared by chemotherapy (3.4%). One case died by other disease (3.4%). **Conclusion:** In the present study, approximately 40% were not caused by tumors. It is important to keep in mind that there are intussusception cases without tumors and some of them can be treated conservatively.

Key Word(s): 1. intussusception; 2. adult

Colonic and Anorectal Disorders

P-003

Identification of MIR375 associated with colon cancer and their targets

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Objective: MicroRNAs (miRNAs) are small non-coding RNAs which down-regulate gene expression of protein-coding genes by either transla-

tional repression or mRNA degradation. The present study aimed to investigate the miRNAs associated with the pathogenesis of colon cancer, and to identify their target genes. **Methods:** The candidate miRNAs were extracted and isolated by analysis of the miRNA microarray chips results between colon cancer and normal colon. The expression levels of differentially expressed miRNAs using quantitative real-time polymerase chain reaction (RT-qPCR) was validated. **Results:** One of them, miR375 was detected as lower expression level in colon cancer than normal colon tissue. The miR375 targets were predicted using the mRNA microarray analysis of the human colon cell lines, Caco2 and SW480, between the normal cells and the candidate miRNA over-expressed cells. The several candidate target genes for MIR375 were identified and validated. As determined by luciferase reporter assay, we found ectopic expression of MIR375 could diminish the transcriptional activity of connective tissue growth factor (CTGF). CTGF mRNA and protein expressions were determined through RT-qPCR and western blotting in MIR375 precursor transfected HT-29 cells, respectively. **Conclusion:** The results showed a significant decrease of CTGF transcripts and protein expression levels in MIR375 precursor treated cells. These results suggest that MIR375 could play an important role in the pathogenesis of colon cancer.

Key Word(s): Na

Colonic and Anorectal Disorders

P-004

High BMI: a risk factor for significant colonic polyps

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Objective: Background & Aim: An increased body mass index (BMI) has long been associated with increased risk of disease. There is evidence to suggest that a high BMI may be associated with an increased prevalence of significant polyps. Given the prevalence of high BMI within regional centres in Australia this association may impact on the already limited resources. This study was conducted at a large regional Centre to determine if there is an association between high BMI and an increased prevalence of significant polyps. **Methods:** A prospective data collection was completed on patients who underwent colonoscopy by 17 different endoscopists between May 2012 and March 2014. Patients who underwent a colonoscopy for screening/surveillance purposes were divided into two groups: BMI ≥ 25 or BMI < 25 . Hyperplastic polyps on the right side within each group was then analysed for significance. **Results:** A total of 2043 colonoscopies were performed on patients with recorded BMIs. 980 of these underwent colonoscopies for screening/surveillance. 77% of these patients had a BMI ≥ 25 . The prevalence of significant polyps in this group was 29% (218). In those with BMI < 25 the prevalence was only 20% (46). This difference was found to be statistically significant with P value 0.001. Given this result we decided to assess the effect of high BMI on the prevalence of significant polyps in the whole cohort. Of the total 2043 patients, 75% of these had BMI ≥ 25 . When we evaluated the data 24% (361) of the BMI ≥ 25 had significant polyps and only 17% (87) within BMI < 25 . This difference was again significant (P value 0.001). **Conclusion:** This study showed an interesting association between high BMI and the prevalence of significant polyps. For consideration is the impact this association has on limited resources in regional hospitals given the prevalence of high BMI within regional centres.

Key Word(s): 1. BMI: body mass index

Colonic and Anorectal Disorders

P-005

Synchronous multiple lymphomatous polyposis and adenocarcinoma in the colon

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Objective: Synchronous multiple lymphomatous polyposis and adenocarcinoma in the colon is very rare. We report a case in which a sporadic adenocarcinoma that occurred on the lymphomatous polyp of colon was successfully resected using endoscopic submucosal dissection (ESD) technique. **Methods:** A 69-year-old female presented with abdominal discomfort and intermittent anal bleeding for 3 months. Under the colonoscopy, there are numerous non-epithelial polyps with various sizes in the colon and an epithelial neoplasm larger than 4 cm in the ascending colon. The biopsy of a non-epithelial polyp showed focal nodular lymphoid hyperplasia, and the biopsy of the epithelial neoplasm revealed tubular adenoma with low grade dysplasia. A computed tomography demonstrated multiple tiny mural nodules in the colon and multiple homogeneous attenuated lymph node enlargement in Lt. gastric, para-aortic, aortocaval, ileocolic, mesenteric area. **Results:** About 4.5 cm sized epithelial neoplasm in the ascending colon was completely resected using ESD technique. The ESD specimen showed intraepithelial well-differentiated adenocarcinoma and extranodal marginal zone B-cell lymphoma (MALT lymphoma). About 0.5 cm sized non-epithelial polyp was resected using endoscopic mucosal resection (EMR) technique. The EMR specimen revealed diffused large B-cell lymphoma that may arise from MALT lymphoma. She was treated with R-CHOP chemotherapy. **Conclusion:** We report a rare case of synchronous multiple lymphomatous polyposis and adenocarcinoma in the colon.

Key Word(s): 1. multiple lymphomatous polyposis; 2. adenocarcinoma; 3. colon

Colonic and Anorectal Disorders

P-006

Identification of MIR375 associated with colon cancer and their target colonic and anorectal disorders

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Objective: MicroRNAs (miRNAs) are small non-coding RNAs which down-regulate gene expression of protein-coding genes by either translational repression or mRNA degradation. The present study aimed to investigate the miRNAs associated with the pathogenesis of colon cancer, and to identify their target genes. **Methods:** The candidate miRNAs were extracted and isolated by analysis of the miRNA microarray chips results

between colon cancer and normal colon. The expression levels of differentially expressed miRNAs using quantitative real-time polymerase chain reaction (RT-qPCR) was validated. **Results:** One of them, miR375 was detected as lower expression level in colon cancer than normal colon tissue. The miR375 targets were predicted using the mRNA microarray analysis of the human colon cell lines, Caco2 and SW480, between the normal cells and the candidate miRNA over-expressed cells. The several candidate target genes for MIR375 were identified and validated. As determined by luciferase reporter assay, we found ectopic expression of MIR375 could diminish the transcriptional activity of connective tissue growth factor (CTGF). CTGF mRNA and protein expressions were determined through RT-qPCR and western blotting in MIR375 precursor transfected HT-29 cells, respectively. **Conclusion:** The results showed a significant decrease of CTGF transcripts and protein expression levels in MIR375 precursor treated cells. These results suggest that miR375 could play an important role in the pathogenesis of colon cancer.

Key Word(s): 1. microRNA; 2. CTGF; 3. MIR375; 4. colorectal cancer

Colonic and Anorectal Disorders

P-007

Resect and discard (RD) strategy for colonic polyps – is it prime time?

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Objective: The current practice of routinely resecting all diminutive (1–5 mm) and small (6–9 mm) colonic polyps and submitting them for histopathologic assessment may not be cost-effective. The resect-and-discard (RD) strategy has been proposed to reduce retrieval of diminutive and small polyps for histology (thought not to have advanced histologic features). In this cross-sectional study, we aim to find the prevalence of small and diminutive polyps resected that shows advanced histologic features such as high grade dysplasia (HGD) or carcinoma and determine if RD policy is feasible in the local tertiary setting. **Methods:** Data were retrieved from January–December 2009 with assistance from the Pathology Department to identify all submitted colonic polyp specimens. Each patient also had their colonoscopy report(s) and detailed histology report reviewed by 2 separate colleagues for data consistency. **Results:** The colonic distribution of the polyps was 45.4% right-sided, 46.1% left-sided and 8.5% rectal. There were 844 diminutive polyps, 447 small polyps and 191 large polyps with proportion of HGD being 18.7%, 37.6% and 56.5%, respectively. The percentage of HGD present in these polyps was relatively high. There were no concurrent carcinomas seen in all polyps. **Conclusion:** These findings showed that a significant proportion of diminutive polyps (18.7%) and small polyps (37.6%) harboured features of HGD, which is much higher than current literature. Based on size alone without the aid of image enhanced endoscopy (IEE), we find that RD strategy is not readily applicable in our local setting.

Key Word(s): 1. colonic polyps; 2. high grade dysplasia; 3. colorectal cancer; 4. resect and discard strategy; 5. image enhanced endoscopy

Colonic and Anorectal Disorders

P-008

Clinicopathologic characteristics of serrated polyposis syndrome in Korea

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Objective: Serrated polyposis syndrome (SPS) is a rare condition characterized by multiple serrated lesions spread throughout the colon and rectum. The risk of personal and familial colorectal cancer (CRC) is increased in SPS. The aim of this study is to evaluate clinicopathologic characteristics of SPS in Korea. **Methods:** This retrospective analysis of prospectively collected data was performed using information from the endoscopy, clinical record, and pathology database system of Uijeongbu St. Mary's Hospital. Consecutive patients fulfilling the updated 2010 World Health Organization criteria for SPS between June 2011 and May 2014 were enrolled. The database included demographic data (age, sex, history of smoking, personal or family history of CRC), characteristics of polyps (number of serrated polyps, size of the largest polyp, polyp location, resection for polyps, synchronous lesions), and the diagnostic criterion met. **Results:** Of the 17,552 patients who underwent colonoscopy during the study period, 11 (0.06%) met the criteria for SPS. The mean age of these patients was 55.6 years (range 35–72). Ten patients (91%) were male, and 7 (64%) had a history of smoking. None had family history of CRC or a first-degree relative with SPS. Seven patients (64%) had synchronous advanced adenoma. One patient had coexistence of SPS with CRC that was diagnosed at initial colonoscopy. Four patients (36%) had more than 30 serrated polyps, and average size of the largest polyp was 22 mm. One of the patients underwent surgery and 10 underwent endoscopic resection. **Conclusion:** The prevalence of SPS in this study cohort was comparable to that in Western population. Considering high risk of CRC, correct diagnosis and careful follow-up for SPS are necessary.

Key Word(s): 1. serrated polyposis syndrome; 2. serrated polyp

Colonic and Anorectal Disorders

P-009

Açaí reduces azoxymethane/dextran sulfate sodium-induced mouse colon carcinogenesis

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Colonic and Anorectal Disorders

P-012

The experience of colonoscopists affects the characteristics of detected polyps**Presenting Author:** JEON GI JUNG**Additional Authors:** TAE OH KIM, JAE HYUN PARK, MIN SUNG KIM, JONG WON YU, MIN SIK KIM**Corresponding Author:** JEON GI JUNG**Affiliations:** Inje University Haeundae Paik Hospital, Inje University Haeundae Paik Hospital

Objective: The PDR is critical to the success of colonoscopies for colorectal cancer screening. In clinical practice, the PDRs of individual endoscopists are seldom measured. Additionally, flat lesions or lesions of the proximal colon can be easily missed. **Methods:** Three colonoscopists participated, the PDR was calculated by assessing the percentage of patients with at least one polyp (method A) or by evaluating the relative number of lesions detected (method B). The primary outcome was the difference in PDR between the two methods, and the secondary outcome was the difference in the characteristics of the detected polyps. **Results:** Between March 2010 and February 2011, 2549 cases were analyzed. Significant differences in the PDR were observed among the three colonoscopists, and a covariate analysis was performed. In both methods, the PDR increased with the increase in the number of colonoscopies, whereas no differences were observed in the adenoma detection rate. In method B, the PDR for small polyps (<5 mm) and proximal polyps increased, whereas that for flat polyps did not change. **Conclusion:** The quality of colonoscopy, as measured by the PDR, increases with increased experience of the colonoscopist, as does the PDR of small polyps and polyps in difficult detection sites.

Key Word(s): 1. experience; 2. colonoscopist; 3. PDR

Colonic and Anorectal Disorders

P-013

Clinical analysis for sigmoid colon volvulus performed treated endoscopic intervention**Presenting Author:** NAOKI HIRANO**Additional Authors:** YOSHINORI IGARASHI, YASUKIYO SUMINO, YOHEI KOYAMA, NOBUHIRO DAN, YASUTSUGU ASAI, YUKI TAKEDA, NOBUO UEKI, KEN ITO, NOBUYUKI OBA, SHUTA NISHINAKAGAWA, TATSUYA KOJIMA**Corresponding Author:** NAOKI HIRANO**Affiliations:** Toho University Omori Medical Center, Toho University Omori Medical Center, Tokyo Rosai Hospital, Tokyo Rosai Hospital

Objective: Sigmoid colon volvulus is defined as the torsion of the large intestine around its mesenteric axis, leading to an acute colonic obstruction. It generally occurs in elderly patients who often have a serious coexisting disease, and has a high mortality when surgically treated. Endoscopic intervention alone is non invasive therapy, but it is associated with a high recurrence rate. **Methods:** The purpose of this study is to review our experience and result in the endoscopic treatment of patients of sigmoid colon volvulus. **Results:** We performed a retrospective study of 41 patients and undergoing 65 endoscopic treatment cases of sigmoid

colon volvulus between April 2004 and March 2014. We included a total of 41 patients (men 28, women 13) with a mean age of 78.2 years old. The average session of endoscopic intervention was 1.91 ± 1.55 times. The success rate of endoscopic detortion for sigmoid colon volvulus was 80% (52/65). In 13 unsuccessful endoscopic detortion cases, 4 cases were successful endoscopic detortion (repeated), 6 cases were operated on, 3 cases died. **Conclusion:** Endoscopic detortion for sigmoid colon volvulus was effective; however, the principal therapy of this condition is surgery. Only occasionally in patients with advanced age, lack of bowel symptoms and multiple co-morbidities might surgical repair not be considered.

Key Word(s): 1. colon volvulus

Colonic and Anorectal Disorders

P-014

Endoscopic treatments for patients with sigmoid colon volvulus**Presenting Author:** MOTOHIKO HIROSE**Additional Authors:** HIRANO NAOKI, SATO SHINJI, DOMON KAORU, UMAKOSHI TOMOKO, IGARASHI YOSHINORI**Corresponding Author:** MOTOHIKO HIROSE**Affiliations:** Toho University Omori Medical Center, Toho University Omori Medical Center

Objective: The volvulus of sigmoid colon is well known as a cause of colorectal obstruction. When the volvulus is not treated, it will result to intestinal strangulations and necrosis, perforation and peritonitis. So it requires emergency treatments. The volvulus is found frequently in patients such as bedridden elderly and neurological patients. Thus, it needs no invasive treatments. It is reported that endoscopic treatments for volvulus and surgical excision are effective. **Methods:** We studied forty-one patients with sigmoid colon volvulus treated endoscopically from April 2004 to March 2014 in our hospital. Mean average age was 78.2 ± 11.0 , male 28 cases and female 13 cases. Recurrence was 6 cases. **Results:** Endoscopic treatments for the volvulus of sigmoid colon were 65 times, 52 of all cases were successful (80.0%). 13 cases were impossible to endoscopic release for volvulus and intestinal necrosis was seen in 7 cases. Emergency surgical operation was performed on 4 cases. Two of 6 cases without intestinal necrosis required no emergency surgical operation. **Conclusion:** Endoscopic treatments for the volvulus were effective for sigmoid colon. When it is impossible to release of volvulus, we recommend surgical operation.

Key Word(s): 1. sigmoid colon volvulus

Colonic and Anorectal Disorders

P-015

Application of human placenta and adipose-derived mesenchymal stem cells for the treatment of radiation proctitis in rat**Presenting Author:** SUNG PYO HONG**Additional Authors:** KWANG HYUN KO, WON HEE KIM**Corresponding Author:** SUNG PYO HONG**Affiliations:** Cha Bundang Medical Center, Cha Bundang Medical Center

Objective: Radiation proctitis is a common complication of radiation to lower abdomen and pelvis. Different modalities of treatment are available; however, the efficacy is incomplete. Mesenchymal stem cells have

immunomodulatory capacity. We hypothesized that human placenta and adipose-derived mesenchymal stem cells could have therapeutic potential on radiation proctitis. **Methods:** Placenta and adipose-derived mesenchymal stem cells were locally injected on distal rectal mucosa of female Sprague–Dawley rats within 24 hrs of 25 Gy rectal irradiation. 1, 2, 4 weeks later, they were sacrificed, and the rectum was removed to evaluate various parameters of inflammation. **Results:** Transplanted stem cell was identified at rectal mucosa during 4 weeks after irradiation. Severe proctitis was provoked after pelvic irradiation reflected with extensive inflammatory cell infiltration, loss of crypt epithelium and collagen deposition. However, treatment with mesenchymal stem cell restored these pathologic indices. In addition, mesenchymal stem cell had anti-inflammatory effect as indicated by elevated serum IL-10, decreased TNF- α and IL-6 levels. Also epithelial cell apoptosis was decreased with mesenchymal stem cell transplantation and regenerative property were increased. **Conclusion:** Placenta and adipose derived mesenchymal stem cell transplantation may be an effective therapeutic strategy to treatment of radiation proctitis.

Key Word(s): 1. radiation proctitis; 2. mesenchymal stem cells

Colonic and Anorectal Disorders

P-016

Regional colorectal cancer screening program using colonoscopy on an island: a prospective Niijima study

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Objective: Total colonoscopy has not been used in a national screening program for colorectal cancer (CRC) in Japan. We conducted a prospective CRC screening program on an island (Niijima), which is a part of Tokyo Metropolis, with a population of 3,068 individuals (men: 1,485; women: 1,583). A few years before our trial, the participation rate of a CRC screening program conducted on this island that used fecal immunochemical testing (FIT) was approximately 10–12%. This study aimed to evaluate the participation rate, safety, and efficacy of a CRC screening program using colonoscopy. **Methods:** Educational campaigns were actively conducted every month using information bulletins and special propaganda pamphlets for 1 year before recruitment. The primary recommended modality was colonoscopy, followed by FIT. The participants of this program were 1,671 individuals aged 40–79 years (men: 819; women: 852). Endoscopic equipment was set up at the health center in Niijima, and skilled endoscopists performed screening using colonoscopy. Endoscopic removal or surgery was indicated for all detected lesions. The participants were treated at the National Cancer Center Hospital within 6 months after colonoscopy. **Results:** A total of 656 (39.3%) individuals provided

consent for this screening program, and 87.0% (571/656) of participants chose colonoscopy as the primary screening procedure. The participation rate of individuals aged 40–69 years was significantly higher than that of individuals aged 70–79 years (42.4 vs. 29.8%; $P < .0001$). The completion rate of total colonoscopy was 99.6% (569/571) and there was no complication during this program. Detection rates of invasive cancer, high-grade dysplasia (HGD), advanced neoplasia, and any adenoma were 0.52% ($n = 3$), 2.6% ($n = 15$), 12.1% ($n = 70$), and 50.0% ($n = 289$), respectively. The adenoma detection rate in men and women aged 40–49 years, 50–59 years, 60–69 years, and 70–79 years was 42.2% and 26.3%, 65.3% and 28.0%, 68.7% and 43.8%, and 73.3% and 50.0%, respectively. The adenoma detection rate and incidence of advanced neoplasia were significantly higher in men than in women in all age groups; however, there was no difference in the incidence of HGD and invasive cancer between men and women. **Conclusion:** The CRC screening program using colonoscopy that was conducted on an island achieved considerably higher participation rate than the conventional screening program using FIT. Completion rate and safety of screening colonoscopy were excellent during this program. Detection rates of advanced neoplasia and any adenoma by skilled endoscopists in this program were considerably higher than those of previous reports.

Key Word(s): 1. colon cancer screening; 2. colonoscopy; 3. adenoma detection rate

Colonic and Anorectal Disorders

P-017

Effectiveness of the therapeutic barium enema for recurrent colonic diverticular bleeding in short periods

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Objective: Many patients with colonic diverticular bleeding experience recurrent bleeds within short periods, even when the site of the bleeding is detected and we performed endoscopic hemostasis with clipping. In this study we found the therapeutic barium enema to be effective for colonic diverticular rebleeding within 7 days after administration for lower gastrointestinal endoscopy. **Methods:** We retrospectively analyzed 219 cases of colonic diverticular bleeding treated between 2003 and 2011. Lower gastrointestinal endoscopy was performed immediately after admission in all cases. Some of these patients received a therapeutic barium enema with 600 ml of 60 w/v percentage barium in addition to conventional therapy. **Results:** The site of bleeding was identified in 138 (63%) of the 219 patients, and all of these patients underwent endoscopic hemostasis with clipping. After the clipping, 109 patients were observed conservatively (Group B) and 29 patients received additional high-dose barium impaction therapy within 5 days from admission (Group A). In the other 81 patients in whom no bleeding site was detected, 58 were observed conservatively (Group D) and 23 received therapeutic barium enemas within 5 days from admission (Group C). The rebleeding rates within 7 days were as follows: Group A, 4/29 (13.8%); Group B, 38/109 (34.9%); Group C, 1/23 (4.3%); Group D, 15/58 (25.9%). Significant differences were found between Group A and B ($p = 0.0278$), and between Group C and D ($p = 0.0309$), in log-rank tests by the Kaplan–Meier method to determine the free rates of rebleeding. **Conclusion:** The therapeutic barium enema effectively prevents recurrent colonic diverticular bleeding in short periods.

Key Word(s): 1. barium enema

Colonic and Anorectal Disorders

P-019

Stenting of the proximal malignant obstruction improved quality of life, provided surgical advantage as primary anastomosis, and enabled early introduction of chemotherapy

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Objective: Now self-expandable metallic stent (SEMS) placement for the treatment of malignant tumor-associated colonic obstruction is used as bridge-to-surgery (BTS) or as palliative care. In particular, SEMS placement is useful for patients with right colonic obstruction for whom a transanal ileus tube insertion cannot be performed. Our purpose was to determine the outcome after colonic stent placement to the proximal colon.

Methods: We evaluated pretreatment history, affected site, and pre- and post-SEMS treatment in 30 patients (16 male patients, mean age; 72 years) with malignant colonic obstruction. The right colon was affected in 11 patients. We evaluated these 11 cases, and we analysed effectiveness and safety of SEMS placement in patients with right colonic obstruction.

Results: In these 11 cases, SEMS placement was performed as BTS in 7 patients (concurrently treated with postoperative chemotherapy), and for palliative care in 4 patients. The SEMS placement was done in all patients with no significant complication. The reported incidental events included fecal ileus in 1 patient. 10 patients were able to eat at a mean of 2.5 days after SEMS placement, but only 1 patient could not achieve clinical success. In all cases of BTS, primary anastomosis could be performed. Chemotherapy was resumed at a mean of 8.6 days after SEMS placement in the patients treated with chemotherapy alone. Their general conditions suggested intolerance to surgery; however, early introduction of chemotherapy improved their conditions. After a mean follow-up of 7 months, 8 patients were alive, 3 patients died of the underlying disease.

Conclusion: Patients treated with SEMS placement were able to start eating at an early stage. Meanwhile, chemotherapy can be started early after the operation. Technical and clinical success rates are comparable to those seen with distal colonic stenting. Further study is necessary to evaluate the efficacy of SEMS placement, including long-term patient prognosis.

Key Word(s): 1. self-expandable metallic stent (SEMS); 2. bridge-to-surgery (BTS); 3. palliative care; 4. chemotherapy

Colonic and Anorectal Disorders

P-021

Long-term clinical outcome of Clostridium difficile infections: a single-center study

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Objective: With the increased use of antibiotics and a rapidly ageing population, incidence of Clostridium difficile infection (CDI) has risen worldwide. Recent studies have reported a similar pattern of increased incidence in Korea, though long-term clinical follow-up of CDI cases is lacking. We have therefore investigated the long-term clinical outcomes of CDI patients in terms of delayed recurrence rates, risk factors, and mortality rates. **Methods:** This study retrospectively recruited 120 hospital patients diagnosed with CDI between January 2007 and December 2008. Medical records and examination results were analyzed. 'Delayed recurrence' was defined as a relapse in symptoms 8 weeks after initial successful treatment. **Results:** Of the 120 patients enrolled, 87 were followed up for at least 1 year, with a mean follow-up period of 34.1 ± 25.1 months. Delayed recurrence of CDI was observed in 17 patients (19.5%), and significant risk factors for delayed recurrence were age >70 years (P = 0.049); Levin tube insertion (P = 0.008); and administration of a proton pump inhibitor or histamine 2 receptor-blocking drugs (P = 0.28). Cumulative mortality rates were 24.6% for 12 months, and 32.5% for 24 months. There was no reported case of death due to CDI. However, 2 cases of death with unknown cause could be attributed to CDI. **Conclusion:** Overall delayed recurrence after successful treatment of CDI was 19.5%. Although CDI-related mortality was low, the 24-month cumulative mortality rate in CDI patients was 32.5%, suggesting that a diagnosis of CDI may be predictive of severe morbidity and poor prognosis due to underlying disease.

Key Word(s): 1. Clostridium difficile; 2. recurrence; 3. mortality; 4. risk factors; 5. clinical characteristics

Colonic and Anorectal Disorders

P-022

Does colorectal adenoma increase the risk of gall bladder polyp?

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Objective: Colorectal adenoma and gallbladder (GB) polyp share many risk factors. However, studies concerning the association between them have been rare. The aims of this study were to evaluate whether colorectal adenoma increases the risk of GB polyps and analyze the risk factors of GB

polyp. **Methods:** Health examinees who underwent both hepatobiliary sonography and colonoscopy in Yeungnam University Hospital health promotion center from January 2010 to December 2013 were included. The clinical characteristics, colonoscopy and ultrasonographic findings of the subjects were reviewed and analyzed retrospectively. **Results:** Among 4327 subjects, colorectal adenoma was detected in 1431 (33.1%) and colorectal cancer in 11 (0.3%). GB polyp was noted in 358 (8.3%) cases. Subjects with colorectal adenoma only or with concomitant colorectal cancer had significantly more GB polyp than those without (143 (10.0%) vs 215 (7.4%), ($p = 0.004$)). Although mean age of the subjects was not significantly different depending on the presence of GB polyp, male was more common in subjects with GB polyp. Five (0.1%) subjects underwent operation of GB polyp and diagnosed as cholesterol polyp and/or adenoma. By multivariate analysis, gender, presence of GB stone, and presence of colorectal adenoma were significantly associated with presence of GB polyp. **Conclusion:** Colorectal adenoma is associated with risk of GB polyp. Meticulous examination with ultrasonography of GB should be considered especially in cases with male, presence of GB stone, and colorectal adenoma. Further studies concerning the common pathogenesis associated with both of them are warranted.

Key Word(s): 1. gallbladder polyp colorectal adenoma

Colonic and Anorectal Disorders

P-023

Prevalence and risk factor of colorectal adenoma in asymptomatic Korean young adulthood 20 to 39 years of age

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Objective: The prevalence of colorectal adenomatous polyps is rapidly increasing in average-risk population in Korea. But, there were few available data about colorectal adenoma in young adults under 40 years of age. We aimed to investigate the prevalence and risk factor of colorectal adenoma in Korean young adulthood 20 to 39 years of age. **Methods:** A cross-sectional study was conducted and the study participants were composed of asymptomatic young adulthood 20 to 39 years of age who underwent their colonoscopy screening for the first time as part of employer-provided health wellness program at the Health Promotion Center, Samsung Changwon Hospital, Korea, from January 2011 to December 2013. Finally, 4286 participants with no risk of colorectal cancer (personal history of colorectal polyp or inflammatory bowel disease, family history of colorectal cancer) were included and we analyzed prevalence and characteristics of colorectal adenoma by classifying into two groups with colorectal adenoma group ($n = 497$) and colorectal adenoma-free group ($n = 3789$). Also, we used logistic regression model to identify risk factors of colorectal adenoma in young adulthood. **Results:** The prevalence of colorectal adenoma and advanced adenoma were 11.6% (497/4286) and 0.9% (39/4286). Based on each decade of age group, the prevalence of colorectal adenoma was 5.4% (33/608) in 20 to 29 years of age and 12.6% (464/3678) in 30 to 39 years of age. Also, based on gender, there were 13.1% (403/3072) in men and 7.7% (94/1214) in women. The colorectal adenoma group ($n = 497$) comparing with adenoma-free group ($n = 3789$)

was more likely to have higher levels in mean age (35.32 ± 3.49 years vs. 33.62 ± 3.89 years), male sex (81.1% vs 70.4%), smoking history, alcohol consumption, BMI (24.33 ± 3.46 kg/m² vs. 23.74 ± 3.36 kg/m²), waist circumference (84.66 ± 9.16 cm vs. 82.98 ± 8.95 cm), elevated triglyceride (113.44 ± 80.84 mg/dL vs. 100.22 ± 71.86 mg/dL), reduced HDL (56.95 ± 13.88 mg/dL vs. 58.60 ± 14.32 mg/dL) and presence of metabolic syndrome (11.9% vs. 8.9%). By multivariable analysis using logistic regression model, age over 30 years old (OR, 2.37; 95% CI, 1.64–3.43), current smoker (OR, 1.48; 95% CI, 1.15–1.92), alcohol consumption intaking more than 40 g/day (OR, 1.30; 95% CI, 1.03–1.64) were associated with increased risk of colorectal adenoma. **Conclusion:** The prevalence of colorectal adenoma and advanced adenoma in young adults under 40 years of age were 11.6% and 0.9%, comparable to those of previous small studies. Age over 30 years old, cigarette smoking, and alcohol consumption were associated with increased risk of colorectal adenoma in young adults.

Key Word(s): 1. colorectal adenoma; 2. prevalence; 3. Korean; 4. young adulthood

Colonic and Anorectal Disorders

P-025

A case of tuberculous anal fistula in a patient with recurrent perianal pain

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Objective: Introduction: Extrapulmonary tuberculosis accounts for 5% of all cases of tuberculosis. Anorectal tuberculosis is a rare extrapulmonary form of the disease. We present a case of middle-aged man, who presented by recurrent anal abscess with fistula, underwent incision and drainage with seton's operation three times. Despite proper managements, he relapsed twice and was diagnosed with a tuberculous anal fistula at third operation.

Methods: Case: A 56 year old man visited at hospital due to persistent perianal pain and anal discharge aggravated for one week. He was operated for anal fistula 10 years ago, but had persisted intermittent anal discharge. Initial digital rectal exam showed external opening of anus at 11-o'clock position, 5 cm distant from anal verge. Abdominal pelvic CT showed perianal abscess, and there was no other specific abnormality including internal opening into rectum in colonoscopy. Incision and drainage with seton's operation for anal abscess with fistula were performed. His condition was improved and he was discharged from the hospital. However, perianal pain on defecation with mucoid and bloody discharge at fistula opening recurred 8 months after operation. He was readmitted and anal fistulectomy with seton division on recurrence of anal fistula was performed. The histological finding showed chronic granulomatous inflammation with caseation necrosis which was compatible with tuberculosis. Tissue acid-fast bacilli staining and tuberculin skin test was negative, but interferon-gamma assay was positive. He had no history of pulmonary tuberculosis and chest X-ray was normal. He received anti-tuberculous treatment for 6 months and there were no further complaints. **Results:** None. **Conclusion:** Tuberculosis can be a rare cause of perianal fistula. Therefore, it should be considered in the differential diagnosis of recurrent anal fistula.

Key Word(s): 1. tuberculosis; 2. anal fistula

Colonic and Anorectal Disorders

P-026

Clinical features of colonic diverticulitis and diverticular bleeding**Presenting Author:** IWATA MASAYA**Additional Authors:** NYUZUKI SATORU, HARADA MANABU, KAWAUCHI KUNIHIRO, YAMAKAWA RYOICHI**Corresponding Author:** IWATA MASAYA**Affiliations:** *Kaetsu Hospital, Kaetsu Hospital, Kaetsu Hospital, Kaetsu Hospital*

Objective: Colonic diverticula sometimes result in diverticulitis and/or diverticular bleeding. In Western countries, diverticulitis is more commonly found in the left side and diverticular bleeding more so in the right. However, in some Asian countries including Japan, the opposite is generally the case, with diverticulitis found in the right and diverticular bleeding in the left. Most patients recover with conservative treatment. However, some patients require endoscopic, radiological or surgical intervention. The aim of this study was to clarify clinical features of diverticulitis and diverticular bleeding. **Methods:** We evaluated 321 consecutive patients with diverticulitis and diverticular bleeding admitted to our hospital between January 2000 and January 2014. **Results:** 235 patients (73.2%) were diverticulitis (154 males, 81 females, median age 49, range 16–91) and 86 patients (26.8%) were diverticular bleeding including 10 patients with diverticulitis and diverticular bleeding (46 males, 40 females, median age 74.5, range 29–97). The ratio of diverticulitis in the left side and right was 49:186 ($P < 0.001$). The ratio of diverticular bleeding in the left side and right was 56:30 ($P < 0.01$). Patients with diverticulitis were more frequent ($P < 0.001$), younger ($P < 0.001$) and more commonly found in the right side ($P < 0.001$) than patients with diverticular bleeding. In diverticulitis, 215 patients (91.5%) recovered with conservative treatment. 19 patients (8.1%) required surgical intervention (9 patients [18.4%] in the left side [$n = 49$], 10 patients [5.4%] in the right [$n = 186$]) due to peritonitis 6, perforation 7, abscess 2, stricture 1, and others 3. Patients with diverticulitis in the left side required surgical intervention more frequently than in the right ($P < 0.01$). 2 patients including one patient who required surgical intervention died due to sepsis. In diverticular bleeding, 84 patients (97.7%) recovered with non-surgical treatment. One patient with diverticulitis and diverticular bleeding required surgical intervention due to perforation. One elderly patient died due to diffuse cerebral infarction. 22 patients (25.6%) required blood transfusions. 44 patients (51.2%) required therapeutic barium enema. The median period from the onset of bleeding to hemostasis was 3 days (range 1–14). **Conclusion:** Diverticulitis was more commonly found in the right side and diverticular bleeding more so in the left. Patients with diverticulitis were more frequent, younger and more commonly found in the right side than patients with diverticular bleeding. Diverticulitis in the left side required more careful observation than in the right due to a greater necessity of surgical intervention. 97.7% patients with diverticular bleeding recovered with non-surgical treatment. However, an elderly patient or a patient with diverticulitis and diverticular bleeding would require more careful observation.

Key Word(s): 1. diverticulitis; 2. diverticular bleeding; 3. diverticulum

Colonic and Anorectal Disorders

P-027

Endoscopic submucosal dissection for correct diagnosis of dysplasia in ulcerative colitis**Presenting Author:** KEN ICHI MIZUNO**Additional Authors:** JUNJI YOKOYAMA, MASAOKI KOBAYASHI, YOSHIFUMI TAKAHASHI, KAZUYA TAKAHASHI, YUKI NISHIGAKI, TAKASHI YAMAMOTO, YUTAKA HONDA, SATORU HASHIMOTO, MANABU TAKEUCHI, YUICHI SATO, YOICHI AJIOKA**Corresponding Author:** KENICHI MIZUNO**Affiliations:** *Graduate School of Medical and Dental Sciences, Niigata University Medical and Dental Hospital, Graduate School of Medical and Dental Sciences, Niigata University Medical and Dental Hospital, Niigata University Medical and Dental Hospital, Niigata University Medical and Dental Hospital, Graduate School of Medical & Dental Sciences, Niiga, Graduate School of Medical & Dental Sciences, Niiga, Graduate School of Medical and Dental Sciences*

Objective: Dysplasia in ulcerative colitis (UC) has become an important problem as the incidence increases. However, there is substantial inter- and intra-observer variability in the assessment of dysplasia among pathologists. Biopsy specimens should therefore be of adequate size for the correct diagnosis of dysplasia. Endoscopic submucosal resection (ESD) is useful for lesions with submucosal fibrosis. For correct diagnosis of dysplasia, we used ESD to obtain larger specimens than those obtainable by forceps biopsy. **Methods:** A total of 8 lesions in 6 patients (4 men; mean age of 61.5 years) were resected by ESD at our hospital from June 2007 through January 2014. The average disease duration was 21.0 years. The mean lesion size was 12.0 mm. All of the lesions were diagnosed as dysplasia on forceps biopsy before ESD, and the extent of tumor was confirmed by circumferential negative biopsies for 5 lesions. **Results:** Seven of 8 lesions were resected en bloc; the other lesion was resected piecemeal. Perforation occurred as a complication of the piecemeal resection. Two lesions had a positive lateral resection margin. The definitive pathological diagnoses of 4 lesions on ESD were different from those on forceps biopsies. One HGD case was diagnosed as LGD after ESD procedure. Unnecessary surgery could be avoided in this case. Colectomy should be recommended in these cases. **Conclusion:** ESD is useful as a diagnostic tool for dysplasia in UC, but must be performed carefully because dysplasia can be associated with submucosal fibrosis and poorly defined lesion margins.

Key Word(s): 1. ulcerative colitis; 2. dysplasia; 3. endoscopic submucosal dissection

Colonic and Anorectal Disorders

P-028

Colooscopy for women**Presenting Author:** RIKA NAKANO**Additional Authors:** HIROKI SHIMODA, TAKAOKI KURODA, YASUSHI TANOUE, NAOKI SASAHIRA, HISATO MAEKAWA**Corresponding Author:** RIKA NAKANO**Affiliations:** *Tokyo Takanawa Hospital, Tokyo Takanawa Hospital, Tokyo Takanawa Hospital, Tokyo Takanawa Hospital, Tokyo Takanawa Hospital***Objective:** Now the first cause of the female cancer mortality is colorectal cancer in our country. However, the colorectal cancer medical

check up rate of the woman is very low at 18% and detailed examination does not reach half. Because most colonoscopists nowadays are males, we introduce colonoscopy for the women doctors, women medical staffs, and all women patients since we are able to contribute to the improvement of detailed examination rate, as reported here. **Methods:** We compare the percentage of the women in all the patients, the percentage of less than 50-year-old youth women and the number of discovery of the neoplastic lesion more than an adenoma for 15 months before and after the introduction of colonoscopy for women. **Results:** The percentage of women in all patients before and after the introduction, there was no significant difference between the 38.2% → 40% ($p=0.3$), but the proportion of young women to have a significant increase 18.5% → 23% ($p=0.04$). And the discoveries of neoplastic lesions is also significantly increased 8.2% → 15.7% ($p=0.02$) in young women. **Conclusion:** I could offer that because of the system a young woman can be easily examined, and the possibility to be connected for the early detection of the neoplastic lesion was suggested by the introduction of the colonoscopic system for women. **Key Word(s):** 1. women colonoscopist

Colonic and Anorectal Disorders

P-029

Association between physical activity levels and colon adenoma

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Objective: Colon cancer is the number 1 cancer in Singapore with mortality rates comparable to the West. Colon cancer is related to physical inactivity and regular exercise can reduce the likelihood of colon cancer. The mechanisms underlying the link between physical inactivity and colon carcinoma and its precursor, adenoma, have not been elucidated. We seek to determine the relationship between colon adenoma status and physical activity in a multiethnic Asian cohort. **Methods:** Consecutive outpatients aged 45–70 years scheduled for colonoscopy were prospectively interviewed by a trained research coordinator. Anthropometric measurements and detailed medical histories were obtained. Physical activity levels were characterised using a validated questionnaire (IPAQ). Metabolic equivalent scores (MET score) reflecting the energy cost of their physical activities was derived from the questionnaire. Serum specimens were obtained from subjects prior to colonoscopy for biomarker analysis. Colonoscopy findings were prospectively documented. Standard statistical methods were used to determine the relationship between colonic adenoma and physical activity. **Results:** 47 patients were studied. 26 were males (55.3%), median age was 55.5 (range 46–72 years). 11 patients (23.9%) had colonic adenoma. Median total physical activity performed is 2253 Met-min/week. Subjects with colonic adenoma had lower median total physical activity levels compared to healthy controls (1386 MET-min/week vs 2481 METmin/week). **Conclusion:** The prevalence of colonic adenoma is associated with decreased overall physical activity levels.

Key Word(s): 1. colonic adenoma; 2. physical inactivity

Colonic and Anorectal Disorders

P-031

Clinical significance of CT-defined ascites in patients with colorectal cancer

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Objective: Peritoneal carcinomatosis from colorectal cancer has been associated with poor survival. The purpose of this study was to evaluate the clinical significance of ascites which was only defined by the computed tomography (CT) and whose nature was not determined preoperatively, in the relationship with the peritoneal carcinomatosis. **Methods:** This is a retrospective single-institution study which examined 470 patients with colorectal cancer based on the pathologic examination in our institute between January 2009 and April 2014. Factors associated with peritoneal carcinomatosis were analyzed in 45 patients who had CT-defined ascites. **Results:** CT detected ascites in 45 of 470 cases (9.57%). Among 45 patients, only 4 of 45 (8.89%) patients were associated with peritoneal carcinomatosis. There is not much difference with respect to cancer stage, CEA level, and ascite amount between the two groups. But the tumor size and regional lymph node enlargement may have relation with peritoneal carcinomatosis. **Conclusion:** CT offers efficient detection of ascites, but there are not much understanding between ascitic fluid and peritoneal seeding. Ascites accompanied with enlarged regional lymph node and bulky sized tumor may be associated with peritoneal carcinomatosis. But in patients with colorectal cancer, defined ascites alone is rarely associated with peritoneal carcinomatosis, if it does not accompany other signs suggestive of malignant seeding.

Key Word(s): 1. colorectal cancer peritoneal carcinomatosis ascites

Colonic and Anorectal Disorders

P-033

Microscopic colitis – a missed diagnosis in irritable bowel syndrome

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Objective: There is considerable overlap between the symptoms seen in patients with microscopic colitis (MC) and the symptom-based criteria for diarrhea predominant irritable bowel syndrome (IBS-D). Clinical symptom based criteria for IBS is not sufficient enough to rule out the diagnosis of MC. There is increasing evidence of microscopic inflammation in patients with IBS. Therefore, we sought to study the prevalence of MC in a prospective cohort of IBS. **Methods:** In this prospective study colonic mucosa of 197 patients with IBS (129 IBS-D, 50 IBS-C and 18 IBS-M) were examined for the evidence of MC. IBS were diagnosed with Rome II criteria and (a)typical MC were diagnosed by clinical symptom, normal or near normal endoscopic findings and characteristic histological changes. **Results:** The mean age of patient with MC (M : F::11:35) at presentation was 37 ± 13.74 years (Range, 17–82 years). The overall prevalence of MC in patients with IBS was 23.4% (46/197). The prevalence of MC in patients

with IBS-D was 28.7% (37/129), higher than in patients with IBS-C 12% (6/50) and IBS-M 16.7% (3/18). Overall atypical MC cases constituted 13.24% (9/68). Colonic mucosa had a normal appearance in most of the patients with MC. **Conclusion:** Microscopic colitis is present in a relevant proportion of symptomatic patients meeting diagnostic criteria for IBS. Despite the fact that IBS is a functional disorder, in many patients morphological changes in colon mucosa occur. The diagnostic criteria of IBS are not specific enough to exclude the presence of MC. Therefore, in patients of IBS, it may be reasonable to perform a biopsy to screen for MC. **Key Word(s):** 1. microscopic colitis; 2. irritable bowel syndrome; 3. IBS; 4. colon; 5. diarrhea

Colonic and Anorectal Disorders

P-034

A study of advanced colorectal cancer with BRAF mutation

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Objective: Oncogenic pathway of SSA/P-derived serrated pathway has recently attracted attention. We have reported that SSA/P was found more often in the right side of the colon of older women and shows the type II-open pit pattern in magnifying endoscopy. BRAF mutation was common in SSA/P and MSI positive cases were detected in cancerous cases including follow-up. We retrospectively investigate advanced colorectal cancer and report assumption of SSA/P derived from advanced colorectal cancer and its characteristics. **Methods:** Of advanced colorectal cancer which was performed by surgical resection at our center between July 2009 and July 2013, analysis was performed on 148 cases (148 lesions) which could be analyzed by molecular biology and pathology. Age, gender, localization, tumor size, gross morphology, tissue type and genetic mutation were investigated. **Results:** Classification of the target lesion is as follows; the number of male is greater than female (93 vs. 55 cases) in gender differences. Regarding age, 69 cases with <70 years old and 79 cases with \geq 70 years old. The mean patient age was 69.1 years old. With respect to location and tumor size, there are 58 cases in the right side of colon and 90 cases in the left side of colon. With respect to tumor size, there are five cases with <20 mm, 73 cases with between 20 mm and 50 mm and 70 cases with >50 mm. The mean tumor size was 49.1 mm. By the genetic analysis, BRAF mutation, six cases (4.1%); Kras mutation, 38 cases (25.7%); no variation, 104 cases (70.2%). Regarding BRAF mutation, male, 3 cases; female, 3 cases. The mean age was 70.7 years old. Four cases were \geq 70 years old and two cases were male. The mean tumor size of BRAF mutation lesion was 40.8 mm, with two cases with tumor size between 20 and 50 mm. There were no localized portions observed in three

cases in the right and left side colons. Macroscopic form was type 2 in all cases. Regarding histology, well-differentiated adenocarcinoma was not observed. All of the cases were moderately differentiated + poorly differentiated adenocarcinoma or moderately differentiated adenocarcinoma histology. **Conclusion:** The results of the study show that the rate of advanced cancer with BRAF mutation (serrated pathway) was as low as 4.1%, which suggested high-grade cancer due to its histological type. However, the finding indicates a contradiction regarding age, sex ratio, and localization, not the similar characteristics of SSA/P. Thus, it can be presumed that there is the possibility that all of SSA/P do not become cancerous, another factor has influence on canceration and malignant transformation from another lesion. Further clinicopathological and molecular biological investigation is warranted.

Key Word(s): 1. serrated pathway BRAF mutation

Colonic and Anorectal Disorders

P-035

Clinico-pathological profile of colorectal cancer in 158 Bangladeshi patients

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Objective: Globally, cancer of colon and rectum is the fourth most common cancer in male and third leading cause of cancer in female with mortality paralleling incidence. Incidence of colorectal carcinoma is highest in developed countries and lowest in Asia. But no data regarding colorectal cancer in Bangladesh is available. With this background this retrospective study was done in the northeastern part of the country. **Methods:** Records of consecutive patients of colorectal carcinoma, diagnosed in a diagnostic centre of Sylhet from March 2012 to February 2014, were retrieved. Personal data, colonoscopic findings and histopathological reports were analysed. Age 40 or below were taken as younger group and age above 40 years were taken as older group. **Results:** A total of 158 patients of colorectal carcinoma were found. Their age varied from 17 years to 90 years with mean 50.77 years (SD \pm 17.23). Among them 96 (60.8%) were male and 62 (39.2%) were female. More affected people 118 (74.7%) were from rural community. It is also found more common among old age group 105 (66.45%). Most common presenting symptom was bleeding per rectum in 87 (55.1%) cases. Other symptoms were abdominal pain with or without intestinal obstruction 33 (20.9%), altered bowel habit in 28 (17.7%), mass in abdomen and anaemia in the rest of the case. Most common site of lesion was at rectum including two cases with lesion at anal canal, in 80 (50.6%) cases and in majority of cases 114 (72.15%); site of lesion was distal to splenic flexure. Histopathologically 156 cases were adenocarcinoma while the remaining two were squamous cell type. **Conclusion:** In this series colorectal carcinoma is found to be more common among older age group. Most common presenting symptom was bleeding per rectum. Rectum and recto-sigmoid areas were the commonest site of lesion.

Key Word(s): 1. colorectal cancer; 2. clinico-demographic profile

Colonic and Anorectal Disorders

P-036

Clinical course and management of sigmoid volvulus after colonoscopic treatment**Presenting Author:** AKINORI SHIRAHIGE**Additional Authors:** NAOKO NAMBA, YUKITO WATANABE, REIKO OYAMA, MAIKO YABE, KYOUKO OTA, HIROAKI TANIOKA, SHINICHI SHIMIZU, TAKUMI KISHIMOTO**Corresponding Author:** AKINORI SHIRAHIGE**Affiliations:** Okayama Rosai Hospital, Okayama Rosai Hospital

Objective: Sigmoid volvulus (SV) is a well recognised cause of acute large bowel obstruction. SV is the wrapping of the sigmoid colon around itself and its mesentery. Decompression and removal of volvulus is known as colonoscopic treatment of SV. Many articles show high recurrence rates in conservatively managed patients via colonoscopic treatments. The aim of this study is to review the clinical course and to decide management of SV after colonoscopic treatment. **Methods:** The clinical records of 26 patients with acute SV treated at our institution between February 2000 and January 2014 were retrospectively reviewed. In total, there were 45 separate hospital admissions. **Results:** The mean age was 76.2 years (range 51–96 years), and 17 patients (65.4%) were male. One patient was managed with urgent surgery. Twenty three patients were managed with colonoscopic decompression or removal of volvulus. The overall mortality rate for non-operative management was 4.0% (1 of 25 patients). The one death in our overall series occurred in patients with established gangrene of the bowel. Nine patients were managed with elective surgery after initial colonoscopic treatment. The recurrence rate of SV after initial successful non-operative management was 67% (8 of 12 patients). Five patients had operative management (four semi-elective following colonoscopic treatments, 1 emergency). There was no mortality in the semi-elective surgery group. The overall mortality for surgery was 5.9% (1 of 17 patients). Three of the eight patients managed with colonoscopic treatment alone who survived were subsequently re-admitted with SV. We could perform laparoscopic sigmoidectomy without colostomy, after passing the 7th day or more from colonoscopic treatment. **Conclusion:** The initial treatment of SV is colonoscopic treatment. All patients should be considered for definitive surgery after initial colonoscopic treatment because of high recurrence rate. After bowel preparation, we can perform laparoscopic sigmoidectomy without colostomy.

Key Word(s): 1. sigmoid volvulus; 2. colonoscope; 3. management; 4. operation

Colonic and Anorectal Disorders

P-037

Clinical significance of CYFRA 21-1 in patients with colorectal cancer**Presenting Author:** TOMOKO SUNAMI**Additional Authors:** DAISUKE KAWAI, KOJI TAKEMOTO, SYOTARO OKANOUE, ERIKO YASUTOMI, CHIHIRO SAKAGUCHI, MAYU MURAKAMI, SHOHEI OKA, NORIKO OKAZAKI, YUKI BABA, HISASHI ISHIKAWA, RYUTA TAKENAKA, HIROFUMI TSUGENO, SIGEATSU FUJIKI**Corresponding Author:** TOMOKO SUNAMI**Affiliations:** Tsuyama Central Hospital, Tsuyama Central Hospital

Objective: The carcinoembryonic antigen (CEA) and cancer antigen 19-9 (CA 19-9) are useful for detecting colorectal cancer (CRC) and for monitoring CRC staging. However, low accuracy and high false-positive rate are a problem because they are influenced by host factors. The CYFRA 21-1 is well known as tumor marker of lung cancer and is not influenced by host factors. Recently, few reports revealed that CYFRA 21-1 can be a positive CRC marker and a useful CRC staging monitor. But this fact is still unclear. The aim of this study is address this issue. **Methods:** A retrospective analysis of 92 primary CRC patients (68 colon cancer and 24 rectal cancer) which measured these 3 tumor markers in our institution (between April 2012 and May 2014) was done. We examined positive ratio of these 3 tumor markers, clinicopathologic factor (Dukes' stages [divided into two groups, Dukes' A-B-C and D]), and positive ratio of combination assay. **Results:** Positive ratio of CYFRA 21-1 (cut off: ≥ 3.5 ng/ml) is 34% in colon cancer and 29% in rectal cancer. Those are lower than CEA (cut off: ≥ 5.0 ng/ml), but higher than CA19-9 (cut off: ≥ 37.0 U/ml). As for the relationship between Dukes D and Dukes A-B-C of tumor markers (CEA, CA 19-9, and CYFRA 21-1) in colon cancer, there are significant differences ($p < 0.05$). In rectal cancer, positive ratio of CEA in Dukes D were significantly higher than positive ratio of Dukes A-B-C ($p < 0.05$). Dukes D in CYFRA 21-1 indicate a meaningful tendency compared to Dukes A-B-C ($p = 0.066$). In combination assay, positive ratio of "CEA or CYFRA 21-1" was higher than positive ratio of "CEA or CA 19-9" and of "CA 19-9 or CYFRA" in both colon cancer and rectal cancer. **Conclusion:** Measuring CYFRA 21-1 and CEA is clinically valuable to detect CRC and predict CRC staging compared with measuring CEA and CA19-9.

Key Word(s): 1. CYFRA 21-1; 2. colorectal cancer

Colonic and Anorectal Disorders

P-038**Two cases of mesenteric phlebosclerosis****Presenting Author:** KAZUNORI TAKAHASHI**Additional Authors:** SHIMOYAMA TADASHI, YAMAMOTO YOICHI, KOJI SHIMAYA, SATOKO ITOH, NORIHIRO HANABATA, KOSUKE KANAZAWA, MASANORI TANAKA, HIROSHI NUMAO, MASAKI MUNAKATA, SHINSAKU FUKUDA**Corresponding Author:** KAZUNORI TAKAHASHI**Affiliations:** Hirosaki University, Aomori Prefectural Hospital, Hirosaki City Hospital, Aomori Prefectural Hospital, Aomori Prefectural Hospital, Hirosaki University**Objective:** Mesenteric phlebosclerosis (MP) is a rare disease entity, characterised by thickening of the colon due to perfusion failure of mesenteric veins. Intake of herbal medicine, especially Sansisi, has been thought to associate with MP. We examined MP cases in our hospital.**Methods:** We reported two cases of MP, including one patient who developed a colonic cancer. **Results:** Case 1: A 70-year-old woman complained of abdominal pain. She had been taking Orengedokuto containing Sansisi for 22 years. Computed tomography (CT) showed linear calcifications along with mesenteric vein in the right hemicolon, and colonoscopy showed dark-purple mucosa in the same area. Biopsy specimens revealed phlebosclerosis and myointimal thickening of the veins. The diagnosis of MP was made, and discontinuation of Orengedokuto improved her symptoms. Case 2: An 80-year-old man complained of abdominal pain and vomiting. He had been taking Orengedokuto over 40 years. CT and colonoscopy showed the same observation as case 1. Colonoscopy also revealed an elevated flat tumor with shallow ulcer in the transverse colon and diagnosed as well differentiated adenocarcinoma by biopsy. The patient underwent right hemicolectomy. Histological examination revealed the presence of MP. The tumor invaded into the submucosa. Immunohistochemical staining was diffusely positive for p53, negative for betacatenin, and top-down type for Ki-67. The tumor was suspected as a colitic cancer and MP was considered as a possible cause. **Conclusion:** Both cases took Sansisi for a long period. Physicians should keep MP in mind and ask for history of drug administration for patients with unexplained abdominal pain. The cancer in the latter case was suspected to be a colitic cancer. There have been some cases with MP complicated solitary colon cancer while no literature described the association between MP and colitic cancer. It is necessary to accumulate cases to elucidate whether MP has a potential of carcinogenesis.**Key Word(s):** 1. herbal medicine; 2. mesenteric phlebosclerosis; 3. colonic cancer

Colonic and Anorectal Disorders

P-039**Long-term outcomes of endoscopic submucosal dissection for colorectal neoplasms****Presenting Author:** YOSHIFUMI TAKAHASHI**Additional Authors:** KEN ICHI MIZUNO, MASAOKI KOBAYASHI, KAZUYA TAKAHASHI, YU KI NISHIGAKI, SATORU HASHIMOTO, MANABU TAKEUCHI, TAKASHI YAMAMOTO, HONDA YUTAKA, JUNJI YOKOYAMA, YU ICHI SATO**Corresponding Author:** YOSHIFUMI TAKAHASHI**Affiliations:** Department of Endoscopy, Department of Endoscopy, Graduate School of Medical & Dental Sciences, Niiga, Graduate School of Medical & Dental Sciences, Niiga, Department of Endoscopy, Graduate School of Medical & Dental Sciences, Niiga, Department of Endoscopy, Department of Endoscopy, Graduate School of Medical & Dental Sciences, Niiga, Graduate School of Medical & Dental Sciences, Niiga**Objective:** Endoscopic submucosal dissection (ESD) for colorectal neoplasms was reported to provide a high en bloc resection rate with less invasiveness than surgical resection. However, detailed long-term outcomes remain unclear. The aim of this study was to clarify the long-term outcomes of colorectal ESD. **Methods:** A total of 482 patients with 501 colorectal epithelial neoplasms (185 adenomas, 314 carcinomas), who were treated with colorectal ESD at a single hospital between February 2005 and December 2013, were studied. Rate of en bloc resection, en bloc plus R0 resection, major complications and local recurrence were analyzed as the short-term outcomes. The 3- and 5-year overall survival and disease-specific survival were assessed in 401 patients as the long-term outcomes. **Results:** The mean age was 68.9 y.o. Rates of en bloc resection and en bloc plus R0 resection were 94.4% (473/501) and 96.2% (482/501), respectively. 22 patients underwent additional colectomy due to histopathological assessment of ESD specimen according to The Japanese Society for Cancer of the Colon and Rectum (JSCCR) guidelines. Local recurrence was detected in 1 lesion (0.31%). In this case, the resection had been piecemeal. The disease-specific survival was 100% because no patients died of colorectal neoplasms. 26 patients died of other coexisting disease. The 3-year and 5-year overall survivals were 96.5% and 90.9% during median follow-up of 61.9 and 73.3 months, respectively. **Conclusion:** Colorectal ESD showed good long-term outcomes and acceptable rate of en bloc resection and en bloc R0 resection.**Key Word(s):** 1. endoscopic submucosal dissection (ESD); 2. long-term outcome; 3. overall survival

Colonic and Anorectal Disorders

P-040**Do women prefer to undergo colonoscopies for the first time by female doctors?****Presenting Author:** HAJIME TAKISAWA**Additional Authors:** TETSUJI TERAZAWA, TAKU SAKAMOTO, YASUO KAKUGAWA, YUTAKA SAITO**Corresponding Author:** HAJIME TAKISAWA**Affiliations:** National Cancer Center Hospital, National Cancer Center Hospital, National Cancer Center Hospital, National Cancer Center Hospital**Objective:** In Japan, disease rate and mortality rate for colorectal cancer (CRC) is increasing and disease rate of inflammatory bowel disease (IBD) is increasing as well. In diagnosing CRC and IBD, colonoscopy is an

effective method. The low screening rate when a colonoscopy is recommended as a follow-up test to a positive fecal occult-blood testing (FOBT) is problematic, however. One possible explanation for this low screening rate among women patients might be their anxiety and hesitance to undergo a colonoscopy with male physicians. Although several studies have indicated that women prefer female physicians for breast or genital examinations, there are only few reports on whether women prefer female endoscopists since colon disease is not specific to women. The aim was to investigate whether women patients preferred to undergo colonoscopies for the first time conducted by female doctors. **Methods:** Subjects are women who received colonoscopies as a follow-up test to a positive FOBT or an asymptomatic screening examination for the first time aged 40 years or older. Researchers chronicled patients' colonoscopist sex preference before and after the colonoscopies, along with patient characteristics, by utilizing a self-administered questionnaire (period: April 2012 to March 2013). **Results:** There were 275 subjects. The survey prior to the exam showed that 98 women (35.6%) (A) preferred female colonoscopists, 173 women (62.9%) had (B) no preference, and 4 women (1.5%) (C) preferred male colonoscopists. The post exam survey showed (A) 30.2%, (B) 66.2% and (C) 3.6%. In women younger than 45 years, while the proportion who preferred female colonoscopist is 60%, which was only 28% at 45 years of age or older. Significant difference ($p < 0.001$) was found in age and employment in preferring female colonoscopists, but medical history, complication, surgery history, malignant disease of family history had no relations. Pre-examination survey showed that 246 women (89.5%) had some type of negative images to colonoscopy, 166 women (60.4%) answered "scary", 119 women (43.2%) answered "embarrassed", 105 women (38.2%) answered "painful", and 19 women (7.0%) answered "others". The main reason for women who preferred female colonoscopist was "embarrassed". Among the 98 women who preferred female colonoscopists, none of them preferred male colonoscopists for the next exam, 31 people (31.6%) had "no preference" and 67 people (68.4%) preferred female colonoscopists. The reasons for having no preference was that 4 people said "sex does not matter as long as they are experts", and 1 person said "because of the anesthetics, sex of the examiner was not a bother". **Conclusion:** Majority of the women who have colonoscopy for the first time have negative images for colonoscopy and younger and employed women tend to prefer female endoscopists. About 30% of the women who desired female endoscopists did not have preference for the next examination. It was suggested that female doctors should be actively assigned for younger and employed women so they will not lose the opportunity for having an exam because of embarrassment and anxiety and contribute to the improvement of colonoscopy examination rate.

Key Word(s): 1. sex preference; 2. women subjects; 3. colonoscopy

age. Association with autoimmune diseases (e.g. celiac disease, diabetes, thyroiditis) or drugs (carbamazepine, sertraline, ticlopidine) has been reported. More smokers than non-smokers are affected. No treatment is accepted as the standard (loperamine, cholestyramine, metronidazole, mesalazine, corticosteroids are used). More authors report good effect of the corticosteroids. The prognosis of the condition is usually good.

Methods: Case description: Colonoscopy was performed in a 70-year-old Caucasian male. Large ulcers in the right colon were found (Figure 1). The patient had smoked for many years, he used antiarrhythmic drugs, clopidogrel and PPI. NSAID-induced colitis was thus excluded. Endoscopy appearance suggested the possibility of Crohn's disease. MRI enteroclysis was in accordance with this hypothesis; it indicated terminal ileum involvement, too. Histopathology examination of multiple biopsies was in accordance with lymphocytic colitis (Figure 2). The lymphocyte number was higher, collagenous colitis and signs of IBD were excluded. Immunological findings were normal. Parasite or other infectious (incl. CMV, yersinia) diseases were excluded. Prednisolone 40 mg daily and 5-ASA 2, 4 g daily were started. The symptom disappeared completely within 2 months and mesalazine was discontinued. The corticosteroids were tapered. After 6 months the endoscopic and histopathologic findings were normalized. **Results:** Images: Figure-1 Figure-2. **Conclusion:** This case suggests that microscopic colitis might rarely present with endoscopic finding which mimics other GI disease.

Key Word(s): 1. endoscopy; 2. lymphocytic colitis; 3. ulceration

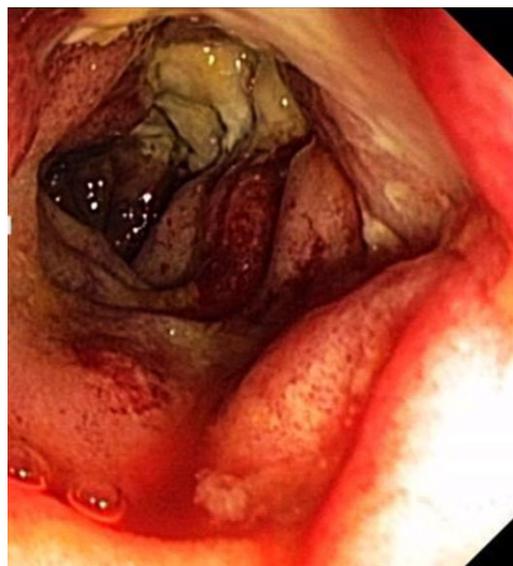


Figure 1

Colonic and Anorectal Disorders

P-041

Surprising macroscopic appearance of microscopic lymphocytic colitis – a case report

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Objective: Introduction: Lymphocytic colitis is characterized by chronic diarrhea with microscopic changes (presence of more than 20 intraepithelial lymphocytes/100 enterocytes) and normal appearance of the mucosa. Possible pathological endoscopic findings are non-specific and discreet. The etiology is unknown, occurrence is higher after 40 years of

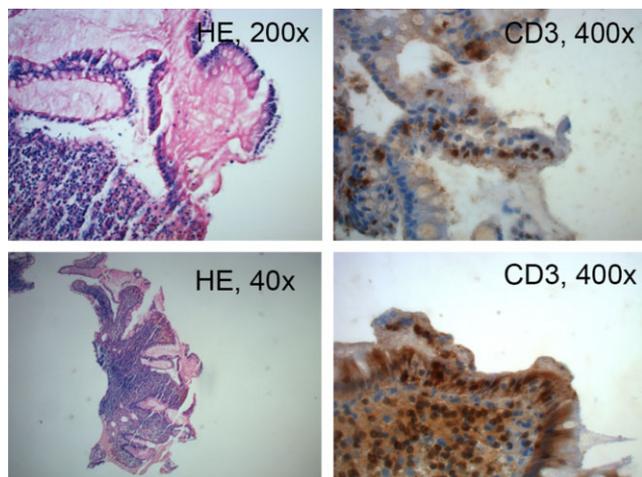


Figure 2

Colonic and Anorectal Disorders

P-042

Complete appendiceal intussusception secondary to a hamartomatous polyp: a case report

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Objective: 1. To present a case of appendiceal intussusception and hamartomatous polyp of the appendix in a 64 year old female. 2. To review the management of appendiceal intussusception. **Methods:** Appendiceal intussusception is an extremely rare condition with a prevalence of 0.01%. Approximately 200 cases of appendiceal intussusception have been reported in the surgical literature, but very few have ever been diagnosed preoperatively. The mechanism and pathogenesis of intussusception of the appendix is divided into anatomical and pathological causes. Clinical manifestations of appendiceal intussusception are non specific. Tumors of the appendix are uncommon and most tumors are benign. Hamartoma of the appendix is an extremely rare condition. Most cases of hamartoma in the gastrointestinal tract have been found in patients who had been suffering from Peutz-Jeghers syndrome. Appendiceal hamartomatous polyp in the absence of Peutz-Jeghers syndrome has been reported only in two cases and even in those patients with Peutz-Jeghers syndrome, appendiceal hamartomatous polyps has been reported only in a few studies. To the best of our knowledge, this is the first case of appendiceal intussusception secondary to a hamartomatous polyp. It is important that an intussuscepted appendix is managed appropriately. These lesions may be misinterpreted as a broad-based cecal polyp during colonoscopy, and subsequent endoscopic resection may result in unexpected complications, such as perforation and peritonitis. In those cases uninvolved by a concurrent malignant tumor, reduction at laparotomy or laparoscopy with subsequent appendicectomy, or right hemicolectomy is the surgical treatment of choice. However, in the circumstances when a malignant tumor of the appendix is also present, right hemicolectomy or ileocecal resection with lymph node dissection should be performed. **Results:** This is a case of a 64 year old, female who

was admitted in our institution due to hematochezia. One day prior to admission, patient had 4 episodes of hematochezia not associated with abdominal pain nor vomiting. Persistence of hematochezia resulted in consultation at the emergency room. Physical examination was unremarkable. At the emergency room, vital signs were stable. Complete blood count showed mild anemia with hemoglobin of 110 g/L and platelet of 325,000. She underwent colonoscopy and showed a smooth tubular structure originating from the appendiceal lumen and projecting into the cecum. The tip of the tubular structure ends in a necrotic fungating polypoid mass occupying about 60% of the cecal lumen. Colonoscopy also showed a solitary cecal diverticulum and internal hemorrhoids. CT scan of the whole abdomen with IV contrast was also done, and this revealed a tubular structure within the cecal area measuring about 7.1 cm × 0.4 cm ending in an ovoid soft tissue density about 2.6 cm × 1.8 cm in size. She eventually underwent exploratory laparotomy and right hemicolectomy with side to end anastomosis and lymph node dissection because malignancy cannot be ruled out. Intraoperative findings showed appendix inverted into the cecal lumen with tip exhibiting polypoid mass. The appendix measured 6.0 cm × 1.1–1.5 cm and the mass measured 4.0 × 3.0 × 2.0 cm. The post-operative course was uneventful and the patient was eventually discharged. Histopathological finding of the mass showed hamartomatous polyp. **Conclusion:** Our case was definitely diagnosed on colonoscopy by following the appendiceal orifice. Recognition of appendiceal intussusception is important in avoiding misdiagnosis and misguided attempts at endoscopic removal or inappropriate surgery. Failure to recognize this condition has resulted in patients undergoing colonoscopic polypectomy with resultant perforation and peritonitis.

Key Word(s): 1. appendix; 2. intussusception; 3. hamartomatous polyp

Colonic and Anorectal Disorders

P-043

Adult onset schönlein-henoch purpura: study of 8 cases

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Additional Authors: YUKI BABA, SHOTARO OKANOUE, MAYU MURAKAMI, CHIHIRO SAKAGUCHI, TOMOKO SUNAMI, SHOHEI OKA, NORIKO OKAZAKI, DAISUKE KAWAI, KOJI TAKEMOTO, RYUTA TAKENAKA, HIROFUMI TSUGENO, SHIGEATSU FUJIKI

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Objective: Schönlein-Henoch purpura (SHP) is a small vessel vasculitis associated with immunoglobulin A (IgA) complex deposition. Though it primarily affects children (over 90% of cases), the occurrence on adults has been rarely reported (about 5% of cases). It is characterized by the clinical tetrad of non-thrombocytopenic palpable purpura, abdominal pain, arthritis and renal involvement. **Methods:** 8 patients of SHP (between June 2007 and July 2014) were studied retrospectively. We examined about age, sex, gastrointestinal (GI) symptoms, GI lesions, treatments. 6 cases are observed in small intestines by capsule endoscopy and double balloon endoscopy. **Results:** Age at onset ranged from 21 to 86 years (median 63.5). 5 patients were male and 3 patients were female. GI symptoms included abdominal pain (100%), diarrhea (37%), nausea (14%), distension of abdomen (14%). GI lesions were located in terminal ileum (88%), duodenum (100%), stomach (63%), jejunum (37%), and colon (37%). The

lesions were described as irregular ulcer, erosion, redness. The most common lesion was multiple irregular ulcer in terminal ileum (75%). Other patients had redness in terminal ileum. 4 patients developed nephritis. 4 patients had *Helicobacter pylori* (HP) antibody. Steroid remitted GI symptoms and improved GI lesion in all patients. **Conclusion:** These results

suggest that steroids may reduce abdominal resion of SHP in adults. 6 of 8 patients had multiple irregular ulcer in terminal ileum and all patients had small intense lesions.

Key Word(s): 1. Schönlein-Henoch purpura

Table 1.

Case	Age	Sex	Compliant	GI lesion	Treatment	Nephritis	HP
1	71	M	Lower abdominal pain Diarrhea	D,I	PSL60 mg (1 mg/kg)	–	+
2	29	M	Lower abdominal pain Diarrhea	I	PSL60 mg (1 mg/kg)	+	+
3	45	M	Upper abdominal pain	S,D,I,C	mPSL500 mg	–	–
4	21	F	Lower abdominal pain	D,I	PSL50 mg (1 mg/kg)	+	–
5	56	M	Upper abdominal pain Nausea	S,D,I,C	mPSL500 mg	+	+
6	76	M	Upper abdominal pain Distension of abdomen	S,D,J,I	PSL60 mg (1 mg/kg)	+	–
7	86	F	Abdominal pain	S,D,J,I	PSL20 mg	–	+
8	83	F	Diarrhea Vomiting	S,D,J,I,C	–	–	N/A

S: Stomach, D: Duodenum, J: Jejunum, I: Ileum, C: Colon.

Colonic and Anorectal Disorders

P-044

Is colonoscopy truly needed in elderly patients aged 85 years or over with positive FOBT?

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Objective: As the Japanese population continues to age, the number of FOBT-positive elderly individuals detected by medical screening is increasing. However, as these individuals have various underlying diseases, colonoscopy may not be the best option because of the risk of complications. We performed colonoscopy in FOBT-positive elderly individuals and investigated the final diagnoses and treatments offered.

Methods: A total of 43 FOBT-positive elderly patients (85 years old) who visited our department between June 2010 and June 2014 were examined by colonoscopy. Those with visible blood in the stool were excluded. Final diagnosis based on colonoscopy findings and subsequent treatments were investigated. **Results:** Subjects included 21 men and 22 women (average: 88.1/88.5 years). Colonoscopy revealed no abnormalities (hemorrhoid) in 14 patients, ischemic colitis in 3 patients, colon polyps \leq 5 mm in 12 patients (1 treated by EMR and 11 untreated), colon polyps 6–10 mm in 10 patients (5 treated by EMR and 5 untreated), colon polyps 11–20 mm in 3 patients (2 treated by EMR and 1 untreated), and advanced colon cancer in 1 patient (laparotomy). Among the patients who underwent EMR, adenocarcinoma was found in only 1 patient with 20 mm polyps. High-grade adenomas were found in 3 patients with polyps 11–19 mm, while low-grade adenomas were found in the remaining 7 patients. None of the patients had complications. **Conclusion:** The majority of very elderly FOBT-positive patients without visible blood in the stool had no abnormalities or low-grade adenoma when the polyp was small, showing that advanced colon cancer was relatively rare. Considering their advanced age, colon polyps are unlikely to progress rapidly to cancer in very elderly

patients. Thus, instead of offering colonoscopy to all very elderly FOBT-positive patients, non-invasive abdominal computed tomography may be useful to select those with suspected advanced colon cancer for further examination by colonoscopy.

Key Word(s): 1. very elderly patient; 2. FOBT-positive; 3. colonoscopy

Colonic and Anorectal Disorders

P-046

Glucagon-like peptide-1 analogue exendin-4 influence visceral hypersensitivity via PKA pathway

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Objective: The present study was designed to investigate the effect of GLP-1 analogue exendin-4 on visceral hypersensitivity in rat model, and its possible regulation on SERT expression and 5-HT reuptake.

Methods: Neonatal male Sprague-Dawley rats received intra-colonic injection of 0.5% acetic acid. Visceral sensation was determined by assessing abdominal withdrawal reflex (AWR) and electromyography (EMG) activity. Exendin-4 with doses of (1, 5, and 10 μ g/kg) was administered by intra-peritoneal injection. SERT expression was detected by quantitative PCR (qRT-PCR) and Western blotting. SERT function was determined by tritiated 5-HT reuptake experiment in IEC-6 cells. Forskolin, protein kinase A (PKA) inhibitors (H89) or adenylyl cyclase inhibitor (SQ22536) was used to investigate the GLP-1/ cAMP/PKA signaling pathway.

Results: Neonatal acetic acid (AA) intra-colonic treatment presented hypersensitivity to CRD in adult rats compared with controls. High levels of 5-HT were detected in plasma and colonic tissues in AA-treated rats ($P < 0.05$). Stimulated with exendin-4 at 10 μ g/kg could reduce visceral sensation. The expressions of SERT reduced in colon of the AA-treated rats, and increased after treatment with exendin-4. The expressions of SERT up-regulated and 5-HT reuptake function enhanced in IEC-6 cells after treatment with exendin-4 in dose- and time-dependently manner. The former effect was abolished by pre-treatment with exendin-9, SQ22536

and H89. Exendin-4 and forskolin increased PKA activity in IEC-6 cells.
Conclusion: Exendin-4, a GLP-1 analogue, can attenuate hyperalgesia in rats with neonatal colon sensitivity by up-regulating SERT expression and 5-HT reuptake, and its effect may involve in cAMP/PKA signaling pathway.

Key Word(s): 1. irritable bowel syndrome; 2. glucagon-like peptide-1; 3. serotonin transporter

Colorectal cancer

P-052

A population-based survey on knowledge, perception and attitude toward CRC screening

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Objective: Several western country has recommended colorectal screening, however the yield of colorectal screening still relative low. Acceptability of such screening influenced by knowledge, perception and attitude of the people. The study was conducted to determine the knowledge, perception and attitude of Indonesia people toward CRC screening. **Aim:** this study are assessing the knowledge perception and attitudes with regard to colorectal cancer screening. **Method:** Cross sectional study with an interview-based population survey carried out in adult ages 30-79 years old, the instrument was structured questionnaires consisting 9 chapters. This survey collected from health center in Depok and hospital in Sumatera and Java. **Result:** the result from 809 respondents collected indicates that there are 478 (59, 1%) female, 459 (56,7%) age >=50 years old, 611 (75,5%) high educated, 681 (84,2%) married, 458(56,6%) worked and 440 (54,4%) had income > 1 million, 76 (9,4%) done cancer colorectal screening, 25 (26,6%) good knowledge, 34 (7,6%) had a positive percep-

tion and 76 (17,1%) positive attitude and 74 (13,9%) respondent from hospital. Chi square analysis, respondent whom less knowledge have odds ratio 34,3 (95% CI ,12,7-92,5; P<0,0001) and respondent from hospital done CRC screening have odds ratio 22,34 (95% CI 5,442-91,22; P<0,0001). **Conclusion:** The knowledge, perception and attitude on colorectal cancer screening test still low in Indonesian people.

Key Word(s): 1. CRC screening; 2. knowledge; 3. perception; attitude

Colorectal Cancer

P-052A

Knife Assisted Resection (KAR) of large and refractory colonic polyps at a Western centre: feasibility, safety and efficacy study to guide future practice

Presenting Author: RUPAM BHATTACHARYYA

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Introduction: ESD enables en-bloc resection reducing recurrence rates, but is technically challenging with high complication rates and hence not widely practiced in the West. We have used a novel Knife Assisted Resection (KAR) technique. We aim to evaluate the outcome of KAR in treatment of large and refractory colonic polyps and identify polyp features that predict complications and recurrence after KAR. **Methods:** Cohort study of patients referred to our centre. All patients who had KAR of colonic polyps over 20 mm in size from 2006 to Feb 2013 were included. All procedures were performed by a single experienced endoscopist. The technique starts with submucosal (SM) injection followed by mucosal incision using a dual knife (Olympus KD-650L). This is followed by variable degrees of SM dissection and completion of circumferential mucosal incision. Finally a snare-assisted resection is performed in an en-bloc or piecemeal fashion. **Results:** 170 polyps in 170 patients of mean age 71 years. Mean polyp size 46 mm (20–170 mm). 29% were >50 mm. 22% were scarred from previous attempted resection. En-bloc resection: 70/170 (41%). Size of polyp <50 mm was a significant ($p < 0.001$) predictor of en-bloc resection. The complication rate was 14/170 (8.2%) with 8 (4.7%) bleeds and 2 (1.2%) perforations. Complications were not linked to polyp size, scarring or resection site. A single patient with perforation required surgery. All other complications were managed endoscopically. The recurrence rate was 21/151 (13.9%). This was significantly higher for polyps >50 mm ($p = 0.008$) and in polyps with fibrosis ($p = 0.002$). We observed that from 2011 to 2013, the en-bloc resection rates in polyps 20–50 mm without fibrosis steadily increased from year-to-year (33%–47%–77%). Demonstrating increasing experience did translate into improved en-bloc resection rates. **Conclusion:** This is the largest reported Western series on KAR in the colon. We have demonstrated feasibility, efficacy and safety of this technique for polyps of all sizes, with or without scarring; and at all sites. We have also identified significant outcome predictors and defined the learning curve. This can inform future standards of training and practice in the Western setting.

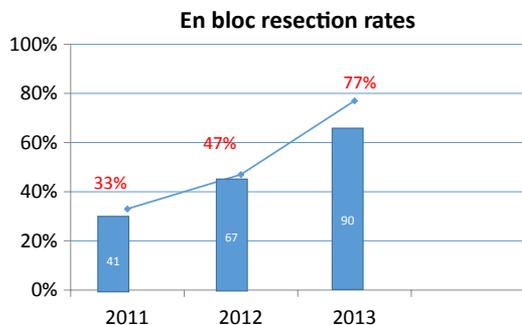
Key Word(s): 1. Endoscopy; 2. colon; 3. ESD

Table 1. Factors predicting en bloc resection

	SIZE		FIBROSIS		SITE	
	20–50 mm n = 120	>50 mm n = 50	Yes n = 37	No n = 133	LC n = 127	RC n = 43
EN BLOC RESECTION 70/170(41%)	64/120 (53%)	6/50 (12%)	12/37 (32%)	58/133 (44%)	49/127 (39%)	21/43 (49%)
	P < 0.001		P < 0.107		P < 0.900	

Table 2. Factors associated with recurrence

	SIZE		FIBROSIS		SITE		RESECTION TYPE	
	20–50 mm	>50 mm	yes	no	LC	RC	En bloc	Piecemeal
RECURRENCE 21/151 (13.9%)	9/112 (8%) P = 0.008	12/39 (31%)	9/30 (30%) P = 0.002	12/121 (10%)	18/112 (16%) P = 0.319	3/39 (7.7%)	3/66 (4.5%) P = 0.091	18/85 (21.2%)



Endoscopy

P-053

Salvage endoscopic resection of scarred polyps after failed previous endoscopic resection attempt: SENSE Study

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Objective: Current standard of care for recurrent/residual polyps after previous endoscopic resection is surgery. This study analyses the outcomes of salvage endoscopic resection of polyps with severe scarring. **Methods:** Prospective cohort study of patients referred to a tertiary-centre for resection of scarred polyps with failed previous endoscopic resection attempts. Resection technique: ESD knife & Snare combination (KAR) or Snare & APC combination (SAR). **Results:** 64 patients were referred for polypectomy, with mean polyp size 46 mm (20–150 mm). 83% were left-sided and 17% right-sided. 67% of resection were performed by KAR with mean polyp size 50 mm. 33% of resections were by SAR with mean polyp size 38 mm. Referral to surgery: 2/64 for technically difficult so no attempt is made, 5/64 for cancer. Endoscopic follow up & cure: 94% overall cure rate. Average number of resections with KAR 1.36 vs SAR 1.44. Cure after 1 attempt with KAR was 64% as compared to 73% with SAR. Complications: 3/64 (4.6%) bleeding, no perforation, no emergency surgery. Had all 64 patients been sent for surgery the total National Health Service cost would have been £343,224. The total cost of the endoscopic approach, including the cost of patients requiring surgery, was £149,820, representing an average cost saving of £3021.94 per patient. **Conclusion:** Polyps with extensive scarring, in the left or right colon, related to previous failed attempts, can be cured by further endoscopic resection by experts. Selection of technique based on polyp size and degree of scarring results in similar outcomes between KAR and SAR. Complication rate is not different from unscarred polyps and is acceptable. Surgery, with its inherent morbidity and mortality can be avoided in 89% of patients at a cost saving of £3021.94 per patient. We would advocate an aggressive endoscopic resection strategy over surgery when dealing with scarred polyps.

Key Word(s): 1. scarred polyps; 2. colonoscopy; 3. ESD; 4. EMR

Endoscopy

P-054

Diagnostic and therapeutic efficacy of endoscopic enucleation for small gastric muscularis propria layer tumor

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Objective: Gastric subepithelial tumors originated from muscularis propria (MP) are partly benign tumors, but some gastric stromal tumors have malignant potential, especially gastrointestinal stromal tumors (GISTs). PM tumors are usually treated by surgical intervention and endoscopic treatment remains controversial. The aim of this study was to retrospectively evaluate the utility of endoscopic enucleation for diagnosis and treatment of MP tumors. **Methods:** From January 2010 to June 2013, forty patients with gastric MP tumor (≤ 20 mm) underwent endoscopic enucleation. Before endoscopic resection, all patients performed endoscopic ultrasound to determine the layer of origin and the accurate size. Small PM tumor (< 12 mm) was resected by using band ligation method and PM tumor (range 12–20 mm size) was enucleated by endoscopic submucosal resection (ESD) technique using various endo-knives. Tumor characteristics, tumor size, procedure technique, complete resection rate and recurrence were analyzed. **Results:** A total 40 patients (16 men, 24 women; mean age 50.3 years) were eligible for inclusion in this study. The histologic diagnosis was leiomyoma ($n = 24$), GIST ($n = 15$) and schwannoma ($n = 1$). Band ligation method was used in 20 patients. Median procedure time was 8 min (5–26) and complete resection rate was 95% (19/20). Two patients developed perforation, which was closed by endoscopic methods with metallic clips. ESD method was used in 20 patients. The mean procedure time was 41.1 minutes (range 10–260) and complete resection rate was 60% (12/20). Four cases were complicated by perforation, and the perforations were closed with metal clips. The mean follow-up time was 9.8 months (range 3–35). No recurrence was developed during follow-up period. **Conclusion:** Endoscopic enucleation appears to be an effective method for the histologic diagnosis and removal of small MP layer tumors (< 2 cm). However, there is a risk of perforation which has become manageable endoscopically.

Key Word(s): 1. gastric subepithelial lesion; 2. ESD; 3. enucleation; 4. band ligation

Endoscopy and Imaging

P-055

The efficacy and cost efficiency of hospital-made polyethylene glycol (PEG) compared to branded PEG for colonoscopy preparation**Presenting Author:** DADANG MAKMUN**Additional Authors:** MURDANI ABDULLAH, ARI FAHRIAL SYAM, ACHMAD FAUZI, KAKA RENALDI, ABDUL AZIZ RANI, MARCELLUS SIMADIBRATA**Corresponding Author:** DADANG MAKMUN**Affiliations:** *Dr. Cipto Mangunkusuko General Hospital – Fmui, Dr. Cipto Mangunkusuko General Hospital – Fmui***Objective:** To reduce the cost of colonoscopy by producing hospital-made PEG and comparing its efficacy and efficiency with branded PEG.**Methods:** A randomized double blind study was conducted among 154 patients who underwent colonoscopy from April 2013 to November 2013. All patients were divided into two groups. The first group received hospital-made PEG while the other group received branded PEG. The quality of bowel preparation for colonoscopy was assessed by using Aronchick's criteria. The cost efficiency was analyzed by comparing the price of branded PEG with hospital-made PEG production cost. The hospital-made PEG was prepared by the Department of Pharmacy Cipto Mangunkusumo National General Hospital. **Results:** In hospital-made PEG group, 32 patients (41.6%) were categorized as excellent, 27 patients (35.1%) good, 2 patients (15.6%) fair, 5 patients (6.5%) poor bowel clearance and 1 patient (1.3%) inadequate result. Meanwhile in branded PEG group, 37 patients (48.1%) were categorized as excellent, 22 patients (28.6%) good, 16 patients (20.8%) fair, 2 patients (2.6%) poor bowel clearance and no patient was included in the inadequate category. The quality of bowel clearance between two groups were similar ($p = 0.997$). In regard to cost efficiency, the production cost of hospital-made PEG was 5.49% of branded PEG price. The production cost of hospital-made PEG was IDR 11,000 (USD 1) compares with the price of branded PEG which was IDR 200,500 (USD 18.2) per unit. **Conclusion:** There were no differences in the efficacy of colon clearance between those two products. Hospital-made PEG was more cost effective compared with branded PEG.**Key Word(s):** 1. colon clearance; 2. hospital-made PEG; 3. branded PEG; 4. efficacy; 5. efficiency

Endoscopy and Imaging

P-056

The use of balanced scorecard to support achievement of business plan in Digestive Endoscopy Center, 2013**Presenting Author:** MURDANI ABDULLAH**Additional Authors:** DADANG MAKMUN, ACHMED FAUZI, AAN SANTI**Corresponding Author:** MURDANI ABDULLAH**Affiliations:** *Cipto Mangunkusumo Hospital Jakarta, Cipto Mangunkusumo Hospital Jakarta, Cipto Mangunkusumo Hospital Jakarta***Objectives:** Digestive Endoscopy Center (PESC) was established in 2011 which located in ICU Building, 2nd Floor. Its concept was developed as Center of Excellence (CoE) with business plan created includes diagnosticand clinical services of international standard, specialized training of Gastroenterology, training / gastrointestinal endoscopy courses, research in the field of gastrointestinal endoscopy-based basic and clinical, services and facilities based on safety and patient satisfaction, fast, accurate, quality and One Stop Services. In 2013 is the 2nd year in PESC business plan development and expected to increase in many aspects. So that, necessary measurement instruments to measure the performance of business plan in PESC using Balanced Scorecard. **Methods:** This studies was conducted from April-December 2013 with quantitative method and Cross Sectional studies on 76 subjects and also used secondary data from Endoscopy's reports. The balanced Scorecard contains 4 measurements, such as financial approach, customer approach, internal process approach, and learning and growth approach. **Results:** The financial approach resulted that income from 2 type of patients: cash and insurance patients was increased in 2013 than 2010. The customer approach resulted a high satisfaction rate with mean 4.69 of 5 for patient satisfaction and the employee satisfaction increased in 2013 than 2010 with mean in 2013 is 3,88 of 5 and in 2010 is 3,64 of 5. For internal process approach was measured using facilities and infrastructure discovered its increased too. Learning and growth approach resulted that accumulation of trainings, achievement of target of the trainings was increased. **Conclusion:** The Achievement of business plan has been evaluated using balanced scored card and showed that there is a balanced on the financial approach, customer approach, internal process approach, and learning and growth approach.**Key Word(s):** 1. balanced scorecard; 2. business plan; 3. endoscopy center

Endoscopy and Imaging

P-057

The comparison between propofol sedated air-colonoscopy and non-propofol sedated water-colonoscopy: a randomized controlled-single blind study**Presenting Author:** MURDANI ABDULLAH**Additional Authors:** DADANG MAKMUN, ARI FAHRIAL SYAM, KAKA RENALDI, HASAN MAULAHELA, AMANDA PITARINI UTARI, CECEP SURYANI SOBUR, MARCELLUS SIMADIBRATA**Corresponding Author:** MURDANI ABDULLAH**Affiliations:** *Cipto Mangunkusumo Hospital Jakarta, Cipto Mangunkusumo Hospital Jakarta***Objectives:** To compare patient's experience who underwent colonoscopy between propofol sedated air-method and non-propofol sedated water-method. **Methods:** This is a single center, single blind RCT in Digestive Endoscopy Center of Cipto Mangunkusumo General Hospital-Faculty of Medicine Universitas Indonesia, Jakarta that compare patient's experience between propofol sedated air-colonoscopy and non-propofol sedated water-colonoscopy. Cecal intubation, VAS score of pain (0-10) after the procedure and willingness to repeat colonoscopy were compared between two groups of treatments. Total of 130 patients who meet inclusion criteria and sign the informed consent will be randomized with 65 patients assign to each arm of procedure. **Results:** Until Oct 2014, 83 patients were recruited consecutively with 56 (M/F: 33/23) patients underwent non-propofol sedated water-colonoscopy and 27 (M/F: 19/8) patients underwent propofol sedated air-colonoscopy. Propofol sedated air-colonoscopy vs non-propofol sedated water-colonoscopy comparisons revealed: cecal intubation time 10:56±10:50 vs 09:32±08:47 ($p=0.774$,

Mean-Whitney test); VAS score of pain 0.07 ± 0.267 vs 2.14 ± 2.467 ($p=0.000$, Mean-Whitney test); and willingness to repeat colonoscopy 100% vs 87.5%. **Conclusion:** While statistically for cecal intubation time insignificant, VAS score of pain result have shown propofol sedated air colonoscopy gave better patient's experience than non-propofol sedated water-colonoscopy.

Key Word(s): 1. propofol; 2. non-propofol; 3. sedated air and water colonoscopy

Endoscopy and Imaging

P-058

Endoscopic repair of an anastomotic leak using Over the Scope Clip (OTSC) system: a case report

Presenting Author: AHMAD SHUKRI

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Objective: To evaluate the successful closure using OTSC system of an anastomotic leak or fistula. **Methods:** In this case report we described a successful closure using OTSC system of an anastomotic leak at the gastro-oesophageal junction following partial gastrectomy.

Results: Fistula and anastomosis are significant complications post gastrointestinal surgery. The Over-the-Scope-Clip (OTSC) has been described to be a successful treatment for closure of the fistula and anastomosis.

Conclusion: Endoscopic application of the OTSC system is safe, effective and a less invasive alternative to surgery for treatment of anastomotic leak.

Key Word(s): 1. OTSC; 2. Over the Scope Clip; 3. fistula; 4. anastomosis; 5. gastrointestinal leaks; 6. endoscopy repair

Endoscopy and Imaging

P-059

Prospective comparison of endoscopic ultrasound-guided fine-needle aspiration and surgical histology in gastric submucosal tumors

Presenting Author: KAZUYA AKAHOSHI

Additional Authors: OYA MASAFUMI, TADASHI KOGA, YASUAKI MOTOMURA, MASARU KUBOKAWA, JYUNYA GIBO, NOBUKATSU KINOSHITA, SHIGEKI OSADA, KAYO TOKUMARU, NARU TOMOEDA

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Objective: To assess the accuracy of endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA) in the differential diagnosis of gastric submucosal tumors (SMT) using histology and immunohistochemical analysis. **Methods:** From October 2002 to February 2014, 127 consecutive patients with gastric hypoechoic solid SMT diagnosed by standard EUS who underwent surgery after preoperative EUS-FNA were evaluated prospectively. The gold standards for the final diagnosis were histologic findings of surgically resected specimen. Additionally, immunophenotyping of specimens obtained by EUS-FNA and surgical resection specimens were compared. **Results:** Postoperative histological diagnosis were 109 GISTs (85.8%), 7 neurinomas (5.5%), 5 SMT like cancers (3 primary gastric cancers and 2 metastatic cancers) (3.9%), 2

leiomyomas (1.6%), 2 Glomus tumors (1.6%), 1 accessory spleen (0.8%), and 1 gauzeoma (0.8%). In 4 cases puncture was not performed because of anatomical problems. The diagnostic rate of the gastric hypoechoic solid SMT by EUS-FNA was 93.7% (119/127). In 119 surgically resected cases who were conclusively diagnosed by preoperative EUS-FNA, the diagnostic accuracy of EUS-FNA using immunohistochemical analysis of gastric hypoechoic solid SMT was 95.7% (114/119). No major complications were encountered. **Conclusion:** EUS-FNA with immunohistochemical analysis is an accurate and safe preoperative histologic test of differential diagnosis of Gastric SMT.

Key Word(s): 1. EUS-FNA; 2. GIST; 3. SMT; 4. stomach; 5. immunohistochemical analysis; 6. histology

Endoscopy and Imaging

P-060

Endoscopic biopsy in the user of antithrombotic agents

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Objective: It has been recommended, if antithrombotic treatment is at least a single use, to perform endoscopic biopsy without cessation of antithrombotic agents, also in the guideline of Japan since 2012. Past reports supporting the guidelines, have indicated the safety of biopsy for these patients by evaluating the development of severe gastrointestinal bleeding complication. However, since such patients are basically elderly, and have comorbidity of cerebro-cardiovascular disease, even if there is no severe bleeding complication after biopsy, anemia due to asymptomatic potential bleeding could lead to serious condition. Therefore, we investigated the development of bleeding complication after biopsy, containing asymptomatic potential bleeding. **Methods:** This prospective cohort study entered consecutive outpatients who needed esophagogastroduodenoscopy without cessation of antithrombotic agents in our institution, and hemoglobin levels were checked just before endoscopy. Patient performed biopsies among these patients were re-checked hemoglobin levels 1 to 2 weeks later, and were asked about episodes of bleeding and thrombosis. Calculating the amount of hemoglobin change: ΔHb (g/dl): (post-biopsy)—(pre-biopsy), we analyzed what kinds of clinical factors influenced ΔHb . **Results:** 65 patients were performed endoscopic biopsy without cessation. No patients experienced severe complication after biopsy. Hemoglobin levels after biopsy are significantly lower than those before biopsy (12.3 ± 1.8 g/dl vs 12.5 ± 1.9 g/dl; $P=0.015$). ΔHb of biopsy number (3 or more) was significantly more than that of biopsy number (1 or 2) (0.4 ± 0.8 g/dl vs 0.1 ± 0.5 g/dl; $P<0.05$). **Conclusion:** In patients treated with antithrombotic agents, biopsy may not increase the risk for severe complications, even if there is no cessation of antithrombotic agents. However, 3 or more biopsies had better be avoided since it could lead to asymptomatic potential bleeding.

Key Word(s): 1. antithrombotic; 2. biopsy

Endoscopy and Imaging

P-061**Randomized prospective trial comparing tolerability to 2 L polyethylene glycol and sodium phosphate tablets****Presenting Author:** SOICHIRO AKO**Additional Authors:** KOUJI TAKEMOTO, CHIHIRO SAKAGUCHI, MAYU MURAKAMI, TOMOKO SUNAMI, SHOHEI OKA, NORIKO OKAZAKI, YUUKI BABA, DAISUKE KAWAI, RYUUTA TAKENAKA, HIROFUMI TSUGENO, SHIGEATSU FUJIKI**Corresponding Author:** SOICHIRO AKO**Affiliations:** Tsuyama Chuo Hospital, Tsuyama Chuo Hospital

Objective: Colonoscopy aids in colon disease diagnosis but requires prior consumption of solutions for bowel preparation. The volume and taste are major factors for patients that prevent from colonoscopy. We compared the colon cleansing tolerability and quality with 2 L polyethylene glycol (PEG) and sodium phosphate (NaP) tablets. **Methods:** We enrolled 200 patients who were randomly assigned to the PEG or NaP tablet groups. In the PEG group, patients were asked to drink 2 L PEG over 2 h on the morning of procedure. In the NaP tablet group, they were asked to take 30 tablets with 2 L water/tea (3 tablets every 10 min with 200 mL water). Regimen tolerability and bowel cleansing quality were assessed by patient questionnaire and colonoscopists, respectively. Regimen tolerability was rated as easily acceptable, relatively acceptable, relatively unacceptable or unacceptable about taste, volume and total valuation. Quality of bowel cleansing was rated as good, fair, poor or inadequate. **Results:** In the overall patient cohort (n = 193), no serious adverse events were observed. More patients receiving NaP tablets choose easily acceptable or relatively acceptable in all respects: taste (51% PEG, 74% NaP), volume (48% PEG, 74% NaP) and total valuation (65% PEG, 80% NaP). Tolerability was better in the NaP tablet group than in the PEG group (p < 0.05). In quality of bowel cleansing the ratio of good or fair was higher in the PEG group (92% PEG, 80% NaP). The PEG group showed better bowel cleansing (p < 0.05). **Conclusion:** Tolerability to NaP tablets was superior to that to PEG. However, bowel cleansing quality by the PEG regimen was significantly better than that by the NaP tablet regimen.

Key Word(s): 1. colonoscopy; 2. polyethylene glycol; 3. preparation; 4. randomised prospective trial; 5. sodium phosphate tablet

Endoscopy and Imaging

P-063**Water immersion colonoscopy facilitates straight passage of the colonoscope through the sigmoid colon without loop formation: randomized controlled trial****Presenting Author:** SATOSHI ASAI**Additional Authors:** NAOKI FUJIMOTO, KOUJIROU TANOUE, EISUKE AKAMINE, MIKIO NAMBARA, NORIFUMI HIROOKA, NORIFUMI HIROOKA, HIDEO YANAGI, MINORU OGAWA, ATSUHIRO OGAWA**Corresponding Author:** SATOSHI ASAI**Affiliations:** Tane General Hospital, Tane General Hospital

Objective: One of major causes of pain during colonoscopy is looping of the instrument during insertion through the sigmoid colon, which causes discomfort by stretching of the mesentery. There are a lot of studies in colonoscopy techniques, but they are not assessed objectively with respect to colonoscope passage through the sigmoid colon without loop formation. The aim of this study is to determine whether cap-fitted colonoscopy and water immersion increase the success rate of insertion through the sigmoid colon without loop formation. **Methods:** A total of 1005 patients were randomized to standard colonoscopy, cap-fitted colonoscopy or water immersion technique. All examinations were performed under a magnetic endoscope imaging device. The main outcome was the success rate of insertion without loop formation. **Results:** The success rate of insertion without loop formation was 37.5%, 40.0%, and 53.8% in the standard, cap, and water groups, respectively (standard-water p = 0.00014, cap-water p = 0.00186). There were no significant differences among the groups about the cecal intubation rate, the cecal intubation time and the number of polyps >5 mm per patient. **Conclusion:** Water immersion increased the success rate of insertion through the sigmoid colon without loop formation. This practical technique, just to prepare a cap and water, is useful without compromising cecal intubation rate, cecal intubation time, or polyp detection rate.

Key Word(s): 1. Water immersion; 2. water navigation colonoscopy; 3. water assisted colonoscopy; 4. cap fitted colonoscopy

Endoscopy and Imaging

P-064**Factors causing poor bowel preparation in colonoscopy****Presenting Author:** JACOBUS ALBERTUS AUWYANG**Additional Authors:** SETYOKO SETYOKO**Corresponding Author:** JACOBUS ALBERTUS AUWYANG**Affiliations:** Tugurejo Hospital

Objective: Poor bowel preparation accounts for 20% of failed colonoscopies and can also lead to failure to detect pathology during the procedure. We aimed to identify independent factors affecting bowel preparation in colonoscopy. **Methods:** 249 consecutive colonoscopies performed in 2011–2013 were identified. Data were retrospectively collected on age, gender, patients' medical co-morbidities, history of previous surgery and malignancy, type and effectiveness of bowel preparation, medication used during the procedure, and endoscopic findings such as presence of diverticular disease. Logistic regression analysis was used to identify independent factors affecting bowel preparation in colonoscopy. **Results:** Male

gender (OR 0.78, 95% CI 0.70–0.95, $p = 0.01$), increasing age (OR 0.99, 95% CI 0.98–0.99, $p = 0.001$) and presence of a respiratory condition such as asthma, COPD, or severe interstitial lung disease (OR 0.54 95% CI 0.44–0.73, $p < 0.001$) were independently associated with poor bowel preparation. Meanwhile, patients who received bowel preparation at home (OR 2.04, 95% CI 1.35–3.07, $p = 0.001$) were found to be more likely to have good bowel preparation. Presence of other medical co-morbidities (cardiovascular, renal, neurological, gastrointestinal and musculoskeletal), endoscopic findings of diverticular disease and severe IBD, history of previous surgery and malignancy did not have statistically significant effect on the quality of bowel preparation. **Conclusion:** Female patients were more likely to have good bowel preparation for colonoscopy and this could be due to better compliance in this group. Elderly patients and those with respiratory conditions were likely to have inadequate bowel preparation, which could be related to poor mobility and general ill health. Patients who took the bowel preparation at home were likely to have better outcome and this could be related to the comfort and easier access to the toilet.

Key Word(s): 1. Poor bowel preparation; 2. colonoscopy; 3. risk factors

Endoscopy and Imaging

P-065

Innovations in interventional EUS: Asia-Pacific surging ahead of the West?

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Objective: There is growing interest among endoscopists to be trained in EUS as interventions are being increasingly performed and there are significant opportunities for clinical research and device development. Aim: Identify important milestones and track growth and development of interventional EUS around the World. **Methods:** A PUBMED search was undertaken by two independent physicians to identify all peer-reviewed publications related to EUS-guided interventions since 1995. Advanced procedures were defined as creation of a conduit between organs (drainage of pancreatic fluid collection/gallbladder/pelvic abscess, hepaticogastrostomy, choledochoduodenostomy, pancreaticogastrostomy). Data were evaluated geographically based on (a) first report of the procedure, (b) novelty (technique or device development) (c) number of related publications. Contribution to interventional EUS literature was compared between USA, Europe and Asia-Pacific. **Results:** 126 publications were related to advanced procedures. All advanced procedures with the exception of gallbladder drainage were reported from outside the USA (5 of 6 from Europe). Higher proportion of publications (66.7% vs. 33.3%, $p < 0.001$) and novel developments (83.3% vs. 16.7%, $p = 0.003$) in advanced interventional EUS were reported from non-USA centers. While contributions from Asia-Pacific constituted only 20% prior to 2008, they now represented the majority (>40%) of publications exceeding both USA and Europe ($p = 0.04$). **Conclusion:** While the USA lags behind the rest of the world in pioneering advanced procedural techniques and novel developments related to interventional EUS, Asia-Pacific is surging ahead of both USA and Europe. Governmental regulations, institutional restrictions and fear of potential lawsuits may be factors restricting development of advanced EUS interventions in the West.

Key Word(s): 1. Endoscopic ultrasound; 2. interventions; 3. USA; 4. Europe; 5. Asia-Pacific

Endoscopy and Imaging

P-066

Learning curve of endoscopic sub-mucosal dissection (ESD) – lessons learnt in a tertiary referral center from a non-endemic region for gi cancers

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Objective: Endoscopic sub-mucosal dissection (ESD) is fast replacing endoscopic mucosal resection (EMR) for mucosal and sub-mucosal lesions. We evaluate the learning curve for ESD from a non-endemic region for GI cancers. **Methods:** Patients with mucosal/sub-mucosal lesions diagnosed on endoscopy and radial EUS underwent ESD. The procedure was converted to EMR when necessary. Follow up endoscopy at 1, 3, 6 months. **Results:** Duration: Aug 10 to Mar 13, N = 33, M: F = 25:8, mean age: 61.2 years (19–83). Locations of lesions: stomach – 9, rectum – 8, colon – 10, esophagus – 2, duodenum – 4. Pathology: villous adenoma (VA) – 19 (CA in situ – 4), hamartomatous polyps – 2, hyperplastic polyp – 1, carcinoid – 4, SMT – 7. Enbloc resection was achieved in 72.7%. Patients were divided in 2 groups (initial 20 and subsequent 13). Both groups were comparable for location, nature and mean size of lesions. In Gr. I, enbloc resection was successful in 65% patients vs 85% in Gr. II. Mean procedure time was comparable in both groups – 81 min (30–150) and 82 min (25–150). Two in Gr. I had perforations, treated by clipping in one and surgery in other. Two underwent EFTR in Gr II, none in Gr I. Recurrence occurred in 20% in Gr. I vs 8%, Gr. II – all post EPMR. **Conclusion:** Sessile adenomas and SM lesions present opportunities to perform ESD in centers with low volumes of early cancers. We suggest a learning curve of minimum 20 ESD procedures in a low volume center to achieve reasonable proficiency.

Key Word(s): 1. Endoscopic submucosal dissection; 2. ESD; 3. submucosal tumor; 4. early cancer; 5. adenoma; 6. polyp; 7. training; 8. learning curve

Endoscopy and Imaging

P-067

The exploration of photodynamic therapy used for digestive tract malignant tumor

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Corresponding Author: DANFENG CHEN

Affiliations: Jilin Tumor Hospital, Jilin Tumor Hospital, Liver and Gall Disease Hospital of Jilin Province

Objective: Exploring the photosensitizer dose, the beginning time and the illumination time of photodynamic therapy used for digestive tract malignant tumor, aiming to get the best treatment effect. **Methods:** The homemade big-power 630 nm gas laser and domestic photosensitizer hematoporphyrin was used to the patients with malignant digestive tumor, using photodynamic therapy. **Results:** By allowing the beginning time to be started earlier suitably and extending the illumination time can make necrotic tissue remarkable, as well as enhancing GI tract motility **Conclusion:** Photodynamic therapy of malignant digestive tumor can achieve good local curative effect, and significantly reduce the clinical symptoms, thus improving the quality of life and prolonging the survival period; the majority of solid tumor are infiltrating, going through the submucosa and reaching to muscular layer, which is totally different from the skin and

flushed and total procedure time were measured and recorded. **Results:** A total of 150 patients were included in the study. The gastric and duodenal mucosal visibility was significantly better in the simethicone group ($p < 0.001$). The volume of water flushed was significantly less in the simethicone group compared with the NPO group ($p < 0.05$) and the water group ($p < 0.01$). The total procedure time was significantly shorter in the simethicone group compared to the NPO group ($p < 0.01$) but did not reach statistical significance compared to the water group. **Conclusion:** The use of simethicone given before endoscopy provided better mucosal visibility requiring lesser volume of water flushes and shorter procedure time.

Key Word(s): 1. Simethicone; 2. mucosal visibility; 3. endoscopy

Endoscopy and Imaging

P-074

Diagnostic usefulness of magnifying endoscopy with blue laser imaging for early gastric cancer

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Additional Authors: ATSUSHI MAJIMA, YURIKO ONOZAWA, TOMOKO KITAICHI, YUSUKE HORII, KENTARO SUZUKI, AKIRA TOMIE, KAZUHIRO KAMADA, NOBUAKI YAGI, YUJI NAITO, YOSHITO ITOH

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Objective: Blue LASER Imaging (BLI) is a new image-enhanced endoscopy with a laser light source developed for narrow-band light observation. The aim of this study is to evaluate the usefulness of BLI for the diagnosis of early gastric cancer. **Methods:** We prospectively analyzed 110 gastric lesions that were examined with both the conventional endoscopy with white-light image (C-WLI) observation and magnifying endoscopy with BLI (M-BLI) observation at Kyoto Prefectural University of Medicine between November 2012 and May 2014. The diagnostic criteria of gastric cancer using C-WLI were both an irregular margin and an irregular mucosal area. The diagnostic criteria of gastric cancer using ME-BLI were an irregular microvascular (MV) pattern and/or irregular microsurface (MS) pattern with the demarcation line evaluated by VS classification system. The lesions were taken biopsies after M-BLI observation following C-WLI observation. We evaluated the correlations between the diagnosis of M-BLI and that of histopathology, compared with the correlations between the diagnosis of C-WLI and that of histopathology. **Results:** We analyzed 110 detected lesions (23 cancers and 87 noncancers). The accuracy, sensitivity and specificity of high confidence M-BLI diagnoses were 93.6, 91.3 and 94.3%, respectively. Most of the false positive cases were depressed mucosal lesions with the histopathological diagnosis of regenerative gland in pyloric/fundic mucosa with inflammatory cell infiltration. On the other hand, the accuracy, sensitivity and specificity of C-WLI diagnoses were 88.1, 56.5 and 96.6%, respectively. **Conclusion:** M-BLI was useful for the diagnostic accuracy and sensitivity of early gastric cancer compared with C-WLI.

Key Word(s): 1. BLI; 2. VS classification; 3. gastric cancer

Endoscopy and Imaging

P-076

Endoscopic findings and treatment in patients with dysphagia, an experience from Karachi, Pakistan

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Additional Authors: ARIF RASHEED SIDDIQUI, SYED AFZAL HAQQI, AYESHA ZIA, OSAMAH SAAD NIAZ, SAAD KHALID NIAZ

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Objective: To evaluate the causes of dysphagia and their endoscopic treatment. **Methods:** Cross-sectional study. Gastroenterology Unit, Patel Hospital Karachi. 382 patients were included, upper gastrointestinal endoscopy was performed, results and therapeutic procedures performed were evaluated. **Results:** In our study of 382 patients, 324 (84.82%) had abnormal findings. 199 patients (52.10%) were male, age range 12–90 years. Esophageal growth was most frequently encountered by 85 patients (26.23%), while 51 (15.75%) had neurological cause of dysphagia. Benign esophageal stricture was present in 41 patients; a similar number of patients (41; 12.65%) had esophageal ulcers/esophagitis. 20 patients (6.20%) had growth at cardia. 16 patients had esophageal candidiasis; a similar number of patients (16; 4.94%) had esophageal web. Achalasia was found in 15 (4.63%) patients which was confirmed by manometry. 13 patients (4%) had oropharyngeal while 7 patients had laryngeal growth. 5 patients had esophageal foreign body and 3 had diverticulae. Incidentally we found esophageal varices in 5 patients and 6 patients had stomach growth near pylorus not explaining the cause of dysphagia. Biopsies were performed in suspected tumors, while metallic stents were placed in proven malignancy. Dilatation was performed in patients with achalasia, strictures and webs or rings. Peg tube was placed where indicated and foreign bodies were removed. **Conclusion:** Dysphagia has variable etiologies, which includes malignancies requiring early diagnosis. Endoscopy not only helps in establishing diagnosis but also has a major therapeutic role. In our study 84.82% of patients benefited from endoscopy either in establishing a diagnosis or therapeutically. Hence, patients with dysphagia should be referred early for endoscopy.

Key Word(s): 1. Endoscopy; 2. dysphagia

Endoscopy and Imaging

P-077

Peroral endoscopic myotomy for the treatment of achalasia: a single-center experience in south China

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Affiliations: Nanfang Hospital, Southern Medical University, Nanfang Hospital, Southern Medical University, Nanfang Hospital, Southern Medical University

Objective: Esophageal achalasia is most commonly treated with endoscopic dilation or laparoscopic myotomy. Peroral endoscopic myotomy (POEM) has recently been described as a treatment for achalasia in humans. The aim of this study was to assess the clinical effectiveness and safety of treating esophageal achalasia with POEM in a single endoscopic

center of south China. **Methods:** POEM was performed in 77 consecutive patients with achalasia. POEM procedure consisted of the following steps: firstly, submucosal tunnel was created and extended below the lower esophageal sphincter (LES) onto the gastric cardia after a mucosal incision was made; then endoscopic myotomy of circular muscle bundles was done; finally, the mucosal entry was closed by hemostatic clips. The Eckardt Score and manometry were used to evaluate the outcomes. **Results:** POEM was successfully performed in all cases. Mean procedure time was 89.3 min (range 51–146) and mean myotomy length was 11.5 cm (range 7–16). No serious complications related to POEM occurred. During a mean follow-up period of 11.8 months (range 3–16 months), treatment success was achieved in 72/77 patients (93.5%). Mean LES pressure was 52.8 mmHg (25.7–82.1) and 15.0 mmHg (4.2–28.1) before and after the procedure ($p < 0.05$), respectively. Mean Eckardt score was 5.7 (3–11, median 6) and 0.5 (0–2, median 1) before and 11 months after POEM, respectively ($p < 0.05$). Five patients (6.5%) developed mild reflux symptoms and required intermittent medication with proton pump inhibitors during the follow-up. **Conclusion:** Our study demonstrated that POEM is a safe, and effective treatment for achalasia. Further studies are warranted to evaluate the long-term efficacy and to compare POEM with other treatment modalities.

Key Word(s): 1. Esophageal achalasia; 2. peroral endoscopic myotomy

Endoscopy and Imaging

P-078

Comparative study of peroral endoscopic myotomy and pneumatic dilation in the treatment of esophageal achalasia

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Objective: Achalasia is a rare esophageal motility disorder. The main goal of treatment is to relieve patients' clinical symptoms. In this study, we aimed to compare the outcomes of peroral endoscopic myotomy (POEM) and pneumatic dilation (PD) in terms of safety, clinical statistics and symptoms relief. **Methods:** This study involves 110 patients who were divided into 2 groups. 80 patients underwent POEM surgery and the rest (30 patients) received PD. Outcome measures include lower esophageal sphincter pressure (LESP) and symptoms relief. **Results:** The mean preoperative Eckardt score was 7.42 in the POEM group vs 7.7 in the PD group (p value = 0.36). The mean preoperative LESP were 44.7 vs 45.2 ($p = 0.31$). The 6-month postoperative mean Eckardt scores were 1.42 vs 1.44 ($p = 0.20$) and mean LES pressures were 16.7 vs 14.6 ($p = 0.19$) between the two groups, which meant there was no significant differences in both groups. However, there was statistical difference in postoperative mean Eckardt scores (1.46 vs 3.76, $p = 0.02$) in 1 year follow-up, especially the median score for dysphagia (0.5 vs 1.5, $p = 0.01$). **Conclusion:** Both PD and POEM are safe and effective for patients with achalasia. And in the short term postoperatively, patients of both groups received obvious symptoms relief. However, symptoms relief seems to be more stable for the POEM patients, while for the PD patients, dysphagia tends to reoccur.

Key Word(s): 1. Poem; 2. pneumatic dilation; 3. myotomy; 4. complication; 5. clinical outcome; 6. achalasia

Endoscopy and Imaging

P-079

Investigation of a novel bowel preparation method using laxative tablets for CT colonography

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Objective: We perform CT colonography (CTC) in more than 2,000 cases once a year. However, distress of bowel preparation have not changed. Thus we investigated a bowel preparation using only laxative tablets for CTC owing to the improvement of receptivity in colorectal examinations. **Methods:** A total 200 patients were randomly divided into two groups. 1: Magnesium Oxide (MO) as full bowel purgation, which is taken each 3 tablets in the evening and at bed time before the examination. 2: Magnesium Citrate (MC) as ordinary bowel preparation, which was taken 1800 ml in the evening before examination day. The amount of residual fluid and stool of their migration were evaluated in 6 segments, and the efficacy of the bowel preparation agent was evaluated visually on CTC images. The comprehensive evaluation is 5 grades from residual fluid and stool results; we totally evaluated with 5 grades, invented the effective preparation more than 3. **Results:** In evaluation of residual fluid, MO was more effective than that of MC, 62% and 49% respectively. In evaluation of residual stool, 81% of MO group and 90% of MC group was effective. In total evaluation, MO group was 80%, preparation of Magnesium Oxide Tablets was effective. People who had good defecation status were 82%. On the other hand, MC group was effective on 89%. No significant difference was found in effectivity of both MO and MC group ($p = 0.076$, t -tests). **Conclusion:** In the case of good defecation, we showed that using only Magnesium Oxide Tablets as pre-CTC bowel preparation is successful. However people who had taken a colorectal examination have bad condition of defecation in many cases; a way to administrate dosage and combination of dosage with should be considered.

Key Word(s): 1. CT colonography; 2. colon preparation; 3. laxative tablet

Endoscopy and Imaging

P-080

EUS-guided paracentesis of ascitic fluid: results from single center experience at a district general hospital in Japan

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Objective: EUS and EUS-guided fine needle aspiration (FNA) has been widely used for the diagnosis and staging of primary or metastatic gastro-

intestinal (GI) and non-GI malignancies. In addition, EUS has been reported to be more sensitive than transabdominal ultrasound and CT for the detection of ascites. Few studies have been published to evaluate the accuracy of EUS-guided paracentesis (EUS-P) in the diagnosis of ascites. The aim of this study was to evaluate the safety and efficacy of EUS-P in the district general hospital setting. **Methods:** All EUS-P performed at our institution from August 2005 to March 2014 were retrospectively retrieved. Corresponding EUS findings, cytology, and follow-up information were reviewed. EUS-P was performed with the curvilinear echoendoscope and a 22- (n = 41) or 25-gauge (n = 1) fine needle. EUS-P was performed via transgastric (n = 24), transduodenal (n = 1), or transrectal (n = 17) approach. Patients undergoing EUS-P via transrectal approach received intravenous prophylactic antibiotics during the procedure. **Results:** Forty-two consecutive patients (30 men, 12 women; mean age 73.5 years, range, 49–92 years) were identified. Before EUS-P, previous and/or present diagnosis of malignancy had been made in 38 of 42 (90.5%) patients. Ascites confirmed by EUS-P was visible in 14 of 42 (33.3%) CT before EUS. The mean volume of ascites obtained was 12.0 ml (range 1–50 ml). Thirty-one percent (13 of 42) had a proven malignancy. There were two false-negative cytology results. The sensitivity, specificity, positive predictive value, negative predictive value, and accuracy of EUS-P for diagnosing malignant ascites was 86.7%, 100%, 100%, 93.1%, and 95.2%, respectively. There were no procedure-related complications. **Conclusion:** EUS-P is a safe and effective procedure for diagnosing malignant ascites. Nevertheless, negative ascitic fluid cytology from EUS-P does not rule out the presence of peritoneal carcinomatosis.

Key Word(s): 1. EUS; 2. EUS-guided paracentesis; 3. ascites; 4. malignant ascites

Endoscopy and Imaging

P-081

Magnifying images by using a near focus method and a conventional method under narrow band imaging for gastric epithelial tumors

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Objective: A dual focus two-stage optical lens technology was recently introduced. In the near focus mode, endoscopists can perform a close examination of mucosal tissue and capillary networks. The aim of this study was to investigate the magnifying images on the near focus method (NFM) compared to those on the conventional magnification method (CMM) under narrow band imaging (NBI) in the patients with gastric epithelial tumors. **Methods:** An experienced endoscopist performed endoscopies by using NFM and CMM in the 20 enrolled patients with gastric epithelial tumors, respectively. We selected 40 images of 40 sessions of endoscopies in the patients. Ten endoscopists asynchronously reviewed for image quality. The image quality was rated on a 5-point Likert scale (from poor, 1, to excellent, 5) for mucosal microsurface structure, subepithelial microvascular architecture, and demarcation line. All of the enrolled patients received endoscopic submucosal dissection (ESD). **Results:** The final diagnosis of the gastric epithelial tumors revealed 10

cases of early gastric cancer, 2 cases of high grade dysplasia, and 8 cases of low grade dysplasia after ESD. The median number of magnification images was 11 in each method. The average observation time (\pm SD) for magnification was 99.9 ± 64.1 s in NFM and 91.5 ± 64.6 s in CMM ($p = 0.54$), respectively. Judgments of image quality in mucosal microsurface structure were 4.09 ± 0.39 in NFM and 3.73 ± 0.40 in CMM ($p = 0.015$). Those in subepithelial microvascular architecture were 3.53 ± 0.45 in NFM and 4.29 ± 0.45 in CMM ($p = 0.001$). Judgement of clear demarcation line were 3.91 ± 0.41 in NFM and 3.61 ± 0.54 in CMM ($p = 0.089$). **Conclusion:** The near focus method seems to be a useful method for magnification in the early stage of gastric epithelial tumors. Further evaluation of this novel technology is necessary.

Key Word(s): 1. Magnification; 2. gastric epithelial tumor; 3. method

Endoscopy and Imaging

P-082

Natural course of EUS-suspected gastrointestinal stromal tumors

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Objective: To evaluate the natural course of asymptomatic EUS-suspected gastric gastrointestinal stromal tumors (GISTs) of ≤ 30 mm in size, and to assess a basis of the optimal management of incidentally detected, asymptomatic small EUS-suspected GISTs. **Methods:** The data of patients diagnosed as asymptomatic small gastric GISTs by endoscopic ultrasound (EUS) at West China Hospital, Sichuan University, between January 2004 and December 2013 were included in this study. A small EUS-suspected gastric GISTs was defined as a hypoechoic lesion arising from the muscularis propria (fourth layer) or submucosa (third layer) of gastric wall on endoscopic ultrasound. The natural course of gastric GISTs was evaluated by EUS. A $>25\%$ increase in the maximal diameter, and/or echo patterns change, and/or ulceration of the tumors were defined as a significant change. Univariate analysis and multivariate analysis using Cox proportional hazard model were carried out to evaluate the changes in GISTs (changes in tumor size, echo pattern, ulceration) with initial related factors of the lesions. Optimal management of asymptomatic small GISTs were reviewed for subsequent analysis. **Results:** Two hundred and ten patients were included in this study. There were 88 men (41.9%), and the mean age was 55.19 ± 11.29 years old (range, 20–84 years). The median follow-up for the 210 cases was 37 months (range, 6–89 months), and changes in size, and/or echo patterns change, and/or ulceration were found in 9 cases (4.28%) at a median follow-up of 32.5 months. Forty two patients underwent surgical/endoscopic resection; of these, 40 cases (95.2%) were diagnosed as gastric GISTs, of which 3 patients were considered at intermediate risk, 28 at low risk, and 9 at very low risk. In a univariate analysis using log-rank test, a change in tumor did not show a statistical significance by initial size (≤ 10 mm, 4.17%; 10–20 mm, 3.12%; 20–30 mm, 5.56%; $P > 0.05$). In a univariate and multivariate analysis, factors such as initial irregular border and heterogeneous echo texture on EUS were not considered indicative of significant changes of tumors. Figure 1 shows endoscopic and endoscopic ultrasonography (EUS) of EUS-suspected gastrointestinal stromal tumors (GISTs). (a and A) Endoscopic view of a round subepithelial mass with a significant change in size during 6 years (2005–2011); (b and B) EUS shows a homogeneous, hypoechoic lesion arising from the muscularis propria (fourth layer) of gastric wall. **Conclusion:** The majority of cases (95.72%) of asymptomatic EUS-suspected gastric GISTs of ≤ 30 mm in size does not change during a median follow-up of 37 months. Therefore, endoscopic examination 1–2 years after the initial diagnosis is recommended. If necessary,

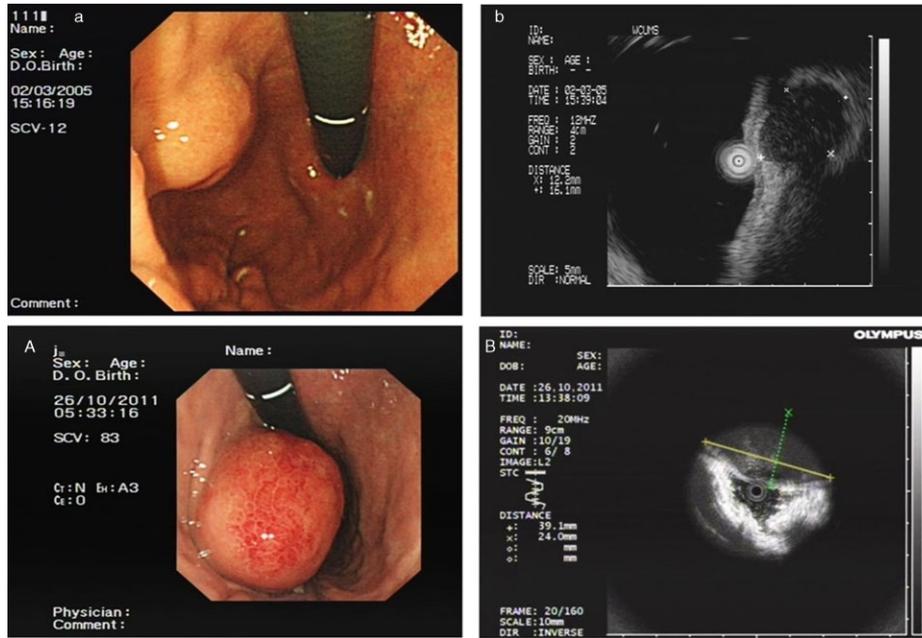


Figure 1

surgical intervention will be considered. And initial factors such as heterogeneous echo texture and irregular border cannot be considered as an index of significant changes of the lesion.

Key Word(s): 1. Endoscopic ultrasound (EUS); 2. gastrointestinal stromal tumors (GISTs); 3. natural course

Endoscopy and Imaging

P-083

Esophageal tuberculosis: how to prevent misdiagnosis

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Objective: Esophageal tuberculosis is frequently misdiagnosed and inappropriately treated. In order to increase the correct diagnosis rate, we summarize 5 cases of initially misdiagnosed esophageal tuberculosis.

Methods: From 2006 to 2012, 11 patients were diagnosed as esophageal tuberculosis in our hospital. 5 of them were initially misdiagnosed as leiomyoma or cyst. The 5 patients presented dysphagia, 3 of whom with retrosternal pain. They reported no history of tuberculosis and weight loss. Physical examinations and contrast enhanced chest computed tomography (CT) were normal. The lesions were found in the middle or lower esophagus on gastroscopy, with bulging mucosa, smooth surface and clear boundary (Figure 1A). Biopsies were not taken. A week to a month later, ulcers with clear boundary were observed (Figure 1B). Endoscopic ultrasonography (EUS) showed the esophagus walls were interrupted, incrassated and had hypoechoic lumps with homogeneous internal echo (Figure 1C). Each patient was taken 4 to 8 biopsies in areas suspicious of tuberculosis, the specimens being sent for acid-fast stain and PCR. They received antituberculosis treatment for 6 to 12 months with satisfying outcomes (Figure 1D).

Results: Fig 1. A The initial gastroscopy. B and C Gastroscopy and EUS

two weeks later. D Gastroscopy after three months of antituberculosis treatment. **Conclusion:** When submucosal bulges are found on gastroscopy in the esophagus, endoscopists should be alert to tuberculosis, especially in developing countries. Vigilance, biopsy, EUS and contrast enhanced CT may help increase the correct diagnosis rate.

Key Word(s): 1. Esophageal tuberculosis

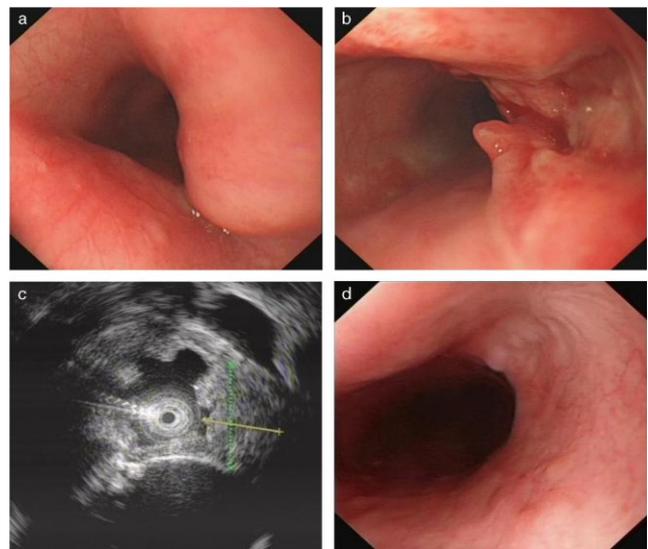


Figure 1 (A) The initial gastroscopy. (B and C) Gastroscopy and EUS two weeks later. (D) Gastroscopy after three months of antituberculosis treatment.

Endoscopy and Imaging

P-084

Should people of advanced age undergo colonoscopy as a detailed examination for colorectal cancer screening?**Presenting Author:** HIROAKI IGARASHI**Additional Authors:** HIROSHI NAKAMURA, KIYOSHI TSUCHIYA, HIROKO YAMASHITA, MIKI HIRAYAMA, ITSURO OGATA**Corresponding Author:** HIROAKI IGARASHI**Affiliations:** Kawakita General Hospital, Kawakita General Hospital, Kawakita General Hospital, Kawakita General Hospital, Kawakita General Hospital

Objective: Since we have no upper limit of age for colorectal cancer (CRC) screening in Japan, quite a few of advanced aged people are referred for colonoscopy with a positive-result of fecal occult blood test (FOBT). However, we are not assured if it is meaningful for them to receive CRC screening, especially colonoscopy as a second-stage examination considering their remaining life expectancy. The purpose of this study was to evaluate the efficacy of colonoscopy for advanced aged people performed as a detailed examination for CRC screening as compared with people of non-advanced age. **Methods:** A total of 804 persons (403 men and 401 women, mean age 70.3 years), who underwent the entire colonoscopy because of positive FOBT between 2008 and 2013, were divided into two groups: group A aged 80 or older–176 persons, and group B aged under 80–628 persons. The detection rates of total CRC, invasive CRC, and premalignant lesion (adenoma) were determined and compared between the two groups. **Results:** CRC was detected in 18 persons (10.2%) in group A and in 43 (6.8%) in group B ($p = 0.147$). The detection rate of invasive CRC, the depth of which is deeper than the mucosal layer, was significantly higher in group A (14 persons, 8.0%) than in group B (18, 2.9%), ($p = 0.013$). The detection rates of adenoma showed no significant difference between the two groups. **Conclusion:** Invasive CRC showed a higher detection rate in advanced aged people than in those aged under 80. We conclude that it will be meaningful for advanced aged people to receive detailed colonoscopy because of the high detection rate of invasive CRC which will soon become life-threatening and shorten their limited expected life span even further.

Key Word(s): 1. Colorectal cancer; 2. screening; 3. colonoscopy; 4. aged people

Endoscopy and Imaging

P-085

A novel method for endoscopic placement of the capsule endoscope using the transparent hood and real time viewer**Presenting Author:** YUJI INO**Additional Authors:** TOMONORI YANO, YOSHIKAZU HAYASHI, HIROTSUGU SAKAMOTO, HIROYUKI OSAWA, KEIJIRO SUNADA, HIROYUKI SATO, YOSHIMASA MIURA, HAKUEI SHINHATA, TAKAHITO TAKEZAWA, HIRONORI YAMAMOTO**Corresponding Author:** YUJI INO**Affiliations:** Jichi Medical University, Jichi Medical University**Objective:** Capsule endoscopy (CE) relies on an intact swallowing mechanism and unimpeded passage of the capsule through the pylorus. A new method for endoscopic placement of the capsule is described.**Methods:** A transparent hood (MH-464, Olympus, Japan), with the inside wall lined with vinyl tape, is attached to the tip of the endoscope. The activated CE is monitored using the RAPID® real-time viewer. The capsule is placed inside the transparent hood using the same tilt angles for both the endoscopic image and the CE image. Since the endoscopic image is blinded by the capsule, while watching the CE image using the RAPID® real-time viewer, the endoscope with the capsule is advanced through the pharynx, esophagus, stomach and into the duodenum. The capsule is then released into the duodenum by injecting water through the accessory channel. **Results:** Six patients underwent successful endoscopic placement of the capsule in the duodenum without complications. In one patient, biopsy forceps were needed to eject the capsule, because the capsule didn't release after injecting water. The mean time required for the capsule to pass from the pharynx through the pylorus was five minutes. A complete small bowel examination was achieved in all six patients. Since the currently available CE (PillCam® SB2) provides two frames per second, the endoscopy operator may sense a time lag between endoscopic maneuvering and viewing the CE images. However, this will improve when using a newer version of the CE with adaptive frame rate technology. **Conclusion:** Endoscope placement of the CE using the described method for patients with dysphagia, anatomical abnormality, or gastroparesis is safe and effective.**Key Word(s):** 1. Capsule endoscopy; 2. endoscopic placement; 3. real time viewer

Endoscopy and Imaging

P-086

A new, rapid, effective, tolerable, and safe preparation suitable for colonoscopy: a morning-only preparation using reduced-volume polyethylene glycol and electrolyte solution (peg-els) plus ascorbic acid**Presenting Author:** NAGAMU INOUE**Additional Authors:** YASUSHI IWAO, JUNTARO MITSUZAKI, TOSHIFUMI YOSHIDA, RYOKO SHIMIZU, MICHIYO TAKAYAMA, YOSHINORI SUGINO**Corresponding Author:** NAGAMU INOUE**Affiliations:** Keio University Hospital, Keio University Hospital**Objective:** Polyethylene glycol (PEG)-electrolyte solution is widely used for bowel cleansing including preparation for colonoscopy (CS). To reduce the volume ingested, PEG-ELS plus ascorbic acid (Asc) (MOVIPREP®) has been marketed in Europe and North America and is the world's most frequently administered bowel preparation. In Japan, MOVIPREP® was finally put on the market last year, however, preparation procedure in Japan is different from in Europe and North America, and there has not been so much experience yet in Japan. Therefore, we assessed the efficacy and safety of bowel preparation using PEG-ELS+Asc for screening CS. **Methods:** Design: an observational open-label study. 229 consecutive examinee of CS for medical checkup were enrolled at our institute. The mean age was 60.3 years old and 167 were male (72.9%). Preparation agent used: MOVIPREP® approved in Japan is slightly modified from that used in Europe and North America. Macrogol (PEG) 3350, one of the main active ingredients of MOVIPREP®, is replaced by Macrogol 4000 in accordance with Japanese Pharmacopoeia. Preparation procedure: Split dose regimen is recommended in Europe and North America, while, in Japan, the following regimen is recommended on the morning before the

procedure.; The participants were administered 1 liter of PEG-ELS+Asc and 0.5 liter of water, and then administered PEG-ELS+Asc until their stool became clear, or 1 liter of PEG-ELS+Asc. No dietary restrictions were applied until the day before CS. If defecation is insufficient after completion of PEG-ELS+Asc ingestion, standard PEG-ELS solution was added per rectum. Quality of colon cleansing was evaluated by physician who performed CS as 4 grades (no or faint residue, some residue but capable for observation, poor for observation and inadequate for intubation. Adverse events and tolerability were also assessed by nurses. **Results:** 229 examinees were analyzed. One participant ingested only 900 cc of PEG-ELS+Asc, however, the rest of all (99.6%) ingested 1 liter or more. Two participants (0.9%) were required additional cleansing treatment such as PEG-ELS enema. Quality of cleansing was adequate in 224 (97.8%, no or faint residue in 61.6% and some residue but capable for observation in 36.2%). In remaining 5 participants (2.2%), cleansing was poor for observation (1.7%) or inadequate for intubation (0.5%). One participant (0.5%) vomited during preparation and 12 (6.3%) felt distress for ingestion. There were no adverse effects observed which required discontinuation of PEG-ELS+Asc ingestion. Mean volume of PEG-ELS+Asc ingested was 1450.5 ± 321.6 cc. Among participants who experienced bowel preparation using standard PEG-ELS, 62.7% preferred PEG-ELS+Asc, 26.1% felt both of them equally and 5.6% preferred standard PEG-ELS. **Conclusion:** Morning-only preparation using a PEG-ELS+Asc seems to be as effective and safer and more tolerable than using standard PEG-ELS. In addition, participants tended to prefer PEG-ELS+Asc standard PEG-ELS.

Key Word(s): 1. Colonoscopy; 2. preparation; 3. polyethylene glycol; 4. ascorbic acid

Endoscopy and Imaging

P-087

Efficacy of sedation by propofol during endoscopic submucosal dissection(esd)

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Additional Authors: TOMOKI INABA, SYO MIZUKAWA, KOUICHI IZUMIKAWA, ICHIRO SAKAKIHARA, KUMIKO YAMAMOTO, SAKUMA TAKAHASHI, SHIGETOMI TANAKA, MASAKI WATO, KOZO KAWAI

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Objective: ESD is an established therapy for early gastric cancer; but anesthesia during ESD has not yet been standardized. ESD under general anesthesia enables respiratory care and is associated with a high level of safety. However, for the convenience of ESD, intravenous sedation is a useful procedure. **Methods:** The subjects were consecutive 556 patients (413 men and 143 women; mean age, 71.5 ± 9.0 years) with early gastric cancer who performed ESD under propofol anesthesia, as well as 140 patients (104 men and 36 women; mean age, 71.8 ± 8.3 years) under midazolam anesthesia. The injection dosage of midazolam was set at 0.06 mg/kg at the start of ESD with the additional administration of 0.03 to 0.18 mg/kg/hr. For the administration of propofol, the target controlled infusion device was employed to detect the estimated drug concentrations in the blood and brain. A comparative evaluation was conducted to determine the instability of sedation (such as expressed by awakening or paradoxical responses) and the incidences of ESD interruption.

Results: Intraoperative awakening occurred in none (0.0%) in the propofol group and in 28 (20.0%) in the midazolam group ($p < 0.00001$). The need for additional administration of another agent to treat paradoxical response occurred in none (0.0%) in the propofol group and in 21 (15.0%) in the midazolam group ($p < 0.00001$). ESD was interrupted in 0.4% (2/556) in the propofol group, a significantly lower figure in comparison with 4.3% (6/140) for the midazolam group ($p = 0.00118$). **Conclusion:** Sustained and reliable sedation is possible with intravenous anesthesia by propofol during ESD.

Key Word(s): 1. Endoscopic submucosal dissection; 2. sedation; 3. propofol

Endoscopy and Imaging

P-088

The clinical outcome of surveillance colonoscopy after negative index colonoscopy in people with average risk of colorectal cancer

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Objective: Guidelines recommend to perform surveillance colonoscopy at 5 years after normal index colonoscopy. The present study aimed to evaluate the characteristics and findings of surveillance colonoscopy performed after normal index colonoscopy in subjects with average risk of colorectal cancer. **Methods:** Subjects who underwent surveillance colonoscopy following negative index colonoscopy in Yeungnam University Hospital health promotion center were included. The clinical characteristics and endoscopic findings were compared and analyzed retrospectively. **Results:** Among 4165 subjects 205 subjects had previous history of negative index colonoscopy. Median interval between index and surveillance colonoscopy was 44 months. Adenoma was detected in 58 (28.3%) subjects and age and gender was not significantly different. Mean interval between surveillance and index colonoscopy was not significantly different according to the existence of adenoma. Total 76 adenomas were found and 43 (56.6%) were located at proximal colon. Mean size of adenoma was 4.6 ± 2.3 mm and 51 (67.1%) were diminutive polyp. Advanced adenoma was diagnosed in 3 (3.9%) and all were located at distal colon. No colorectal cancer was found on surveillance colonoscopy. Mean withdrawal time was significantly different in subjects with or without colorectal adenoma (7.9 ± 3.9 , 5.8 ± 3.6) ($p < 0.001$). By multivariate analysis, withdrawal time above 6 minutes was associated with detection of colorectal adenoma. **Conclusion:** The risk of colorectal cancer did not increase for at least 4 years after normal index colonoscopy. Meticulous examination with sufficient withdrawal time for more than 6 minutes is needed not to miss the colorectal polyp.

Key Word(s): 1. Surveillance colonoscopy colorectal cancer

Endoscopy and Imaging

P-089

A comparative study of low-volume bowel preparation methods for colonoscopy; sodium picosulfate versus peg-asc**Presenting Author:** YOON TAE JEEN**Additional Authors:** IN KYUNG YOO, JAE MIN LEE, SEUNG HAN KIM, SEUNG JOO NAM, HYUK SOON CHOI, EUN SUN KIM, BORA KEUM, HONG SIK LEE, HOON JAI CHUN, CHANG DUCK KIM**Corresponding Author:** IN KYUNG YOO**Affiliations:** Korea University College of Medicine, Korea University College of Medicine

Objective: Low-volume bowel preparations provide equivalent cleansing with improved tolerability compared to standard 4 L polyethylene glycol. However, studies comparing superiority between low-volume bowel preparations are rare, and results are controversial. This study aimed to compare the bowel cleansing quality and tolerability between split-dose methods of sodium picosulfate/magnesium citrate and polyethylene glycol with ascorbic acid. **Methods:** A randomized, observer-blinded study was performed. In total, 200 outpatients were prospectively enrolled and received colonoscopy using the low-volume bowel preparation. The Boston Bowel Preparation Scale and Aronchick scale were used to evaluate the bowel cleansing, and bubble scoring was also performed to back up both results. To investigate the preference and tolerability, a questionnaire was administered before colonoscopy. **Results:** One hundred patients received SPMC and 100 patients received PEG-Asc. The SPMC group showed superior cleansing quality compared to the PEG-Asc group (8–9 Boston scale score: 40% versus 22.8%, excellent Aronchick grade: 28.5% versus 14.2%, $p < 0.05$). There were fewer gastrointestinal symptoms and solution taste was better in the SPMC group compared to the PEG-Asc group ($p < 0.05$). **Conclusion:** The SPMC group showed excellent cleansing quality and better tolerability, palatability compared to the PEG-Asc.

Key Word(s): 1. Bowel preparation; 2. colonoscopy; 3. polyethylene glycol with ascorbic acid; 4. sodium picosulfate

colonoscopy. **Methods:** This study involved 955 average-risk adults undergoing screening colonoscopies. The subjects were randomized to undergo a colonoscopy with either the NBI or FICE systems. Four board-certified staff endoscopists without prior experience using NBI or FICE participated. The main outcomes of this study were overall accuracy, sensitivity, and specificity of FICE and NBI in identifying neoplastic polyps. **Results:** There was no significant difference in the number of subjects with adenoma between the NBI (143/475, 30.1%) and FICE groups (139/480, 29.0%) (after excluding adenoma ≥ 1 cm) ($P > 0.05$). The overall accuracy of NBI was 81.0%, compared with 81.4% for FICE ($P = 0.867$). The overall sensitivity and specificity of NBI and FICE were 84.6% and 78.0% ($P = 0.054$), 73.5% and 86.5% ($P = 0.002$), respectively. For polyps measuring ≤ 5 mm, the sensitivity was 82.0% for NBI and 74.5% for FICE ($P = 0.053$); the specificity was 75.4% for NBI and 88.4% for FICE ($P = 0.004$) and the resulting accuracy was 79.2% for NBI and 80.1% for FICE ($P = 0.770$). **Conclusion:** The overall accuracy of NBI and FICE was similar for differentiating small polyp histologies during screening colonoscopy.

Key Word(s): 1. Colonoscopy; 2. polyp; 3. histology

Endoscopy and Imaging

P-091

Dexmedetomidine versus midazolam for sedation of adults undergoing gastrointestinal endoscopy: a meta-analysis and systematic review**Presenting Author:** HYUN KANG**Additional Authors:** GEUN JOO CHOI, CHONG WHA BAEK, YONG HUN JUNG, YOUNG CHEOL WOO**Corresponding Author:** HYUN KANG**Affiliations:** Chung-Ang University, Chung-Ang University, Chung-Ang University, Chung-Ang University

Objective: Gastrointestinal endoscopy necessitates comfort as do most diagnostic and treatment procedures. Recently, many studies reported comparison of dexmedetomidine and midazolam for sedation during gastrointestinal endoscopy, but the results were inconsistent. The aim of this systematic review was to compare the efficacy and safety of dexmedetomidine with midazolam for sedation of adults undergoing gastrointestinal endoscopy. **Methods:** We searched MEDLINE, Cochrane Central Register of Controlled Trials (CENTRAL), Embase, Web of Science, and Google Scholar databases. Additional studies were identified from the reference lists of the retrieved articles. We included only prospective randomized controlled trials (RCTs) that compared dexmedetomidine and midazolam as sedatives in adults undergoing gastrointestinal endoscopy with no language restriction. Primary outcomes were Ramsay Sedation Score (RSS) and pain score during procedures, time to full recovery, and patient satisfaction score. Secondary outcomes were complications including desaturation, hypotension, bradycardia, restlessness, vomiting, and cough were also retrieved. **Results:** We included 8 RCTs with 490 patients. Dexmedetomidine sedation showed significantly lower pain score [mean difference (MD) -0.53 , 95% confidence interval (CI) -0.87 to -0.19] and higher patient satisfaction score [Standardized MD 2.06, 95% CI 0.25 to 3.86] compared to midazolam sedation. RSS (0.41, -0.17 to 0.99) and time to full recovery (-0.45 min, -7.91 to 7.02) were similar between two sedatives. When using dexmedetomidine, incidences of desaturation [relative risk (RR) 0.27, 95% CI 0.08 to 0.96], restlessness [0.08, 0.02 to 0.31], and cough [0.08, 0.01 to 0.62] were significantly lower, whereas that of bradycardia was significantly higher [3.00, 1.05 to 8.57] than when using midazolam. Frequency of hypotension and vomiting were similar between two sedatives. **Conclusion:** Dexmedetomidine sedation showed superior quality

Endoscopy and Imaging

P-090

Comparison of narrow band imaging (nbi) and fujinon intelligent color enhancement (fice) in predicting small colorectal polyp histology**Presenting Author:** HAE YEON KANG**Additional Authors:** YOUNG SUN KIM, JI HYUN SONG, SUN YOUNG YANG, SEON HEE LIM**Corresponding Author:** HAE YEON KANG**Affiliations:** Seoul National University Hospital, Seoul National University Hospital, Seoul National University Hospital, Seoul National University Hospital

Objective: There are limited data comparing the performance of narrow band imaging (NBI) and Fujinon Intelligent Color Enhancement (FICE) for differentiating polyp histologies. The aim of this study was to compare the diagnostic performances of NBI and FICE in differentiating neoplastic from non-neoplastic colorectal polyps < 10 mm during a screening

in terms of producing analgesic effect and patient satisfaction compared to midazolam sedation. Time to full recovery was comparable between dexmedetomidine and midazolam sedation. Dexmedetomidine sedation provided clinical benefits by reducing desaturation, restlessness and

cough. However, dexmedetomidine was associated with higher incidence of bradycardia.

Key Word(s): 1. Dexmedetomidine; 2. gastrointestinal endoscopy; 3. midazolam; 4. sedation

Table 1

Study or Subgroup	Dexmedetomidine			Midazolam			Std. Mean Difference		Std. Mean Di IV, Random
	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	
Demiraran 2007	1.47	1	30	0.97	2	30	26.0%	0.31 [-0.20, 0.82]	
Dere 2010	3	0.00001	30	2	0.18657	30	22.5%	7.48 [6.01, 8.96]	
Sethi 2014	90.1	3	25	88.8	6.5	25	25.9%	0.25 [-0.30, 0.81]	
Vazquez-Reta 2011	9.9	0.2	20	9	1.4	20	25.6%	0.88 [0.23, 1.53]	
Total (95% CI)			105			105	100%	2.06 [0.25, 3.86]	

Heterogeneity: $\tau^2 = 3.20$; $\chi^2 = 86.13$, $df = 3$ ($P < 0.00001$); $I^2 = 97\%$.

Test for overall effect: $Z = 2.23$ ($P = 0.03$).

Endoscopy and Imaging

P-092

The relationship between colonoscopy procedure order and adenoma detection rates: a prospective study

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Objective: There have been conflicting studies regarding the timing or order of a colonoscopy and its ability to detect adenomas. The aim of this study was to prospectively assess the effects of the order of colonoscopic procedures and other possible factors on the adenoma detection rate (ADR). **Methods:** Between March 2011 and July 2011, consecutive colonoscopies were prospectively performed by 7 board-certified staff endoscopists at the Seoul National University Hospital Healthcare System Gangnam Center. The primary outcome was the overall ADR according to the procedure order of the colonoscopies, and the secondary outcome was the identification of other possible factors influencing the ADR. **Results:** A total of 1908 colonoscopies were analyzed. The detection rate was 56.5% for all polyps and 37.3% for adenomas. The ADR increased as the performance order of the colonoscopy increased and was highest for the third procedure (43.4%). However, the ADR of the remaining procedures, including later procedures, was similar throughout the workday. In the multivariable analysis, the ADR was significantly associated with older age, male sex, high body mass index, personal history of colorectal polyps, long withdrawal time, and an experienced endoscopist. However, the colonoscopy procedure order was not significantly associated with the ADR. **Conclusion:** The ADR was stable according to the procedure order for the later procedures of the workday in a setting of moderate daily procedure volumes. The withdrawal time and experience level of the endoscopist were more important than the procedure order in detecting adenomas by colonoscopy.

Key Word(s): 1. Time; 2. colon polyp; 3. adenoma; 4. procedure order

Endoscopy and Imaging

P-093

Lobulated villous polyps with gastric mucin phenotype in the duodenal bulb: two case reports

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Objective: Introduction: There remains many unknown points about the diagnosis and the prognosis of duodenal polyps. In particular, little is known about the polyps which show gastric mucin phenotype by immunohistochemical staining. We report here the endoscopic and pathological findings of two duodenal polyp cases with gastric mucin phenotype. **Methods:** Case report: The patients were male in both cases, and the endoscopic examination revealed semipedunculated polyps over 20 mm in diameter in their duodenal bulb. Both polyps were soft and lobulated with reddish appearance, and some lobules had white deposition on them. In the case 1, microvascular dilation was observed at the top of the polyp by magnified narrow band imaging (NBI) system. On the other hand, the vasculature was uniform and regular without dilatation in case 2. Endoscopic mucosal resection (EMR) was performed for both cases. Pathological findings: The polyp in the case 1 was diagnosed as well differentiated tubular adenocarcinoma. It was hyperplastic polyp in the case 2. Evaluation by immunohistochemistry revealed that MUC5AC and MUC6 but not CD10 and MUC2 were expressed in both polyps, which confirmed the gastric mucin phenotype of these lesions. **Results:** Discussion: Duodenal polyps with gastric mucin phenotype were thought to develop from the ectopic gastric mucosa, gastric metaplasia or Brunner's gland. However, there are few reports about the characteristics of them, so the details are

still unclear. **Conclusion:** We experienced both malignant and benign cases, which showed distinctive findings with NBI system. It would be important to accumulate the data of endoscopic features for the diagnosis of malignant or benign lobulated villous polyps with gastric mucin phenotype to analyze the correlation with pathological findings, which may also lead to the better understanding of the biological characteristics of these polyps.

Key Word(s): 1. Duodenal polyp; 2. gastric mucin phenotype; 3. NBI

Endoscopy and Imaging

P-095

The novel imaging of colon mucosa 3 D structure using multiphoton microscopy

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Objective: A multiphoton microscopy(MPM) can allow a detailed 3D structure analysis of tissue and can be used for the early diagnosis of dysplastic mucosal lesion. The aim of this study was to make the gastrointestinal mucosa 3D structure using multiphoton microscopy and to compare normal mucosa with adenomatous and adenocarcinoma tissues.

Methods: We obtained three colon tissue samples by biopsy and endoscopic mucosal resection during colonoscopy. Then the tissues were placed in sterile specimen bottles containing PBS(phosphate buffer solution). Multiphoton images were collected using a DM IRE2 Microscope (Leica Microsystems GmbH, Wetzlar, Germany). **Results:** Three human colon tissues were obtained and histologically confirmed diagnosis of 1 normal, 1 adenoma and 1 cancer. We were able to get 3D structural images at depths of 90–140 μm . Normal tissue had a defined texture, whereas adenoma and cancer tissue was amorphous. And adenoma and cancer tissues showed lack of collagen in mucosa and increased nucleus/cytoplasm ratio compared to normal mucosa. **Conclusion:** Colon mucosa 3D structure analysis using multiphoton microscopy can be successfully used to determine colon mucosa architecture and may help to diagnose early colon cancer together with histopathologic examination.

Key Word(s): 1. Multiphoton microscopy; 2. colon mucosa; 3. N/C ratio

Endoscopy and Imaging

P-096

Intratumoral cystic lesion may be a typical eus finding of brunner's gland hyperplasia

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Objective: Brunner's gland hyperplasia is a common, benign, proliferative disorder of the duodenum. However, a large Brunner's gland hyperplasia over than 10 mm in diameter is rare. We experienced 8 cases of large Brunner's gland hyperplasia and the endoscopic ultrasonography (EUS) showed typical findings. **Methods:** Patient basic characteristics and EUS features of duodenal mucosa were analyzed in 8 patients who were pathologically diagnosed as large Brunner's gland hyperplasia.

Results: Median age is 52.6 years. 4 patients were male and 4 patients were female. The size of tumor ranged from 10 mm to 36 mm and the median diameter was 26.3 mm. All cases were pathologically confirmed as Brunner's gland hyperplasia. EUS findings were classified into 3 categories: 4 cases were homogenous pattern with hypoechoic cystic lesion; 3 cases were homogenous pattern with isoechoic solid lesion; 1 case was mixed heterogenous pattern (isoechoic with cystic portion)(Table 1). The origins of all Brunner's gland hyperplasia were submucosal layer in EUS findings. **Conclusion:** In our cases, EUS findings of large Brunner's gland hyperplasia were very typical. All cases were submucosal origin and classified 3 categories: (1) homogenous hypoechoic cystic appearance; (2) homogenous isoechoic well defined solid appearance; (3) heterogenous mixed (isoechoic with cystic portion) appearance. Therefore, EUS findings can be useful diagnostic tools for large Brunner's gland hyperplasia.

Key Word(s): 1. Brunner's gland hyperplasia

Endoscopy and Imaging

P-097

Is it significant electrolyte and renal function disturbances? Bowel preparation with sodium picosulphate/magnesium citrate for screening colonoscopy**Presenting Author:** SEONG EUN KIM**Additional Authors:** HYE KYUNG SONG, SUNG AE JUNG, SO YOON YOON, JU YOUNG CHOI, CHANG MO MOON, HYE KYUNG JUNG, KI NAM SHIM, JOUNG SOOK KIM, KWON YOO**Corresponding Author:** SEONG-EUN KIM**Affiliations:** *Ewha Womans University School of Medicine, Ewha Womans University School of Medicine*

Objective: Sodium picosulphate/magnesium citrate (SPMC) is known as effective for colonoscopy bowel preparation, but electrolyte and renal function disturbances are concerned. We investigated electrolyte and renal function associated with SPMC for colonoscopy bowel preparation comparing to 4 L PEG. **Methods:** The study was a retrospective medical records review of health adults undergoing screening colonoscopy. The SPMC group was introduced to take 3 sachets of SPMC by split method (2 sachets at 6:00 pm the day before and 1 sachet at 4 hours before procedure). The PEG group was introduced to split method (3 L at 6:00 pm the day before and 1 L at 4 hours before procedure). Biochemical parameters and the presence of co-morbidities were recorded. **Results:** Nine-hundred and fifty five adults were included. No significant difference in age, gender, BMI and co-morbidity were observed between the SPMC group (n = 471) and the PEG group (n = 484). The SPMC group showed significantly lower serum sodium (140.1 ± 2.5 vs. 142.7 ± 1.9 mEq/L, $p = 0.001$). The SPMC group had more hyponatremia (<135 mEq/L, 4.0 vs. 0.0%, $p < 0.001$) and hypokalemia (<3.5 mEq/L, 4.41 vs. 1.2%, $p = 0.029$) but they were asymptomatic. SPMC was not associated with decreased estimated glomerular filtration rate (<60 ml/min per 1.73 m²), ($p = 1.00$). **Conclusion:** SPMC induced more hyponatremia and hypokalemia than 4 L PEG but they were asymptomatic. SPMC using 3 sachets can be an alternative to 4 L PEG for colonoscopy bowel preparation in healthy adults. However, we advise an alternate preparation be considered in patients with decreased renal function or diuretics due to tendency of hyponatremia and hypokalemia.

Key Word(s): 1. Colonoscopy; 2. bowel preparation; 3. sodium picosulphate/magnesium citrate; 4. polyethylene glycol; 5. electrolyte; 6. renal function

Endoscopy and Imaging

P-098

Usefulness of a still photography of ileocecal valve demonstrating villi with indigocarmine as verification of a complete colonoscopy**Presenting Author:** HYUN SIK KIM**Additional Authors:** HYUN SOO KIM, JAE WOO KIM, MYEONG HUN CHAE, HONG JUN PARK, HEE MAN KIM, YEON SOO KIM, SUNG CHUL PARK, HYUN IL SEO**Corresponding Author:** HYUN-SOO KIM**Affiliations:** *Yonsei University Wonju College of Medicine, Yonsei University Wonju College of Medicine, Hallym University, Chuncheon Sacred Heart Hospital, Kangwon National University Hospital, Ulsan Medical University, Gangneung Asan Hospital*

Objective: Cecal photographs including the ileocecal valve (ICV) and appendiceal orifice (AO) are the currently recommended standard for the verification of colonoscopy completion, however, they could not be trusted in substantial proportion of cases. We prospectively evaluate the usefulness of ICV demonstrating villi with indigocarmine (ICV-VI) and to compare the effectiveness of this image and cecal photographs for the verification tool of complete colonoscopy. **Methods:** A prospective, observational study evaluated 120 consecutively completed colonoscopies performed in routine clinical practice at the tertiary hospital. Cecal photographs including ICV or AO, and still image of the ICV-VI were evaluated and the survey on the confidence of the complete colonoscopy was scored by independent reviewers. **Results:** ICV-VIs were taken without any complication and did not required additional sedation. ICV-VI was more likely to be considered as a more convincing cecal intubation than those of the ICV and AO. After reviewing the images of ICV and AO, the three reviewers were convinced that cecal intubation had been achieved in 81.4% of colonoscopies. However, the same reviewers convinced that complete colonoscopy had been achieved in 99.2% of procedures after adding the ICV-VI and these were statistically different in convincing the complete colonoscopy ($P < 0.001$). **Conclusion:** ICV-VI provides more convincing evidence of complete colonoscopy than the ICV or AO. In particular, documentation of ICV-VI would be beneficial to get more compelling evidence for complete cecal intubation if the still images the ICV and AO are not convincing.

Key Word(s): 1. Complete colonoscopy; 2. cecal intubation; 3. verification; 4. ileocecal valve; 5. indigocarmine

Endoscopy and Imaging

P-099

Proper interval to second colonoscopy after preparation failure in the first procedure – prospective randomized trial –**Presenting Author:** BEOM JIN KIM**Additional Authors:** CHANG HWAN CHOI, JEONG WOOK KIM, JAE GYU KIM, SE KYUNG CHANG**Corresponding Author:** BEOM JIN KIM**Affiliations:** *Chung-Ang University Hospital, Chung-Ang University Hospital, Chung-Ang University Hospital, Chung-Ang University Hospital***Objective:** We investigated the outcome of a second colonoscopy after preparation-associated failure of the first colonoscopy and determine the

proper timing of a second colonoscopy. **Methods:** Patients who failed in their first colonoscopy due to poor bowel preparation were randomly allocated to two groups: next day repeated colonoscopy with sodium phosphate (NaP) 45 mL group (Next day group) vs after 7 days repeated colonoscopy with polyethylene glycol (PEG) 4 L (After 7 days group). Age, sex, past medical history, current medication, bowel habit, reason for colonoscopy were compared between the two groups. The quality of bowel preparation was assessed using Ottawa scale. Bowel preparation scale, colonoscopic findings and polyp detection rate were compared between the two groups. **Results:** A total of 101 patients with unacceptable colonic preparation were enrolled. Fifty one patients were included in Next day group and fifty patients in After 7 days group. Next day group showed the better quality of bowel preparation than After 7 days group (4.75 ± 2.45 vs 5.52 ± 2.24 , $P = 0.003$). There was no significant difference in age, sex, current medication, reason for colonoscopy, colonoscopic findings and polyp detection rate between the two groups. Constipation and past history of abdominal surgery was found to be predictive of a failed repeated preparation (Odd ratio = 1.54, 95% CI (1.14–2.07), $P = 0.004$). **Conclusion:** Second colonoscopy on next day with NaP 45 mL was more effective than after 7 days with PEG 4 L in colonic preparation failure. Constipation and past history of abdominal surgery were significant risk factors of repeated preparation failure.

Key Word(s): 1. Second colonoscopy; 2. preparation failure; 3. interval

Endoscopy and Imaging

P-100

Influence of stress on bowel preparation: a prospective, single blind study

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Objective: Adequate bowel preparation is essential for a thorough and accurate examination of the bowel during colonoscopy. Because psychological and environmental stress induces changes in gastrointestinal motility influencing on bowel preparation, stress could affect degree of bowel cleansing. The goal of this study was to demonstrate the influence of stress on bowel preparation. **Methods:** A prospective, endoscopist single blind study was conducted. Bowel-cleansing was measured by endoscopists using the Boston bowel preparation scale (BBPS) score. Because all study procedures were conducted between 12 AM and 3 PM, a 4-liter same-day regimen of polyethyleneglycol preparation method is used. We evaluated degree of stress using a global assessment of recent stress (GARS) scale. **Results:** Five hundred thirty one patients undergoing colonoscopy were enrolled. In multivariate analysis, the GARS scale was significant contributors to satisfactory bowel preparation ($p < 0.001$). However, the scores of GARS scale between adequate and inadequate bowel preparation groups did not show significant difference in both transverse (T) colon segment and left (L) colon segment (T colon segment; $p = 0.074$, L colon segment; $p = 0.073$). Two subclasses of GARS scale had meaningful effect on bowel preparation: stress related to pressure caused by sickness or injury ($p = 0.027$), overall level of pressure during the past week ($p = 0.013$). **Conclusion:** Bowel preparation in right colon may be influenced by stress unfavorably, especially stress related to pressure caused by sickness or injury & overall level of pressure during the past week. We assume that stress alter colonic bowel motility during bowel preparation.

Key Word(s): 1. Bowel preparation; 2. stress

Endoscopy and Imaging

P-101

Endoscopic submucosal dissection (esd) for rectal tumor became safe and curative procedure as compared with trans anal resection(tar)

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Objective: local excision for early rectal cancer, was selected surgical treatment as transanal tumor resection (TAR) previously. However Endoscopic submucosal dissection (ESD) technique has made it possible to perform one-piece resection of colorectal tumors regardless of lesion size and location. Thus we compared the safety and curability between these treatments. **Methods:** ESD was performed for 48 cases of tumor. In same periods, we experienced 25 cases of TAR. We compared the Operative time, complication and residual/local recurrence between ESD and TAR. **Results:** We completed ESD procedure on 48 of 48 rectal tumors (particularly lower rectum), The average operation time was 125.5 minutes for ESD and 50.4 minutes for TAR. The complication of perforation was 0% and late bleeding was 4.3% with ESD. Thus, although there is no significant difference in the incidence of perforation between these endoscopic procedures. However one case Retroperitoneal emphysema has occurred in TAR and Hospitalization period of the patients was 22 days. This result revealed that ESD has become a very safe procedure than the TAR technique. The incidence of residual/local recurrence was 0% with ESD, 8.0% (2/25) with TAR. **Conclusion:** ESD for colorectal tumors became safe and curative procedure owing to the progress of endoscopic technique and devices as compared with TAR.

Key Word(s): 1. ESD; 2. TAR

Endoscopy and Imaging

P-103

The efficacy for an additional intake of low-volume peg on a procedure-day in patients with poor bowel preparation for colonoscopy

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Objective: An adequate bowel preparation is critical for successful colonoscopy. Some patients cannot achieve an adequate level of bowel cleansing for procedure although they have completed the preparation as instructed. Rescheduling procedure is inefficient and needs further costs and time. We assessed the efficacy for an additional intake of low-volume (2 L) PEG on a procedure-day in patients with poor bowel preparation. **Methods:** We retrospectively enrolled 69 patients with poor bowel preparation despite of complete intake of 4 L PEG or 2 L PEG plus ascorbate from February 2010 to July 2014, who repeated preparation on a procedure-day using 2 L PEG. By reviewing colonoscopic images and

medical records, we gauged the level of preparation state of the second colonoscopy, based on bowel preparation scale suggested by American society of gastroenterology. In addition, we checked the interval of time between the first and second procedure and newly developed side effects. **Results:** The preparation state after additional intake of 2 L PEG on a procedure-day was excellent in 4.3% (3/69), good in 68.1% (47/69), fair in 14.5% (10/69), and poor in 13.0% (9/69) of the patients with poor bowel preparation. Seventy-two percents of them achieved the level of excellent or good preparation. The mean interval between the first and second procedure was 176 minutes (75–311). The patients stayed in a hospital just for more 3 hours in average instead of rescheduling for another day. There were no serious side effects while the patients had an additional PEG and examined the second colonoscopy. **Conclusion:** Over 70% of the patients with poor bowel preparation could achieve an adequate quality of bowel cleansing without serious adverse effects following intake of an additional low-volume PEG on a procedure-day.

Key Word(s): 1. Bowel preparation

Endoscopy and Imaging

P-104

Regression of cap polyposis after eradication of helicobacter pylori

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Objective: Cap polyposis is rare and benign colorectal disease, and characterized histopathologically by the presence of inflammatory polyps with a cap of granulation tissue, which cover the top of polyps. However, in case of atypical type of cap polyposis, it was initially confused with inflammatory bowel disease (IBD) frequently. The pathogenesis of cap polyposis remains still unknown. And the several models of treatment were reported. Here, we present two patients with cap polyposis that regressed after Helicobacter pylori eradication (HPE). **Methods: Results:** Case 1 A 50-year-old woman was presenting pain during defecation and tenesmus. Colonoscopy showed multiple lobulated hyperemic polyps with exudates from hepatic flexure to rectum. We thought a possibility of IBD such as tuberculosis colitis, Crohn's disease or other chronic IBD, and evaluated. Only helicobacter pylori-Urea Breath Test (UBT) was positive. Therefore, HPE was performed. After 1 month, Helicobacter pylori-UBT was negative, and colonoscopy revealed that the multiple lobulated polyps had regressed. Case 2 A 65-year-old woman was transferred at our hospital for further evaluation of an ulcerative inflamed area in the rectum. Colonoscopy showed multiple inflammatory polyps with whitish exudates from rectosigmoid junction to rectum. Under impression of ulcerative colitis (UC), we started treatment of UC with steroid and mesalamine per oral and enema. However, symptom was relapsed shortly after treatment. We tried to perform a HPE. 10 weeks later, colonoscopy revealed that findings of cap polyposis were regressed. Colonoscopy followed by next 16 months later showed that the multiple lobulated polyps disappeared. **Conclusion:** We could diagnose atypical cap polyposis mimicking IBD, and treated successfully with HPE

Key Word(s): 1. Cap polyposis; 2. eradication, 3. Helicobacter pylori

Endoscopy and Imaging

P-105

Primary intestinal lymphangiectasia with generalized warts diagnosed by capsule endoscopy

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Objective: Primary intestinal lymphangiectasia (PIL) is a congenital and rare disorder characterized by dilated intestinal lymphatics resulting in lymph leakage and protein-losing enteropathy. PIL patients are associated with cell mediated immunodeficiency due to loss of lymphocytes, especially CD4+ T cells. PIL associated with generalized warts is very rarely reported. **Methods:** Case Presentation: A 36-year-old man was admitted to the hospital with a 3-month history of diarrhea and weight loss (5 kg). He had generalized warts on the whole body, including both hands and feet (Figure 1). Laboratory tests showed hypoalbuminemia (albumin, 2.3 g/dL), hypogammaglobulinemia (IgG, 653.4 mg/dL), lymphopenia (CD4+ T cells, 24.4%; CD3+ T cells, 54.7 mg/dL) and increased stool α -1 antitrypsin clearance (220.11 mL/24 hr). Upper endoscopy showed diffuse mucosal edema in the duodenum. Colonoscopy revealed white mucosal plaques and spots in the terminal ileum and diffuse mucosal edema in the colon. Capsule endoscopy showed diffuse multifocal white mucosal plaques from the proximal jejunum to the terminal ileum, which is compatible with intestinal lymphangiectasia (Figure 2). On histological examination of the terminal biopsy specimens, CD240-stained endothelial cells were found, which indicates dilated lymphatics. CD68-stained macrophages were observed, which aggregated to uptake lipids leaking from dilated lymphatics. Histological findings are also suggestive of PIL. Flow cytometry of peripheral blood lymphocytes showed reduced number of CD3+ T cells and CD4+ T cells. Finally, he was diagnosed with PIL, and his warts were associated with T-cell mediated immunologic abnormalities. We report a rare case of PIL with generalized warts diagnosed by capsule endoscopy. **Results:** (Figure 1). **Conclusion:** (Figure 2).

Key Word(s): 1. Lymphangiectasia; 2. warts; 3. capsule endoscopy



Figure 1



Figure 2

Endoscopy and Imaging

P-107

Bowel preparation for colonoscopy with low-volume polyethylene glycol (2 l) plus lactulose and standard volume polyethylene glycol (4 l) in patients with constipation

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Objective: To survey the efficacy, safety, and acceptability of bowel preparation for colonoscopy with low-volume polyethylene glycol (2-L) plus lactulose versus standard volume polyethylene glycol (4-L) in patients with constipation. **Methods:** Low-volume polyethylene glycol (2-L) plus lactulose and standard volume polyethylene glycol (4-L) were used as our bowel cleansing protocol. Blinded colonic scoring assessment of bowel cleansing of each group was audited. Lactulose were used for 3 days before colonoscopy scan. A total of 258 participants were included, 129 participants in each group. **Results:** Excellent bowel preparation was achieved in 200(77.5%) patients; 20(7.8%) patients had good bowel preparation, 22(8.5%) patients had fair bowel preparation and 16(6.2%) patients had poor bowel preparation. The overall cleansing efficacy was similar in 2 groups (94% vs.93.6%, $P > 0.05$). No serious side effects of bowel cleansing were reported. **Conclusion:** Low-volume polyethylene glycol (2-L) plus lactulose and standard volume polyethylene glycol (4-L) were similar effective for Bowel preparation in patients with constipation.

Key Word(s): 1. Colonoscopy; 2. bowel preparation; 3. constipation

Endoscopy and Imaging

P-108

Correlation between terminal ileum ileoscopy and histopathology image in patients with chronic diarrhea and normal colonoscopy

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Objective: This study discusses the correlation between the results of the terminal ileum ileoscopy with histopathologic results. **Methods:** The method used was a cross-sectional study and diagnostic test between the two examinations, with histopathologic examination as the gold standard. **Results:** The results give the correlation between the two examination is 93.33%. Moreover ileoscopy compared with histopathologic examination as the gold standard also give a sensitivity of 94%, specificity 90%, positive predictive value 97.9%, and negative predictive value of 75%. **Conclusion:** Therefore it can be concluded that ileoscopy examination in patients with chronic diarrhea and normal colonoscopy gave similar results with histopathologic examination.

Key Word(s): 1. Ileoscopy; 2. histopathology; 3. correlation

Endoscopy and Imaging

P-109

Feasibility of confocal laser endomicroscopy for duodenum lesions

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Objective: Probe-based confocal laser endomicroscopy (pCLE) is a novel endoscopic modality and provides real-time in-vivo histological evaluation for gastrointestinal lesions, but no investigations have reported its application in the analysis of duodenum neoplasms. The aim of this study is to evaluate the feasibility of pCLE for the duodenum neoplasms. **Methods:** After training the diagnosis of several typical CLE images of normal mucosas, adenomas and carcinomas of duodenum, 15 case images (5 normal mucosas, 5 adenomas, 5 carcinomas) were selected. 12 different endoscopists (2 ~ 16 years) diagnosed the images and were compared with the histopathological diagnoses (biopsy, ESD specimen) by the pathologist. **Results:** The accuracy of the 15 case images diagnosed by the endoscopists was 66.7 ~ 93.3% and the rate did not relate to the years of experience of the endoscopy. The accuracy of the normal mucosa, adenoma, and carcinoma were 73.3%, 68.3%, 100%, respectively. The accuracy, sensitivity and specificity for carcinomas were 100%. **Conclusion:** The results of CLE and histopathological diagnoses were relatively high in this study, regardless of the years of experience of the endoscopy. This study suggested that the model image of CLE will make possible to differentiate carcinoma or non-carcinoma. Further studies based on a large number of cases are necessary to clarify this suggestion.

Key Word(s): 1. Probe-based confocal laser endomicroscopy (PCLE)

Endoscopy and Imaging

P-110

Capsule endoscopy is a very useful tool as a decision of treatment strategy for neurocysticercosis**Presenting Author:** SHINTARO MINOWA**Additional Authors:** MARI HAYASHIDA, DAISUKE SAITO, AKIHITO SAKURABA, YUJI YAMADA, YASUHARU YAMAGUCHI, GENICHI KOYAMA, HIROSHI YAMAZAKI, SHIN'ICHI TAKAHASHI**Corresponding Author:** SHINTARO MINOWA**Affiliations:** *Kyorin University School of Medicine, Kyorin University School of Medicine, National Institute of Infectious Diseases, Kyorin University School of Medicine*

Objective: A 20 year-old Japanese female had visited southeast and west Asian countries for several times on business during 2 years. She admitted a hospital due to sudden onset of convulsion. A brain magnetic resonance imaging (MRI) detected numerous small cystic lesions in the brain cortex and basal ganglia. The patient was referred to the Neurology Department of Kyorin University Hospital for a suspected brain infection such as toxoplasmosis. **Methods:** The brain MRI showed numerous cystic lesions in exhibiting a typical 'hole-with-a-dot' sign that is highly characteristic of NCC. Since the serum antibody and cerebrospinal fluid antibody was positive for NCC she was diagnosed as NCC. Although the eggs and proglottids of *Taenia solium* were not detected in feeces, capsule endoscopy was performed prior to anthelmintic treatment to determine whether the *Taenia solium* had exists on the digestive tract. If *Taenia solium* exist on the digestive tract, the antiparasitic agent may be induce NCC by destroying proglottids. Because the parasite eggs and the hexacanth larvae may moving in systemic. Capsule endoscopy detected the head and proglottids of *Taenia solium* in the upper small intestine; therefore, deworming was first performed by using Gastrografin. Subsequently, praziquantel 2400 mg/day and predonisolone 30 mg/day were administered for 28 days to treat NCC, and the brain cystic lesions was completely disappeared. **Results:** In this case, mitochondrial DNA analysis confirmed the diagnosis of NCC as the Asian genotype of *Taenia solium*. The route of infection was presumed to be infected pork meat ingested in west Asia. **Conclusion:** Capsule endoscopy for detecting GI lesion is a very useful tool as a decision of treatment strategy for NCC.

Key Word(s): 1. Capsule endoscopy neurocysticercosis

Endoscopy and Imaging

P-111

Clinical outcomes of endoscopic submucosal dissection for 958 colorectal epithelial neoplasms**Presenting Author:** TOSHIFUMI MITANI**Additional Authors:** HOTEYA SHU, MITSURU KAISE**Corresponding Author:** TOSHIFUMI MITANI**Affiliations:** *Toranomon Hospital, Toranomon Hospital*

Objective: Endoscopic submucosal dissection (ESD) is also useful therapy for colorectal tumors because large and difficult lesions can be resected in an en bloc fashion. However, the **Methods:** This study enrolled 958 consecutive colorectal epithelial neoplasms, conducted by ESD procedures in Toranomon Hospital from June 2005 to December 2013 and retrospectively examined. Rates of en bloc resection, R0 resection, and

major complications were analyzed as short-term outcomes. As long-term outcomes, over-all survival were assessed in 508 patients followed up more than 1 year in our hospital. **Results:** Total results of this study was shown that male: female was 518: 328, mean age 65.4 years (range 34–91 years), mean tumor size 30.7 mm (range 4–209 mm), procedure time 67.9 minutes (range: 5–500 minutes), Rates of en bloc resection and R0 resection 98.5% and 91.0%, respectively. Perforation occurred in 3.4% and 8 cases of perforation were managed with surgical treatment. Postoperative bleeding occurred in 3.0% and endoscopically managed, 3 cases were required with blood transfusion. Additional colectomy was undergone for 45 patients and 3 cases were proven lymph node metastasis. Local recurrence was detected in 4 lesions. There were no patients died of primary colorectal cancer but 7 patients died of other diseases and over-all survival rate was 96.2%. **Conclusion:** Excellent short-term and long-term outcomes revealed that ESD showed acceptable resectability for colorectal tumor although our data was single-center retrospective study.

Key Word(s): 1. Colorectal ESD; 2. outcomes

Endoscopy and Imaging

P-112

Clinical factors for consideration in patients with gastric hyperplastic polyps treated by endoscopic polypectomy**Presenting Author:** HEE SEOK MOON**Additional Authors:** SE WOONG HWANG, HYUN YONG JEONG**Corresponding Author:** HEE SEOK MOON**Affiliations:** *Department of Internal Medicine, Department of Internal Medicine*

Objective: Hyperplastic polyps are the most common type of gastric polyps that constitute 30–93% of all benign epithelial gastric polyps. The overall prevalence of dysplasia in patients with hyperplastic polyps is believed to be <2%, and higher in patients with large polyps (>2 cm). We aimed to identify the clinical features of hyperplastic polyps that undergo neoplastic transformation. **Methods:** Between March 2011 and June 2013, 315 hyperplastic polyps that were removed by endoscopic polypectomy from 217 patients were analyzed retrospectively. **Results:** Neoplastic transformations were found in 5 cases (1.6%), including 3 cases of adenoma (1.0%) and 2 cases of adenocarcinoma (0.6%). Polypectomy-associated complications were noted in only 2 (0.6%) cases, which were bleeding in both cases. Neoplastic transformation was significantly associated with the absence of hyperemia on endoscopy (non-neoplastic transformation group, n = 26 [8.4%] vs. neoplastic transformation group, n = 3 [60%]; P = 0.006). However, no other significant differences were found between these groups in terms of age, sex, presence of *Helicobacter pylori*, size, location, number of detected polyps in each patient, and endoscopic appearance such as nodular changes or erosions and shape. **Conclusion:** No clinical factors were associated with the neoplastic transformation of hyperplastic polyps. In addition, neoplastic transformations were almost impossible to identify using endoscopy. Therefore, endoscopic polypectomy could be considered for the accurate diagnosis and definitive treatment of gastric hyperplastic polyps <1 cm in size.

Key Word(s): 1. Stomach; 2. hyperplastic; 3. polyps; 4. neoplastic; 5. transformation

Endoscopy and Imaging

P-113

Usefulness of magnified endoscopy with nbi for the detection and diagnosis of anal canal cancer**Presenting Author:** YUSUKE MURAMATSU**Additional Authors:** TERUHITO KISHIHARA, YOSHIRO TAMEGAI, MASAHIRO IGARASHI, AKIKO CHINO**Corresponding Author:** TERUHITO KISHIHARA**Affiliations:** *Cancer Institute Hospital, Cancer Institute Hospital, Cancer Institute Hospital, Cancer Institute Hospital*

Objective: Early detection, diagnosis, and treatment by endoscopy are important because treatment outcomes and prognosis are dependent on the tumor size of anal canal cancer. **Methods:** We report some cases of anal canal cancer in which magnified endoscopy with NBI was very useful. **Results:** A 64-year-old female. Magnified endoscopy with NBI revealed an irregular vascular network at the oral side of the elevated lesion. Transanal local excision was carried out and squamous cell carcinoma was diagnosed. Cancer in situ was widely observed at the mucosa without an elevation, where an irregular vascular network was recognized by magnified endoscopy with NBI, and the modality was useful for determination of the area for excision. A 54-year-old female. Magnified endoscopy with NBI revealed an irregular network of dilated blood vessels on the elevated lesion. In addition, an irregular vascular pattern in various diameters was observed on the mucosa without an elevation and squamous cell carcinoma was diagnosed by biopsy. **Conclusion:** The mucosa of the anal canal is composed of squamous epithelium as in the esophagus and focusing by magnified endoscopy with NBI on the changes in vascular patterns specifically observed for squamous epithelium enables early detection of anal canal cancer.

Key Word(s): 1. NBI; 2. anal canal cancer

Endoscopy and Imaging

P-114

Usefulness of transabdominal ultrasonography for improved safety of capsule endoscopy in patients with crohn's disease**Presenting Author:** MAKOTO NAKANO**Additional Authors:** SHIRO OKA, SHINJI TANAKA, ATUSHI IGAWA, TAIKI AOYAMA, SHINTARO SAGAMI, YOKO KOMINAMI, KENTA NAGAI, KAZUAKI CHAYAMA**Corresponding Author:** MAKOTO NAKANO**Affiliations:** *Hiroshima University Hospital, Hiroshima University Hospital*

Objective: Transabdominal ultrasonography (TUS) is useful for detecting small-bowel stricture. We aimed to clarify the clinical usefulness of TUS for improving the safety of capsule endoscopy (CE) in patients with Crohn's disease (CD). **Methods:** Subjects were 76 patients with CD who underwent double-balloon endoscopy (DBE) and/or patency capsule (PC) examination and/or CE before TUS. The TUS findings were classified as intestinal narrowing and distension at the oral side (Type A), extensive bowel wall thickening (Type B), focal bowel wall thickening (Type C), or no abnormality (Type D). We compared TUS findings to DBE, PC, and CE findings with respect to small-bowel stricture, defined as failure of the enteroscope to pass through the small bowel or capsule retention.

Results: Small-bowel stricture was discovered in 50% (38/76) of patients. One or more strictures were detected by TUS in 95% (36/38) of these patients and corresponded to one of the three TUS abnormality types. One (3%) of the small-bowel strictures was proximal, 4 (11%) were deep, and 33 (86%) were distal. Identified strictures corresponded to TUS findings as follows: 100% (17/17) to Type A, 58% (11/19) to Type B, 33% (8/24) to Type C, and 10% (2/20) to Type D. The two strictures showing no TUS abnormality (Type D) were located deep in the small bowel. **Conclusion:** When TUS reveals Type A or Type B findings in patients with CD, CE or PC should not be attempted. If TUS shows Type C or Type D findings, PC examination should be performed before CE.

Key Word(s): 1. Transabdominal ultrasonography capsule endoscopy Crohn's disease

Endoscopy and Imaging

P-115

Clinical outcomes of metallic stent for malignant colorectal obstruction**Presenting Author:** OSAMU NAKASHIMA**Additional Authors:** MINORU MURAYAMA, KATSUO YAMAZAKI, KAZUO KOIZUMI**Corresponding Author:** OSAMU NAKASHIMA**Affiliations:** *Izumi Memorial Hospital, Izumi Memorial Hospital, Izumi Memorial Hospital*

Objective: One of the common symptoms of colorectal cancer is obstruction, which usually occurs in advanced. Therefore, palliation is the aim of therapy in most of these patients. The most important feature of palliative therapy in patients with obstructive unresectable colorectal cancer is to achieve colonic decompression to eliminate the obstructive symptoms and to avoid bowel perforation. Surgical therapy has been the standard therapy for this problem for many years, which usually affords a temporary or permanent colostomy. However, although surgical therapy is an effective solution of colorectal obstruction, it is often a heavy burden to the patient, because the patient is usually in a poor clinical condition. In addition, many patients with advanced colorectal cancers don't want to be treated by an operation, some even refuse surgical therapy, and many ask for a nonsurgical alternative therapy. **Methods:** We evaluated the usefulness and safety about the cases with malignant colorectal obstruction treated with colonic metallic stent in our Hospital. We attempted to insert colonic metallic stent for 15 cases of obstruction for colorectal cancer. But we could not insert for one case. **Results:** We diagnosed malignant colorectal obstruction for all cases due to abdominal CT and colonoscopy. We inserted colonic stent for palliation in 11 cases and for bridge to surgery in 3 cases. Chronic complication, in one case, tumor ingrowth had been seen. Another one case, we could not insert colonic stent had underwent emergency operation (colostomy). It is recognized that emergency abdominal surgery is associated with higher risks of death and complications than the same operation performed on an urgent or elective basis. Surgical therapy and inserting long tube have been the standard therapy for this problem for many years, which usually affords a temporary or permanent colostomy. **Conclusion:** Colonic metallic stent placement offers low-risk treatment for management of colonic obstruction either palliatively or preoperatively. Colonic stent may reduce the stress of surgeons.

Key Word(s): 1. Metallic stent obstruction of colorectal cancer

Endoscopy and Imaging

P-116

Is narrow-band imaging useful for histological evaluation of gastric mucosa-associated lymphoid tissue lymphoma after treatment?**Presenting Author:** KOUICHI NONAKA**Additional Authors:** KEN OHATA, NOBUYUKI MATSUHASHI, MICHIO SHIMIZU, SHIN ARAI, YOSHIMITSU HIEJIMA, HIROTO KITA**Corresponding Author:** KOUICHI NONAKA**Affiliations:** *Ntt Medical Center Tokyo, Ntt Medical Center Tokyo, Saitama Medical University International Medical C, Saitama Medical University International Medical C, Tokyo Healthcare University, Saitama Medical University International Medical C*

Objective: Endoscopic diagnosis of stomach mucosa-associated lymphoid tissue (MALT) lymphoma is often difficult because few specific findings were indicated. Even when MALT lymphoma is suspected by endoscopy, it is still difficult to make a definitive diagnosis by biopsy since lymphoma cells sometimes distribute unevenly. We previously reported that a tree-like appearance (TLA) is a characteristic finding of MALT lymphoma by narrow-band imaging (NBI) magnifying endoscopy and it is valuable in the selection of an optimal biopsy site in MALT lymphoma. Here, we study the frequency of TLA and evaluate the relationship between the response to eradication therapy and TLA in MALT lymphoma.

Methods: In this study, we retrospectively examined the clinical background, endoscopic findings, response to eradication therapy, and *H. pylori* infection status of 16 patients diagnosed with MALT lymphoma who were referred to our hospital from April 2007 to August 2012. The regimen for eradication therapy consisted of rabeprazole, with amoxicillin and clarithromycin, all given for 7 days. **Results:** TLA was found in 75% (12/16) and *H. pylori* infection in 75% (12/16) of patients diagnosed with MALT lymphoma by NBI magnifying endoscopy. In all CR patients after eradication treatment, the TLA finding had disappeared (100%); however, in the non-CR patients, TLA remained the same as before the eradication therapy ($p = 0.002$). **Conclusion:** These results suggest that NBI magnifying endoscopy may be useful not only in the diagnosis but also in the evaluation of response to eradication therapy of MALT lymphoma of the stomach.

Key Word(s): 1. NBI; 2. malt

Endoscopy and Imaging

P-117

Confocal laser endomicroscopy using dye dispersion**Presenting Author:** KOUICHI NONAKA**Additional Authors:** KEN OHATA, MAIKO TAKITA, YASUSHI MATSUYAMA, TOMOAKI TASHIMA, YOHEI MINATO, NOBUYUKI MATSUHASHI**Corresponding Author:** KOUICHI NONAKA**Affiliations:** *Ntt Medical Center Tokyo, Ntt Medical Center Tokyo, Ntt Medical Center Tokyo, Ntt Medical Center Tokyo, Ntt Medical Center Tokyo*

Objective: Probe-based confocal laser endomicroscopy (pCLE) is a new imaging modality that enables the in vivo histological evaluation of gastrointestinal mucosa during ongoing endoscopy. As confocal imaging is possible by fluorescein of the tissue, fluorescein contrast is necessary for pCLE. Fluorescein is intravenously administered. The side effects of fluo-

rescein include yellow-colored urine, nausea, and exanthema. However, these symptoms resolve over time. Other severe adverse effects are extremely rare. However, some studies indicated that the intravenous administration of fluorescein caused shock or arterial ischaemia. To promote the widespread application of pCLE, an alternative method in which pCLE can be more safely performed compared to the intravenous administration of fluorescein should be developed. We successfully obtained an image quality similar to that on intravenous administration by dripping fluorescein in the duodenal mucosa, and not by intravenous administration, and reported it as a first in the world (*Digestive Endoscopy*, 2014). **Methods:** In 3 subjects, crystal violet, indigo carmine, Lugol's iodine, and 10% fluorescein were dripped on the upper gastrointestinal mucosa (esophagus, gastric body, and duodenum) in this order. Finally, 2.5 mL of 10% fluorescein was intravenously injected, and the image with this was used as a control. **Results:** In the stomach and duodenum, images could be acquired only with the dripping and intravenous injection of fluorescein in all subjects, and the images were favorable for histological evaluation. In the esophagus, images could also be acquired only with the dripping and intravenous injection of fluorescein, but the images were insufficient to evaluate the histology. **Conclusion:** Confocal laser endomicroscopy was suggested to be inappropriate for histological evaluation of the esophageal mucosa. For the stomach and duodenum, it was suggested that dripping a very small amount of fluorescein is an alternative to intravenous administration, being a clue to promoting the widespread of confocal laser endomicroscopy. We also report on the preparation and skills for the fluorescein dripping method.

Key Word(s): 1. Confocal laser endomicroscopy; 2. fluorescein

Endoscopy and Imaging

P-118

Blue laser imaging is useful for detection and detailed examination of early flat gastric cancers**Presenting Author:** MASAHIRO OKADA**Additional Authors:** HIROYUKI OSAWA, YOSHIMASA MIURA, YUJI INO, TAKEHITO TAKEZAWA, HIROYUKI SATOH, HIRONORI YAMAMOTO**Corresponding Author:** MASAHIRO OKADA**Affiliations:** *Jichi Medical University, Jichi Medical University, Jichi Medical University, Jichi Medical University, Jichi Medical University*

Objective: Endoscopic diagnosis of early flat gastric cancers is often difficult because the subtle changes of surface mucosa are difficult to recognize by standard white-light images. High resolution images or high color contrasted images may improve the diagnostic accuracy for such cancers. We experienced a new diagnostic method of blue LASER imaging (BLI) system for early flat gastric cancers. **Methods:** These new images are generated by two kinds of LASER light source. The illumination of the first source with 410 ± 10 nm wavelength can produce a clear image of superficial microvasculature of digestive mucosa. Another source with 450 ± 10 nm can produce a deep vascular image and also excite fluorescence leading to white light images. The combination of these illuminations can characterize as BLI image and BLI-bright image that exhibit both detailed microstructure and microvasculature. BLI-bright images have higher proportion of white light images than BLI images. Since 2011, we observed a total of five early flat gastric cancer lesions. **Results:** Without magnification, three lesions were recognized by BLI images but not by LASER white-light images alone. The other two lesions showed distinctively abnormal high-resolution images by LASER white-light. BLI-bright and BLI presented clear images with high color contrast as well as detailed

smoothly by air inflation. These observations indicated that the lesion was a mucosal carcinoma. We performed en bloc resection of the tumor by endoscopic submucosal dissection (ESD). **Results:** The tumor was 0-IIc type and 24 mm in diameter. A pathological diagnosis of Squamous cell carcinoma, pTis, ly0, v0, VM (-), HM (-) was made. **Conclusion:** As for anal canal cancer, the frequency in all colon cancer was 0.7–1.8% in literatures. Most of them are adenocarcinoma; squamous cell carcinoma is relatively rare. This is the first report of depressed-type squamous cell carcinoma at anal canal, which was treated by ESD.

Key Word(s): 1. Anal canal cancer. scc. ESD

Endoscopy and Imaging

P-121

A second-look endoscopy after endoscopic submucosal dissection for left-sided colorectal epithelial neoplasm may be unnecessary: retrospective analysis of postendoscopic submucosal dissection bleeding

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Objective: Endoscopic submucosal dissection (ESD) is one of the curative endoluminal surgical procedures for colorectal epithelial neoplasms. Although second-look endoscopy (SLE) is frequently performed after gastric ESD, no reports have assessed the role of SLE in colorectal ESD. We investigated whether a SLE after ESD is effective in the prevention of delayed bleeding. **Methods:** This study included 173 consecutive patients in whom 174 left-sided colorectal epithelial neoplasms were resected using ESD between March 2005 and December 2013. After removal of the lesion, preventive post-ESD-coagulation for all visible exposed vessels or prophylactic clip closure for ulcer was performed. In the patients who performed SLE, the post-ESD ulcers were categorized according to the Forrest classification: high-risk ulcer stigma (type I and IIa) and low-risk ulcer stigma. We classified patients into two groups on the basis of performing SLE and retrospectively compared delayed bleeding. **Results:** SLE was performed in 97 (55.7%) lesions on the day following ESD. SLE revealed that the incidence of type IIb and III ulcer stigma was 38 (39.2%) and 59 (60.8%) respectively and there was no high risk ulcer stigma. One patient with IIb ulcer stigma performed prophylactic clipping without bleeding and one patient with IIb ulcer stigma performed argon plasma coagulation as oozing bleeding from a margin of ulcer was occurred after air inflation. There was no delayed bleeding both in the SLE group and no-SLE group. **Conclusion:** A SLE after left-sided colorectal ESD may contribute little to the prevention of delayed bleeding if preventive post-ESD-coagulation or clip closure is performed.

Key Word(s): 1. Colorectal neoplasm; 2. endoscopic submucosal dissection; 3. second-look endoscopy

Endoscopy and Imaging

P-122

The effect of endoscopic variceal banding ligation and sclerotherapy on portal hypertensive gastropathy

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Objective: Patient with portal hypertensive gastropathy (PHG) may experience stomach bleeding. Endoscopic treatment of esophageal varices may affect PHG, but its remaining unclear. This study aims to investigate the effects of endoscopic variceal ligation and sclerotherapy on the development and severity of PHG. **Methods:** Patients with esophageal varices by various etiologies presenting in the endoscopy unit of Dr. Moewardi Hospital and meet the inclusion criteria between January–June 2014. The patient's past record was reviewed retrospectively. PHG grading using Baveno scoring system. Statistical analysis using Wilcoxon Rank sum test with $p < 0.05$ statistically significant. **Results:** Out of 55 patients, 43 were males (78%). Ages range from 29–80 years (mean 54.62 ± 11.26 years). There were 6 patients (10.9%) with grade I esophageal varices, 7 patients (12.7%) grade II, 39 patients (70.9%) grade III and 3 patients (5.4%) grade IV. Forty-five patients (81.8%) had mild and 4 patients (7.3%) were suffering from severe PHG at the start. Twenty-two patients underwent sclerotherapy and 27 Endoscopic Variceal Banding Ligation (EVBL). Our finding shows relation between variceal degree with development of PHG ($p = 0.003$), but not with sclerotherapy ($Z = -1.414$, $p = 0.157$) and EVBL ($Z = -1.134$, $p = 0.257$) on the development and severity of PHG. **Conclusion:** Both sclerotherapy and EVBL do not related with the development and severity of PHG.

Key Word(s): 1. Endoscopic variceal banding ligation; 2. portal hypertensive gastropathy; 3. sclerotherapy

Endoscopy and Imaging

P-124

Usefulness of drinking oolong tea before premedication for improving visualization during esophagogastroduodenoscopy

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Objective: Premedication with dimethicone, pronase, and sodium bicarbonate improves visibility during esophagogastroduodenoscopy (EGD). However, mucus, foam and bubbles in the upper gastrointestinal tract may remain despite using these solutions. Oolong tea contains saponin that has surfactant effects on a fat solution. The aim of this study was to assess the usefulness of drinking oolong tea before conventional premedication for

improving endoscopic visibility. **Methods:** From May to June 2014, a total of 59 patients were received EGD and treated in two groups: group A (n = 30): conventional premedication using dimethicone, pronase, and sodium bicarbonate; group B (n = 29): drinking 150 mL of oolong tea before conventional premedication. One endoscopist assesses the mucosal visibility score (from score 0: no adherent mucus; to score 5: adherent mucus in spite of using more than 60 mL of water including dimethicone during EGD). Visibility score and procedure time was compared between group A and B. Questionnaire was carried out for the patients of group B after EGD. **Results:** The mucosal visibility score showed significantly lower in the patients of group B (1.86 ± 1.09) than in those of group A (3.43 ± 1.17) ($p < 0.05$). Procedure time was not extended in spite of drinking immediately before EGD in comparison with group A (311.6 ± 75.5 seconds) and group B (311.0 ± 82.6 seconds) (n.s.). According to the questionnaire, drinking oolong tea before EGD has a high satisfaction level, and contributes to the relaxation. **Conclusion:** Premedication using 150 mL of oolong tea before conventional premedication improves visualization during EGD. Moreover, oolong tea to drink just before EGD does not interfere with the procedure.

Key Word(s): 1. Oolong tea; 2. premedication

Endoscopy and Imaging

P-125

Two case reports of puo with hepatic and splenic abscesses: a unifying diagnosis

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Objective: To highlight the significance of splenic abscesses in PUO.

Methods: Case notes of two patients with PUO, who presented to the two medical units of the authors, were retrospectively analyzed.

Results: Case 1 A 36 year old adult Sri Lankan male engineer having type 2 DM and HTN and secondary polycythemia presented with a PUO of 1 month duration. LFT and renal profile were normal. There was a neutrophil leucocytosis with toxic granulations suggestive of bacterial sepsis. There was no significant exposure history. Examination revealed only hepatomegaly. Ultrasound showed hepatomegaly with fatty changes. ANA was negative, CRP >100 mg/L, hepatitis and HIV screens were negative, 2D Echo and TOE were normal. CECT abdomen and pelvis showed multiple splenic and liver abscesses. Repeated blood cultures yielded *Burkholderia pseudomallei* and the fever responded to IV meropenem. Case 2 A 55 year old diabetic Sri Lankan male presented with a PUO of 2 months with loss of weight, loss of appetite and abdominal pain. The history revealed no other remarkable features. The examination revealed a palpable spleen. The investigations were normal as per previous case except for ESR >100 mmHg and CRP >200 mg/L. Ultrasound abdomen revealed splenomegaly with irregular hypoechoic regions and CECT of the abdomen confirmed multiple splenic abscesses. Blood cultures grew *Burkholderia pseudomallei*. Blood picture was suggestive of bacterial sepsis and fever responded to IV meropenem. **Conclusion:** In patients

with PUO and splenic abscesses in endemic areas, melioidosis should be entertained as a possible differential diagnosis.

Key Word(s): 1. PUO

Endoscopy and Imaging

P-126

A rare cause of hemoperitoneum, presenting as acute abdomen

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Objective: To report a rare cause for haemoperitoneum. There are many causes resulting in a haemoperitoneum such as blunt or penetrating trauma to the abdomen, tumour-associated haemorrhage or in blood dyscrasias. Splenic infarctions as a cause of frank hemoperitoneum has not been documented before, to the best of our knowledge. **Methods:** Case notes of a 54 year old adult Sri Lankan male, who had been diagnosed to have chronic alcoholic cirrhosis, portal hypertension and bronchial asthma, admitted with an acute abdomen and a hypotensive state were retrospectively analysed. Examination had revealed presence of free fluid with mild tenderness and guarding of the abdomen. His previous abdominal scan revealed no ascites. **Results:** The investigations revealed the following: On the FBC, Hb was 11.5 g/dl, while other indices and cell lines were normal. CRP was 23 mg/L and the other biochemical and hematological investigations were unremarkable. Ultrasound abdomen showed free fluid. Peritoneal tap was blood stained with a Hb of 11.5 g/dl. Cells were obscured by blood. Clotting screen was normal. The first contrast CT scan abdomen was inconclusive and showed old findings of liver disease and the second paracentesis was dry. Second contrast CT abdomen done the following day revealed a peripheral splenic infarction. The patient had an uneventful recovery. **Conclusion:** Peripheral splenic infarction should be entertained as a cause for frank hemoperitoneum.

Key Word(s): 1. Hemoperitoneum; 2. splenic infarct

Endoscopy and Imaging

P-127

Enteroscopy using double balloon technique: indications, methodology, safety, and clinical impact in suspected small bowel diseases

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Additional Authors: RANJIT KUMAR BANIK, SHASANKA KUMAR SAHA, NIKHIL CHANDRA NATH, MADHUSUDAN SAHA, MOHAMMAD OMAR FARUQ, MOHAMMAD HABIBUR RAHMAN, SWAPAN CHANDRA DHAR

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Objective: Double balloon Enteroscopy (DBE) allows complete visualization, biopsy, and therapeutic intervention in the small bowel. The aim

of the study was to evaluate the indication, diagnostic impact and safety of the procedure in the management of small intestinal diseases. **Methods:** Between October 2011 to May 2014, 168 consecutive double-balloon enteroscopies were performed in 103 patients with suspected small bowel diseases in our department. Scope insertion route (anal or oral) of double-balloon enteroscopy was chosen according to the suspected location of the lesions basing on the clinical features and on the findings, when available, of previous endoscopic or radiological imaging. Sedation was achieved with intravenous Ketamine and Fentanyl. **Results:** Total 168 DBE procedures in 103 patients were carried out (Female 45, Male 58 and age range 16–65 years). Seventy four patients underwent both oral and anal approach, 28 patients underwent only oral and 12 patients needed only anal approach. No major complication was found. The overall diagnostic yield was 67% (69/103 patients). Enteroscopy revealed normal in 34 (33%) cases. Indication of DBE were chronic abdominal pain (n = 57), obscure GI bleeding (n = 25), chronic diarrhea (n = 16), recurrent sub acute small gut obstruction (n = 8), abnormal imaging (n = 5). The diagnoses were mucosal ulcerations of various etiologies (39/69; 56.5%), vascular ectasia (11/69; 15.9%); worm infestation (6/69; 8.7%). Polyps and tumors were identified, including malignancy, in 18.8% (13/69). In 67% cases, DBE findings influenced the subsequent medical, endoscopic or surgical management. **Conclusion:** Double balloon enteroscopy is a useful, safe and well tolerated method with a high diagnostic and therapeutic impact for the management of suspected small bowel diseases.

Key Word(s): 1. Double balloon enteroscopy; 2. small bowel

Endoscopy and Imaging

P-128

The optimal endoscopic screening interval for detecting early gastric cancers

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Objective: The optimal interval between endoscopic examinations for detecting early gastric cancers has not been become clear. So we tried to clarify the optimal interval between endoscopic examinations for the early diagnosis of gastric cancers. **Methods:** We researched patients who had a diagnosis of gastric cancer at our hospital between October 2008 and September 2013, and underwent penultimate endoscopy at the hospital within 30 months from 6 months. A total of 153 patients were divided into 2 groups according to the interval between endoscopic examinations: group A (6 to 18 months) and group B (19 to 30 months). The number of patients was 128 in Group A and 25 in Group B. We compared the proportion of endoscopically treatable gastric cancers and the proportion of advanced gastric cancers between 2 groups by Chi-square test. **Results:** In total, 149 and 4 patients were diagnosed with early cancer and advanced cancer. Almost all them had atrophic gastritis. The proportion of endoscopically treatable gastric cancers was not significantly difference between the 2 groups (Group A vs Group B: 81.3% vs 80.0%, $P = 0.884$). In addition, the proportion of advanced gastric cancers was not significantly difference (Group A vs Group B: 1.5% vs 8.0%, $P = 0.065$). **Conclusion:** Annual endoscopy cannot facilitate the detection of endoscopically treatable gastric cancers compared with biennial endoscopy.

Because there is little number of cases, it is necessary to repeat further examination.

Key Word(s): 1. Screening endoscope; 2. gastric cancer

Endoscopy and Imaging

P-129

Utility of endoscopic ultrasonography for evaluation and surveillance of gastric subepithelial tumours

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Objective: Whilst surgery is advocated for large gastric GISTs (20–30 mm +), management of small (<20 mm) lesions is controversial. A strategy of endoscopic ultrasound surveillance is commonly used, but data on its utility is limited. We analysed our experience in evaluation and surveillance of gastric GISTs in Western Australia across all tertiary centres. **Methods:** All patients undergoing EUS for the evaluation of a gastric subepithelial lesion in Western Australia between February 2002 and May 2014 were identified. Data was represented as mean or median +/- range as appropriate. **Results:** 263 patients with gastric subepithelial lesions were identified. EUS diagnosis was GIST in 161 cases (62%). 77 of the endosonographically suspected GISTs were recommended for surveillance. Of these, 55 patients proceeded to EUS surveillance, male 27 (49%) with mean age 59.1. Mean size of lesion 14.5 mm (range 6–40 mm). 155 EUS procedures were performed with mean number of EUSs per patient 2.8 (range 2–7). Mean time of EUS follow up was 33 months, median 26 months (range 4–113 months). In this time mean change in size was -0.65 mm, median 0 (range -19 to +5 mm). Longer follow up time had no relation to change in size. 5 patients (9%) went for surgery after a surveillance period of 5.0, 5.8, 13.6, 26.3 and 27.3 months respectively. 3 lesions were ≥ 30 mm on first EUS and indication was new lymph nodes (1) and cystic areas (2). The remaining 2 lesions were 20 mm and grew by 1 mm and 5 mm on first FU respectively. Histopathology showed no high risk lesions; low risk GIST 2, leiomyoma 2, schwannoma 1. **Conclusion:** In our cohort, there appears to be little evidence of significant growth of small gastric GISTs with up to 9 years of EUS follow up. This leads us to question the utility of frequent EUS surveillance for small gastric GISTs (<20 mm).

Key Word(s): 1. Gastric; 2. GIST; 3. EUS

Endoscopy and Imaging

P-130**A case of idiopathic hypereosinophilic syndrome with multiple organs involvement in a 61-year-old male****Presenting Author:** BYOUNG KWAN SON**Additional Authors:** JUN BONG KIM, SU JUNG GONG, YOUNG SOOK PARK, SEONG HWAN KIM, YUN JU JO, SANG BONG AHN, YOUNG KWAN CHO, TAE KYUN KIM, SE JIN LEE**Corresponding Author:** BYOUNG KWAN SON**Affiliations:** *Eulji Medical Center, Eulji Medical Center*

Objective: Abstract Idiopathic Hypereosinophilic Syndrome (IHES) is defined by significant prolonged eosinophilia ($>1,500$ eos/ul) without an identifiable underlying cause which leads to end-organ dysfunction or damage. Primary organ involvement includes heart, lung, gastrointestinal tract, nervous system and bone marrow. Peripheral blood eosinophilia may relate to systemic conditions, but most often found in gastrointestinal diseases with parasitic infections or even in malignancy. However, it may be associated with obscure gastrointestinal disorders like eosinophilic gastroenteritis, eosinophilic cholangiopathy and IHES. In this study, we experienced 61-year-old male who complained of epigastric area abdominal pain with chronic diarrhea, febrile sensation and general weakness. There was no evidence of allergic disease or parasitic infestation. Blood tests showed profound peripheral eosinophilia, leukocytosis and thrombocytosis. The Abdominopelvic computed tomography showed prominent periportal echogenicity without significant bile duct dilatation and multiple small ill-defined shaped low attenuating lesions scattered in the liver. Additional examination by esophagoduodenoscopy and colonoscopy revealed severe eosinophilic infiltration on esophagus, stomach and in colonic mucosa. Eosinophilic inflammation and fibrosis were subsequently confirmed by liver biopsy. Also, test for bone marrow biopsy showed normal cellularity with marked eosinophilia in peripheral blood smear and bone marrow. Possibility of chronic eosinophilic leukemia and idiopathic hypereosinophilic syndrome were to rule out. However, a diagnosis of IHES was reached based on the presence of peripheral and tissue eosinophilia, along with the exclusion of other causes of eosinophilia. Treatment of high-dose corticosteroids resulted in a dramatic clinical response.

Key Word(s): 1. Idiopathic hypereosinophilic syndrome; 2. eosinophilia; 3. eosinophilic gastrointestinal disorder

Endoscopy and Imaging

P-131**Detection rate and inspection level of ampulla of Vater using forward-viewing esophagogastroduodenoscope: a comparison between an expert and a trainee****Presenting Author:** BYOUNG KWAN SON**Additional Authors:** BYOUNG KWAN SON, TAE KYUN KIM, JUN BONG KIM, SANG BONG AHN, YOUNG KWAN JO, SEONG HWAN KIM, YUNJU JO, YOUNG SOOK PARK**Corresponding Author:** BYOUNG KWAN SON**Affiliations:** *Eulji University School of Medicine, Eulji Hospital, Eulji University School of Medicine, Eulji Hospital*

Objective: It is not easy to observe the ampulla of Vater (AOV) using forward-viewing esophagogastroduodenoscope (EGD). We aimed to evaluate the detection rate of AOV and the difference in inspection quality between 2 endoscopists (expert vs. trainee) **Methods:** We conducted forward-viewing EGD from May to September in 2012. The examiners consisted of one expert endoscopist and one trainee. We divided patients into five groups according to the inspection level for AOV; Group 1: fully visible, Group 2: partially visible – only upper part, Group 3: partially visible – only lower part, Group 4: partially visible – peri-papilla orifice, Group 5: invisible **Results:** A total of 364 EGD were performed, of which 169 patients were examined by expert, and 195 patients were examined by trainee (Mean age: 56.15 ± 12.42 , F : M 127:237). There was significant difference in the length of inserted endoscope for the inspection of AOV between two examiners (68.83 ± 5.73 cm vs. 71.43 ± 8.32 cm, $p = 0.001$). Expert achieved higher rate of full inspection for AOV (group 1) (66.9% vs. 35.9%, $p < 0.001$). While group 5 (AOV was not seen) was significantly higher in trainee (4.7% vs. 18.5%, $p < 0.001$) despite entering descending part of the duodenum. Expert diagnosed papillitis in 3 patients and performed biopsies for the suspicion of major duodenal papilla adenoma in 2 patients. Trainee diagnosed papillitis in 1 patient **Conclusion:** We could hardly find significant lesions in descending part of the duodenum. However, considering significant differences in the inspection level of AOV and length of the inserted endoscope according to the proficiency of endoscopist, endoscopic trainee need to give an effort to shorten the endoscope for the effective inspection of AOV

Key Word(s): 1. Ampulla of Vater; 2. esophagogastroduodenoscope

Endoscopy and Imaging

P-133

A discrepancy in pathological diagnosis of gastric neoplasia between biopsy and endoscopic submucosal dissection**Presenting Author:** SHO SUZUKI**Additional Authors:** TADASHI MIIKE, TAKAHO NODA, YUKO NODA, UEHARA NATSUMI, SACHIKO TAKEDA, MAI SAKAGUCHI, SHUICHIRO NATSUDA, KANNA HASHIMOTO, KOUSUKE MAEMURA, TAKUMI YAMAJI, HIROO ABE, SHOJIRO YAMAMOTO, KENJI YORITA, HIROAKI KATAOKA, KAZUYA SHIMODA**Corresponding Author:** SHO SUZUKI**Affiliations:** *University of Miyazaki, University of Miyazaki***Objective:** Clinically, we found a discrepancy between the preoperative pathological diagnosis of gastric neoplasia from biopsy and postoperative diagnosis from the endoscopic submucosal dissection (ESD). We examined ESD cases of gastric neoplasia at the University of Miyazaki Hospital.**Methods:** A total of 109 gastric neoplastic lesions from 105 patients who underwent ESD between June 2009 and January 2014 were examined. We retrospectively compared the pathological diagnosis from biopsy with the postoperative diagnosis after ESD. Patients were excluded if they were diagnosed with undifferentiated adenocarcinoma, carcinoid tumor, endocrine carcinoma, and other similar types, or did not have an adaptation lesion. In Japan, an adaptation lesion for ESD is defined as differentiated adenocarcinoma (diff) with a diameter less than 2 cm, is within the submucosal layer (cT1a), and is without ulceration (UL-). An expanded adaptation lesion is 1) a diff with a diameter over 2 cm, is a cT1a and UL-, 2) is a diff with a diameter less than 3 cm, is a cT1a, and is with ulceration, 3) is undifferentiated adenocarcinoma with a diameter less than 2 cm, is a cT1a and UL-. All 109 patients underwent a standard ESD procedure with the surgeon using a Hook knife. We investigated the diagnosis from the biopsy versus that of ESD. The pathological diagnosis of biopsy was carried out according to the classification of the Japanese Gastric Cancer Association. Biopsy pathology is classified into five groups: normal or benign changes without atypia (Group 1), lesions indefinite for neoplasia or non-neoplasia (Group 2), definite adenomas (Group 3), lesions strongly suspected of carcinoma (Group 4), and definite carcinomas irrespective of invasion (Group 5). **Results:** Of 109 lesions, the diagnosis from the biopsy for 30 was Group 3; 26, Group 4; and 53, Group 5. After ESD, the definitive diagnosis was an adenoma for 30 lesions and differentiated adenocarcinoma for 79 lesions. When we carefully reviewed the results, Group 3 included 4 differentiated adenocarcinoma lesions (13%); Group 4, 3 adenoma lesions (11%); and Group 5, 1 adenoma lesion (1.8%). The diagnostic concordance rate for adenoma in Group 3 was 86% (26/30), and that for adenocarcinoma in Group 5 was 98% (52/53). **Conclusion:** The pathological diagnostic concordance rate shows a tendency to increase if the pathological diagnosis from biopsy was of a more malignant type. On the other hand, 13% of Group 3 lesions had differentiated adenocarcinoma. We must pay careful attention in cases when the diagnosis of gastric neoplasia is obtained from biopsy, and we recommend endoscopy with narrow band imaging to aid in the diagnosis.**Key Word(s):** 1. Biopsy; 2. ESD

Endoscopy and Imaging

P-134

Significant increase of colorectal polyps in asymptomatic fecal immunochemical stool test positive patients on maintenance hemodialysis**Presenting Author:** KOJI TAKEMOTO**Additional Authors:** DAISUKE KAWAI, SHOTARO OKANOUE, RYUTA TAKENAKA, HIROFUMI TSUGENO, SHIGEATSU FUJIKI**Corresponding Author:** KOJI TAKEMOTO**Affiliations:** *Tsuyama Central Hospital, Tsuyama Central Hospital, Tsuyama Central Hospital, Tsuyama Central Hospital, Tsuyama Central Hospital***Objective:** The usefulness of colorectal cancer screening using fecal immunochemical stool test (FIT) has been established in large control populations, but not in hemodialysis patients. **Methods:** We investigated that 42 asymptomatic FIT positive patients on maintenance hemodialysis underwent colonoscopy between April 2007 and June 2014. We randomly selected 102 asymptomatic FIT positive healthy adult patients as a control. Two groups were compared with the prevalence of the colorectal polyps which needs polypectomy, and colorectal cancer. **Results:** Hemodialysis patients with FIT positive were composed of 31 men and 11 women, with a mean age of 70.9 ± 8.8 years. Healthy adult patients with FIT positive were composed of 50 men and 52 women, with a mean age 59.8 ± 13.8 years. The prevalence of colorectal polyps (≥ 5 mm) which needs polypectomy in patients on maintenance hemodialysis is 32/42 (76%), higher than healthy adult patients 41/102 (40%) ($p = 0.0001$). Moreover, the prevalence of colorectal polyps (≥ 10 mm) patients on maintenance hemodialysis is 14/42 (33%) and healthy adult patients is 13/102 (13%) ($p = 0.004$). The prevalence of colorectal cancer in hemodialysis patients is 1/42 (2%) and healthy adult patients is 6/102 (6%) ($p = 0.56$). **Conclusion:** Significant increase of colorectal polyps in asymptomatic FIT positive patients on maintenance hemodialysis. Therefore we consider hemodialysis patients should be performed colonoscopy routinely.**Key Word(s):** 1. Hemodialysis; 2. colorectal polyps

Endoscopy and Imaging

P-135

Closure of full thickness defects by endoluminal suturing: leak pressure study in an ex vivo porcine model**Presenting Author:** KOHEI TAKIZAWA**Additional Authors:** ELIZABETH RAJAN, MARY KNIPSCHILD, CHRISTOPHER GOSTOUT**Corresponding Author:** KOHEI TAKIZAWA**Affiliations:** *Mayo Clinic, Mayo Clinic, Mayo Clinic***Objective:** The strength of an endoscopic suture closure of a full thickness defects is unknown. We evaluate the strength of endoscopic suture acute closure of full thickness defects in an ex vivo porcine model by pressurized leak testing. **Methods:** Five stomachs from adult domestic pigs were used. Full-thickness, standardized defects of 20 mm were created. Linear defects were made using a surgical scalpel and measured with a ruler. Each defect was closed by endoscopic suturing (OverStitch, Apollo Endosurgery, Austin, TX). Endoscopic endoluminal inspection and external visual inspection with insufflation were performed for confirmation of successful closure. Following endoscopic closure, a digital pressure gauge was inserted into the gastric lumen. Each stomach was submerged in water, and the gastric lumen was slowly insufflated with compressed air. When any leakage of air was evident, shown by either air bubbles or frank

rupture, pressure recordings were obtained from the digital pressure gauge.

Results: All 20-mm defects were successfully closed by endolumenal and external visual inspection after endoscopic insufflation. The median procedure time for closure was 13 minutes (range 8–18) and the median number of individual stitches placed were 5 (range 4–6). Two of the five specimens, ruptured at a site other than the defect closure. The median leak pressure of the closure sites was 79 mm Hg (range 68–93). **Conclusion:** Full-thickness tissue defects of 20 mm in the stomach could be closed successfully by endolumenal single layer full thickness suturing in an ex-vivo experimental setting. The leak pressure of the suture closures (79 mm Hg) was comparatively higher than leak pressures of clips (40 mm Hg) and OTSC (49.3 mm Hg) as previously reported using similar methods. Endolumenal suturing may offer the most robust method of reliable endoscopic full-thickness defect closure.

Key Word(s): 1. Endoscopic closure; 2. endoscopic suturing; 3. perforation; 4. leak pressure

Endoscopy and Imaging

P-136

Utility of combined cap and water-assisted colonoscopy in patients with previous failed or incomplete colonoscopy: a case series

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Objective: Up to 5% of colonoscopies may be incomplete due to technical limitations such as bowel tortuosity or acute bowel angulation. Current options to visualise the remaining colon include CT/MRI colonography and enteroscope-assisted colonoscopy using either the push

enteroscope or the single-balloon enteroscope. The former does not allow endoscopic intervention, while the latter technique is technically challenging. The study aims to evaluate the utility of cap and water-assisted colonoscopy in patients with previous unsuccessful colonoscopy due to technical reasons. **Methods:** Patients with current indications for colonoscopy but who had a history of previous failed or incomplete colonoscopy underwent colonoscopy using combined cap application and water insufflation. Technical factors were deemed the major reasons for the incomplete colonoscopy rather than inadequate bowel preparation or patient discomfort (all procedures had been performed using propofol sedation). In the current series, a transparent cap was attached to the tip of the scope for colonoscopy. Water insufflation was achieved using a foot-controlled water pump. Caecal intubation time (CIT) and total procedure time (TPT) were recorded using the Endobase software program. **Results:** Four consecutive patients underwent combined cap and water-assisted colonoscopy under propofol sedation by the same endoscopist (Table). Bowel preparation was satisfactory in all cases. The caecum was intubated in all cases, and polypectomy was successfully performed. There were no adverse events. Table: Results of patients who underwent cap and water-assisted colonoscopy Age Sex Reason(s) for failed colonoscopy Previous unsuccessful attempts (No.) Pathology encountered Polypectomy (No.) CIT TPT 66M Acute angulation Colonoscopy (2) Diverticulosis Yes (1) <5 min 16 min 71F Bowel tortuosity Colonoscopy, Single balloon colonoscopy nil Yes (2) <10 min 23 min 79F Bowel tortuosity Colonoscopy nil Yes (1) <5 min 20 min 70M Bowel tortuosity, acute angulation Colonoscopy (3) Diverticulosis Yes (2) <10 min 33 min **Conclusion:** Performance of colonoscopy using both the distal cap attachment and water insufflation appeared to facilitate caecal intubation in patients in whom previous colonoscopies have been unsuccessful due to technical difficulties. Water insufflation in the left colon may straighten the left colon and shorten caecal intubation time. A randomised study is ongoing to confirm these findings.

Key Word(s): 1. Colonoscopy; 2. cap; 3. water; 4. failed colonoscopy

Table 1 Results of Patients Who Underwent Cap and Water-Assisted Colonoscopy

Age Sex	Reason(s) for failed colonoscopy	Previous unsuccessful attempts (No.)	Pathology encountered	Polypectomy (No.)	CIT	TPT
66 M	Acute angulation	Colonoscopy (2)	Diverticulosis	Yes (1)	<5 min	16 min
71 F	Bowel tortuosity	Colonoscopy, Single balloon colonoscopy	nil	Yes (2)	<10 min	23 min
79 F	Bowel tortuosity	Colonoscopy	nil	Yes (1)	<5 min	20 min
70 M	Bowel tortuosity, acute angulation	Colonoscopy (3)	Diverticulosis	Yes (2)	<10 min	33 min

Endoscopy and Imaging

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Treatment outcomes of cecal tumors spreading to the appendiceal orifice

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Objective: Endoscopic resection (ER) for cecal tumors spreading to the appendiceal orifice (CTAOs) is sometimes technically difficult, but treatment outcomes had not been reported yet. The aim of this study was to assess the treatment outcomes for CTAOs. **Methods:** In this retrospective study, 95 cecal tumors treated endoscopically or surgically between September 2003 and August 2012 at our hospital were enrolled if the lesions met the following criteria: 1) lesions ≥ 10 mm in size, 2) lesions diagnosed preoperatively to extend no deeper than the shallow submucosal layer, 3) lesions followed-up more than 6 months after the initial treatment, 4) lesions without involvement to the ileocecal valve. CTAOs were defined as lesions located within 5 mm from the orifice. Treatment outcomes were compared between CTAOs and the other cecal lesions as controls. **Results:** We identified 16 CTAOs and other 79 cecal lesions. The median tumor size of CTAOs was larger than controls (25 mm/20 mm). Five CTAOs underwent surgery as an initial treatment because of possible technical difficulty in ER due to invisibility of the lesion margin. ER outcomes of CATOs were significantly inferior to controls because of

lower en bloc resection rate (18%/74%, $p < 0.001$) and R0 resection rate (18%/71%, $p < 0.001$). During the median observation period of 41 months, local recurrences occurred significantly frequently in CTAOs than controls (27%/4%, $p < 0.005$). After salvage ER, residual tumors were removed in most of cases. In two CTAOs with failures of endoscopic removal of residual tumors, one underwent additional surgery and the other was closely observed without additional treatment. Endoscopic complete remission rate was lower in CTAOs than controls (82%/100%, $p < 0.001$).

Conclusion: Local curability of initial ER for CTAOs was inferior to other cecal lesions. However, if the lesion margin could be observed, ER could achieve a complete remission in almost cases.

Key Word(s): 1. Endoscopic resection

Endoscopy and Imaging

P-138

The clinical outcomes of patients who have undergone percutaneous endoscopic gastrostomy

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Objective: To evaluate outcomes of patients who have undergone percutaneous endoscopic gastrostomy (PEG). **Methods:** The clinical outcomes of procedures were retrospectively collected of 55 patients who underwent PEG between January 2008 and December 2013 in our hospital. **Results:** Medium age of all patients were 56.32 ± 13.4 years. The patients who died in the early postoperative period ($n = 1$) because of cardiac insufficiency. Errhysis and hyperplasia of granulation tissue around the incision were occurred after PEG in one of the other patients. Local infection was occurred in the another patient and extinguished after carefully dressing change without serious complication. The weight index (BMI) and serum albumin level were higher than before ($p < 0.05$). **Conclusion:** Currently PEG placement is a well-developed technique, which is a new choice for long time enteral nutrition. With the improvement of manipulate technique the indication of PEG is expanded, complication is reduced.

Key Word(s): 1. Percutaneous endoscopic gastrostomy; 2. clinical outcomes; 3. complication

Endoscopy and Imaging

P-139

Usefulness of endoscopic recognition using blue laser imaging for superficial esophageal squamous cell carcinoma

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Objective: In recent years, image-enhanced endoscopy is widely performed for detection and diagnosis of esophageal squamous cell carcinoma (ESCC). Especially, narrow band imaging (NBI) has established the usefulness in detection and diagnosis of superficial ESCC. Blue LASER Imaging (BLI) has developed as a novel endoscope system with two kinds of lasers that enable us to allow narrow-band light observation. BLI-bright is a brighter mode than BLI, and useful for endoscopic observation in a distant view. The aim of this study is to evaluate the endoscopic recognition of ESCC using BLI-bright compared with using NBI. **Methods:** A total of 26 superficial ESCC were examined using both BLI-bright and NBI in Kyoto Prefectural University of Medicine. A typical ESCC was observed as a brownish area (BA) in a distant view using both BLI-bright and NBI. Subjective evaluation was performed by five endoscopists who scored the each image on the basis of the ease of detection of BA (very clear is 2 points, clear is 1 point and unclear is 0 point). As objective evaluation, we calculated the color difference scores of pixel values based on $L^*a^*b^*$ color spaces between each cancer and noncancerous area. **Results:** The median score of BLI-bright images was significantly higher than that of NBI images. Further, the average color difference score of BLI-bright images was significantly higher than that of NBI images. There was a good correlation between the image score and the color difference score. **Conclusion:** The detection ability of BAs using BLI-bright was higher than using NBI both subjectively and objectively.

Key Word(s): 1. Blue laser imaging; 2. esophageal squamous cell carcinoma

Endoscopy and Imaging

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Clinical outcome of endoscopic submucosal dissection for entire circumferential superficial esophageal squamous cell carcinoma**Presenting Author:** MIWATA TOMOHIRO**Additional Authors:** SHIRO OKA, SHINJI TANAKA, YOSHIKAZU YOSHIFUKU, KENICHI KAGEMOTO, NORIFUMI NUMATA, YOJI SANOMURA, YUJI URABE, KAZUAKI CYAYAMA**Corresponding Author:** MIWATA TOMOHIRO**Affiliations:** Hiroshima University Hospital, Hiroshima University Hospital

Objective: To clarify outcomes of entire circumferential endoscopic submucosal dissection (ESD) for superficial esophageal squamous cell carcinoma. **Methods:** Study 1: We retrospectively examined 23 lesions of 23 patients who underwent entire circumferential esophageal ESD until December 2013 (20 men, 3 women, average age 68 years, 14 patients with EP/LPM, 5 with MM/SM1, 4 with SM2) for rate of en bloc resection, mean procedure time, resected ulcer diameter and perforation rate. Study 2: We divided 19 patients after ESD without additional surgery into 2 groups: refractory postoperative stenosis group (>6 endoscopic balloon dilation [EBD] procedures, 12 lesions) and non-refractory postoperative stenosis group (≤ 5 EBD procedures, 7 lesions). We retrospectively examined patient factors (age, sex, alcohol consumption, smoking index, CRT history), tumor factors (location, macroscopic type, fibrosis, depth), and treatment factors (mean procedure time, entire circumferential resection diameter, muscle layer damage, steroid administration method) between the groups. **Results:** Study 1: En bloc resection rate was 96% (22/23), mean procedure time was 160 min, mean diameter of entire circumferential resection was 82 mm, and perforation rate was 13% (3/23, conservatively observed). Surgical resection was added in 4 SM2 cases. There were no recurrences in follow-up cases. Study 2: Muscle layer damage ($p = 0.019$) and ≥ 5 cm of longitudinal length of ulcer after entire circumferential ESD ($p = 0.010$), were significant factors associated with the refractory group. **Conclusion:** The stenosis rate after entire circumferential ESD was high regardless of steroid administration method. To prevent refractory postoperative stenosis, it is important to avoid damaging the muscle layer during the procedure.

Key Word(s): 1. Entire circumferential superficial esophageal squamous cell carcinoma; 2. ESD

Endoscopy and Imaging

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The color doppler ultrasound and pathological correlative analysis of gastrointestinal stromal tumor**Presenting Author:** LINGXIA TONG**Additional Authors:** QI NA, ZHANG JIAN**Corresponding Author:** LINGXIA TONG**Affiliations:** Jilin Tumor Hospital, Jilin Tumor Hospital

Objective: To study the value of color doppler ultrasonography in the diagnosis of gastrointestinal stromal tumor (GIST). **Methods:** Retrospective analysis the color Doppler manifestations of 21 patients with GIST confirmed by pathology and immunohistochemistry. **Results:** There were 11 cases originated from stomach, 8 cases from small intestine, 2

cases from colorectal and 1 case from mesenteric. 11 cases were malignant which were >5 cm in diameter with unclear boundary, round or lobulated shape and uneven heterogeneous echo, some of them accompanied by necrosis. The majority was above grade II on a scale of Alder grade by color Doppler flow imaging (CDFI); 10 cases were benign which were <5 cm in diameter with clear boundary, oval shape and heterogeneous echo. The majority was below grade II on a scale of Alder grade by color Doppler flow imaging (CDFI). **Conclusion:** Ultrasound has certain value in the diagnosis of GIST

Key Word(s): 1. Gastrointestinal stromal tumor; 2. ultrasound; 3. color Doppler ultrasound

Endoscopy and Imaging

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Hem-o-lok clip in the first part of duodenum after laparoscopic cholecystectomy**Presenting Author:** JAMSHID VAFAEIMANESH**Additional Authors:** MOHAMMAD BAGHERZADEH, MOHAMMADREZA SEYYEDMAJIDI**Corresponding Author:** JAMSHID VAFAEIMANESH**Affiliations:** Clinical Research Development Center, Golestan Research Center of Gastroenterology and H

Objective: Laparoscopic cholecystectomy (LC) and common bile duct exploration (LCBDE) has become the standard surgical procedure for cholelithiasis and choledocholithiasis. During the operation, cystic duct and vessels are usually controlled by hem-o-lok clips. **Methods:** We report a case with complaint of severe abdominal pain for the previous 20 days. **Results:** Her medical history was unremarkable except for laparoscopic cholecystectomy 8 months ago. In upper gastrointestinal endoscopy, two hem-o-lok clips at anterior wall of the first part of duodenum were detected. **Conclusion:** Therefore, the clip can migrate during postoperative period and Hem-o-lok is not a so safe ligation method during laparoscopic cholecystectomy.

Key Word(s): 1. Laparoscopic cholecystectomy; 2. Hem-O-Lok clip; 3. migration

Endoscopy and Imaging

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Deployment of a short, single-opening endoscopic clip versus a long, re-opening endoscopic clip in clinical practice**Presenting Author:** SHU JENG WOO**Additional Authors:** ERIC WEE, P. MATHEW SACHIN, UTHAMANAND CHINNAPPA, CHERNG HANN YIP**Corresponding Author:** SHU JENG AARON WOO**Affiliations:** Khoo Teck Puat Hospital, Khoo Teck Puat Hospital, Khoo Teck Puat Hospital, Khoo Teck Puat Hospital

Objective: Endoscopic clips are available in various designs. There are no studies comparing the efficacy of these designs. The primary aim of this study is to compare the deployment success of a long, re-opening endoscopic clip, Type A (Resolution clip, Boston Scientific Corp., USA) versus a short, single-opening endoscopic clip, Type B (Quick Clip2, Olympus Medical Systems Corp., Japan). Secondary aims were to assess the costs, clip wastage and hemostasis. **Methods:** Subjects with endoscopic clips deployed between January 2012 to December 2013 were included. Clip deployment was successful if the clip retained its position. This was independent of the outcome. Clips were wasted, if they were deployed unsuccess-

cessfully or malfunctioned. For hemostasis, only cases with active hemorrhage were included. P-value less than 0.05 was significant.

Results: Of 14,996 endoscopies performed, Type A clips were used in 99 procedures (171 clips) and Type B in 163 procedures (301 clips). Baseline demographics (age, gender, type of procedure, indication for endoscopy and clip application) were comparable between both groups. Type A clips (86.0%) had a significantly higher deployment success rate than type B clips (73.4%) ($p = 0.002$). The number of clips per endoscopy ($p = 0.53$) and hemostatic efficacy were similar between both clip types ($p = 0.43$). Although the cost of wastage was similar ($p = 0.23$), the costs of Type A clips per procedure (SGD 207.3 ± 122.2) was significantly higher than Type B (SGD 111.0 ± 79.2) ($p = 0.01$). **Conclusion:** Type A (Resolution) clips have a higher deployment success rate than Type B (Quick Clip2). The cost of clips per procedure is higher for Type A, but the cost of clip wastage is similar between clips. There is no difference in the efficacy of hemostasis.

Key Word(s): 1. Endoscopic clip; 2. resolution clip; 3. Quick Clip2; 4. deployment; 5. hemostasis

Endoscopy and Imaging

P-145

Analysis of the factors and prevention of gastrointestinal endoscopy disinfection infection

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Objective: The purpose of this study was to analyze the causes of patients who suffered hospital infection after the gastrointestinal endoscopy, and to find the methods to control nosocomial infection ratio. **Methods:** The cleaning and disinfection of endoscope on local area 8 all level hospitals were investigated with a questionnaire survey, and review 2480 inpatients from 8 hospitals to analysis nosocomial infection after gastrointestinal endoscopy, a self-made questionnaire and collected all the patients clinical data is the single factor and multi factor analysis. **Results:** Single factor analysis of occupation, endoscopy category, disease category, complications, the use of antibiotics in time, hospitalization time, whether the use of immunosuppressant, whether patients with immunodeficiency disease, the dangerous suspected risk factors between the two groups had significant difference statistically ($p < 0.1$); two group of age, course, difference ($p < 0.05$). The statistical significance of the measurement data of the average age of two groups, the average duration of difference ($p < 0.05$); results of multi factor screening: endoscopy category, disease category, complications, the use of antibiotics in time, hospitalization time, whether the use of immunosuppressant, suffered from immunodeficiency disease. The risk factors including whether people with immunodeficiency disease (OR = 7.881), whether the use of immunosuppressive agents (OR = 6.878), peptic ulcer disease (OR = 3.642) risk factors were the three ranked endoscopy infection. **Conclusion:** Patients with various diseases, especially immunosuppressive drugs and immunodeficiency disease, long time application of antibacterial drugs, combined with ulcer easily lead to hospital infection after endoscopy examination. We can control hospital infection through regulating hospital disinfection process.

Key Word(s): 1. Endoscopy; 2. nosocomial infection; 3. risk factors

Endoscopy and Imaging

P-146

Nursing intervention of applying propofol in patients accepting painless gastroscopic inspection

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Objective: To summarize the nursing intervention experience of applying propofol in patients accepting painless gastroscopic inspection.

Methods: 980 cases with painless gastroscopic examination by applying propofol were collected, 480 cases were male and female 500 cases, age ranged from 7 to 82 years old (mean 47 years old). In the process of examination, respiratory rate, pressure, heart rate and general condition were observed. **Results:** 980 cases of patients were able to be achieved a satisfactory level of sedation and successful completion of the examination. Propofol dose was 9–26 ml. The respiratory rate, pressure, heart rate and general condition of 968 patients (98.8) from 980 cases were normal and steady, no significant changes or adverse reactions were observed in all these cases. 4 cases appeared decreasing heart rate (lower than 60 beats) and were examined continuously after vein injection of atropine 0.5 mg. 8 patients occurred transient low degree of blood oxygen saturation, 5 of them from expectoration difficulty, overmuch buccal secretion and all were remitted after helping expectoration or lowering the position of heads to help secretion. 3 of them because of disturbance in respiration and were recovered by changing the body position. In the course of inspection, nursing intervention was needed to be performed to focus on the physiological condition of patients and remind inspectors when some abnormal status occurring. **Conclusion:** Propofol was a satisfactory and safe anesthesia drugs to contribute to the successful progress of gastroscopic inspection. Good nursing intervention played a dispensable role in the full course of examination.

Key Word(s): 1. Propofol; 2. gastroscopic inspection; 3. nursing intervention

Endoscopy and Imaging

P-147

Comparative study of anti-peristaltic agents for upper gastrointestinal endoscopy

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Objective: Antispasmodic agents, such as hyoscine butyl bromide (HB) or glucagon (GL), were commonly used to inhibit gastric peristalsis during upper gastrointestinal endoscopy for accurate diagnosis in Japan. Although

l-menthol has been reported to be an effective agent for reducing gastric peristalsis, the contributions during endoscopy are not well understood. Our aims were to evaluate and compare the anti-peristaltic effects of those agents during upper gastrointestinal endoscopy. **Methods:** This study was performed as a non-randomized prospective study. A total of 260 patients scheduled to undergo upper gastrointestinal endoscopy were enrolled. Written informed consents were obtained from all patients before enrollment. HB and GL were injected intramuscularly three minutes ahead of procedure. L-menthol was sprayed on the gastric mucosa through endoscopy within one minute from insertion of endoscopy. Patients <70 years old without contraindications to HB were classified into two groups; administered HB intramuscularly (group A) or administered l-menthol on the gastric mucosa (group B). Patients \geq 70 years old, or with contraindications to HB were also classified into two groups; administered GL intramuscularly (group C) or administered l-menthol on the gastric mucosa (group D). The peristaltic score (1–5, 1 represents no peristalsis, 5 represents markedly vigorous peristalsis) was defined according to the degree of peristalsis of the antrum after two minutes from insertion and at the end of procedure. Blood pressure, heart rate, procedure time, and severity of gastric atrophy were also assessed. Statistical analysis was performed by use of GraphPad Prism version 5.0 (GraphPad Software, San Diego, CA). Patient characteristics were compared among the groups using Fisher's exact test. For the peristaltic score, Mann-Whitney U test was used to assess the significance of difference. P value < 0.05 was considered statistically significant. **Results:** As four cases were excluded due to the exclusion criteria, 256 cases were analyzed (group A; B; C; D = 61; 58; 71; 66). No significant differences were observed in age, sex, procedure time and severity of gastric atrophy between group A and B as well as C and D. Although the peristaltic score was lower in group B than in group A (1.47 ± 0.81 vs. 1.73 ± 0.94) at the end of procedure, there was no significant difference ($p = 0.097$). The peristaltic score in Group D was significantly lower than the one in group C (after two minutes 1.17 ± 0.51 vs. 1.48 ± 0.78 , at the end of procedure 1.33 ± 0.70 vs. 1.83 ± 1.01) in both of periods ($p < 0.05$). Moreover, elevations of heart rates were significantly lower in group B than in group A ($p < 0.0001$). In group B and D, the peristaltic score in patients with open type atrophy was significantly lower than the one in patients without atrophy at the end of procedure (1.75 ± 0.99 vs. 1.26 ± 0.60 , $p < 0.05$). **Conclusion:** These data provide the new insights into antispasmodic procedures during upper gastrointestinal endoscopy by showing that l-menthol has same or lower peristaltic score than HB and GL without extending procedure time. These novel observations suggest that l-menthol can be one of the standard anti-peristaltic agents for upper gastrointestinal endoscopy.

Key Word(s): 1. Antispasmodic agents

Endoscopy and Imaging

P-148

The role of colonoscopy reexamination among patients with colorectal cancer

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Objective: To investigate the role of colonoscopy reexamination among patients with colorectal cancer after curative resection. **Methods:** The colonoscopy was carried out among 2439 patients with colorectal cancer who had undergone curative resection and biopsy during the past fourteen years (2000.1–2013.12). **Results:** Among the patients, recurrence of cancer was found in 153 patients (153/2439) which were making up of 92

cases tally mouth cancers and 61 cases of second primary colorectal cancer. In addition, there were 576(576/2439) cases polyp patients, which were cured by minimally invasive. APC, EMR, etc. **Conclusion:** Surgery is still the preferred method of colorectal cancer treatment. Postoperative residual intestine is normal intestinal mucosa, but phase of the second chance of developing colorectal cancer three times higher than normal bowel. Regular colonoscopy time, meticulous colonoscopy can timely find relapse or recurrence and precancerous lesions, and make the corresponding treatment, APC, EMR etc. It is irreplaceable for the colonoscopy to improve the quality of life and prolong survival. Conventional endoscopy for colorectal cancer recurrence and heterochrony cancer findings have clear effect, which is directly related to postoperative survival rate of patients with colorectal cancer, colonoscopy should be as a means of monitoring for long-term or even a lifetime. In conclusion, colonoscopy in large intestine cancer postoperative review has a very high value for clinical application.

Key Word(s): 1. Colonoscopy reexamination; 2. colorectal cancer; 3. EMR

Esophageal, Gastric and Duodenal Disorders

P-149

Overlapping of functional dyspepsia and irritable bowel syndrome in Indonesian patients

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Objective: Functional dyspepsia (FD) and irritable bowel syndrome (IBS) are common in clinical practice. Sometime, both diagnoses can exist altogether. Therefore this study to set out and describe the symptom reporting, diagnosed and treatment experience of patients with FD or IBS presenting to outpatient clinics in Indonesia. **Methods:** A survey was conducted in primary and secondary care patients presenting to two outpatient gastroenterology clinics in Jakarta and Padang, Indonesia, using a culturally adapted and translated version of the Rome III FGID Questionnaire that had been locally validated. Patients who were found to have organic disease during investigation were excluded. **Result:** A total of 142 patients (47 males and 95 females) consecutively recruited, with 50 FD, 44 IBS, and 48 both FD-IBS. Female was predominant in FD ($F = 37/50$, 74%; age mean 47.38, SD 17.25), IBS ($F = 28/44$, 63.64%; age mean 38.64, SD 14.00) and both/FD-IBS ($F = 30/48$, 52.5%; age mean 42.17, SD 15.48). The most bothersome complaint was abdominal pain in FD (10) and FD - IBS (23) and abdominal discomfort in IBS patients (14). In IBS-only patients, 13 had IBS-C (constipation predominant), 8 had IBS-D (diarrhea predominant), 18 had IBS-M (mixed) and 5 had IBS-U (unspecified). In patients who had both FD and IBS, 20 had IBS-C, 11 had IBS-D and 17 had IBS-M pattern. Clinically, in FD-only patients, 44% patients were diagnose as FD. In IBS-only patients, none was diagnose as IBS. In FD-IBS, only 10% diagnose as IBS, 37.5% as FD and none as both. Previous treatment consisted of PPI 54.9%, H2RA 28.9%, probiotics 23.2%, gastrokinetics 18.3%, traditional herbs 17.6%, anxiolytic 16.2%, laxatives 13.4%, fibre supplement 10.6% and anti-spasmodics 5.6%. On their previous treatment 63.4% felt some improvement, 11.3% felt no change, and 1.4% felt worse. **Conclusions:** Overlapping diagnosis of both FD and IBS was common with abdominal pain commonly present in both disorders. This overlapping symptom may cause mis-diagnosis in clinical setting.

Key Word(s): 1. Functional dyspepsia; 2. irritable bowel syndrome; 3. overlapping diagnoses

Esophageal, Gastric and Duodenal Disorders

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The role of fucoidan in chronic gastritis: Endoscopic and histopathologic appearances

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Objective: Chronic gastritis is frequent in daily practice. One of the agents that can improve gastric inflammation, mucus and mucosal healing is fucoidan. Fucoidan derived from *Cladosiphon okamuranus tokida* is a sulphated polysaccharide algae from Japan. The aim of this study to reveal the efficacy of fucoidan in treating dyspeptic symptoms, endoscopy and histopathologic scores of gaster. **Methods:** This is an open study on 31 dyspeptic patients who went to polyclinic gastroenterology Ciptomangunkusumo Hospital Jakarta. The patients were given oral fucoidan 100 mg perday for 28 days. The inclusion criteria were aged 18 – 60 yo, dyspeptic symptom who need endoscopy examination, chronic moderate until severe gastritis and able to give informed consent. **Result:** There was improvement of endoscopic score of gastritis between day-28 versus day-0 fucoidan therapy ($p < 0.001$). The histopathologic inflammation score between day-28 versus day-0 fucoidan therapy was improved ($p = 0.043$). Histopathologic atrophic gastritis score between day-28 versus day-0 fucoidan therapy was improved ($p = 0.05$). No major adverse event was noted in this study. **Conclusion:** Fucoidan improved the gastritis score, decrease the histopathologic inflammatory and atrophic gastritis score.

Key Word(s): Fucoidan, chronic gastritis, endoscopic score, histopathologic inflammatory score, histopathologic atrophic gastritis score

Esophageal, Gastric and Duodenal Disorders

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Risk factors for dieulafoy lesion in upper gastrointestinal tract

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Objective: The purpose of this study is to verify the risk factors associated with Dieulafoy lesion formation and to evaluate the endoscopic treatment efficacy in upper gastrointestinal tract with bleeding. **Methods:** A case-control study was performed by reviewing the electronic medical records of 42 patients who were admitted to a tertiary medical center region for Dieulafoy lesion from September 2008 to October 2013 and the records of 132 patients who were admitted during the same period and who underwent endoscopic examinations for reasons other than bleeding. We analyzed the clinical and endoscopic findings retrospectively and looked for associated risk factors of Dieulafoy lesion formation. **Results:** The

correlation of Dieulafoy lesion formation and sex, the administration of drugs, smoking and alcohol consumption, and concomitant diseases between the case (Dieulafoy lesion) and control groups were analyzed. All 42 patients diagnosed with Dieulafoy lesion had accompanying bleeding, and the location of the bleeding was proximal in 25 patients (59.5%), middle portion in 7 patients (16.7%), and distal in 10 patients (23.8%). Antiplatelet agents ($p = 0.022$) and alcohol ($p = 0.001$) showed statistically significant differences between the two groups. An analysis performed using logistic regression model showed that the odds ratio (OR) (95% confidence interval) of the two factors were 2.802 [1.263–6.217] and 3.938 [1.629–9.521], respectively. **Conclusion:** This study showed that antiplatelet agents and alcohol ingestion were risk factors associated with Dieulafoy lesion formation in upper gastrointestinal tract.

Key Word(s): 1. Dieulafoy; 2. gastrointestinal bleeding; 3. endoscopic treatment; 4. antiplatelet agents; 5. alcohol

Esophageal, Gastric and Duodenal Disorders

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Esophagography in the left anterior oblique position for esophageal achalasia. A prospective pilot study

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Objective: Barium esophagography is indispensable for evaluation of esophageal morphology in order to classify achalasia and determine its treatment. A right- anterior oblique (RAO) view is generally recommended to evaluate esophageal morphology, but some achalasia patients show more pronounced meandering of the esophagus in the left anterior oblique (LAO) view. To evaluate the usefulness of LAO views for esophagography, we investigated differences of esophageal dilatation and meandering between RAO and LAO images. **Methods:** From April to September 2013, 11 achalasia patients aged 59.4 ± 17.3 yrs (mean \pm SD, including eight new patients and three with recurrence, underwent esophagography for dysphagia and were enrolled. In the new patients, achalasia was diagnosed by high resolution esophageal manometry (ManoScan, USA), and was classified as type I in 2 patients and type II in 6 according to Chicago classification. RAO and LAO views were obtained at 1 minute after swallowing 100 ml of 125% barium sulfate in the standing position, and the maximum transverse diameter and the angle at which the major esophageal axes intersect were compared. **Results:** The maximum transverse diameter (mean \pm SE) was 41.7 ± 4.3 cm on RAO images and 45.2 ± 4.6 cm on LAO images. The angle of intersection of the major axes (mean \pm SE) was $154.0 \pm 5.4^\circ$ on RAO images and $131.8 \pm 5.8^\circ$ on LAO images. Although there were no significant differences of the angle of intersection and esophageal diameter, the angle was smaller on LAO images than RAO images in two patients (18.1%). **Conclusion:** Two of 11 patients showed greater meandering on LAO views compared with RAO views, although there were no statistical differences. These findings suggest that adding LAO views to RAO views for esophagography is useful to evaluate esophageal morphology in achalasia patients.

Key Word(s): 1. Achalasia; 2. esophagography; 3. LAO (left anterior position)

Esophageal, Gastric and Duodenal Disorders P-153

The histologic discrepancy between the endoscopic forceps biopsy and endoscopic submucosal dissection of gastric adenoma and gastric cancer: a nationwide multicenter retrospective study in Korea

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Objective: Background: Recently, variable gastrointestinal track tumors including early stage malignancies are treated by endoscopic procedure. A preoperative histologic diagnosis of neoplasia is a requirement for endoscopic submucosal dissection (ESD). However, the discrepancy of histologic diagnosis may sometimes occur between the pretreatment forceps biopsy specimens versus ESD specimens. In this study, we wanted to investigate of discrepancy rate between the histology of the endoscopic biopsy and that of the resected specimen obtained from the same lesion by endoscopic submucosal dissection (ESD) in the Korean population. **Methods:** From January 2010 to May 2013, gastric EMR/ESD data performed at multiple university hospitals were enrolled in retrospective design. We compared the histologic diagnosis from the biopsy sample and the final diagnosis from the ESD specimen to assess the discrepancy rate. Clinicopathological characteristics of the lesions that were related to the histologic discrepancies were also studied. **Results:** A total of 85 gastric adenomas from 74 patients were reviewed. Male-to-female ratio was 1:1.96. Mean age was 59.9 ± 10.8 years. Gastric adenomas occurred most frequently in the antrum (58.8%). Pathological results on resected specimens were as follows: tubular adenoma 45.9%, hyperplastic polyp 31.8%, inflammatory polyp 9.4%, hamartoma 3.5%, fundic gland polyp 2.4%, tubulovillous adenoma 2.4%, adenocarcinoma 2.4%, dysplasia 1.1%, and mucosal pseudolipomatosis 1.1%. Discrepancy rate between endoscopic biopsy and pathology of resected specimens was 27.1%. The discrepancy rate between the histology of the endoscopic biopsy and the resected specimen was 40.6% for the gastric adenoma and 23.7% for the EGC. Twenty-one cases (16.3%) were diagnosed as malignancy after endoscopic treatment. Especially, discrepancy occurred more frequently in depressed lesions than in flat or elevated lesions (41.7% vs. 13.7%, $p = 0.012$), and in lesions diagnosed as high grade adenomas than low or moderate grade adenomas (33.3% vs. 11.1%, $p = 0.004$). Among the 43 cases of low grade dysplasia, 6 cases (14%) were confirmed as gastric cancer after ESD. The size, existence of a depressed area, and ulceration findings were significant factors observed in these lesions. An ESD diagnosis of differentiated type cancer was obtained for 17% (12/63) of lesions diagnosed as undifferentiated type cancer from the biopsy specimens; for these lesions, the color and a mixed histology were significant factors related to the histologic discrepancies. There was no relationship between the size of the polyp and concordance rate. **Conclusion:** There is considerable discrepancy in histologic findings between endoscopic forceps biopsy and ESD specimens. A biopsy diagnosis of borderline lesions or undifferentiated type cancer is more likely to disagree with the diagnosis from ESD specimens. In cases of depressed type lesions in the pretreatment endoscopy or those diagnosed as high grade adenoma in the pretreatment forceps biopsy, we should consider combined malignant lesion. Endoscopic characteristics should be considered together with the biopsy diagnosis to determine the treatment strategy for these lesions. We suggest though the endoscopic biopsy may reveal low grade dysplasia, gastric adenoma should be removed by ESD especially when EGC is suspected.

Key Word(s): 1. Early gastric cancer; 2. gastric adenoma; 3. histologic discrepancy; 4. biopsy; 5. endoscopic submucosal dissection (ESD)

Esophageal, Gastric and Duodenal Disorders P-154

Effect of long-term diabetes on the morphology of gastric parietal and chief cells in an animal model of type 1 diabetes

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Objective: Diabetes mellitus (DM) is chronic disease affecting more than 124 million worldwide. Gastric pathology is a common complication of DM. The aim of this study was to evaluate the morphological changes in the parietal and chief cells in the gastric glands of streptozotocin-induced diabetic rats. **Methods:** Diabetes mellitus was induced by a single intraperitoneal injection of streptozotocin (STZ, 60 mg/kg). A similar quantity of phosphate buffered solution was administered to control rats. Immunofluorescence, light and electron microscopy were used to determine the pattern of distribution and structure of parietal and pepsinogen-containing chief cells, respectively. **Results:** Electron micrographs of the parietal cells of the glandular stomach of rats showed that parietal cells were scattered haphazardly in diabetic compared to control rats and the parietal cells appear intact in normal and ill-defined in diabetic rats. Pepsin-immunoreactive cells were seen in the basal region of the glands of the corpus of the stomach of both normal and diabetic rats. However, the number of pepsin-immunopositive cells was significantly higher in the stomach of normal rats compared with that of diabetic rat. The rough endoplasmic reticuli (RER) of the chief cells of gastric glands was disrupted and fewer in diabetic rats compared to control. **Conclusion:** Long-term DM induces morphological changes in the gastric parietal and chief cells. DM causes a reduction in the number of pepsin-containing chief cells in gastric glands. The abnormal distribution of RER in the chief, and parietal cells of the gastric glands of diabetic rats may contribute to reduced pepsin and acid production, respectively. All of these observations may contribute to the development of dyspepsia and hypoacidity observed in patients with diabetes mellitus.

Key Word(s): 1. Diabetes; 2. chief; 3. parietal; 4. cells; 5. morphology; 6. gastric

Esophageal, Gastric and Duodenal Disorders P-155

An analysis of digestive diseases blog in the viewpoint of big data

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Objective: We are living in a world make decisions based on more data than ever before. People are generating data of 2.5×10^{18} bytes every day. Just over the past 2 years, 90% of the data that exists in the world today has occurred. Recently, the concept of Big data being appeared in the past, that was impossible to extract new insights and value. So, we aimed to investigate by analyzing trends in data of the visitors of the digestive diseases personal blog in the viewpoint of big data. **Methods:** We analyzed the personal blog of the professor of Gastroenterology at Gangnam Severance

Hospital in Yonsei University from January 2011 to November 2013. We analyzed the changes in the number of visitor, access path of visitors and Query. Among total 82 in blog posts, it was categorized Profile, press release, poetry and essays, understanding of digestive diseases and patient experience **Results:** Total 47,850 visitors have accessed the blog. Average 1,467 people visited per monthly and the 48 people visited per day. Between number of visitors and the cumulative number of registered post was showed a positive correlation. The site as most access path of visitors is blog.iseverance.com (41.6%), followed by naver (31.6%) and google. It is different from domestic leading search site. The most search term in blog was found intestinal metaplasia (11.9%), followed by dizziness (7.8%), diverticulitis (6.4%). **Conclusion:** Personal blog can functionalize as a communication with digestive disease patients. The blog analysis provides information that title of 'intestinal metaplasia' on the health lecture in the future be helpful to patients. In range non-infringement of the personal information, long-term studies and larger data should be necessary in the future.

Key Word(s): 1. Big data; 2. digestive blog

Esophageal, Gastric and Duodenal Disorders

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Portal hypertension associated gastropathy & gastritis in children in sudan

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Objective: Portal Hypertension is a major problem in our Sudanese children, it is the second cause of Hematemesis in our children after Gastritis, GERD, and Deudentitis, and it is mainly due to Extra Hepatic Portal Vein Obstruction and Chronic Liver Disease due mainly to infections and hereditary diseases (1). Portal Hypertensive Gastropathy (PHG) is a macroscopic lesion well recognized in adults, although controversy still exists with regard to its incidence and the factors influencing its development (2). Gastritis has been associated with chronic liver disease, mainly cirrhosis (3,4). Very few data are available in the pediatric age group for either PHG or gastritis (5). The objectives of this study were to determine the frequency of PHG and gastritis in Sudanese children with Portal hypertension and the factors associated with both conditions in these children. **Methods:** All patients younger than 15 years who referred to the pediatric endoscopy unit of Gafaar Ibn Oaf Specialized Children Hospital, Khartoum, Sudan and the endoscopy unit of the Military Hospital, Omderman, Sudan, during the last 5 years who underwent an upper GI endoscopy for various reasons, of those children with known or suspected Portal hypertension or who were found to have evidences of Portal hypertension during the procedure, during this period, were included in the study. Verbal informed consent was taken from the parents and the older children. Patients who had abnormal coagulation factors (Prothrombin time <50%, platelet count <50,000/mm³), and those for whom verbal informed consent was not obtained were excluded from the study. Upper gastrointestinal endoscopy was performed by the same Pediatric endoscopist and the adult Surgeon endoscopist, during the study period. The macroscopic aspect of the gastric mucosa was classified according to Taor et al (6). The presence of esophageal and gastric varices was noted and classified according to the Japanese Research Society of Portal Hypertension (7). During the procedure, 2 gastric biopsy specimens were taken from each patient. One biopsy specimen was taken from the antrum and one from the fundus for histopathological examination. Biopsy specimens were analyzed by the same histopathologist during the study period. The gastritis was classified as either chronic active or nonactive. Nonactive gastritis was defined by the presence of mononuclear cell infiltration and active gastritis by the presence of neutrophils and/or erosions. H Pylori

infection was reported on the histology. Children with Portal hypertension were subsequently studied. The underlying liver disease, the duration of evolution of the disease, the medical treatment, the presence of systemic or gastrointestinal symptoms, and the indications for upper gastrointestinal endoscopy were recorded for those patients. The patients were divided into 2 groups. Group 1 included 190 patients with Portal hypertension without liver cirrhosis (i.e. Portal Cavernoma, Peri Portal fibrosis due to Schistomaisis and congenital hepatic fibrosis). Group 2 included 60 patients with liver disease progressing toward cirrhosis (infectious hepatitis, Idiopathic cirrhosis, Progressive Familial Intra hepatic Cholestasis (PFIC), Wilson disease, or other metabolic liver diseases.) The χ^2 test was used to compare qualitative variables, and the Fisher exact test for comparison between small groups. $P < 0.05$ was considered significant. The study was approved by Al Nileen University Ethical committee. **Results:** Among 2000 patients enrolled during the study period, 250 (12.5%) received a diagnosis of Portal hypertension and were therefore included in the study. The median age of the patients at the time of endoscopy was 5 years 9 months (range, 5 months–15 years). The median time between the diagnosis of liver disease and endoscopy was 2 years 3 months (range, 2 months–8 years). Table 1 summarizes the clinical characteristics of the patients. Portal Hypertensive Gastropathy was found in 150 of 250 patients (60%). Moderate PHG was found in 104 of 250 patients and severe PHG in 41 patients (31 of whom had liver cirrhosis). Esophageal varices were found in 135 of 250 patients (54%) (Grade I, $n = 52$; grade II, $n = 62$; and grade III, $n = 21$). The hemorrhagic aspect of the esophageal mucosa was observed in 21 patients. No patient had gastric varices (8). Gastritis was found in 145 of 250 (58%) patients (antrum, $n = 70$; fundus, $n = 75$). No glandular atrophy or intestinal metaplasia was seen in the patients in the study. In the group 2 patients ($n = 60$), PHG was found in 35 patients with Liver Cirrhosis associated with chronic gastritis (active, $n = 25$; nonactive, $n = 20$). Esophageal varices were found in 15 patients. PHG and esophageal varices were not found in 15 patients having other causes of portal hypertension (i.e., syndromic or nonsyndromic paucity of bile ducts, PFIC or neonatal Cholestasis.) However, histological gastritis was found in 14 of 15 of these patients. In patients with late-onset liver disease (autoimmune hepatitis, Wilson disease, Idiopathic cirrhosis or secondary to infectious causes), PHG was found in 33 of 60 patients in addition to esophageal varices. Chronic gastritis was found in 15 patients with Liver cirrhosis and in 11 patients with Autoimmune Hepatitis. In the group 1 patients ($n=190$), PHG and esophageal varices were found in 158 cases. None of these patients showed histological gastritis. PHG was significantly associated with esophageal varices ($P = 0.001$) and a history of upper gastrointestinal bleeding ($P = 0.05$). No association was found between PHG and the cause of Portal hypertension (Intrahepatic or extra hepatic), cirrhosis (30 of 60 patients in group 2 vs. 158 of 190 patients in group 1), age of patient, duration of evolution of the liver disease, or presence of thrombocytopenia or neutropenia. Histological gastritis was more frequent in patients with cirrhosis than in those without cirrhosis (46 of 60 patients in group 2 and none of the patients in group 1; $P = 0.002$). However, no association was found between histological gastritis and age of patient, duration of evolution of liver disease, thrombocytopenia or neutropenia, or esophageal varices. Histological gastritis was found in half of the patients without any evidence of PHG. H Pylori infection was found in 150 children with no correlation to the presence of cirrhosis. Table 1 Clinical Characteristic of Patients with Portal Hypertension. AR-SA Underlying disease Age Number of children Endoscopy indications Neonatal Cholestasis 5 month-2 year 16 Splenomegaly Biliary Atresia, 12 Suspected Portal hypertension PFIC, 12, Syndromic and non Syndromic Bile Duct Paucity 8, Metabolic Liver Disease, 7, Infectious Hepatitis 2 year-5 years 18, Idiopathic Cirrhosis, 12 Hematemesis Portal Vein Thrombosis, 42, Portal Vein Thrombosis 5 years-15 years 32, +/- Splenomegaly Idiopathic Cirrhosis, 20 Suspected Portal hypertension Viral Hepatitis 5 years-15 years 19, Auto immune Hepatitis 5 years-15 years 18, Wilson disease, 10 Suspected Portal hypertension +/- Hematemesis Pri

portal fibrosis, 10 Hematemesis VenoOcclusive disease, 4 Suspected Portal hypertension Miscellaneous All age group 10, **Conclusion:** PHG defines a wide spectrum of diffuse macroscopic lesions, from erythema to diffuse gastritis, that appear in the gastric mucosa of patients with Portal hypertension (6). Histologically, these lesions correspond to dilated vessels in the mucosa and sub mucosa in the absence of erosions or inflammation (9). The opposite of gastritis, "Gastropathy" refers to conditions in which inflammation is not a prominent feature, although there may be epithelial damage and regeneration. The prevalence of PHG varies in the literature, among centers, ranging between 7% and 98% in the adult population (1). In our prospective longitudinal series reported a prevalence of 58%, confirming the 40% to 64% rate reported in a few previous pediatric studies (4, 10). The mosaic aspect was first described by Taor et al (6) and was considered specific for Portal hypertension by some authors (6, 11). In reports by Sarin et al (12) and Lin et al (13), the mosaic aspect was more frequently found in patients with Portal hypertension than in control groups. We confirmed these data in our study, given that we found a significant association between the presence of PHG, esophageal varices, and history of upper gastrointestinal bleeding. By contrast, the development of PHG was not related to cirrhosis by itself, confirming a previous pediatric study (4). Controversy still exists regarding the potential relationship between the severity of liver disease, cirrhosis, and the development of PHG. Vigneri et al (14) and McCormack et al (15) found no correlation between PHG secondary to portal hypertension and the severity of liver disease. By contrast, Sarin et al (16) and Marques Chaves et al (17) found a high prevalence of PHG in patients with cirrhosis compared with patients with Portal hypertension but without cirrhosis. Sarin et al (12) and Yachha et al (10) suggested that the sclerotherapy of esophageal varices plays a role in the development of PHG, although this fact was refuted by Primagnini et al (1). In our study, we did not find any correlation between the development of PHG and a history of sclerotherapy of esophageal varices. In addition, in adults, no relationship was found between H pylori infection and the development of PHG (10, 17). Though in our study most of the children with portal hypertension included in our study had H pylori infection. Although Parikh et al (18) reported a correlation between the presence of PHG and histological gastritis in 50% of adult patients; we did not find such a correlation in our study. The presence of histological gastritis was indeed strongly correlated with the presence of cirrhosis, in as much as none of the non cirrhotic patients with Portal hypertension had histological gastritis. Yachha et al (10) found no correlation between the endoscopic and the histological aspects of the gastric mucosa in 40 patients followed up for extra hepatic portal vein obstruction. In conclusion, our study shows that PHG is frequently found in children with Portal hypertension. It develops regardless of the cause of the Portal hypertension. PHG is inconstantly associated with histological gastritis (found in 58% of patients), which remains moderate in half of the cases and is preferentially localized in the fundus with a normal macroscopic aspect in the other cases. Almost all of the children in our study had H Pylori infection, but this can be just a reflection to the fact that most of our children acquire the infection quite early in their childhood (1). The clinical outcome and the evolution of the gastritis related to cirrhosis need to be determined.

Key Word(s): 1. Portal hypertensive gastropathy; 2. gastritis; 3. children; 4. varices

Esophageal. Gastric and Duodenal Disorders P-157

The significance of gastric endoscopic submucosal dissection (esd) as total pathological diagnosis in excluded indication criteria

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Objective: Indication of endoscopic submucosal dissection (ESD) has been expanding due to endoscopic technique and device improvement. Recently, we sometimes performed ESD for total pathological diagnosis when preoperative diagnosis was unconfirmed. We examined treatment outcomes and adverse events of ESD in excluded indication criteria which were performed for total pathological diagnosis. **Methods:** We conducted a retrospective analysis for consecutive 28 early gastric cancers (EGC) in excluded indication criteria in 28 patients who were performed ESD between June 2010 and May 2014. We examined average of longer axis for lesions, procedure time, en bloc resection (ER) rate, en bloc complete resection with margin negative (ECR) rate, curative resection (CR) rate as treatment outcomes, and perforation rate, severe bleeding rate during ESD procedure, delayed bleeding rate, incidence of severe stenosis, incidence of severe aspiration pneumonia, incidence of disease-related death and emergency surgery as adverse events. **Results:** The patients characteristics of 28 EGC in 28 patients were as follows: man : female 27:1, average age 68.5 ± 13.1 . Treatment outcomes were as follows: average of longer axis for lesion 26.5 ± 13.2 mm, procedure time 75.7 ± 44.1 minutes, ER rate 28/28(100.0%), ECR rate 19/28(67.8%), CR rate 7/28(25.0%). Adverse events were as follows: perforation 1/28 (3.5%), delayed bleeding 2/28 (7.1%). there were no cases of severe bleeding during ESD procedure, severe stenosis, aspiration pneumonia, emergency surgery and disease-related death. **Conclusion:** ESD for total pathological diagnosis in excluded indication criteria has significance because ESD is safety and diagnosis of EGC has limitations.

Key Word(s): 1. ESD included indication criteria

Esophageal. Gastric and Duodenal Disorders P-158

An experience of pneumatic balloon dilatation of achalasia cardia in a tertiary care hospital

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Objective: To evaluate the success and complications of endoscopic balloon dilatation in patients with Achalasia Cardia, in a tertiary care setup.

Methods: All patients with diagnosis of achalasia on barium swallow or manometry were retrospectively analyzed on the endoscopy database from January 2006 to September 2013. Balloon used for dilatation were Olympus Achalasia Balloon Dilators. All procedures were performed by expert endoscopists. Telephonic follow up was done and patients response was graded as follows. Excellent response was taken as improvement of dysphagia for both solids and liquids, Good response was taken as improvement of dysphagia for both solids and liquids but still has problems in food intake while poor response was taken as no improvement following balloon dilatation. Time to recurrence of symptoms and complications was also asked. **Results:** Seventy seven dilatations were performed in 60 patients (mean 1.28 ± 0.691). There were 31 males (51.7%) and 29 (48.3%) females. Male to female ratio was 1.07:1. The age ranged from 13–65 yrs with a mean of 35.48 ± 13.366 . The dilatations in the first session ranged from 30–40 mm with a mean of 36 ± 3.884 while the remaining 17 dilatation in the successive sessions ranged from 35–40 with a mean of 38.53 ± 2.35 . 25 (41.7%) patients had recurrence of symptoms following balloon dilatation. There were 35(58.33%) patients with excellent response, 19(31.67%) with good response and 6(10%) with poor response after dilatations. There was one (1.7%) case of perforation. 4 patients (6.7%) were referred for surgery after failure to improve after balloon dilatation. **Conclusion:** Balloon dilation with fluoroscopic guidance is a safe and successful treatment for esophageal achalasia.

Key Word(s): 1. Achalasia; 2. pneumatic dilatation

Esophageal, Gastric and Duodenal Disorders

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Clinical outcomes of endoscopic submucosal dissection for submucosal invasive early gastric cancer

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Objective: The Japanese Gastric Cancer Association has proposed expanded criteria for the curative endoscopic resection of early gastric cancer. However, it remains controversial whether endoscopic submucosal dissection (ESD) for submucosal invasive early gastric cancer (SM-EGC) is feasible or not. The aim of our study was to assess the feasibility of ESD for SM-EGC. **Methods:** We retrospectively collected clinical data of 1060 consecutive patients with gastric lesions who had undergone ESD at our hospital between January 2008 and September 2013. Of these, 150 lesions (14.2%) were classified as SM-EGC by pathological evaluation using the ESD specimen; 72 lesions (47.7%) had submucosal invasion of less than 500 μm (SM1-EGC), and the remaining 78 lesions (52.0%) had invasion of 500 μm or more (SM2-EGC). **Results:** There were no significant differences in patient age, sex, tumor size, location, and histology or morphological type between patients with SM1-EGC and SM2-EGC. Lymphovascular involvement was found in 9 patients with SM1-EGC (12.5%) and 42 patients with SM2-EGC (53.8%) ($p < 0.05$). The complete resection rates for SM1-EGC and SM2-EGC were 84.7% and 63.3%, respectively ($p < 0.05$). There were no significant differences in procedure time (60 min vs. 94 min) or perforation rate (4.2% vs. 5.1%). Sixteen SM1-EGC patients (22.2%) underwent surgical resection after ESD as an additional treatment, and lymph node metastasis was found in only 1 case. Additional surgical resection was performed for 57 patients (72.2%) of SM2-EGC patients, and lymph node metastasis was observed in 8 of these patients. Of 33 patients who did not undergo additional curative surgical resection, 2 patients with SM2-EGC had recurrence of lymph node metas-

tases and underwent surgery, but no patient with SM1-EGC had lymph node metastases or local recurrence. **Conclusion:** ESD for SM1-EGC based on expanded criteria may be feasible, but additional long-term follow-up data are needed.

Key Word(s): 1. ESD; 2. submucosal invasion; 3. early gastric cancer

Esophageal, Gastric and Duodenal Disorders

P-160

Clinical consideration of metastatic gastric tumor

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Objective: [Background] Metastatic gastrointestinal tract tumors can be seen in end-stage malignant disease, is clinically diagnosed during his lifetime was rare. Review the experience cases of metastatic gastric tumors, we report, including the endoscopic findings and therapeutic adaptation.

Methods: We have experienced 17 cases (with 28 lesions) of metastatic gastric tumor. 8 cases of female and 9 cases of male, 67-year-old average age. Primary tumor were detected 7 cases of lung cancer, two cases of pancreatic cancer and bile duct cancer, one each in esophageal cancer, breast cancer, colonic cancer. Nine cases of digestive tract bleeding, abdominal pain, clinical symptoms that triggered the discovery was 8 cases is asymptomatic. At the first visit is the seven cases, the discovery period was 4–60 months after the primary tumor found in six cases other.

Results: Gross morphology was submucosal tumor-like polypoid lesions with a central ulcer formation in 17 lesions, primary gastric cancer similar lesions in 6, and 2 lesions peptic ulcer similar. From the form, rather than transfer the serosal side invasion of intraperitoneal seeding, hematogenous metastases was suggested. When we discover, the less likely an indication for aggressive treatment, but for bleeding from metastatic lesions, in 5 cases of argon plasma coagulation treatment, it was very effective in terms of improving patient QOL successful in all patients hemostasis. **Conclusion:** It is necessary to consider the possibility of bleeding from metastatic lesions such cases to cause gastrointestinal bleeding of unknown cause during the course of malignant disease. Macroscopic picture is characteristic of metastatic gastric tumors can be diagnosed by the combined use of biopsy. Also, consider if you have bleeding, such as treatment of APC hemostasis surgery also useful.

Key Word(s): 1. Metastatic gastric tumor

Esophageal, Gastric and Duodenal Disorders

P-163

Polymorphisms of CD24 gene are not related to risk and prognosis of gastric cancer

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Objective: CD24 expression has been reported to mediate gastric carcinogenesis and correlate with poor prognosis. The aim of this study was to evaluate the role of SNPs of CD24 gene in susceptibility and prognosis of gastric cancer. **Methods:** Three loci of CD24 gene, P-534, P170 and P1527, were genotyped using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) in 679 histologically-confirmed gastric cancer cases, 111 gastric atrophy cases and 976 tumor-free controls. CD24 expression was evaluated by a tissue microarray immunohistochemistry method in 131 gastric cancer specimens. Serum anti-Helicobacter pylori (H.pylori) IgG were detected by enzyme-linked immunosorbent assay (ELISA). **Results:** All of the three loci were in Hardy-Weinberg equilibrium in the control group. None of the three SNPs was observed to be associated with the risk of gastric cancer or gastric atrophy. And no SNPs were found to be correlated with the TNM stage, tumor differentiation, lymph node metastasis and overall survival of gastric cancer. Moreover, no difference of CD24 expression was found among the three genotypes of each SNP. **Conclusion:** SNPs of CD24 gene may not be correlated with the risk and prognosis of gastric cancer. However, more studies may be needed to confirm the conclusion. This work was supported by Norman Bethune Program of Jilin University [2013025], National Natural Science Foundation of China (81072369 and 81273065).

Key Word(s): 1. Polymorphisms; 2. CD24 gene; 3. prognosis; 4. gastric cancer

Esophageal, Gastric and Duodenal Disorders

P-164

Prevalence and predictors of GERD during pregnancy and its effects on the quality of life and pregnancy outcomes

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Objective: Pregnancy has long been acknowledged as a condition that predisposes to gastroesophageal reflux disease (GERD). The aim of this study was to evaluate the prevalence and predictors of GERD and the effect of GERD on quality of life (QOL) and pregnancy outcomes in Korean pregnant women. **Methods:** This study was a prospective, cohort study which followed pregnant women in the second or third trimester. Ninety-four consecutive pregnant women who visited Seoul National University Boramae Hospital for the prenatal test were included in this study. GERD was diagnosed with the use of the GERDQ (gastroesophageal reflux disease questionnaire). QOL in pregnant women with GERD was assessed

using QOLRAD (quality of life in reflux and dyspepsia questionnaire). Pregnancy outcome was evaluated with obstetric records after delivery.

Results: Twenty eight (29.8%) of 94 women were diagnosed as GERD by GERDQ. History of GERD in pre-pregnancy and BMI of pre-pregnancy were associated with the development of GERD during pregnancy (9% vs 25%, $P = 0.041/21.04 \pm 2.82$ vs 19.97 ± 1.90 , $P = 0.036$). On aspects of QOL, emotional stress ($P = 0.014$), sleep problem ($P = 0.015$), food/drink problem ($P = 0.004$), and vitality ($P = 0.029$) were more prevalent in pregnant women with GERD. Pregnancy outcomes as assessed by birth weight, Apgar score, pre-term birth, and gestational age at partum were not different between the two groups. **Conclusion:** The prevalence of GERD during pregnancy was 29.8% in our cohort. Previous history of GERD and lower BMI in pre-pregnancy can be the predictive factors of the development of GERD in pregnant women. GERD significantly impaired QOL of pregnant women.

Key Word(s): 1. Gastroesophageal reflux disease; 2. pregnancy; 3. outcome; 4. Qol; 5. predictors

Esophageal, Gastric and Duodenal Disorders

P-165

Long-term three-dimensional primary gastric culture within gastric mesenchymal myofibroblasts as a stem cell niche

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Objective: Stem cells are generally influenced by a microenvironment niche. In the stomach, mechanism of epithelial-mesenchymal interaction has not yet fully elucidated. The aim was to produce a culture system to enable study of gastric epithelial-mesenchymal interaction. **Methods:** Glandular stomach cells from postnatal day 2 C57BL/6J mice were cultured in our three-dimensional (3D) primary culture system. We established mouse mesenchymal myofibroblast (GMF) cell line and cocultured in collagen gels in our 3D culture system. This culture system maintains the cultured cells that are embedded in a collagen gel under an air-liquid interface environment. **Results:** Cultured stomach cells showed outer spindle cells and yielded expanding sphere structures, which grew for three months. In coculture system with GMF cells, the size and the number of cultured spheres were significantly greater than in control culture. The wall of cultured gastric spheres consisted of a monolayer of tall columnar cells with round nuclei at the base and mucus cytoplasm. A portion of the wall showed a pit-like structure, confirming high morphological differentiation. Immunohistochemistry revealed cells that were positive for human gastric mucin and HIK1083, demonstrating differentiation into gastric surface mucous cells and mucous neck cells, respectively. Fewer than 1% of the epithelial cells were positive for enteroendocrine cell marker chromogranin A. Ultrastructural examination revealed fully differentiated microstructures in cultured gastric epithelial cells. **Conclusion:** We show the potential role of gastric mesenchymal myofibroblasts to affect the normal gastric epithelial differentiation and proliferation in our noble long-term in vitro 3D culture system.

Key Word(s): 1. Stem cell; 2. stomach

Esophageal, Gastric and Duodenal Disorders P-165A

Diagnostic accuracy of gastrin-17 in relation to severe endoscopy feature of dyspepsia patients

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Introduction: Screening populations using endoscopy is impractical and expensive. We need a noninvasive method to choose the patient that really need endoscopy. We evaluate the accuracy of gastrin-17 as a tool of screening patients for endoscopy. **Method:** Endoscopy finding was classified in 2 category, severe and mild/normal, severe if we found ulcer or tumor in gastric and mild if we found normal, superficial and erosive gastritis. Fasting serum gastrin-17 was determined by standard immunoassays. Receiving operating characteristic (ROC) analysis was used to determine the best cut-off for gastrin-17 serum test in severe and mild/normal endoscopic feature. **Results:** Seventy seven patients underwent endoscopy. Seventy one patients with normal/mild finding and 6 patients with severe finding. Base on nonparametric test with Mann-Whitney test, we found significant mean different of gastrin-17 between mild/normal and severe group ($p = 0.025$). Diagnostic accuracy of Gastrin-17 on determining severe finding base on ROC procedure, we found AUC 78% (95% CI: 63%–91%), $p = 0.025$, with sensitivity and specificity are 66.7% and 77.5% at value ≥ 21.75 pg/ml. **Conclusion:** In dyspepsia patient, Gastrin-17 has an acceptable accuracy in determining severe abnormality on endoscopy and value ≥ 21.75 pg/ml is the best cut off value for screening severe endoscopic feature.

Key Word(s): 1. Gastrin-17; 2. endoscopy feature

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Differences in clinical characteristics between nontuberculous mycobacterial lung disease associated with gastroesophageal reflux disease and without gastroesophageal reflux disease

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Objective: GERD is reported to be associated with several respiratory diseases, including asthma, COPD. However, the association between gastroesophageal reflux disease (GERD) and nontuberculous mycobacterial (NTM) lung disease is unclear. The purpose of this study was to assess the clinical and radiographic characteristics in the NTM lung disease with/without GERD. **Methods:** The present study retrospectively studied 106 patients diagnosed as NTM lung disease at Bundang Seoul National University Hospital, between 2009 and 2013. 31 patients had NTM lung disease with GERD and 75 age-sex matched patients had NTM lung disease without GERD. The diagnosis of reflux esophagitis was based on the endoscopic findings, such as mucosal break around the distal esopha-

geal sphincter. **Results:** No statistically significant differences were found between the two groups with regard to age, sex, body mass index. There were no differences in the positivity of acid-fast bacilli smear, the number of involved lobe. In the patients with GERD, 19 patients (62%) did not report any reflux or heartburn symptoms. 7 Patients (25%) had atypical GERD symptoms such as dyspepsia, epigastric discomfort. The patients without GERD were more likely to have *M. abscessus* infection (2 of 31 patients, 6.5%) than those without GERD (17 of 75 patients, 22.7%) ($p = 0.048$). **Conclusion:** Patients with NTM lung disease have a high prevalence of asymptomatic gastroesophageal reflux. The presence of GERD in NTM lung disease is associated with the etiology of NTM infection. The results of this study are not consistent with the previous study.

Key Word(s): 1. Gastroesophageal reflux; 2. nontuberculous mycobacteria; 3. endoscopy

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Gastric perforation caused by primary gastric diffuse large B cell lymphoma

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Objective: Primary gastric lymphoma is less than 5% of primary gastric neoplasm but the incidence of this malignancy is increasing. The most common histology is representing diffuse large B cell lymphoma. Complication of gastric lymphoma such as perforation and peritonitis, nearly always required a surgical management. Although unusual, the occurrence of perforation is potentially life threatening and leads to morbidity from sepsis, multi-organ failure, prolonged hospitalization, delay the initiation of chemotherapy and mortality. We report a case with gastric lymphoma initially presenting as peritonitis because of spontaneous gastric perforation. **Case Report:** A 64-year-old man was hospitalized via our emergency room with sudden onset of abdominal pain. A physical examination revealed abdominal tenderness and muscular defense. The laboratory tests on admission showed WBC 9,270/mm³, Hb 10.3 g/dl, platelet count 406,000/mm³. Others value were within the normal range. Chest X-ray finding was free air below the right diaphragm (Figure 1A). We checked abdominal CT scan. It showed massive free air in the peritoneal cavity and large wall defect in lesser curvature of gastric lower body (Figure 1B). We performed emergency surgery and primary closure was done. In the pathology report, H&E staining showed diffuse proliferation of lymphocytes (Figure 1C) and immunohistochemistry staining was positive for CD 20 (Figure 1D) and LCA. On the basis of the microscopic and immunohistochemical findings, we made diagnosis of diffuse large B cell lymphoma. 15 days after primary closure, patient underwent subtotal gastrectomy and then chemotherapy was performed. Patient is during the follow up without any particular complication.

Key Word(s): 1. Gastric lymphoma; 2. perforation

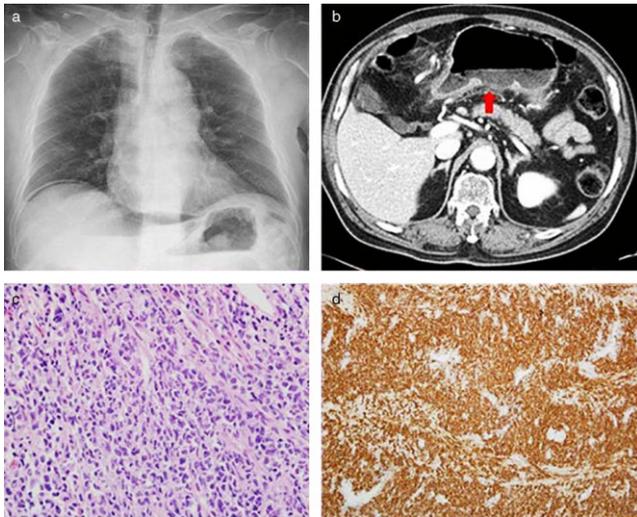


Figure 1

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Low expression of transforming growth factor β in the epithelium of barrett's esophagus, with or without dysplasia, and associated adenocarcinoma

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Objective: Transforming growth factor β (TGF- β) overexpression or signaling dysfunction has been demonstrated for many tumors. The aim of this study was to investigate the expression of TGF- β in the epithelium of human Barrett's esophagus (BE). **Methods:** Patients with endoscopic suspected BE (ESBE) were collected between November 2012 and March 2013. Biopsy over BE epithelium was applied and classified by an histopathologist. Reverse transcription-polymerase chain reaction (RT-PCR) for TGF- β mRNA expression over biopsy specimen from normal squamous epithelium of esophagus, BE, and gastric cardia were assessed. Four human esophageal cell lines, including HETA1 (normal), CA-A (BE without dysplasia), CP-C (BE with dysplasia) and OE-33 (Adenocarcinoma), were selected. RT-PCR for mRNA and western blotting for protein of TGF- β expression of each cell were assessed. **Results:** Among all thirty enrolled patients, twenty-eight, one, and one cases were classified as BE without dysplasia, BE with low-grade dysplasia and BE associated AC, respectively. Expression of TGF- β mRNA in the epithelium of BE, with or without intestinal metaplasia, dysplasia, or AC, was significantly (P -value < 0.01) lower than that in normal esophagus and gastric cardia. In the cell line, expression of TGF- β mRNA and protein were significantly (P -value < 0.05) lower from BE and associated adenocarcinoma than that from normal esophagus. **Conclusion:** The expression of TGF- β was low

in the epithelium of BE irrespective of the presence of dysplasia or associated adenocarcinoma. This finding provided a potential biomarker for diagnosis of BE.

Key Word(s): 1. Barrett's esophagus; 2. dysplasia; 3. transforming growth factor β

Esophageal, Gastric and Duodenal Disorders

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Overexpression of transforming growth factor β could decrease cell migration of barrett's esophagus associated adenocarcinoma

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Objective: Esophageal adenocarcinoma (AC) arising from Barrett's esophagus (BE) epithelium was fatal with limited chance to cure. The aim of this study was to investigate the role of transforming growth factor β (TGF- β) in human BE associated AC. **Methods:** Three human esophageal cell lines, including HETA1 (normal), CP-C (BE) and OE-33 (AC), were selected. Reverse transcription-polymerase chain reaction (RT-PCR) and western blotting for mRNA and protein of TGF- β expression of each cell were assessed. The OE-33 cell line was further divided into 3 subgroups: OE-33, OE-33-TGF- β (OE-33 cells transgene with TGF- β), and OE-33-r TGF- β (OE-33 cells culture with r TGF- β medium 0.1 ng/ml for 24 hr). The presentations of cell viability and migration of above subgroups were assessed. **Results:** Expression of TGF- β mRNA and protein were significantly (P -value < 0.05) lower in the cell line of CP-C and OE-33 than that in HETA1. The cell viability of OE-33, OE-33-TGF- β and OE-33-r TGF- β subgroups was similar, but both OE-33-TGF- β and OE-33-r TGF- β subgroups owned a significant (P -value < 0.01) decrease of cell migration compared with OE-33 subgroup did. **Conclusion:** The expression of TGF- β was low in the epithelium of BE and associated AC. Overexpression of TGF- β in EAC cell line can significantly inhibit cell migration, which might be a therapeutic option to BE associated AC in the future.

Key Word(s): 1. Adenocarcinoma; 2. Barrett's esophagus; 3. cell migration; 4. transforming growth factor β

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Acute exposure of aspirin could decrease cell viability and migration of barrett's esophagus associated adenocarcinoma, not via the transforming growth factor β pathway

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Objective: The incidence of Barrett's esophagus and its associated esophageal adenocarcinoma (AC) has risen dramatically over the past several decades. The aim of this study was to investigate the role of aspirin in BE associated AC and its potential pathway. **Methods:** Human Barrett's esophagus associated AC cell line, OE-33, was selected. The presentations of cell viability and migration after acute exposure to 0, 5, 10, 15 μ M aspirin were assessed. Reverse transcription-polymerase chain reaction (RT-PCR) for mRNA of TGF- β expression from OE-33 cell after exposure of aspirin were also evaluated. **Results:** There was a significant decrease in cell viability and migration of OE-33 cell after acute exposure of 10 and 15 μ M aspirin respectively. However, the expression of TGF- β mRNA after exposure of aspirin showed no difference. **Conclusion:** Acute exposure of moderate to high dose aspirin could inhibit cell viability and migration of Barrett's esophagus associated AC, but it was not related with the TGF- β expression.

Key Word(s): 1. Adenocarcinoma; 2. aspirin; 3. Barrett's esophagus; 4. cell viability; 5. cell migration; 6. transforming growth factor β

Esophageal. Gastric and Duodenal Disorders P-174

Clinical features and prognosis of intramural hematoma of the esophagus in korea

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Objective: Intramural hematoma of the esophagus (IHE) is a rare disorder and part of the spectrum of esophageal injuries which includes the more common Mallory-Weiss tear and Boerhaave's syndrome. Because acute retrosternal or epigastric pain is a common feature, which can be accompanied by dysphagia, hematemesis, it is important to differentiate from other disorders causing chest pain. We reviewed based on the reported cases of IHE in Korea and investigated clinical features and prognosis. **Methods:** For clarifying the clinical features of IHE in Korea, we searched Pub-med and KoreaMed with the keywords of 'IHE' or 'esophageal submucosal hematoma' or 'submucosal dissection of esophagus' and only the Korean cases were selected from the results. The number of the cases is 27 from 1998 to 2014, excluding uncleaned articles and we analyzed the clinical features in these cases. **Results:** Total 27 patients were enrolled and included 18 males and 9 females. The ages ranged from 12 to

82 years (mean age 54.04 years) with a tendency toward the elderly. The chief complaint was chest pain in 22 cases (81.5%), followed by dysphagia in 12 cases (44.4%), hematemesis in 8 cases (29.6%), Odynophagia in 8 cases and nausea and vomiting in 4 cases (14.8%). Most common underlying disease was diabetes mellitus in 7 cases, followed alcoholic liver cirrhosis in 5 cases. Three patients were received antithrombotic agents, such as aspirin or clopidogrel. Primary IHE, including unknown origin was observed in 18 cases (66.7%) and secondary IHE, including iatrogenic, traumatic, pill-induced causes in 9 cases (33.3%). Thoracic part of the esophagus was the most common site of the lesion. Conservative treatment was performed in 20 cases (74.1%) and only one patient was died. **Conclusion:** In this study, there are several different points comparing to previous studies. Cases of IHE have been reported more frequently in elderly men and not concerned with antithrombotic agents. Diabetes and liver cirrhosis are common accompanied disorders. Although most of IHE cases have a benign disease course and resolve within few days with conservative treatment, a mortality of 4% has been noted and surgical treatment may be needed in some cases.

Key Word(s): 1. Intramural hematoma; 2. esophagus; 3. prognosis

Esophageal. Gastric and Duodenal Disorders P-176

Polydeoxyribonucleotide affecting gastric ulcer healing in mongolian gerbils

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Objective: Polydeoxyribonucleotide (PDRN) stimulates VEGF expression and facilitating wound healing. However, effects of PDRN on gastric ulcer (GU) healing are still unknown. **Methods:** 60 Adult male Mongolian gerbils were used in this experiment. They were randomly divided into six groups (n = 10 each group): sham-operation group, GU-induced group, GU-induced and 2, 4, 8, and 16 mg/kg PDRN-treated group. GU was induced by injection of acetic acid into subserosal surface of stomach. After convalescent period of 2 days, gerbils in PDRN-treated groups underwent intraperitoneal injection of 100 μ l distilled water, which included PDRN of each concentration, once a day for 14 consecutive days. We investigated effects of PDRN on the size of ulcer and VEGF expression in GU-induced Mongolian gerbils. In addition, we evaluated the effects of PDRN on apoptosis in GU. **Results:** PDRN of 8 and 16 mg/kg significantly decreased the size of GU. Compared with GU-induced group, 8 and 16 mg/kg PDRN-treated group showed significant overexpression of VEGF protein. In terms of anti-apoptosis, 8 and 16 mg/kg PDRN-treated group significantly decreased number of TUNEL-positive cells in stomach. In addition, 8 mg/kg PDRN-treated group significantly suppressed caspase-3 expression. Induction of GU significantly enhanced the ratio of Bax to Bcl-2. The suppressing effect of PDRN on Bax to Bcl-2 ratio appeared most potent at 8 mg/kg dose. **Conclusion:** PDRN overexpressed VEGF protein on acetic acid-induced GU in Mongolian gerbils. This alteration is considered to promote GU healing. In addition, VEGF overexpressed by PDRN inhibited apoptosis, and this effect is considered to prevent gastric ulcer.

Key Word(s): 1. Gastric ulcer; 2. polydeoxyribonucleotide; 3. apoptosis; 4. vascular endothelial growth factor

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Continuing decline in helicobacter pylori and associated upper gastrointestinal diseases in a multi-racial asian population in malaysia

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Objective: To report on prevalence of upper gastrointestinal diseases between 2009–2010 in a multi-ethnic Asian population.

Methods: Endoscopy records of patient that presented for first time gastroscopy between 2009–2010 in the University of Malaya Medical Centre, Kuala Lumpur, Malaysia were reviewed. **Results:** 4745 patients undergone first time endoscopy examinations between 2009–2010. Prevalence of peptic ulcer disease (PUD) was reported to be 2.5% and 3.4% respectively for duodenal ulcer (DU) and gastric ulcer (GU). Helicobacter pylori (*H.pylori*) infection was reported in 11.1% of patients. However only 6.7% of DU and 0.6% of GU were associated with *H.pylori* infection. Although Prevalence of gastric cancer (GCA) was only noted in 0.8% of patients, Chinese remains the highest at risk at 67.5%. Erosive oesophagitis (EO) was noted in 9.4% of patents. Higher proportion of Malay male (24.4%) and Chinese male (49.2%) had EO whilst the opposite was observed in the Indian. ($p = 0.023$). Prevalence of Barret's oesophagus and oesophageal cancer was reported in 0.4% and 0.3% respectively. Comparing with historical data (1), prevalence of PUD continues to decline in keeping with reduction of *H.pylori* infection. Prevalence of EO increased steadily over the years in agreement with observations around the globe. Complications related to EO remains low. The decline of prevalence of GCA appears to correlate with an overall decrease in *H.pylori* infection with Chinese remains the highest ethnic group at risk. **Conclusion:** Further decline in *H.pylori* infection is associated with dramatic reduction in peptic ulcer disease and gastric cancer whilst in contrary a further increased of erosive oesophagitis was observed in our population. Goh K.L., et al., Time trends in peptic ulcer, erosive reflux oesophagitis, gastric and oesophageal cancers in a multiracial Asian population. *Aliment Pharmacol Ther*, 2009.29(7):p.774–80.

Key Word(s): 1. *H. pylori*; 2. endoscopy; 3. upper GI; 4. epidemiology

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Risk factors for gastroesophageal reflux disease

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Objective: To explore the related risk factors for gastroesophageal reflux disease (GERD). **Methods:** Patients who were diagnosed as GERD on the basis of the Montreal Consensus guidelines (2006) from Jun 2011 to Jun 2013 in our hospital were enrolled as GERD group. Healthy people were selected to be served as control group. A questionnaire including lifestyle, dietary and demographic data was performed for each group. Univariate analysis was made to select the significant factors and the factors selected were brought into multivariate analysis of conditional logistic regression. **Results:** The risk factors of GERD included drinking distillate spirit, eating high fat and sweet food, overeating, spicy food, and strong tea. All these factors were found to be correlated with GERD by univariate analysis ($P < 0.05$). Multivariate conditional logistic regression analysis appealed that fat food (OR: 3.123, 95% CI: 1.024–9.896, $P < 0.05$), sweet food (OR: 3.483, 95% CI: 1.102–10.296, $P < 0.05$), over-eating (OR: 3.343, 95% CI: 1.432–9.897, $P < 0.05$), spicy food (OR: 3.163, 95% CI: 1.067–10.896, $P < 0.01$) and strong tea (OR: 2.343, 95% CI: 1.342–9.566, $P < 0.01$). **Conclusion:** Good and healthy eating habits and lifestyle would contribute to prevent and attenuate GERD.

Key Word(s): 1. Gastroesophageal reflux disease; 2. questionnaire

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Effective of esophageal pH monitoring in patients with laryngeal symptoms

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Objective: To examine 24-h esophageal pH monitoring effectiveness in patients with laryngeal symptoms and without typical reflux symptoms. And also to evaluate the response to a 8-week proton pump inhibitor (PPI) trial. **Methods:** Patients who experienced persistent laryngeal symptoms more than two weeks and without laryngeal neoplasm were enrolled. Patients who combined with the typical reflux symptoms including heart-burn and acid regurgitation were excluded. 24-h esophageal pH monitoring was performed in these patients. And they were also treated with 10 mg of Omeprazole bid for 8 weeks. **Results:** 48 patients from December 2011 to December 2013 were analyzed. According to DeMeester scoring criteria, 40 patients (83%) had normal results, 8 patients (17%) had pathological gastroesophageal reflux. 13 patients (27%) reported laryngeal symptoms relief with PPI therapy. **Conclusion:** Esophageal pH monitoring was effective in patients with laryngeal symptoms and without typical reflux symptoms. A part of laryngeal symptoms can be relieved by PPI therapy.

Key Word(s): 1. Esophageal pH monitoring; 2. laryngeal reflux

Esophageal, Gastric and Duodenal Disorders

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Comparison of preventive effects of teprenone and rabeprazole in gastritis caused by non-steroidal anti-inflammatory drugs

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Objective: To compare the preventive effects of Teprenone and Rabeprazole in gastritis caused by non-steroidal anti-inflammatory drugs (NSAIDs). **Methods:** 233 patients taking NSAIDs for more than 3 months with no infection of helicobacter pylori (Hp) were collected. All patients were screened by endoscopy and their upper gastrointestinal symptoms were evaluated. 26 patients with ulcers or 1 patient with gastric cancer were excluded. 206 patients were randomly divided into Teprenone group and Rabeprazole group. The Teprenone group took Teprenone 150 mg daily. And the Rabeprazole took Rabeprazole 10 mg daily. After follow-up for 6 months, patients were screened again by endoscopy and their upper gastrointestinal symptoms were also evaluated. **Results:** Long term use of NSAIDs causes gastric mucosa erosions. The damages in endoscopy and the symptoms of gastrointestinal were improved significantly ($P < 0.05$) both in the teprenone and the Rabeprazole intervention group after follow-up for 6 months. The improve level of endoscopy were better in the Rabeprazole group (91.0%, 91/100), compare with the Teprenone group (76.4%, 81/106). $P > 0.05$. No significant difference was found in symptom relief rates between the two groups (95.0%, 95/100 vs. 90.1%, 96/106). **Conclusion:** Long-term use of NSAID caused severe damages on gastric and duodenal mucosa; teprenone and Rabeprazole improved NSAIDs-related gastric side effects. The effectiveness of Rabeprazole was better than Teprenone in the endoscopic erosion. **Key Word(s):** 1. Gastritis; 2. non-steroidal anti-inflammatory drugs; 3. rabeprazole

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Observation of the therapeutic effects of deanxit in functional dyspepsia

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Objective: Functional dyspepsia is a very common disease and costs a lot of medical resources. This study was designed to study the therapeutic effects of Deanxit in treating functional dyspepsia. **Methods:** 168 functional dyspepsia patients were collected. According to the Roma III standard, symptoms include early satiety, epigastric distention, epigastric pain, et al. All patients were randomly assigned to the Deanxit group and the control group. The former had 78 patients and took Mosapride 15 mg daily and Deanxit 10.5 mg daily, while the latter had 90 patients and took Mosapride 15 mg daily and Vitamin B6 10 mg daily. Both groups took medicine for 4 weeks. The scoring for the digestive tract symptoms, HAMA score, and HAMD score were evaluated before and after treatment. **Results:** The total effect rate was 88.2% in the Deanxit Group and 78.3% in the control Group. There was statistical difference between the two groups ($P < 0.05$). There was statistical difference in the scoring for the digestive tract symptoms, HAMA score, and HAMD score ($P < 0.05$,

$P < 0.01$). There was no statistical difference in the improvement of defecation frequency score between the two groups after treatment ($P > 0.05$). There was no statistical difference in the side effects between the two groups. **Conclusion:** Deanxit could effectively treat dyspepsia accompanied with anxiety and/or depression. It had superiorities in improving symptoms.

Key Word(s): 1. Deanxit; 2. dyspepsia; 3. effect

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Histopathological assessment of gastrointestinal submucosal tumors by EUS-FNA using a 19-gauge needle

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Objective: Gastrointestinal submucosal tumors (SMT) include various diseases from benign to malignant. EUS-FNA is a safe and reliable technique to obtain pathological sample from SMT. However, it is still unclear whether such FNA specimen has sufficient amount and quality for detailed assessment including immunohistological staining, which is mandatory to make a diagnosis of gastrointestinal stromal tumor (GIST). We evaluated the accuracy of diagnosis of gastrointestinal SMT by EUS-FNA using a 19-gauge needle. Especially in the diagnosis of GIST, the correlation with risk classification between FNA and surgical specimens was also examined. **Methods:** Our EUS database between July 2004 and March 2014 was reviewed to identify the patients who had been attempted EUS-FNA using a 19-gauge needle for SMT. In the patients who underwent surgery for GIST, MIB-1 index and Fletcher risk classification were compared between the FNA and surgical specimens and the correlations was assessed by weighted kappa coefficient. **Results:** A total of 93 patients (52 female; median age 66 [range, 24–86]) were identified. SMT was located at stomach in 76, esophagus in 11, duodenum in 3, and rectum in 3. The median size was 28 mm (range, 11–135 mm). The final diagnosis was GIST in 60, leiomyoma in 20, schwannoma in 4, ectopic pancreas in 3, metastatic cancer in 2, malignant lymphoma in 2, carcinoid in 1, and lipoma in 1. Adequate specimen for histological assessment was obtained in 87 patients (93.5%). The sensitivity, specificity, and accuracy in the diagnosis of SMT by EUS-FNA were 91%, 100%, and 94%, respectively. Finally, 51 patients underwent surgery and surgical diagnoses were GIST in 44, leiomyoma in 5, schwannoma in 1, and metastatic cancer in 1. Of the 42 patients with surgical diagnosis of GIST, weighted kappa coefficients between FNA and surgical specimens in modified Fletcher risk classification was 0.92. No procedure-related complication was observed. **Conclusion:** EUS-FNA using a 19-gauge needle was a safe and reliable procedure to obtain the histopathological diagnosis. It is also useful to assess the risk classification of GIST preoperatively.

Key Word(s): 1. EUS-FNA; 2. GIST

P-183A**Diagnostic accuracy of gastrin-17 in relation to severe endoscopy feature of dyspepsia patients****Presenting Author:** IK MARIADI**Additional Authors:** IW DARYA, IDN WIBAWA, N PURWADI, IGA SURYADARMA**Corresponding Author:** IK MARIADI**Affiliations:** *Department of Internal Medicine, Sanglah General Hospital/ Udayana University School of Medicine Denpasar, Indonesia*

Introduction: Screening populations using endoscopy is impractical and expensive. We need a noninvasive method to choose the patient that really need endoscopy. We evaluate the accuracy of gastrin-17 as a tool of screening patients for endoscopy. **Method:** Endoscopy finding was classified in 2 category, severe and mild/normal, severe if we found ulcer or tumor in gastric and mild if we found normal, superficial and erosive gastritis. Fasting serum gastrin-17 was determined by standard immunoassays. Receiving operating characteristic (ROC) analysis was used to determine the best cut-off for gastrin-17 serum test in severe and mild/normal endoscopic feature. **Results:** Seventy seven patients underwent endoscopy. Seventy one patients with normal/mild finding and 6 patients with severe finding. Base on nonparametric test with Mann-Whitney test, we found significant mean different of gastrin-17 between mild/normal and severe group ($p = 0.025$). Diagnostic accuracy of Gastrin-17 on determining severe finding base on ROC procedure, we found AUC 78% (95% CI: 63%-91%), $p = 0.025$, with sensitivity and specificity are 66.7% and 77.5% at value ≥ 21.75 pg/ml. **Conclusion:** In dyspepsia patient, Gastrin-17 has an acceptable accuracy in determining severe abnormality on endoscopy and value ≥ 21.75 pg/ml is the best cut off value for screening severe endoscopic feature.

Keyword(s): 1. Gastrin-17; 2. endoscopy feature

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P-186**Gastroesophageal Reflux Disease on endoscopic investigation****Presenting Author:** LUBIS MASRUL**Additional Authors:** ALAMSYAH SIREGAR GONTAR, HAKIM ZAIN LUKMAN**Corresponding Author:** LUBIS MASRUL**Affiliations:** *Gastroenterology-Hepatology Division Internal Medicine Department – Haji Adam Malik General Hospital*

Objective: Endoscopy has been used with increasing frequency in the investigation of upper gastrointestinal symptoms. Upper gastrointestinal endoscopy is currently the main diagnostic modality in the work-up of gastroesophageal reflux disease. For patient with gastroesophageal, performing endoscopy can detect underlying esophagitis, Barrett's esophagus and malignancy. The aim of this study was to establish the etiology of gastroesophageal reflux disease on upper endoscopic investigation. **Methods:** We collected upper endoscopy procedures results among gastroesophageal reflux patients at endoscopic centre Adam Malik Hospital January 2011 to July 2013. A detailed personal interview was conducted to establish clinical gastroesophageal symptoms and medication. We also determined sociodemographic profile of each patient. **Results:** There are 140 gastroesophageal patients, 60 (42.8%) were male and 80 (57.1%) were female. The main endoscopic findings were normal 103 (73.5%), esophagitis 25 (17.8%), Barrett's esophagus 10 (7.1%), esophagus carcinoma 12 (8.5%). **Conclusion:** Normal mucosa is a common diagnostic patients with gastroesophageal reflux.

Key Word(s): 1. GERD-endoscopy-normal mucosa

Esophageal, Gastric and Duodenal Disorders

P-187**Two cases of gastric amyloidosis****Presenting Author:** SHIGENAGA MATSUI**Additional Authors:** HIROSHI KASHIDA, KAZUKI OKAMOTO, YUTAKA ASAKUMA, TOSHIHARU SAKURAI, MASATOSHI KUDO**Corresponding Author:** SHIGENAGA MATSUI**Affiliations:** *Kinki University Faculty of Medicine, Kinki University Faculty of Medicine*

Objective: Amyloid deposits are produced in a variety of diseases and may be present in one or multiple organs. Isolated amyloidosis in the stomach is even more rare. **Methods:** We report two cases of gastric amyloidosis. **Results:** Case 1: A seventies woman was admitted with epigastric pain. An upper gastrointestinal endoscopy revealed a tumor at the inferior part of gastric corpus which was elevated lesion with redness. The gastric cancer it indicates the form like a submucosal tumor to be suspected. Histological examination of biopsy specimens from this lesion showed deposition of amorphous, homogeneous and acidophilic material in the gastric mucosa. This was consistent with a diagnosis of gastric amyloidosis. Immunohistochemistry for ATTR (amyloidogenic transthyretin) was strongly positive. There is no gene mutation of TTR and it carried out the final diagnosis to the ATTR of wild type TTR (senile systemic amyloidosis: SSA). It was a rare case of localized gastric amyloidosis of ATTR. SSA also easy to merge the digestive tract amyloidosis. The classification of amyloidosis should be performed by immunity staining including TTR. Case 2: A sixties man was admitted with diarrhea and anorexia. An upper gastrointestinal endoscopy revealed small curvature at the part of gastric upper corpus which was elevated lesion with ulcer. Histological examination of biopsy specimens from this lesion showed deposition of amorphous, homogeneous and acidophilic material in the gastric mucosa. Immunohistochemistry for AL lambda was strongly positive. Therefore, there are diagnosed gastric AL amyloidosis. **Conclusion:** Localized gastric amyloidosis, being rare in incidence, should be considered in the differentiation of gastric tumors, in which biopsy is the only means to confirm the diagnosis.

Key Word(s): 1. Gastric amyloidosis diagnosis

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P-188**The clinical characteristics and treatment of eosinophilic esophagitis****Presenting Author:** SHIGENAGA MATSUI**Additional Authors:** HIROSHI KASHIDA, MASANORI KAWASAKI, YUTAKA ASAKUMA, TOSHIHARU SAKURAI, MASATOSHI KUDO**Corresponding Author:** SHIGENAGA MATSUI**Affiliations:** *Kinki University Faculty of Medicine, Kinki University Faculty of Medicine, Kinki University Faculty of Medicine, Kinki University Faculty of Medicine*

Objective: Eosinophilic esophagitis (EoE) is a chronic inflammatory condition characterized by esophageal dysfunction and eosinophilic infiltrate in the esophageal epithelium in the absence of other potential causes of eosinophilia. In this study, we investigated the clinical characteristics, endoscopic appearances, and treatments for patients with EoE. **Methods:** Three patients with EoE (3 women; mean age, 27.3 years)

were diagnosed with EoE based on typical symptoms, endoscopic abnormalities and infiltration of the esophageal epithelium with >15 eosinophils/high-power field. The average endoscopic follow-up period was 19.2 months. **Results:** Two patients had dysphagia symptoms and 1 patient had epigastralgia symptoms, which not improved in 3 patients who were treated with proton pump inhibitor. Three patients had the history of the allergy disease of asthma, atopic dermatitis, and a food allergy. The endoscopic features were linear furrows in 2 patients, and was white papules in 1 patient. Three patients had a mean peak eosinophil count of 94.7 eos/hpf in the esophageal biopsy specimens. All the patients had an average of 9.13% of peripheral eosinophilia. All the patients were given with the corticosteroid administration of 30 mg of introduction, and the quantity of it was decreased gradually. As a result, the improvement of symptoms and endoscopic features had in all the patients. However, the one patient was permitted recurrence of symptom when corticosteroid was 5 mg. **Conclusion:** Endoscopic features of EOE is should be known. New evidence from ongoing research on EoE should thus seek to define a common treatment algorithm to optimize EoE patient management.

Key Word(s): 1. Eosinophilic esophagitis treatment

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Follow-up results of expandable metal stents for malignant esophageal obstruction in 210 cases

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Objective: Palliation of malignant esophageal obstruction endoscopically placed stent has been shown to improve patient quality of life by allowing restoration of oral alimentation. But complications and failures have not been well described in stomach cancer with esophageal invasion as well as esophageal and lung cancer. The aim of this report was to summarize our experience with expandable metal stents for palliative malignant esophageal obstruction in 210 cases and also compared the clinical outcomes of patients with esophageal, lung and stomach cancer with esophageal invasion. **Methods:** During January 2000 and December 2012, 210 stents were placed in 183 patients with malignant esophageal obstruction from esophageal cancer, lung cancer or stomach cancer with esophageal invasion. Dysphagia grade, clinical outcome, complications, and risk factor of complications were evaluated. **Results:** The improvement in dysphagia grade after stent implantation was statistically significant. (from 3.2 to 1.8, $p < 0.001$) Complication occurred in 23 (11%) patients. Procedure-related mortality was 2.4% (5/210). Tumor ingrowth and overgrowth is a significant problem with stent insertion, occurring in 53 patients (29%). And bleeding, sepsis due to procedure is more serious complication in the patients with malignant dysphagia, and mortality rate is high. When comparing the esophageal, lung, and stomach cancer groups, fistula status ($p < 0.001$) and migration ($p = 0.017$) were significantly different from each other. But there were no significant risk factors between complication and non-complication group. Complications were not correlated to type of tumor characteristic ($p = 0.176$). **Conclusion:** Expandable metal stents offer excellent palliation of malignant obstruction. Placement of the expandable metal stents effectively relieved malignant dysphagia in treated patients. Several factors should be considered before applying palliative therapy for malignant esophageal obstruction. Tumor characteristics such as location, fistula, and type need to be considered. Factors such as medical comorbidity and overall expected duration of survival also are important.

Key Word(s): 1. Expandable metal stents; 2. malignant esophageal obstruction

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Sushi worm: a case of anisakiasis

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Objective: Introduction: Gastric anisakiasis is a parasitic disease caused by the gastric mucosal penetration of the Anisakis larvae ingested with raw marine fish. Anisakis can penetrate small intestinal wall, leading abdominal pain and intestinal obstruction. We reported here a case of gastric anisakiasis with gastric bleeding and a case of small intestinal anisakiasis.

Methods: Case1: A 73 year-old Japanese man presented with 1 day history of tarry stool and hematemesis 4 hours after eating a raw mackerel. His vital signs were within normal range. He had no abdominal tenderness. The laboratory findings were not significant. The endoscopy showed A1 stage ulcer and the presence of Anisakis larvae. He was diagnosed with acute gastric anisakiasis with gastric ulcer. It was resolved with proton pump inhibitor and conservative treatment. **Results:** Case2: A 30 year-old Japanese man presented with acute onset of abdominal pain and vomiting 5 hours after eating squid. His vital signs were within normal limit. He had diffuse abdominal tenderness, especially in left upper quadrant and guarding. The laboratory findings were not significant. The CT showed 15 cm length intestinal wall edematous enlargement at jejunum and high density area at mesentery around jejunum and ascites at Douglas cavum. He was radiologically diagnosed with small intestinal anisakiasis. It was resolved spontaneously in a few days. **Conclusion:** Discussion: Acute gastric anisakiasis can be easily diagnosed by the endoscopic visualization of Anisakis larvae along with mucosal edema, erythema, hemorrhage, and/or an ulcer. However, small intestinal anisakiasis is difficult to diagnose because we cannot endoscope it easily. The CT scan typically showed severe intestinal submucosal edema with ascites. The small intestinal anisakiasis should be considered by the food history and the typical CT finding. If strongly suspected, small intestinal anisakiasis can be treated without surgery because the larvae will die within a few days and the symptoms will subside soon.

Key Word(s): 1. Anisakiasis

Esophageal. Gastric and Duodenal Disorders

P-191

Endoscopic features of gastric adenocarcinoma of fundic grand type

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Objective: Gastric adenocarcinoma of fundic grand type (GAFG) is neoplastic lesion mainly composed of highly differentiated columnar cells mimicking the fundic gland cells with nuclear atypia. It has been reported as a new, rare variant of gastric adenocarcinoma. Therefore, its endoscopic features are uncertain. The aim of the current study was to evaluate the endoscopic features of GAFG. **Methods:** From October 2012 to March 2013, three consecutive patients with GAFG resected by endoscopic sub-

mucosal dissection (ESD) in our hospital were enrolled in this retrospective study. These specimens resected by ESD revealed well-differentiated adenocarcinoma mimicking fundic gland cells, which were positive for pepsinogen-1 (a marker of chief cells) and MUC6 (a marker of fundic gland cells). These findings were consistent with GAFG. To evaluate the endoscopic features of GAFG, they were examined for their location, background mucosa, shape, color, and size. **Results:** All three GAFGs were in the upper part of the stomach. In the background mucosa, all they had normal fundic gland mucosa without atrophic change. And all they had whitish submucosal tumor shape with dilated branching vessel, ranging in size from 5.0 to 6.0 mm (mean, 5.1 mm). **Conclusion:** Precise understanding of these endoscopic features must enhance efficacious detection of GAFG in endoscopic surveillance.

Key Word(s): 1. Gastric adenocarcinoma of fundic gland type

Esophageal, Gastric and Duodenal Disorders

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Efficacy and safety of endoscopic resection for gastric neoplasm in patients with liver cirrhosis: a case-control study

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Objective: Even though endoscopic resection is performed widely in gastric neoplasm, not enough studies have been reported in patients with liver cirrhosis (LC). Therefore, we analyzed the outcomes of endoscopic resection for gastric neoplasm in patients with LC. **Methods:** From January 1995 to December 2012, 120 patients with LC (case group) underwent endoscopic resection for gastric neoplasm at Asan Medical Center. To compare the clinical outcomes, age, sex, and tumor size-matched control group (n = 360) were selected from patients without LC. In addition, we analyzed the changes in the outcomes of the Child-Pugh classification after the procedure. **Methods:** From January 1995 to December 2012, 120 patients with LC (case group) underwent endoscopic resection for gastric neoplasm at Asan Medical Center. To compare the clinical outcomes, age, sex, and tumor size-matched control group (n = 360) were selected from patients without LC. In addition, we analyzed the changes in the outcomes of the Child-Pugh classification after the procedure. **Results:** Among total 120 patients of the liver cirrhosis group (median age 68.5 years, men 103 patients), 106 patients (88.3%) were in Child-Pugh A classification and 14 patients (1.2%) were in Child-Pugh B. The complete/curative resection rates were 100%/97.5% in the case group and 91.9%/91.9% in the control group (p = 0.60 and p = 0.70, respectively). The median procedural time was 33.5 minutes in the case group and 33.7 minutes in the control group (p = 0.930). Bleeding was observed in 7 cases of the case group (5.83%) and in 16 cases of the control group (4.44%) after the procedure (p = 0.673). No perforation occurred in the control group and 4 cases of microperforation occurred in the control group (p = 0.576). The median follow up period after the procedure in the case group and the control group was 29.2 months and 44.24 months, respectively. In the case group, 4 of 106 cases of Child-Pugh A were changed to Child-Pugh B (3.3%) and none of 14 cases of Child-Pugh B were changed to Child-Pugh C after undergoing endoscopic resection. **Conclusion:** Endoscopic resection for gastric neoplasm can be performed in LC patients with a comparable

efficacy and safety to the patients without LC. Also, endoscopic resection does not worsen the Child-Pugh classification in the majority of the patients.

Key Word(s): 1. Endoscopic resection; 2. liver cirrhosis; 3. gastric neoplasm

Esophageal, Gastric and Duodenal Disorders

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The frequency of occurrence of symptoms and risk factors of gastroesophageal reflux disease (gerd) in patients with sinusitis

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Objective: To study the frequency of symptoms and risk factors of GERD in patients with sinusitis. **Methods:** Examined 56 consecutive inpatients sinusitis, which depending on availability of heartburn and regurgitation more than 1 time per week were divided into two main groups: with presence of typical GERD symptoms (group 1) and without them (group 2). The control group comprised 28 patients with GERD. All three groups were matched for age and sex. By anthropometry and questionnaire was assessed body mass index (BMI), waist circumference, the frequency and intensity of smoking, alcohol consumption. Manifestations of GERD diagnosis was carried out on the basis of the recommendations of the Montreal consensus. **Results:** The frequency of heartburn and regurgitation more than once a week in patients with sinusitis was 51.8%. In group 1 were significantly higher than in group 2 BMI (27.1 + 6.3 vs. 23.1 + 4.2 kg/m², p < 0.05) and waist circumference (92.2 + 14.0 vs. 75.4 + 12.9 cm, p < 0.05). Only in group 1 were detected patients with obesity and abdominal obesity. In group 1 were significantly higher figure bundles/years and the number of "drink" with a concentrated alcohol per week. Incidence and intensity of the analyzed parameters in group 1, in contrast to the two groups was comparable to the control. **Conclusion:** Every second patient with sinusitis has symptoms of GERD. Only in patients with sinusitis with heartburn and regurgitation identified obesity and abdominal obesity, high intensity of smoking and alcohol abuse.

Key Word(s): 1. Gastroesophageal reflux disease; 2. sinusitis; 3. risk factors

Esophageal, Gastric and Duodenal Disorders

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Frequency of regurgitation and its risk factors in patients with gastroesophageal reflux disease (gerd) in different age groups

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Objective: To study the frequency of regurgitation and its risk factors in GERD patients of different age groups. **Methods:** Examined 1100 patients with GERD mean age 69.0 + 5.9 years. Comparison group consisted of 453 patients GERD with a mean age of 45.6 + 9.4 years. GERD diagnosis was performed on the basis of recommendations of the Montreal Consensus. The extent of damage the esophageal mucosa was assessed by the Los Angeles classification. Barrett's Esophagus was defined as the presence of intestinal metaplasia in the distal esophagus. **Results:** Frequency of regurgitation in elderly patients with GERD was 53.1% in middle-aged patients – 26.9% ($p < 0.001$). Regurgitation in both groups was not associated with a form of endoscopic GERD. Meanwhile, in patients with regurgitation elderly in 1.4 times, and middle-aged patients – 7.4 times more likely to detect the presence of complications. Appearance of regurgitation in elderly patients with GERD contributed abdominal obesity (OR = 3.2 CI: 2.5–3.9), reception NSAID (OR = 2.7 CI: 1.7–3.7) and nitrate (OR = 2.1 CI: 1.2–2.8); middle-aged patients – hiatal hernia (OR = 3.3 CI: 2.0–4.4). Common risk factor that is independent of age, was the presence of any of obesity (OR = 2.2 CI: 1.5–2.8 – elderly patients, OR = 2.4 CI: 1.1–3.6 – middle-aged patients). **Conclusion:** Regurgitation twice as likely to bother GERD elderly patients. In both age groups, the presence of a burp was more typical complications of the disease. The largest contribution to the emergence of belching were added: abdominal and any obesity, reception NSAIDs and nitrates (elderly patients); hiatal hernia and any obesity (middle-aged patients).

Key Word(s): 1. Gastroesophageal reflux disease; 2. regurgitation; 3. risk factors; 4. elderly patients

Esophageal, Gastric and Duodenal Disorders

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Successful treatment of esophago-jejunal anastomotic leak by combination of self-expandable metal stent and fibrin glue

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Objective: INTRODUCTION: The incidences of anastomotic leaks after upper gastrointestinal surgery are approximately 4% to 20%. Although the

treatments of anastomotic leaks have not been established, a covered metal stent is considered a useful method. In some cases, fibrin glue was reported as a useful alternative tool. We used both covered metal stents and fibrin glue to treat the patient with esophago-jejunal leak and marked dilated esophagus. **Methods:** CASE PRESENTATION: A 72-year-old woman was referred for an esophago-jejunal anastomotic leak. The patient had undergone total gastrectomy with end-to-side esophago-jejunal anastomosis due to the adenocarcinoma of the stomach. A Jackson-Pratt (JP) drain was inserted into the Morrison pouch via right upper quadrant port site. JP drain didn't reduce until one week. Esophagography was performed and showed contrast leak at the anastomotic site (Figure A). It also revealed marked dilated esophagus with the largest diameter (35 mm). A fully covered self-expanding metal stent was placed over the leak site. After one week, follow-up esophagography showed persistent leak and the stent did not fit the esophagus due to the large diameter of the esophagus (Figure B). The stent was removed and fibrin glues were applied at the leak site (Figure C). Specially manufactured fully covered metal stent with 32 mm in a diameter was placed (Figure D). Two weeks later, the esophagography showed no leak. The metal stent was removed, and then the patient was discharged with a good health condition. **Conclusion:** We experienced a case that the esophago-jejunal leak after total gastrectomy was successfully treated by combination of covered metal stent and fibrin glue.

Key Word(s): 1. Esophago-jejunal anastomotic leak; 2. combination; 3. self-expandable metal stent; 4. fibrin glue

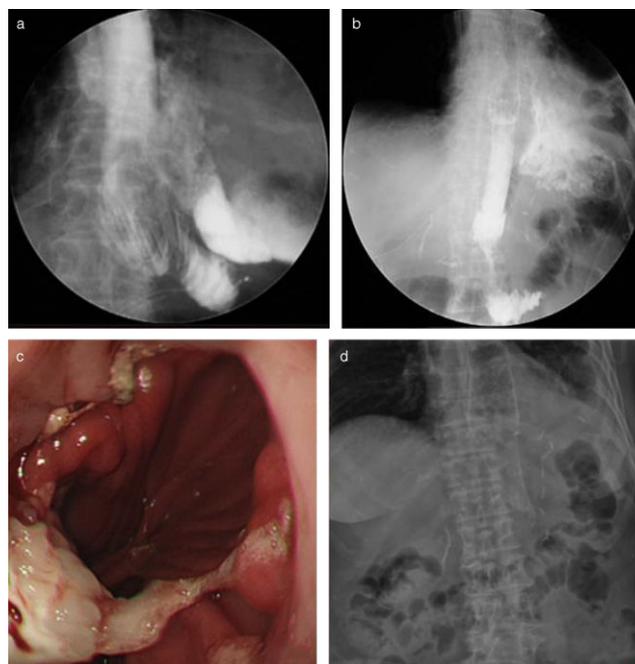


Figure 1

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A case of ampullary regenerative tissue mimicking adenoma after ampullectomy

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Objective: Ampullary adenoma is glandular dysplastic lesions that arise in and around the duodenal ampulla. Endoscopic ampullectomy is the treatment of choice for an ampullary adenoma. However, regenerative tissue developed at the post-ampullectomy site can mimic the ampullary adenoma. **Methods:** We retrospectively reviewed the medical records of a patient treated for the ampullary adenoma. **Results:** A 67-year-old woman underwent screening esophagogastroduodenoscopy. A protruding mass-like lesion was found at the ampulla of Vater (Figure A). Histological examination of the lesion revealed tubular adenoma with low grade atypism (Figure B). An endoscopic snare ampullectomy was performed. The microscopic ampullectomy specimen showed an adenoma, and the margin of specimen was free of the adenoma. Forty days after the ampullectomy, the patient visited the emergency department due to fever and abdominal pain. Acute cholangitis was suspected from the clinical findings. Endoscopic retrograde cholangiopancreatography was performed, and a recurrent protruding mass was found at the ampullectomy site (Figure C). We performed an ampullectomy again suspecting that this lesion was recurrent or remnant adenoma. However, the ampullectomy specimen revealed the regenerative epithelium, not true adenoma (Figure D). **Conclusion:** Regenerative epithelial tissue can mimic recurrent or remnant adenoma after an ampullectomy.

Key Word(s): 1. Ampullary adenoma; 2. endoscopic ampullectomy

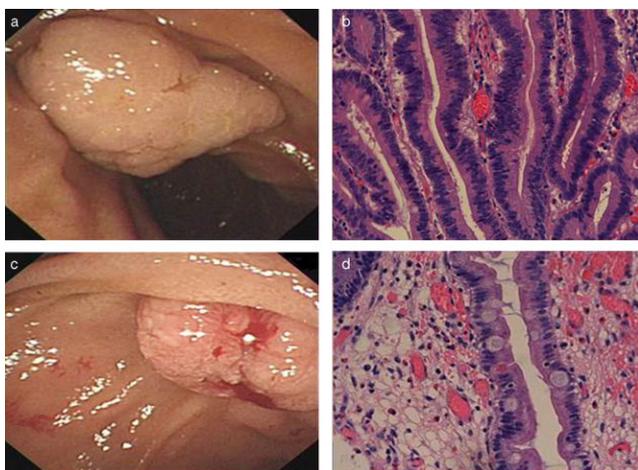


Figure 1

Esophageal, Gastric and Duodenal Disorders P-197

Upper gastrointestinal malignancy in patients undergoing esophagogastroduodenoscopy in sanglah general hospital denpasar

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Objective: Upper gastrointestinal (UGI) malignancy is one of major causes of cancer related death. However, data of UGI malignancy in Indonesian health care center were limited. This study was aimed to determine the prevalence of UGI malignancy in patients undergoing esophagogastroduodenoscopy in Sanglah General Hospital Denpasar.

Methods: A retrospective study was conducted on 780 patients who had esophagogastroduodenoscopy in Endoscopy Unit of Sanglah General Hospital Denpasar between June 2012 and May 2014. Demographic, endoscopic and histopathological findings were documented. **Results:** Of 780 patients undergoing esophagogastroduodenoscopy, 46 (5.9%) were confirmed with UGI malignancy. Thirty one (67.4%) patients were male. The mean age was 55.91 ± 10.995 years. Of 46 UGI malignancy patients, 25 (54.3%) had gastric cancer, 14 (30.4%) with esophageal cancer, and 7 (15.2%) had duodenal cancer. From histopathological findings, 19 patients (41.3%) had adenocarcinoma gaster, 5 (10.9%) with signet ring carcinoma of gaster, 3 (6.5%) with GIST, 7 (15.2%) with adenocarcinoma of esophagus, 5 (10.9%) with squamous cell carcinoma of esophagus, and 7 (15.2%) with adenocarcinoma of duodenum. Thirteen (52%) cases of gastric cancer were located in antrum and 9 (36%) were located in corpus. **Conclusion:** UGI malignancy was found in 5.9% undergoing esophagogastroduodenoscopy in Sanglah General Hospital Denpasar. The most frequent UGI malignancy was gastric cancer; while adenocarcinoma was the most frequent type of gastric cancer.

Key Word(s): 1. Esophagogastroduodenoscopy; 2. upper gastrointestinal malignancy

Esophageal, Gastric and Duodenal Disorders P-198

Erosive reflux esophagitis in naive vietnamese patients with upper gastrointestinal symptoms and its association with h. Pylori infection

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Objective: (1) To evaluate the prevalence and severity of erosive reflux esophagitis (ERD), and (2) to assess the association between ERD and H.

pylori in naïve Vietnamese patients with upper gastrointestinal symptoms. **Methods:** A cross-sectional study was conducted on 203 naïve patients. Upper gastrointestinal endoscopy were performed in all patients and the severity of ERD was assessed according to the Los Angeles classification. H. pylori infection was diagnosed by rapid urease test and pathological examination. Patients were considered H. pylori – positive if at least one of the two above-mentioned tests was positive. **Results:** The rate of ERD was 10.9%. All of ERD were in mild grade (grade A: 90.9% and grade B 9.1%). 10% patients with ERD also had peptic ulcer disease. Patients with H. pylori infection were less likely to suffer from ERD than those without H. pylori infection ($p = 0.004$, $OR = 0.2$ (CI95%, 0.07–0.6)). **Conclusion:** ERD is not uncommon in primary care and mostly in mild grade. There is a statistically negative association between ERD and H. pylori infection in Vietnamese patients.

Key Word(s): 1. GERD; 2. erosive reflux disease; 3. Helicobacter pylori; 4. Vietnamese

Esophageal. Gastric and Duodenal Disorders P-199

Reflux esophagitis in young healthy Japanese medical school students evaluated by endoscopy and FSSG

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Objective: The prevalence and disease-characteristics of endoscopic esophagitis in young Japanese individuals are not fully demonstrated. The aim of this study was to determine the prevalence of reflux esophagitis and Helicobacter pylori infection and their relationship in young healthy Japanese volunteers, medical students. **Methods:** Upper gastrointestinal endoscopy was performed in 550 young healthy Japanese medical school students (age range 21–36 years, mean 23.4 years) between 2008 and 2013. Upper gastric clinical symptoms were monitored with questionnaires of FSSG scales. Helicobacter pylori infection was determined by detecting urinary IgG antibodies. Upper gastric clinical symptoms were monitored with questionnaires of FSSG scales. **Results:** Helicobacter pylori antibodies were detected in 50 of the 550 subjects (9.09%) with endoscopic chronic gastritis without peptic ulcers. Endoscopic reflux esophagitis was detected in 55 out of the 550 subjects (10%), including grade A in 48 subjects (8.7%), grade B in 6 (1.09%) and grade C in 1 (0.18%). Only 5 subject with reflux esophagitis was Helicobacter pylori-positive, and the other 50 subjects with esophagitis were Helicobacter pylori-negative. Infection rate of Helicobacter pylori decreased around 40% during the last 6 years in a time dependent manner, although relatively high prevalence of reflux esophagitis of 10% was not changed during the last 6 year. Several factors were related to the prevalence of reflux esophagitis and most critical risk factors were lifestyles including alcohol consumption and increase in body weight. Clinical symptoms of heartburn were more common and FSSG scales were high in subjects with reflux esophagitis. FSSG scales were not different in subjects with or without Helicobacter pylori infection. **Conclusion:** This study indicated relatively high prevalence (10%) of endoscopic reflux esophagitis in young Japanese adults, and risk factors for esophagitis were males, negative Helicobacter infection alcohol drinking and obesity.

Key Word(s): 1. Reflux esophagitis

Esophageal. Gastric and Duodenal Disorders P-200

A rare cause for partial gastroesophagectomy: rupture of a tuberculous cold abscess into the oesophagus

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Objective: To report a rare cause for partial gastroesophagectomy. Non pulmonary tuberculous infection in the body could present with bizarre clinical symptoms. We report a case of mediastinal tuberculoid cold abscess eroding into the oesophagus causing ulceration and an incidental leiomyoma of the oesophagus resulting in dysphagia. **Methods:** Case notes of a 55 year old female health care worker, who presented with a history of vague chest discomfort, polyarthralgia, ill health and backache for 6 months duration were retrospectively analysed. **Results:** The patient had an elevated ESR for about an year; the cause of which was undetected. The only other detectable abnormality was hyperlipidemia. Since of late she had complained of mild dysphagia. The examination was unremarkable. The basic investigations which included FBC, CRP, renal and liver profile were normal. The blood film was inconclusive. Repeated CXRs, abdominal Ultrasound scan and 2D Echo were normal. OGD showed an intramural mass causing narrowing of the oesophagus at 30 cm. A CECT scan of the chest and neck showed a subcarinal eccentric mid oesophageal mass causing proximal oesophageal dilatation. A repeat OGD showed an ulcerative lesion at the abnormal site. A thoracotomy revealed a cervical mass. A partial gastroesophagectomy was carried out, the histology of which showed evidence of TB and an incidental leiomyoma in the vicinity. Following anti TB treatment her lassitude and ESR normalized. **Conclusion:** This case report illustrates a rare cause oesophageal ulceration in the tropics, due to extra oesophageal tuberculous disease.

Key Word(s): 1. Tuberculosis; 2. cold abscess; 3. oesophageal ulceration

Esophageal. Gastric and Duodenal Disorders P-202

A 18-years old male with Henoch-Schönlein purpura, pangastritis, hematuria, osteoarthritis pedis bilateral

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Objective: Henoch-Schönlein purpura (HSP) is a systemic, small-vessel, IgA immune complex-mediated leukocytoclastic vasculitis characterized by a tetrad of palpable purpura, abdominal pain, renal disease, and arthritis/arthralgias. Gastrointestinal involvement occurs in 50–75% of patients. Gastrointestinal bleeding is usually occult, but 30% of patients have grossly bloody or melanotic stools. In most cases, HSP is a self-limited condition that

lasts 4 weeks on average. A third of patients have recurrent symptoms, but the recurrences generally become less intense after 4–6 months.

Results: An 18-year old male came with epigastric abdominal pain, melena, ankle joints pain and a palpable purpuric rash in both of the lower legs. Urinalysis: protein 50 mg/dl, erythrocyte 10/ul. Faeces analysis: blood (+). Oesophagogastroduodenoscopy showed oesophagitis LA grade B, pangastritis with predominant cardiofundus, erosive duodenitis. Biopsy result was mild dysplasia without H. pylori. Palpable purpuric skin biopsy result was leukocytoclastic vasculitis. Rontgen of ankle joint result was osteoarthritis pedis bilateral. In the chemical laboratory: Hb 16.8 g/dl; Hct 44%; Erythrocyte 6.2×10^6 /uL; Leukocyte 11.0×10^3 /uL; thrombocyte 379×10^3 /uL; creatinine 1.1 mg/dl; ureum 79 mg/dl; SGOT 21 u/l; SGPT 35 u/l; PT 13.4 second; APTT 38.1 second, INR 1.080; Antinuclear Antibody titer 1/100. BNO and USG of the abdomen were normal. The patient was treated with prednisone 1 mg/kg a day for 2 weeks, then tapered over 2 weeks, omeprazole 20 mg twice a day, and sucralfate syrup 30 ml three times a day before meal. After a year, patient came again with epigastric abdominal pain, palpable purpuric rash in both of lower legs but without melena and joint pain. Oesophagogastroduodenoscopy showed oesophagitis LA grade A and pangastritis. Biopsy result was chronic gastritis without H. pylori. Normal 0 false false. Management still consists of the therapy on complication and definitive therapy. **Conclusion:** HSP patient with gastrointestinal involvement may experience recurrent symptoms after a year relieved symptoms.

Key Word(s): 1. Henoch-Schönlein purpura; 2. pangastritis; 3. hematuria; 4. osteoarthritis pedis bilateral

Esophageal, Gastric and Duodenal Disorders P-204

How can we manage incidental small subepithelial mass in upper gastrointestinal tract?

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Objective: Subepithelial mass is a relatively common finding in upper gastrointestinal endoscopy. The aim of this study was to evaluate the natural course of asymptomatic subepithelial masses in upper gastrointestinal tract and analyze the risk factors of the subepithelial masses increasing in size. **Methods:** From 2004 to 2011, 2126 subepithelial masses in upper gastrointestinal tract were detected, and 935 were followed up using endoscopy. **Results:** The lesion size at initial endoscopy was 8.7 mm (range 1–100 mm). During a mean follow-up of 35.2 ± 21.2 month (range 6–96 month), 903 subepithelial masses (96.6%) were showed no interval change, 32 lesions (3.4%) were increased at least 25% in diameter with mean increment 5.0 ± 4.0 mm (range 1–15 mm). The risk of increasing subepithelial mass was significant in overlying mucosal changes (hyperemia, erosion, or ulcer) (OR = 8.22, 95% CI 1.48–45.70) and hard consistency (OR = 10.348, 95% CI 1.10–97.35). We evaluated the increasing velocity as size increment divided by follow-up years. The increasing velocity was faster (0.44 ± 2.12 mm/year, range 0.00–15.00 mm/year) for large lesions (≥ 2 cm) than small lesions (0.07 ± 0.38 mm/year, range 0.00–5.14 mm/year for < 2 cm) ($p < 0.001$). **Conclusion:** Most of the small subepithelial masses were showed no interval change during 8 year follow-up period. Regular follow-up with endoscopy may be considered in small (< 2 cm) subepithelial masses with intact overlying mucosa.

Key Word(s): 1. Subepithelial mass; 2. upper gastrointestinal tract; 3. gastrointestinal endoscopy

Esophageal, Gastric and Duodenal Disorders P-205

The effectiveness of the addition of fucoidan for clinical improvement, endoscopy and histopathology in patients with chronic gastritis

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Affiliations: Mohammad Hoesin Hospital Palembang, Mohammad Hoesin Hospital Palembang, Mohammad Hoesin Hospital Palembang

Objective: Chronic gastritis is a diffuse or limited inflammation of the gastric mucosal which is characterized by the presence of lymphocytes inflammatory cells or plasma cells, occurs due to an imbalance between aggressive factors and defensive factors. Nowadays the use of drug to treat aggressive factors still causing high recurrence rate. A drug is developed to improve the defensive factors to overcome this problem, such as fucoidan. The aim of study is to examine the effectiveness of the addition of fucoidan for clinical improvement, endoscopic and histopathologic in patients with chronic gastritis. **Methods:** This study was a double blind randomized clinical trial in the form of an add-on in patients with chronic gastritis in Mohammad Hoesin Hospital Palembang from March to November 2013. Patients who meet the inclusion and exclusion criteria chosen by consecutive sampling method and divided into 2 groups: A. Fucoidan and Lansoprazole B. Placebo and lansoprazole. Conducted a study of clinical scores, endoscopic feature, the degree of mucosal inflammation and mucous thickness before and after 4 weeks of treatment. The results were analyzed using SPSS version 20.0 with a significance limit of $P < 0.05$. **Results:** There are 28 people with chronic gastritis who met the inclusion criteria consisting of 11 persons (39,3%) men and 17 (60,7%) women. The results showed a decrease in clinical scores for the group of fucoidan from $20,86 \pm 6,01$ to $6,14 \pm 4,53$ and placebo from $17 \pm 7,59$ to $9,43 \pm 9,19$ which is not statistically significant when compared between the two groups ($P: 0,24$). There is improvement in the endoscopic feature of fucoidan and placebo group, which did not differ statistically significant when compared between the two groups ($P: 0,90$). There was no improvement in the degree of inflammation either fucoidan or the placebo group ($P > 0,05$). Significant improvement was obtained in the antrum mucous thickness in the group fucoidan from $27,03 \pm 7,20 \mu\text{m}$ to $34,64 \pm 11,09 \mu\text{m}$ compared to the placebo group from $24,93 \pm 11,45 \mu\text{m}$ to $\pm 25,36 \pm 6,96 \mu\text{m}$ ($P: 0,02$). In the corpus, the thickness of the mucous showed a significant improvement in the group of fucoidan from $24,46 \pm 9,99 \mu\text{m}$ to $41,73 \pm 22,46 \mu\text{m}$ compared to the placebo group from $23,77 \pm 9,96 \mu\text{m}$ to $27,06 \pm 9,45 \mu\text{m}$ ($P: 0,03$). **Conclusion:** The addition of fucoidan on chronic gastritis standard therapy significantly improved mucosal mucous thickness than placebo.

Key Word(s): 1. Chronic gastritis; 2. fucoidan; 3. clinical score; 4. endoscopy; 5. histopathology

Esophageal, Gastric and Duodenal Disorders P-206

Effect of ramadhan fasting to dyspeptic symptoms on outpatient based on dysepsia symptoms severity index (dssi) scores

Presenting Author: NDRAHA SUZANNA

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Objective: One of the risk factor for dyspepsia is fasting, include Ramadan fasting. Proton pump inhibitors (PPIs) are drugs commonly

given to patients with dyspepsia mechanism controlling gastric acid secretion. The aim of this study is to find the effect of Ramadan fasting and omeprazole treatment on dyspeptic complaints based on Dyspepsia Symptoms Severity Index (DSSI) score. **Methods:** Using analytic study design, conducted in outpatient Kojia Hospital from June 2013 until July 2013, for all patients with dyspepsia who will be run ramadan fasting. Subjects are divided into 2 groups, one group was given omeprazole during fasting, while others were given a placebo. Before and after 2 weeks of fasting DSSI scores were taken. DSSI scores assessed changes in both groups were compared using student t test. **Results:** DSSI scores on average before the intervention (pre-test) of the two groups was not significant ($p=0.9$). In the omeprazole group obtained without worsening DSSI score from 27.7 ± 14 to 36 ± 14.8 ($p=0.001$), whereas the omeprazole group obtained scores from 27.2 ± 9.4 to 30 ± 9.9 ($p=0.08$). In the group without omeprazole score worsened by 8.3 ± 7.2 and in the omeprazole group with only 2.7 ± 5.7 ($p=0.02$). **Conclusion:** Deterioration of DSSI score was significantly occurred in the group without omeprazole therapy. Omeprazole during the month of fasting can reduce exacerbations in patients with dyspeptic complaints.

Key Word(s): 1. Dyspepsia; 2. DSSI; 3. fasting; 4. Ramadan

Esophageal, Gastric and Duodenal Disorders

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Endoscopic management of bariatric complications: a description of safety and efficacy in a case series

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Objective: Surgical management of bariatric complications may be associated with considerable morbidity. Endoscopic intervention has been increasingly used to manage these complications. However, data on its safety and efficacy are lacking. **Methods:** A retrospective review of endoscopic intervention from 2009 to 2014 was undertaken in 11 patients

(M : F = 2:9, mean age 39.5 years, mean BMI:48.3) with significant bariatric complications requiring hospital admission. All bariatric surgery – vertical banded gastroplasty (VBG), laparoscopic sleeve gastrectomy (LSG) or laparoscopic gastric banding (LGB) were performed by the same experienced surgeon. **Results:** Complications included leaks, sinus/fistulae, stricture formation and migrated silastic ring. 63.6% of the complications occurred early (<30 days) post-bariatric surgery. In 5 patients (45.5%) the bariatric complications were successfully managed with endoscopic intervention alone. The remaining 6 (54.5%) patients had both surgical and endoscopic interventions. Endoscopic techniques used to treat stenosis included through-the-scope (TTS) balloon dilatation ($n=4$), wire-guided dilatation ($n=1$) and fully-covered stent insertion ($n=2$). Post-operative leaks, fistulae and sinuses were managed with fibrin glue injection, clips (TTS and/or over-the-scope clips) and/or insertion of fully-covered stents. A symptomatic patient with a migrated silastic ring after VBG underwent balloon dilatation before the ring was removed endoscopically (see Table). There were no complications arising from endoscopic treatment. One patient required laparotomy after failed endoscopic dilatation for gastro-oesophageal junction volvulus. All 11 patients were well at mean follow-up of 8.4 months. **Table- Results of different endoscopic treatments done in various bariatric surgical complications**

Patient	Bariatric complications	Surgical complications	Timing of complications	Endoscopic treatment (No. of repeat procedures)	Surgical treatment
1	VBG	Stricture Migrated silastic ring	>1 year	Balloon dilatation Removal of silastic ring	Yes
2	VBG	Stricture	<1 year	Guide wire dilatation (x2)	No
3	VBG	Stricture	>1 year	Balloon dilatation (x2)	No
4	LSG	Leak	7 days	Fibrin glue injection	Yes
5	LSG	Leak	17 days	Fibrin glue (x2), Clip (x3), Stents (x2)	Yes
6	LSG	Leak	29 days	Fibrin glue, Clip	No
7	LSG	Gastro-cutaneous fistula	76 days	Fibrin glue (x2), Clip	Yes
8	LSG	Gastric outlet obstruction	23 days	Stents (x3)	No
9	LSG	Gastro-oesophageal junction volvulus	2 days	Balloon dilatation	Yes
10	LSG	Stricture	3 days	Balloon dilatation, Stent	No
11	LGB	Sinus	19 days	Fibrin glue (x3), Clip, Stent	Yes

Conclusion: Endoscopy plays an important role in complementing surgical management of both early and late complications of bariatric surgery. Our experience has indicated that complications related to post-operative leaks, fistulae and sinuses can be managed safely and effectively using clips, tissue glue and/or stent application. Similarly, post-operative strictures can be readily dilated. Further prospective data will be helpful to confirm these observations.

Key Word(s): 1. Bariatric complications; 2. endoscopy; 3. safety; 4. efficacy; 5. stents; 6. clips; 7. Ovesco

Table 1 Results of Different Endoscopic Treatments Done in Various Bariatric Surgical Complications

Patient	Bariatric complications	Surgical complications	Timing of complications	Endoscopic treatment (No. of repeat procedures)	Surgical treatment
1	VBG	Stricture Migrated silastic ring	>1 year	Balloon dilatation Removal of silastic ring	Yes
2	VBG	Stricture	<1 year	Guide wire dilatation (x2)	No
3	VBG	Stricture	>1 year	Balloon dilatation (x2)	No
4	LSG	Leak	7 days	Fibrin glue injection	Yes
5	LSG	Leak	17 days	Fibrin glue (x2), Clip (x3), Stents (x2)	Yes
6	LSG	Leak	29 days	Fibrin glue, Clip	No
7	LSG	Gastro-cutaneous fistula	76 days	Fibrin glue (x2), Clip	Yes
8	LSG	Gastric outlet obstruction	23 days	Stents (x3)	No
9	LSG	Gastro-oesophageal junction volvulus	2 days	Balloon dilatation	Yes
10	LSG	Stricture	3 days	Balloon dilatation, Stent	No
11	LGB	Sinus	19 days	Fibrin glue (x3), Clip, Stent	Yes

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Analysis of gastric acid secretion in patients with portal hypertensive gastropathy**Presenting Author:** JIN TAO**Additional Authors:** XIAOLI HUANG, LI TAO**Corresponding Author:** JIN TAO**Affiliations:** *The Third Affiliated Hospital of Sun Yat-Sen University, Third Affiliated Hospital, Sun Yat-Sen University*

Objective: To investigate the clinical features of cirrhotic patients with portal hypertensive gastropathy and pathological changes of the gastric mucosa, analyze the correlation between the levels of acidity, serum pepsinogen, gastrin and the severity of portal hypertensive gastropathy.

Methods: Totally 106 Chinese hospitalized patients with liver cirrhosis in the third affiliated hospital of Sun Yet-sun university from November 2013 to March 2014 were included in this study. They were all underwent endoscopic examination. Serum G-17 levels were measured by radioimmunoassay and serum PGI, PGII were measured by enzyme-linked immunosorbent assay. We evaluated the volume of the gastric fluid and aspirated about 5 ml gastric fluid with a syringe from the gastric mucoid pools, and tested the fluid pH value. **Results:** The serum gastrin-17 level was not statistically significant between the cirrhotic patients and the normal, but the serum PGI, PGII levels were significantly higher in cirrhotic people with portal hypertensive gastropathy ($P_1 = 0.001$, $P_2 = 0.001$). The serum gastrin-17 level was significantly associated with the location of lesions. There were not significantly different in the gastric fluid pH value between the the portal hypertensive gastropathy and the normal people. **Conclusion:** Gastric acid secretion in patients with portal hypertensive gastropathy appeared more greatly reduced in volume than acid concentrations.

Key Word(s): 1. Portal hypertensive gastropathy; 2. gastric acid secretion; 3. gastrin

Esophageal, Gastric and Duodenal Disorders

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Big gastric bezoar, a case report**Presenting Author:** SHIRLY ELISA TEDJASAPUTRA**Additional Authors:** TJAHLJADI R TEDJASAPUTRA, RACHMAT, GUNADI P**Corresponding Author:** SHIRLY ELISA TEDJASAPUTRA**Affiliations:** *Tarakan General Hospital, Tarakan General Hospital, Tarakan General Hospital*

Objective: To report a rare case of gastric foreign body which is difficult to diagnose and treatment **Methods:** Report rare case of big gastric bezoar in a 14-year old female. **Results:** Bezoars are tightly packed collections of partially digested or undigested material stuck in the stomach or other parts of the digestive tract. Masses of undigestible materials can get stuck in various parts of the digestive tract and sometimes perforate (pierce) it. The stomach is a common collection site for hardened, partially digested or undigested masses of food or other materials (bezoars) or foreign bodies. Most bezoars and foreign bodies cause no symptoms. Clinically it can be misdiagnosis as a malignancy. The diagnosis is based on x-rays and on visual examination of the digestive tract using a flexible endoscopy. Most bezoars and foreign bodies pass without treatment, but some need to be broken down manually or removed surgically. We report a rare case of big gastric bezoar in a 14-year old female with a lump and dragging pain in her upper abdomen, fill bloating and nauseous. In the physical examination, nontender irregular hard mass was palpated in the epigastrium, which was 10×5 cm tubular in shape extending from the left subcostal margin to the right sub costal region. The gastroscopy showed a

mottled big gastric mass ($20 \times 15 \times 5$ cm³) extending from the gastric corpus to antrum prepylorus. The mass consist of a big hairball Trichobenzoar. The bezoar could not be evacuated by Gastroscopy. The patient underwent gastrostomy for the foreign body extraction. **Conclusion:** A report of big foreign body of gastric bezoar which was diagnosed by Abdominal CT scan, upper GI endoscopy. The treatment to evacuate the foreign body by open gastrostomy.

Key Word(s): 1. Gastric bezoar

Esophageal, Gastric and Duodenal Disorders

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Evaluation of stent placement for advanced esophageal cancer**Presenting Author:** JUNYA TOKUHISA**Additional Authors:** SHIGEHUMI OMUTA, HIROAKI SHIGOKA, KATUSHIGE GON, MIEKO NARUKI, IRURU MAETANI**Corresponding Author:** JUNYA TOKUHISA**Affiliations:** *Division of Gastroenterology and Hepatology, Division of Gastroenterology and Hepatology*

Objective: Esophageal stents provide immediate palliation of malignant dysphagia and improvement of fistula formation. However, radiotherapy (RT) is a superior long-term option. Previously published retrospective reports found an increase in adverse event, when stents were placed either before or after RT. We review the outcomes of combined esophageal stenting and RT for patients. **Methods:** We review the outcomes of combined esophageal stenting and RT for patients. We retrospectively investigated clinical features of 48 patients with malignant dysphasia who underwent SEMS (Self-expandable metallic stent) placement at our hospital to clarify the outcomes of combined esophageal stenting and RT. **Results:** We placed stents in 48 patients for esophageal stricture from esophageal cancer. Twenty one patients had no therapy; 16 patients had CRT before stent placement, 5 patients had RT before stent placement, 1 patient had CRT after stent placement. Adverse events occurred in 6 (12.5%) patients. Bleeding and perforation occurred 2(4.1%) patients who had no therapy, 3(6.2%) patients with RT. We compared complication rates between our patients with no RT to those with RT before or after stent placement, there were no significant differences in our experience. **Conclusion:** The use of stents in combination with RT before or after stenting maybe a safe therapeutic approach to palliative cancer care, suggesting that esophageal stents can play a role in multimodal cancer therapy.

Key Word(s): 1. Esophageal stents

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Ethnic differences in prevalence of dyspepsia and heartburn in mongoloids and caucasoids of siberia**Presenting Author:** VLADISLAV TSUKANOV**Additional Authors:** ALEXANDER VASYUTIN, OLGA AMELCHUGOVA, OKSANA TRETYAKOVA, ELENA ONUCHINA, NIKOLAY BUTORIN**Corresponding Author:** VLADISLAV TSUKANOV**Affiliations:** *Fsbi "Srimpn" Sb Rams, Fsbi "Srimpn" Sb Rams, Fsbi "Srimpn" Sb Rams, Irkutsk State Postgraduate Medical Institute, Katanov Khakass State University***Objective:** To study the prevalence of dyspepsia and heartburn in different ethnic groups of Mongoloids and Caucasoids of Siberia.**Methods:** We carried out cross-section epidemiological study of the prevalence of dyspepsia, heartburn and esophagitis in rural localities of Tuva, Khakassia and Evenkia. 572 Tyvins, 2085 Khakases, 1445 Evenks and 3422 Europoids were examined. Dyspepsia was diagnosed in accordance to the Rome criteria III (Tack J. et al., 2006). Heartburn was diagnosed on the basis of the Montreal consensus (Vakil N. et al., 2006). The results of clinical examination and interviews were recorded using ques-

tionnaire of Mejo clinic (Locke G.R., 1994). 1364 Europoids, 791 Evenks, 1145 Khakases, 379 Tyvins underwent upper digestive tract endoscopy. Esophagitis was defined on the basis of Los-Angeles classification (Lundell L.R., et al). **Results:** We found ethnic differences in prevalence of dyspepsia, weekly heartburn and esophagitis (Table). Combining the data, it was found that the prevalence of dyspepsia, weekly heartburn and esophagitis in Caucasoids was higher than in Mongoloids and equaled, respectively, 24.5% and 17.5% (OR = 1.53, CI 1.37–1.71, $p < 0.001$), 8.0% and 13.1% (OR = 1.73, CI 1.49–2.01, $p < 0.001$), 5.4% and 2.8% (OR = 2.01, CI 1.59–2.56, $p < 0.001$). In all examined groups we registered overlap syndrome of heartburn and dyspepsia. Table. The prevalence of dyspepsia, heartburn and esophagitis in the population of Eastern Siberia. Population Dyspepsia Weekly heartburn Esophagitis Abs. % Abs. % Abs. % 1.Europoids, n = 3422 840 24,5 447 13,1 185 5,4 2.Evenks, n = 1445 211 14,6 92 6,4 9 0,6 3. Khakases, n = 2085 385 18,5 173 8,3 75 3,6 4.Tyvins, n = 572 122 21,3 63 11,0 29 5,1 OR; CI; p 1–2 1,90; 1,61–2,24; $<0,001$ 2,20; 1,74–2,78; $<0,001$ 8,66; 4,50–16,68; $<0,001$ OR; CI; p 1–3 1,44; 1,25–1,64; $<0,001$ 1,66; 1,38–1,99; $<0,001$ 1,53; 1,16–2,01; 0,003 OR; CI; p 2–4 0,63; 0,49–0,81; $<0,001$ 0,55; 0,39–0,77; $<0,001$ 0,12; 0,06–0,25; $<0,001$ **Conclusion:** The prevalence of dyspepsia, heartburn and esophagitis were higher in Europoids than in Mongoloids in Siberia. At the same time fluctuations in the prevalence of dyspepsia, heartburn and esophagitis in different ethnic groups of Mongoloids were observed.

Key Word(s): 1. Dyspepsia; 2. GERD; 3. heartburn; 4. prevalence**Table 1** The Prevalence of Dyspepsia, Heartburn and Esophagitis in the Population of Eastern Siberia

Population	Dyspepsia		Weekly heartburn		Esophagitis	
	Abs.	%	Abs.	%	Abs.	%
1. Europoids, n = 3422	840	24.5	447	13.1	185	5.4
2. Evenks, n = 1445	211	14.6	92	6.4	9	0.6
3. Khakases, n = 2085	385	18.5	173	8.3	75	3.6
4. Tyvins, n = 572	122	21.3	63	11.0	29	5.1
OR; CI; p_{1-2}	1.90; 1.61–2.24; <0.001		2.20; 1.74–2.78; <0.001		8.66; 4.50–16.68; <0.001	
OR; CI; p_{1-3}	1.44; 1.25–1.64; <0.001		1.66; 1.38–1.99; <0.001		1.53; 1.16–2.01; 0.003	
OR; CI; p_{2-4}	0.63; 0.49–0.81; <0.001		0.55; 0.39–0.77; <0.001		0.12; 0.06–0.25; <0.001	

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Prevalence of helicobacter pylori and ulcer disease in caucasoids of siberia**Presenting Author:** VLADISLAV TSUKANOV**Additional Authors:** OLGA AMELCHUGOVA, OKSANA TRETYAKOVA, ALEXANDER VASYUTIN, JULIA TONKIKH**Corresponding Author:** VLADISLAV TSUKANOV**Affiliations:** *Fsbi "Srimpn" Sb Rams, Fsbi "Srimpn" Sb Rams, Fsbi "Srimpn" Sb Rams, Fsbi "Srimpn" Sb Rams***Objective:** To investigate the prevalence of Helicobacter pylori and peptic ulcer disease in the Caucasoids of different regions of Siberia.**Methods:** Representative groups were selected by epidemiological method, clinical examination and fibrogastroduodenoscopy were performed for diagnosis of peptic ulcer disease in 1177 adult individuals (581 females, 596 males) in Dudinka (Taimyr), in 564 people (293 females, 271 males) in Atamanovo (100 km north of Krasnoyarsk) and in 657 patients (341 females, 316 males) in Krasnoyarsk. The average age of examined persons was 38.6 years in Taimyr, 42.4 years in Atamanovo and 55.3 years

in Krasnoyarsk. Determination of H. pylori infection was performed to 472 individuals in Dudinka, to 507 patients in Atamanovo and to 657 people in Krasnoyarsk by enzyme immunoassay and urease methods. **Results:** The prevalence of peptic ulcer disease was 8.2% in Dudinka (4.6% in females and 11.7% in males, $p < 0.001$), 9.2% in Atamanovo (6.5% in females and 12.2% in males, $p = 0.03$) and 8.5% in Krasnoyarsk (5.8 in females and 11.3% in males, $p = 0.007$). The prevalence of H. pylori infection in Dudinka was 93.5%, in Atamanovo – 88.6%, in Krasnoyarsk – 91.1%. The ratio of duodenal ulcer / gastric ulcer was equal, respectively, – 4:1, 3.5:1 and 2.7:1. Risk factors of ulcer disease in all regions were H. pylori infection, tobacco smoking and male gender, for gastric ulcer – increasing age. **Conclusion:** Currently there is no reason to consider that the prevalence of risk factors and ulcer disease in Russia decreased.

Key Word(s): 1. Helicobacter pylori; 2. ulcer disease; 3. prevalence

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Ethnic features of GERD extraesophageal manifestations

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Objective: To study ethnic features of extraesophageal manifestations in patients with GERD among Mongoloids and Caucasoids of Khakassia.

Methods: 905 Caucasoids (402 males, 503 females, mean age – 44.9 years) and 506 Khakases (276 males, 230 females, mean age – 41.3 years) were examined in Abakan, coverage was 93% of the employee list of one of the municipal factories. GERD diagnosis established on the basis of the recommendations of the Montreal consensus (Vakil N. et al., 2006). Diagnosis of esophagitis was performed using the Los Angeles classification (Lundell L.R. et al., 1995). Complex examination by a cardiologist, pulmonologist, otolaryngologist with modern clinical and instrumental methods was performed to identify extraesophageal syndromes.

Results: The prevalence of weekly heartburn was 14.7% in Caucasoids and 10.3% in Khakases ($p = 0.02$). In Caucasoids with weekly heartburn, compared with those without heartburn prevailed anamnestic information on complaints of cough (12% and 5%, respectively, $p = 0.004$), presence of laryngitis (3.7% and 0.9%, respectively, $p = 0.04$), pharyngitis (11.3% and 3.7%, respectively, $p < 0.001$), cardialgia (12% and 5.5%, respectively, $p = 0.01$) and coronary heart disease (11.3% and 4.7%, respectively, $p = 0.006$). Among Khakases similar regularity has been established only for the association of weekly heartburn with complaints of cough (11.5% and 3.9%, $p = 0.04$) and with the presence of pharyngitis (15.4% and 3.7%, $p = 0.001$). Similar regularities were received for the association of GERD extraesophageal manifestations with esophagitis. **Conclusion:** We found differences in the relationship of heartburn and esophagitis with GERD extraesophageal manifestations in indigenous and alien inhabitants of Khakassia.

Key Word(s): 1. GERD; 2. extraesophageal manifestations; 3. prevalence

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Relationship between body mass index and the severity of gastroesophageal reflux disease

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Objective: The prevalence of gastroesophageal reflux disease (GERD) and obesity are increasing. However, the relationship between body mass index (BMI) and GERD is still controversial. Therefore, we designed a study to evaluate the relationship between BMI and the severity of GERD.

Methods: This is an analytic-cross sectional study that involved of GERD patients in one of private clinic in Surabaya. The diagnosis of GERD was based on endoscopic examination. We dichotomized the frequency of heart burn and acid regurgitation into less than once a week and once a week or more frequent. The BMI was categorized according to

World Health Organization (WHO) classification (normal BMI $< 25 \text{ kg/m}^2$, overweight $25\text{--}30 \text{ kg/m}^2$, and obese $>30 \text{ kg/m}^2$). The severity of endoscopic findings based on modification of Los Angeles (LA) criteria (non-erosive reflux disease/NERD, stage A,B,C,D). Spearman correlation and Chi-square test were used to know the relationship between variables.

Results: MicrosoftInternetExplorer4 Result of the 28 GERD patients, there were 16 (57.1%) patients with normal BMI, 9 (32.1%) patients were overweight, and 3 (10.7%) patients were obese. The correlation of BMI with frequency of heart burn and acid regurgitation was not significant ($r = 0.19$, $p = 0.3$; $r = 0.01$, $p = 0.94$). The correlation of BMI with endoscopic severity was not significant ($r = 0.1$, $p = 0.6$). **Conclusion:** This study suggest there was no relationship between BMI and the severity of GERD.

Key Word(s): 1. GERD; 2. BMI; 3. LA criteria

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Randomised, double-blind placebo controlled trial assessing the efficacy of itopride in postprandial distress syndrome (pds): a pilot study

Presenting Author: ZHIQIN WONG

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Objective: Functional dyspepsia (FD) is a common global disorder that causes significant morbidity and time loss from work. Itopride, a prokinetic drug, has been demonstrated to be efficacious in improving FD symptoms compared with placebo. This study was conducted to evaluate the efficacy of itopride as compared to placebo in achieving symptom improvement and improvement in health-related quality of life in a subset of FD patients with post-prandial distress syndrome PDS / PDS overlap symptoms.

Methods: This was a randomized double blind placebo controlled trial. Patients with PDS and PDS overlap symptoms were randomized to placebo or itopride 100 mg tds for 8 weeks. All patients were required to complete three questionnaires: Leeds Dyspepsia questionnaire (LDQ), Functional Dyspepsia Questionnaire (FDQ) to assess symptoms improvement and Short Form Nepean and Dyspepsia Index (SFNDI) to assess health related quality of life at weeks 0, 4 and 8 of treatment. **Results:** 30 patients with PDS ($n = 12$) and PDS overlap symptoms ($n = 18$) were randomized. 16 patients received itopride treatment and 14 patients received placebo. Based on the assessment from LDQ, 13(81.3%) patients from the itopride group had symptom improvement compared to placebo ($n = 10$; 71.4%) ($p = 0.526$). Assessment from the FDQ also showed higher response rate of itopride compared to placebo 15(93.8%) patients vs 12 (85.7%) patients ($p = 0.90$). For the health related quality of life assessment, 8 (50%) patients on itopride showed improvement compared to 6 (42.9%) patients on placebo ($p = 0.696$). However these findings were not statistically significant. No major adverse drug reactions including galactorrhoea were reported in this study. **Conclusion:** Both placebo and itopride demonstrated improvement in symptoms and health related quality of life in patients with PDS and PDS overlap symptoms. Itopride had a slightly better outcome compared to placebo. Itopride was well tolerated with minimal adverse drug reaction and it is safe to be considered as an option for patients with mainly PDS.

Key Word(s): 1. Functional dyspepsia; 2. post prandial distress syndrome; 3. itopride

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Prognosis of early gastric cancer patients with advanced stage cancer of other organs after endoscopic submucosal dissection

Presenting Author: YOSHIFUKU YOSHIKAZU

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Objective: Background: Endoscopic submucosal dissection (ESD) has become a standard procedure for the treatment of early gastric cancer (EGC). Aims: To evaluate the effectiveness of ESD for EGC in patients with advanced stage cancer of other organs. **Methods:** The subjects of this study comprised 17 patients with advanced stage cancer of other organs who underwent ESD for EGC at Hiroshima University Hospital between 2002 and 2014. We retrospectively evaluated clinical outcomes of these patients. **Results:** Mean age of the patients was 75.0 years, and 13 (76%) were men. En bloc resection rate was 95%, and R0 resection rate was 75%. Mean procedure time of ESD was 102 minutes. Advanced stage cancer of other organs included the following: prostate cancer, 4 cases; hepatocellular carcinoma, 4 cases; esophageal cancer, 2 cases; colon cancer, 2 cases; pharyngeal cancer, 2 cases; lung cancer, 1 case; malignant lymphoma, 1 case; and multiple myeloma, 1 case. Stages of cancers of other organs were as follows: stage II, 9 cases; stage III, 3 cases; and stage IV 5, cases. Complications of aspiration pneumonia in 1 case, microperforation in 1 case, and delayed perforation in 1 case occurred. Aspiration pneumonia and delayed perforation caused disseminated intravascular coagulation and death in the affected patients. Three patients with stage IV cancer died from progression (metastasis) of advanced stage cancer of other organs within 6 months, and 12 patients remain alive over a follow-up period of 23.6 ± 17.1 months. **Conclusion:** Patients with advanced stage cancer of other organs are at high risk for poor prognosis due to complications related to ESD for EGC.

Key Word(s): 1. Endoscopic submucosal dissection

IBD

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Thiopurine therapy and cytomegalovirus viraemia in inflammatory bowel disease: four case reports

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Objective: The thiopurines azathioprine (aza) and 6-mercaptopurine (6-MP) have been a mainstay of inflammatory bowel disease treatment for over 20 years. Cytomegalovirus (CMV) infection has long been associated with IBD and suggested an aetiological factor in steroid-resistant colonic

disease. Despite extensive experience with thiopurine therapy it is unclear if these medications predispose to CMV infection/reactivation. **Methods:** We present 4 case reports of patients with CMV viraemia of varying clinical severity whilst on thiopurine therapy. **Results:** Case 1 is a 28 year old male with UC on 5-MP who presented with a febrile illness with pancytopenia and a CMV viral load of 380000 copies. Case 2 is a 55 year old woman with a 4 year history of Crohn's disease on aza who presented with a febrile illness following contact with a work colleague with confirmed CMV infection. Her CMV titre on admission was 880 000 copies. Case 3 is of a 44 year old female with ulcerative colitis controlled on 6-MP. She presented with a febrile illness, neutropenia, deranged LFTs, and a CMV titre of 63 000. In all cases prompt therapy with ganciclovir resulted in complete recovery. Case 4 is of a fatal CMV infection in a 57 year old female with a 5 year history of Crohn's disease on 6-MP for 3 years. She presented with a febrile illness and macular rash, with bloods revealing neutropenia, deranged LFTs, and acute kidney injury. Her CMV titre was 85 000 copies. Unfortunately despite early ganciclovir therapy her condition continued to decline requiring respiratory and inotropic support and she died shortly thereafter. **Conclusion:** We present 4 case reports of CMV viraemia whilst receiving thiopurine therapy for IBD, highlighting the need for early consideration of CMV infection/reactivation in any patient in this population presenting with febrile illness and neutropenia.

Key Word(s): 1. Thiopurines; 2. azathioprine; 3. mercaptopurine; 4. Aza; 5. 6-Mp; 6. ulcerative colitis; 7. Crohn's disease; cytomegalovirus

IBD

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Microna 429 regulates the expression level of CHMP5 in Ulcerative Colitis

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Objective: miRNAs are non-coding RNAs that play important roles in the pathogenesis of human diseases by regulating target gene expression in specific cells or tissues. We have focused on detecting miRNAs related to ulcerative colitis of mouse, identifying their target molecules, and analyzing the correlation between the miRNAs and their target genes in colon cell lines. **Methods:** UC-associated miRNAs were identified by miRNA microarray analysis of UC colon tissues and normal colon tissues of mouse. The results were validated by quantitative RT-qPCR. MIR429 target genes were identified by the mRNAs downregulated in MIR429-overexpressing cells (determined by mRNA microarray analysis). Luciferase reporter plasmids were constructed to confirm the effect of MIR429 on target gene expression. The protein expression of the target genes was measured by western blot. **Results:** Thirty-seven miRNAs were identified as UC-associated miRNAs. We investigated one, MIR429, which was specifically downregulated in UC, and identified 41 genes as targets of MIR429. The association between MIR429 and CHMP5 was verified in this study. CHMP5 transcript expression was directly downregulated by MIR429; protein expression was also downregulated. **Conclusion:** Our results suggest that MIR429 could play an important role in the pathogenesis of ulcerative colitis.

Key Word(s): 1. microRNA; 2. ulcerative colitis; 3. CHMP5

IBD

P-220

Development of a plant-based diet score: its application for crohn's disease**Presenting Author:** MITSURO CHIBA**Additional Authors:** YUKO TAKAYAMA, KAE SUGAWARA, KENICHI TAKAHASHI, TATSUYA YOSHIDA, HIDEO OHNO, HAJIME ISHII, SATOKO TSUDA, TSUYOTOSHI TSUJI, KUNIO NAKANE, MASAFUMI KOMATSU**Corresponding Author:** MITSURO CHIBA**Affiliations:** *Seirei Women'S Junior College, Akita City Hospital, Akita City Hospital*

Objective: Current diseases are a reflection of our lifestyle, particularly westernized diet, in wealthy nations. Diet reviews recommend plant-based diets (PBD) to treat and prevent a variety of common diseases. Inflammatory bowel disease (IBD) is not an exception. Semi-vegetarian diet (SVD), one of the plant-based diets, was shown to prevent a relapse in CD. A simple way of evaluating the adequacy of PBD is eagerly needed.

Methods: Components of the PBD were scored positively: rice, miso soup, pulses, potatoes/starches, vegetables, fruits, green tea, and plain yoghurt. Components of westernized diet and risk factors for IBD were scored negatively: meat, minced or processed meat, sweets, soft-drinks, alcohol, bread, cheese/butter/margarine, and fish. Scores 5, 3, and 1 were given according to frequency of consumption. A PBD score (PBDS) was developed from the sum of plus and minus scores. A pre-illness food-frequency questionnaire was obtained from 42 newly diagnosed CD patients. They received SVD during hospitalization. A post-illness questionnaire mostly at 2 years later was provided by 28 out of the 42 patients.

Results: Post-illness positive score (32.6) was higher than that of pre-illness (20.5) ($P < 0.0001$). Post-illness negative score (1.6) was lower than that of pre-illness (12.5) ($P < 0.0001$). Post-illness PBDS (31.0) was higher than that of pre-illness (7.9) ($P < 0.0001$). **Conclusion:** CD dietary education dramatically increased PBDS. PBDS is a useful tool for assessing a dietary intervention of PBD. PBD and PBDS can be modified for a variety of diseases and for national dietary preferences.

Key Word(s): 1. Crohn's disease; 2. plant-based diet; 3. vegetarian diet; 4. inflammatory bowel disease

IBD

P-221

Long-term clinical outcome of patients with ulcerative colitis according to the extent of disease**Presenting Author:** HWANG CHOI**Additional Authors:** KYU YONG CHOI, BO IN LEE, JEONG SEON JI, KANG MOON LEE, SANG WOO KIM, SOK WON HAN, MYUNG GYU CHOI**Corresponding Author:** HWANG CHOI**Affiliations:** *The Catholic University of Korea, The Catholic University of Korea*

Objective: The extent of disease in ulcerative colitis (UC) is important in management and surveillance. Distal UC has been favorable clinical outcome compared with extensive UC. The outcome of ulcerative

rectosigmoiditis was not well known. We evaluated the long-term clinical outcome of ulcerative rectosigmoiditis. **Methods:** The medical records of 238 patients with UC who initially diagnosed and followed more than 1 year at our university hospital from 1991 to 2010 were reviewed retrospectively. The extent of disease divided 4 groups; proctitis (UC-P, $n = 114$), rectosigmoiditis (UC-RS, $n = 45$), left-sided (involvement of descending colon, UC-D, $n = 35$) and extensive UC (UC-E, $n = 44$). Clinical characteristics, initial severity, and outcome were compared between 4 groups.

Results: The age at diagnosis, gender, and follow-up period were not different in 4 groups (mean 41 years of age, 122 male, mean 83 months of follow-up period). The Mayo scores of 4 parameters at initial diagnosis in patients with UC-RS were between those in patients with UC-P and UC-D ($p < 0.001$). The severity of UC-RS was near to that of UC-D rather than that of UC-P. Although the number and interval of relapse was not different between groups, the number of hospitalization and the rate of colectomy were significantly different between groups ($p < 0.001$ and $p = 0.027$, respectively). The usage of drugs was also different between groups ($p < 0.001$). **Conclusion:** The long-term clinical outcome in patients with UC-RS was similar as that in patients with UC-D. The Montreal classification for defining the distribution of disease was also reliable in Korea.

Key Word(s): 1. Ulcerative colitis; 2. treatment outcome

IBD

P-223

Characteristic of inflammatory bowel disease (ibd) patients in cipto mangunkusumo hospital (rscm) jakarta in 5 years**Presenting Author:** DARMADI DARMADI**Additional Authors:** FAHRIAL SYAM ARI, MAKMUN DADANG**Corresponding Author:** DARMADI DARMADI**Affiliations:** *Medical Faculty of Indonesia University, Medical Faculty of Indonesia University*

Objective: The incidence and prevalence of inflammatory bowel diseases (IBD) are lower in Asia than in the West. However, the incidence and prevalence of IBD has increased rapidly over the last two to four decades. These changes may correlate to the life changes in Asia close to the Western country. We will see the characteristic of our IBD patients from colonoscopy findings. **Methods:** Descriptive study to describe Inflammatory Bowel Disease (IBD) patients characterized who underwent colonoscopy at Cipto Mangunkusumo Hospital (RSCM) from 2009 until 2013. We had 2,234 patients who underwent colonoscopy from January 2009 until December 2013. **Results:** From colonoscopy patients, there were normal colonoscopy 14.2%, hemorrhoid 66.3%, tumor 20.5%, polyp 13.2%, IBD 9.8%, infective colitis 6.2% and ileitis 5.7%. The incidence of IBD 9.8% (219 cases of IBD from 2,234). The ulcerative colitis (UC) was 192 cases (87.7%) which male gender 44.8%, female 55.2%, and average age 47.8 ± 15.75 years. Crohn's Disease (CD) was 27 cases (12.3%) which male gender 40.7%, female 59.3%, and average age 40.96 ± 16.24 years. There are significant difference for average age between UC and CD (47.81 ± 15.75 vs 40.96 ± 16.25 , $p = 0.04$). Most of the clinical symptoms are chronic diarrhea 78.6%, then abdominal pain 55%, hematochezia 46.8%, abdominal mass 5% and constipation 5%. Chronic diarrhea was the most of clinical symptoms for UC and CD. **Conclusion:** The incidence of IBD is still only below 10% from colonoscopy patients. Most of them are UC. Female was a most gender for both UC and CD. There are significant differences for average age between UC and CD.

Key Word(s): 1. Colonoscopy; 2. inflammatory bowel disease

IBD

P-225

Early intervention with adalimumab may contribute to favorable clinical efficacy in patients with crohn's disease

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Objective: We evaluated the clinical efficacy of adalimumab (ADA) for Crohn's disease (CD) and analyzed predictive factors for induction and maintenance of clinical remission. **Methods:** We retrospectively reviewed the medical records of 45 patients treated with ADA for CD at Keio University Hospital between October 2010 and October 2013. Clinical remission was defined as a Harvey-Bradshaw index of ≤ 4 . **Results:** Twenty-eight of 45 patients (62.2%) achieved clinical remission at week-4. Among these 28 patients, 18 patients (64.3%) maintained clinical remission at week-26. Younger age, disease duration ≤ 3 years, absence of a history of bowel resection and absence of prior anti-TNF therapy were associated with clinical remission at week-4 upon univariate analyses ($p = 0.03, 0.02, 0.001$ and 0.004 , respectively). Absence of a history of bowel resection and prior anti-TNF therapy were predictive factors for clinical remission at week-4 upon multivariate logistic regression analyses ($p = 0.03$; odds ratio (OR), 9.00; 95% confidence interval (CI), 1.30–62.32; 0.04; 6.95; 1.07–45.00, respectively). Younger age and disease duration ≤ 3 years correlated with clinical remission at week-26 upon univariate analyses ($p = 0.03$ and 0.009 , respectively). No patient contracted a serious infectious disease. **Conclusion:** Younger age, shorter duration of disease, being naïve to anti-TNF antagonists, and absence of a history of bowel resection were associated with the efficacy of ADA for induction and maintenance of clinical remission in CD patients.

Key Word(s): 1. Crohn; 2. adalimumab

IBD

P-227

Analysis of mucosal tnfsf15/tl1a expression in korean ibd patients

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Objective: It has been well known that genetic mutations and the epidemiology of inflammatory bowel disease (IBD) differ between Asia and the

West. However, TNF superfamily member 15 (TNFSF15) gene has been identified as a common susceptibility gene in Asian and Western IBD patients, suggesting that TNFSF15 may play an important role in the pathogenesis of IBD. TNFSF15/TNF-like cytokine 1A (TL1A) is a proinflammatory cytokine and a member of the TNF α superfamily, mainly expressed on activated T cells. We investigated mucosal TL1A expression by immunohistochemistry (IHC) in Korean IBD patients. **Methods:** TL1A expression was investigated in resected ileal specimens from 8 Crohn's disease (CD) patients and 8 non-IBD controls by IHC using an affinity-purified mAb against TL1A. TL1A expression was also studied in endoscopically biopsied colonic specimens from 8 ulcerative colitis patients and 8 non-IBD controls. In addition, the mucosal expressions of CD3, CD4, and CD8, T cell markers, were examined in ileal and colonic specimens of IBD patients and non-IBD controls. **Results:** The expression of TL1A at the protein level was absent or minimal in ileal and colonic tissues from controls. On the contrary, intense expression of TL1A was identified in ileal and colonic specimens from IBD patients, especially in CD patients. Staining for TL1A was significantly increased in inflamed area of ileal tissues compared to non-inflamed area from CD patients. CD3, CD4, and CD8 expressions were also significantly increased in ileal and colonic specimens from IBD patients compared to those from controls. **Conclusion:** Mucosal TL1A is upregulated in IBD patients, suggesting an important role of TL1A in the pathogenesis of IBD. Further functional studies of TL1A will provide a better understanding of the pathogenesis of IBD.

Key Word(s): 1. Inflammatory bowel disease; 2. TNFSF15; 3. TL1A; 4. immunohistochemistry

IBD

P-228

Correlation between histologic activity and clinical, endoscopic, and serologic activities in patients with ulcerative colitis

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Objective: It is important to accurately determine disease activity for the assessment and prediction of treatment outcomes in patients with ulcerative colitis (UC). The assessment of UC activity has been based on a combination of clinical, serologic and endoscopic data. Recent studies suggest histologic healing as a treatment goal in UC. The aim of this study was to evaluate the correlation between histologic activity and clinical, endoscopic, and serologic activities in patients with UC. **Methods:** We retrospectively reviewed the medical records of patients with UC who underwent colonoscopy or sigmoidoscopy with biopsies between January 2011 and December 2013. The Mayo endoscopic subscore was used to assess the endoscopic activity. Colonic biopsy specimens were reviewed by two expert pathologists blindly and scored based on the Geboes scoring system (range, 0–5.4). For the evaluation of disease activity, C-reactive protein (CRP) and partial Mayo score were also determined around the time of endoscopy. **Results:** 154 biopsy specimens from 102 patients with UC were analyzed. Histologic score showed good correlation with endoscopic subscore (Spearman's rank correlation coefficient

$r = 0.774$, $p < 0.001$) as well as CRP ($r = 0.422$, $p < 0.001$) and partial Mayo score ($r = 0.403$, $p < 0.001$). Proportions showing active inflammation (Geboes score > 3.1) on histology were 6% (2 of 33) in endoscopically normal mucosa (Mayo endoscopic subscore 0), 66% (19 of 29) in mild disease (subscore 1), and 100% (92 of 92) in moderate to severe disease (subscore 2 and 3), respectively. **Conclusion:** Histologic activity closely correlated with endoscopic, clinical and serologic activities in patients with UC. But some patients with mild or even normal endoscopic findings still had histologic evidence of inflammation on biopsy. Histologic assessment may be helpful in evaluating treatment outcome and determining follow-up strategies in clinical practice.

Key Word(s): 1. Ulcerative colitis; 2. histologic activity; 3. endoscopic activity

IBD

P-229

Intestinal alkaline phosphatase in the colonic mucosa of patients with inflammatory bowel disease

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Objective: To investigate intestinal alkaline phosphatase (iAP) in the intestinal mucosa of patients with inflammatory bowel disease (IBD)

Methods: Mucosal biopsy specimens from the colon were obtained during colonoscopy in the patients with inflammatory bowel disease [25 patients with ulcerative colitis (UC), 17 patients with Crohn's disease (CD)]. Biopsies from patients with CD were obtained from the edge of ulceration's or aphthoid lesions if present, and from macroscopic non-inflamed areas using a standard biopsy forceps. IAP (intestinal alkaline phosphatase) was quantified from each specimens using ELISA. **Results:** A total of 32 consecutive patients (25 UC, 17 CD) were included in the study. Median age and median disease duration of 25 patients with UC were 45.0 years and 6 years, respectively. The extent of disease was proctitis in 5 patients (20%), left-sided colitis in 11 (44%), extensive colitis in 119 (36%). Median age and median disease duration of 17 patients with CD were 21.0 years and 4 years, respectively. The IAP protein level (58.7 ± 38.0 ng/mL) (median value, 53.7 ng/mL; range, 13.1–125.3) of the inflamed mucosa in patients with UC was higher than that (27.6 ± 10.9 ng/mL) (median value, 22.9 ng/mL; range, 15.4–44.4) of non-inflamed mucosa in patients with UC ($p = 0.022$). We found a higher IAP protein level in the inflamed mucosa in CD (66.4 ± 27.3 ng/mL) (64.7, 40.9–111.1) compared with non-inflamed mucosa in CD (31.3 ± 11.8) (29.4, 17.4–52.0) ($p = 0.028$). **Conclusion:** iAP expression of inflamed mucosa in patients with IBD was higher than that of non-inflamed mucosa. It is necessary to do further study to evaluate the role of iAP in patients with IBD.

Key Word(s): 1. Intestinal alkaline phosphatase; 2. inflammatory bowel disease

IBD

P-230

Changes over time in clinical outcomes of enteroscopy in crohn's disease with small bowel lesions

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Affiliations: Soonchunhyang University College of Medicine, Soonchunhyang University College of Medicine

Objective: Double-balloon enteroscopy (DBE) has been introduced since 2003 in Korea and used for 10 years. DBE has become the preferred method for examination of the small bowel and allows real time, controlled observation, biopsy and therapeutic capability. Although DBE enables endoscopic visualization of the SB, the available data of CD with SB lesions is limited. We performed a study to investigate changes between different time periods in the indications and clinical outcomes of enteroscopy. **Methods:** We retrospectively analyzed records in a prospectively collected database to identify CD patients with small bowel lesions who underwent enteroscopy (63 DBEs, 50 patients) from January 2004 to November 2012. We compared enteroscopic-related factors between the first stage (2004–2007, 38 DBEs, 28 patients) and second stage (2008–2012, 25 DBEs, 22 patients) of the study. **Results:** The most common indication was to make the initial diagnosis (52.6% vs. 20.0%, $p = 0.017$) in the first stage and obscure gastrointestinal bleeding (31.6% vs. 40.0%, $p = 0.592$) in the second stage. Indication for evaluation and/or treatment of stricture increased significantly in the second stage compared with the first (2.6% vs. 20.0%, $p = 0.032$). Aphthous ulcer was the most common enteroscopic finding during the entire study period (35.1% vs. 33.3%), followed by longitudinal ulcer in the first stage (29.7% vs. 12.5%) and variable ulcer in the second stage (10.8% vs. 29.2%). However, this difference was not statistically significant. The diagnostic yield of DBE was 89.5% in the first stage and 88.0% in the second stage, but there wasn't statistically significant. More endoscopic interventions were performed in the second stage than in the first (2.6% vs. 20.0%, $p = 0.017$). No major complication was observed in both stages. **Conclusion:** During the entire study period, most clinical outcomes did not change, except for indication and increased frequency of endoscopic intervention.

Key Word(s): 1. Enteroscopy; 2. Crohn's disease; 3. small bowel; 4. time

IBD

P-231

Parthenolide, a nf-kb inhibitor, suppresses the experimental colitis associated colon cancer development**Presenting Author:** CHANG HUN LEE**Additional Authors:** KYUNG BO YOO, BUM SU CHOUNG, SEUNG YOUNG SEO, SEONG HUN KIM, SEUNG OK LEE, SOO TEIK LEE, IN HEE KIM, DAE GHON KIM, SANG WOOK KIM**Corresponding Author:** CHANG HUN LEE**Affiliations:** Chonbuk National University Hospital, Chonbuk National University Hospital**Objective:** Parthenolide (PT) known as a NF- κ B inhibitor has recently been demonstrated as a promising anticancer agent that promotes apoptosis of cancer cells. However, its role in the process of tumor development in colitis associated colon cancer (CAC) is not well established. We aimed to investigate the effects of PT on an experimental murine CAC model.**Methods:** Experimental CAC was induced by azoxymethane (AOM) and dextran sulfate sodium (DSS). Mice were divided into 3 groups: AOM+DSS, AOM+DSS+2 mg/kg PT and AOM+DSS+4 mg/kg PT, and we analyzed the results. **Results:** Administration of PT significantly reduced the severity of AOM/DSS-induced CAC as assessed by histological analysis, and resulted in downregulation of phospho-NF- κ B p65 expression by the blockade of phosphorylation and subsequent degradation of I κ B- α . Administration of PT ameliorated the carcinogenesis through the downregulation of anti-apoptotic protein Bcl-2 and Bcl-xL mediated by inhibition of NF- κ B activation. Moreover, apoptosis and caspase-3 expression also increased markedly in PT administration group. **Conclusion:** Our results demonstrate that PT downregulates NF- κ B and eventually suppresses the CAC development. We may suggest that PT has beneficial effects in experimental CAC and, therefore, could be a potential chemopreventive and therapeutic agent of CAC.**Key Word(s):** 1. Colitis-associated colorectal cancer; 2. parthenolide

IBD

P-232

The characteristics of pediatric inflammatory bowel disease in korea: comparison to eurokids data**Presenting Author:** HYEON AH LEE**Additional Authors:** SUNG YOUNG CHOI, EUN RAN KIM, YOUNG HO KIM, CHANG KYUN LEE, KYU CHAN HUH, KANG MOON LEE, DONG IL PARK**Corresponding Author:** HYEON AH LEE**Affiliations:** Kangbuk Samsung Hospital, Sungkyunkwan University, Samsung Medical Center, Sungkyunkwan University, Samsung Medical Center, Sungkyunkwan University, Kyung Hee University School of Medicine, Konyang University School of Medicine, St. Vincent's Hospital The Catholic University, Kangbuk Samsung Hospital, Sungkyunkwan University**Objective:** Pediatric inflammatory bowel disease (IBD) have been increasing worldwide. We investigated the clinical characteristics of pedi-atric IBD in Korea and compared to results from EUOKIDS. **Methods:** Children with an established diagnosis of IBD between July 1987 and January 2012 were investigated in 5 university hospitals in Korea. Clinical characteristics were retrospectively evaluated by medical record review. The results were compared to those of EUOKIDS data.**Results:** Thirty children with Crohn's disease (CD) and 33 children with ulcerative colitis (UC) were identified. CD and UC showed male predominance. The mean age (year) at diagnosis with CD was 15.3(6.9–17.9), with UC was 15.8(8.8–17.7). In comparison to EUOKIDS data, Korean pediatric CD patients had higher rates of terminal ileal disease. (Korean data 10 (33.3%) vs. EUOKIDS data 46 (7.9%), $p = 0.006$) Korean pediatric CD patients showed higher incidence in perianal disease than EUOKIDS patients. (Korea 10 (33.3%) vs. EUOKIDS 48 (9%), $p < 0.001$) Korean pediatric UC group showed higher incidence of proctitis than EUOKIDS group. (Korea 6 (18.2%) vs. EUOKIDS 27 (5%), $p = 0.015$) **Conclusion:** The characteristics of pediatric IBD in Korea appeared not similar to those reported by EUOKIDS study. Korean children with CD have higher incidence of ileal disease and perianal disease and proportion of proctitis was higher than EUOKIDS in children with UC.**Key Word(s):** 1. Pediatric IBD; 2. clinical characteristics; 3. Korean IBD

IBD

P-233

The safety of infliximab infusions for refractory inflammatory bowel disease**Presenting Author:** YAN PING LIANG**Additional Authors:** ZHI E WU, JIN TAO**Corresponding Author:** YAN PING LIANG**Affiliations:** The Third Affiliated Hospital of Sun Yat-Sen University, Third Affiliated Hospital, Sun Yat-Sen University**Objective:** To evaluate the safety of infliximab in refractory inflammatory bowel disease. **Methods:** Forty-three patients with refractory inflammatory bowel disease, who received infliximab treatment in our hospital between 2008 and 2013, were enrolled in the study. Adverse drug reaction (ADR) information was collected for time of onset, severity and outcome. **Results:** Of the 43 patients who received scheduled infusion of infliximab, 34 (79%) achieved clinical remission within 8 weeks after initiating infliximab treatment. Only 4 patients suffered ADRs, including flushing ($n = 4$), dizziness ($n = 3$), headache ($n = 3$), nausea ($n = 2$), chest discomfort ($n = 1$), fever ($n = 1$). No patient was severe and required active physician intervention. Slow infusion rate to 10 mL/h and pretreated with diphenhydramine and acetaminophen before infusion can prevent ADRs. **Conclusion:** Infliximab infusions are safe and effective in refractory inflammatory bowel disease. Severe ADRs were rare. Nurses were significant in prevention and treatment of ADRs.**Key Word(s):** 1. Inflammatory bowel disease; 2. adverse events; 3. infliximab

IBD

P-235

Novel natural history of mild crohn's disease**Presenting Author:** KWAK MIN SEOB**Additional Authors:** KYUNG JO KIM, SUK KYUN YANG, SEUNG JAE MYUNG, JEONG SIK BYEON, YE BYONG DUK, YANG DONG-HOON, SANG HYOUNG PARK, HYO JEONG LEE, HO SOO LEE, MIN KEUN CHO**Corresponding Author:** KWAK MIN SEOB**Affiliations:** *University of Ulsan College of Medicine, University of Ulsan College of Medicine*

Objective: Crohn's disease (CD) leads mostly to irreversible intestinal damage through continuing relapses and remissions. Despite the debate of efficacy, 5-ASA remain the mainstay in the management of mild CD, only for the reason that these are the most widely investigated agents available so far. So, we investigated the natural course of mild CD to assess whether current treatment strategies are indeed true for the patients with mild disease activity. **Methods:** A total of 104 patients with mild CD were enrolled between January 2008 and May 2014. This inception cohort study included 53 patients who were newly diagnosed with CD and who started treatment at Asan medical center, Seoul, Korea. The remaining 51 patients were referred to our center during same period. The long-term outcomes of them were investigated. **Results:** The median follow-up length for patients was 28.2 months (Range, 64.2 or IQR, 26.7). The clinical remission rates at 1, 3, and 5 years were noted in 12.6%, 63.5% and 95.9% of the patients, respectively. In the patients, 5.1% relapsed at 1 year. This percentage increased to 27.3% at 3 years and to 65.1% at 5 years. After 1, 3, and 5 years of treatment, surgical resection was performed in 0.2%, 11.8%, and 42.4% of patients, respectively. Mild CD patients within initial bowel damage showed a statistical significant rising tendency compared to those without, in need of surgery (Log Rank test, $P < 0.001$). Patients with a baseline elevated CRP level were more likely to experience surgical resection ($P = 0.016$). **Conclusion:** The clinically mild CD patients who have bowel damage at baseline would rather intensive therapy, such as biological agent, than immunomodulator therapy. Patients with a baseline elevated CRP level always should be cautious for the future risk of surgical resection.

Key Word(s): 1. Crohn's disease; 2. azathioprine; 3. immunomodulator

IBD

P-236

Investigation of the relationship between endoscopic mucosal healing and maintenance of long-term remission in ulcerative colitis**Presenting Author:** MAKI MIYAKAWA**Additional Authors:** RYOSUKE SAKEMI, MASANAO NASUNO, HIROKI TANAKA, SATOSHI MOTOYA, AKIMICHI IMAMURA**Corresponding Author:** HIROKI TANAKA**Affiliations:** *Sapporo Kosei General Hospital, Sapporo Kosei General Hospital, Sapporo Kosei General Hospital, Sapporo Kosei General Hospital, Sapporo Kosei General Hospital*

Objective: It is not clear whether a resultant Mayo endoscopic subscore of 0 is associated with improved long-term outcomes compared with a resultant subscore of 1. We analyzed the relationship between long-term remission rates and Mayo endoscopic subscores in UC patients. **Methods:** We retrospectively analyzed the medical records of patients with UC who underwent endoscopy from January 2009 to December 2010. The inclusion criteria were as follows: 1) maintenance of clinical remission for at least 1 year before the day of endoscopy; 2) no change in maintenance therapy before the day of endoscopy; 3) a Mayo endoscopic subscore of 0–2; and 4) patients not receiving maintenance treatment. Clinical remission and recurrence were defined as Lichtiger's clinical activity index (CAI) scores of ≤ 4 and ≥ 5 , respectively. The cumulative remission rate since the day of endoscopy was estimated for each Mayo endoscopic subscore using the Kaplan–Meier method. **Results:** A total of 166 patients were included in the present study. The 1-year cumulative remission rates were 86% for a Mayo endoscopic subscore of 0; 77% for a Mayo endoscopic subscore of 1; and 55% for a Mayo endoscopic subscore of 2. The cumulative remission rates for a Mayo endoscopic subscore of 0 were higher than those for a Mayo endoscopic subscore of 1, although the differences were not statistically significant. **Conclusion:** In UC patients in clinical remission, a Mayo endoscopic subscore of 0 may be associated with a reduced risk of recurrence compared with a Mayo endoscopic subscore of 1.

Key Word(s): 1. Ulcerative colitis; 2. mucosal healing

IBD

P-237

Microrna 429 regulates the expression level of chmp5 in ulcerative colitis**Presenting Author:** JI-SU MO**Additional Authors:** JI-SU MO, KHONDOKER JAHENGIR ALAM, SUCK-CHEI CHOI**Corresponding Author:** JI-SU MO**Affiliations:** *School of Medicine, Wonkwang University, School of Medicine, Wonkwang University, School of Medicine, Wonkwang University*

Objective: miRNAs are non-coding RNAs that play important roles in the pathogenesis of human diseases by regulating target gene expression in specific cells or tissues. We have focused on detecting miRNAs related to ulcerative colitis of mouse, identifying their target molecules, and analyzing the correlation between the miRNAs and their target genes in colon cell lines. **Methods:** UC-associated miRNAs were identified by miRNA microarray analysis of UC colon tissues and normal colon tissues of mouse. The results were validated by quantitative RT-qPCR. MIR429 target genes were identified by the mRNAs downregulated in MIR429-overexpressing cells (determined by mRNA microarray analysis). Luciferase reporter plasmids were constructed to confirm the effect of MIR429 on target gene expression. The protein expression of the target genes was measured by western blot. **Results:** Thirty-seven miRNAs were identified as UC-associated miRNAs. We investigated one, MIR429, which was specifically downregulated in UC, and identified 41 genes as targets of MIR429. The association between MIR429 and CHMP5 was verified in this study. CHMP5 transcript expression was directly downregulated by MIR429; protein expression was also downregulated. **Conclusion:** Our results suggest that MIR429 could play an important role in the pathogenesis of ulcerative colitis.

Key Word(s): Na

IBD

P-238

Increased serum ifn- γ and il-6, but not il-17 concentrations are associated with crohn's disease activity**Presenting Author:** NAZRI MUSTAFFA**Additional Authors:** WON FEN WONG, ALICIA YILING PHAN, IDA HILMI, KHEAN LEE GOH**Corresponding Author:** NAZRI MUSTAFFA**Affiliations:** *University of Malaya, University of Malaya, University of Malaya, University of Malaya*

Objective: Gut inflammation in Crohn's disease (CD) is related to T-helper type 1 (Th1) cells, with high levels of interferon (IFN)- γ being produced. Th17 cells are also involved, identified by the production of interleukin (IL)-17; IL-6 drives early Th17 cell differentiation. IL-17's role in the pathogenesis of CD however has not been definitely confirmed. We thus set out to identify the relationship of IFN- γ , IL-6 and IL-17 to disease activity in a cohort of CD patients from the University Malaya Medical Centre. **Methods:** Serum from blood samples of CD patients and control subjects were obtained from 1:2 diluted supernatant following Ficoll-Paque density centrifugation. Serum IFN- γ , IL-6, and IL-17 concentrations were measured using ELISA kits (Biologend, USA). Clinical disease activity was measured using the Harvey-Bradshaw Index. **Results:** A total of 24 CD patients (16 in remission, 6 having active disease) and 9 control subjects were recruited. Compared to controls, for CD patients in remission IFN- γ was not significantly raised ($p = 0.08$) while there was a significant rise in patients with active disease ($p < 0.05$). IL-6 was raised in both groups of CD patients ($p < 0.01$ for those in remission and $p < 0.01$ with active disease). IL-17 however was not increased in both groups of CD patients ($p = 0.11$ for patients in remission, and $p = 0.07$ for those with active disease). **Conclusion:** In our cohort of CD patients serum IFN- γ and IL-6, but not IL-17 concentrations were associated with clinical disease severity. Questions remain on the role of IL-17 in relation to the gut inflammation of CD.

Key Word(s): 1. IFN- γ ; 2. IL-6; 3. IL-17; 4. Crohn's disease

IBD

P-239

Influence of endoscopic mucosal healing on long-term efficacy of infliximab in patients with refractory ulcerative colitis**Presenting Author:** MASANA O NASUNO**Additional Authors:** MAKI MIYAKAWA, RYOSUKE SAKEMI, HIROKI TANAKA, SATOSHI MOTOYA, IMAMURA AKIMICHI**Corresponding Author:** HIROKI TANAKA**Affiliations:** *Sapporo Kosei General Hospital, Sapporo Kosei General Hospital, Sapporo Kosei General Hospital, Sapporo Kosei General Hospital, Sapporo Kosei General Hospital*

Objective: It is unclear whether the resultant Mayo endoscopic subscore can predict the efficacy of infliximab maintenance treatment in patients with refractory UC. We analyzed the long-term maintenance remission rate according to the Mayo endoscopic subscore in patients with UC treated with infliximab. **Methods:** Retrospective data of patients with refractory UC treated with infliximab were collected from July 2005 to December 2012. The efficacy of infliximab treatment was evaluated on the basis of reduction in Lichtiger's Clinical Activity Index (CAI) scores. Remission was defined as a CAI score of ≤ 4 . We included patients who had active UC

and a CAI score of ≥ 5 at the first infliximab administration, achieved clinical remission at 6 weeks following the commencement of the standard infliximab protocol, and underwent at least 1 endoscopy after that. The cumulative remission rate according to the Mayo endoscopic subscore was estimated using the Kaplan-Meier method. **Results:** In total, 28 patients were included in this study. Mayo endoscopic subscores were 0, 1, and 2 for 14, 10, and 4 patients, respectively. One-, 3-, and 5-year cumulative remission rates were 100%, 75%, and 60%, respectively. Two- and 3-year cumulative remission rates were 85% and 76% for a Mayo endoscopic subscore of 0, 71% and 43% for one of 1, and 50% and 50% for one of 2, respectively. **Conclusion:** A Mayo endoscopic subscore of 0 was associated with the reduced risk of recurrence compared with a Mayo endoscopic subscore of 1 or 2 in patients with UC who achieved remission by infliximab treatment.

Key Word(s): 1. Ulcerative colitis; 2. infliximab; 3. mucosal healing

IBD

P-240

Baseline tumor necrosis factor alpha levels predict the clinical response of infliximab therapy in patients with crohn's disease**Presenting Author:** EIKI NOMURA**Additional Authors:** TAKESHI SATO, NANA KANNNO, KAZUHIRO SAKUTA, NAOKO MIZUMOTO, RIKI SHIBUYA, MAKOTO YAGI, DAISUKE IWANO, YU SASAKI, YASUHIKO ABE, SYOICHI NISHISE, YOSHIYUKI UENO**Corresponding Author:** EIKI NOMURA**Affiliations:** *Faculty of Medicine, Yamagata University, Faculty of Medicine, Yamagata University*

Objective: To investigate the possible role of baseline-tumor necrosis factor alpha (baseline-TNF) on the clinical response to infliximab (IFX) in patients with CD. **Methods:** Nineteen patients with CD were followed up. All the patients received 5 mg/kg of IFX infusion thrice at weeks 0, 2, and 6, and followed by maintenance regimen at every 8 weeks. Plasma samples for the evaluation of baseline-TNF were collected just before the first infusion of IFX. Crohn's disease activity index (CDAI) was evaluated at week 0, 6, and 54. Remission was defined as CDAI below 150. **Results:** CDAI of all the 19 patients before IFX infusion was 227 ± 76 . At week 6, 14 patients (73.7%) reached remission (remission group) and 5 patients (26.3%) did not reach remission (non-remission group). Although a significant difference was not observed between the two groups, the level of baseline-TNF in non-remission group is higher than remission group. At week 54, 11 (78.6%) of 14 patients were maintaining remission and 3 patients (21.4%) were not maintaining remission. The level of baseline-TNF was significantly higher in non-remission group than the remission group at week 54. **Conclusion:** In patients with CD, baseline-TNF is significantly associated with the clinical response in the period of remission maintenance therapy. Baseline-TNF may be a predicting factor of the second failure and a useful measure for personalising the treatment of CD using IFX.

Key Word(s): 1. Crohn's disease; 2. infliximab; 3. TNFalpha

IBD

P-241

Paediatric inflammatory bowel disease in Singapore – an increasing trend in a multi-racial society**Presenting Author:** CHRISTINA TJAN ONG**Additional Authors:** YUQIN CHER, AJMAL KADER, VEENA LOGARAJAH, KONG BOO PHUA**Corresponding Author:** CHRISTINA TJAN ONG**Affiliations:** *Yong Loo Lin Medical School, Kk Hospital, Kk Hospital, Kk Hospital*

Objective: Prevalence of Paediatric Inflammatory Bowel Disease (PIBD) is increasing worldwide although data in Southeast-Asian population remains scarce. This study aims to evaluate the characteristics and trends of IBD in a cohort of Southeast-Asian children **Methods:** IBD database from a pediatric tertiary hospital in Singapore over 18years (1996–2013) was retrospectively reviewed for clinical, radiological and endoscopy data **Results:** 123 PIBD patients were identified: Crohn's disease (CD) n = 82; Ulcerative colitis (UC) n = 28; Indeterminate Colitis(IC) n = 13. Mean age = 10.7 y (range: 1.5–17); 72Males:51Females. Newly diagnosed PIBD cases/year have increased significantly: before 2010(n < 8/year), 2011 (n = 13), 2012 (n = 24), 2013 (n = 37). Ethnicity: Chinese 55/123 (44.7%), Indians 39/123 (31.7%), Malays 19/123 (15.4%), Others 10/123 (8.1%). Common presenting features: CD: abdominal pain 70/82 (85.4%), weight loss 62/82 (75.6%), diarrhea 53/82 (64.6%). UC: bloody stools 25/28 (89.3%), diarrhoea 25/28 (89.3%). Physical examination findings: Most common in CD: mouth ulcers 30/82 (36.6%), perianal fistulas 15/82 (18.3%), skin tags/fissures 28/82 (34.1%). Physical findings were less common in UC patients. Failure to thrive (FTT) at diagnosis: CD 10/82 (12.2%), UC 3/28 (10.7%). Abnormal investigation results: CD: raised C-reactive protein (CRP) 63/82 (76.8%), mean = 50.52 mg/l (range:0.2–191.2); hypoalbuminemia 60/82 (73.2%), mean = 30.3 g/l (range:16–44); raised erythrocyte-sedimentation-rate (ESR) 62/82 (75.6%) mean = 46.7 mm/h (range: 1–145); low haemoglobin 57/82 (69.6%) mean = 10.87 g/dL (range: 5.01–14.4); thrombocytosis 44/82 (53.7%) mean = 503,000/ul (range: 121–867). UC: low haemoglobin 22/28 (78.6%), mean = 10.1 g/dL (range:5.1–13.5); hypoalbuminemia 20/28 (71.4%), mean = 32.4 g/l (range: 14–41); raised ESR 12/28 (42.9%) mean = 27.52 mm/h (range: 3–128). 18/82 (22%) CD had MRI enterography. 11/18(61.1%) had abnormal findings: small bowel involvement 9/18 (50%); strictures 5/18 (27.8%), fistulas 6/18 (33.3%). Liver involvement: 5 patients were diagnosed with primary sclerosing cholangitis (PSC). CD = 4,UC = 1. Endoscopy: CD disease location: Colon 55/82 (67.1%), Small bowel 25/82 (30.5%), stomach 18/82 (22%), esophagus 10/82 (12.2%). UC: pancolitis 15/28 (53.6%); left-sided disease 8/28 (28.6%); rectosigmoid 5/28 (17.9%). Treatment: Immunomodulators were started in 53.7% CD, 32.1% UC, 27.3% IC. 4/74 CD required anti-TNF. 7/74 (9%) CD required surgery. **Conclusion:** Prevalence of PIBD is rising in Singapore; CD is most common with a higher proportion of Indians (compared to population demographics) and boys. Onset of disease is earlier as compared to the West (10.7 y vs 12 y). CD and UC differ in presentation and laboratory findings. MRI enterography is an important investigative modality. Almost half of our cohort required immunomodulators suggesting at least a similar or more severe disease course in Southeast-Asian children compared to the west.

Key Word(s): 1. paediatric; 2. inflammatory bowel disease

IBD

P-242

Analyses of infliximab therapy for patients with inflammatory bowel disease: mainly with respect to safety**Presenting Author:** SHINYA OOMORI**Additional Authors:** ATSUSHI KANNNO, YAMASHITA KAZUYOSHI**Corresponding Author:** SHINYA OOMORI**Affiliations:** *Japanease Red Cross Sendai Hospital, Japanease Red Cross Sendai Hospital*

Objective: Infliximab (IFX) therapy, which is extraordinarily effective for patients with inflammatory bowel disease (IBD), cannot be occasionally used because of its strong immunosuppressive actions. We aimed to assess the actuality of IFX therapy for patients with IBD and to investigate safety and validity of the therapy. **Methods:** There were the total number of 208 events for which we tried IFX infusion therapy between January 2008 and June 2013 (classification of diseases: 11 cases of ulcerative colitis (UC), 3cases of Crohn's disease (CD) and one case of Bechet disease). At every event before IFX infusion, breast X-p and blood cell examinations were performed. We analyzed clinical features of the 208 events as to reactions for "conventional therapies", subjective symptoms and objective findings before IFX therapy and adverse events after IFX therapy, etc. **Results:** All of the patients with UC were steroid -resistance or -dependent and all of ones with CD were resistant for diet therapy (elemental diet treatment and TPN therapy). One patient with Bechet disease was resistant for multi-therapies (steroid, Granulocyte-Monocyte absorption and operations). Of the 208 events, there were total of thirty-two events at which we should consider the postponement of IFX therapy because of infectious symptoms, abnormal shadows at breast X-p and lymphocytopenia, etc. At 27 of the thirty-two events, IFX was carefully administered under the proper informed consents, owing to patients' strong desire for IFX therapy (at the rest of 5 events, the therapy was postponed to be on the safe side). No severe side effect was found at the 27 events. The rate of IFX induction was 80%. **Conclusion:** IFX therapy for patients with IBD in our hospital is thought to be safely performed under the closer medical investigation and proper informed consents, considering patients' various situations and desire.

Key Word(s): 1. IBD; 2. infliximab; 3. safety

IBD

P-243

Effectiveness of combination therapy with adalimumab plus intensive granulocyte and monocyte adsorptive apheresis in patients with crohn's disease**Presenting Author:** KEIJI OZEKI**Additional Authors:** SATOSHI TANIDA, TSUTOMU MIZOSHITA, HIRONOBU TSUKAMOTO, TAKAHITO KATANO, NORIYUKI HAYASHI, MAMORU TANAKA, HIROTAKA NISHIWAKI, MASAHIDE EBI, TAKESHI SAWADA, YOSHINORI MORI, EIJI KUBOTA, HIROMI KATAOKA, TAKASHI JOH**Corresponding Author:** KEIJI OZEKI**Affiliations:** Nagoya City University Graduate School of Medical, Nagoya City University Graduate School of Medical

Objective: Adalimumab (ADA) is an efficacious treatment for patients with Crohn's disease who are naïve to the chimeric TNF- α blockades and have the loss of response to their scheduled maintenance therapy. However, the efficacy of ADA on induction to clinical remission in randomized patients that respond to refractory CD reportedly presented around 50% in 10 weeks among the patients who responded at 4 week. This is considered to be limited and is not always satisfactory. Granulocyte and monocyte adsorptive apheresis (GMA) with Adacolumn[®](JIMRO, Takasaki, Japan) is another effective and safe therapeutic option for patients with CD. GMA is available in Europe, and Japan for the treatment of patients with active IBD that may have become refractory to standard drug based medication, including TNF- α blockers. The aims of this study are to recommend that combination therapy with ADA plus intensive GMA is effective to induce clinical remission in refractory CD patients. **Methods:** Between December 2010 and June 2014, thirteen consecutive refractory CD patients were retrospectively evaluated the effect of the combination therapy with ADA and intensive GMA (two sessions per week) with Crohn's Disease Activity Index (CDAI), C-reactive protein (CRP), and endoscopic findings. **Results:** The mean age was 40 \pm 17 years old, and the mean disease duration was 10.6 \pm 10.7 years. The mean values of CDAI and CRP levels at baseline were 246 \pm 113 and 3.6 \pm 2.6 mg/dL, respectively. Their values after the combination therapy were 105 \pm 40 (p = 0.015) and 0.4 \pm 0.2 mg/dL (p = 0.025), respectively. In twelve among thirteen cases in this study, the clinical remission and normalized CRP levels were obtained 10 weeks (at 5-times ADA shots) after ADA induction without any adverse events. In the cases evaluated mucosal healing, many cases showed the improvement tendency. **Conclusion:** Combination therapy with ADA plus intensive GMA is useful to induce clinical remission in refractory CD patients.

Key Word(s): 1. adalimumab; 2. Crohn's disease; 3. granulocyte and monocyte adsorptive apheresis

IBD

P-244

Usefulness of tacrolimus in ulcerative colitis**Presenting Author:** SHINJI SATO**Additional Authors:** MOTOHIKO HIROSE, HIROSHI MORITA, NAOKI HIRANO, KEN ITOH, HIDENORI KURAKATA, HIDENARI NAGAI, YASUKIYO SUMINO, IGARASHI YOSHINORI**Corresponding Author:** SHINJI SATO**Affiliations:** Toho University Omori Medical Center, Toho University Omori Medical Center

Objective: Ulcerative colitis(UC) is an idiopathic inflammatory bowel disease characterized by a chronic relapsing/intermittent clinical course. Tacrolimus has been shown to be safe and effective as salvage therapy for steroid refractory/resistant UC. Since differences in the onset of action between various agents are thought to influence the achievement and maintenance of disease remission, accelerated stepup therapy with tacrolimus may be useful. The aim of this study is to identify the short term benefit of one month tacrolimus administration for the treatment of moderate to severe UC. **Methods:** Eight patients(male 6, female 2 mean age 40.2 \pm 8.2) with active phase, moderate to severe UC were treated with oral tacrolimus at a dose of 0.1 mg/kg body weight daily. The dosages were adapted to maintain trough whole-blood levels of 10 to 15 ng/mL to induce remission and 5 to 10 ng/mL to maintain remission. Laboratory data, activity index and endoscopic features were assessed to evaluate in short-term outcomes. **Results:** At four weeks after the initiation of tacrolimus therapy, clinical remissions were observed for three patients (37.5%) and clinical response were achieved for three patients (37.5%) and the response rate was 75%. Half of the patients got into mucosal healing in endoscopic features, and almost patients (seven of eight) were succeeded to induce high trough phase within 7 days after the initiation of tacrolimus therapy and there was no severe complications in entire period of using tacrolimus. **Conclusion:** Oral tacrolimus is a safe and effective therapy for the treatment of moderate to severe UC, although still more longer follow-up of patients and compilation of further clinical data will be necessary.

Key Word(s): 1. ulcerative colitis; 2. tacrolimus

IBD

P-245

Efficacy of low dose CT for evaluation of disease activity in ulcerative colitis**Presenting Author:** MANABU SHIRAKI**Additional Authors:** TAKAYUKI YAMAMOTO, KOICHI MATSUMOTO**Corresponding Author:** MANABU SHIRAKI**Affiliations:** Yokkaichi Hazu Medical Center, Yokkaichi Hazu Medical Center

Objective: It has been reported that CT can be used for the evaluation of inflammatory bowel disease; nevertheless, there have been few reports on the efficacy of low dose CT for ulcerative colitis. We report here the efficacy of low dose CT for ulcerative colitis. **Methods:** The patients with relapsing ulcerative colitis between July 2013 and April 2014 were included in this study. All patients had undergone sigmoidoscopy and low dose CT scan. The colon CT image was divided into six segments, and then

Objective: β -arrestin2 deficiency has been reported to protect mice from experimental colitis. Our study is aimed to investigate the role of β -arrestin 2 in mucosal recovery of colitis. **Methods:** Ulcerative colitis was induced in β -arrestin2 wild-type (WT) mice and β -arrestin2 knockout (KO) littermates with 3% Dextran Sulfate Sodium (DSS) for 5 days, followed by regular water consumption for 1, 2, 3 and 4 weeks to analyze the recovery from colitis, respectively; Disease activity index and histology score were performed; Apoptosis was assessed by TUNEL and cleaved caspase-3 staining; Proliferation was detected by Ki-67 and PCNA staining; The levels of a range of growth factors were measured by real-time PCR; Induction of β -arrestin2, p-IGF-IR and p-ERK expression in colon tissue were examined by immunostaining and western blotting. In vitro: β -arrestin2 gene was over-expressed or interfered on HCT116 cell by transfection. The effect of β -arrestin2 in IGF-I receptor signaling pathway was detected by western blotting. **Results:** β -arrestin2 expression was up-regulated in the recovery phase of DSS-induced colitis in β -arrestin2-WT mice. Targeted deletion of β -arrestin2 delayed the recovery of colitis by reducing cells proliferation. IGF-I involved in the mucosa recovery through promoting epithelial cells and goblet cells regeneration. Furthermore, the activation of ERK were diminished in β -arrestin2 deficient mice during the recovery of colitis in IGF-I receptor signaling pathway, which was also confirmed in cell experiments. **Conclusion:** β -arrestin2 contributes to the recovery of colitis, which mediates mucosal repairing through IGF-I receptor signaling pathway by encouraging ERK activation.

Key Word(s): 1. ulcerative colitis; 2. β -arrestin 2; 3. insulin like growth factor-I (IGF-I); 4. extracellular signal-related kinase (ERK)

IBD

P-249

Smad3 phosphorylation contributes to the recovery of ulcerative colitis

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Objective: To investigate the process of mucosal injury and repair of ulcerative colitis in mice and the key role of p-Smad3 in this process.

Methods: Mice were exposed to 3% dextran sulfate sodium (DSS) for 5 days and followed by water for 4 weeks. Mice were divided into six groups: control group that were allowed to drink only water, injury group that exposed to 3%DSS for 5 days and recover groups which drunk water for 1,2,3,4 weeks after DSS removed. General health condition was recorded daily. Related markers of apoptosis and proliferation were detected. The expression of TGF- β and p-Smad3 were measured to observe the change of TGF- β signaling pathway in this process. **Results:** The disease activity index of mice was increased after DSS treatment and returned to normal at 2 weeks of DSS removed. The histological score was increased significantly at injury group and began to decrease at 2 weeks of recovery. The apoptotic index was risen to the maximal level at injury group and came back to normal level at 3 weeks. However, the proliferation index was reduced to the minimal level at injury group, then started to increase to reach at the peak at 3 weeks. TGF- β expression was increased at all of the experimental group, while the activation of Smad3 was inhibited at injury group, the began to be reactivated at 1 week after DSS removal. **Conclusion:** Smad3 phosphorylation promotes the repair of colonic mucosa of ulcerative colitis in mice.

Key Word(s): 1. ulcerative colitis; 2. recovery; 3. proliferation; 4. TGF- β ; 5. Smad3

IBD

P-250

Inflammatory bowel disease profile at Dr. Moewardi Hospital, Surakarta

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Objective: To determine the descriptive profile of IBD at Dr. Moewardi Hospital Surakarta. **Methods:** A retrospective descriptive study of IBD patients at Dr Moewardi Hospital Surakarta between mei 2011 and mei 2014. Variables taken from medical record. **Results:** We found 109 patients IBD, Normal 0 false false false IN X-NONE X-NONE UC (ulcerative colitis) 96,3%, CD (chron's disease) 62,4% Normal 0 false false false IN X-NONE X-NONE with male 62,4%, female 37,6%. The mean age: UC 50,7 \pm 13,4 years old, CD 44,5 \pm 8,5 years old. High class economy 63,3% and low class economy 36,7%. Senior high school graduated 48,6%, junior high school 26,6%, elementary school 12,8%, university 11%, no school 9%. From surakarta 23,9%, sragen 16,5%, karanganyar 16,5%, boyolali 10,1%, outer karesidenan 10,1%, klaten 8,3%, wonogiri 7,3%, sukoharjo 7,3%. The chief complaint was chronic diarrhea 83,5%, hematochezia 11%, abdominal discomfort 9%, melena 9%, post colostomy 9%, constipation 2,8%. Area of abnormalities: pancolitis 42,2%, colon descendens 15,6%, caecum-descenden 10,1%, rectosigmoid 10,1%, sigmoid-caecum 9%, anus-descenden 9%, descendens-transversum 9%, rectum-caecum 9%, caecum-ascenden 3,7%, caecum-sigmoid 2,8%, sigmoid 2,8%, ascenden 1,8%. Feces routine: no abnormalities 85,3%, yeast (+) 11,9%, pseudohifa (+) 9%, eritrosit (+) 9%, protozoa (+) 9%. The mean Hb: UC 11,8 \pm 1,7 (g/dl), CD 11,9 \pm 0,2 (g/dl); Ht UC 36,6 \pm 5,4 (%), CD 55,7 \pm 4,9 (%); AL UC 8,7 \pm 4,2 (10³ / μ l), CD 10,7 \pm 4,4 (10³ / μ l); AT UC 304 \pm 98,2 (10³ / μ l), CD 360 \pm 97,6 (10³ / μ l); stab neutrofil UC 4 \pm 1 (%), CD 5 \pm 0,9 (%); segment neutrofil UC 51,9 \pm 7,1 (%), CD 56 \pm 5 (%); limfosit UC 37,2 \pm 6,8 (%), CD 33,5 \pm 5 (%); monosit UC 5 \pm 1,4 (%), CD 4,5 \pm 1,2 (%); eosinofil UC 1,8 \pm 0,7 (%), CD 1,5 \pm 0,5 (%); basofil UC 0,5 \pm 0,4 (%), CD 0,6 \pm 0,5 (%). **Conclusion:** The most cases IBD was UC, especially in male with high class economy, senior high school graduated and Surakarta resident ce were the dominance characteristics. Chronic diarrhea and pancolitis were the dominance clinical overview. Anemia and normal feces were the dominance laboratories.

Key Word(s): 1. IBD (inflammatory bowel diseases); 2. UC (ulcerative colitis); 3. CD (Chron's disease)

IBD

P-251

Efficacy of infliximab therapy for patients with ulcerative colitis who failed to respond to tacrolimus

Presenting Author: HIRONOBU TSUKAMOTO

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Objective: Infliximab and tacrolimus are effective for the treatment of patients with corticosteroid-dependent/refractory ulcerative colitis. However, regarding treatment for these patients, whether tacrolimus therapy should precede anti-TNF α therapy as a secondline therapy remains controversial. To address this issue, we retrospectively investigated the efficacy of infliximab salvage therapy for patients with ulcerative colitis who failed to respond to tacrolimus. **Methods:** We assessed retrospectively clinical backgrounds and therapeutic outcomes at baseline, 8, 54 weeks for 19 patients receiving infliximab between beginning of 2009 and the end of 2013 for severe or moderate ulcerative colitis who showed refractoriness or loss of response to tacrolimus, or no tolerance. **Results:** Mean partial Mayo score was significantly decreased ($P < 0.05$) to 6.2, 2.1, and 1.1 at baseline, 14, and 54 weeks, respectively. Ten of 19 patients (52.6%) showed clinical remission at 14 weeks and ten (52.6%) showed clinical remission at 54 weeks. Three patients who did not respond to infliximab finally underwent colectomy. Rates of clinical remission at 14 and 54 weeks were 60.0 and 60.0% in tacrolimus responders, and good remission rates of 44.4 and 44.4%, respectively, were also obtained in tacrolimus nonresponders. No serious adverse events were encountered. **Conclusion:** Infliximab salvage therapy following tacrolimus appeared to be efficacious in both tacrolimus responders and in nonresponders, and 16 (84.2%) of 19 patients avoided colectomy. Sequential therapy may thus prove useful and well tolerated. Infliximab was thus considered to be a therapeutic option. In addition, we should avoid missing the proper timing of colectomy, and care is warranted regarding adverse events.

Key Word(s): 1. ulcerative colitis; 2. infliximab; 3. tacrolimus

IBD

P-252

Colon inflammatory polyp in young adult as a manifestation of inflammatory bowel disease

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Objective: Polyp inflammatory colon is an inflamed regenerating mucosa surrounded by ulcerated tissue, also granulation tissue overlying epithelium. Associated with Crohn's disease or ulcerative colitis. In this case young adult male with Crohn's disease with relapse diarrhea have different histologic finding biopsy from chronic colitis to polyp inflammatory colon. **Methods:** Colonoscopy evaluation. On hospital day 5 was perform colonoscopy and polypectomy with histopathologic findings description Polyp Inflammatory Colon. **Results:** A 28 year old Indonesian male with past medical history chronic diarrhea for since 5 years ago were diagnosed intestinal tuberculosis presented to the hospital with complaining flatulence and mild fever. No autoimmune disorders were noticed. History smoking cigarette 3 cigarette everyday. He diagnosed and treats like as tuberculosis medication but the symptoms never relieve. And then after colonoscopy procedure found that Crohn's disease. Methyl prednisolone 3 x 8 mg and sulfasalazine 3 x 1000 mg, last treatment with Immuran 2x50 mg. One week ago was admitted to hospital because relapse diarrhea. Physical examination was remarkable moon face and skin striae and no abdominal distension. Laboratory findings hyponatremia, hypoalbumunemia. He was admitted with diagnosis Pancolitis. Medical management Sulfasalazin 3 x 1000 mg, Methyl prednisolone 3 x 8 mg and Omeprazole 2 x 20 mg. On hospital day 5 was perform colonoscopy and

polypectomy with histopathologic findings description Polyp Inflammatory Colon. **Conclusion:** This case illustrates the potential benefit to reevaluation colonoscopy as procedure to make diagnosis of patient with Crohn's disease with presenting Polyp Inflammatory Colon.

Key Word(s): 1. Crohn's disease; 2. colonoscopy; 3. polyp inflammatory colon

IBD

P-254

New onset of grave's disease during anti-tnf α treatment in a case of fistulizing crohn's disease

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Additional Authors: ALGUILI ELSHEIKH, NOOF HAMID, OMAR ABDULAAL, MOHAMMED ALGHAMDI, WALID FARAH

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Affiliations: King Fahad Military Medical Complex, King Fahad Military Medical Complex

Objective: The association between inflammatory bowel disease in form of ulcerative colitis and autoimmune thyroid disease has been well documented. However, the association between crohn's disease and autoimmune thyroid disease is not well established and there have only been a few reported cases in the literature. Case presentation We present here a rare case of a 35-year-old Saudi female with simultaneous onset of Graves' disease and fistulizing Crohn's disease. Crohn's disease was complicated with intra-abdominal fistulas. Despite intense medical treatment with regular Azathioprine, total parenteral nutrition, antibiotics, and corticosteroids the clinical course of the disease was suboptimal. Finally, the patient underwent laparotomy and right hemi-colectomy with ileo-transverse anastomosis, simultaneous drainage of the abdominal abscess and closure of the opening. Although the surgical approach cured the perforating complications of the disease (fistulas and abscess), the luminal disease in the colon remnant was still active. The subsequent successful treatment with infliximab, azathioprine and mesalazine resulted in the induction and maintenance of the disease remission. Later on, patient develop full blown picture of Graves' disease after she started infliximab which was stopped later and the patient improved on antithyroid medication. **Conclusion:** We are not sure whether the association between Crohn's disease and Graves' disease is infliximab dependent or independent and it needs more case studies and research.

Key Word(s): 1. Graves' disease; 2. Crohn's disease; 3. ulcerative colitis; 4. infliximab; 5. azathioprine

Biliary Tract

P-255

Evaluation of the algorithm for selective bile duct cannulation for patient with naive choledocholithiasis**Presenting Author:** TESSHIN BAN**Additional Authors:** TADASHI TOYOHARA, HIROMICHI ARAKI, YUKA SUZUKI, SHUNSUKE SHIBATA, ISSEI KOJIMA, YU NOJIRI, TAKASHI YOSHIMINE, HUIJITA YASUAKI, SATOSHI NOMURA, ATSUNORI KUSAKABE, HIROSHI KANIE, AKIRA SAWAKI, TOMONORI YAMADA, KATSUMI HAYASHI, ETSURO ORITO**Corresponding Author:** TESSHIN BAN**Affiliations:** Nagoya Daini Red Cross Hospital, Nagoya Daini Red Cross Hospital

Objective: To evaluate the three steps algorithm for selective bile duct cannulation (SBDC) for naïve choledocholithiasis. **Methods:** We evaluated the rate of SBDC and post-procedure pancreatitis (PPP) under the algorithm among 281 patients with choledocholithiasis from February 1, 2011 to August 31, 2013. Using that algorithm, the cannulation moved from the conventional method to the guide-wire method (wire-guided cannulation (WGC) or pre-pancreatic guide wire placement cannulation (PGC)) and pre-cut method, sequentially, if SBDC failed. **Results:** We achieved SBDC under the conventional method in 200 out of 281 patients (71.2%). Among patients who underwent the conventional and guide-wire method, we achieved SBDC in 264 out of 281 patients (94.0%). Eleven out of 65 patients (16.9%), who moved on to the guide-wire method, developed PPP, though, moving on to the guide-wire method was the risk factor for PPP in multivariate analysis [Odds ratio; 4.14, $p = 0.005$]. Among patients who underwent the guide-wire method, PPP occurred only in the PGC group (PGC vs WGC; 11/49 (22.4%) vs 0/12 (0%), $p = 0.101$). It was supposed that PGC would contribute to PPP. The final cumulative rate of SBDC and PPP were 98.2% (276/281) and 7.5% (21/281), respectively. **Conclusion:** In patients with naïve choledocholithiasis and difficult cannulation under conventional method, using the guide-wire method was effective for SBDC. However, moving on to the guide-wire method itself, especially PGC, was the risk factor for PPP.

Key Word(s): 1. bile duct cannulation; 2. choledocholithiasis; 3. post-ERCP pancreatitis

Biliary Tract

P-256

Tuberculous cholecystitis with cholecysto-colonic fistula : a case report**Presenting Author:** CHOL KYOON CHO**Additional Authors:** CHOONG YOUNG KIM, HEE JOON KIM, HYUN JONG KIM, JIN SHICK SEOUNG**Corresponding Author:** CHOL KYOON CHO**Affiliations:** Chonnam National University Medical School, Chonnam National University Medical School, Chonnam National University Medical School, Chonnam National University Medical School

Objective: Gallbladder tuberculosis is an extremely rare disease. It can mimic other gallbladder disease, because accurate preoperative diagnosis is difficult and diagnosis is made by histopathologic examination after cholecystectomy. **Methods:** A 54 year old man was visited our hospital presenting abdominal discomfort. He had medical history of hypertension and diabetes mellitus. He was treated with endoscopic retrograde cholangiopancreatogram for common bile duct stone removal by 6 months ago. He was afebrile, there were tenderness in right upper quadrant area and no Murphy's sign on physical examination. In laboratory findings, complete blood count showed only leukocytosis and other blood chemistries and viral serologic markers were normal. Serum CA 19-9 was elevated.(115.2 U/ml) Abdominal computed tomography(CT) revealed diffuse wall thickening of gallbladder and several gallstones. Based on these findings, preoperative diagnosis was thought to be xanthogranulomatous cholecystitis or gallbladder cancer. **Results:** In operative findings, severe adhesion between gallbladder, omentum, common bile duct, and transverse colon was observed and gallbladder was thickened, distended and inflamed. We performed cholecystectomy and transverse colon segmental resection, because there were cholecysto-colonic fistula. There were bloody and necrotic material and several stones in gallbladder. Histopathologic examination revealed epithelioid granulomatous with caseating necrosis and presence of Langerhan's giant cells. Therefore, postoperative diagnosis was revealed tuberculosis of cholecystitis. The patient tolerated the procedure well and was discharge 1 week following surgery without any problems. The patient was started on anti tubercular treatment. **Conclusion:** Herein, we present a case of tuberculous cholecystitis with cholecysto-colonic fistula.

Key Word(s): 1. tuberculosis cholecystitis; 2. cholecysto-colonic fistula

Biliary Tract

P-257

Steroid challenge test is useful for diagnosis of prolonged cholestasis after ercp stone removal**Presenting Author:** JIN KYEONG CHO**Additional Authors:** Na**Corresponding Author:** JIN KYEONG CHO**Affiliations:** Seoul Medical Center

Objective: Introduction After successful common bile duct (CBD) stone removal by endoscopic retrograde cholangiopancreatography (ERCP), high prolonged jaundice is very confused for the next decision (ERCP for remnant stone or other rare causes). With assurance of removal of CBD stone and no remnant stone, Liver biopsy may be useful for jaundice of parenchymal origin but invasive. In such cases, steroid challenge test is useful both diagnosis and treatment. Case description A 62-year-old male presented with colicky right upper quadrant pain. Laboratory tests showed total bilirubin of 7.6 mg/dL, aspartate aminotransferase (AST) 60 IU/L, alanine aminotransferase (ALT) 15 IU/L, alkaline phosphatase (ALP) 60 IU/L and gamma-glutamyltranspeptidase (γ -GT) 71 IU/L. At abdomen CT, There was single 1.3 cm sized distal CBD stone and diffuse dilatation of upstream bile duct and cystic duct. The patient underwent endoscopic retrograde biliary drainage (ERBD) by plastic stent because of long procedure time for cannulation. But 5 days after the ERBD, his total bilirubin increased to 18.7 mg/dL. A second ERCP was carried out, which revealed patent biliary stent and CBD stone was removed successfully. After 2 days of second ERCP, total bilirubin level increased to 19.5 mg/dL. At second abdomen CT, there was no remnant stone. It was presumed that intrahepatic cholestasis was occurred by intrahepatic bile duct inflammation from contrast agent or pethidine. P rednisolone was started (30 mg/day) for three days, which caused a significant improvement of jaundice and bilirubin level. But 7 days later, his bilirubin raised up to 20.3 mg/dL. It was certain that prednisolone improved his cholestasis. Prednisolone started again and after use of 30 mg/day of prednisolone for 7 days, total bilirubin fell to 10 mg/dL, and his jaundice was progressively declined. Steroid was used

and tapered off during a month. He had normal bilirubin level and normal liver function tests.

Key Word(s): 1. ERCP; 2. prolonged cholestasis

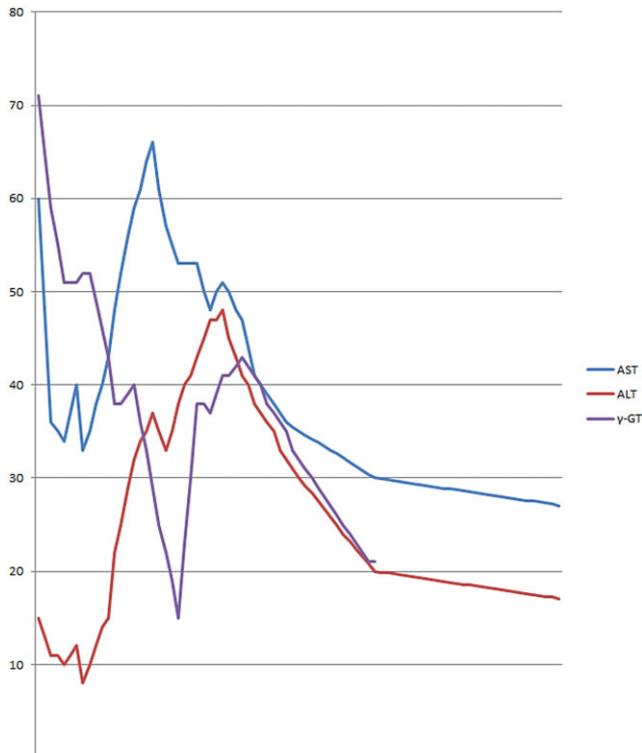


Figure 1. Serum total bilirubin levels, response to corticosteroid.

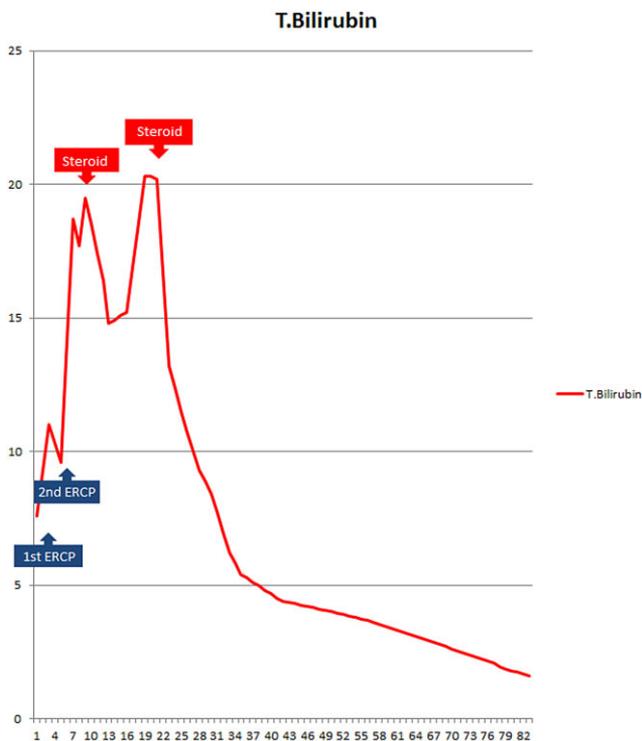


Figure 2. Liver biochemistry on hospitalization.

Biliary Tract

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Prevention of post-ercp pancreatitis by using nafamostat mesilate: comparison of 8-hour infusion versus 24-hour infusion

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Objective: An effective way to prevent post-ERCP pancreatitis (PEP) is 24-hour infusion of the protease inhibitor nafamostat medilate. However, the optimal duration of the administration has not been confirmed. It will be more convenient for the patients if they can get 8-hour infusion instead of 24-hour. We assessed and compared the incidence of PEP in 8-hour and 24-hour infusion. **Methods:** A total of 325 patients who underwent ERCP were analyzed from February to September 2014. Patients were divided into two groups; 24-hour infusion with nafamostat medilate (group A), 8-hour infusion (group B) (107 patients per arm). Serum amylase and lipase levels were checked before ERCP, 6 and 24 hours after ERCP, and when clinically indicated. The incidence of PEP was analyzed. **Results:** The overall incidence of acute pancreatitis was 9.2% (30/325). There was no significant difference in the incidence of PEP as 30 to 90 minutes before ERCP or after ERCP (7.5% vs 6.4% respectively; $p=0.687$). Also there was no significant difference in the incidence of hyperamylasemia (8.2% vs 7.6%, respectively; $p=0.761$). **Conclusion:** Nafamostat mesilate infusion protocols had equal incidence of PEP regardless of timing of infusion. Therefore, 8-hour infusion of nafamostat mesilate is also a proper way to prevent PEP.

Key Word(s): 1. ERCP; 2. pancreatitis; 3. nafamostat

Biliary Tract

P-259

Endoscopic snare papillectomy (esp) for papillary tumors- a single centre retrospective study

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Objective: Endoscopic snare papillectomy (ESP) may be a minimally invasive solution to treat lesions of duodenal papilla. We evaluate safety and outcome of ESP in this study. **Methods:** Patients with ampullary tumors treated with ESP for localized disease during 6-years (Feb 2007 to Jan 2013) identified from ERCP database. All underwent pre-ESP EUS.

Results: 36 patients underwent ESP, mean age 63 years (33–83), males – 23. Mean tumor diameter was 18 mm (7–37). Complications – 2 bleeds (managed endoscopically), one delayed biliary stenosis and one fatal pancreatitis. Histopathology: adenocarcinoma – 20(56%), adenoma – 15(41%), NET – 1. Margin positive 7 (19.4%) – adenocarcinoma – 4 (20%), adenoma – 3 (20%). Mean follow up 13.6 months (1–58). 4 (11%) lost to follow up – 2 in each group. Adenoma group – no recurrence at mean 12-month (3–36) – 10(67%), recurrence – 3 (treated by APC). NET (3) – month no recurrence. Adenocarcinoma group – 8 (40%) underwent surgery. Remaining 12, 7 (58%) – no recurrence at mean 26-month (14–58), recurrence – 2, fatal pancreatitis – 1, no follow up – 2. **Conclusion:** ESP for ampullary tumors is effective and safe. It can be curative for most ampullary adenomas. ESP for localized adenocarcinoma may be potentially curative in >50% patients.

Key Word(s): 1. ampullary tumours; 2. endoscopic papillectomy

Biliary Tract

P-260

A case of cholecystocolonic fistula masquerading as colonic polyp

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Objective: Cholecystocolonic fistulas are rare complications of gallstones with a variable clinical presentation. Cholecystocolonic fistulas are often asymptomatic and it is difficult to diagnose them preoperatively.

Methods: A patient who complaint diarrhea for one month visited local clinic and underwent colonoscopy. During colonoscopy, an 1 cm sized polypoid lesion was noted on ascending colon. During suction the patient to observe the lesion closely, the polypoid lesion was sucked up and a hole like perforation was appeared. The patient was transferred to our hospital suspected bowel perforation. **Results:** On the physical exam, there was no specific findings such as abdominal tenderness. On abdominal computed tomography, small air was noted in the gallbladder and several common bile duct stones and gallbladder stones. We did ERCP (endoscopic retrograde cholangiopancreatography) and removed CBD stones. Then cholecystectomy with segmental colonic resection was done. **Conclusion:** On operation field, a cholecystocolonic fistula was noted. After the operation, the diarrhea was stopped and the patient recovered completely.

Key Word(s): 1. cholecystocolonic fistula

Biliary Tract

P-261

Efficacy of indigo carmine method in identifying the afferent limb during double-balloon ercp

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Objective: This study was undertaken to evaluate the efficacy of indigo carmine (IC) method in identifying the afferent limb with Roux-en Y (RY) reconstruction during double-balloon ERCP (DBERCP).

Methods: DBERCP was performed in 94 patients with RY reconstruction from February 2009 to October 2013 at Jichi Medical University Hospital. We investigated accuracy rate of IC method in total gastrectomy (TG) group and in non TG group. In the second portion of the duodenum or at the distal site of esophagojejunostomy, after inflation of a balloon at the tip of the endoscope, 50 ml of IC was injected into the lumen. At the RY site, we evaluated the inflow of IC into both limbs and identified the limb with less inflow as the afferent limb. When the limb with less inflow was confirmed as afferent limb, the case was classified as "correct group". Insertion time in correct group was compared to that in incorrect group. **Results:** Nineteen patients were excluded from 94 patients. Exclusion reason was no IC at RY anastomosis in 10 patients, unrecognizing RY in 4 patients, inaccessibility RY in 2 patients, absence of judge in 3 patients. Accuracy rate in total was 77.3% (58/75). Accuracy rate in TG group and in non TG group was 78.3%(9/12), 77.8%(49/63) respectively (P = 0.833). Insertion time was 39.7 min in correct group, 56.6 min in incorrect group (P = 0.023). **Conclusion:** In conclusion, accuracy rate of IC method in identifying the afferent limb was 77%. Accuracy rate was no significance between in TG group and non TG group. Insertion time in correct group was 17 min shorter than in incorrect group.

Key Word(s): 1. double-balloon ERCP; 2. indigo carmine; 3. insertion time

Biliary Tract

P-262

Comparison of endoscopic and surgical treatment of patients with adenoma of the major duodenal papilla

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Objective: Adenomas of the major duodenal papilla are not common. Surgical resection is usually performed as a definitive treatment. Endoscopic snare papillectomy (ESP) provides an endoscopic option. The aims of this study was to assess the technical feasibility, clinical outcome, and adverse events of ESP in comparison to surgical treatment of patients with adenomas of the major duodenal papilla. **Methods:** Between November 2004 and June 2014, forty-five patients (24 men and 21 women; median age 65.66 ± 12.84 years, range 38–92 years) with adenomas of the major duodenal papilla at ERCP were retrospectively reviewed. Fifteen patients undergoing ESP (Group I) and fifteen patients undergoing surgical resection (13 Whipple resection and 2 transduodenal local resection) (Group II) were enrolled in the study. **Results:** Except for tumor size (19.14 ± 6.88 mm in Group I and 32.47 ± 8.97 mm in Group II), there were no significant difference between two groups in clinical characteristics. ESP was technically feasible in 14 (93%) patients. Eleven of 15 (73%) patients were successfully treated with one tumor removal procedure. In Group I, four uremic patients (27%) suffering from GI bleeding and bacteremia after tumor resection required blood transfusion and intravenous antibiotics therapy. One of 4 patients expired because of severe bacterial sepsis. In Group II, 7 patients (47%) had wound leakage, intra-abdominal abscess, and sepsis requiring drainage and antibiotics treatment. Two of 7 patients had septic shock and acute respiratory failure requiring endotracheal intubation. The duration time of hospitalization was 7.64 ± 4.41 days in Group I and

33.53 ± 20.03 days in Group II (P < 0.0001). In the duration of follow-up (46.7 ± 36.04 months), two (13%) residual adenoma were detected in the ESP group. **Conclusion:** Compared with surgery, ESP group had shorter hospital stay and fewer complications. However, due to mortality of one uremic patient and recurrence rate of 13%, careful pre-resection selection of uremic patients and close follow-up have to be emphasized.

Key Word(s): 1. endoscopic snare papillectomy; 2. adenoma; 3. major duodenal papilla

Biliary Tract

P-263

Treatment of common bile duct stone for the oldest-old patients

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Objective: [Background and Purpose] At core hospitals in local cities, it is not rare to attend to ERCP cases of the oldest-old patients (90-years old or above). In total, our hospital treated 84 ERCP cases for patients at ninety or older between March 2010 and February 2014, including 59 cases of common bile duct stones. For the cases with multiple or extremely large common bile duct stones, our existing treatment method has been either EBS only or endoscopic mechanical lithotripsy (EML), but these methods often required several operation sessions to complete. In this study, the cases before and after the introduction of EPLBD for the treatment of the oldest-old patients in May 2012 are compared to examine treatment methods, accidental symptoms, length of hospitalization, and retreatment ratios of common bile duct stone for the oldest-olds. **Methods:** [Subject of Study] At our hospital, indication for EPLBD is 10 mm or larger stone diameter or the presence of three or more stones in a patient. 23 cases of the oldest-old patients with common bile duct stones treated at our hospital from March 2010 to April 2012 are labeled as Group A to be compared with 36 such cases treated after the introduction of EPLBD for the oldest-old patients in May 2012 till February 2013 (Group B). **Results:** [Result] Group A was found with the mean age at 91.7, average maximum stone diameter at 12 mm, average number of stones at 3.2, length of hospitalization at 13.5 days excluding hospitalization at sub-acute phase and waiting time before relocation to another hospital or institute), duration of operation at 29.4 minutes, breakdown of operation types as follows: 5 EBS; 13 EST; 1 post-EST; and 4 EPBD, accidental symptoms at 0 cases, stone-crushing rate at 52.1%, and the rate of hospitalization for retreatment at 30.4%. Group B was found with the mean age at 92.6, average maximum stone diameter at 12.6 mm, average number of stones at 4.3, length of hospitalization at 12.8 days (excluding hospitalization at sub-acute phase and waiting time before relocation to another hospital or institute), duration of operation at 32.9 minutes, breakdown of operation types as follows: 6 EBS; 18 EST; 4 post-EST; 4 EPBD; and 4 EPLBD cases, 3 accidental symptoms (mild pancreatitis), stone-crushing rate at 72.2%, and the ratio of hospitalization for retreatment at 13.9%. **Conclusion:** Past treatments mainly employed EBS for the oldest-old patients with multiple common bile duct stones or enormous bile duct stones without proactively crushing the stone, but the study result suggested the advantage of applying EST, EPLBD, etc. to the oldest-olds and crushing stones in reducing the re-hospitalization ratio.

Key Word(s): 1. treatment of common bile duct stone

Biliary Tract

P-264

A case of a biliary stent dropped into the abdominal cavity during endoscopic ultrasound guided-hepaticogastrostomy treated by coil embolization and blood injection therapy

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Objective: One of the most dangerous complications in endoscopic ultrasound-guided hepaticogastrostomy (EUS-HGS) is the loss of a biliary stent by dropping it into the abdominal cavity. Most such cases are treated by open surgery. Here, we report a case that was treated without surgery by preventing biliary leakage via coil embolization and blood injection therapy. **Methods:** An 81-year-old man presented with fever and jaundice and was diagnosed with biliary obstruction (BO) caused by bile duct cancer. The biliary cancer was inoperable with concurrent lung cancer, and the patient refused chemotherapy. Therefore, we performed percutaneous transhepatic biliary drainage (PTBD) and inserted an expandable metallic stent (EMS) for biliary drainage, and the patient was discharged soon after. However, during follow-up at another hospital, cholangitis recurrence was noted, and the patient was readmitted in our hospital. We then performed EUS-HGS for BO; however, the end of stomach-side of a fully covered EMS (8 mm × 10 cm) dropped into the abdominal cavity. We considered that surgical rescue would be fatal in this case since the patient's general condition was poor due to sepsis from cholangitis and terminal cancer. We therefore performed PTBD; the biliary fistula at the route of entry was then filled by coil embolization and autologous blood injection. **Results:** After a week of continuous biliary drainage through the PTBD tube, we inserted another EMS into the previous EMS and clamped the PTBD tube. A week after the clamping, we confirmed that the biliary leakage had ceased, and we removed the PTBD tube. **Conclusion:** We thus report a case of biliary leakage during EUS-HGS that was treated without surgery. Dropping an EMS into the abdominal cavity needs to be carefully prevented; however, if it does occur, coil embolization and blood injection can be an effective treatment without the need for another operation.

Key Word(s): 1. biliary stent; 2. complications; 3. hepaticogastrostomy

Biliary Tract

P-265

Risk factors for cholangitis after endoscopic extraction of bile duct stones and palliative endoscopic biliary stenting after incomplete stone extraction

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Objective: Endoscopic extraction of bile duct stones is a standard procedure. Cholangitis is a careful complication after stone extraction. Endoscopic biliary stenting (EBS) after incomplete extraction of stones is sometimes performed in patients with comorbidities and poor performance status. We retrospectively investigated the risk factors for cholangitis after biliary stone extraction and the characteristics of patients who underwent EBS due to residual stones. **Methods:** Between October 2011 and January 2014, 130 consecutive patients underwent endoscopic extraction of bile duct stones. Risk factors for cholangitis after biliary extraction were investigated. The number and diameter of biliary stones, number of ERCP sessions, and duration of hospital stay were compared in patients whose stones were completely extracted (Group A) and those who underwent EBS due to residual stones (Group B). In Group B, the incidence of cholangitis in patients treated with single plastic stenting (SPS) versus multiple plastic stenting (MPS) was compared. **Results:** Multivariate analysis revealed that EBS was a significant risk factor for cholangitis after biliary stone extraction (odds ratio, 5.4; 95% confidence interval, 1.9–15.1; $p < 0.01$). There were 103 patients in Group A (mean age, 74 years; 51 males and 52 females) and 27 in Group B (83 years; 7 males and 20 females). Patients in Group A required more sessions of ERCP (1.4 vs. 1.1, $p < 0.01$) and longer hospital stays (17.5 vs. 10.8, $p = 0.07$). Patients in Group B had more stones on average (2.7 vs. 3.7, $p < 0.01$) and stones with a significantly greater diameter (10.6 mm vs. 16.1 mm, $p = 0.03$) than patients in Group A. In Group B, MPS tended to be associated with a lower incidence of cholangitis than SPS ($p = 0.09$). **Conclusion:** EBS is a risk factor for cholangitis after stone extraction, even though EBS is usually performed in high-risk patients as a palliative procedure. Multiple biliary stenting is effective for reducing the risk of cholangitis in patients with residual biliary stones.

Key Word(s): 1. biliary stenting bile duct stone cholangitis

Biliary Tract

P-266

Unknown etiology of portal vein and subsequent rare non-isolated splenic vein thromboses in patient presenting with pancytopenia

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Objective: Portal vein thrombosis considered as the primary cause of adults portal hypertension. Commonly occurs in patient with cirrhosis, this entity could manifest as asymptomatic and symptomatic forms (portal hypertensive bleeding, abdominal pain, and intestinal infarction). Approximately 25 percent of adult patients with portal vein thrombosis have underlying cirrhosis as the main cause including cirrhotic condition in hepatocellular carcinoma with a possible hypercoagulable state or direct invasion of the portal vein by the neoplasm itself. In thrombosis without cirrhosis, 34 percent might be caused by prior history of abdominal surgery, 14 percent had pancreaticobiliary disease, 9 percent had alimentary tract disease, acute pancreatitis, and prothrombotic mutation as the rest. In 25 percent of patients the portal vein thrombosis might occur with no apparent cause, and underlying hypercoagulable state likely to be the culprit as hypothesized in the following case with later found splenic vein thrombosis. **Methods:** Female, Ms. S, 22 years old, came to hospital with progressively increased dyspnea since 2 weeks before admission. Since 6

months ago she complained of abdominal pain caused by enlarging abdomen with icteric sclerae but no black stool, nor bloody vomiting. Since 1 month before admission she started feeling heavy in taking breath due to enlarging stomach size, she also complained increasing menstrual blood volume with normal duration. Any other bleeding complaints were denied. Defecation and urination described as normal. She denied any history of malar rash, unexplained stomatitis, arthralgia, and hair loss. No hypertension, diabetes, asthma, and allergy. On physical examination, we found icteric sclerae, cardiomegaly with holosystolic grade III/VI murmur at mitral valve region, hepatosplenomegaly (Schuffner IV). At first we found pancytopenic condition with strong rise in transaminases which further decrease without any steroid intervention. This accompanied by portal vein thrombus and dilatation on repeated abdominal ultrasound, with splenic vein thrombus but missing portal vein thrombus on subsequent CT scan. Bone marrow aspiration yield hypercellular result with further autoimmune (intermediate APS marker) and hypercoagulable state markers show weak probability as the culprits. **Results:** At first we found strong rise in transaminases with portal vein thrombus and dilatation on abdominal ultrasound. The thrombus again confirmed with repeated US but later missing on subsequent CT Scan with late discovered splenic vein thrombus. Further autoimmune-related disease such as systemic lupus erythematosus (SLE) and antiphospholipid syndrome (APS) also hypercoagulable state markers show weak probability as the culprits. Splenic vein thrombosis is a rare clinical syndrome. In this case it occurs in the setting of pancytopenia, therefore we are looking for an entity which could explain the logical relation in between. Pancytopenia might happen with hypocellular and cellular bone marrow. In cellular bone marrow it might be caused by systemic lupus erythematosus and other autoimmune diseases like antiphospholipid syndrome (APS). Hypersplenism in this patient is another enigma that we has been investigating since our first encounter. The splenomegaly was initially proposed to occur due to SLE or occurred as the result of backflow of the blood obliterated by the thrombus in splenic vein. We hypothesized the missing link might be best explained by the presence of probable APS strengthened with other secondary thrombogenic risk factors exist such as SLE, pancreatitis, stasis, drugs (oral contraceptives), or other traditional atherosclerosis risk factors that suspected to be present in this patient. **Conclusion:** After investigation, we, therefore, proposed the pathomechanism in this patient as the following: suspected antiphospholipid syndrome -> splenic vein thrombus -> splenomegaly -> hypersplenism -> pancytopenia.

Key Word(s): Na

Biliary Tract

P-267

Diagnostic and management approaches of mirizzi syndrome in tertiary hospital

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Objective: Mirizzi syndrome defined as common hepatic duct obstruction caused by an extrinsic compression from an impacted stone in the cystic duct or Hartmann's pouch of the gallbladder. Classified as a rare case, it occurs in 0.7 to 1.8 percent of all cholecystectomies. Often not recognized preoperatively, it contains the risk to morbidity, biliary injury, and cancer. The original classification by McSherry described two types of Mirizzi syndrome i.e., type I – compression of the common hepatic duct or common bile duct by a stone impacted in the cystic duct or Hartmann's pouch and type II – erosion of the calculus from the cystic duct into the

common hepatic duct or common bile duct, producing a cholecystocholedochal fistula. Csendes classified into 4 types according to the presence and extent of cholecystobiliary fistula. **Methods:** Male, Mr. R, 22 years old, referred to RSCM to undergo therapeutic ERCP due to biliary stones found on previous MRCP. Since 1.5 years ago he complained of yellowish eyes accompanied with nausea, vomiting, and upper right colicky abdominal pain. He denied any bloody vomiting and black stool. He was then hospitalized in Gatot Soebroto Army Hospital and soon diagnosed as having biliary-related disease and was underwent MRCP. Later stones were found and therapeutic ERCP was obliged to evacuate the stones, he was then referred to RSCM. On admission, he admitted increased yellowish eyes and decreased nausea and vomiting. **Results:** He has hypertension since 2 years ago and treated with Captopril. Icteric sclerae and hepatomegaly found. Increased bilirubin level, ALP, and γ GT with MRCP findings of 1.5 cm impacted stone in cystic duct and 3 cm stone in gallbladder with dilatation of cystic and common hepatic ducts concurrent with cholangitis and cholecystitis. On ERCP this dilatation of common hepatic ducts were confirmed with concurrent dilatation of right and left hepatic ducts, plastic stent sized 7–9 was then placed and Mirizzi syndrome was then diagnosed and laparoscopic total cholecystectomy underwent. **Conclusion:** • Mirizzi syndrome defined as common hepatic duct obstruction caused by an extrinsic compression from an impacted stone in the cystic duct or Hartmann's pouch of the gallbladder. It increases the risk to gallbladder cancer. • Diagnostic approach of Mirizzi usually begins with history taking, physical exam, lab exam, ultrasonography followed by cholangiography via endoscopic retrograde cholangiopancreatography, direct percutaneous cholangiography, or magnetic resonance cholangiography. • Endoscopic treatment with or without electrohydraulic lithotripsy (EHL) considered to be effective as a temporizing measure before surgery like the one underwent in this case file. Surgery is the main therapy for Mirizzi syndrome, eliminating definitive pathomechanisms of this entity, i.e., the inflamed gallbladder and the impacted stone. Surgical modalities depend on the type of Mirizzi syndrome, which range from laparoscopic, closure of fistula, choledeochoplasty, and bilioenteric anastomosis.

Key Word(s): 1. Mirizzi syndrome; 2. management; 3. diagnosis

Biliary Tract

P-268

In vivo endoscopic biliary in-stent photodynamic therapy using polymeric photosensitizer-embedded membrane-covered metal stent in a swine model

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Additional Authors: DON HAENG LEE, YONG WOON SHIN

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Affiliations: *Inha University School of Medicine, Inha University School of Medicine*

Objective: The aim of this study is to estimate the safety, efficacy and photosensitizer stability of endobiliary PDT using PDT-stent in swine model. **Methods:** Single session of endoscopic biliary in-stent PDT was performed with various energy amount of laser after insertion of PDT-stent in the common bile duct (CBD) of twelve swine to determine proper energy level of laser for PDT. Two days later, bile ducts were extracted for pathologic examination. Biliary PDT with 70 J/cm², and cholangiogram were repeated at 2-week intervals over a period of 4 weeks or 8 weeks after PDT-stent insertion in 6 swine. Then the bile ducts and the inserted stent were obtained after two days for pathologic analysis and quantification of fluorescence intensity (FI) for Pheoporbide A (Pheo-A) remained from PDT-stent. **Results:** There was no evidence of bile duct perforation in all animals on follow up cholangiograms after single or repeated biliary PDT.

Repeated PDT caused only surface mucosal necrosis in all animals and the degree of inflammation was constant irrespective of number of PDT session. The FI of Pheo-A from PDT-stent was reduced to 50 and 60% of baseline FI for 100 and 150 J/cm² group, respectively after single session of PDT. After 3 or 5 sessions of PDT with 70 J/cm², the FI of PDT-stents observed to be similar to that of the PDT-stent before laser irradiation. **Conclusion:** Endoscopic biliary PDT using the PDT-stent was safe, effective, and repeatable over a period of 8 weeks for the treatment of cholangiocarcinoma.

Key Word(s): 1. cholangiocarcinoma; 2. photodynamic therapy; 3. swine

Biliary Tract

P-270

Comparison of endoscopic retrograde cholangiopancreatography between elderly patients and very elderly patients.

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Objective: Endoscopic retrograde cholangiopancreatography (ERCP) is widely performed in elderly patients, yet there are few reports of ERCP in very elderly patients aged 85 years or more. This study aims to assess the feasibility and safety of ERCP in very elderly patients. **Methods:** During 2013 and 2014, 48 patients (68 cases) underwent ERCP for cholangitis, choledocholithiasis, or obstructive jaundice at our institute. Patients were divided into an elderly group (60–84 years) and a very elderly group (85–100 years). A standard scope (JF260V, Olympus Medical Systems, Tokyo, Japan) was used for ERCP. For both groups, we retrospectively analyzed procedure times, total amounts of midazolam and pentazocine, past medical history (heart failure, cerebrovascular disease, and respiratory failure), ERCP-related complications (tachycardia, bradycardia, hypotension, hypertension, and hypoxia) and post-ERCP-related complications on the basis of the database of our institution. **Results:** From the database, we collected data on a total of 48 patients (68 cases). The elderly group comprised 26 patients (11 men/15 women, 60–84 years of age, mean age 78) and the very elderly group 22 patients (9 men/13 women, 85–100 years of age, mean age 88.8). In both groups, 10 patients had past medical histories as above. The mean ERCP time was 37.8 minutes in the elderly group and 34.7 minutes in the very elderly group ($p = 0.59$). 3.13 mg and 2.32 mg of midazolam and 14.4 mg and 14.6 mg of pentazocine were administered, respectively. ERCP-related complications were reported in 5 patients (1 tachycardia, 1 bradycardia, 1 hypotension, 2 hypertension) and 7 patients (1 hypotension, 6 hypertension), respectively. There were 2 and 6 post-ERCP-related complications, respectively ($p = 0.09$). There were no statistical differences between the two groups. **Conclusion:** Our results suggest that ERCP for very elderly patients is safe and poses no disadvantages compared with elderly patients.

Key Word(s): 1. ERCP; 2. very elderly patients

Biliary Tract

P-273

Comparison of ercp complication rate between asymptomatic and symptomatic cbd stone patients**Presenting Author:** TAE NYEUN KIM**Additional Authors:** SUNG BUM KIM, KOOK HYUN KIM, KYEONG OK KIM, SI HYUNG LEE, BYUNG IK JANG**Corresponding Author:** TAE NYEUN KIM**Affiliations:** Yeungnam University College of Medicine, Yeungnam University College of Medicine

Objective: 50–55% of CBD stone patients without symptom at present may experience symptoms or complication related to CBD stone in the future. Studies about risk of performing ERCP in asymptomatic CBD stone patients has been scarce. The aim of our study was to compare ERCP complication rate between asymptomatic and symptomatic CBD stone patients. **Methods:** Patients diagnosed as CBD stone and underwent ERCP from Jan 2010 to Dec 2013 were included and their clinical data were collected and analyzed retrospectively. Patients without symptom associated with CBD stone were classified as asymptomatic group and with symptom as symptomatic group. **Results:** Among 323 patients with CBD stone, 306 patients had symptomatic CBD stone and 17 patients, asymptomatic CBD stone. Mean age of asymptomatic and symptomatic group was 68.2 ± 12.9 and 64.7 ± 17.0 , respectively ($p = 0.442$) and male proportion was not significantly different between both groups (64.7% vs 50.3%, $p = 0.248$). There was no difference between two groups in performing precutting, sphincterotomy and endoscopic papillary balloon dilatation. Unintentional injection rate of pancreatic duct was not significantly different between two groups. Mean size of CBD was not significantly different between asymptomatic and symptomatic group (11.4 ± 3.5 vs 10.5 ± 4.7 , $p = 0.165$). Asymptomatic group experienced significantly more post ERCP pancreatitis than symptomatic group (23.5% vs 7.8%, $p = 0.049$). There was no significant difference in post ERCP complications of bleeding, infection and perforation between two groups. **Conclusion:** Performing ERCP for removal of CBD stone in asymptomatic patients showed significantly increased risk of post ERCP pancreatitis.

Key Word(s): 1. endoscopic retrograde cholangiopancreatography complication common bile duct stone

Biliary Tract

P-277

Endoscopic papillary balloon dilatation for the management of bile duct stones in patients with billroth-ii gastrectomy**Presenting Author:** TAE NYEUN KIM**Additional Authors:** KOOK HYUN KIM, KYEONG OK KIM, SI HYUNG LEE, BYUNG IK JANG**Corresponding Author:** TAE NYEUN KIM**Affiliations:** Yeungnam University College of Medicine, Yeungnam University College of Medicine, Yeungnam University College of Medicine, Yeungnam University College of Medicine

Objective: Endoscopic common bile duct stone removal is relatively difficult in patients with a history of Billroth-II gastrectomy and endoscopic sphincterotomy (ES) with conventional sphincterotome may

increase complication risks. The aims of this study was to evaluate the safety and effectiveness of endoscopic papillary large balloon dilation (EPLBD) in patients with B-II gastrectomy. **Methods:** A review of 53 patients with a history of B-II gastrectomy who underwent ERCP for treatment of common duct stones from January 2010 to December 2012 were conducted retrospectively. Patients with hepatobiliary cancer, pancreatic cancer, common bile duct stricture and concomitant pancreatitis were excluded. **Results:** Of 53 patients, 31 patients were enrolled. The median age was 70.2 ± 7.1 years and male to female ratio was 2.9:1. Patients who underwent ES or EPLBD for management of CBD stones were 16 and 15, respectively. Mechanical lithotripsy was performed in 7 patients (4 in ES group, 3 in EPLBD group). The median size of balloon was 11.3 ± 1.4 mm (range 10–15 mm). The median duration of balloon expansion was 33.1 ± 14.0 s (range 20–60 s). The overall stone removal rate was 96.8% (30/31). Overall incidence of post-ERCP pancreatitis was 0%. Post-ERCP bleeding occurred in 1 patient within EPLBD group. No significant difference in the incidence of post-ERCP bleeding was observed between the two groups ($p = 0.48$). Cholangitis was not observed in this study. **Conclusion:** EPLBD seems to be an effective and safe procedure for CBD stone removal in patients with billroth II gastrectomy.

Key Word(s): 1. endoscopic papillary balloon dilatation billroth-II gastrectomy bile duct stone

Poster

P-278

A case of large cell neuroendocrine carcinoma of intrahepatic bile duct**Presenting Author:** HYUN JONG KIM**Additional Authors:** CHOONG YOUNG KIM, HEE JOON KIM, CHOL KYOON CHO, JIN SHICK SEOUNG**Corresponding Author:** HYUN JONG KIM**Affiliations:** Chonnam National University Medical School, Chonnam National University Medical School, Chonnam National University Medical School, Saint Carollo Hospital

Objective: Large cell neuroendocrine carcinoma is a high grade type of neuroendocrine tumor. Neuroendocrine carcinoma of biliary system are extremely rare. Here in, we present a case of large cell neuroendocrine carcinoma of intrahepatic bile duct. **Methods:** A 53-year-old man visited our hospital presenting right upper quadrant pain and jaundice. Abdomen CT and Cholangiogram MRI showed diffuse heterogenous enhancing mass including from common hepatic duct and left distal branch and dilatation of both intrahepatic bile duct. Endoscopic retrograde cholangiopancreatography showed abruptly narrowing in common hepatic duct and irregular narrowing in left intrahepatic bile duct. Biopsy from left intrahepatic bile duct showed reactive atypia. Preoperative diagnosis was thought to be intrahepatic cholangiocarcinoma or klatskin tumor. **Results:** We performed Left hepatectomy, caudate lobectomy, common bile duct resection and routine lymph node dissection. At laparotomy, there were 8 x 2.5 cm size friable polypoid mass from first order branch of left intrahepatic bile duct and distal left intrahepatic bile duct. Microscopic finding revealed large cell neuroendocrine carcinoma type cholangiocarcinoma. The patient discharged 23 days following surgery without any complications. **Conclusion:** Here in, we report a case of large cell neuroendocrine carcinoma of intrahepatic bile duct.

Key Word(s): 1. large cell neuroendocrine carcinoma; intrahepatic bile duct

Biliary Tract

P-279

Lymphoid hyperplasia arising from bile duct and gallbladder simultaneously mimicking cholangiocarcinoma and gallbladder cancer**Presenting Author:** CHOONG YOUNG KIM**Additional Authors:** CHOL KYOON CHO, HEE JOON KIM, HYUN JONG KIM, JIN SHICK SEOUNG**Corresponding Author:** CHOONG YOUNG KIM**Affiliations:** Chonnam National University Medical School, Chonnam National University Medical School, Chonnam National University Medical School, Saint Carollo Hospital

Objective: Lymphoid hyperplasia is a rare benign lymphoproliferative disorder. It can occur in various organs. However, lymphoid hyperplasia arising from extrahepatic bile duct and gallbladder simultaneously is extremely rare. **Methods:** A 72-year-old woman visited hospital with general weakness, dyspepsia and weight loss for 3 months. She had medical history of diabetes mellitus and depressive mood disorder and had been treated for liver abscess ten years ago. On physical examination, there was no icteric sclera and no tenderness in the upper abdomen. Viral hepatitis markers and all tumor markers were within normal limits. Magnetic resonance cholangiopancreatography (MRCP) showed 3 cm length wall thickening and enhancement of suprapancreatic and intrapancreatic CBD, causing mild luminal narrowing and dilatation of upper biliary tract and also showed irregular wall thickening and enhancement of gallbladder body and fundus. **Results:** Under diagnosis of distal CBD cancer and gallbladder cancer, she underwent pylorus-preserving pancreaticoduodenectomy with routine lymph node dissection and s4b and S5 liver wedge resection. In operation finding, there were diffuse nodular sclerosing change from mid CBD to distal CBD and there were diffuse wall thickening of gallbladder body at liver bed side. Based on pathologic finding and immunohistochemical staining, lesion was diagnosed histologically as lymphoid hyperplasia. **Conclusion:** Lymphoid hyperplasia is a rare disease, and preoperative diagnosis is difficult. Although it is benign condition, we should consider surgical excision for this lesion that cannot be excluded for malignancy.

Key Word(s): 1. lymphoid hyperplasia; 2. bile duct; 3. gallbladder

Biliary Tract

P-280

Bile duct adenoma mimicking a klatskin tumor in unusual location : a case report**Presenting Author:** CHOONG YOUNG KIM**Additional Authors:** CHOL KYOON CHO, HEE JOON KIM, HYUN JONG KIM, JIN SHICK SEOUNG**Corresponding Author:** CHOONG YOUNG KIM**Affiliations:** Chonnam National University Medical School, Chonnam National University Medical School, Chonnam National University Medical School, Saint Carollo Hospital

Objective: Adenoma of bile duct is an extremely rare benign tumor. It can be found mostly in the ampulla or in close proximity to the Vaterian system, and the common bile duct(CBD). It can mimic malignant extrahepatic tumors, because preoperative differentiation between adenomas and malignant tumors is very difficult. **Methods:** A 75-year-old man who presented epigastric pain and indigestion for 6 months was referred to our hospital. He had no past medical history and no family history. On physical examination, there were tenderness on epigastric area. Abdominal computed tomography (CT) scan and magnetic resonance imaging (MRI) scan demonstrated 3 cm sized soft tissue tumor at bifurcation of common hepatic duct and left intrahepatic bile duct (IHBD) obstruction with

marked IHBD dilatation. Based on laboratory test and imaging investigations, preoperative diagnosis was thought be hilar cholangiocarcinoma with left intrahepatic bile duct invasion. **Results:** Extended left hepatectomy, caudate lobectomy, cholecystectomy, CBD resection was performed. At laparotomy, there was 1.5 cm sized polypoid mass at left IHBD bifurcation and there was no vascular invasion. Pathologic examination of the resected specimen showed tubulopapillary adenoma and there was no atypia and no dysplasia. The patient tolerated the procedure well and was discharge 3 weeks following surgery without any problems. **Conclusion:** Bile duct adenoma is an rare benign tumor, especially rising at hepatic duct. It should be considered different diagnosis of hilar cholangiocarcinoma, and it is important to make an effective plan for treatment.

Key Word(s): 1. bile duct adenoma; 2. unusual location

Biliary Tract

P-281

Analysis for enhancement pattern of diffuse gallbladder wall thickening: is it helpful to differentiate between tumors and other benign diseases of gb?**Presenting Author:** JU HWAN KIM**Additional Authors:** KWANG HYUN KO, SUNG PYO HONG, SANG WOO HAN, SUK PYO SHIN**Corresponding Author:** JUHWAN KIM**Affiliations:** Bundang Cha Hospital, School of Medicine, Cha Univ, Bundang Cha Hospital, School of Medicine, Cha Univ, Bundang Cha Hospital, School of Medicine, Cha Univ, Bundang Cha Hospital, School of Medicine, Cha Univ

Objective: Some studies suggested analyzing the pattern of gallbladder wall enhancement is helpful to characterize a diffuse gallbladder wall thickening as benign or malignant. The objective of our study is to define the pattern of GB wall thickening for classifying the diagnosis. **Methods:** Abdominal computed tomography images and pathologic results were obtained from 60 patients who underwent cholecystectomy due to diffuse gallbladder wall thickening were reviewed retrospectively. Enhancement patterns were divided into 5 types. We compared CT findings with the pathologic results and categorized pathologic findings as inflammatory lesion and tumors. Tumors include adenomyoma, adenomyomatosis, and adenocarcinoma. **Results:** Enhancement was classified as one of the following five patterns. Type 1 pattern was a heterogeneously enhancing one-layer gallbladder wall; type 2, strongly enhancing thick inner layer and weakly enhancing outer layer; type 3, borderline enhancement and thickness of the inner layer with small cystic spaces and non-enhancing outer layer; type 4, weakly enhancing thin inner layer and non-enhancing thin outer layer; type 5, weakly enhancing thin inner layer and non-enhancing thick outer layer. Type 1 and 3 showed tendency for tumorous condition but no statistical significance between gallbladder wall enhancement patterns and pathologic causes of diffuse gallbladder wall thickening was noted. Type;inflammatory lesion;tumor: Type 1:0;3, Type 2:5;1, Type 3:0;2, Type 4:25;2, Type 5:22;0. **Conclusion:** Analyzing the enhancement pattern of a diffuse gallbladder wall thickening on CT may helpful in distinguishing gallbladder tumor from benign inflammatory lesion. The study with more patients is needed to confirm this result.

Key Word(s): 1. gallbladder; 2. wall thickening; 3. GB wall; 4. enhancement

Biliary Tract

P-282

Do balloons larger than 15 mm in size increase the risk of adverse events in endoscopic large balloon dilation?**Presenting Author:** JIN HONG KIM**Additional Authors:** MIN JAE YANG, GIL HO LEE**Corresponding Author:** JIN HONG KIM**Affiliations:** Ajou University Hospital, Ajou University Hospital

Objective: Endoscopic large balloon dilation (EPLBD) using large-diameter balloons (12–20 mm) was introduced to facilitate the removal of large bile duct stones and minimize the need for endoscopic mechanical lithotripsy (EML). Limited data exist on the maximal balloon size that would minimize fatal adverse events associated with EPLBD. In the current study, we aimed to assess the safety profiles of EPLBD according to balloon size and to identify the proper maximal size of a large balloon for treating large bile duct stones. **Methods:** From March 2004 to July 2013, we retrospectively reviewed the ERCP database system at our center. There were 114 patients in the EPLBD with endoscopic biliary sphincterotomy (EST) group and 165 patients in the EPLBD without EST group. In the EPLBD with EST group, there were 49 patients in the EPLBD with a larger balloon (>15 mm) group and 65 patients in the EPLBD with a smaller balloon (12–15 mm) group. **Results:** Although no significant difference was found between the larger and smaller balloon groups in terms of adverse events, there was a trend toward the larger balloon group having a higher rate of severe to fatal adverse events. In the EPLBD without EST group, there were 36 patients in the EPLBD with a larger balloon (>15 mm) group and 129 patients in the EPLBD with a smaller balloon (12–15 mm) group. The safety variables did not differ significantly between the two groups, and no severe to fatal adverse event occurred in either group. **Conclusion:** Our study shows that EPLBD with a larger balloon (>15 mm) tends to have more risk of severe to fatal adverse events compared with a smaller balloon (12–15 mm) for removing large bile duct stones. Large multicenter trials will be needed to reveal the statistical relationships between adverse events and balloon size.

Key Word(s): 1. endoscopic large balloon dilation (EPLBD); 2. adverse events; 3. balloon size

Biliary Tract

P-283

Hedgehog pathway inhibition radiosensitizes cholangiocarcinomas**Presenting Author:** YOUN JOO KIM**Additional Authors:** JIN SUN SHIN, KI YOUNG YANG**Corresponding Author:** YOUNJOO KIM**Affiliations:** Korea Cancer Center Hospital, Korea Cancer Center Hospital

Objective: Despite improvements in chemoradiation, local control remains a major clinical problem in locally advanced or R1 resected cholangiocarcinoma (CC). The Hedgehog (HH) pathway has been implicated in tumor recurrence by promoting survival of tumorigenic precursors and through effects on tumor-associated stroma. **Methods:** We evaluated the radiosensitizing effects of a targeted Hedgehog inhibitor (Cyclopamine) or SMO RNA interference on proliferation, migration of cholangiocarcinoma cell lines in vitro. In vivo nude mice experiments were conducted using two groups: HuCCT-1-single implant xenograft (SX) and co-implant xenograft (CX) with HuCCT-1 and Lx-2. **Results:** In 4 CC cell lines in vitro, cyclopamine showed little or no effect on radiosensitivity. By contrast, in co-cultured with Lx-2, LI 90 (human hepatic stellate cell lines), HH signal inhibition increased cancer cell suppression effect of radiation. In the human tumor xenograft models, cyclo pamine enhanced radiation efficacy and delayed tumor growth in CX, but not in SX. Cyclopamine treatment decreased CC cell proliferation, suppressed microvessel density, and increased apoptosis in the CX group, but not in the SX group. **Conclusion:** Targeted Hedgehog pathway inhibition can increase in vivo radiation efficacy in cholangiocarcinoma preclinical models. This effect is associated with pathway suppression in tumor-stroma interaction. These data support clinical testing of Hedgehog inhibitors as a component of multimodality therapy for locally advanced cholangiocarcinoma.

Key Word(s): 1. hedgehog; 2. cholangiocarcinoma; 3. radiation

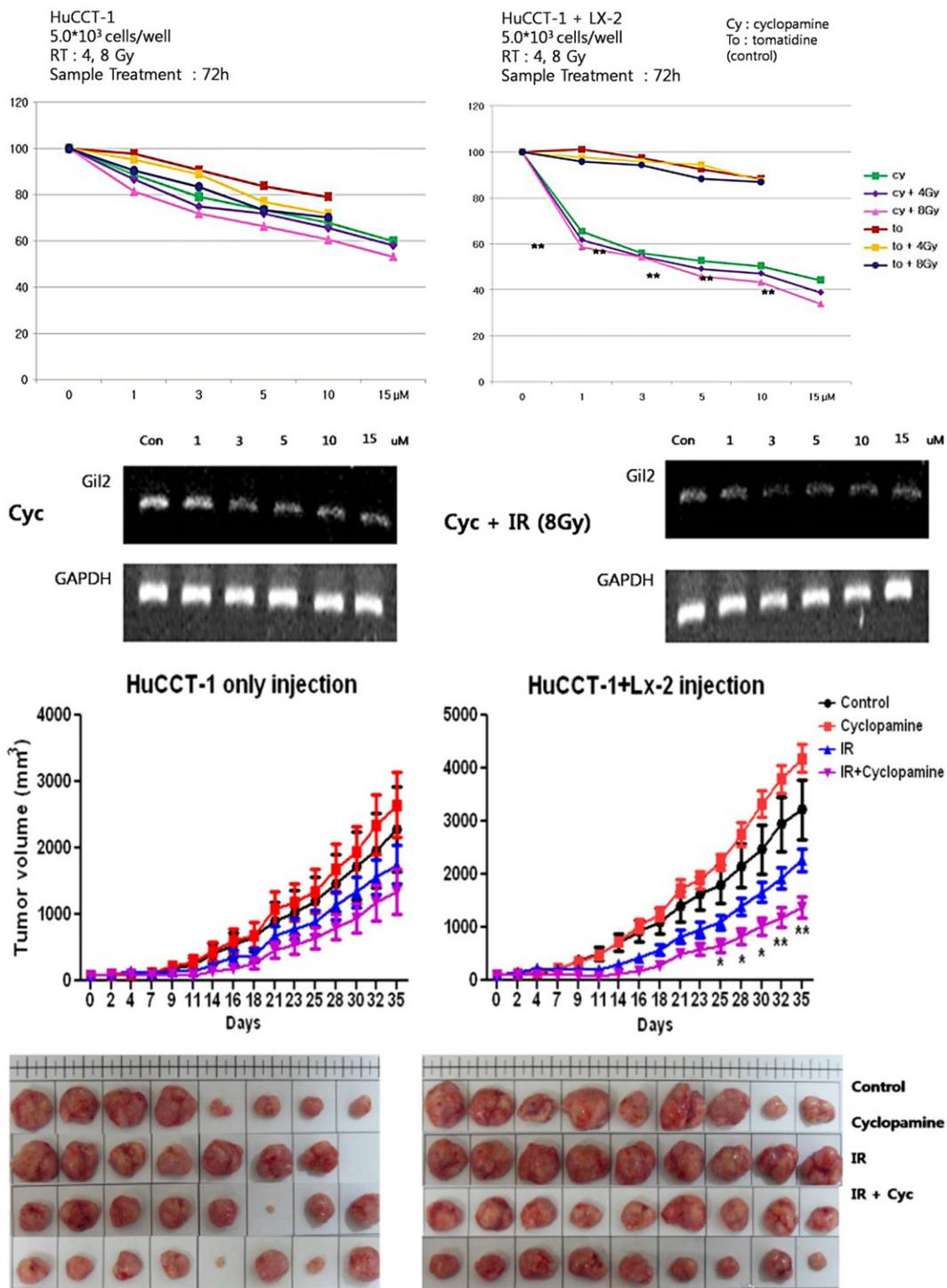


Figure 1

Biliary Tract

P-284

Endoscopic-radiologic rendezvous; is it still valid for failed conventional ercp**Presenting Author:** JIN HONG KIM**Additional Authors:** MIN JAE YANG**Corresponding Author:** JIN HONG KIM**Affiliations:** Ajou University Hospital

Objective: The clinical application of endoscopic-radiologic rendezvous technique has been underestimated in clinical practice, as PTBD related adverse events are emphasized and novel endoscopic ultrasound (EUS)-guided biliary intervention has emerged. The aim of the present study is to analyze the technical advantage of the endoscopic-radiologic rendezvous, and evaluate the validity and sustainability of this technique. **Methods:** From April 2003 to August 2013, we retrospectively enrolled 31 cases of endoscopic-radiologic rendezvous as a rescue for failed conventional ERC. We classified the endoscopic-radiologic rendezvous into 6 different subtypes, and analyzed the technical characteristic and usefulness of each technique. Overall technical outcomes and safety profiles were evaluated. **Results:** The overall technical success rate of endoscopic-radiologic rendezvous was 91.2% (28/31). In 10 patients with approach failure, successful approach was achieved in 7 (70.0%) through the unique approach technique using the traction force produced by pulling antegrade guidewire via percutaneous route. Biliary deep cannulation was achieved in all cases with selective cannulation failure or guidewire passage failure, with the aid of 6 different cannulation techniques, 4 modified techniques of which are difficult or impossible to be applicable in the EUS-guided rendezvous. No adverse event associated with percutaneous transhepatic biliary drainage was encountered. **Conclusion:** The endoscopic-radiologic rendezvous is still valid and sustainable as an alternative rescue modality for the failed conventional ERC even in the era of EUS-guided biliary intervention.

Key Word(s): 1. rendezvous ERCP

Biliary Tract

P-285

Prediction of post-ercp pancreatitis by 4-hour post-ercp serum amylase and lipase level**Presenting Author:** JIN HONG KIM**Additional Authors:** MIN JAE YANG**Corresponding Author:** JIN HONG KIM**Affiliations:** Ajou University Hospital

Objective: Early prediction of possible post-ERCP pancreatitis (PEP) could allow for an earlier safe discharge of a patient on the same day after ERCP. The aim of this study was to investigate a predictive cut-off value of 4-hour post-ERCP serum amylase and lipase levels for the PEP. **Methods:** In patients who underwent ERCP procedures and had tests for serum amylase and lipase levels of 4-hour post-ERCP and the next morning at Ajou Medical Center from January 2012 to August 2013, patient demographics, the procedure reasons, performance of pancreatograms, serum amylase and lipase levels were retrospectively evaluated. **Results:** PEP occurred in 16 (3.1%) after 516 ERCP procedures. Its severity was mild in 4 (25%), moderate in 9 (56.3%), and severe in 3 (18.8%). The mean 4-hour amylase level was significantly higher in patients with PEP, compared with those without PEP (965 U/L vs. 158 U/L, $P = 0.001$). The sensitivity, specificity and negative predictive value (NPV) of a 4-hour post-ERCP amylase level with a cut-off value of 2.5 times of its normal upper limit (290 U/L) was 75.0%, 88.0% and 99.1%, respectively. The sensitivity, specificity and negative predictive value (NPV) of a 4-hour post-ERCP lipase level with a cut-off value of 8

times of its normal upper limit (480 U/L) was 75.0%, 91.3% and 99.1%, respectively. The patient group undergoing pancreatogram revealed high incidence of post-ERCP pancreatitis, but no significant difference in the 4-hour post-ERCP serum amylase and lipase level, compared to its counterpart group. **Conclusion:** The 4-hour post-ERCP serum amylase level and lipase level with cut-off value of 2.5 times and 8 times of their normal upper limit have so far proven to be useful predictive values for an earlier safe discharge of a patient on the same day after ERCP.

Key Word(s): 1. Post-ERCP pancreatitis; 2. amylase

Biliary Tract

P-286

Direct operator feedback reduces post ercp pancreatitis**Presenting Author:** JIANYI CALVIN KOH**Additional Authors:** HARTONO JUANDA LEO, RUTER MARALIT, BENJAMIN CHERNG HANN YIP, LI LIN LIM, KHEK YU HO, BHAVESH KISHOR DOSHI**Corresponding Author:** JIANYI CALVIN KOH**Affiliations:** National University Hospital, Singapore, National University Hospital Singapore, National University Hospital, Singapore, National University Hospital, Singapore, National University Hospital Singapore, National University Hospital Singapore

Objective: Endoscopic Retrograde Cholangiopancreatography (ERCP) has been associated with a wide range of complications with post ERCP pancreatitis ranging 1.6–15%. Clinical audit is typically used to evaluate the outcomes of a clinical service for quality improvement. There is no published evidence however, that ERCP audit improves either outcomes or complication rates. The aim of this study is to compare ERCP success and complication rates before and after implementation of direct operator feedback, in prospectively collected audit outcomes. **Methods:** ERCP audit has been an ongoing practices in our institution, however, since the start of 2013, direct operator feedback has been instituted so operators are able to review their casemix and complications in comparison with the rest of the hospital. The ERCP audit data over 16 months since the start of 2013 when this direct operator feedback was implemented was compared to the corresponding data from the preceding 12 months in 2012. Patient demographics, clinical indications, complication incidences were collated and compared. **Results:** A total of 593 cases were performed since the start of 2013 compared with 429 in 2012. The overall success rate was similar at 92% compared with 94% from the preceding year ($P = 0.12$). Although the incidence of bleeding and perforation were comparable in 2012 compared to after 2013 (bleeding 1.3% vs 1.4%; perforation 0.9% vs 0.3%), the incidence of post ERCP pancreatitis demonstrated a significant decrease from 4.0% to 1.8% ($p = 0.041$). There was no significant difference in rates of pancreatic duct cannulation, pancreatic duct stenting, indication casemix, or the use of biliary sphincterotomy between the 2 groups. **Conclusion:** While ERCP audit is routine in most units to review clinical outcomes, to our knowledge, this is the first reported case of direct observer feedback demonstrating a reduction in the incidence of post ERCP pancreatitis.

Key Word(s): 1. ERCP; 2. audit; 3. pancreatitis; 4. feedback

Biliary Tract

P-287

What can histopathology say about acute appendicitis?**Presenting Author:** DEWA PAKSHAGE CHULA
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SIVASURIYA SIVAGANESH, ISHAN DE ZOYSA**Corresponding Author:** PAKSHAGE CHULA KANISHKA
ANANDA LAL DEWA**Affiliations:** *National Hospital of Sri Lanka, National
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Objective: A cute appendicitis is one of the commonest surgical problems encountered in clinical practice. Pathological evaluation is the gold standard to diagnose acute appendicitis. Routine histopathological evaluation is performed to confirm the diagnosis in acute appendicitis and it may reveal other important pathological details. The aim of this study is to describe the pathology of clinically diagnosed acute appendicitis.

Methods: Pathology reports of appendectomies in clinically diagnosed acute appendicitis, done over 2 years at the university surgical unit of National Hospital of Sri Lanka were analyzed. Histopathological evidence of acute inflammation and luminal obstruction were evaluated to find the etiopathogenic relationship. **Results:** 125 patients were included. 46% appendices were macroscopically normal but 79% of them were microscopically pathological. 90% appendices were pathological and microscopic evidence of acute inflammation was found in 82% of them. 12.5% and 3.5% of them had lymphoid hyperplasia and chronic inflammation respectively without any pathological evidence of acute appendicitis. Luminal obstruction was seen in 30% of appendices and 49% of them were histologically normal. 49% appendices with luminal obstruction had microscopic evidence of acute inflammation. Faecolith (49%), lymphoid hyperplasia (38%), fibrosis (8%), parasites (3%) and endometrial tissue (3%) were found obstructing the lumen. 78% of appendices with faecoliths were pathological and 93% of appendices with lymphoid hyperplasia had no pathological evidence of acute appendicitis. **Conclusion:** Clinical assessment is fairly accurate in diagnosis of acute appendicitis. Luminal obstruction may not be a significant process in pathogenesis, though obstruction with faecolith can commonly cause acute appendicitis. Luminal obstruction (mostly by lymphoid hyperplasia) without acute inflammation may be a reason for clinical presentation of acute appendicitis. Neoplasia is not a commonly encountered pathology in clinically diagnosed acute appendicitis.

Key Word(s): 1. gall bladder; 2. histopathology

Biliary Tract

P-288

Rationale of routine histopathological analysis of gall bladder in symptomatic gallstone disease**Presenting Author:** DEWA PAKSHAGE CHULA
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Hospital of Sri Lanka, National Hospital of Sri Lanka*

Objective: Histopathological analysis of the gallbladder in cholecystectomy for symptomatic gallstone disease is routinely carried out in most of the surgical units, though its value is debated. Expected pathology in

symptomatic gallstone disease is chronic cholecystitis which does not influence post-operative management. Incidentally detected neoplastic pathologies need further post-operative evaluation and management. The objective of this study is to describe the pathology of gallbladder after cholecystectomy for symptomatic gallstone disease to find out the value of routine pathological assessment. **Methods:** Pathology reports of all cholecystectomies done for symptomatic gallstone disease, in the university surgical unit of the national hospital of Sri Lanka over 5 years were analyzed. **Results:** There were 220 pathology reports to include in the study. 32% and 68% were males and females respectively. 31% were females between 30 to 50 years of age. Chronic cholecystitis, acute on chronic cholecystitis and xanthogranulomatous cholecystitis were found in 89.5%, 5% and 2% patients respectively. Normal gallbladder, gangrenous cholecystitis, follicular cholecystitis were seen in three patients. Two patients had chronic cholecystitis with gastric metaplasia and one patient had chronic cholecystitis with focal high grade dysplasia. Adenocarcinoma of the gallbladder was encountered in 2 patients (0.9%) and they were in T1 and T2 stage of the disease. **Conclusion:** Chronic cholecystitis due to gallstone is the commonest pathology identified in patients with symptomatic gallstone disease. Incidental finding of neoplastic pathologies (malignant or premalignant) of the gallbladder is a rarity, but it is detected at an early stage of the disease which carry a good prognosis following further surgical interventions.

Key Word(s): 1. gall bladder; 2. histopathology

Biliary Tract

P-289

Effect of rowachol on prevention of postcholecystectomy syndrome after laparoscopic cholecystectomy: prospective multicenter randomized controlled trial**Presenting Author:** JUN KYU LEE**Additional Authors:** IN WOONG HAN, KYOUNG HEE
HONG**Corresponding Author:** JUN KYU LEE**Affiliations:** *Dongguk University Ilsan Hospital, Dongguk
University Ilsan Hospital*

Objective: Postcholecystectomy syndrome (PCS) is characterized by abdominal pain following gallbladder removal. The purpose of this trial is to determine whether Rowachol will be useful in the prevention of PCS and in symptoms improvement after laparoscopic cholecystectomy (LC). **Methods:** From 2012 to 2013, this prospective, randomized, single blind, placebo-controlled study had balanced random assignment Rowachol and placebo in Dongguk University Ilsan Hospital, and Chung-Ang University Hospital. A total of 138 patients, with various gallbladder diseases after LC, were enrolled and randomized. Rowachol or placebo 100 mg three times daily was given to each group of patients for 3 months. Outcomes were assessed in visit over 3 months after surgery with right upper quadrant (RUQ) pain on European Organization for Research and Treatment of Cancer QLQ-C30. **Results:** There are no differences in aspect of demographics, preoperative clinical findings, and surgical findings between each group. Incidence of PCS in placebo group (n = 9, 14.3%) was higher than that in Rowachol group (n = 3, 4.7%) with statistically marginal significance (p = 0.089). After risk factor analysis for PCS, the patients with PCS showed a higher difficulty score to perform LC, more frequent pathology with acute cholecystitis, and absence of postoperative Rowachol treatment compared to those without PCS. Among these, higher difficulty score to perform LC (HR = 5.780, 95% CI 1.355- 24.390, p = 0.018), and Absence of postoperative Rowachol treatment (HR = 2.537, 95% CI 1.102- 10.386, p = 0.048) were identified independent risk factors to develop PCS after multivariate analysis. **Conclusion:** Rowachol can be beneficial for prevention of PCS and symptoms improvement after LC.

Key Word(s): 1. postcholecystectomy syndrome; 2. laparoscopic cholecystectomy; 3. gallstone

Biliary Tract

P-290

Intraductal ultrasonography without fluoroscopy in patients with extrahepatic biliary diseases

Presenting Author: SUNG UK LIM

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Objective: Background and Aim: Intraductal ultrasonography (IDUS) has been performed as an adjunct to endoscopic retrograde cholangiography (ERC) under fluoroscopy. If IDUS is practical without fluoroscopy, IDUS could be performed as a fundamental imaging method and replace the fluoroscopy for ERC. The aim of this study was to evaluate the feasibility of IDUS without fluoroscopy in patients with various extrahepatic biliary diseases. **Methods:** A total of 105 patients were enrolled in this study. IDUS scanning was performed while inserting an IDUS probe from the papilla of Vater to the confluent portion of the common hepatic duct over the guidewire without fluoroscopy. The technical success rate and procedure-related complications were evaluated retrospectively. **Results:** The mean age of the patients was 66.5 years, and 50 (47.6%) patients were male. Wire-guided IDUS without fluoroscopy was successfully performed in all patients. The IDUS diagnoses were choledocholithiasis (73, 69.5%), benign biliary stricture (11, 10.5%), biliary pancreatitis (9, 8.6%), bile duct cancer (5, 4.8%), pancreatic cancer (1, 1.0%) and others (6, 5.9%). According to the IDUS findings, 91 patients (86.7%) underwent therapeutic ERC procedures. No significant complications occurred including bleeding, perforation, or severe pancreatitis. **Conclusion:** IDUS without fluoroscopy was feasible and safe in patients with various extrahepatic biliary diseases. IDUS could be performed as a fundamental imaging method and replace the fluoroscopy for ERC. IDUS can open a new era of ERC without radiation.

Key Word(s): 1. intraductal ultrasonography; 2. fluoroscopy; 3. endoscopic retrograde cholangiography

Biliary Tract

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The effectiveness and safety of endoscopic papillary large balloon dilation for aged people

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Objective: We often have opportunities to treat multiple choledocholithiasis and large choledocholithiasis. We have previously treated these conditions with Endoscopic Mechanical Lithotripsy (EML) in our hospital, but multiple procedures were often required. Recently, the application of Endoscopic Papillary Large Balloon Dilation (EPLBD) together with endoscopic sphincterotomy has been reported for the treatment of these conditions. We compared EPLBD cases in patients over 80 years old with those in patients under 80 years old and examined the effectiveness and safety of EPLBD for aged people. **Methods:** We applied EPLBD in our hospital to cases with a major axis stone of over 15 mm or more than 3 stones. We examined 13 EPLBD cases for patients over 80 years old (Group A) and 10 cases for patients under 80 years old in the period from April 2012 to February 2013. The mean ages were 86 ± 5.0 y.o. (Group A) and 74 ± 4.8 y.o. (Group B). The mean major axes of the biliary stone were 20.3 ± 6.7 mm (Group A) and 16.7 ± 3.6 mm (Group B). The mean numbers of biliary stones were 5.0 ± 3.2 (Group A) and 4.2 ± 2.0 mm (Group B). **Results:** The mean procedure times were 42 ± 17 minutes (Group A) and 57 ± 32 minutes (Group B). The rates of procedural accidents were 1/13 (Group A) and 2/10 (Group B). The rates of the complete clearance of biliary stones in one procedure were 10/13 (Group A) and 9/10 (Group B). **Conclusion:** EPLBD is a safe and effective method in the treatment of aged patients.

Key Word(s): 1. EPLBD

Biliary Tract

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Therapeutic ercp for common bile duct stones is safe and effective even in the elderly**Presenting Author:** TOSHIHIRO NIIKURA**Additional Authors:** TAKAYUKI KATO, SHIGERU KOYAMA, NOBORU MISAWA, YUTARO ISHIKAWA, MINEO KANEZAKI, RYOJI SUZUKI, TETSURO FUJII, FUMITAKE JONO, KEIKO AKIMOTO, YUMIKO HOJO, NOBUTAKA FUJISAWA, KENSUKE KUBOTA, ATSUSHI NAKAJIMA**Corresponding Author:** TOSHIHIRO NIIKURA**Affiliations:** Tokyo Metropolitan Hiroo Hospital, Yokohama City University, Yokohama City University

Objective: Therapeutic ERCP is now the first-line therapy for common bile duct (CBD) stones. Opportunities for endoscopic therapy in elderly patients are increasing, under rapidly aging society. The aim of this study was to evaluate the safety and effectiveness of therapeutic ERCP for CBD stones in elderly patients. **Methods:** One hundred cases of CBD stones treated by endoscopic therapy at Tokyo Metropolitan Hiroo Hospital between April 2012 and October 2013 (mean age, 78.5 years) were reviewed. Endoscopic findings and clinical factors were identified retrospectively from medical records. We evaluated patient characteristics, complications and outcomes, and compared groups less than 80 years old (younger group, n = 53) and 80 years old and more (elderly group, n = 47). **Results:** In terms of patient characteristics, younger group had more cases with gallbladder stones (P = 0.004), elderly group showed greater diameter of the CBD (P), greater maximum diameter (P = 0.003) and more numbers (P = 0.015) of the CBD stones. In terms of complications, more cases of post-ERCP pancreatitis were seen in younger group (P = 0.01). No significant differences in bleeding, perforation, or aspiration pneumonia were seen between the two groups. In outcomes, with the exception of more stone lithotomy in elderly group (P = 0.02), success rates of complete stone removal were above 90% in both groups, showing no significant difference. **Conclusion:** Therapeutic ERCP for CBD stones has been considered more difficult in elderly patients due to patient characteristics. However, complications and outcomes for patients 80 years old and more were not markedly inferior to those for patients less than 80 years old in this study. In cases of CBD stones, therapeutic ERCP appears sufficiently safe and effective in elderly patients, even in octogenarians, and active and careful operation can be recommended.

Key Word(s): 1. ERCP; 2. elderly

Biliary Tract

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Risk factors for gallstone formation in patients who underwent gastrectomy due to gastric cancer**Presenting Author:** KYU HYUN PAIK**Additional Authors:** HYUNG WOO KIM, JONG CHAN LEE, YOON SUK LEE, JIN HYEOK HWANG, SANG HOON AHN, DO JOONG PARK, HYUNG HO KIM, JAIHWAN KIM**Corresponding Author:** KYU-HYUN PAIK**Affiliations:** Seoul National University Bundang Hospital, Seoul National University Bundang Hospital

Objective: Previous studies reported increased incidence of gallstone formation after gastrectomy. However, there is a controversy about risk factors of gallstones and prophylactic cholecystectomy. **Methods:** From June 2003 to December 2008, we identified 1,527 patients who underwent gastrectomy due to gastric cancer but had no gallstones before surgery. Medical records and radiological images of these patients were retrospectively reviewed. Gallstones were assessed by computerized tomography or ultrasound examination that as periodically carried out after surgery. **Results:** Male were 1,015 (66.5%) and median age were 59.0 years old. Median follow-up periods were 47.3 months. Within follow-up periods, gallstone formations occurred in 108 of 1,527 (7.1%) patients. Cumulative gallstone formation occurred in 37 (34.3%), 56 (51.9%), and 90 (83.3%) patients within 1, 2 and 5 years after surgery. On univariate Cox regression analysis, age (HR 1.03; 95% CI, 1.01–1.05), male sex (HR 2.18; 95% CI, 1.35–3.51), postoperative body mass index <23 kg/m² (HR 1.54; 95% CI, 1.05–2.26), and subtotal gastrectomy with Billroth II anastomosis or total gastrectomy (HR 1.60 or 2.41; 95% CI, 1.02–2.52 or 1.51–3.86) were associated with gallstone formation. On multivariable Cox regression analysis, age (HR 1.03; 95% CI, 1.01–1.05), male sex (HR 1.98; 95% CI, 1.23–3.21), postoperative body mass index <23 kg/m² (HR 1.54; 95% CI, 1.05–2.26), and total gastrectomy (HR 2.27; 95% CI, 1.41–3.65) remained significantly associated with gallstone formation. Only nine (0.6%) patients experienced symptomatic cholecystitis and there was no difference according to variables. **Conclusion:** The risk of gallstone formation increased according to age, male sex, postoperative decreased body mass index (<23 kg/m²), and total gastrectomy. Unlike previous studies that documented gallstones mostly occur within first two years after gastrectomy, gallstones were found even after 2 years of surgery. Considering lower risk of cholecystitis after gastrectomy, prophylactic cholecystectomy should not be recommended.

Key Word(s): 1. gastric cancer; 2. gastrectomy; 3. gallstone; 4. cholecystitis

Biliary Tract

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The risk factor of spontaneous hemobilia after liver transplantation**Presenting Author:** TAE YOUNG PARK**Additional Authors:** SUNG KOO LEE, JIN SEOK PARK, DONGWOOK OH, TAE JUNE SONG, DO HYUN PARK, SANG SOO LEE, DONG WAN SEO, MYUNG HWAN KIM**Corresponding Author:** TAE YOUNG PARK**Affiliations:** Asan Medical Center, Asan Medical Center

Objective: Biliary complications are major cause of morbidity in liver transplantation (LT) patients. Among various LT-related complications, spontaneous hemobilia is infrequent, but can lead to graft dysfunction such as obstructive jaundice and cholangitis by clots. The etiology and mechanism of spontaneous hemobilia after LT has not been well elucidated. The aim of this retrospective study is to assess risk factor of spontaneous hemobilia after LT **Methods:** LT patients with endoscopically confirmed hemobilia without history of liver biopsy from January 2006 to April 2014 were enrolled to case group (n = 33). 1:2 age and sex matched LT patients without hemobilia were enrolled to control group (n = 66). To evaluate risk factor of spontaneous hemobilia, clinical data were collected and logistic regression analysis was performed. **Results:** Thirty three patients in case group (male 24, 72.7%; mean age, 52.4 ± 8.7 years) and 66 patients in control group (male 48, 72.7%; mean age, 52.2 ± 8.5 years) were analyzed. There was no statistically significant difference in indication of LT, child-pugh class, MELD (Model for end-stage liver disease) score, UNOS (United network for organ-sharing) liver status, laboratory findings including platelet, INR and aPTT, method of liver transplantation and biliary anastomosis, operative time and operative findings between the two groups. In the univariate analysis, fulminant hepatic failure (odds ratio [OR] 5.714, 95% confidence interval [CI] 1.045–31.245, p = 0.027), life expectancy less than 7 days according to UNOS liver status classification (status 1 and 2a) (OR 2.97, 95% CI 0.883–8.242, p = 0.074), history of recent hemodialysis (OR 3.129, 95% CI 2.340–4.183, p = 0.043), recipient bile duct opening number of more than 2 (OR 5.208, 95% CI 1.721–15.761, p = 0.002) were significant (p < 0.1). In the multivariate analysis, recipient bile duct opening number of more than 2 was statistically significant risk factor (OR 5.208, 95% CI 1.721–15.761, p = 0.003). **Conclusion:** Recipient bile duct opening number was associated with spontaneous hemobilia after LT. Further studies are required in order to clarify the role of recipient bile duct opening number in spontaneous hemobilia in LT patients.

Key Word(s): 1. liver transplantation; 2. biliary complication; 3. spontaneous hemobilia; 4. risk factor

Biliary Tract

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Intraductal placement of modified fully covered metallic stent for distal malignant biliary obstruction**Presenting Author:** SOO KYUNG PARK**Additional Authors:** JONG HO MOON, HYUN JONG CHOI, YUN NAH LEE, TAE HOON LEE, SANG WOO CHA, YOUNG DEOK CHO, SANG HEUM PARK, SUN JOO KIM**Corresponding Author:** SOO-KYUNG PARK**Affiliations:** Soonchunhyang University School of Medicine, Soonchunhyang University School of Medicine

Objective: Covered self-expandable metallic stent (SEMS) may improve stent patency but have the risk of migration in comparison with uncovered stent in patients with distal malignant biliary obstruction. Intraductal placement above the papillary orifice of SEMS may prevent duodeno-biliary reflux after stenting. This study was performed to evaluate the efficacy of modified fully covered SEMS in patients with distal malignant biliary obstruction. **Methods:** Total 55 patients with distal malignant biliary obstruction and obstructive jaundice were enrolled in this study. The modified fully covered SEMS (12 mm in diameter) has center portion of smaller diameter (8 mm) and long lasso without flare in both ends. **Results:** Causes of biliary obstruction were 27 common bile duct cancers, 21 pancreatic cancers, 5 gallbladder cancers and 2 metastatic cancers. Intraductal stenting above the papillary orifice was performed in 83.6% (46/55). Early complication rate was 5.5% (3/55, 3 mild pancreatitis). Clinical improvement of obstructive jaundice was achieved in all enrolled patients. 11 patients with operability underwent surgical resection after stenting. No stent migration or obstruction was occurred until operation. No stent migration was occurred in inoperable patients. Stent obstruction in inoperable patients was developed in 15.9% (7/44) during follow up period. **Conclusion:** The modified fully covered SEMS may be useful to prevent stent migration in patients with distal malignant biliary obstruction. Long-term follow up and prospective comparative studies were demanded.

Key Word(s): 1. distal malignant biliary obstruction; 2. covered self-expandable metallic stent

Biliary Tract

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Repetitive endoscopic revision for high-grade malignant hilar biliary strictures previously managed by bilateral stent-in-stent placement with cross-wired metallic stents**Presenting Author:** SOO KYUNG PARK**Additional Authors:** JONG HO MOON, HYUN JONG CHOI, YUN NAH LEE, TAE HOON LEE, SANG WOO CHA, YOUNG DEOK CHO, SANG HEUM PARK, SUN JOO KIM**Corresponding Author:** SOO-KYUNG PARK**Affiliations:** Soonchunhyang University School of Medicine, Soonchunhyang University School of Medicine

Objective: Endoscopic bilateral metallic stenting has been introduced as a feasible and effective palliative modality in patients with inoperable hilar malignant biliary strictures (MBS). However, repetitive endoscopic revision of occluded bilateral metallic stents may be challenging. The aim of this study was to evaluate the feasibility and efficacy of repetitive endoscopic revision after first endoscopic revision for hilar MBS previously managed by bilateral stent-in-stent placement with cross-wired metallic stents. **Methods:** Total 6 patients (5 cholangiocarcinoma and one gallbladder cancer) who had previously managed by bilateral stent-in-stent placement with cross-wired metallic stents (BONASTENT-M Hilar, Standard Sci Tech., Seoul, Korea) were required repetitive biliary reintervention because of stent occlusion after first endoscopic revision during follow up. **Results:** Total 19 repetitive endoscopic revision were performed. The mean number of repetitive endoscopic revision for each patient was 3.2 (range 1–8). Technical and clinical success rate of repetitive endoscopic revision after first endoscopic revision was 100.0% (19/19) and 78.9% (15/19), respectively. Bilateral revision was performed in 8 (42.1%) endoscopic sessions. Early and late complication rate was 15.8% (3/19, cholangitis; 1, pancreatitis; 2) and 21.1% (4/19, liver abscess; 4), respectively. And, stent occlusion rate was 68.4% (13/19). Mean stent patency period was 75 days (20–265), and became shorter than when first stenting (216 days, 43–481) and first revision (126 days, 34–316) ($p = 0.006$). **Conclusion:** Repetitive endoscopic revision for hilar MBS previously managed by bilateral metallic stenting was feasible. Cross-wired metallic stents for hilar MBS may facilitate repetitive endoscopic revision after stent occlusion.

Key Word(s): 1. Hilar malignant biliary stricture; 2. bilateral metallic stenting

Biliary Tract

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Obstructive jaundice prognostic factors based on hospital length of stay and mortality**Presenting Author:** INDAH PRIANTI**Additional Authors:** ARYO SUSENO, ARITRANTRI DAMAYANI, PAUL KUSNANTO, TRI YULI PRAMANA, M.TANTORO HARMONO**Corresponding Author:** INDAH PRIANTI**Affiliations:** Muwardi Hospital, Muwardi Hospital, Muwardi Hospital, Muwardi Hospital, Muwardi Hospital

Objective: Obstructive jaundice contributes to high morbidity and mortality number. How the condition affects the whole body system may determine the outcome of the disease. In this study we looked at factors interplay in obstructive jaundice patients and examine them as probable prognostic factors. **Methods:** Retrospective data were taken from medical record from January 2010 to July 2013. Inclusion criteria were inpatients adult with total bilirubin of ≥ 1.75 mg/dl with raised direct bilirubin higher than indirect bilirubin. Outcome and prognostic analysis were done by Cox proportional hazard and logistic regression with the help of SPSS version 20. P-value of < 0.05 is considered significant. **Results:** 133 jaundice patients met the inclusion criteria, 73 were analyzed. The mean age is 51.3 years old. The average length of stay is 13.9 days with 16 of the patients died. The level of Gamma-glutamyl transferase (GGT) ($p: 0.048$ HR: 1.000), Creatinine (Cr) ($p: 0.044$ HR: 2.031) and Ureum (Ur) ($p: 0.043$ HR: 1.016) correlates with mortality. Longer time spent in the hospital associated with intervention ($p: 0.000$ OR 1.89), socio-economic status ($p: 0.001$ OR 2.67), higher level of random blood glucose ($p: 0.005$ OR: 1.672) and serum GGT ($p: 0.049$ OR 0.924) shown by logistic regression analysis. The data implies that severity of the obstruction, represented as GGT, may determine the disease outcome and hospital length of stay. Significant of Cr and Ur may suggest hepato-renal connection and complications. **Conclusion:** It seems that the severity of the obstruction, and kidney involvement are important factors determining the disease prognosis in our subjects.

Key Word(s): 1. gamma-glutamyl transferase; 2. ureum; 3. creatinine; 4. hospital length of stay; 5. mortality

Biliary Tract

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The efficacy of ercp under intubated general anesthesia for the management of common bile duct stones in elderly patients**Presenting Author:** DUC QUACH**Additional Authors:** HUY TRAN, NHAN LE, KHANH PHAM, OANH NGUYEN, HY TRINH**Corresponding Author:** DUC QUACH**Affiliations:** University Medical Center, University Medical Center, University Medical Center, University of Medicine and Pharmacy, University of Medicine and Pharmacy

Objective: Endoscopic retrograde cholangio-pancreatography (ERCP) is preferred in the management of common bile duct (CBD) stones, especially when not accompanying with gallstones and intra-hepatic stones. Few Vietnamese studies have reported on the efficacy and the safety profile of this technique in elderly patients. This study aims to assess the efficacy and the safety profile of therapeutic ERCP under intubated general anesthesia in elderly patients with CBD stones. **Methods:** A retrospective cohort study in consecutive elderly patients (i.e. ≥ 60 year-of-age) who suffered from CBD stones and underwent therapeutic ERCP at the HCMC

University Medical Center from June 2010 to June 2012 **Results:** There were 139 patients with the mean age of 75.1 ± 9.8 (60–100) and the male-to-female ratio of 1:2. 33.8% (47/139) patients have had prior history treatment for biliary stones. The rates of successful CBD stone removal and completely CBD stone removal at the first-time ERCP were 92.1% (128/139) and 82% (114/139), respectively. Mechanical lithotripsy were performed in 24.2% (31/128). Of 11 patients who were failed to remove CBD stones, only one was due large size of the stone. The rates of post-ERCP pancreatitis and gastrointestinal bleeding and perforation were 4.3%, 0.8% and 0%, respectively. There were no severe anesthetic-related complications and no death. **Conclusion:** Therapeutic ERCP under general anesthesia is an effective and safe procedure for the management of CBD stones in elderly patients

Key Word(s): 1. ERCP; 2. billiary stone; 3. elderly; 4. Vietnamese

Biliary Tract

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Is combination of biliary sphincterotomy and balloon dilation a better option than either alone in endoscopic removal of bile duct stones? A comparative study.

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Objective: We compared therapeutic benefits and complications between endoscopic sphincterotomy (EST) alone, endoscopic large balloon sphincteroplasty (ELBS) without preceding sphincterotomy and EST plus large balloon dilation (LBD). **Methods:** 60 patients with obstructive jaundice due to common bile duct stones. Patients chosen were divided into 3 groups according to the order of the procedure. 20 patients were randomized to EST (group A), 20 patients were randomized to EST plus LBD (group B) and 20 patients were randomized to LBS without preceding EST (group C). All patients were subjected to complete blood count CBC, liver function tests, serum amylase, serum lipase, serum alkaline phosphatase in addition to abdominal ultrasound and magnetic resonant cholangiopancreatography (MRCP). **Results:** (5%) complications in group (A) one patient with melena. (5%) complications in group (B) one patient with acute pancreatitis. (10%) complications in group (c) one patient with acute pancreatitis and another patient with failure of complete stone extraction. No perforation occurred in any of the 3 groups (0%). **Conclusion:** EST plus LBD was found to be an effective alternative to EST alone. Using balloon dilation has less bleeding with more increased risk of pancreatitis and also more use of mechanical lithotripsy with no difference in perforation rates. However, there are number of situations such as coagulopathy or anti-coagulation that favor use of EBD. The three methods are safe and effective for stone removal but each method has its different complications. **Key Word(s):** 1. common bile duct stones; 2. balloon dilation; 3. biliary sphincterotomy

Biliary Tract

P-300

Complication rate of endoscopic sphincterotomy before sems insertion on malignant biliary stricture

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Objective: Endoscopic sphincterotomy (ES) is commonly used to remove bile-duct stones and to treat other problems. But ES has several risks of bleeding, pancreatitis, perforation and other complication. The rate of complications after endoscopic biliary sphincterotomy can vary widely in different circumstances and is primarily related to the indication for the procedure. ES can facilitate insertion of self expandable metal stent (SEMS) and also helps to avert development of pancreatitis from stent-related occlusion of the pancreatic duct. We investigated overall complication rate of ES before SEMS insertion on malignant biliary stricture. **Methods:** This was a retrospective study from a single institution. From December 2008 to August 2013, 238 patients underwent ES with SEMS insertion for malignant biliary stricture at the Pusan National University Yangsan Hospital. We investigated the incidence of pancreatitis, bleeding, bleeding required blood transfusion, perforation, overall complication and in-hospital mortality due to ES before SEMS insertion. **Results:** Of 238 patients, 16 patients experienced overall complication (6.7%). Acute pancreatitis occurred in 13 (5.4%) cases and bleeding occurred only 3 (1.2%) cases. In 3 bleeding cases, they did not require packed RBC transfusion and bleedings were stopped spontaneously. There were no ES related perforation and in-hospital mortality. **Conclusion:** ES can cause several complications. But ES before SEMS insertion on malignant biliary stricture has low overall complication rate and the complications were not clinically fatal. We need to more research about complication rate of ES during other therapeutic procedure to compared with SEMS insertion.

Key Word(s): 1. endoscopic sphincterotomy; 2. SEMS; 3. biliary stricture

Biliary Tract

P-301

Development of a swine benign biliary stricture model using endobiliary radiofrequency ablation

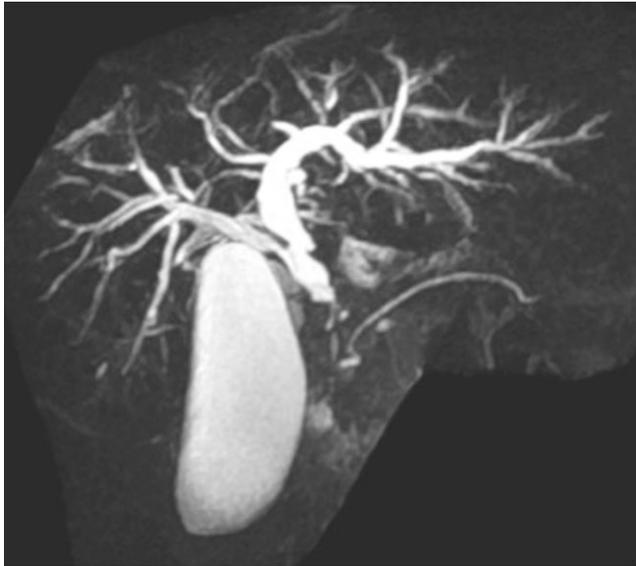
Presenting Author: YONG WOON SHIN

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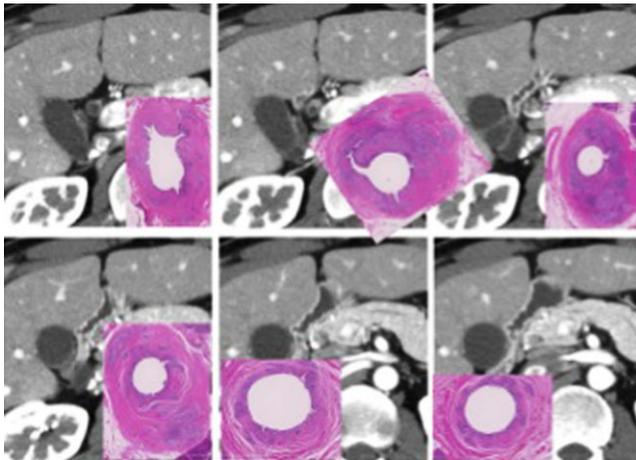
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Objective: An established and reproducible animal model of benign biliary stricture (BBS) has been indispensable to develop new devices or methods for endoscopic treatment of biliary stricture. **Methods:** We studied how to make a porcine BBS model using endobiliary



MRCP image: Biliary stenosis at lower part of bile duct with distension of intrahepatic ducts and gall bladder.



Enhanced CT and histopathology: hyperplasia of bile duct at the stenosis

Figure 1

Biliary Tract

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The differences of serum liver biochemical levels in different gallstone location of gallstone patients underwent biliary surgery

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Objective: Complete removal of all bile duct stones is recommended. The selective use of intraoperative cholangiography or choledochoscopy exploration with cholecystectomy is still controversial. Usually, liver biochemical tests and transabdominal ultrasound are performed as initial evaluations and risk stratifications. The aim of this research is to evaluate the difference of bilirubin, alkaline phosphatase (ALP), gamma glutamyl transferase (GGT), aspartate transaminase (AST), and alanine transaminase (ALT) levels in different gallstone locations. **Methods:** From 2010 through 2013, 289 adult patients with gallstone disease underwent biliary surgery in Dr. Sardjito Hospital. One hundred and thirty six patients with appropriate medical record data and criteria were included into this study. The subjects were divided into two groups, i.e. patients with choledocholithiasis and with cholecystolithiasis. The stone locations were determined based on final surgery reports. The latest liver biochemical test results during one week before surgery were chosen. **Results:** Table. Liver biochemical level according to gallstone location

Liver biochemical test	Gallstone location	n	Median (min.-max.)	p*
Direct bilirubin (mg/dL)	Choledocholithiasis	16	0.15 (0.02–9.86)	0.000
	Cholecystolithiasis	97	4.40 (0.42–9.39)	
ALP (U/L)	Choledocholithiasis	8	78.5 (45–552)	0.001
	Cholecystolithiasis	36	252 (111–1093)	
GGT (U/L)	Choledocholithiasis	5	103 (14–430)	0.017
	Cholecystolithiasis	17	326 (220–803)	
SGOT (U/L)	Choledocholithiasis	14	23 (8–224)	0.000
	Cholecystolithiasis	104	56 (14–168)	
SGPT (U/L)	Choledocholithiasis	14	27 (7–323)	0.001
	Cholecystolithiasis	103	52.5 (28–248)	

*Mann-Whitney U test. **Conclusion:** Serum liver biochemical levels have significant differences in different gallstone location.

Key Word(s): 1. liver biochemical level; 2. gallstone location

Table 1. Liver Biochemical Level According to Gallstone Location.

Liver biochemical test	Gallstone location	n	Median (min.-max.)	p*
Direct bilirubin (mg/dL)	Choledocholithiasis	16	0.15 (0.02–9.86)	0.000
	Cholecystolithiasis	97	4.40 (0.42–9.39)	
ALP (U/L)	Choledocholithiasis	8	78.5 (45–552)	0.001
	Cholecystolithiasis	36	252 (111–1093)	
GGT (U/L)	Choledocholithiasis	5	103 (14–430)	0.017
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	Cholecystolithiasis	104	56 (14–168)	
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*Mann-Whitney U test.

Biliary Tract

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Suturing of the wound using endoscopic clips after endoscopic papillectomy

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Objective: Postprocedural bleeding is the most important troublesome complication of endoscopic papillectomy. In the present report, we

describe our experiences with suturing of the wound using endoscopic clips after endoscopic papillectomy for prevention of postprocedural bleeding. **Methods:** Eighteen patients with ampullary adenomas not invading the biliary tract and pancreatic duct underwent endoscopic papillectomy. Patients who underwent endoscopic submucosal dissection (ESD) and hemostasis by clipping or heat coagulation were assigned to group A (n = 7), those who underwent snare papillectomy without suturing of the wound were assigned to group B (n = 8), and those who underwent suturing of the wound using endoscopic clips after snare papillectomy were assigned to group C (n = 3). When we perform suturing of the wound after snare papillectomy, we exchange to forward-view scope after placing of biliary stent and pancreatic stent. **Results:** Of the 7 patients in group A, 6 underwent curative resection. Of these, 4 patients experienced complications; postprocedural bleeding was observed in 2 and minor perforations in the other 2. Of the 8 patients in group B, 6 underwent curative resection. Of these, 5 patients experienced postprocedural bleeding. All 3 patients in group C underwent curative resection. None of these patients experienced postprocedural bleeding or other complications. **Conclusion:** Suturing of the wound after endoscopic papillectomy is a useful technique to prevent postprocedural bleeding after endoscopic papillectomy. Moreover, endoscopic hemostasis following ESD may be useful for preventing postprocedural bleeding, although this technique is challenging. **Key Word(s):** 1. ampullary tumor; 2. endoscopic papillectomy

Biliary Tract

P-306

A comparative study between ptgbd and etgd as a bridge to surgery in patients with acute cholecystitis and a suspicion of cbd stone

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Objective: To compare the technical feasibility, clinical and surgical outcomes between a single-step approach of endoscopic removal of CBD stones with endoscopic transpapillary gallbladder drainage (ETGD group) and a two-step approach of endoscopic removal of CBD stones and percutaneous transhepatic gallbladder drainage (PTGBD group) as a bridge treatment before cholecystectomy, in patients with acute cholecystitis and a high suspicion of common bile duct (CBD) stones. **Methods:** From March 2006 to May 2013, a total of 79 patients were enrolled in this study retrospectively. The PTGBD group (n = 39) was compared with the ETGD group (n = 40, ENGBD: 22, ERGBD: 18) in terms of technical and clinical success rates, adverse events, and surgical outcomes of surgery time and rate of conversion to open surgery in the non-inferiority analysis. **Results:** PTGBD and ETGD groups had similar outcomes in terms of technical success rate (97.4% 38/39 vs 92.5% 37/40; 95% 1-sided confidence interval (CI) lower limit, -14.6%; p = 0.028 for noninferior margin of 15%) and clinical success rate (94.7% 36/38 vs 91.9% 34/37; 95% 1-sided CI lower limit, -12.9%; p = 0.045 for noninferior margin of 15%). The two groups did not differ significantly in the rates of adverse events (5.1% 2/39 vs 7.5% 3/40; p = 1.000), surgery time (59.3 vs 55.7 min; p = 0.361), rates of conversion to open cholecystectomy (5.2% 2/38 vs 0% 0/37; p = 0.135). There was no significant differences in the technical, clinical, and surgical outcomes between ENGBD and ERGBD groups respectively. **Conclusion:** In patients with acute cholecystitis and a high suspicion of CBD stones, the single-step approach through ERCP and simultaneous ETGD

could be an effective alternative treatment modality to the two-step approach through PTGBD followed by ERCP.

Key Word(s): 1. percutaneous transhepatic gallbladder drainage; 2. endoscopic transpapillary gallbladder drainage

Biliary Tract

P-307

Safety and outcome of de novo two third PTFE-covered nitinol stent for palliation of biliary obstruction secondary to peripancreatic cancer

Presenting Author: WOONG SUN YOO

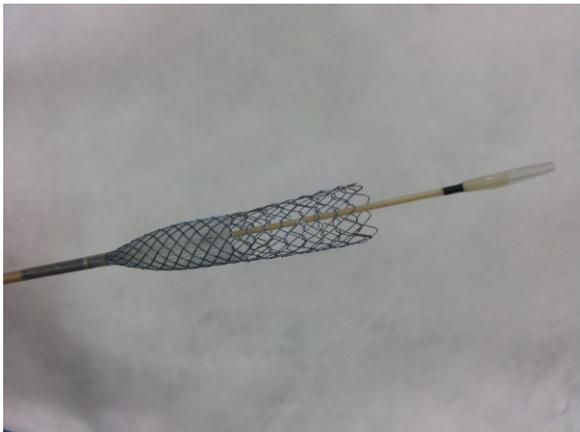
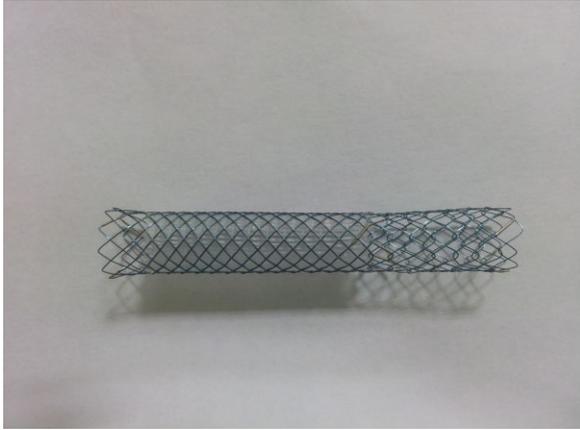
Additional Authors: SOO HYUN YANG, TAE GYOON KIM, DO YOUNG KIM, SEO YOUNG YANG, WONHYEONG PARK

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Affiliations: Veterans Health Service Medical Center, Veterans Health Service Medical Center

Objective: Uncovered metal stents rather than covered metal stents are commonly used for palliation of biliary obstruction secondary to peripancreatic cancer because of the low risk of stent migration. But de novo two third PTFE-covered nitinol stent have advantage at low reintervention rate and safety because both large and silicone covering prevents leakage and tissue ingrowth. The goal of this study was to evaluate the safety and efficacy of de novo two third PTFE-covered nitinol stent for the palliative treatment of malignant biliary obstruction. **Methods:** Five patients (mean age 69.2 years) with peripancreatic cancer were retrospectively involved and underwent endoscopic retrograde cholangiopancreatography and newly designed two third PTFE partially covered self-expandable metal stents placement. The de novo partially covered SEMS (Niti-S stent; Taewoong Medical) is made with triple layer which is an PTFE (polytetrafluoroethylene) membrane sandwiched between two uncovered nitinol wires. Silicone covering prevents the risk of tumor ingrowth. Differently than traditional, this stent was longer covered. We evaluated self-expandable metal stents patency, survival and reintervention-rate after two third covered self-expandable metal stents placement during 6 months. **Results:** Five stents were placed successfully in all of 5 patients. One patient died without signs of stent dysfunction. All patients did not need to repeat procedures. All patients experienced adequate palliative drainage for the remainder of their lives. There were no immediate complications. Stent insertion resulted in acute elevations of the amylase and lipase levels one day after stent insertion in all patients but it just back to normalize spontaneously. The bilirubin levels were significantly reduced one week after stent insertion. The 30 day mortality rate was zero. **Conclusion:** The de novo two third PTFE-covered nitinol stent is safe to use with acceptable complication rates and effective for palliation of biliary obstruction secondary to peripancreatic cancer.

Key Word(s): 1. PTFE-covered nitinol stent; 2. biliary obstruction; 3. peripancreatic cancer



Gastrointestinal Bleeding

P-308

Comparison of gerd prevalence between internet-based and conventional survey using Indonesian translated and validated GERD-Q

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Affiliations: *Dr. Cipto Mangunkusumo General Hospital, Dr. Cipto Mangunkusumo General Hospital*

Objective: This study was designed to determine GERD prevalence using internet-based and conventional GERD-Q survey. In addition, we analyzed the difference in characteristic of samples between internet based and conventional survey. **Methods:** The internet-based Indonesian validated GERD-Q was constructed using SurveyMonkey®, a web-based survey provider. The link <https://www.surveymonkey.com/s/gerdq> contained the questionnaire. The link was disseminated via social media and mailing list. The survey was conducted from August 2013–March 2014. The conventional survey using GERD-Q was conducted consecutively in Pegangsaan, sub-district of Menteng, Central Jakarta at September 2013. **Results:** 383 subjects were obtained from web-based GERD-Q survey and 82 subjects from conventional survey. The gender proportion of sub-

jects from internet-based survey was more balance than conventional survey (M/F: 49.2%/50.8% vs 12.2%/87.8%). Javanese (40.7%), Sundanese (12.4%) and Chinese (6.7%) were predominant in internet-based survey whereas Betawi (45.1%), Javanese (24.4%) and Sundanese (13.4%) were dominant in conventional survey. Subjects' formal education background from internet-based survey was better than community based (college or better 79.2% vs 2.4%). The prevalence of GERD was found higher in internet-based than community-based survey (low probability GERD/low impact GERD/high impact GERD: 48.7%/33.4%/17.9% vs 93.9%/1.2%/4.8%). There was no significant relation between age, gender, ethnicity nor formal education with diagnosis of GERD. **Conclusion:** GERD prevalence obtained from internet-based survey was higher than conventional survey. Internet-based survey is easier to perform but the probability of selection bias is higher. More careful research design and rigorous subject's selection is needed to perform internet-based survey.

Key Word(s): 1. GERD prevalence; 2. GERD-Q; Internet-based survey; 3. conventional survey

Gastrointestinal Bleeding

P-309

Small intestinal gist diagnosed by double balloon enteroscopy in patient with obscure gastrointestinal bleeding: a case report

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Objective: Obscure gastrointestinal bleeding (OGIB) is defined as recurrent or persistent gastrointestinal bleeding when gastric and colonic endoscopy is negative. OGIB accounts for approximately 5% of all gastrointestinal bleeding events. Most OGIB events are attributable to small bowel disease. Double-balloon enteroscopy, also known as push-and-pull enteroscopy is an endoscopic technique for visualization of the small bowel. **Results:** We reported a 14-years old young girl who had repeated tarry stool and severe anemia (haemoglobin: 7,46gr%). Esophagogastroduodenoscopy (EGD) and colonoscopy had been performed in other hospital, but the source of bleeding could not be identified, and the patient was transferred to our hospital. The result of both of upper and lower gastrointestinal (GI) endoscopy are normal. Thus, the source of her GI bleeding was suspected to be in the small intestine, and the patient underwent peroral double balloon enteroscopy (DBE). On DBE we found a proliferative nodular mass in the proximal of small intestine (jejunum) as a cause of gastrointestinal bleeding. Biopsy was taken and the result was mesenchymal tumor, suspected GIST. The patient had undergone a surgical resection tumor, and GIST was concluded by histopathology with immunohistochemical examination. **Conclusion:** We reported a 14-years old young girl who had repeated tarry stool and severe anemia. On DBE we found a proliferative nodular mass in the proximal of small intestine (jejunum) as a cause of gastrointestinal bleeding. Biopsy was taken and the result was mesenchymal tumor, suspected GIST. The patient had undergone a surgical resection tumor, and GIST was concluded by histopathology with immunohistochemical examination.

Key Word(s): 1. GIST; 2. obscure gastrointestinal bleeding; 3. small intestine; 4. and double balloon enteroscopy

Emergent endoscopy did not show any bleeding points because of blood clots fulfilled in the stomach. TAE through the right gastric artery was performed, and complete hemostasis was achieved. Re-bleeding did not occur for 8 months. Endoscopic examination done following the TAE procedure revealed advanced gastric cancer on the gastric angle. **Conclusion:** TAE is useful as an alternative procedure to achieve hemostasis in patients showing massive bleeding from advanced gastric cancer in whom endoscopic procedures failed to arrest bleeding.

Key Word(s): 1. gastrointestinal hemorrhage; 2. gastric cancer; 3. transcatheter arterial embolization (TAE)

Gastrointestinal Bleeding

P-313

Gastropathy nsaid is the most cause of upper gastrointesatinal bleeding in pekanbaru, riau, indonesia

Presenting Author: ARLES

Additional Authors: ARI FAHRIAL SYAM, DADANG MAKMUN

Corresponding Author: ARLES

Affiliations: Faculty of Medicine, University of Indonesia, Faculty of Medicine, University of Indonesia

Objective: Upper gastrointestinal bleeding is a prevalent condition and commonly found in emergency department. There were different causes of upper gastrointestinal bleeding in Indonesia compared with Western literature. Esophageal varices or gastropathy portal hypertension are common causes of upper gastrointestinal bleeding in Indonesia. The aim of study was to determine the endoscopic finding in patient with upper gastrointestinal bleeding in Awal Bros Hospital, Riau, Indonesia. **Methods:** This retrospective study was conducted in 1,032 patients with upper gastrointestinal bleeding who had underwent upper gastrointestinal endoscopy at private referral Awal Bros Hospital, Pekanbaru between January 2009 and December 2013. **Results:** There were 1032 eligible patients consisting of 577 (55.91%) males and 455 females (44.09%) ranged from 17–87 years old. The greatest occurrence was at the age group 50–59 years (23.63%). The endoscopy results showed that the most common cause of bleeding was gastropathy NSAID, which occurred in 552 (53.41%) cases, the other finding were 283 (27.47%) cases of gastric ulcer, 95 (9.27%) cases of esophageal varices, 54 (5.23%) cases of duodenal ulcers, 34 (3.29%) cases of erosive gastritis and 14 (1.41%) cases of gastric neoplasm. **Conclusion:** The greatest occurrence of upper gastrointestinal bleeding between January 2009 and December 2013 in Awal Bros Hospital was at the age group 50–59 years and male. The gastropathy NSAID was the most common cause in this study. This finding is different compared with the etiology in Indonesia which esophageal varices or gastropathy portal hypertension were the most common cause.

Key Word(s): 1. endoscopic finding; 2. upper gastrointestinal bleeding; 3. gastropathy NSAID

Gastrointestinal Bleeding

P-314

Spleen size: a predictor of variceal bleeding in myeloproliferative disease with portal hypertension

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Affiliations: Singapore General Hospital

Objective: Portal hypertension(PHT) can occur in myeloproliferative disease(MPD) either from spleno-portal venous thrombosis or due to increased portal inflow from MPD. Our study aims to describe the association and outcome of PHT in MPD. **Methods:** We reviewed the records of 18 patients with MPD referred for gastroenterology evaluation at our hospital from 1999–2013. Demographics, clinical presentation, endoscopy, radiology findings and treatment outcomes were analyzed. **Results:** Median age at presentation was 52(range 41–75)years. Fifteen(83%) were Chinese and 3(17%) Malay. Main presenting symptoms were abdominal pain(39%), variceal bleeding(33%) and thrombocytopenia(22%).Type of MPD included myelofibrosis(39%), essential thrombocytosis(27%), polycythemia rubra vera(22%) and others(11%). MPD was diagnosed by positive JAK-2 mutation or bone marrow analysis. All had significant splenomegaly with a mean spleen size(SS)of 18.4(±3.7)cm. Liver function was normal in all patients. Mean liver stiffness was 9.6±3.1 kPa in 11 patients who underwent Fibroscan®. Radiological imaging showed splenomegaly and collaterals without features of chronic liver disease in all patients. Gastroscopy was performed in 15 patients which showed Isolated gastric varices in 6/15(40%), isolated esophageal varices in 3/15(20%) and both in 4/15(27%). Variceal bleeding occurred in 6 patients (33.3%). Mean SS in variceal bleeders was 21.2±1.5 cm vs. 16.0±3.3 in non-bleeders ($p < 0.005$). SS was found to be an accurate predictor of variceal bleeding in MPD with an AUROC of 0.907 (95% confidence interval 0.730–1.000). SS > 19 cm was predictive of variceal bleeding with sensitivity 100%, specificity 89%, PPV 85% and NPV 100%. During a median follow-up of 5.5±4.6 years, two died (one from variceal bleeding and other from advanced MPD) and two developed cirrhosis. **Conclusion:** This is the first case series in South East Asia describing the association of MPD with PHT. We conclude that MPD with spleen size >19 cm have increased risk of variceal bleeding and will benefit from endoscopic screening.

Key Word(s): 1. portal hypertension; 2. myeloproliferative disease; 3. variceal bleeding

Gastrointestinal Bleeding

P-315

A case report of gastrointestinal bleeding and hyperammonaemic coma from intestinal phlebectasia and congenital absence of the portal vein in turner syndrome

Presenting Author: ERIC CHEAH

Additional Authors: EDWARD O'LOUGHLIN

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Affiliations: The Children'S Hospital At Westmead

Objective: Turner syndrome is characterised by a 45 XO karyotype. It is associated with multiple congenital abnormalities. Less common manifestations include diffuse intestinal phlebectasia causing gastrointestinal bleeding (GI). Associated liver abnormalities are common but rare cases of congenital absence of the portal vein (CAPV) have been documented. **Methods:** We report here a case of the concomitant occurrence of intes-

tinal phlebectasias leading to gastrointestinal bleeding and CAPV with associated portosystemic shunts causing hyperammonaemic coma.

Results: A 10 year old girl with Turner syndrome and a history of repaired aortic coarctation was admitted with profuse malaena with anaemia and status epilepticus from hyperammonaemia. She had no signs of chronic liver disease, portal hypertension or external haemangiomas. Her liver function test and coagulation studies were normal. An abdominal doppler and CT angiogram confirmed the absence of a portal vein with 2 portosystemic shunts: superior mesenteric vein (SMV) to left renal vein to inferior vena cava (IVC) and splenic vein to left hepatic vein to IVC. Initial laparotomy with enteroscopy identified diffuse abnormal veins throughout the small bowel. After failing initial conservative management, resection of 2/3 of the small bowel was performed due to life threatening GI bleeding and hyperammonaemia. Histopathology of multiple sections of the resected small bowel demonstrated abnormally dilated veins. Episodes of GI bleeding and hyperammonaemia recurred despite resection and trials of octreotide, propranolol, and sirolimus. Capsule endoscopy demonstrated the ongoing presence of abnormal veins. Oestrogen patch and ferroliquid was commenced and the patient has had no further GI bleeding. **Conclusion:** Intestinal phlebectasias causing GI bleeding in patients' with Turner syndrome should be managed conservatively where possible with a trial of oestrogen patches. To the best of our knowledge, this is the first case report of concomitant intestinal phlebectasias and CAPV with portosystemic shunts in a patient with Turner syndrome.

Key Word(s): 1. bleeding; 2. hyperammonaemia; 3. intestinal phlebectasia; 4. congenital absence of the portal vein; 5. Turner syndrome

Gastrointestinal Bleeding

P-316

The clinical utility of glasgow blatchford score in patients who presented with upper gastrointestinal bleeding

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Additional Authors: DOREEN SIEW CHING KOAY, HOCK SOO ONG, YAW CHONG GOH, CHRISTOPHER JEN LOCK KHOR, JING HIENG NGU

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Affiliations: Singapore General Hospital, Singapore General Hospital, Singapore General Hospital, Singapore General Hospital, Singapore General Hospital

Objective: Early risk assessment for patients with upper gastrointestinal bleeding (UGIB) is important so that tailored management strategy can be employed. Glasgow Blatchford Score (GBS) has been developed to identify patient who require intervention, however, it has not been validated locally. We aim to prospectively assess the clinical utility of GBS in patients presented with UGIB to Singapore General Hospital. **Methods:** We prospectively recruited every UGIB patients presented to SGH between March and May 2014. Clinical characteristics, laboratory investigations, endoscopy findings and outcomes of patients were recorded. Correlation between GBS and endoscopic findings was examined. Patients who did not undergo endoscopy were excluded from analysis. **Results:** One hundred and twenty one patients presented to SGH between the study periods, 10 were discharged. Of these, 90 patients underwent endoscopy. Sixty were male and 51.1% were over the age of 60. The mean length of hospitalization was 5.5 days. Approximately one third (37.8%) had normal endoscopy. Those with abnormal endoscopy had peptic ulcer disease (42.2%), malignancy (8.8%), varices (6.7%) and others (4.4%). Only a quarter (25%) of patients required endoscopic therapy. We found that GBS 0 predict normal endoscopy (specificity 100%, sensitivity 14.7% and positive predictive value 100%). GBS <4 identify patient who do not require endoscopic intervention. Systolic BP <100 mmHg (P < 0.05), coffee ground vomiting (P = 0.009), urea

>8 mmol/L (P = 0.016) and past history of ischemic heart disease (IHD) (P = 0.037) are significant predictors for the need of endoscopic intervention. **Conclusion:** Our study found that GBS 0 safely predict normal endoscopy (PPV 100%), and therefore can potentially be used to stratify patients that do not require admission and urgent inpatient endoscopy. Patients with low systolic BP, coffee ground vomitus, raised urea and past history of IHD at presentation should undergo endoscopy promptly as these are independent predictors for the need of endoscopic intervention.

Key Word(s): 1. Glasgow Blatchford score; 2. upper GI bleed; 3. endoscopy

Gastrointestinal Bleeding

P-317

Non-variceal upper gastrointestinal bleeding in cirrhotic portal hypertensive patients

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Additional Authors: MAMDOUH GABR

Corresponding Author: MOAMEN GABR

Affiliations: Tanta University

Objective: Upper Gastrointestinal Bleeding (UGI) is a common and potentially serious problem in Egypt and worldwide. Acute UGIB is a serious medical problem in cirrhotic patients. In published literature, most reports focus on variceal bleeding while data on acute non-variceal upper GI bleeding in cirrhosis are limited. This has meant that many physicians over the years assume only variceal bleeding in cirrhosis. Moreover, there are very few reports in which the characteristics of variceal and non-variceal bleeding are analyzed together. Despite the fact that variceal bleeding is a life-threatening complication in cirrhosis with consistently high morbidity and mortality, non-variceal bleeding may also decompensate cirrhotic patients and even may be fatal. Therefore, we conducted this prospective study in our endoscopy center in TUH to assess the magnitude of the problem as well as its different causes among cirrhotic patients in the region of the middle of Nile Delta. **Methods:** In the period from March 2013 to September 2013, a total of 650 patients underwent emergency upper GI endoscopy for acute UGIB in the endoscopy center in TUH. Out of these patients, 550 (84.6%) patients proved to have cirrhosis, who were the subject of the present study. All patients included in the study were subjected to full history taking, clinical examination, with special emphasis on stigmata of chronic liver disease, and emergency upper gastrointestinal endoscopy after initial assessment and resuscitation in the emergency department searching for the source of bleeding. A lesion was considered the source of bleeding, if there is stigmata of recent hemorrhage or if it's the only lesion detected in the presence of fresh or altered blood in the upper GI tract. After identification of the bleeding lesion, the appropriate endoscopic hemostatic procedure was done to control bleeding whenever indicated. Endoscopic hemostasis was obtained by injection, thermal and mechanical methods or combination of these modalities. The outcome of these modalities was not included in the present analysis. Different endoscopic findings were recorded & ratio of non-variceal in relation to the total number of cases was calculated. **Results:** Our results showed that UGIB in cirrhotic patients was much more common in males and patients from rural areas. Bleeding varices were detected in 75.5% while non-variceal sources of bleeding were detected in 24.5% of the patients. Regarding age, the bleeding variceal group was younger than the bleeding non-variceal group & the difference was statistically significant. Bleeding variceal group was more commonly presented with hemodynamic instability than the bleeding non-variceal group. 22% of the studied cirrhotic patients had negative viral markers while 78% had positive viral markers. 99.1% of patients with positive viral markers were HCV positive, (0.2%) were HBV positive and (0.7%) had mixed viral etiology. Within bleeding variceal patients, bleeding esophageal varices were predominant (90.6%) while bleeding gastric varices were responsible for only (9.4%) of variceal bleeding. Bleeding peptic ulcer was the most

common cause of bleeding (48.9%) followed by PHG (28.1%), Erosive disease of the stomach and the duodenum represented (6.7%) **Conclusion:** In this study, we confirmed the importance of early endoscopy (within the initial 24 hours) in early and accurate localization of bleeding lesions in acute UGIB. Our results clearly show that non-variceal bleeding in cirrhosis is not infrequent being responsible for (24.5%) of all cases. The most common non-variceal sources of bleeding in cirrhotic patients were peptic ulcer (48.9%), portal hypertensive gastropathy (28.1%) and erosive disease of stomach & duodenum (6.7%). Five other uncommon entities were also detected, Dieulafoys lesion (4.4%), GERD (3%), MWT (3%), tumors (3%) and GAVE (3%). Since data about the therapeutic modalities and outcome of upper GI bleeding in cirrhotic patients were not included in this study, we recommend a multicentre study covering different populations to better clarify the burden of non-variceal upper GI bleeding in cirrhosis in our country. Finally, this modest effort in the setting of limited resources does provide local and relevant information that should be useful to practicing physician in the field of hepato-gastroenterology.

Key Word(s): 1. bleeding; 2. non-variceal; 3. cirrhosis; 4. varices; 5. endoscopy

Objective: Bleeding is the main complication of EMR. Patients with repeated massive post-EMR bleeding face a dangerous situation. The treatment methods involved multidisciplinary intervention. Here we present a typical case of multidisciplinary treatment of post-EMR repeated massive bleeding. **Methods:** A 49-year old man presented to our hospital for an endoscopic ultrasonography (EUS) diagnosed esophageal leiomyoma (5 mm × 8 mm) (A). Due to the patient's strong requirement, EMR was performed. When the tumor was resected, a spurting bleeding occurred at the bottom of the wound. Six clips were used to clamp the artery (B) so that the bleeding stopped. After the operation, the patient maintained stable vital signs. Unfortunately, he started hematemesis six hours later and showed hemorrhagic shock. Urgent vascular interventional operation was immediately performed (C). Celiac angiography revealed a tortuous left gastric artery with contrast extravasation, and an aortoesophageal fistula was found. After endovascular embolization, the left gastric artery was successfully embolized. The second endoscopy was performed and a white vessel section was found on the surface of the wound(D). **Results:** An evil chance seldom comes alone. One hour later, hematemesis occurred again. The exploratory thoracotomy was forced to be performed and scores of abnormal circuitous vessels in the lower esophagus were found. **Conclusion:** The bleeding vessel was ligated and alimentary tract hemorrhage no longer happen. The patient was discharged 27 days later.

Key Word(s): 1. endoscopic mucosal resection (EMR); 2. bleeding

Gastrointestinal Bleeding

P-318

Multidisciplinary treatment of repeated massive bleeding after endoscopic mucosal resection (emr)

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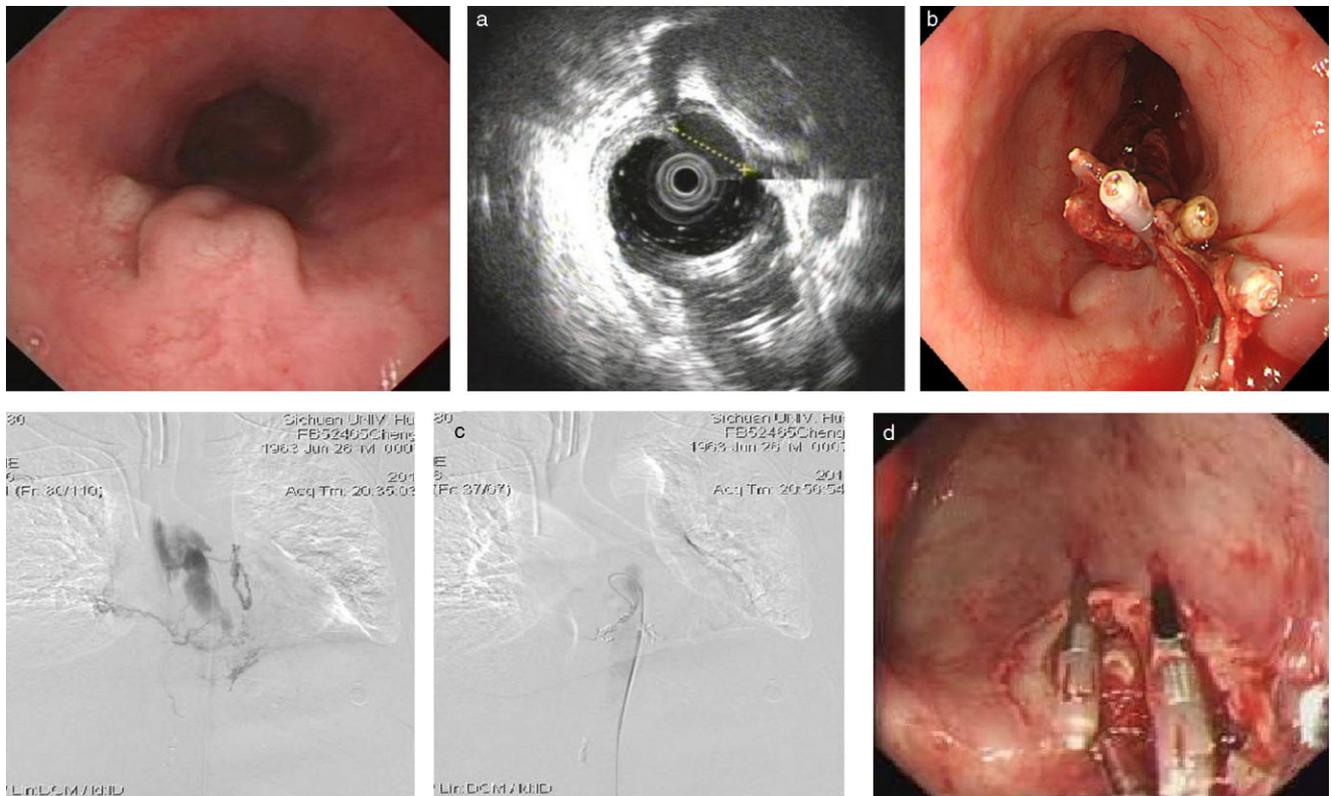


Figure 1

Gastrointestinal Bleeding

P-319

Hepatobiliary carcinoma: twenty-seven years experience from a medical center in Eastern Taiwan**Presenting Author:** LU CHIN HUANG**Additional Authors:** MING CHE LEE, YUNG HSIANG HSU**Corresponding Author:** LU CHIN HUANG**Affiliations:** *Buddhist Tzu Chi General Hospital, Hualien, Taiwan, Buddhist Tzu Chi General Hospital*

Objective: Background: The patients who had simultaneous hepatocellular carcinoma and cholangiocarcinoma was not frequent. Aims: In order to investigate the manifestations of patients with hepatobiliary carcinoma, we performed this retrospective study. **Methods:** From August 1986 to April 2014, the patients with diagnosis of hepatobiliary carcinoma were included. The age, gender, alpha fetoprotein (AFP), carbohydrate antigen 19-9 (CA 19-9), HBsAg and anti-HCV was recorded. The size, location of tumor, treatment, follow up duration and survival status was recorded. **Results:** A total of 10 patients (M8, F2) were included. The average age was 58.1 years (49–71). The AFP was 38414 ng/mL (5.3–382000 ng/mL, normal <8.1), CA 19-9 was 378 IU/mL (25–1632 IU/mL, normal <37). Hepatitis B, hepatitis C infection rate was 50%, 30%. The size of tumor was 6.7 cm (2–13 cm). The location of tumor was right lobe 50%, left lobe 30%, and both lobes 20%. The treatments included surgery(2), surgery plus chemotherapy (2), surgery plus radiotherapy (2), transarterial chemoembolization (1), chemotherapy (1), and supportive care (2). The follow up duration was 10.6 months (1 month-2.6 years). The 3 months, 6 months, and 1 year survival rate was 90%, 70%, and 55.6%. **Conclusion:** 1. Hepatobiliary carcinoma was not a frequent disease. We collected 10 patients in the past 27 years. 2. The average age was 58.1 years. 3. The average AFP was 38414 ng/mL. 4. Hepatitis B, hepatitis C infection rate was 50%, 30%. 5. The 6 months, and 1 year survival rate was 70% and 55.6%, respectively.

Key Word(s): 1. hepatobiliary carcinoma; 2. Eastern Taiwan

Gastrointestinal Bleeding

P-320

Clinical study on performing upper gastrointestinal biopsy with small cup biopsy forceps in patients receiving antiplatelet agents**Presenting Author:** TOMOKI INABA**Additional Authors:** SHIGENAO ISHIKAWA, TOSHIMI HASUI, MASAKI WATO, MIHOKO MATSUURA, SHIGETOMI TANAKA, SAKUMA TAKAHASHI, KOUICHI IZUMIKAWA, KUMIKO YAMAMOTO, ICHIROU SAKAKIHARA, SATOKO NAKAMURA, SHOHEI MANO**Corresponding Author:** TOMOKI INABA**Affiliations:** *Kagawa Prefectural Central Hospital, Kagawa Prefectural Central Hospital*

Objective: Various societies have recommended that low-risk procedures such as biopsy should be performed without cessation of antiplatelet agents in esophagogastroduodenoscopy. However, the clinical evaluation is not enough, and reduce the risk of bleeding on biopsy is important. Therefore,

we conducted a prospective cohort study in a clinical setting to assess bleeding risk attributable to gastric biopsy in patients taking antiplatelet agents and the validity of performing endoscopic biopsy with small cup biopsy forceps. **Methods:** The study was performed during the 1-year for 5374 scheduled esophagogastroduodenoscopy performed. 1128 patients, including 65 patients taking antiplatelet agents underwent gastric biopsy with small cup biopsy forceps, and 2025 biopsy specimens were obtained from each part of the stomach. Clinical bleeding was investigated during and after endoscopy. Two pathologists assessed the presence of muscularis mucosae in biopsy specimens in addition to the suitability of specimens for histological diagnosis. **Results:** Ratio of appropriate specimens obtained with small cup biopsy forceps was 99.3% (2010/2025) and muscularis mucosae was detected in 27.8% (538/1394) of specimens. After endoscopy, 1 patient of 1049 patients who took no antithrombotic agents experienced major bleeding (0.095%); however, 65 patients receiving antiplatelet treatment experienced no bleeding. **Conclusion:** Endoscopic forceps with a small cup is useful and the absolute risk attributable to gastric biopsy in patients taking antiplatelet agents seems to be low.

Key Word(s): 1. endoscopic biopsy; 2. antiplatelet agent; 3. bleeding; 4. biopsy forceps; 5. antithrombotic agent

Gastrointestinal Bleeding

P-321

Current clinical features in elderly patients with gastrointestinal bleeding**Presenting Author:** KUNIO IWATSUKA**Additional Authors:** TAKUJI GOTODA, SHIN KONO, SHO SUZUKI, NAOKO YAGI, CHIKA KUSANO, MASAKATSU FUKUZAWA, TAKASHI KAWAI, FUMINORI MORIYASU**Corresponding Author:** KUNIO IWATSUKA**Affiliations:** *Tokyo Medical University, Tokyo Medical University Hospital, Tokyo Medical University*

Objective: Despite improvements in pharmacological and endoscopic hemostasis, gastrointestinal bleeding (GIB) remains fatal clinical event in the elderly patients. With increasing numbers of the elderly population, endoscopists might face such kind of serious cases. The aims of this study are to research treatment outcomes and clinical features of GIB in elderly patients. **Methods:** Medical records of 185 patients (mean age 68.2 years, range 10–99 years, male/female 123/62) with GIB who underwent esophagogastroduodenoscopy or colonoscopy from April 2012 to March 2014 were reviewed. Clinical outcomes and clinicopathological features including pre-existing co-morbidities, prescribed drugs (antiplatelet agent, anticoagulant, NSAIDs, corticosteroid) were compared between younger (<70 years old) and elderly groups (≥ 70 years old). **Results:** Following features were specifically found in elderly patients (N = 100) compared to non-elderly patients (N = 85): presence of co-morbid diseases (90.0% vs. 62.4%: $p < 0.001$), low hemoglobin level (9.0 vs. 10.6 g/dl: $p < 0.01$), and use of NSAID or antiplatelet agent or anticoagulant or corticosteroid (34.1% vs. 59.0%: $p < 0.001$). In elderly patients, the most common reason of upper gastrointestinal bleeding (UGIB) was gastric ulcer (45.7%) followed by duodenal ulcer (13.6%), and most common cause of lower gastrointestinal bleeding (LGIB) was rectal ulcer (41.5%), followed by diverticulosis (14.6%). On the other hand, in non-elderly patients most common cause of UGIB was gastric ulcer (19.6%), and duodenal ulcer (19.6%), and most common cause of LGIB was highly related with endoscopic therapeutic procedures (26.5%), followed by lower gastrointestinal malignancy (20.6%), diverticulosis (17.6%). In elderly patients, 5 patients died, and 17

patients lost activities of daily living (ADL) after GIB-treatment, and their main cause of the poor outcome was exacerbation of their primary illnesses (45.5%), followed by various complications unrelated to GIB (31.8%). **Conclusion:** Elderly patients have poor blood loss tolerances, and level of their ADL is affected by not only GIB itself but also various causes after treatment for GIB. When we face GIB in the elderly patients, it is clinically important to pay strong attention to their clinical status after bleeding control.

Key Word(s): 1. elderly; 2. gastrointestinal bleeding

Gastrointestinal Bleeding

P-322

Massive gastrointestinal bleeding due to angiodysplasia within the Meckel's diverticulum containing ectopic pancreatic tissue

Presenting Author: SANG EON JANG

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Objective: Although Meckel's diverticulum is common congenital disorder in the gastrointestinal tract and angiodysplasia is common cause of gastrointestinal bleeding in old population, the chance of coexisting two disorders at the same time is rare in young population and there has been only two reports so far. **Methods:** A 38-year-old male presented to the emergency room with loss of consciousness for a few seconds after large amount of hematochezia. Since active bleeding from the lower intestinal tract was suspected, arteriography was performed and then there was no bleeding focus on SMA angiography after Embolization. Segmental small bowel resection and omentectomy was done. On microscopic examination, the excised Meckel's diverticulum contained ectopic pancreas and angiodysplasia showing dilated, distorted, thin walled vessel in submucosa resulted in focal ischemic ulceration and hemorrhage. **Results:** The report of pancreatic tissue identified within the diverticulum was rare and the case that primary cause of gastrointestinal bleeding was angiodysplasia located within the Meckel's diverticulum in the state of containing pancreatic tissue within it has never been reported. So we report of an unusual case of massive acute bleeding due to angiodysplasia located within the Meckel's diverticulum containing ectopic pancreas at the jejunum which caused shock in a young man. **Conclusion:** We suggest angiography as an initial diagnostic tool when vital sign is unstable and there is no definite upper GI tract bleeding sign

Key Word(s): 1. angiodysplasia; 2. Meckel's diverticulum; 3. gastrointestinal hemorrhage; 4. ectopic pancreas; 5. angiography

Gastrointestinal Bleeding

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Urgent versus early endoscopy for acute non-variceal upper gastrointestinal bleeding: comparison of the endoscopic yield and outcomes

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Objective: Performing emergency endoscopy is essential to diagnose and treat patients with acute GI bleeding. Early endoscopy (within 24 hours) is the standard treatment option for the patients with acute NVUGIB. According to several studies that analyzing the efficacy of emergency endoscopy, the need for urgent endoscopy (within 8 hours) is a matter of debate. This study compares the outcomes of urgent endoscopy (within 8 hrs) with early endoscopy (from 8 to 24 hours). **Methods:** We have enrolled 434 patients who visited ER from January 2009 to December 2013 for hematemesis, melena, or/and hematochezia with blood or altered blood in the nasogastric aspiration. Patients with non-variceal upper GI bleeding who previously underwent upper endoscopy within 24 hours were analyzed and received intravenous proton pump inhibitor (PPI). Based on the timing of the endoscopy, patients were classified into two groups; urgent (<8 hrs) and early (8–24 hrs). We defined positive endoscopic yield as the presence of definite bleeding sites and high-risk stigmata of recent bleeding such as adherent clots, non-bleeding visible vessels and active bleeding. **Results:** We identified 224 patients who enrolled the inclusion criteria. There was no significant difference in outcomes between the two groups. The positive endoscopic yield for the urgent and early endoscopy groups were similar at 81/105(77.1%) and 100/119(84%), respectively ($p = 0.17$). There were no differences of outcomes between the urgent and early endoscopy groups with regard to in-hospital mortality (1.9% vs 2.5%, $p = 0.75$), need for repeat endoscopy within 72 hrs (10.5% vs 6.8%, $p = 0.40$), median packed red blood cell requirements (1.78 vs 1.73 unit, $p = 0.84$), need for hemostatic therapy (31% vs 43%, $p = 0.05$) and mean length of hospital stay (6.43 ± 5.61 vs 6.25 ± 6.42 days, $p = 0.82$). **Conclusion:** According to our retrospective study, there was no difference in the outcomes of performing urgent (<8 hrs) endoscopy compares to early (8–24 hrs) endoscopy. Therefore, we can conclude that the urgent endoscopy is not necessary for patients with acute upper gastrointestinal bleeding.

Key Word(s): 1. gastrointestinal bleeding; 2. urgent endoscopy; 3. early endoscopy

Gastrointestinal Bleeding

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Postoperative hemorrhage after endoscopic treatment of colorectal tumors undergoing antithrombotic treatment**Presenting Author:** HIROSHI KANIE**Additional Authors:** SATOSHI NOMURA, ISSEI KOJIMA, YU NOJIRI, TAKASHI YOSHIMINE, YASUAKI FUJITA, ATSUNORI KUSAKABE, TESSHIN BAN, TOMONORI YAMADA, KATSUMI HAYASHI, ETSURO ORITO**Corresponding Author:** HIROSHI KANIE**Affiliations:** Nagoya Daini Red Cross Hospital, Nagoya Daini Red Cross Hospital

Objective: In July 2012, the Japan Gastroenterological Endoscopy Society (JSGE) published guidelines for gastroenterological endoscopy in patients undergoing antithrombotic treatment. (Digestive endoscopy 2014;26:1–14) The new edition of the guidelines (GL) includes discussions of gastroenterological hemorrhage associated with continuation of antithrombotic therapy, as well as thromboembolism associated with withdrawal of antithrombotic therapy. The aim of this study is to clarify postoperative hemorrhage undergoing antithrombotic treatment. **Methods:** In a retrospective review of our database prospectively collected data between July 2011 and June 2013 (two years), we resected endoscopically colorectal tumors, total 1175 cases 2198 lesions. We compared the rate of postoperative hemorrhage between endoscopic treatment within the new guidelines (New GL group: 164 lesions), and within the old guidelines (Old GL group: 199 lesions), and undergoing no antithrombotic therapy (No medication group: 1834 lesions). We evaluated for risk factor of postoperative hemorrhage after endoscopic treatment of colorectal tumors. **Results:** The lesions undergoing antithrombotic treatment were 363 lesions (16.6%). The rate of postoperative hemorrhage was 1.8%(3/164) in New GL group, 1.5%(3/199) in Old GL group, 0.60%(11/1834) in No medication group, and there were no significant difference. It was 1.4%(1/73) in continuation of aspirin, 0.8%(1/128) in withdrawal of aspirin, and there were no significant difference. The risk factor of postoperative hemorrhage was location (rectum), size (over 10 mm), pathological finding (cancer) and antithrombotic therapy (+) by univariate analysis. The significant independent risk factor of postoperative hemorrhage was size (odds ratio 14.80[95 % CI 3.22–67.96], $p = 0.001$), location(odds ratio 3.46[95 % CI 1.25–9.61], $p = 0.017$) and antithrombotic therapy(odds ratio 2.96[95 % CI 1.07–8.21], $p = 0.037$) by multivariate analysis. **Conclusion:** The rate of postoperative hemorrhage is not increased by compliance of new guidelines, and it is reasonable to observe the new guidelines.

Key Word(s): 1. postoperative hemorrhage; 2. antithrombotic treatment; 3. colorectal

Gastrointestinal Bleeding

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Factors related to re-bleeding after endoscopic hemostasis of peptic ulcer**Presenting Author:** TAKAYUKI KATO**Additional Authors:** MINEO KANEZAKI, NOBORU MISAWA, YUTARO ISHIKAWA, TOSHIHIRO NIKURA, RYOJI SUZUKI, TETSURO FUJII, FUMITAKE JONO, KEIKO AKIMOTO, YUMIKO HOJO, NOBUTAKA FUJISAWA, SHIGERU KOYAMA, KENSUKE KUBOTA, NAKAJIMA ATSUSHI**Corresponding Author:** TAKAYUKI KATO**Affiliations:** Tokyo Metropolitan Hiroo Hospital, Yokohama City University, Yokohama City University

Objective: Our hospital is one of the members of Tokyo ER, and peptic ulcers are one of the main diseases we experience in our daily EMS field. The main complication of endoscopic hemostasis is re-bleeding. We considered factors that are related to re-bleeding. **Methods:** We reviewed 510 cases of endoscopic hemostasis performed in our hospital from April 2005 to June 2013. **Results:** The factors we reviewed were gender, age, location of the ulcer, Forrest classification, H. pylori infection, daily medication, and methods we chose for hemostasis. Above these, the factors related to re-bleeding were Forrest classification (Ia vs. others; OR = 3.82, $P < 0.05$) and ulcer location (duodenum vs. stomach; OR = 3.06, $P < 0.01$). We also reviewed the Rockall scores of the cases, which suggested that clinical Rockall score may be useful in predicting re-bleeding. **Conclusion:** From the results above, factors that are said to be the risks for peptic ulcers themselves and the methods have little relation to re-bleeding, and the difficulty of the procedure due to the location of the ulcer, and background diseases that affect the clinical Rockall score are likely to be the main factors that cause re-bleeding.

Key Word(s): 1. re-bleeding; 2. peptic ulcer

Gastrointestinal Bleeding

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A comparison between endoscopic clipping and conservative treatment in patients with diverticular bleeding**Presenting Author:** YONG HUN KIM**Additional Authors:** SEONG RAN JEON, JIN OH KIM, HYUN GUN KIM, TAE HEE LEE, JUN HYUNG CHO, BONG MIN KO, JOO YOUNG CHO, JOON SEONG LEE**Corresponding Author:** YONG HUN KIM**Affiliations:** Soonchunhyang University College of Medicine, Soonchunhyang University College of Medicine

Objective: Most diverticular bleeding is self-limited. However, approximately 3–5% of them can be manifested with severe bleeding, and then it can cause lethal outcomes. The aim of this study is to compare various clinical factors and the rebleeding rate between the two groups with two different treatments, endoscopic clipping and conservative treatment group. **Methods:** Thirty three patients diagnosed diverticular bleeding in Soonchunhyang University hospital between 2005 and 2011 were analyzed retrospectively. Patients were classified into two groups: endoscopic clipping group (group A, n = 22) and conservative treatment group (group B, n = 11). The endoscopic clipping was done when active bleeding or vessel exposure was existed, and the conservative treatment was done when there were only presumptive lesions of bleeding. Rebleeding was defined as the revisit of the same patient for a recurrent diverticular bleeding after discharge. **Results:** In both groups, the distribution of diverticulum was right colon dominant and there was no significant difference (Group A vs. B; 68% vs. 82%). There was no significant difference in comorbidities. Aspirin taking rate was significantly higher in group B (55%, 6/11) than group A (14%, 3/22) ($p = 0.033$). The mean hemoglobin value was lower in group A than group B (Group A vs. B; 9.9 ± 2.3 vs. 10.1 ± 2.6 , $p = 0.045$). However, in multivariate analysis, there were no significant differences in the other clinical factors between both groups, except aspirin taking history ($p = 0.01$). In both groups, rebleeding rate also was no significant difference between both groups and was 9% equally. **Conclusion:** The aspirin taking history was a factor related to the diverticular bleeding, and the rebleeding rate was not associated with the endoscopic hemoclipping treatment in the primary bleeding episode. However, with the removal of risk factors like aspirin, the choice of the treatment strategy will have to be considered the aspect of the bleeding.

Key Word(s): 1. endoscopic clipping; 2. diverticular rebleeding; 3. aspirin

Gastrointestinal Bleeding

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The protective effects of GX2801 isolated from *Artemisia princeps* on NSAID-induced small intestinal mucosal injuries in rats

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Objective: This study aimed to characterize the mucosal protective effect of GX2801 on indomethacin-induced injury to the rat small intestine. GX2801 is a formulation prepared from isopropanol extracts of *Artemisia princeps*. **Methods:** Rats were divided into four groups. The control group received vehicle. The indomethacin-treated group received vehicle for seven days before indomethacin treatment. The GX2801 groups were administered GX2801 orally for seven days before indomethacin treatment and two different doses of GX2801 (30 and 60 mg/kg) were used. The protective effects of GX2801 were evaluated using gross, microscopic findings of injury. Inflammatory markers, PGE2, TNF- α were measured by immunosorbent assays. **Results:** Based on gross examinations, areas of mucosal injury in the rat small intestines were 12.5 ± 8.04 cm² in the indomethacin-treated group, 3.5 ± 2.07 cm² in the 30 mg/kg GX2801 group, and 1.0 ± 0.63 cm² in the 60 mg/kg GX2801 group. The 60 mg/kg GX2801 decreased areas of mucosal injury compared to the indomethacin-treated group. Based on microscopic examinations, three rats with ulcerations and another three rats with erosions were observed in the

indomethacin group. While only one rat with ulceration and three rats with erosion were observed in the 60 mg/kg GX2801 group. Measurements of inflammatory markers showed that the levels of PGE2 increased in proportion to the dosage of GX2801. The plasma TNF- α levels in the indomethacin-treated group was significantly ameliorated by 30 mg/kg GX2801 or 60 mg/kg GX2801. **Conclusion:** These findings demonstrate that GX2801 might protect the small intestine from indomethacin-induced injury in rats.

Key Word(s): 1. *Artemisia princeps*; 2. intestinal injury; 3. indomethacin; 4. rat

Gastrointestinal Bleeding

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Proton-pump inhibitors for prevention of upper gastrointestinal bleeding in patients with end-stage renal disease

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Objective: Patients with end-stage renal disease (ESRD) are at high risk of upper gastrointestinal bleeding (UGIB). The aim of this study was to assess the effects of low-dose proton-pump inhibitors (PPIs) for the prevention of UGIB in a cohort of patients with ESRD. **Methods:** This was a retrospective cohort study that reviewed 544 patients with ESRD who started dialysis at our center from 2005–2013. We examined the incidence of UGIB in 175 patients treated with low-dose PPIs in the PPI group and 369 patients not treated with PPI in the control group. **Results:** During the study period, 41 patients developed UGIB, a rate of 14.4/1000 person-years. The mean time between the start of dialysis and UGIB events was 26.3 ± 29.6 months. Bleeding occurred in only 2 patients in the PPI group (2.5/1000 person-years) and 39 in the control group (19.2/1000 person-years). Kaplan–Meier analysis of cumulative non-bleeding survival showed that the probability of UGIB was significantly lower in the PPI group than in the control group (log rank test, $p < 0.001$). Univariate analysis showed that coronary artery disease, PPI use, anti-coagulation and anti-platelet therapy were associated with UGIB. After adjustments for the potential factors influencing risk of UGIB, PPI use was shown to be significantly beneficial in reducing UGIB compared to the control group (hazard ratio 13.7, 95% confidence interval 1.8–101.6, $p = 0.011$). **Conclusion:** The use of low-dose PPIs in patients with ESRD is associated with a low frequency of UGIB.

Key Word(s): 1. end-stage renal disease; 2. upper gastrointestinal bleeding; 3. proton-pump inhibitors

Gastrointestinal Bleeding

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Clinical characteristics of rebleeding cases with overt obscure gastrointestinal bleeding

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Objective: Capsule endoscopy (CE) and double balloon endoscopy (DBE) are useful tool to examine the patients with acute overt obscure gastrointestinal bleeding (OGIB). It is likely that OGIB is occurred in the same patients at multiple times. However, the characteristics of patients with repeated overt OGIB is not fully investigated. Therefore, we investigated the patients with repeated overt OGIB in terms of clinical data and medication. **Methods:** We retrospectively reviewed the clinical records of 81 patients, who referred to our hospital due to overt OGIB between January 2011 and June 2014. **Results:** Fifteen (18.5%; 11 men, 4 women, mean age 70.2 ± 10.2 years) of 81 patients had repeated overt OGIB. Small intestinal lesions were detected in 11 patients (73.3%) by DBE. Hemostatic therapy was performed in 6 (54.5%) of those patients. However, rebleeding was occurred in five (83.3%) of six patients with hemostatic therapy. Underlying illness of 15 patients were as follows; 3 cases of heart valve disease (20%), 8 cases of heart disorder (13.3%), 2 cases of abdominal aortic aneurysm (13.3%), 4 cases of chronic renal failure (26.7%), 3 cases of dialysis treatment (20%). Oral medications were as follows: 6 anticoagulant drug (40%), 2 low dose aspirin (13.3%), 1 antiplatelet drug (6.7%). Twelve (80%) patients with repeated overt OGIB received transfusion. The rate of transfusion was significantly higher in patients with repeated overt OGIB when compared with patients with single overt OGIB ($p < 0.05$). **Conclusion:** Anticoagulant may be the risk for repeated overt OGIB, and the patients with repeated overt OGIB tend to have severe bleeding. **Key Word(s):** 1. obscure gastrointestinal bleeding; 2. rebleeding

Gastrointestinal Bleeding

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Predictors of persistent ulcer at surveillance endoscopy in patients with complicated duodenal ulcers

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Objective: Surveillance endoscopy is performed to confirm ulcer healing and absence of cancer in patients with gastric ulcer. Although not routine in patients with simple duodenal ulcers (DU), endoscopy may be repeated in patients with complicated ulcers to ensure adequate healing prior to commencing anti-thrombotic agents or discontinuing proton pump inhibitor (PPI). We aimed to determine the healing rate of complicated DUs, predictors of delayed healing and the clinical impact of surveillance endoscopy in these patients. **Methods:** Data was collected between March 2010 and January 2013, from consecutive patients admitted for DU bleeding who had endoscopic, angiographic or surgical management. All patients had surveillance endoscopy after 4 or more weeks of PPI therapy. Patient demographics, location and morphology of ulcers, types of intervention and treatment, and co-morbidities were analyzed. The main outcome variables were ulcer healing and clinical predictors of ulcer persistence. **Results:** 421 patients presented with acute DU bleeding during the study period, of which 77 met study criteria and were analysed; 47 males, 30 females. Mean age was 66.4 years; range 18–88. From a multi-ethnic population, there were 50 Chinese, 24 Malay, 2 Indian and 1 patient of other race. In terms of etiology, 21 patients (27.3%) took NSAIDs or antiplatelet agents. *H. pylori* infection was detected in 13 patients (16.9%). 45 patients (58.4%) had an idiopathic etiology. Ulcers were predominantly located at duodenal bulb (59.7%) or D1/D2 junction (28.6%), with either Forrest class Ib (33.8%) or IIa (42.9%) morphology. Although all patients were treated endoscopically, 9 patients required salvage therapy; angio-

embolisation (6) or surgery (3). Surveillance was performed at a mean duration of 54.6 days (range 28–125). At surveillance, 68 (88.3%) had complete healing of duodenal ulcers. Diabetes mellitus (DM) was associated with persistence of ulcer at surveillance [Odds Ratio (OR) 5.6, 95% CI 1.2–24.6; $p = 0.02$]. DM patients had a mean HbA1C of 7.2%. When compared with Chinese race, Malay race had higher risk of persistent ulcer [OR 9.9, 95% CI 1.9–52.3; $p = 0.007$]. Following multivariate logistic regression, Malay race was the only statistically significant predictor of persistent ulcer [OR 6.9, 95% CI 1.2–39.5; $p = 0.03$]. Post-surveillance, 9 patients with persistent ulcer were given a longer course of PPI therapy (5) or changed to a more potent PPI (4). **Conclusion:** Following therapy, bleeding duodenal ulcers may have delayed healing, especially in the Malay patient with DM. Further larger prospective studies may establish the role of surveillance endoscopy in this group of patients.

Key Word(s): 1. duodenal ulcer; 2. bleeding ulcer; 3. therapeutic endoscopy; 4. surveillance

Gastrointestinal Bleeding

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Comparison of clinical outcome of peptic ulcer bleeding according to the different etiology: Helicobacter pylori infection or drug use

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Objective: To evaluate the clinical outcomes and severity of peptic ulcer bleeding (PUB) according to the etiology – *Helicobacter pylori* (*H. pylori*) and drug (aspirin and nonsteroidal anti-inflammatory drug). **Methods:** A consecutive series of patients who had PUB and admitted to the hospital between 2006 and 2012 were retrospectively analyzed. A total of 232 patients were enrolled in this study, and we compared the clinical characteristics and outcomes according to the different etiologies (*H. pylori*, drug, *H. pylori* with drug and idiopathic). We also evaluated the severity using Blatchford score and Rockall score between four groups. **Results:** When *H. pylori* associated PUB compared with drug induced PUB, it was male dominant. In drug induced PUB, the longer duration of admission and larger ulcer were observed. Also, Blatchford score and Rockall score were the higher than *H. pylori* associated PUB. When idiopathic PUB compared with *H. pylori* associated PUB, the larger ulcer and more frequent rate of re-bleeding were observed. When idiopathic PUB compared with drug induced PUB, it was distinct of male predominance. Re-admission rate and re-bleeding rate after initial hemostasis were higher in idiopathic PUB. **Conclusion:** Clinically, infection of *H. pylori* might not appear to play an important role in severity of PUB. Idiopathic (*H. pylori*-negative, drug-negative) PUB had a strong tendency of re-bleeding after initial hemostasis.

Key Word(s): 1. peptic ulcer; 2. gastrointestinal bleeding; 3. *Helicobacter pylori*; 4. non-steroidal anti-inflammatory drug

Gastrointestinal Bleeding

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Comparison of clinical outcome between first year GI fellows and attending doctors on the treatment of UGIB in the emergency department at night**Presenting Author:** TAKEHIRO MIYAZAKI**Additional Authors:** KAZUYA AKAHOSHI, HIDENOBU KOGA, AKI MIYAGAKI, MASARU KUBOKAWA, YASUAKI MOTOMURA, JYUNYA GIBO, NOBUKATU KINOSHITA, SHIGEJI OSADA, YUZOU SHIMOKAWA, KAYO TOKUMARU, YOSHIHIRO OTUKA, TAIZOU HOSOKAWA, NARU TOMOEDA, RAN UTUNOMIYA, KAZUAKI MIYAMOTO**Corresponding Author:** TAKEHIRO MIYAZAKI**Affiliations:** *lizuka Hospital, lizuka Hospital*

Objective: Upper gastrointestinal bleeding (UGIB) is a common cause of hospital admission and morbidity and mortality are still high despite advancements in endoscopic and acid suppressive therapy. The requirement for first year Gastrointestinal (GI) fellows to start urgent endoscopic therapy is, however, still controversial. The aim of this study is to compare the clinical outcome between first year GI fellows and attending doctors on the endoscopic treatment of UGIB alone in the emergency department.

Methods: Between April 2008 and March 2013, urgent endoscopy was performed for 442 consecutive patients (288 male and 154 female; mean age, 73 years), presenting symptoms and signs of UGIB, in the emergency department at night. 227 patients who underwent endoscopic hemostatic treatment were enrolled in this study. 57 patients were treated by first year GI fellows (8 endoscopists) whose endoscopic training period was from 6 months to 12 months (Group A) and 170 patients treated by attending doctors (21 endoscopists) whose endoscopic training period was more than 1 year (Group B). In these two grade endoscopists, initial hemostasis, mortality, re-bleeding and need for interventional radiology (IVR) rate were retrospectively compared using medical records. **Results:** Initial hemostasis was obtained in 57 out of 60 patients treated by Group A (95%) as well as in 162 out of 170 patients treated by Group B (95.3%). Re-bleeding occurred in 5 cases (5.2%) treated by Group A and 11 cases (4.7%) treated by Group B, but this difference was not statistically significant ($p > 0.05$). Also, the differences between the two groups of patients in the need for interventional radiology (IVR) and mortality were not statistically significant ($p > 0.05$). **Conclusion:** First year GI fellows with endoscopic training of six months may be able to perform urgent UGIB treatment effectively and safely. Further extensive prospective control studies are needed to clarify this point.

Key Word(s): 1. first year GI fellows upper gastrointestinal bleeding emergency department case control study

Gastrointestinal Bleeding

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Small-intestinal mucosal injury induced by non-steroidal anti-inflammatory drugs or antiplatelet agents in our hospital**Presenting Author:** TOMOYUKI NAGAI**Additional Authors:** TOMOYUKI NAGAI, RIE TANAKA, MITSUNARI YAMADA, TEPPEI ADACHI, MASAKI TAKAYAMA, HIROMASA MINE, YOSHIHISA OKAZAKI, YORIAKI KOMEDA, YUTAKA ASAKUMA, TOSHIHARU SAKURAI, SHIGENAGA MASTUI, HIROSHI KASHIDA, MASATOSHI KUDO**Corresponding Author:** TOMOYUKI NAGAI**Affiliations:** *Kinki University, Kinki University*

Objective: In the progression of unexplained gastrointestinal bleeding or anemia, small-intestinal mucosal injury is increasingly diagnosed by small-bowel endoscopy and capsule endoscopy (CE). **Methods:** We performed single balloon endoscopy (SBE) in 495 patients during the period July 2005–December 2013 and CE in 51 patients during the period August 2012–December 2013. We examined the clinical characteristics of patients diagnosed with NSAIDs- or antiplatelet agents-induced small-intestinal mucosal injury. The diagnostic criteria for the injury included a history of oral NSAIDs/antiplatelet agents; small-intestinal mucosal injury detected by diagnostic imaging; exclusion of inflammatory bowel disease, malignant tumors, and infectious disease; and clinical improvement with discontinuation of NSAIDs/antiplatelet agents or administration of mucosal protectants. **Results:** NSAIDs- or antiplatelet agents-induced small-intestinal mucosal injury was diagnosed in 20 patients by SBE and in 5 by CE. There were 13 men and 12 women; their mean age was 72 years (range: 32–85). The following drugs had been administered: NSAIDs in 7 patients, NSAIDs plus aspirin in 1, aspirin in 10, aspirin plus clopidogrel in 6, and clopidogrel in 1. Endoscopic hemostasis and surgery were required for treatment in 4 patients and 1 patient, respectively. The majority of the patients, including those requiring hemostatic treatment, discontinued the administered drugs or switched to another drugs and received mucosal protectants. **Conclusion:** The injury can improve with hemostatic treatment and discontinuation of the administered drugs. In cases where drugs cannot be discontinued, there are no established measures for preventing a recurrence of the injury or bleeding.

Key Word(s): Na

Gastrointestinal Bleeding

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Clinical features of cases with insufficient endoscopic hemostasis against hemorrhagic gastroduodenal ulcers**Presenting Author:** SHINSAKU NAGAMATSU**Additional Authors:** TOSHIYA NAKATANI, DAISUKE KAYA, HIROTETSU TAKAGI, YUKIHISA FUJINAGA, SOICHIRO SAIKAWA, DAISUKE KOBE, NAOTAKA SHIMOZATO, HIDEKI MATSUO, EIRYO KIKUCHI**Corresponding Author:** SHINSAKU NAGAMATSU**Affiliations:** Nara Prefecture General Medical Center, Nara Prefecture General Medical Center

Objective: Endoscopic treatment is the first-line method for hemorrhagic gastroduodenal ulcers due to its easy accessibility as well as its reliable hemostatic effect. However, not only repeated endoscopic treatment but also alternative approach such as IVR or surgical operation is necessary in some cases. In this study, factors contributing to the insufficient hemostasis were evaluated among cases with hemorrhagic gastroduodenal ulcers subjected to the initial emergent endoscopic treatment in our hospital.

Methods: Among 1,122 patients undergoing endoscopic treatment against hemorrhagic gastroduodenal ulcers in our hospital, 280 cases (221 men and 59 women; mean age 64.0 ± 14.7 years old) whose profiles are clear in terms of recent medications and Helicobacter pylori infection were divided into 2 groups (group A: insufficient hemostasis in the initial endoscopic treatment, group B: successful hemostasis). The hemorrhage with insufficient hemostasis was defined as that requiring repeated endoscopic treatment, IVR or surgical operation following the initial approach. Factors contributing to the insufficient hemostasis were retrospectively analyzed.

Results: The success rate of endoscopic therapy as the first approach was 92.1%. The proportion of patients with ulcerative factors causing insufficient hemostasis in endoscopic approach (Forrest Ia; A:40.9% vs B:11.2% $P = 0.0055$, location on duodenum and anastomosis; A:54.5% vs B:29.0% $P = 0.016$) was significantly higher in group A than that in group B. Multivariate analysis indicated that hemostasis using more than 3 modalities (OR:6.033, $P = 0.0219$), forrest Ia (OR:4.149, $P = 0.0091$) and location of lesion (duodenum or anastomosis) (OR:4.377, $P = 0.0049$) were significantly associated with insufficient hemostasis. **Conclusion:** Endoscopic treatment is effective as the first approach against hemorrhagic gastroduodenal ulcers. Insufficient endoscopic hemostasis could be implicated in the characteristics of ulcers rather than the background of patients. Careful management is necessary in patients with a possibility of insufficient hemostasis.

Key Word(s): 1. endoscopic hemostasis; 2. hemorrhagic gastroduodenal ulcers

Gastrointestinal Bleeding

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Successful endoscopic treatment of bleeding anorectal varices in a terminally ill cancer patient**Presenting Author:** MASAYUKI NAKANOWATARI**Additional Authors:** TAKAHIRO SATO, MICHIO IIDA, JIRO HONMA, TAKASHI FUKUHARA**Corresponding Author:** MASAYUKI NAKANOWATARI**Affiliations:** Sapporo Kosei General Hospital, Sapporo Kosei General Hospital, Sapporo Kosei General Hospital, Sapporo Kosei General Hospital

Objective: Anorectal varices are ectopic varices that are rarely complicated with massive bleeding. We report a case of ruptured anorectal varices resulting in massive bleeding which was successfully controlled by combined endoscopic injection sclerotherapy (EIS) and endoscopic variceal ligation (EVL). **Methods:** A 78-year-old woman with advanced pancreatic cancer and extra-hepatic portal vein obstruction was admitted to our Palliative Care Unit. After admission, massive hematochezia was observed. Abdominal contrast-enhanced CT showed extra-hepatic portal vein obstruction and enlarged anorectal varices. Colonoscopy revealed enlarged rectal varices and external anal varices with reddish fibrin clots. We made a diagnosis of rupture of anorectal varices near the anal verge. We first performed EIS using ethanolamine oleate for the rectal varices under fluoroscopy. Following EIS, EVL was performed for the fibrin plug.

Results: The patient experienced no further episodes of bleeding during the two months following treatment with combined EIS and EVL. **Conclusion:** Anorectal varices are not common complications in advanced cancer patients. However, once ruptured, they can be life-threatening. EIS or EVL can be an effective and safe treatment for bleeding anorectal varices as seen in this case. Indications of these treatments should be considered according to the clinical condition and prognosis of the terminally ill cancer patient.

Key Word(s): 1. anorectal varices; 2. hematochezia; 3. endoscopic treatment

Gastrointestinal Bleeding

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Clinical outcomes of endoscopic bleeding control in patients with gastric cancer**Presenting Author:** KWANG WOO NAM**Additional Authors:** JI YONG AHN, HWOON YONG JUNG, DO HOON KIM, KWI SOOK CHOI, JEONG HOON LEE, KEE WOOK JUNG, KEE DON CHOI, HO JUNE SONG, GIN HYUG LEE, JIN HO KIM**Corresponding Author:** KWANGWOO NAM**Affiliations:** Asan Medical Center, Asan Medical Center

Objective: Endoscopic hemostasis in bleeding from gastric cancer shows lower success rate and the need of transfusion is remained after procedure. However, there were not enough studies about the endoscopic bleeding control in patients with gastric cancer. In this study, we tried to know the clinical outcomes and proper treatment modality of upper gastrointestinal bleeding by gastric cancer which was initially controlled by endoscopic hemostasis. **Methods:** From January 2006 to December 2010, endoscopic hemostasis was performed in 96 patients who had upper gastroin-

testinal bleeding due to gastric cancer at Asan Medical Center. We analyzed clinical outcomes and methods of endoscopic hemostasis by review of data retrospectively. **Results:** Among total 96 patients (median age 60 years, 73 men), AGC B-I were 5 patients (5.2%), B-II were 17 patients (17.7%), B-III were 52 patients (54.2%), B-IV were 13 patients (13.5%), and EGC were 9 patients (9.4%). Single bleeding control method was used in 56 patients (58.3%) and multiple methods in 40 patients (41.7%). Argon plasma coagulation (58 cases, 40.8%), epinephrine injection (36 patients, 25.4%), fibrin glue injection (22 patients, 15.5%), hemoclipping (18 patients, 12.7%), coagulation forcep (4 patients, 2.8%), hypertonic saline (3 patients, 2.1%), ethanol injection (1 patient, 0.7%) were used. Temporary endoscopic hemostasis was achieved in 90 patients (93.7%) and remaining 6 patients underwent radiographic intervention (2 patients, 2.1%) or surgery (4 patients, 4.2%). But after 3 days, 39 patients (40.6%) received transfusion and after 1 month, 40 patients (41.7%) still received transfusion. Average transfusion requirement per patient after 1 month was 4.7 packed RBCs (range 0–32). The median follow-up was 13 months (range 1–102) and 76 patients (78.4%) were expired. **Conclusion:** Endoscopic hemostasis is not enough to control entire bleeding of gastric cancer and transfusion is needed due to delayed bleeding. To control bleeding by gastric cancer effectively, other hemostatic method should be considered.

Key Word(s): 1. gastric cancer; 2. bleeding control; 3. endoscopy

Gastrointestinal Bleeding

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Clinical factors to predict angiographically detectable non-variceal upper gastrointestinal bleeding in patients refractory to endoscopic treatment

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Objective: Non-variceal upper GI bleeding (NVUGIB) is a common medical problem that has significant association with morbidity and mortality. Angiographic detection and subsequent transarterial embolization (TAE) is a primary treatment option when medical and endoscopic treatments fail. We investigated clinical factors that could affect the success of the angiographic detection and prognosis after TAE in patients with NVUGIB refractory to endoscopic therapy. **Methods:** A retrospective analysis of the clinical data was done in patients with failed endoscopic treatment who underwent angiography for the treatment of acute NVUGIB between May 2002 and May 2013. Patients were divided into detection or non-detection groups according to the presence of bleeding stigmata in angiographic finding. Rebleeding defined as subsequent bleeding event within 7 days and mortality within 30 days were analyzed as outcome parameters after TAE following detection in angiography. **Results:** A total 45 patients (37 male, mean age, 65.9 ± 14.9 years) were analyzed and classified as a detection group (n = 25, 55.5%) and non-detection group (n = 20, 44.6%). Peptic ulcers were the most common cause of refractory NVUGIB. Larger transfusion amount (5.7 ± 3.9 unit vs. 3.5 ± 2.8 unit; P = 0.03), prolonged aPTT level (34.2 ± 17.3 sec vs. 21.8 ± 13.8 sec; P = 0.01) and short time interval between last endoscopy and angiography

(17.5 ± 25.9 hours vs. 34.3 ± 59.5 hours; P = 0.04) were found to be significant factors for predicting angiographic detection. TAE was performed in all patients detected in angiography. Rebleeding (44%) was significantly associated with higher Rockall score (8.3 ± 1.5 vs. 6.6 ± 2.4; P = 0.046) and mortality (12%) was significantly associated with higher Rockall score (9.3 ± 0.6 vs. 7.1 ± 2.2; P = 0.002) and higher level of BUN (55.3 ± 47.4 vs. 27.6 ± 17.4; P = 0.01). **Conclusion:** Clinical characteristics associated with angiographic detection in patients with NVUGIB refractory to endoscopic therapy were severe bleeding, bleeding tendency and early angiographic intervention. The Rockall score is useful parameter for predicting rebleeding and mortality after TAE.

Key Word(s): 1. non-variceal upper GI bleeding; 2. transarterial embolization

Gastrointestinal Bleeding

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Efficiency and safety of immediate capsule endoscopy after acute obscure gastrointestinal bleeding

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Objective: Capsule endoscopy (CE) is now widely accepted as a first-line diagnostic modality for obscure gastrointestinal bleeding (OGIB), and has recently been used for acute overt OGIB. However, its efficiency and safety in the acute phase of overt OGIB is controversial. This study aimed to evaluate the efficiency and safety of CE in patients with acute overt OGIB. **Methods:** We investigated 82 patients with acute overt OGIB who underwent CE between April 1996 and March 2002 at our hospital. Patients were classified into three groups: an emergency CE group (CE performed within 48 hours of the last GI bleed), an early CE group (CE performed at days 2–7 after the last bleed), and an elective CE group (CE performed after 7 days). We compared the patient characteristics, clinical outcomes, and procedure-related complications between the three groups. **Results:** The emergency, early, and elective groups included 35, 23, and 24 patients, respectively. There were no significant differences in the characteristics of these groups. The detection rate for abnormal CE findings were significantly higher in the emergency group when compared with the early and elective groups (60% vs. 22% [p = 0.04] and 33% [p = 0.004], respectively). There was no significant difference in the rates of balloon assisted enteroscopy among the three groups (p = 0.066). The rate of hemostasis by enteroscopy was higher in the emergency group than in the elective group (29% vs. 4.2%; p = 0.02), and tended to be higher in the emergency group than in the early group (29% vs. 8.7%; p = 0.064). There were no fatalities or severe complications in any group. **Conclusion:** This study demonstrated that the detection rate of abnormal findings was higher when CE was performed earlier after GI bleeding, and that homeostasis was more effective. In addition, CE was safely performed in all patients, suggesting that CE should be performed as soon as possible after an acute GI bleed.

Key Word(s): 1. OGIB; 2. CE

testinal bleeding is very important. So assessment for acute upper gastrointestinal bleeding (AUGIB) must be done appropriately. Several scoring systems have been used to identify patients with AUGIB. Glasgow-Blatchford score (GBS) uses the result of a blood test. Rockall score (RS) is assessed by endoscopic finding, age, comorbidity, vital sign. AIMS65 is simpler than these systems. It contains serum albumin, international normalized ratio, altered mental status, systolic blood pressure and age. Retrospectively, we compared the difference of these three systems in AUGIB. **Methods:** Retrospectively we analyzed 384 patients who underwent urgent endoscopy due to non-variceal upper gastrointestinal bleeding from December 2008 to August 2013 at Pusan national university Yangsan Hospital. Among these patients, 223 patients were satisfied with our UGIB criteria. We assessed these 223 patients by GBS, RS and AIMS65. We defined unfavorable outcome as requiring a clinical intervention or death in-hospital within 30 days. And then the predictability of each scoring system for clinical outcome compared between each other. **Results:** In-hospital mortality was 2.2% (5/223). 43.9% (98/223) of all patients was unfavorable outcome. The re-bleeding rate was 9.4% (21/223). Of scoring systems, GBS was significantly increased in unfavorable outcome patients ($p = 0.0119$) and was most superior than other scoring systems in predicting the need for packed red blood cell (PRBC) transfusion ($p = 0.0134$). Overall among the three scoring systems there was no significant difference in predicting re-bleeding, the need of therapeutic intervention and death. **Conclusion:** Assessment for acute upper gastrointestinal bleeding (AUGIB) has been performed through several scoring systems. Clinicians can predict the need for intervention and unfavorable clinical outcome by these scoring systems. Our study showed there was no significant difference in predicting clinical outcome among these systems. But GBS was superior than other scoring systems to predict unfavorable outcome patients and need for transfusion.

Key Word(s): 1. gastrointestinal bleeding; 2. Rockall score; 3. Glasgow-Blatchford score; 4. AIMS65

Gastrointestinal Bleeding

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The antibiotics prophylaxis on prognosis in cirrhotic patients with peptic ulcer bleeding after endoscopic hemostasis

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Objective: Infections in cirrhotic patients with upper gastrointestinal bleeding are a common complication causing severe complication and mortality. Antibiotic prophylaxis has been recommended for cirrhotic patients with variceal hemorrhage but little is known about the effect for peptic ulcer bleeding. This study aimed to evaluate the antibiotic prophylaxis on prognosis in cirrhotic patients with peptic ulcer bleeding after endoscopic hemostasis and to identify risk factors predictive of re-bleeding, bacterial infection and in-hospital mortality. **Methods:** The medical records of 426 patients with acute peptic ulcer bleeding who had received endoscopic hemostasis between January 2008 and January 2014 were reviewed. Two hundred and thirty-five patients were enrolled after strict exclusion criteria. Patients who received prophylactic intravenous ceftriaxone were classified as group A ($n = 88$) while those who did not receive antibiotics were classified as group B ($n = 147$). The outcomes were length of hospital days, bacterial infection, rebleeding and in-hospital mortality. Multivariable analysis was performed to determine predictors of death, ulcer rebleeding and infection development. Kaplan-Meier survival

analysis was used to compare the mortality between two groups and in subgroups between patients with compensated and decompensated cirrhosis. **Results:** 48 (20.4%) patients experienced ulcer rebleeding and 46 (19.6%) developed bacterial infection. More patients suffered from infection and recurrent bleeding in group B than group A (25.2% vs. 10.2%, $p = 0.005$ and 30.6% vs. 3.4%; $p < 0.001$ respectively). The risk factors associated to recurrent bleeding were Rockall score (Odds ratio (OR) = 1.069; $p = 0.004$), unit of blood transfusion (OR = 1.019; $p = 0.031$), and antibiotic prophylaxis (OR = 0.082, $p < 0.001$). The risk factors associated to bacterial infection were Child-Pugh score (OR: 1.251; $p = 0.003$), active alcoholism (OR: 1.882; $p = 0.035$), and antibiotic prophylaxis (OR: 0.377; $p = 0.009$). On the whole, 40 (17%) patients died during hospitalization. Rockall score and recurrent bleeding are two predictive factor of in-hospital mortality. The in-hospital mortality was 13.6% in group A and 19% in group B. The administration of prophylactic antibiotics was not associated with significant differences in mortality between the two groups ($p = 0.131$). In subgroup analysis according to different stages of cirrhotic patients, survival was not different in compensated patients but the administration of prophylactic antibiotics appeared to significantly reduce the death in decompensated patients. **Conclusion:** This study suggests that antibiotic prophylaxis after endoscopic hemostasis for acute peptic ulcer bleeding prevents infections and reduces rebleeding events in cirrhotic patients. The use of antibiotic prophylaxis only yields better survival among decompensated cirrhotic patients. Patients with higher Rockall score and experienced rebleeding are at increased risk of dying during hospitalization.

Key Word(s): 1. antibiotics prophylaxis; 2. peptic ulcer bleeding; 3. liver cirrhosis

Gastrointestinal Bleeding

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The safety and clinical outcomes of gastric fundal variceal obliteration using tissue adhesive made in China

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Objective: Bleeding from esophagogastric varices is life threatening. To determine the safety and clinical outcomes of tissue adhesive made in China injection for acute gastric variceal hemorrhage. **Methods:** Patients who presented to the Third Affiliated Hospital of Sun Yat-sen University Endoscopy Center with active gastric variceal bleeding and were admitted for treatment between 2011 and 2013 were selected retrospectively for study inclusion. All patients were treated by injection of tissue adhesive made in China. Data recorded included demographic and clinical characteristics, endoscopic findings, clinical outcomes in terms of early and late re-bleeding, complications, and mortality. **Results:** A total of 39 patients underwent tissue adhesive injection to treat bleeding gastric varices. The mean age was 46.8 ± 7.9 (range: 21 to 73) years old, and 79.5% of the patients were male. The most common presentations were hematemesis (67.1%), melena (16.2%), and coffee ground emesis (8.9%). Early complications developed in 14.4% of patients, and were primarily infections and non-fatal embolization. Late re-bleeding was significantly correlated with early procedure-related complications by univariate analysis ($P < 0.05$), but no factors were significantly correlated by multivariate analysis. The overall mortality rate was 12.8%, and the factors showing strong association with higher mortality risk were elevated total bilirubin

($P < 0.01$), and late re-bleeding ($P < 0.05$). **Conclusion:** Tissue adhesive made in China injection is a safe and effective hemostatic method for treating gastric variceal hemorrhage.

Key Word(s): 1. tissue adhesive; 2. gastric varices; 3. complications; 4. hemorrhage

Gastrointestinal Bleeding

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Clinical analysis on 105 cases of NSAIDs associated peptic ulcer bleeding: a retrospective study

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Objective: To evaluate the clinical characters of nonsteroidal anti-inflammatory drugs (NSAIDs) associated peptic ulcer bleeding to provide basis for the clinical reasonable application. **Methods:** The use of medication, clinical manifestations and signs, laboratory examinations, endoscopy examinations, treatment and prognosis were retrospectively analyzed in 613 patients who were diagnosed as peptic ulcer bleeding from January 2009 to December 2013. Cases combined with esophageal gastric variceal bleeding or Mallory-Weiss syndrome were excluded. **Results:** A total of 105 cases (17.1%) with NSAID associated peptic ulcer bleeding were evaluated. There were significant differences in older age, gender disparity, less complain of epigastric pain, high rate of concomitant with anti-coagulant drugs or steroids, high prevalent of gastric or compound ulcers, severity of anemia in elder patients compared with 508 non-NSAIDs associated peptic ulcer bleeding cases ($P < 0.05$). No significant differences were found in mortality, *Helicobacter pylori* infection ($P > 0.05$). **Conclusion:** NSAID associated peptic ulcer bleeding were more common in elder female patients who suffered from more severe anemia and less complain of epigastric pain. The prompt medical and endoscopic treatments are the primary factors to improve the prognosis of NSAID associated peptic ulcer bleeding patients.

Key Word(s): 1. NSAID; 2. peptic ulcer; 3. bleeding

Gastrointestinal Bleeding

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Endoscopic therapy for lower gastrointestinal bleeding in the elderly

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Objective: With the progressive aging of society, the importance of treatment for lower gastrointestinal tract bleeding is increasing. It is necessary to evaluate the safety of treating gastrointestinal bleeding using endoscopic therapy. The present study aimed to evaluate the safety and validity of endoscopic hemostasis for lower gastrointestinal bleeding in elderly individuals aged more than 70 years. **Methods:** We reviewed the cases of 36 patients with lower gastrointestinal bleeding who underwent endoscopic

hemostasis at our hospital between April 2009 and February 2014. **Results:** The mean age was 76.2 years (70–91 years). Nineteen patients were men, and 17 were women. Five patients were using an antiplatelet agent. Seven patients were using an anticoagulant agent (including heparin injection). Three patients were using a combination of both agents. The cause of bleeding was ulcer induced by endoscopic mucosal resection in 12 cases, ulcer induced by endoscopic submucosal dissection in 6, anastomosis site of colon resection in 5, colon diverticulum in 4, radiation proctitis in 4, hemorrhagic rectal ulcer in 3, biopsy for advanced colorectal cancer in 1, and vascular ectasia in 1. The methods of treatment were as follows: clipping in 27 cases, argon plasma coagulation in 6, hemostatic forceps in 5, and temporary snare in 1. All patients who underwent endoscopic therapy achieved hemostasis. There were no serious complications such as perioperative death or complications requiring emergency surgery. **Conclusion:** Endoscopic hemostasis is a safe and effective treatment for lower gastrointestinal bleeding in the elderly.

Key Word(s): 1. lower gastrointestinal bleeding endoscopic therapy

Gastrointestinal Bleeding

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Choosing between endoscopic sclerotherapy and endoscopic ligation for esophageal varices case report and literature review

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Objective: Endoscopic sclerotherapy and endoscopic ligation were accepted in the treatment of esophageal varices bleeding in patients with liver cirrhosis. Endoscopic ligation seem to be superior than endoscopic sclerotherapy. Primary prevention must be performed if the criteria are concluded, and the secondary prevention must be performed to prevent variceal rebleeding. According to the guideline Endoscopic ligation is the first choice, if ligation was difficult because of continued bleeding or this technique is not available, endoscopic variceal sclerotherapy should be performed. **Methods:** Cases report. Case 1. A women get serial variceal ligation. At the last endoscopic evaluation, there was esophageal varices lining between cicatrix, it is difficult to perform ligation, so sclerotherapy must be choosed. Case 2. A man with liver cirrhosis and the shape of the varix is wide and look like a fan, sclerotherapy was done. Case 3. A man with liver cirrhosis and has esophageal varices continue to the gastro-esophageal varices, it's better sclerotherapy. **Results:** Beside variceal size and tension of variceal wall, others condition of varix itself must be mentioned. The type of esophageal varix is important. The varix look like pipe, it's better to perform ligation. In the case of esophageal varix lining between cicatrix, it's difficult making suction of this varix, its better sclerotherapy. When the shape of the varix is wide and look like a fan, the diameter of 'adaptor' smaller then the varix, so better sclerotherapy. Also the varix has connection to the GOV, liquid which was injected will be spread out to the GOV than ligation. **Conclusion:** Sclerotherapy endoscopy better than ligation at the condition: Ligation was difficult such as the varix lining between cicatrix, the shape of varix is wide and look like a fan and if esophageal varix continue to be gastroesophageal varix.

Key Word(s): 1. variceal endoscopic ligation; 2. sclerotherapy endoscopy; 3. type of esophageal varices

Gastrointestinal Bleeding

P-348A**A 2-year study: etiology of upper gastrointestinal Bleeding in Cipto Mangunkusumo Hospital****Presenting Author:** AMANDA PITARINI UTARI**Additional Authors:** AMANDA PITARINI UTARI, ARI FAHRIAL SYAM, ACHMAD FAUZI, MURDANI ABDULLAH, DADANG MAKMUN**Corresponding Author:** AMANDA PITARINI UTARI**Affiliations:** *Division of Gastroenterology, Department of Internal Medicine, Universitas Indonesia*

Objectives: Upper gastrointestinal (UGI) bleeding is a common but potentially life-threatening condition. Because rebleeding causes higher mortality, prevention is the most effective management of UGB. Previous study suggested that variceal bleeding was the most common etiology of UGI bleeding in our center. This study aimed on obtaining recent data on the etiology of UGB in Cipto Mangunkusumo hospital. **Methods:** Data was collected from Endoscopy Record System at Gastrointestinal Endoscopy Centre, Cipto Mangunkusumo Hospital, Jakarta, Indonesia. We used SPSS 18.0 for Windows to analyze the data. **Results:** From October 2011 until October 2013 (a 2-year period), there were 2,814 UGI endoscopy procedures performed in our center and as many as 391 cases were UGI bleeding. Most patient were male (56,5%) and more than 50-year old. The most common etiology were gastritis (29,6%), followed by gastric ulcer (27,2%), esophageal varices (16,3%), and duodenal ulcer (8,5%). Gastric mass caused the bleeding in 17 patients, while 7 patients had duodenal tumor. **Conclusions:** Compared to previous study, the percentage of UGI bleeding was decreased and the main etiologies were changed.

Key Word(s): 1. Bleeding; 2. gastrointestinal; 3. peptic ulcer; 4. variceal

Gastrointestinal Bleeding

P-349**Erosive gastritis is the most cause of gastrointestinal bleeding in Pontianak, West Kalimantan****Presenting Author:** WILLY BRODUS UWAN**Additional Authors:** FAHRIAL SYAM ARI, MAKMUN DADANG**Corresponding Author:** WILLY BRODUS UWAN**Affiliations:** *Division of Gastroenterology Fkui, Division of Gastroenterology Fkui*

Objective: Upper gastrointestinal bleeding is a prevalent condition and commonly found in emergency department. There were a different cause of upper gastrointestinal bleeding in Indonesia compared with western literature. Esophageal varices or gastropathy are common cause of upper gastrointestinal bleeding in Indonesia. The aim of this study were to determine the endoscopic finding in patients with upper gastrointestinal bleeding in St. Antonius General Hospital. **Methods:** This retrospective study was conducted in all patients with upper gastrointestinal bleeding who had underwent upper gastrointestinal endoscopy at a private referral hospital St. Antonius, Pontianak between January 2009 and December 2013. We evaluated 5912 patients undergoing endoscopic examination of the upper gastrointestinal tract for five years. **Results:** There were 988 eligible patients consisting of 589 (59, 62%) males and 399 females (40, 38%) ranged from 16–83 years old. The greatest occurrence was at the age group 40–49 (22, 87%). The endoscopy result showed that the most common cause of bleeding was erosive gastritis, which occurred in 675 (68, 31%) cases, the other findings were 181 (18, 31%) cases of gastric ulcer, 46 (4,

65%) cases of duodenal ulcer, 33 (3, 34%) cases of portal hypertensive gastropathy, 21 (2, 12%) erosive esophagitis, 9 (0, 91%) cases of esophageal varices, 12 (1, 21%) cases of esophageal neoplasm and 11 (1, 111%) cases of gastric neoplasm. **Conclusion:** The greatest occurrence of upper gastrointestinal bleeding between January 2009 and December 2013 in St. Antonius General Hospital was at the age group 40–49 years. Male and erosive gastritis were the most common cause in this study, this finding is different compared with the etiology in Indonesian literature which esophageal varices or gastropathy were the most common cause.

Key Word(s): 1. endoscopic finding; 2. upper gastrointestinal bleeding; 3. erosive gastritis

Gastrointestinal Bleeding

P-350**Gastrointestinal bleeding from an inverted Meckel's diverticulum diagnosed via double balloon enteroscopy: a case report****Presenting Author:** MARGARET ELAINE J VILLAMAYOR**Additional Authors:** JOHN PAUL OLIVEROS, JASON CASTRO, MARK ANTHONY DE LUSONG, WILMA BALTAZAR**Corresponding Author:** MARGARET ELAINE J VILLAMAYOR**Affiliations:** *Philippine General Hospital, Philippine General Hospital, Philippine General Hospital, Philippine General Hospital*

Objective: This aims to present a 17 year old Filipino male who presented for intermittent hematochezia for 2 years. Workups such as upper endoscopy, colonoscopy, Meckel's scan, RBC tagging and CT angiography were all unremarkable. He was referred to our service for double balloon enteroscopy. **Methods:** There was a 2 × 2 cm pedunculated mass with a 0.3 cm clean based ulcer was seen on its base located approximately in the distal jejunum. Exploratory laparotomy with resection of the mass was planned. **Results:** Intraop, findings showed a 4 cm outpouching in the antimesenteric border of the ileum about 115 cm from the ileocecal valve. There were no other palpable lesions on bowel run. On histopath, it was compatible with Meckel's diverticulum, the specimen contained gastric and pancreatic tissues. **Conclusion:** Meckel's diverticulum may contain ectopic tissues with gastric and pancreatic tissue occurring 60 and 6 percent at a time. It is usually located on the antimesenteric border of the ileum located within 100 cm from the ileocecal valve, although reports up to 180 cm have occurred. Hemorrhage is the most frequent complication. Meckel's may invert into the lumen, one theory is that abnormal peristaltic movement due to ulceration or ectopic tissue at the base of the Meckel's diverticulum may cause it to invert.

Key Word(s): 1. gastrointestinal bleeding



Figure 1 Inverted Meckel's diverticulum

Gastrointestinal Bleeding

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Gastric cavernous hemangioma present with severe upper gastrointestinal bleeding

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Objective: To introduce a rare cause of upper gastrointestinal bleeding.

Methods: The medical course of a rare patient with upper gastrointestinal bleeding caused by gastric cavernous hemangioma was presented in brief. **Results:** We report a case of a 41-year-old man who suffered from shock due to a sudden onset of hematemesis and melena. Endoscopy revealed a 5 cm x 1.5 cm mass mimicking a varices which is located along with lesser curve and the gastric fundus. Abdominal contrast-enhanced CT revealed huge tumor about 10 cm x 6 cm huge mass originated from the lesser curve of the stomach with the blood supply from the left gastric artery. Based on his clinical appearance and the laboratory results, the patient was diagnosed with gastric hemangioma. In the laparotomy, the tumor was cut off and a total gastrectomy was performed. The final diagnosis of cavernous hemangioma arising from the gastric was confirmed by postoperative pathological examination. **Conclusion:** Gastric cavernous hemangioma can be present as severe upper gastrointestinal bleeding.

Key Word(s): 1. cavernous hemangioma; 2. upper gastrointestinal bleeding

Gastrointestinal Bleeding

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Nursing experience of acute upper gastrointestinal hemorrhage

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Objective: To summarize the nursing experience of acute upper gastrointestinal hemorrhage. **Methods:** 162 patients (58 from esophageal and/or gastric varices and 104 from non-varices) with acute upper gastrointestinal hemorrhage were analyzed on nursing, therapy and prognosis. **Results:** 3 cases were dead because of 3 times hemorrhage, 2 cases were dead because of liver failure, 2 cases were transferred to the surgery department, the other patients were successful rescued by using emergency endoscopic treatment, including sclerotherapy, ligation, titanium clips and medical treatment, and leaved hospital without re-bleeding in a long-term follow. By the same time, observing closely, taking urgent measure in a timely manner, strengthening the basic care and symptomatic care, ensuring the blood volume and taking care of patients' psychological condition were needed to be performed in the full phase of stopping bleeding and the recovery phase. The careful nursing methods and strategies significantly improved the therapeutic treatment and prognosis of patients of acute upper gastrointestinal hemorrhage. **Conclusion:** Taking urgent measure in earlier time, strengthening the basic nursing care and symptomatic care, and the proper use of emergency endoscopic treatment are the effective strategies to shorten the phase of treatment and decrease the complications of acute upper gastrointestinal hemorrhage.

Key Word(s): 1. upper gastrointestinal hemorrhage; 2. nursing care; 3. treatment

Gastrointestinal Bleeding

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The study of hood-assisted endoscopic injection sclera-therapy in patients with esophageal varices

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Objective: To evaluate the efficacy of hood-assisted endoscopic esophageal injection sclero-therapy in patients with esophageal varices.

Methods: Three hundred and sixty two adult patients with esophageal varices treated by EIS in our hospital from January 2011 to January 2014 were randomly divided into two groups: 180 patients (group A) were treated by hood-assisted endoscopy and 182 by direct injection (group B). The time required of the endoscopic treatment, the success rate and postoperative incidence of adverse reactions were compared between the two groups. **Results:** The time required of endoscopic treatment ($6.61 \text{ min} \pm 1.52 \text{ min}$ in group A vs $9.35 \text{ min} \pm 1.48 \text{ min}$ in Group B, $p < 0.05$) was shortened in the hood-assisted group. The success rate was 100% in group A and 93.8% in group B. The postoperative incidence of complications was significantly reduced in the hood-assisted group (26.7% vs 35.1%, $p < 0.05$). **Conclusion:** Our results indicate that the hood-assisted EIS method can make endoscopic view show clearly, easy to locate, and help to shorten operation time, reduce complications and increase the success rate of operation.

Key Word(s): 1. esophageal varices; 2. esophageal injection sclera-therapy; 3. hood-assisted

Gastrointestinal Bleeding

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Protective effect of GLP-2 on intestinal barrier function of stress ulcer rat**Presenting Author:** LIANG ZHU**Additional Authors:** YUNHONG WU, DEZHENG GONG, QIJING WANG, SHUHAO ZHANG, ZIHANG HUANG, LIHONG CHEN, CHUNYANG SUN, LILI GUAN, BO YAUN, DEQIN YU, JINGZHOU MU, QIUYU CHEN, SHUPING LIU, YUFEI ZHAO, YUAN ZOU**Corresponding Author:** LIANG ZHU**Affiliations:** *Medical University, Dalian Medical University*

Objective: To evaluate the protective effect of GLP-2 on intestinal barrier function of stress ulcer rat. **Methods:** 20 SD rats with similar weight were randomly divided into two groups, the GLP-2 group (Group C), and the control group (Group D), with 10 rats in each group. GLP-2 was dissolved in sterile PBS buffer (0.01 mol/L, 20 µg/ml, pH7.0), and subcutaneously injected at the dose of 250 µg/kg/d, for 2 times with an interval of 12 hours. The administration continued for 3 days. The control group was injected of the corresponding volume of PBS. Water-immersion and restraint stress (WRS) was used to duplicate stress ulcer (SU) model. Techniques including pathology, immunohistochemistry and bacterial culture were applied to observe the effect of GLP-2 on rat intestinal barrier function in stress ulcer. **Results:** In stress ulcer rat received GLP-2, the villous height and crypt depth of the jejunum, ileum and colon were observed, and the expression of Inos, NF-κB was decreased, but occludin-1, PCNA was increased. The bacterial translocation to mesenteric lymph nodes was also obviously inhibited by GLP-2. **Conclusion:** GLP-2 is effective to stimulate the proliferation and improve the barrier function of rat intestinal mucous membrane in stress ulcer. Supported by the National Nature Science Foundation of China No. 81370583, No. 30801127; Liaoning BaiQianWan Talents Program No. 2013921053; Liaoning Provincial Natural Science Foundation of China NO.2014.

Key Word(s): 1. GLP-2; 2. stress ulcer; 3. intestinal barrier function

Gastrointestinal Bleeding

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Left gastric vein color Doppler evaluate the efficacy of endoscopic variceal ligation**Presenting Author:** YINGQIAO ZHU**Additional Authors:** YANG BAI, QI ZHANG**Corresponding Author:** YINGQIAO ZHU**Affiliations:** *Ultrasound, 1st Hospital, Jilin University; Ultrasound, 1st Hospital, Jilin University*

Objective: Study the left gastric vein color Doppler evaluate the efficacy of endoscopic variceal ligation. **Methods:** 102 Patients (median age 60 years) involved in this study, all of them with significant liver cirrhosis and varices, in which 38 males (median age 58 years), females 25 (median age 62 years). All patients underwent endoscopic variceal ligation, and was carried out left gastric vein color Doppler ultrasound examination before and after ligation, respectively. Contrast the hemodynamics changes of left gastric vein before and after surgery. 2 h before and after the Ligation ,

resting, take the appropriate position, moderate pressure scanning, we observe the left gastric vein diameter, flow direction, flow velocity and other indicators. Effective treatment is defined as: left gastric vein flow direction restore to the liver, hepatic direction flow velocity was increased to more than 30% before surgery or reflux velocity dropped to more than 30% before surgery. **Results:** 102 subjects were successfully completed by ligation, in which 85 patients with more significant changes in hemodynamics after ligation. The sensitivity and specificity of color Doppler ultrasound examination for efficacy evaluation were 83.3% and 100%, respectively. **Conclusion:** The left gastric artery color Doppler examination can overall assess Hepatogastric shunt condition by comparing before and after endoscopic variceal ligation surgery. Due to the complex diversity of the collateral circulation, left gastric vein color Doppler examination cannot make a precise assessment of all cases.

Key Word(s): 1. color Doppler; 2. left gastric vein; 3. varicose veins; 4. ligation

Liver

P-361

N.I.A.C.E score: a new tool to better distribute advanced hepatocellular carcinoma (BCLC C).**Results from four French cohorts comprising 703 patients****Presenting Author:** XAVIER ADHOUTE**Additional Authors:** GUILLAUME PENARANDA, JEAN FREDERIC BLANC, JULIEN EDELINE, GUILLAUME CONROY, PAUL CASTELLANI, VALERIE OULES, OLIVIER BAYLE, OLIVIER MONNET, BERNARD POL, PATRICK BEAURAIN, HERVE PERRIER, JEAN LUC RAOUL, JEAN PIERRE BRONOWICKI, MARC BOURLIERE**Corresponding Author:** XAVIER ADHOUTE**Affiliations:** *Alphabio Laboratory, Hôpital Saint-André, Centre Eugene Marquis, Chu Vandoeuvre-Lès-Nancy, Hôpital Saint-Joseph, Hôpital Saint-Joseph, Hôpital Saint-Joseph, Hôpital Saint-Joseph, Hôpital Saint-Joseph, Hôpital Saint-Joseph, Paoli-Calmettes Institute, Chu Vandoeuvre-Lès-Nancy, Hôpital Saint-Joseph*

Objective: Hepatocellular carcinoma (HCC) is often diagnosed at an advanced stage. BCLC C HCC includes a broad spectrum of tumors. The prognosis may vary with liver function and characteristics of the tumor. purpose: To make a simple score to distinguish among BCLC C HCC a subgroup with better prognosis to guide therapeutic decision. Validation of the score in three external cohorts of BCLC C patients. **Methods:** This retrospective study included BCLC C HCC patients (n = 160) at diagnosis or during follow-up, treated by chemoembolization (TACE) 27%, sorafenib 30%, TACE and sorafenib 24% and untreated patients 19%. Determining a score based on prognostic variables of our population. Validation within three external cohorts of BCLC C HCC patients (Rennes, Nancy, Bordeaux). **Results:** Cirrhosis was viral 45%, alcohol-related 31%, Child-Pugh A 62%, Child-Pugh B 38%. 50% of HCC were infiltrative tumors. The number of nodules was ≥3 in 44% of cases. Portal vein thrombosis was present in 60% of cases, metastasis in 12% of cases. 45% of the patients had elevated AFP ≥ 200 ng / ml at diagnosis. ECOG grade was ≥1 in 85% of cases. Median survival time of patients treated by Sorafenib was 7 months [5–10], by TACE: 10 months [6–15], by TACE then Sorafenib: 13 months [10–15], p = 0.462. Multivariate analysis found five prognostic variables associated with overall survival (AFP ng/ml rate at diagnosis, Child-Pugh score, infiltrative vs. encapsulated tumor, nodule number, ECOG grade).

These variables were included in a score (N.I.A.C.E) determined from Beta regression coefficients: $1 \times (\text{Nodules: } 0 \text{ if } <3, 1 \text{ if } \geq 3) + 1.5 \times (\text{Infiltrative } 0 \text{ if no, } 1 \text{ if yes}) + 1.5 \times (\text{AFP: } 0 \text{ if } <200, 1 \text{ if } \geq 200) + 1.5 \times (\text{Child-Pugh: } 0 \text{ if A, } 1 \text{ if B}) + 1.5 \times (\text{ECOG grade } 0 \text{ if } 0, 1 \text{ if } \geq 1)$. With a threshold value <3 , the score found two groups with different survival: <3 (n = 38) 16 months [14–27] vs. ≥ 3 (n = 122) 7 months [6–9], $p < .0001$. Application of the score to three external BCLC C HCC cohorts treated or not by Sorafenib also found two groups with different survival: <3 (n = 37) 10.6 months [4.1–17.1] vs. ≥ 3 (n = 46) 5.1 months [2.9–7.4] $p < .001$ Rennes; Score < 3 (n = 28) 16 months [14–25] vs. ≥ 3 (n = 55) 6 months [4–8] $p < .0001$ Nancy; <3 (n = 141) 12 months [10–16] vs. ≥ 3 (n = 236) 6 months [5–7] $p < .0001$ Bordeaux. **Conclusion:** This series confirms that BCLC C HCC are a heterogeneous group. We have determined and validated a simple score which can distinguish a sub-group of better prognosis, regardless of treatment. Current treatments do not appear to alter the natural course of BCLC C HCC with a NIACE score >3 .

Key Word(s): 1. hepatocellular carcinoma nodule number infiltrative cancer AFP Child-Pugh score ECOG grade

Liver

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Unresectable hepatocellular carcinoma (HCC) treated by chemoembolization. What prognostic score use: ART, HAP, ABCR? Comparative study on a French multicenter

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Objective: Chemoembolization (TACE) is the most commonly used treatment option in HCC. It is recommended for intermediate stage HCC (BCLC B). But there is no consensus concerning treatment modalities. Recently several prognostic scores have been proposed to guide the treatment decision: ART, HAP, ABCR (EASL 2014, abstract A-627-0008-01729). Purpose: To evaluate and compare these three prognostic scores on a multicenter independent cohort treated by TACE. **Methods:** This retrospective study included Child-Pugh A or B patients with BCLC B HCC, BCLC A HCC (not eligible for curative treatment) and BCLC C HCC with limited portal vein thrombosis, treated by TACE from 01/2007 to 01/2013, without complementary treatment (RF or graft), not involved in the development of ABCR score. To compare the three scores, we used an independent cohort: 153 patients, median age 68 years, BCLC A 17%, BCLC B 69%, BCLC C 14% treated in Marseille and Nancy. Cirrhosis was viral 40%, related to alcohol 43%, to a fatty liver disease 12%. Median survival in the three scores, overall effect of scores on survival time (Wald test). **Results:** Patients in the independent cohort were treated an average of 2.75 TACE. The response rate (EASL criteria) was 61%. Median follow-up was 19 months [17–23]. HAP score distinguished four groups: HAP A 31 months [25–37] vs. HAP B 31 months [20–51] vs. HAP C 22 months [17–25] vs. HAP D 18 months [6–32], $p = 0.0454$, but the risk of death in

HAP B and D groups were not significantly different from the reference HAP A group (respectively HR 0.88 [0.52–1.50], $p = 0.640$, HR 1.56 [0.81–2.99], $p = 0.1820$). ART score distinguished two groups with different survival: ART (0–1.5) 27 months [23–37] vs. ART (≥ 2.5) 19 months [14–25], $p = 0.0013$, but the risk of death of the ART 4 group was not significantly different from the reference ART 0 group (HR 1.61 [0.81–3.21], $p = 0.178$) conversely ART 1 group (HR 3.26 [1.91–5.55], $p < .0001$). The ABCR score distinguished three groups with different survival: ABCR ≤ 0 : 37 months [27–49] vs. ABCR [1–3]: 17 months [14–20] vs. ABCR ≥ 4 : 8 months [6–18], $p < 0.0001$. The risk of death of ABCR [1–3] and ABCR ≥ 4 groups was significantly increased compared to the reference ABCR ≤ 0 group (respectively HR 3.85 [2.46–6.02], $p < .0001$, HR 14.72 [6.57–33], $p < .0001$). **Conclusion:** In this multicenter mainly BCLC B HCC series, the distribution of patients according to the ART and HAP scores is inaccurate because it is not correlated with prognosis. The ABCR score better distributes unresectable HCC and therefore optimize treatment: continuation of TACE, systemic therapy or therapeutic trial.

Key Word(s): 1. hepatocellular carcinoma chemoembolization BCLC classification prognostic score

Liver

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Does transjugular intrahepatic portosystemic shunt (TIPS) with covered stents modify the natural course of decompensated cirrhosis?

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Objective: To analyze the impact of TIPS with covered stents on survival of patients with “severe” portal hypertension compared to a control group treated medically. To assess complications associated with implantation of the TIPS. **Methods:** 344 consecutive patients were hospitalized for decompensated cirrhosis (Child-Pugh B 60% / C 40%) from 01/2008 to 12/2012. Covered stent was implanted in 98 patients for refractory ascites or recurrent gastrointestinal bleeding. Assessment of median survival (MS) with and without TIPS, MS according to Child-Pugh score and after matching 1:1 (n = 130) for age, Child-Pugh score, MELD score, presence of hepatocellular carcinoma HCC, to a control group having a first decompensation. **Results:** TIPS implantation was successful in 100% of rates. The mean portosystemic pressure gradient decreased from 18.5 ± 4.5 mmHg to 5.8 ± 2.6 mmHg. MS of patients with TIPS (n = 98) was 29.4 months [22–38.6] vs. 12.9 months [10.2–18.3] without TIPS (n = 246), $p = 0.0015$; MS of Child-Pugh B patients with TIPS (n = 69) was 38.6 months [29.4–48.7] vs. 19.1 months [14.1–35.3] without TIPS (n = 137), $p = 0.0183$; MS of Child-Pugh C patients with TIPS (n = 29) was 17.4 months [10.1–25.3] vs. 8 months [6.2–11.2] without TIPS (n = 109), $p = 0.22$. TIPS was a prognostic variable associated with survival in univariate analysis ($p = 0.015$). HCC, alcoholic hepatitis were more frequent in patients without TIPS (respectively 31% vs. 8%, $p < .0001$, 17% vs. 10%, $p = 0.05$). After matching 1:1 for age (61 ± 10), Child-Pugh score (B 66%, C 34%), MELD score (17.0 ± 4.2) and presence

of HCC (9%), esophageal varices grade 2 or 3 ($p=0.003$), refractory ascites ($p=0.01$), an increase in the portosystemic gradient ($p=0.008$) were significantly more frequent in the TIPS group. Median survival was 26 months in the TIPS group ($n=65$) vs. 27 months without TIPS ($n=65$), $p=1.00$. Median follow up was 12 months. Rate of infection did not differ between the 2 groups. Main complications of TIPS (recurrent encephalopathy 34%, stent dysfunction 24.5%, strangulated umbilical hernia 9%, congestive heart failure 7.5%) did not affect patient survival. **Conclusion:** In this series, TIPS with covered stents appears to improve the natural history of Child-Pugh B cirrhosis with recurrent decompensation. Conversely, decreasing portosystemic pressure gradient does not alter the progression of Child-Pugh C cirrhosis with prolonged decompensation. Earlier implementation of a tips should be discussed for some Child-Pugh B patients with recurrent ascites or gastrointestinal bleeding.

Key Word(s): 1. TIPS portal hypertension covered stents decompensated cirrhosis

Liver

P-364

Hepatocellular carcinoma in nonalcoholic fatty liver disease, which differences from virus and alcohol? Comparative monocentric study about 452 patients concerning the presentation, treatments, evolution

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Objective: Steatosis has become the leading cause of chronic hepatitis in developing countries. It is frequently associated with the metabolic syndrome (MS). Nonalcoholic fatty liver disease can progress to cirrhosis and/or carcinoma hepatocellular (HCC). The objectives of this study are to compare the presentation, treatments, evolution of HCC regardless of the underlying liver disease, whether viral, alcohol-related or related to metabolic syndrome as the only factor risk. **Methods:** From 01/2005 to 12/2012, 452 patients meeting these criteria were admitted to our unit for the management of HCC (Virus $n=196$, Alcohol $n=173$, metabolic syndrome $n=83$). **Results:** Cirrhosis was more frequently associated with viral or alcoholic etiology ($p=0.27$) probably due to the size of resected tumors in the metabolic syndrome group. **Conclusion:** HCC associated with metabolic syndrome as the only risk factor are the third cause of primary malignant liver tumors in this series. They have distinct characteristics with a non-cirrhotic liver development and more unique macronodule, which allow more frequently surgical resection. But comorbidities related to the MS and the large size of lesions involved in relapse, should be taken into account. Response and tolerance to non-surgical treatments (TACE or Sorafenib) appears similar to other etiologies. Given the frequency of metabolic syndrome in our population, patients at risk should be clearly better defined.

Key Word(s): 1. hepatocellular carcinoma nonalcoholic fatty liver disease liver cirrhosis surgical resection TACE

Liver

P-365

Validation of the Hong Kong liver cancer (HKLC) classification in a European cohort of HCC associated with HCV and alcoholic cirrhosis.

Comparative study with the BCLC classification

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Objective: HKLC is new staging system with treatment guidelines determined from a large cohort of B virus-related HCC (80%), treated or not, aimed to improve the prognostic classification for HCC, using surgery in subsets of intermediate and advanced HCC (Yau T and al. *Gastroenterology* 2014; 146). This score includes the following prognostic factors: tumor size, number, vascular invasion, distant metastases, patient performance score (ECOG PS) and liver function. The staging system widely used in western countries is the BCLC classification endorsed by EASL, AALSD. To assess the performance of HKLC score and to compare it with BCLC classification in a HCC European cohort associated with HCV and/or alcoholic cirrhosis. **Methods:** we collected data from 665 HCC patients predominantly related to HCV (36%), alcohol (36%) and NASH (16%), treated in Marseille and Nancy from 01/2005 to 06/2013. Overall survival (OS) from the HKLC and BCLC staging systems. Indices of rank correlation: AUC, Somers' D, and Gamma measures of association for HKLC and BCLC in their discriminatory ability for the prediction of survival. **Results:** Median age was 67.5 years; the majority of patients were men (80%). Regarding treatments modalities: TACE in the first or second line 53%, curative procedures (surgery, LT, RF) 23%, systemic therapy in the first or second line 36%, supportive care 15%. At the time the data were censored (June 2014), 460 (69%) patients had died. The median overall survival time was 18.2 months [16.2–20.8] and the median follow-up time was 14.5 months [13.1–16.2]. Significant differences in overall survival outcome are observed in both scores ($p<.0001$ for both HKLC and BCLC). Survival probabilities observed are similar for both scores according to score stages. Five years survival probability of HKLC stage I patients was 0.495 ± 0.057 in the same range as the five years survival probability of BCLC A patients (0.449 ± 0.049). Similarly, one year survival probability of HKLC 5b patients was 0.030 ± 0.029 in the same range as survival probability of BCLC D patients (0.056 ± 0.038). Similar measures were observed between HKLC and BCLC in their ability for the prediction of survival (all p -values were not significant). AUC of HKLC 0.71 at 1 year, 0.64 at 3 years, and 0.55 at 5 years; and AUC of BCLC 0.72 at 1 year, 0.65 at 3 years, and 0.57 at 5 years (NS). **Conclusion:** The new HKLC prognostic classification can be applied to a European cohort of alcohol or hepatitis C-related HCC. We don't observed difference between HKLC and BCLC classifications in terms of discriminatory ability.

Key Word(s): 1. hepatocellular carcinoma BCLC HKLC cirrhosis HCV

Liver

P-366**The association between serum ferritin level and severity of liver cirrhosis measured by Child-Pugh Turcotte score****Presenting Author:** APRILIANA ADHYAKSARI**Additional Authors:** ARITANTRI DARMAAYANI, PAULUS KUSNANTO, TRI YULI PRAMANA, M TANTORO HARMONO**Corresponding Author:** APRILIANA ADHYAKSARI**Affiliations:** Moewardi Hospital, Moewardi Hospital, Moewardi Hospital, Moewardi Hospital

Objective: Chronic liver disease causes formation changes of fibrous tissue that influences normal liver function, mainly resulting in liver cirrhosis. Iron uptake can occur within the hepatic parenchyme. This parenchymal changes will deteriorate the liver function. In cirrhotic persons of any Child-Pugh class have abnormal ferritin, decreased Serum Iron (SI) and increased ferritin levels. Serum iron level was lower in cirrhosis. Increased ferritin levels which shown iron overload were limited to class C cirrhotics. The aim of this study was to investigate the association between ferritin serum, serum iron and the degree of severity cirrhotic which was measured by Child-Pugh Turcotte score. **Methods:** This retrospective study was conducted between July 2013 until December 2013 in Moewardi Hospital Surakarta. Inclusion criteria was age of 18 years or older cirrhotic patients. Exclusion criteria was chronic kidney disease, iron or vitamin deficiencies, chronic infectious or inflammatory diseases, metabolic syndrome and chronic heart failure. Degree severity of cirrhotic was measured by Child-Pugh Turcotte score. Statistical analysis were calculated by the Spearman's correlation and independence t-test, with SPSS 20. Statistical significance was defined by a P value < 0.05. **Results:** There was 69 patient, 43 (62,3%) male and 17 (24,7%) female. Mean age was (SD 54,23 + 10,29). There was patients with hepatitis B and C [42 (70%); 18 (30%) respectively]. The Child Pugh Turcotte score was B and C [35 (50,72%); 34 (49,23%) respectively]. Mean ferritin was (SD 156,7 + 244,6). Mean serum iron was (SD 46,3 + 47,2). There was positive correlation between ferritin serum, serum iron with Child-Pugh Turcotte score [(p : 0,008; r : 0,845); (p : 0,002; r : 0,8700) respectively]. **Conclusion:** This study was demonstrated that increase ferritin serum and serum iron was associated with severity of liver cirrhosis measured by Child-Pugh Turcotte score.

Key Word(s): 1. liver cirrhosis; 2. ferritin serum; 3. serum iron; 4. Child-Pugh Turcotte score

Liver

P-367**Endovascular repair of aorta abdominalis aneurysm in a man with cirrhosis hepatitis: a case report****Presenting Author:** TITOS AHIMSA**Additional Authors:** RINO GANI, ANNA MIRA LUBIS, SUHARTONO SUHARTONO**Corresponding Author:** TITOS AHIMSA**Affiliations:** Faculty of Medicine, University of Indonesia; Faculty of Medicine, University of Indonesia; Faculty of Medicine, University of Indonesia

Objective: An operation is seldom done in patients with cirrhosis hepatitis. Cirrhosis hepatitis is an end stage liver disease, with low platelet, prolonged hemostasis. **Methods:** Case illustrations **Results:** Aorta abdominalis aneurysm is a dangerous disease when not treated earlier before it ruptured. We reported a case report about a 68 years old man with cirrhosis hepatitis who undergone endovascular repair of aorta abdominalis aneurysm suc-

cessfully although he had low platelet, 47,000/mm³ and prolonged hemostasis, PT 20 seconds, INR 1.74, APTT 42 seconds, D Dimer 3840 Ug/l.

Conclusion: The patient survived.**Key Word(s):** 1. cirrhosis hepatitis; 2. aorta abdominalis aneurysm; 3. endovascular repair; 4. prolonged hemostasis

Liver

P-368**Usefulness of balloon-occluded retrograde transvenous obliteration for the treatment of portal vein thrombosis in patients with liver cirrhosis****Presenting Author:** SATSUKI ANDO**Additional Authors:** YUKINORI IMAI, AKIRA FUCHIGAMI, MANABU NAKAZAWA, SATOSHI MOCHIDA**Corresponding Author:** SATSUKI ANDO**Affiliations:** Saitama Medical University, Saitama Medical University, Saitama Medical University, Saitama Medical University

Objective: Portal vein thrombosis frequently occurs in patients with liver cirrhosis leading to deterioration of liver function. Although anticoagulant therapies are effective to attenuate the thrombosis transiently, the lesions may develop again when blood flow in the portal vein decreases as a result of shunts connecting to the systemic circulation. Thus, balloon-occluded retrograde transvenous obliteration (B-RTO) seems to be useful to prevent recurrence of the thrombosis. **Methods:** We experienced two cases with cirrhosis in whom portal vein thrombosis disappeared after occlusion of huge spleno-renal shunt by B-RTO. **Results:** Subjects were male patients with liver cirrhosis; 61 and 64 years-old men due to alcohol intake and HBV infection, respectively. Both patients were admitted to our hospital suffering from refractory hepatic encephalopathy and were diagnosed as having liver failure of grade-C according to the Child-Pugh classification. Abdominal CT examination revealed huge spleno-renal shunts and complete occlusion of main and right trunks of the portal vein by thrombosis. Anticoagulant therapies using danaparoid sodium and antithrombin III concentrates were not effective in both patients. Then, occlusion of the spleno-renal shunt by B-RTO was performed. CT examination after the B-RTO procedures showed disappearance of thrombosis and recanalization of the portal vein. **Conclusion:** B-RTO can increase portal blood flow, and may be effective for attenuation of portal vein thrombosis without anticoagulant therapies as well as prevention of thrombosis recurrence after the therapies.

Key Word(s): 1. B-RTO; 2. portal vein thrombosis

Liver

P-368A

Correlation between degree of liver fibrosis, thrombocytopenia, and concentration of thrombopoietin in patients with chronic viral hepatitis

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Background: Thrombocytopenia is a common manifestation of liver cirrhosis and hepatic fibrosis. The pathogenesis of thrombocytopenia in liver cirrhosis and liver fibrosis which caused by chronic viral hepatitis is not well known. Thrombopoietin (TPO), which is produced mainly by the liver, has been identified as a humoral control mechanism of thrombopoiesis (Emmons *et al*, 1996; Eaton & de Sauvage, 1997). The TPO production may be inadequate in patients with severe necroinflammatory activity and in advanced liver fibrosis. The aim of this study was to examine the correlation between stage of liver fibrosis, platelet count, and level of serum thrombopoietin in patients with chronic viral hepatitis. **Patients and Methods:** Thirty Two patients with liver fibrosis which caused by chronic viral hepatitis were enrolled 4 patients (12.50 %) with stage F1 fibrosis; 4 patients (12.50 %) with stage F2 fibrosis; 5 patients (15.60 %) with stage F3 fibrosis; and 19 (59.4%) patients with F4/ cirrhosis. TPO levels were measured using an enzyme-linked immunosorbent assay. Platelet counts were measured. The diagnosis of chronic hepatitis B and C was based on increased alanine transaminase (ALT) values for over 6 months, viral marker positivity and fibroscan. Markers for HBV and HCV were sought using commercial enzyme-linked immunosorbent assay (ELISA). Serum levels of thrombopoietin were measured by commercial enzyme-linked immunosorbent assay (Quantikine, R & D Systems, Wiesbaden-Nordenstandt, Germany). **Statistical analysis:** Platelet count, TPO levels, and stage of liver fibrosis were obtained at the time when patients were included in the study. Continuous variables were compared using the Student's *t*-test or the Kruskal–Wallis test as appropriate. Differences in serum TPO levels between groups were evaluated using the Kruskal–Wallis test. Correlation among variables was performed with Pearson regression analysis. A *P*-value ≤ 0.05 was considered significant. **Results:** Thrombocytopenia was present in 21 patients (65.63 %). Mean platelet counts of patients with cirrhosis ($10.28 \pm 3.5 \times 10^4/\mu\text{l}$) were significantly lower than those with fibrosis F1 ($23.6 \pm 13.8 \times 10^4$), F2 ($15.45 \pm 4.8 \times 10^4$), or F3 ($14.10 \pm 7.1 \times 10^4$; $p < 0.05$). Mean thrombopoietin levels of patients with fibrosis F1 = 64.31 ± 32.94 pg/ml, F2 = 49.54 ± 16.24 pg/ml, F3 = 45.67 ± 10.92 pg/ml, and with cirrhosis = 39.17 ± 11.20 pg/ml. Mean thrombopoietin levels of patients with fibrosis F1 (64.31 ± 32.94 pg/ml) were significant higher than those in patients with fibrosis F2, F3, and cirrhosis ($p = 0.004$; $p = 0.001$; $p < 0.001$). Mean thrombopoietin levels of patients with fibrosis F2, F3, and cirrhosis were not significantly different ($p > 0.05$). **Conclusions:** The degree of liver fibrosis showed significant negative correlation to platelet counts ($p < 0.001$, $r = -0.586$). Thrombocytopenia are significantly more frequent in patients with fibrosis F4 than in patients with early stage of liver fibrosis (stage 1 to 3; $p = 0.001$). Platelet counts showed a significant inverse relationship to stage of liver fibrosis ($p = 0.001$). Mean thrombopoietin levels are significantly higher in patients with fibrosis F1 than in patients with fibrosis F2 to F4 (F1 : F4, $p < 0.001$; F1 : F3, $p = 0.001$; F1 : F2, $p = 0.004$). Thrombopoietin levels showed sig-

nificant positive correlation to platelet counts ($p = 0.004$, $r = 0.496$). We suggest that as the disease progresses from mild fibrosis to cirrhosis, decreased production of thrombopoietin may contribute to the further development of thrombocytopenia in cirrhosis.

Key Word(s): 1. Liver fibrosis; 2. Thrombopoietin; 3. Thrombocytopenia; 4. Chronic viral hepatitis

Liver

P-369

The diagnostic value of contrast-enhanced ultrasound and color Doppler ultrasound on focal fatty infiltration of liver

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Objective: This study aimed to assess the diagnostic value of contrast-enhanced ultrasound and color Doppler ultrasound on focal fatty infiltration of the liver. **Methods:** Retrospective analysis 2010–2013, 46 occupying lesion diagnosis, proved focal fatty infiltration of the liver lesions by fine needle biopsy. Under the patient supine resting state, on the right elbow shallow intravenous bolus injection of ultrasound contrast agent (SonoVue) 1.5 ml, Siemens s2000, 4s-1 probe, scan mode at angiography, recording the whole process, playback analysis ROI, arterial phase, portal venous phase, delay phase and vascular contrast agent distribution. **Results:** For 46 lesions, in the arterial phase 5 cases high enhanced, 30 cases equivalent enhanced, 11 cases of low-enhanced, all the lesions showed equal enhancement without subsided in portal vein and delayed phases. 12 lesions showed small vein branch walk through the lesions without obvious signs of stress, 7 lesions are located next to the portal or its branches without space-occupying lesion effect. The sensitivity, specificity and accuracy of color Doppler ultrasound diagnosis for focal fatty infiltration were 83.3%, 75.7% and 71.7%, respectively. The sensitivity, specificity, accuracy of CEUS diagnosis for focal liver fatty infiltration of were 93.3%, 90.3%, 90.0%, respectively. **Conclusion:** CEUS is a noninvasive and effective method for the diagnosis of focal fatty infiltration of the liver.

Key Word(s): 1. color Doppler; 2. CEUS; 3. fatty infiltration; 4. biopsy

Liver

P-370

Intramuscular hematoma in liver cirrhosis

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Objective: The cause of intramuscular hematoma often mentioned previously were trauma, coagulopathy such as anticoagulant therapy or hemophilia. Liver cirrhosis is one of important conditions for coagulopathy. However, there were rare cases (only eight patients until now) reported intramuscular hematoma in liver cirrhosis. Unfortunately, the prognosis of these patients was poor as the mortality rate up to 75%. **Methods:** We collected the patients from 2009 to 2014. Ages, location of intramuscular hematoma, etiology of liver cirrhosis, Child-Pugh score, treatment and outcome were analyzed and compared with previous reports. **Results:** Total three patients were collected (1 male, 2 female; mean age: 69.3 year old, range: 63–73). The etiology of liver cirrhosis were alcohol (1) and hepatitis C (2). The location of hematoma were right rectus

abdominis; right vastus intermedius and lateralis; right adductor magnus muscle and gastroneimus respectively. They all survived under conservative treatment including pain control, bed rest, discontinuation of anticoagulant or therapy, and blood transfusion to correct anemia and coagulopathy. We also listed features, treatments, and outcomes of our patients (A, B, C) and previously reported ones (1–8) in Table 1. **Conclusion:** In our study, all patients were survived under conservative treat-

ment. We though early stage of liver cirrhosis (A) and peripheral muscles involved (B, C) may be the reason of better survival in our patient. Intramuscular hematoma is rare but important disease for differentiating anemia and pain in patients with liver cirrhosis. Also, early recognition is key to preserving unnecessary operation or other intervention.

Key Word(s): 1. liver cirrhosis; 2. intramuscular hematoma; 3. outcome; 4. treatment

Table 1 Intramuscular hematoma in patients with liver cirrhosis

Case	Age	Gender	Etiology	Location	Treatment	Outcom	Child-Pugh score
A	73	Male	HCV	Rectus abdominis	Conserve	Alive	A
B	63	Female	HCV	Vastus intermedius, lateralis muscle Adductor magnus	Conserve	Alive	B
C	72	Female	Alcohol	muscle & astronemius muscle	Conserve	Alive	B
1	48	Female	Alcohol	Rectus abdominis		Died	
2	46	Female	Alcohol	Rectus abdominis	Conserve	Died	
3	56	Male	Alcohol	Rectus abdominis	Conserve	Alive	
4	58	Female	Virus	Rectus abdominis	Liver transplantation	Alive	
5	60	Male	Alcohol	lloipsoas	Conserve	Died	
6	62	Male	Alcohol	lloipsoas	TAE	Died	
7	56	Male	Alcohol	lloipsoas	Conserve	Died	
8	60	Male	Alcohol & HCV	Gluteus max & biceps femoris & pectralis	Conserve	Died	

Case A–C: Our Patients; Case 1–8 Previous repected patients; HCV: Hepatitis C virus;TAE: Transcatheter arterial embolism

Liver

P-371

Clinical significance of intrahepatic HBsAg quantification in correlation with quantitative HBsAg serum in chronic hepatitis B patients who received oral antiviral therapy

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Objective: Chronic hepatitis B (CHB) infection is still a major problem in most Asian countries. The role of seromarkers such as quantitative HBV DNA and quantitative HBsAg might not predict accurately the intrahepatic viral activity. Intrahepatic cccDNA and Pregenomic RNA measurement is not practical in clinical practice. Quantification of intrahepatic HBsAg might give a better prediction in clinical practice since the liver biopsy is also a common procedure for the liver condition assessment. To know the clinical significance of intrahepatic HBsAg measurement in correlation with quantitative HBsAg serum in CHB patients who received oral antiviral therapy. **Methods:** This was a retrospective cohort study using liver specimens and blood samples from 26 CHB patients who underwent oral antiviral therapy for one year (2010–2011) from two big referral hospitals (Cipto Mangunkusumo Hospital and Medistra Hospital). Quantification of HBsAg particles in the liver specimens was done by immunohistochemistry staining. Other data was obtained from the patient's database. Statistical analysis was done using SPSS ver. 17. **Results:** There was a weak correlation between quantitative HBsAg serum with intrahepatic HBsAg particles before and after one year oral antiviral therapy ($r = -0.20$, $p .249$;

$r = 0.15$, $p .433$). Quantitative HBsAg serum was decreased after one year oral antiviral therapy, however there was no mean difference in intrahepatic HBsAg particles after one year oral antiviral therapy ($p .468$). **Conclusion:** Intrahepatic viral activity might not be accurately predicted by seromarkers as quantitative HBsAg serum is more related to viral load but intrahepatic HBsAg particles reflects more intrahepatic viral activity that many factors could influence this condition. Further study is needed with larger samples to confirm these findings.

Key Word(s): Na

Liver

P-372

Limited utility of plasma M30 in discriminating non-alcoholic steatohepatitis from steatosis – a comparison with routine biochemical markers

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Objective: The utility of Cytokeratin-18 fragment, namely CK18Asp396 (M30), for the diagnosis of non-alcoholic steatohepatitis (NASH) is currently uncertain. We aimed to provide further data in this area among multi-ethnic Asian subjects with NAFLD. **Methods:** The accuracy of M30 for detecting NASH was compared with serum alanine aminotransferase (ALT), aspartate aminotransferase (AST) and gamma glutamyl transpeptidase (GGT) levels in consecutive adult subjects with biopsy-proven non-alcoholic fatty liver disease (NAFLD). **Results:** Data for 93 NAFLD subjects (mean age 51.0 ± 11.1 years old and 51.6% males) and 20 healthy controls (mean age 50.2 ± 16.4 years old and 33.3% males) were analyzed. There were 39 NASH subjects (41.9%) and 54 non-NASH

subjects (58.1%) among the NAFLD subjects. Plasma M30 (349 U/L vs. 162 U/L), and serum ALT (70 IU/L vs. 26 IU/L), AST (41 IU/L vs. 20 IU/L) and GGT (75 IU/L vs. 33 IU/L) were significantly higher in NAFLD subjects than in healthy controls. Serum ALT (86 IU/L vs. 61 IU/L), AST (58 IU/L vs. 34 IU/L) and GGT (97 IU/L vs. 56 IU/L) were significantly higher in NASH subjects compared to non-NASH subjects,

but no significant difference was observed with plasma M30 (435 U/L vs. 331 U/L). The accuracy of plasma M30, and serum ALT, AST and GGT was good for predicting NAFLD (AUROC 0.91, 0.95, 0.87 and 0.85, respectively) but less so for NASH (AUROC 0.59, 0.64, 0.75 and 0.68, respectively). The AUROC of plasma M30, and serum ALT, AST and GGT for prediction of NAFLD and NASH is shown below.

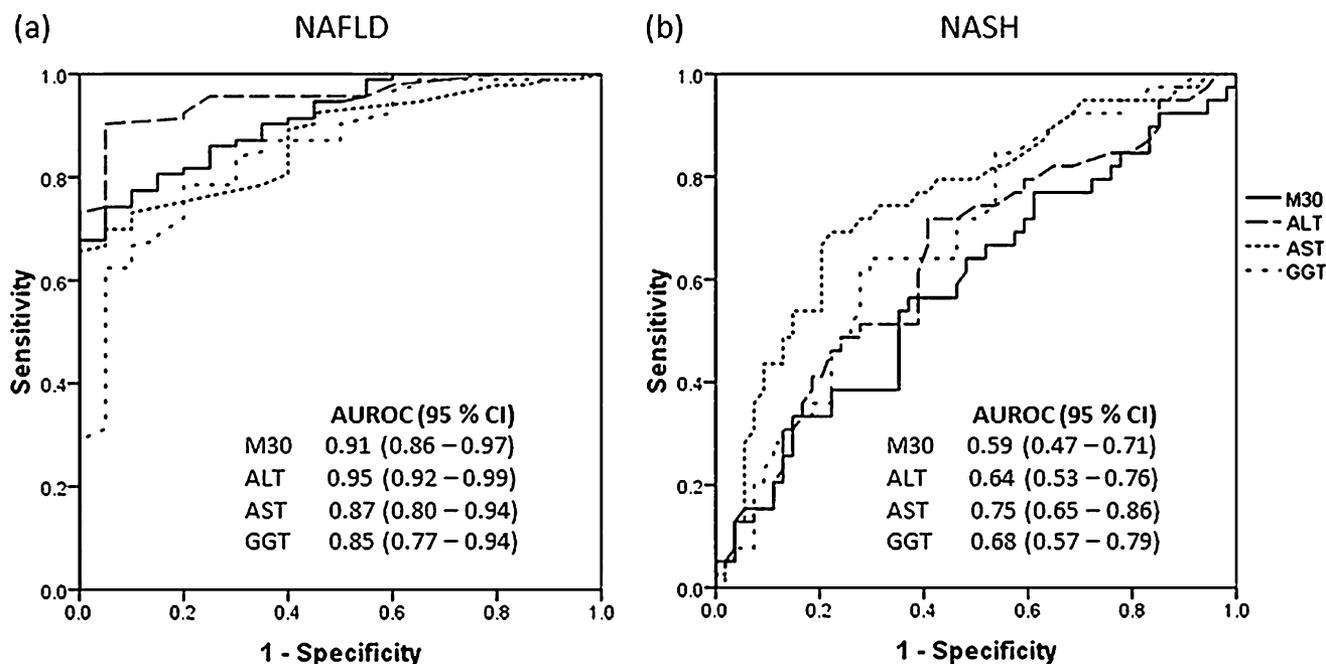


Figure 1

Conclusion: The utility of M30 in the detection of NASH in clinical practice appears limited, in comparison to routine biochemical markers.

Key Word(s): 1. M30; 2. cytokeratin-18; 3. Ck-18, 4. non-alcoholic steatohepatitis; 5. NASH

Liver

P-373

Combination of NAFLD fibrosis score and liver stiffness measurement for predicting advanced fibrosis in non-alcoholic fatty liver disease

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Objective: The non-alcoholic fatty liver disease (NAFLD) fibrosis score (NFS) is indeterminate in a proportion of NAFLD patients. Combining the NFS with liver stiffness measurement (LSM) may improve the prediction of advanced fibrosis. We aim to evaluate the accuracy of NFS and LSM in predicting advanced fibrosis in NAFLD patients. **Methods:** The NFS was calculated and LSM obtained for consecutive adult NAFLD patients scheduled for liver biopsy. The accuracy of predicting advanced fibrosis using either modality and in combination were assessed. An algorithm combining the NFS and LSM was developed from a training cohort and

subsequently tested in a validation cohort. **Results:** There were 101 and 46 patients in the training and validation cohort, respectively. In the training cohort, the percentages of misclassifications using the NFS alone, LSM alone, LSM alone with grey zone of 7–18 kPa, both tests for all patients and a 2-step approach using LSM only for patients with indeterminate and high NFS were 7.1%, 30.7%, 2.0%, 2.0% and 6.0%, respectively. The percentages of patients requiring liver biopsy were 30.7%, 0%, 36.6%, 36.6% and 16.8%, respectively. In the validation cohort, the percentages of misclassifications were 8.7%, 28.3%, 2.2%, 2.2% and 8.7%, respectively. The percentages of patients requiring liver biopsy were 28.3%, 0%, 41.3%, 43.5% and 17.4%, respectively. The algorithm using a 2-step approach for prediction of advanced fibrosis is shown below. **Conclusion:** A 2-step approach using LSM only for patients with indeterminate and high NFS further reduced the number of patients requiring liver biopsy whilst maintaining the accuracy to predict advanced fibrosis. The combination of NFS and LSM for all patients provided no advantage over using either of the tests alone.

Key Word(s): 1. non-alcoholic fatty liver disease; 2. NAFLD; 3. non-invasive test; 4. liver fibrosis; 5. NAFLD fibrosis score; 6. liver stiffness measurement; 7. transient elastography; 8. Fibroscan

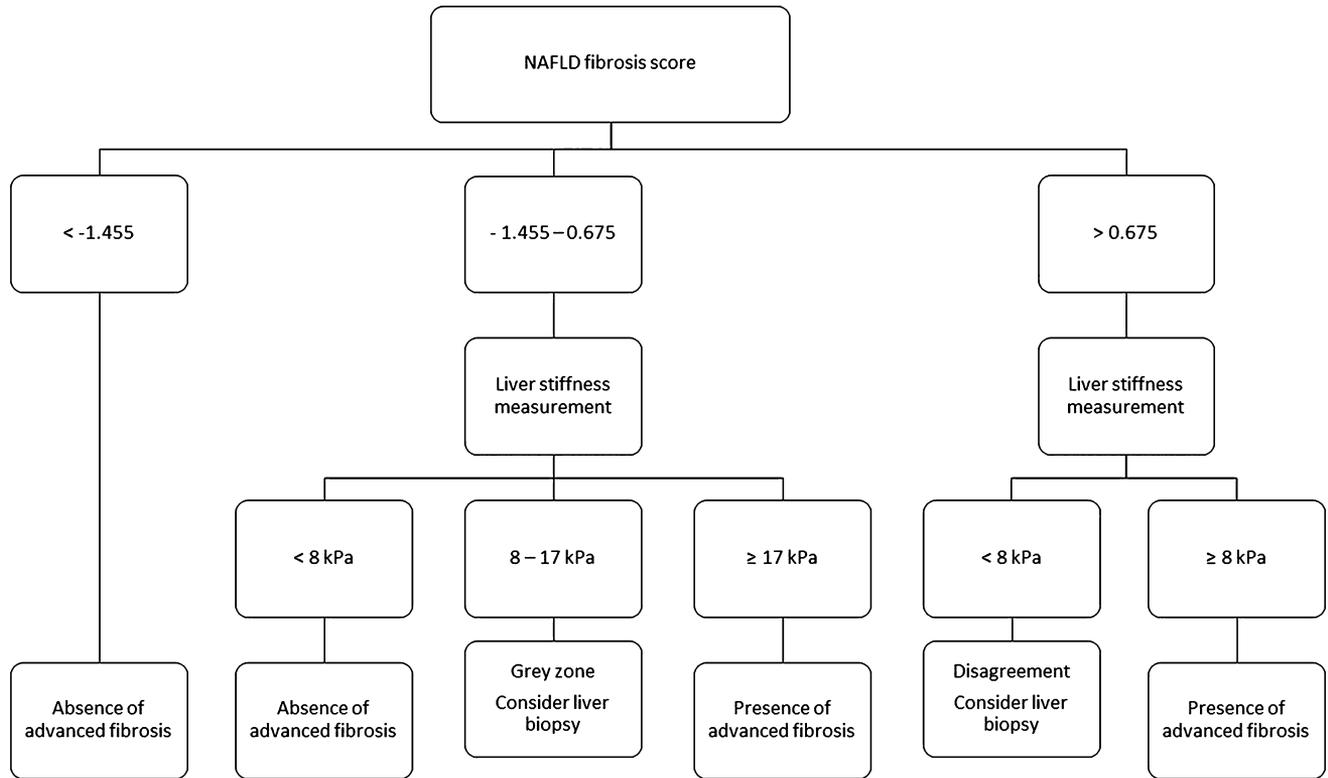


Figure 1

Liver

P-374

Quantitative collagen and liver fibrosis by morphometric assessment in chronic hepatitis B patients treated with long term tenofovir disoproxil fumarate (TDF)

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Objective: Long term suppression of HBV DNA with TDF results in a reduction in liver fibrosis and the regression of histologic cirrhosis (Lancet 2013;385:468). Morphometric quantitative collagen (MQC) may be a more accurate way to measure changes in liver fibrosis than traditional fibrosis scoring systems. This study assessed the change in MQC over 5

years in patients with CHB treated with TDF. **Methods:** Liver biopsy slides from the 344 patients who had liver biopsies at baseline (BL) and weeks 48 and 240 in the TDF phase 3 trials were stained with picrosirius red. Digital image analysis was used to calculate the relative collagen content of each biopsy. Biopsy slides with less than 5 mm² of tissue and those with <3% collagen at BL were excluded. Change in collagen over time was analyzed using Wilcoxon Sign Rank Test. Comparisons between patients with and without persistent cirrhosis were assessed with the Wilcoxon Rank Sum Test. **Results:** 600 out of 765 liver biopsy slides were of adequate quality for assessment. The mean collagen declined from 7.78% at BL to 4.07% at year 5 (p < 0.0001) in patients with BL cirrhosis. Patients with persistent cirrhosis by Ishak stage had higher mean collagen at BL than those who had regression of cirrhosis. Patients with regression of cirrhosis demonstrated a 42% mean reduction in collagen compared with 17% in those with persistent cirrhosis by Ishak stage. **Conclusion:** Long term virologic suppression in CHB patients was associated with significant reduction in MQC regardless of BL Ishak fibrosis stage. In patients with cirrhosis, reductions in collagen were observed in patients with or without histologic regression by Ishak staging, suggesting that MQC is a more sensitive and quantitative measure of change in liver fibrosis. Persistently cirrhotic patients may achieve regression of cirrhosis with a longer course of TDF.

Key Word(s): 1. collagen; 2. liver fibrosis; 3. morphometric assessment; 4. chronic hepatitis B; 5. tenofovir; 6. tenofovir disoproxil fumarate

Liver

P-375**Long term tenofovir disoproxil fumarate for chronic hepatitis B infection is associated with sustained virological, biochemical and serological responses with no detectable resistance****Presenting Author:** ALAIN CHAN**Additional Authors:** PATRICK MARCELLIN, EDWARD GANE, NAO KY TSAI, ROBERT FLISIAK, JORG PETERSEN, SELIM GUREL, ISKREN KOTZEV, JOHN FLAHERTY, ANUJ GAGGAR, KATHRYN KITRINOS, JOHN MCHUTCHISON, JACOB GEORGE, MARIA BUTI
Corresponding Author: ALAIN CHAN**Affiliations:** *Hopital Beaujon, Auckland City Hospital, University of Hawaii at Manoa, Medical University of Bialystok, University of Hamburg, Uludag Universitesi Tip Fakultesi, University Hospital Sveta Marina, Gilead Sciences, Gilead Sciences, Gilead Sciences, Gilead Sciences, Westmead Hospital, Hospital General Universitari Vall d'Hebron*

Objective: 5 years of tenofovir DF (TDF) therapy in treatment naive patients results in sustained viral suppression with no development of resistance and was associated with either the halting or regression of fibrosis in 96%, and reversal of cirrhosis in 74% of previously cirrhotic patients. 7 year results from studies 102 and 103 are presented.
Methods: After 48 weeks of double-blind comparison of TDF to adefovir dipivoxil, all patients undergoing liver biopsy were eligible to continue open-label TDF. Patients were assessed every 3 months for safety and efficacy with annual resistance surveillance. Annual assessments of bone mineral density (BMD) by DXA were added to both studies starting at year 4. **Results:** 641 patients who were initially randomized and treated. 437 (68%) patients remained on study at year 7. Efficacy results at year 7 will be presented in the poster. Less than 2.5% of patients discontinued TDF due to an adverse event, and less than 1.7% experienced a confirmed renal event (greater than 0.5 mg/dL increase in serum creatinine from baseline, or phosphorus less than 2 mg/dL, or CrCL less than 50 mL/min). BMD assessments (lumbar spine and hip T scores) were stable over 7 years of evaluation. No resistance to TDF has been detected through year 7. **Conclusion:** TDF remains safe, well tolerated and effective over a 7 year treatment period with no detectable resistance; a relatively low rate of renal events and no evidence of clinically relevant bone loss were observed.

Key Word(s): 1. hepatitis B; 2. tenofovir; 3. TDF; 4. tenofovir disoproxil fumarate

Liver

P-378**Updated upper limit of normal serum AST and ALT levels in Korea: a nationwide survey in Korea****Presenting Author:** YOO KYUNG CHO**Additional Authors:** SEUNG UK JUNG, SOO YOUNG NA, SUN JIN BOO, HYUN JOO SONG, EUN KWANG CHOI, HEUNG UP KIM, BYUNG CHEOL SONG**Corresponding Author:** YOO-KYUNG CHO**Affiliations:** *Jeju National University Hospital, Jeju National University Hospital*

Objective: For a long time, upper limit of normal serum AST and ALT levels are usually set at 40 IU/L. But, recent studies revealed that more stringent normal AST and ALT levels are needed. We investigated the normal range of serum AST and ALT levels of all ages in Korea.
Methods: We used the data from the fifth Korea National Health and Nutrition Examination Survey (KNHANES V, 2010–2012). The exclusion criteria were history of chronic liver disease including hepatitis B infection, hepatitis C infection, heavy alcohol drinking (>50 g/day for male and >30 g/day for female), liver cirrhosis, hepatocellular carcinoma, and obesity (body mass index >25 kg/m²). **Results:** A total number of 13246 (male 5495, female 7751) participants aged 10 years or older were analyzed. The overall upper limit of normal AST and ALT levels (95th percentile) were 32 IU/ml (29 IU/ml for females and 36 IU/ml for males) and 35 IU/ml (28 IU/ml for females and 41 IU/ml for males). According to the age, the average of AST and ALT levels were increased. The average of AST levels were peaked in the 7th decade and the ALT levels were in the 6th decade, and since then were decreased. **Conclusion:** The upper limit of normal AST and ALT levels were different according to the sex (AST/ALT, 29/28 IU/ml for females and 36/41 IU/ml for males) and age. The two factors are the points to be specially considered in making the new normal range of serum AST and ALT levels.

Key Word(s): 1. alanine aminotransferase; 2. aspartate aminotransferase; 3. normal

Liver

P-379**microRNAs involved in tumorigenesis of hepatocellular carcinoma****Presenting Author:** CHOL KYOON CHO**Additional Authors:** CHOONG YOUNG KIM, EUN KYU PARK, HEE JOON KIM, HYUN JONG KIM, YANG SEOK KOH, JIN SHICK SEOUNG**Corresponding Author:** CHOL KYOON CHO**Affiliations:** *Chonnam National University Medical School, Chonnam National University Medical School, Chonnam National University Medical School, Chonnam National University Medical School, Saint Carollo Hospital*

Objective: microRNAs (miRNAs) are endogenous non-coding 21–23 nucleotide RNAs that are involved in post-transcriptional regulation and they control various cellular processes, one of which is tumorigenesis. miRNAs were reported to be implicated in the pathogenesis of hepatocellular carcinoma (HCC) and the aim of this study is to evaluate the role of miRNAs in the development of HCC. **Methods:** To find yet-to-be-

identified miRNAs associated with HCC tumorigenesis, we carried out miRNA microarray analysis with miRNAs extracted from normal and HCC liver tissues resected from the same patients. Of the miRNAs showing significantly different expression levels between normal and HCC liver tissues, we focused on miR-128. The difference in expression levels of miR-128 was verified by real-time PCR. In addition, the target gene of miR-128, axin1, was determined by bioinformatics study, luciferase assay and Western blotting. **Results:** Four pairs of liver tissues were selected for RNA extraction. miRNA microarray and FDR calculation were performed and four genes were selected due to the previous report on their correlation with HCC. The results of luciferase assay and transfection of HepG2 cells indicated that miRNA-128 indeed binds to the 3' UTR of Axin1. In Western blotting study miR-128 indeed decreased Axin1 protein levels, demonstrating that Axin1 is indeed a target of miR-128 in HepG2 cells. **Conclusion:** In this study we report that miR-128 is up-regulated in clinical HCC tissues and that miR-128 binds to 3' UTR of Axin1. The identification of miR-128 as oncomir and determination of its target gene Axin 1 will shed light on the pathogenesis of HCC.

Key Word(s): 1. hepatocellular carcinoma; 2. microRNA; 3. tumorigenesis

Liver

P-380

Prognostic factor as 18F-FDG PET CT in hepatocellular carcinoma

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Affiliations: Chonnam National University Hospital, Chonnam National University Hospital

Objective: 18F-fluorodeoxyglucose PET computed tomography (18F-FDG PET CT) has been used widely in oncology part as a part of staging workup, prediction of treatment response and clinical outcomes in various malignancies. However, its use in hepatocellular carcinoma (HCC) has been limited to evaluation of extrahepatic metastasis. The aim of this study was to investigate the role of 18F-FDG PET CT as an independent prognostic factor in hepatocellular carcinoma. **Methods:** A total of 77 patients with newly diagnosed HCC who underwent 18F-FDG PET CT before treatment from January 2009 to December 2013 were reviewed retrospectively. Maximal standardized uptake values (SUVmax) of the tumors were obtained. **Results:** Sixty-four patients were male (83.1%) and 13 patients were female (16.9%). Mean age of the enrolled patients was 61.73 years and mean duration of follow-up was 8.6 months. High SUVmax (≥ 5.0) was significantly associated with the tumor burden such as α -fetoprotein ($P = 0.003$), amino transaminase (AST) ($P = 0.001$), tumor size ($P = 0.01$), and TNM staging ($P = 0.04$). The overall survival rates in patients with high SUVmax (≥ 5.0) were 24.3% while those in patients with low SUVmax (< 5.0) were 64.5% ($P < 0.001$). In subgroup analysis, among the 42 patients who received transarterial chemoembolization (TACE), patients with high SUVmax (≥ 5.0) were more likely to have earlier recurrence ($P = 0.019$). **Conclusion:** SUVmax of 18F-FDG PET CT can not only serve as an indicator of tumor burden and an independent prognostic factor in HCC but also predict recurrence after TACE.

Key Word(s): 1. hepatocellular carcinoma; 2. positron emission tomography-computed tomography; 3. prognosis

Liver

P-382

Pyogenic liver abscess in the elderly

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Objective: Pyogenic liver abscess (PLA) in elderly has an increasing incidence in the world. However, PLA remains poorly characterized in elderly patients, and comprehensive data are limited. This study was conducted to compare the differences in clinical features and outcomes of PLA according to age. **Methods:** A total of 602 patients who were diagnosed with PLA were analyzed retrospectively from January 2004 to July 2013. The patients were divided into two age groups: ≥ 65 yr ($n = 296$) and < 65 yr ($n = 306$). **Results:** Older PLA patients, compared to younger patients, had significantly higher prevalence rates of females, hypertension, hepatobiliary disease, hepatobiliary procedure, associated gastrointestinal malignancy, sepsis at admission, culture positivity of antibiotic resistant organism, occurrence of complication and higher WBC, but lower prevalence rates of chronic alcoholics, right lobe abscess, fever and higher CRP. There were no significant differences in underlying diabetes mellitus, chronic kidney disease, other symptoms, causative organism, treatment modalities, length of hospital stay, and mortality. Regarding complication, elderly patients had higher prevalence of septic shock, and cardiovascular disease during hospital stay. **Conclusion:** Older age is not associated with a longer hospital stay and a higher mortality rate. However, older PLA patients tend to have more atypical presentations and complications than younger patients. Thus, clinicians should be on high alert for these findings.

Key Word(s): 1. pyogenic liver abscess; 2. age; 3. elderly; 4. prognosis

Liver

P-383

Increased frequency of bacterial infection in patients with liver cirrhosis using acid suppressive medication: an experience of a single tertiary hospital in Qatar

Presenting Author: ABDEL-NASER ELZOUKI

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Objective: The association between bacterial infections and acid suppressive medications (i.e., proton pump inhibitors, PPIs) has been recently studied with debatable results. The aim of this study was to investigate the relationship between PPIs and the development of bacterial infections in cirrhotic patients. **Methods:** Consecutive cirrhotic patients above 18 years old hospitalized from 2007 through 2012 to Hamad General Hospital-Qatar were enrolled. Specifically inquired for PPIs consumption in the last 90 days prior to hospitalization and classify as PPIs-users and non-users. Cirrhosis diagnosis was established either with a liver biopsy or the combination of physical, laboratory and ultrasonography findings. Cirrhotic patients with active gastrointestinal bleeding, using immunosuppressive therapy or using antibiotics in the previous two weeks prior to hospitalization were excluded. **Results:** A total of 333 patients were

included, 171 (51.4%) with and 162 (48.6%) without PPIs. The PPIs-users were significantly older in age ($p = 0.001$). There were not statistical difference between the two groups in sex distribution and etiology of cirrhosis ($p > 0.05$ for both parameters). The PPIs-users had a significantly higher incidence of overall bacterial infection rate (25.7%) than non-PPIs-users (13.5%), $p = 0.005$. On the multivariate analysis, older age >60 years, (OR = 1.246, 95% CI 1.021–08.486; $p = 0.02$), and PPIs-use (OR = 2.149, 95% CI 1.124–06.188; $p = 0.01$) were independent predicting factors for overall bacterial infection. The indication for PPIs use was undocumented in 43% of patients. **Conclusion:** The present study shows that PPIs use, as well as older age >60 years, was an independent predicting factor for the development of bacterial infection in hospitalized cirrhotic patients. Unless it is indicated, PPI therapy should be avoided in this group of patients, in particular those with older than 60 years of age.

Key Word(s): 1. cirrhosis; 2. infection; 3. PPI

Liver

P-384

Association of TNF-alpha levels and HOMA-IR values with simple non-alcoholic fatty liver in senior high school students with obesity

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Objective: To date, non-alcoholic fatty liver remains one of the public health problems, not only in adults but also in children and adolescents. Obesity is a risk factor that is closely related to non-alcoholic fatty liver. Insulin resistance occurs in obesity leading to lipolysis, followed by an increase in free fatty acids and synthesis of triglycerides with the final outcome of a fatty liver development. TNF-alpha as a pro-inflammatory cytokine plays a role in fatty liver pathogenesis in which TNF-alpha levels may induce the development of insulin resistance. **Methods:** To investigate the association of TNF-alpha and HOMA-IR values with simple non-alcoholic fatty liver in senior high school students with obesity. **Results:** This was an observational analytic with cross sectional study. This study was conducted in Prof.dr.R.D.Kandou Manado General Hospital starting from July 2012 to September 2012. **Conclusion:** Based on statistical analysis for association between TNF-alpha and HOMA-IR, this study found the contingency coefficient was 0.16 and the odd ratio (OR) was 3.37 with confidential interval (CI) 0.24–46.35. While based on statistical analysis for association between TNF-alpha and fatty liver, it was found that the contingency coefficient was 0.05 and the OR was 1.40 with CI 0.20–9.66. This study also found a contingency coefficient of 0.28 with CI 0.246–46.362 based on statistical analysis for association between HOMA-IR values and fatty liver.

Key Word(s): 1. TNF-alpha; 2. HOMA-IR; 3. non-alcoholic fatty liver; 4. obesity

Liver

P-386

Transient elastography (fibroscan), short term experience from Karachi, Pakistan

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Objective: To assess the indications and results of fibroscan patients in our population. **Methods:** Study design: Cross-Sectional study. Setting: Medilink clinics, Karachi, Pakistan. Sample size and collection: 50 patients were included, indications and results of fibroscan patients were evaluated. **Results:** In our study of 50 patients, there were 39 (78%) males. Age ranged from 28–72 years. Mean age was 45.5 years. Indications include non-alcoholic fatty liver disease (NAFLD) 26 (52%) patients, chronic hepatitis 18 (36%) patients and 4 (8%) patients had history of chronic alcohol abuse, 1 patients was referred for assessment of liver fibrosis before chemotherapy and 1 patient had both chronic hepatitis and NAFLD. In 50 patients of fibroscan, 21 (42%) patients had significant fibrosis F3–F4. 09 patients had F-2 stage of fibrosis. 20 patients had F0 (no fibrosis) -F1 fibrosis. NAFLD was the most common indication and the results from the 26 patients under that group were as follows, body mass index ranged from 26.6–33.12 (46.1%) patients had significant F3–F4 fibrosis, 5 (19.2%) patients had F-2 stage of fibrosis and 09 (34.6%) patients had F0–F1 stage of fibrosis. **Conclusion:** Fibroscan now recognized as an acceptable alternative to liver biopsy, should be utilized more effectively in our population. In our study 21 out of 50 (42%) patients were found to have significant fibrosis which is helpful in planning further management of these patients.

Key Word(s): 1. transient elastography; 2. liver fibrosis; 3. non-alcoholic fatty liver disease; 4. chronic viral hepatitis;

Liver

P-386A

Prediction of large esophageal varices among patients with liver cirrhosis in Sanglah Hospital Denpasar

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Objective: Findings of liver cirrhosis are usually accompanied with screening endoscopy for large esophageal varices (EV) that may benefit from prophylactic measures. The aim of this study was to identify whether Model for End-stage Liver Disease (MELD) score, Child-Turcotte-Pugh (CTP) score, AST to platelet ratio index (APRI), FiB4 index, and laboratory tests could predict the presence of large EV among patients with liver cirrhosis in Sanglah Hospital Denpasar. **Methods:** A total of 90 hospitalized liver cirrhosis patients from September 2012 until March 2014 were retrospectively analyzed. Variables used in the analysis included age, sex, etiology of cirrhosis, CTP classification, MELD score, APRI, FiB4 index,

platelet count, serum creatinine, and liver function tests. The presence of large EV was correlated with those characteristics. Univariate and multiple regression analysis were used to determine which factors may predict large EV. **Results:** Of ninety (90) patients enrolled, 66 were male (73.3%) and 24 were female (26.7%); majority with chronic hepatitis B. Sixty (66.7%) of the 90 patients were found to have large EV. The distribution of large EV according to CTP classification was as follows: A, 63.16%; B, 62.8% and C, 75%. Large EV was independently associated with total bilirubin higher than 1.9 mg/dL ($p = 0.010$), INR higher than 1.65 ($p = 0.018$), and platelet count lower than 105,500/mm³ ($p = 0.02$). Platelet count lower than 105,500/mm³ had the highest discriminative value for presence of large EV (sensitivity = 73.33%; specificity = 73.33%; area under receiver operating characteristics = 0.783). **Conclusions:** Large EV were found in 66.7% of patients with liver cirrhosis who underwent hospitalization. In patients with liver cirrhosis, the existence of thrombocytopenia may predict large EV which warrant prophylactic therapy.

Key Word(s): 1. large esophageal varices; 2. liver cirrhosis; 3. platelets

Liver

P-387

Hepatocolangiocarcinoma: twenty-seven years experience from a medical center in eastern Taiwan

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Additional Authors: MING CHE LEE, YUNG HSIANG HSU

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Objective: The patients who had simultaneous hepatocellular carcinoma and cholangiocarcinoma was not frequent. In order to investigate the manifestations of patients with hepatocolangiocarcinoma, we performed this retrospective study. **Methods:** From August 1986 to April 2014, the patients with diagnosis of hepatocolangiocarcinoma were included. The age, gender, alpha fetoprotein (AFP), carbohydrate antigen 19-9 (CA 19-9), HBsAg and anti-HCV was recorded. The size, location of tumor, treatment, follow up duration and survival status was recorded. **Results:** A total of 10 patients (M 8, F2) were included. The average age was 58.1 years (49–71). The AFP was 38414 ng/mL (5.3–382000 ng/mL, normal <8.1), CA 19-9 was 378 IU/mL (25–1632 IU/mL, normal <37). Hepatitis B, hepatitis C infection rate was 50%, 30%. The size of tumor was 6.7 cm (2–13 cm). The location of tumor was right lobe 50%, left lobe 30%, and both lobes 20%. The treatments included surgery (2), surgery plus chemotherapy (2), surgery plus radiotherapy (2), transarterial chemoembolization (1), chemotherapy (1), and supportive care (2). The follow up duration was 10.6 months (1 month–2.6 years). The 3 months, 6 months, and 1 year survival rate was 90%, 70%, and 55.6%. **Conclusion:** 1. Hepatocolangiocarcinoma was not a frequent disease. We collected 10 patients in the past 27 years. 2. The average age was 58.1 years. 3. The average AFP was 38414 ng/mL. 4. Hepatitis B, hepatitis C infection rate was 50%, 30%. 5. The 6 months, and 1 year survival rate was 70% and 55.6%, respectively.

Key Word(s): 1. hepatocolangiocarcinoma; 2. eastern Taiwan

Liver

P-389

Antifibrotic effects of antiviral therapy in chronic hepatitis C measured by serum activity of angiotensin converting enzyme and regression of fibrosis in liver biopsy specimens prior and after the treatment

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Objective: In chronic liver diseases with different etiology, Renin-angiotensin system (RAS) is frequently activated. Angiotensin – II (AT-II), produced by angiotensin converting enzyme (ACE), has important role in liver fibrogenesis. Dual antiviral therapy with PEG-IFN and ribavirin beside antiviral effect, leads to the reduction of liver parenchyma fibrosis. Aim: To determine ACE value in serum of patients with chronic hepatitis C before and after dual antiviral therapy, as well as reduction of liver fibrosis in liver tissue before and after the antiviral treatment. **Methods:** We analysed 50 patients treated at Gastroenterohepatology Department, in the period of four years. Patient were treated with pegylated interferon alfa 2a or 2b and ribavirin with treatment duration depending on genotype. Value of ACE in serum, was determined by Olympus AU 400 device, with application of kit "Infinity TN ACE Liquid Stable Reagent." HCV RNA levels in sera were measured by real time PCR. HCV RNA test was performed with modular analysis AMPLICOR and COBAS AMPLICOR HCV MONITOR test v2.0, which has proved infection and was used for monitoring of the patients respond to the therapy. Liver histology was evaluated in accordance to the level of necroinflammation activity and stadium of fibrosis. **Results:** Antiviral therapy in chronic hepatitis C statistically decreases serum activities of ACE ($p = 0,02$) with indirect affects on the fibrogenesis of the liver parenchyma. Among the patients who accepted repeated biopsy after the treatment (35% of total number), 60% had a regression in fibrosis stage. **Conclusion:** Our results suggested that serum activity of the ACE is valuable indirect parameter of the liver damage, and can be used as a marker of non invasive assessment of intensity of liver damage. Antifibrotic effect of antiviral therapy was also proven by quantification of changes in liver tissue.

Key Word(s): 1. angiotensin converting enzyme; 2. antiviral therapy; 3. chronic hepatitis C

Liver

P-391

Dyspeptic symptoms on endoscopic investigation

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Objective: Over the past 40 years, endoscopy has been used with increasing frequency in the investigation of upper gastrointestinal symptoms. Upper gastrointestinal endoscopy is currently the main diagnostic modality in the work-up of dyspeptic patients. Despite most dyspeptic patient either have no identifiable cause of dyspepsia (non-ulcer dyspepsia, NUD), performing endoscopy in patients with dyspepsia is to detect underlying ulcer

disease, gastric cancer or pancreatic disease. The aim of this study was to establish the etiology of dyspeptic symptoms on upper endoscopic investigation. **Methods:** We collected upper endoscopy procedures results among dyspeptic patients at endoscopic centre Adam Malik Hospital until January 2010 to July 2013. A detailed personal interview was conducted to establish clinical dyspeptic symptoms and medication. We also determined sociodemographic profile of each patient (age, sex, level of education, residence, occupation, family income, size of family, and smoking behavior). **Results:** There are 169 dyspeptic patients, 79 (46.7%) were male and 90 (53.3%) were female. 35.5% age was 45–55 years old. 84.2% symptoms was dyspepsia ulcer like type. The main endoscopic findings were normal (25.4%), gastritis (33.7%), peptic ulcers (7.1%), gastropathy (3%), and esophagitis (0.6%). Gastritis was diagnostic endoscopic in all dyspeptic patients, 45.9% at dyspeptic ulcer like patients, 55.6% at dysmotility like and 33.3% at mixed type. **Conclusion:** Gastritis is a common diagnostic dyspeptic patients referred for endoscopy procedures. **Key Word(s):** 1. dyspeptic symptoms; 2. upper gastrointestinal endoscopy

Liver

P-392

Serum adiponectin levels and the severity of hepatic fibrosis in non alcoholic fatty liver disease patients

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Objective: In recent studies adiponectin has been implicated in the pathogenesis of non alcoholic fatty liver disease (NAFLD), a common chronic liver disease with a broad spectrum of histopathologic findings. Adiponectin is reduced in concentration in patients with NASH (non-alcoholic steatohepatitis). The aim of this study was to investigate the comparison of serum adiponectin levels among different severity of hepatic fibrosis in non alcoholic fatty liver disease patients. **Methods:** Thirty four patients (17 males and 17 females) with NAFLD (based on ultrasonographic finding of bright liver) were enrolled in the study. Serum adiponectin levels were measured by an enzyme-linked immunosorbent assay. Fibrosis scored using biochemical parameters to obtain the BARD score (weighted sum of BMI > 28 = 1 point, AST/ALT ratio > 0.8 = 2 points, diabetes = 1 point). A total of 2–4 points indicates significant fibrosis. **Results:** Mean of serum adiponectin level 4.12 ± 1.23 ng/ml in the BARD score group with 0–1 point (N = 7), and 3.71 ± 1.39 in the BARD score group with 2–4 points (N = 27). No significantly difference was found between adiponectin levels in 2 group (p = 0.36). **Conclusion:** There was no difference between serum adiponectin levels among different severity of hepatic fibrosis in NAFLD patients.

Key Word(s): 1. Adiponectin; 2. non alcoholic fatty liver disease; 3. fibrosis

Liver

P-393

Genomic variations of pre-S1/S2, S regions of hepatitis B virus related to HBe seroconversion in spontaneous acute exacerbation

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Objective: The natural course of anti-HBe positive chronic hepatitis B is very different according to patients. Especially, after acute exacerbation (AE) of anti-HBe positive chronic hepatitis B, marked decreases in HBV replication with emergence of anti-hepatitis B e antibody (anti-HBe) and/or anti-hepatitis B surface antibody (anti-HBs) are found. Presumably, AE of chronic hepatitis B likely relates to the break of balance between virus and host immune responses. However, sequential changes of genomic variations according to AE was not well investigated. In particular, the present study about genomic variation of pre-S1/S2, S regions in HBV was lack. Therefore, we investigate the genomic variation of pre-S1/S2 and S regions in HBV associated with AE. **Methods:** From January 1999 to July 2006, 384 patients with anti-HBe positive chronic hepatitis B receiving follow-up at the gastroenterologic clinics of Kang-dong Sacred Hospital. **Results:** Among 45 patients who experienced AE, only 6 patients were selected due to have serial samples of before, during and after AE. 6 patients were not treated any anti-viral therapies and another causes of AE were excluded. HBV genomes of pre-S1/S2, S regions were amplified by polymerase chain reaction from sera of 6 patients before, during and after AE and directly sequenced. Among total 6 patients, 4 patients were confirmed HBe Ag seroconversion, but another 2 patients were not. The genetic analysis of total 30 sera from 6 patients was conducted. The group of patients with HBe seroconversion have total 17 point mutations; it consist of 2 point mutations of the pre-S1 region, 4 point mutations of the pre-S2 region and 11 point mutations of S region. The 2 patients without HBe seroconversion have total 4 point mutations; it consists of 3 point mutations of the pre-S1 region and 1 point mutation of the S region. 2 patients with HBe seroconversion have mutation at a protective B-cell epitope containing the group 'a' determinant during and after AE. And that patients have more genomic variations of S region than pre-S1/S2 regions. However, 2 patients without HBe seroconversion have lesser mutations than patients with HBe seroconversion and dose not have mutations of pre-S2 region. **Conclusion:** Mutations of pre-S2 region and S region may contribute to HBe seroconversion after AE rather than mutations of pre-S1.

Key Word(s): 1. chronic hepatitis B; 2. acute exacerbation; 3. HBe seroconversion; 4. pres gene mutation

Liver

P-395

Morbidity and mortality differences between cryptogenic and non-cryptogenic cirrhosis: a retrospective cohort study

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Objective: Cryptogenic cirrhosis is thought to be associated with the metabolic syndrome, but the consequences of this association have not been reported. **Methods:** A retrospective cohort study was conducted in

a single academic centre, comparing the morbidity and mortality between cryptogenic and non-cryptogenic cirrhosis over a 5-year duration. **Results:** Complete data were available in 301 patients with cirrhosis (cryptogenic n = 94, non-cryptogenic n = 207). Patients with cryptogenic cirrhosis were older (mean age 66.4 vs. 60.7, $p < 0.0001$), had more females (43.6% vs. 26.6%, $p = 0.003$), less severe disease severity (Child Pugh C 8.5% vs 15.9%, $p = 0.042$) and a higher prevalence of the metabolic syndrome (83% vs. 51.2%, $p < 0.0001$) compared with non-cryptogenic cirrhosis. During the 5-year study period, adults with cryptogenic cirrhosis had a longer total hospital admission stay compared to non-cryptogenic cirrhosis (median 10.5 vs 8 days, $p = 0.08$). Further analysis demonstrated a longer hospital admission duration for cryptogenic cirrhosis due to non-liver related morbidity (median 19.0 days vs. 13.0 days, $p = 0.04$), rather than liver related morbidity (median 14.0 days vs 11.0 days, $p = 0.06$). A higher proportion of stroke (6% vs 2%, $p = 0.02$) and cardiovascular disease (6% vs 3%, $p = 0.05$) were responsible for the increased hospitalization for non-liver related morbidity in cryptogenic compared to non-cryptogenic cirrhotic patients. Kaplan-Meier survival analysis showed no significant difference in survival between both types of cirrhosis during the period of study (Log rank statistic 0.56). **Conclusion:** Cryptogenic cirrhosis is associated with an increased morbidity, but not mortality, compared to non-cryptogenic cirrhosis. This difference is due to a greater burden of non-liver related complications in the former.

Key Word(s): Na

Liver

P-396

A case of liver cirrhosis from chronic haemolysis, systemic iron overload and deposition in a patient with a rare form of non transfusion dependant thalassaemia

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Objective: We present a 57 year old gentleman, who has liver cirrhosis from likely chronic systemic iron overload, haemolysis and iron deposition due to a rare form of non transfusion dependant thalassaemia. His medical problems include hypergonadotrophic hypogonadism, osteoporosis and subclinical hypothyroidism. He had never undergone any blood or blood product transfusions in the past. He is a teetotaler. On physical examination he had short stature, bronze skin, scleral icterus and multiple stigmata of chronic liver disease with hepatosplenomegaly. He had biochemical evidence of hemolysis and iron overload in addition to raised aspartate aminotransferase and unconjugated hyperbilirubinemia. Investigations done to rule out other causes of liver cirrhosis was negative in particular HFE gene mutation analysis (C282Y and H63D mutations were not detected). An ultrasound of the liver showed coarsened liver echo texture and nodular surface outline. Fibroscan stiffness reading was 27.4 kPa. Oesophagogastroduodenoscopy (OGD) showed the presence of portal hypertensive gastropathy. DNA sequence analysis revealed a rare IVSInt1 mutation in his Beta globin gene, forming an extremely rare and unusual compound heterozygote for a Beta globin and an unknown HPFH thalassaemia mutation. **Conclusion:** We postulate that his underlying metabolic and endocrine abnormalities may be due to iron deposition, similar in pathophysiology to patients with hemochromatosis. While liver cirrhosis from transfusion dependant thalassaemia is known, this has been the first reported case of liver cirrhosis in a non transfusion dependent patient with a rare form of Beta hemoglobinopathy

Key Word(s): 1. Cirrhosis; 2. thalassaemia

Liver

P-400

Short term efficacy of telbivudine versus entecavir in hepatitis B related hepatocellular carcinoma

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Objective: Telbivudine was reported to be superior compared to lamivudine in terms of viral suppression, HBeAg loss and viral resistance in Asian patients with chronic hepatitis B. We investigated the short term efficacy of telbivudine in comparison with entecavir as the first-line agent of HBV suppression in HBV related advanced HCC patients. **Methods:** A total of 86 consecutive HBV related HCC patients who started to receive antiviral treatment in Incheon St. Mary's hospital between 2010 and 2013 were analyzed. We investigated the virologic response at week 12 and 24 of the antiviral therapy. **Results:** 39 (46.4%) patients were treated with telbivudine 600 mg (TLV group) and 47 (54.6%) patients with entecavir 0.5 mg (ECV group). There were no differences in the baseline HBV DNA level and HBeAg positivity between the two groups. Virologic response rate (defined as < 20 IU/mL) at week 12 and 24 were 21.4% (3/14), 18.1% (2/11) in the TLV group and 18.5% (5/27), 37.5% (12/32) in the ECV group, respectively ($P = 0.583$, $P = 0.213$). There was no significant difference in the HBeAg seroconversion rate between the two groups (TLV 9.5% versus ECV 7.4%, $P = 0.248$). In the patients with advanced TNM stage (3,4) and poor liver function (Child-Pugh class B and C), virologic response rates at week 12 and 24 were 20% (1/5), 42.8% (3/7) in the TLV group and 33.3% (1/3), 33.3% (1/3) in the ECV group, respectively ($P = 0.424$, $P = 0.800$). Resistance to antiviral treatment was not documented in both groups. **Conclusion:** Telbivudine showed similar short term efficacy compared to entecavir. Therefore, considering the cost-effectiveness, telbivudine may be considered as the first line antiviral agent in patients with advanced HCC, poor liver function and short life expectancy.

Key Word(s): 1. chronic hepatitis B; 2. telbivudine; 3. hepatocellular carcinoma

Liver

P-401

Hepatitis B virus infection associated with agent orange in non-Hodgkin's lymphoma

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Objective: Hepatitis B virus (HBV) infection can be associated with non-Hodgkin's lymphoma (NHL). Agent Orange is also reported to cause

NHL. However, a correlation between HBV and Agent Orange in NHL is not yet proven. The aim of this study was to investigate the association between HBV infection and Agent Orange who were diagnosed with NHL.

Methods: The authors reviewed 236 veterans patients with NHL from June 2003 to April 2011. A retrospective, case-control study was performed. Patients who were positive for HBsAg for at least 6 months were regarded as chronic HBV carrier. **Results:** Among 236 patients with NHL, 102 patients had been exposed to Agent Orange. The prevalence of hepatitis B surface antigen in 102 patients who had been exposed to Agent Orange (12 of 106; 11.3%) was significantly higher than that of 124 patients who had not been exposed to Agent Orange (5 of 130; 3.8%) (adjusted odds ratio, 3.45; 95% CI, 2.32–7.21). HBV carrier who had been exposed Agent Orange group (n = 12) presented with significantly more advanced liver disease and high HBV DNA level than those who had not been exposed Agent Orange group (n = 5). Among 17 patients with hepatitis B surface antigen who received anticancer therapy, 14 patients (83%) received prophylactic antiviral therapy, primarily lamivudine. There was no occurrence of hepatitis flare during antiviral therapy. **Conclusion:** Agent Orange may have a significant correlation with HBV infection in NHL patients. Advanced liver disease and high HBV DNA level are more common in NHL patients who had been exposed Agent Orange. But all HBV carrier who received prophylactic antiviral therapy had no occurrence of hepatitis flare during chemotherapy.

Key Word(s): 1. hepatitis B virus infection; 2. non-Hodgkin's lymphoma; 3. agent orange

Liver

P-402

Volumetric analysis and indocyanine green retention rate at 15 minutes as a predictor of posthepatectomy liver function

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Objective: The actual future liver remnant (aFLR) is calculated as a ratio of remnant liver volume (RLV) to total functional liver volume (TFLV). The standardized future liver remnant (sFLR) is calculated as a ratio of RLV to standard liver volume (SLV). The aims of this study were to compare actual FLR versus standardized FLR and to determine criteria for safe hepatectomy using CT volumetry and ICG R15. **Methods:** Medical records and volumetric measurement were obtained retrospectively from 81 patients who underwent right hemihepatectomy for malignant hepatic tumor from January 2010 to November 2013. The sFLR was compared with aFLR, and a ratio of sFLR to ICG R15 as a predictor of posthepatectomy liver failure. **Results:** In non-cirrhotic patients, sFLR showed a stronger correlation with serum total bilirubin level than aFLR ($R^2 = 0.499$ vs. 0.239). Posthepatectomy liver failure (PHLF) only developed in the group of sFLR 1.9 showed a 66.7% of sensitivity and 100% of specificity. **Conclusion:** Regardless of ICG R15 level, standardized FLR $\geq 25\%$ in non-cirrhotic patients, and sFLR $\geq 25\%$ with sFLR/ICG R15 > 1.9 in cirrhotic patients was an acceptable limit of major hepatectomy.

Key Word(s): 1. liver resection; 2. volumetry; 3. indocyanine test

Liver

P-403

Efficacy and safety of tenofovir treatment in chronic hepatitis B patients in real-life practice: one year results of single center

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Objective: Tenofovir was licensed in 2008 for the treatment of HBV infections in Europe and the United States and has been available in Korea since 2012. It has shown potent antiviral efficacy and safety against HBV infections. The aim of this study was to evaluate the biochemical response and virological response to tenofovir in real-life practice of HBV patients at six months after treatment with tenofovir. **Methods:** One hundred and twenty-two chronic hepatitis B patients who took tenofovir for at least twelve months were enrolled. We investigated virological response (VR) and biochemical response (BR) by retrospectively reviewing medical records. We measured ALT levels, HBeAg, anti-HBe, HBV DNA, serum creatinine and phosphorous at six and twelve months after treatment with tenofovir. **Results:** The BR rate at six and twelve months after treatment with tenofovir in naïve patients were 75.0% and 85.4%, respectively. The VR rate at six and twelve months after treatment with tenofovir in naïve patients were 27.1% and 41.7%, respectively. High VR rate at six and twelve months after treatment were associated with initial low HBV DNA titer and initial negative HBeAg status. In this study nephrotoxicity due to tenofovir was not reported. **Conclusion:** Tenofovir induced good biochemical and virological responses at six and twelve months after treatment in real-life practice of Korean patients with chronic hepatitis B.

Key Word(s): 1. hepatitis B; 2. tenofovir; 3. efficacy; 4. safety

Liver

P-404

Difference of apoptotic and similar pro-inflammatory processes due to hepatitis B virus (HBV) x protein according to HBV subgenotype

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Objective: Hepatitis B virus (HBV) related hepatocellular carcinoma (HCC) is one of the common malignant disorders. There is well known the different prevalence of the HCC development according to genotype, even to argue of it to subgenotype. Among them, HBV X protein (HBX) is most commonly implicated on carcinogenesis, as it affect the cellular and viral genes. Even there are the different prevalence of the HCC according to genotype, there is also underlined the difference of the severity of chronic liver disease (CLD) according to genotype. **Methods:** To confined the characteristics of genotypic HBx protein, we collected full HBV sequences from HBV data of NCBI. From there, we earned consensus nucleotide and amino acid sequences according to subgenotype Ba, Ce and Cs. After, we make the corresponding plasmid reconstruction and transfect to Hep G2, Huh 7 and Chang cell lines. **Results:** 1. The effect of apoptosis due to

HBx is differed according to cell lines, and Chang cell is only distinguishable among them. 2. There is significantly differed the apoptotic effects in subgenotype in Chang cell. 3. Cleaved caspase 3 activity are increased gradually Ce, Cs and Ba, but there are not differed the caspase 8. 4. Even there were variability of proapoptotic and anti-apoptotic protein and apoptotic differences according to subgenotypes, they were disappeared when the transfected cell line are treated with N-acetylcysteine (NAC) and rapamycin. 5. There were also different fluorescent appearance in transfected cell. 6. Even there are the difference of apoptotic process, there are no difference of activated caspase 1 activity, as a pro-inflammatory indicator. **Conclusion:** The differed apoptosis is related to the cellular effect due to subgenotypic HBx. The differences is related different sensitivity of intrinsic apoptotic factors due to subgenotypic HBx.

Key Word(s): 1. hepatitis B; 2. hepatocellular carcinoma; 3. genotype

Liver

P-405

Influencing risk factors of hepatorenal syndrome in liver cirrhosis patients based on creatinine clearance

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Objective: Liver cirrhosis is a chronic liver disease characterized by damage of liver parenchymal with wide fibrosis and nodules formation. One of liver cirrhosis complications is hepatorenal syndrome, an occurrence of renal failure in a patient with advanced liver disease in the absence of an identifiable cause of renal failure. Management of liver cirrhosis with hepatorenal syndrome is difficult and needs monitoring and special treatments with poor prognosis. The aim of this study is to investigate risk factors affecting the occurrence of hepatorenal syndrome in liver cirrhosis patients. **Methods:** Cross sectional analytic study enrolled 60 liver cirrhosis patients. Admitted patients underwent endoscopy in Dr. Moewardi Hospital Surakarta from June 2013 to June 2014. Hepatorenal syndrome is determined by CCT <40 ml/min, no microhaematuria (<50 red cells/high powered field), and normal renal ultrasonography. Liver cirrhosis patients with other disorders such as parenchymal renal disease, concomitant use of nephrotoxic drugs, shock, type 2 diabetes mellitus, long history of hypertension, hyperthyroid, obstructive uropathy and sepsis were excluded. Statistical analysis with MANOVA. **Results:** From the multivariate analysis regression, simultaneously Child Turcotte Pugh classification, esophageal varices, ascites, hepatic encephalopathy, haemoglobin, platelet, albumin, sodium, potassium, calcium, proteinuria, sex, weight, and age were affecting significantly for the occurrence of hepatorenal syndrome with correlation within 67% ($R = 0.676$, $P = 0.006$). In a partially analysis from the multivariate regression, Child Turcotte Pugh classification ($B = 24.743$, $P = 0.000$) is independent factors for affecting the occurrence of hepatorenal syndrome. **Conclusion:** The Child Turcotte Pugh classification is independent good factor for affecting the occurrence of hepatorenal syndrome.

Key Word(s): 1. liver cirrhosis; 2. hepatorenal syndrome; 3. Child Turcotte Pugh

Liver

P-406

Efficacy of low-dose and long-term administration of IFN-alpha 2a in patients with chronic hepatitis C who failed to obtain sustained viral response by after PEG-IFN plus ribavirin therapy

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Objective: Genetic variation in the interleukin 28B (IL-28B) region is known to be associated with sustained virological response (SVR) to pegylated (PEG)-interferon (IFN)-alpha and ribavirin (RBV) in patients having chronic hepatitis C (CHC) genotype 1b and high viral load. The SVR rate in Japan was recently shown to be approximately 80–90% in patients with the IL-28B responder genotype, and only 50% in patients with the IL-28B non-responder genotype when they were treated with a new protease inhibitor combined with PEG-IFN plus RBV (new triple therapy). The aim of this study was to clarify the efficacy of low-dose and long-term administration of PEG-IFN-alpha 2a in CHC patients who failed to obtain SVR by prior PEG-IFN plus RBV combination therapy. **Methods:** Sixteen CHC patients (average: 61, range: 43–80 years, male/female = 10/6) infected with high viral loads of genotype 1b hepatitis C virus (HCV), who had received PEG-IFN plus RBV therapy for a median 48 (range: 24–96) weeks but had not obtained SVR, were examined in this study. Patients were divided into 3 groups based on the results of the previous PEG-IFN plus RBV regimen: a relapse group ($n = 6$; serum hepatitis C virus (HCV)-RNA was undetectable by RT-PCR during therapy, but patients became positive less than 24 weeks after the termination of therapy), a break-through group ($n = 4$; serum HCV-RNA was undetectable by RT-PCR, but patients became positive during therapy), and a null group ($n = 6$; serum HCV-RNA was detected by RT-PCR during therapy). At least 24 weeks after terminating PEG-IFN plus RBV therapy, we administered 90 μg of PEG-IFN-alpha 2a to all 16 patients at two-week intervals. All patients consented to genetic investigation for IL-28B genetic variants at rs8099917. Seven patients had genotype TT, 9 patients had genotype TG, and no patients had genotype GG at rs8099917. **Results:** In 5 (4 from the relapse group and 1 from the break-through group) of 16 patients, serum levels of HCV-RNA quantified by RT-PCR decreased constantly; 3 had the TT genotype and 2 had the TG genotype. In 4 (3 from the relapse group and 1 from the break-through group) of 5 patients, serum HCV-RNA subsequently became undetectable; 2 had the TT genotype and 2 had the TG genotype. Levels of serum transaminases remained within normal limits in 5 patients (4 belonged to the relapse group and 1 to the break-through group); 3 had the TT genotype and 2 had the TG genotype. **Conclusion:** Although patients who failed to obtain SVR by PEG-IFN plus RBV combination therapy should be administered a new triple therapy, administration of 90 μg PEG-IFN-alpha 2a every 2 weeks is thought to be useful for patients who cannot receive the new triple therapy for some reason such as aging or anemia, even if relapse or break-through occurred prior to PEG-IFN plus RBV combination therapy irrespective of their IL-28 genotypes at rs8099917.

Key Word(s): 1. chronic hepatitis C

P-406A
Prediction of large esophageal varices among patients with liver cirrhosis in Sanglah Hospital Denpasar

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Objective: Findings of liver cirrhosis are usually accompanied with screening endoscopy for large esophageal varices (EV) that may benefit from prophylactic measures. The aim of this study was to identify whether Model for End-stage Liver Disease (MELD) score, Child-Turcotte-Pugh (CTP) score, AST to platelet ratio index (APRI), FiB4 index, and laboratory tests could predict the presence of large EV among patients with liver cirrhosis in Sanglah Hospital Denpasar. **Methods:** A total of 90 hospitalized liver cirrhosis patients from September 2012 until March 2014 were retrospectively analyzed. Variables used in the analysis included age, sex, etiology of cirrhosis, CTP classification, MELD score, APRI, FiB4 index, platelet count, serum creatinine, and liver function tests. The presence of large EV was correlated with those characteristics. Univariate and multiple regression analysis were used to determine which factors may predict large EV. **Results:** Of ninety (90) patients enrolled, 66 were male (73.3%) and 24 were female (26.7%); majority with chronic hepatitis B. Sixty (66.7%) of the 90 patients were found to have large EV. The distribution of large EV according to CTP classification was as follows: A, 63.16%; B, 62.8% and C, 75%. Large EV was independently associated with total bilirubin higher than 1.9 mg/dL ($p = 0.010$), INR higher than 1.65 ($p = 0.018$), and platelet count lower than $105,500/\text{mm}^3$ ($p = 0.02$). Platelet count lower than $105,500/\text{mm}^3$ had the highest discriminative value for presence of large EV (sensitivity = 73.33%; specificity = 73.33%; area under receiver operating characteristics = 0.783). **Conclusions:** Large EV were found in 66.7% of patients with liver cirrhosis who underwent hospitalization. In patients with liver cirrhosis, the existence of thrombocytopenia may predict large EV which warrant prophylactic therapy.

Keyword(s): 1. large esophageal varices; 2. liver cirrhosis; 3. platelets

Liver

P-410
Increased galectin-3 expression but not galectin-9 is related to poor prognosis in hepatocellular carcinoma

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Objective: Galectins (Gal) are multifunctional galectins binding to the β -galactoside of glycoproteins that affect diverse physiological and pathophysiological processes. Previous studies have reported a correlation between galectin expressions and neoplastic transformation, progression and prognosis. The objective of this study was to evaluate the role of the expression of Gal-3 and Gal-9 in hepatocellular carcinoma (HCC) and their prognostic values. **Methods:** Gal-3 and Gal-9 expression was evaluated in 247 HCC patients using tissue microarray immunohistochemistry method, of which 110

had paired adjacent normal samples. Correlations were analyzed between expression levels of Gal-3 and Gal-9 protein and tumor parameters or clinical outcomes. **Results:** Gal-3 expression was found in 52 of 110 tumor tissues, significant higher than that in adjacent hepatic tissues (47.3% vs 18.2%, $P < 0.001$), while no significant differences was observed in expression of Gal-9 ($P = 0.430$). Gal-3 expression was statistically correlated with histological differentiation ($P = 0.016$) and lymph-vascular invasion ($P = 0.049$) and cirrhosis ($P = 0.040$). Gal-9 expression was also correlated with histological differentiation ($P = 0.002$) and lymph-vascular invasion ($P = 0.012$). Kaplan-Meier analysis showed that patients with higher Gal-3 expression had worse overall survival ($P = 0.008$), however, no relationship was found in Gal-9 expression and survival ($P = 0.150$). Multivariate analysis showed that multiple tumor (RR = 2.97, 95%CI = 1.39–6.33, $P = 0.005$), lymph-vascular invasion (RR = 2.80, 95%CI = 1.14–6.93, $P = 0.025$) and Gal-3 expression (RR = 2.24, 95%CI = 1.29–3.89, $P = 0.004$) were independent factors of prognosis in HCC. **Conclusion:** Gal-3 expression was involved in tumor progression and related to the prognosis of HCC, while Gal-9 expression was only related to tumor progression. Gal-3 is expected to serve as a novel diagnostic and prognostic marker of HCC.

Key Word(s): 1. hepatocellular carcinoma; 2. galectin-3; 3. galectin-9; 4. prognosis

Liver

P-411
Challenges in diagnosing atypical hepatocellular carcinoma: a case report

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Objective: Hepatocellular carcinoma aspect in imaging studies and liver biopsy is highly specific, allowing a diagnosis when the manifestations are correlated with signs of chronic liver disease. On the other hand, atypical findings of hepatocellular carcinoma are not uncommon. This report presents an unusual presentations of hepatocellular carcinoma. In order to evaluate atypical aspects of hepatocellular carcinoma at histopathological examination and imaging studies, we have done an immunohistochemical staining to confirm the diagnosis. A 66-year-old male patient recently diagnosed with liver nodule and liver cirrhosis Child Turcotte Pugh A. Physical and laboratory examination showed normal results, except high transaminase level. Ultrasonography examination of abdomen showed nodule in right lobe of the liver, with the 4 cm of the diameter, liver cirrhosis appearance, and hyperechoic liver. Multiphase contrast CT scan of abdomen was done to confirm the diagnosis, but with no typical appearance for hepatocellular carcinoma (HCC). Liver core biopsy was then done to confirm the diagnosis. However, liver core biopsy was also difficult to conclude the diagnosis. Addition of Glypican 3 as immunohistochemical staining was done in liver tissue, and the diagnosis of HCC trabecular type grade I can be confirmed histologically. Patient was then diagnosed with HCC BCLC Stage A and scheduled for segmentectomy V per laparoscopy

surgery. Pathology examination from the segment V of the liver showed similar result with Glypican-3-stained liver core biopsy.

Key Word(s): 1. hepatocellular carcinoma; 2. multiphase contrast CT scan abdomen; 3. liver cirrhosis; 4. BCLC staging; 5. Child Turcotte Pugh score; 6. core biopsy; 7. glypican 3 immunohistochemical staining; 8. segmentectomy

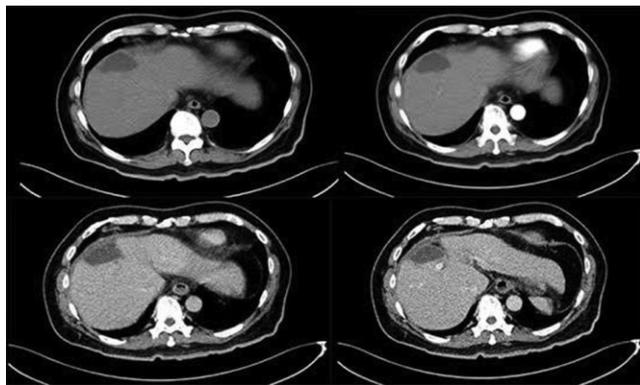


Figure 1 Non-contrast, arterial, venous, and delayed phase contrast CT scan abdomen (clockwise)

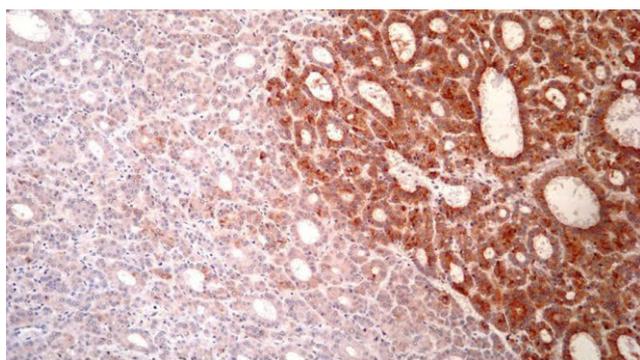


Figure 2 Glypican-3 immunostaining

Liver

P-412

High SVR rates among patients with multiple negative predictive factors across genotypes treated with sofosbuvir-based regimens

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Objective: Phase 3 studies of sofosbuvir (SOF) regimens have demonstrated high efficacy across genotypes with minimal impact on SVR of

traditional negative predictors of poor treatment response. Further definition of the influence of multiple, concomitant negative baseline host and viral factors is needed. **Methods:** Retrospective analysis of data from phase 2 and 3 studies of sofosbuvir-based regimens for patients with HCV GT-1 to 3 infections. Univariate logistic-regression analysis performed as a first step in all patients achieving SVR or experiencing relapse. Variables identified as significantly associated with relapse in the multivariate model were used to calculate SVR rates in patients with 0–6 of these factors. **Results:** Multivariate regression analysis identified male gender, body weight ≥ 75 kg, IL28B non-CC genotype, cirrhosis, baseline HCV RNA $\geq 800,000$ IU/mL, and prior treatment failure were significantly associated with relapse. SVR rates were above 90% in all genotypes when patients had ≤ 3 negative predictors. Reduction in SVR rates were observed in the presence of 5 or more negative predictors. **Conclusion:** Current SOF regimens are highly efficacious, even in patients with combination of multiple negative factors. SVR rates are comparatively lower in patients who have 5–6 negative predictors. Further strategies focused on addressing these hardest to cure populations are now required.

Key Word(s): 1. hepatitis C; 2. sofosbuvir; 3. SVR; 4. genotypes; 5. negative predictive factors

Liver

P-413

Long-term clinical outcomes and sustained virologic response (SVR) follow up of patients treated with sofosbuvir in the phase 3 studies: FISSION, POSITRON, FUSION, and NEUTRINO

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Objective: To assess the durability of SVR 24, persistence of resistance-associated variants in patients who did not achieve SVR 24 and clinical outcomes in patients who completed the sofosbuvir phase 3 studies: FISSION, POSITRON, FUSION and NEUTRINO.

Methods: Patients in the SOF Phase 3 studies who achieved SVR were offered enrollment in a SVR Registry and those who did not achieve SVR were offered enrollment in the Sequence Registry. Periodic laboratory evaluations and clinical assessment of liver disease were performed for up to 3 years. **Results:** 480 out of 991 eligible patients from the phase 3 studies enrolled into the SVR Registry with a median (range) follow-up of 170 days (1–377 days). 116 eligible patients have enrolled in the Sequence Registry with median (range) follow-up of 204 days (1–369) days. All patients in the SVR registry have maintained SVR through follow up. 69% of patients have discontinued from the Sequence Registry primarily due to re-treatment. Patients without a SVR24 had a higher incidence of grades 3 to 4 laboratory abnormalities. Two patients developed hepatocellular carcinoma upon entry into the Sequence Registry. **Conclusion:** This analysis indicates that SVR achieved with SOF-based treatment is durable. Further follow-up will be necessary to determine the impact of SVR or treatment failure on liver disease regression or progression.

Key Word(s): 1. hepatitis C; 2. sustained virologic response; 3. SVR; sofosbuvir; 4. FISSION; 5. POSITRON; 6. FUSION; 7. NEUTRINO

Liver

P-414

Complete regression of esophageal varices after interferon plus ribavirin therapy in patients with HCV related liver cirrhosis

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Objective: Recent studies suggest that liver cirrhosis is reversible after antiviral therapy in patients with hepatitis C virus infection. However, no reports are available if complication of cirrhosis, such as esophageal varices, are regressed after antiviral therapy. To our knowledge, this is the first report that esophageal varices can be regressed after antiviral therapy.

Methods: A 67-year-old woman was diagnosed with HCV (genotype 2a) related liver cirrhosis in 2004. Gastroscopic finding showed minimal to F1 small sized esophageal varices on the lower esophagus. Liver ultrasonography showed splenomegaly (11.8 cm). She was treated with interferon alpha plus ribavirin for 24 weeks since June 2004 and achieved sustained virologic response and normal liver function tests. After 1 year of antiviral therapy, esophageal varices progressed to F1-F2 (Figure 1). However, during follow up of 3 years after antiviral therapy, esophageal varices completely regressed (Figure 2) and spleen size decreased to 9.2 cm on ultrasonography. This finding suggest that even the complication of liver cirrhosis, such as esophageal varices, can be regressed after successful antiviral therapy in patient with HCV related liver cirrhosis.

Results: (Figure 1).



Figure 1

Conclusion: (Figure 2).



Figure 2

Key Word(s): 1. chronic hepatitis C; 2. liver cirrhosis; 3. esophageal varix; 4. ribavirin; 5. interferon

Liver

P-415

The safety and effectiveness of sedation with midazolam in cirrhotic patients undergoing endoscopic variceal ligation

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Objective: Endoscopic variceal ligation (EVL) is the established treatment for acute esophageal variceal bleeding. Unlike other therapeutic endoscopic procedure, sedation is generally not used in a cirrhotic patient for fear of hepatic encephalopathy (HE). However, a successful procedure might not be guaranteed due to poor cooperation and/or delirious behavior. In this study, we evaluated safety and effectiveness of midazolam in a cirrhotic patient undergoing EVL. **Methods:** The medical records of 320 cirrhotic patients who underwent EVL between October 2005 and December 2012 were reviewed retrospectively. The main outcomes were treatment success and adverse drug reaction (ADR) that might be related with sedation. Also, risk factors for development of HE were pursued. **Results:** Midazolam was used in 151 patients and not in 161 and baseline characteristics were similar. The rates of treatment success were not differ in both groups (95.8% vs. 96.2%, $p = 0.999$). Although the incidence of ADR didn't differ (46.2% vs. 55.0%, $p = 0.115$), development of HE (6.6% and 0%, $p = 0.001$) and desaturation (23.2% vs. 7.7%, $p = 0.001$) were more common in the midazolam group. A patient from the midazolam group died due to uncontrolled bleeding. There were a total of 10 cases of HE. With logistic regression, ECOG score ≥ 2 turned out to be associated with ADR (OR = 2.69, 95% CI 1.68–4.29, $p \leq 0.001$). However, age, body mass index, Child-Pugh classification and variceal grade were not related. **Conclusion:** Because midazolam was associated with ADR including HE in a cirrhotic patient undergoing EVL, it should be used with extreme

caution including appropriate intra- and post-procedural monitoring, especially when the ECOG score of a patient is not less than 2.

Key Word(s): 1. endoscopic variceal ligation; 2. midazolam; 3. liver cirrhosis; 4. sedation

Liver

P-420

The role of endoplasmic reticulum stress in the development of acute liver injury induced by carbon tetrachloride

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Objective: To investigate endoplasmic reticulum (ER) stress in the development of acute liver injury induced by carbon tetrachloride (CCl₄) in mice. **Methods:** Mice were randomly allocated to establish acute liver injury models by the administration of 20% CCl₄ intraperitoneally. The expressions of ER stress-related proteins and apoptotic proteins in the liver of CCl₄-treated mice were determined by pathological staining. The trends of ER stress-related proteins and apoptotic proteins were also analyzed by western blot. **Results:** It was shown by pathological analysis that administration of 20% CCl₄ to mice caused a marked hepatic damage, characterized by significant expressions of ER stress-related proteins and apoptotic proteins combined with a remarkable reduction of proliferative proteins, PCNA. TUNEL staining and PCNA staining showed that significant increasing apoptotic cells and decreasing proliferative cells, respectively, when compared with the control group ($P < 0.01$). By the same time, western blot analysis also demonstrated that administration of 20% CCl₄ to mice caused significant elevated expressions of ER stress-related proteins and apoptotic proteins, accompany with the release of mitochondrial cytochrome c and obvious repression of proliferative proteins, such as PI3K, p-Akt, PCNA. **Conclusion:** ER stress-mediated mitochondrial apoptotic pathway plays an important role in the pathogenesis of CCl₄-induced acute liver injury in mice.

Key Word(s): 1. liver injury; 2. endoplasmic reticulum stress; 3. apoptosis; 4. carbon tetrachloride

Liver

P-428

Rate and outcomes of spontaneous HBsAg seroclearance in hepatitis B virus/hepatitis C virus dually infected patients

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Objective: Spontaneous seroclearance of hepatitis B surface antigen (HBsAg) is usually associated with favorable clinical outcomes in hepatitis B with hepatitis B virus (HBV) mono-infection. However, in patients with dual HBV and hepatitis C virus (HCV) infection, the annual rate and outcomes of HBsAg seroclearance were not clarified. Factors associated with this event were also largely unknown. **Methods:** We addressed these issues by retrospectively collecting a cohort of 157 untreated HBsAg-positive and anti-HCV-positive patients (M:F = 94 : 63; median age: 47.6 years) who received regular follow-up for a median period of 10 years.

Results: At enrollment, 31 (19.8%) patients had active HBV infection (serum HBV DNA >2000 IU/mL) and inactive HCV infection (serum HCV RNA negative), 41 (26.1%) had active HCV and inactive HBV infection, 10 (6.4%) had active HBV and active HCV infection, and 75 (47.8%) had inactive HBV and inactive HCV infection. After 1,278 patient-years of follow-up, annual incidence of HBsAg seroclearance was 2.0 per 100 patient-year; the 10-year cumulative incidence was 18.9 per 100 patient-years. The incidence was highest in patients with active HCV and inactive HBV infection. Multivariate analysis revealed that serum ALT >80 U/L ($p = 0.003$), baseline HBsAg <100 IU/mL ($p < 0.001$), and rs3077 GG genotype ($p = 0.034$) were associated with HBsAg seroclearance. None developed HCC after HBsAg seroclearance. **Conclusion:** Spontaneous seroclearance of HBsAg is not common in HBV and HCV dually infected patients, but the outcomes are generally good.

Key Word(s): 1. hepatitis B; 2. hepatitis C; 3. dual infection; 4. HBsAg seroclearance

Liver

P-429

Relationship between age, weight, height, body mass index, hemoglobin, hematocrit, leukocytes, thrombocytes, lymphocytes, albumin with incidence of drug induced liver injury (DILI) result from oral anti tuberculosis drugs

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Objective: Many factors contributed in the development of DILI caused by oral anti tuberculosis drugs, such as slow acetylation, age, serum albumin, weight, height, body mass index, hemoglobin, hematocrit, leukocytes, thrombocytes, lymphocytes. **Methods:** A prospective study had performed to 172 tuberculosis patients who treated with first line anti tuberculosis drugs therapy from January to June 2014. The patients were followed up at week 2, 4, 6, and 8 for development of DILI. The diagnosis of DILI based on WHO criteria. **Results:** One hundred seventy two patients finished the study. Subjects consist of 97 men (56.39%) and 75 women (43.8%). The incidence of DILI is 20/172 (11.63%). The DILI occurred in 14 patients (70%) at week 2, 3 patients (15%) at week 4, 1 patient (5%) at week 6, and 2 patients (10%) at week 8 respectively. Fourteen patients (70%) had severe DILI and 9 (30%) patients had moderate DILI. A weak correlation found between age, hemoglobin, hematocrit, thrombocytes, albumin with DILI (rpb -0,148 ($p = 0,026$), -0,147 ($p = 0,027$), -0,131 ($p = 0,043$), -0,165 ($p = 0,015$) and -0,159 ($p = 0,018$) respectively. No correlation found between body mass index, leukocytes, and lymphocytes with DILI. **Conclusion:** The incidence of DILI is 11,63% and most of them had DILI in first 2 week of treatment. Severe DILI was found in more than 50%. A weak correlation found between age, hemoglobin, hematocrit, thrombocytes, and albumin with DILI.

Key Word(s): 1. tuberculosis; 2. drug induced liver injury; 3. hemoglobin; 4. hematocrit; 5. thrombocytes; 6. albumin

Liver

P-430

Hepatoprotection by S-adenosylmethionine and the associated mechanism with farnesoid X receptor in intrahepatic cholestasis rats**Presenting Author:** HUA MAO**Additional Authors:** JUNHUI OUYANG, DANDAN JIN, WENDAN QIU**Corresponding Author:** HUA MAO**Affiliations:** Southern Medical University, Southern Medical University, Traditional Chinese and Western Medicine Hospital

Objective: S-adenosylmethionine (AdoMet) is successfully used in the treatment of intrahepatic cholestasis (IHC). The involvement of activation of the farnesoid X receptor (FXR) – which is involved in the regulation of bile acids – in the AdoMet action is not known. So the hepatoprotection of AdoMet with FXR is further to be understood. **Methods:** The curative effects of AdoMet (60 mg/kg/d i.p.) and the FXR agonist GW4064 (3 mg/kg/d ip) in an acute alpha naphthyl isothiocyanate (ANIT, 50 mg/kg) induced IHC model in rats were investigated in this study. Plasma bilirubin, bile acid, liver enzymes, FXR, bile salt export protein (Bsep), multidrug resistance-associated protein 2 (Mrp2) and Na⁺-taurocholate cotransporting polypeptide (Ntcp) were tested. Expression of FXR was tested in Q-PCR method, Bsep, Mrp2 and Ntcp were tested in situ hybridization method. **Results:** ANIT induction resulted in increases in plasma bilirubin, bile acid and liver enzymes that were most pronounced after 48 h in rats. Treatment with AdoMet significantly improved the plasma parameters and increased expression of FXR. In addition, AdoMet increased Bsep, Mrp2 and Ntcp expression. The specific FXR agonist GW4064 also increased FXR and the related transporter expression but was at best only weakly active on liver enzymes. **Conclusion:** It is suggested that part of the positive effects of AdoMet on the liver enzymes, serum bile acids and bilirubin in the rat IHC model might be related to the an augmented FXR expression and the resulting up-regulation Bsep, Mrp2 and Ntcp.

Key Word(s): 1. S-adenosylmethionine; 2. intrahepatic cholestasis; 3. farnesoid X receptor

Liver

P-431

Efficacy of antiviral therapy in HBV infection with pegylated interferon alfa 2a in regards to epidemiological profile of the patients**Presenting Author:** RUSMIR MESIHOVIC**Additional Authors:** NENAD VANIS, AZRA HUSIC-SELIMOVIC**Corresponding Author:** AZRA HUSIC-SELIMOVIC**Affiliations:** University Hospital Sarajevo, University Hospital Sarajevo

Objective: Yearly, approximately 500 000 people die of HBV related cirrhosis. Up to two thirds are unaware of their infection. Bosnia and Herzegovina belongs to the group of the countries with intermedium prevalence rate, estimating to have 50 000 people infected with HBV. The aim of the study was to analyse epidemiological profile of HBV infected patients treated at Gastroenterohepatology University Hospital Sarajevo, in a five years period, with pegylated interferon alfa 2a. **Methods:** Forty seven patients who completed therapy was analysed according to the reported source of HBV infection. Almost 50% of the patients was in 41-50 age group, and 70% was males. By analysing the source of infection, 64% of patients reported as “unknown”; 17% “war injured,” 11% intrafamiliar

transmission, 4% surgical procedures. We diagnosed chronic HBV infection by biochemical and virological analysis. Pegylated interferon alfa 2a was administered in a duration of 48 weeks. HBV DNA levels in sera were measured by real time PCR (m2000rt). HBV DNA test performed with ABOTT has proved infection and was used for quantification of the viruses and monitoring of the patients respond to the therapy. Liver histology was evaluated in accordance to the level of necroinflammatory activity and fibrosis. **Results:** End of treatment respond – ETR (HBV DNA PCR negative) was achieved in 26% patients. By analysing ETR based on source of infection; 25% of patients with intrafamiliar transmission achieved ETR, 38% of war injured, 50% of patients infected by surgery and 30% of patients infected by unknown source. **Conclusion:** Reduction of HBV DNA PCR level at the end of therapy was not significant (0,05 significance level). Intrafamiliar and war injured way of infection was associated with more advance liver disease and lower respond on antiviral therapy.

Key Word(s): 1. chronic hepatitis B; 2. antiviral therapy; 3. epidemiological profile

Liver

P-432

Correlation between serum triglycerides with alanine aminotransferase levels in non alcoholic fatty liver disease**Presenting Author:** SAPTINO MIRO**Additional Authors:** BAYU GEMILANG, ARNELIS ARNELIS K, NASRUL ZUBIR**Corresponding Author:** SAPTINO MIRO**Affiliations:** Medical Faculty of Andalas University, Medical Faculty of Andalas University, Medical Faculty of Andalas University

Objective: Serum triglyceride s is one of the metabolic syndrome components which is believed as the main factor that causes Non Alcoholic Fatty Liver Disease (NAFLD), a chronic liver disease which later can cause hepatocyte fibrosis and also malignancy. NAFLD does not show any typical clinical appearance, so it is important to do workups such as liver enzyme test to make the diagnosis. In some research, Alanine Aminotransferase (ALT) is considered as the marker of NAFLD. The purpose of this study was to determine the relationship between serum triglycerides with ALT levels in NAFLD patients. **Methods:** This study is an analytical study with retrospective design by using the data from health record of NAFLD patients in the hospital medical record installation of RSUP Dr. M. Djamil Padang. The subject of this study were 51 NAFLD patients. **Results:** The mean of serum tryglycerides level was 164,69 mg/dL and ALT level was 48,43 U/l in NAFLD patients. By performing Pearson correlation test, there were a strong correlation ($r = 0,512$) and significantly association ($p < 0,001$) between serum triglyceride s and ALT levels. Clark et al. (2003) found that there was correlation between the increasing of serum ALT level with triglyceride. The study of Mendla et al. (2012) showed that ALT/triglyceride ratio has a high sensitivity and specificity for identifying NAFLD. This result concordant with this study, which is the correlation between triglyceride and ALT could be a marker to detect NAFLD in obesity patients. **Conclusion:** Serum triglycerides level were associated with ALT level in patient with NAFLD.

Key Word(s): 1. triglyceride; 2. ALT; 3. NAFLD

yield for detecting advanced neoplasm was significantly higher in patients with ALD than in healthy control. Screening for colorectal neoplasm using colonoscopy is warranted in ALD patients without decompensated LC.

Key Word(s): 1. alcoholic liver disease; 2. advanced colonic neoplasm; 3. decompensated liver cirrhosis

Liver

P-437

Association between coffee and serum aminotransferase in Korean adults: the Korea National Health and Nutrition Examination Survey

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Objective: This study was performed to investigate the association between coffee and serum aminotransferase in Korean adults.

Methods: Data were obtained from the 4th and 5th Korea National Health and Nutrition Examination Survey. Elevated alanine aminotransferase (ALT) and aspartate aminotransferase (AST) were defined as >30 IU/L for men and >19 IU/L for women, respectively. Proportion of elevated ALT and AST according to general characteristics and coffee consumption frequency were tested by chi-square tests. Adjusted odds ratios (aOR) and 95% confidence interval (CI) for elevated ALT and AST by coffee consumption frequency were calculated after adjusting for sex, age, smoking status and body mass index. **Results:** The proportions of elevated ALT were 27.4%, 27.8% and 26.9% in subjects who drank <1, 1 and ≥2 cups/day, respectively. The proportions of elevated AST were 32.5%, 33.1% and 26.7% in subjects who drank <1, 1 and ≥2 cups/day, respectively. AOR for elevated ALT and AST in subjects who drank more than 2 cups/day was significantly low compared to subjects who drank <1 cups/day (ALT: aOR=0.86, 95% CI=0.79-0.94; AST: aOR=0.83, 95% CI=0.76-0.91). In subgroup analysis, coffee consumption more than 2 cups/day were associated with lower ORs for elevated ALT in entire high-risk group, viral hepatitis group and obesity group. **Conclusion:** Increased coffee consumption was associated with lower risk of elevated aminotransferase in Korean adults. Further study is needed to investigate the underlying biological mechanisms between coffee and aminotransferase level.

Key Word(s): 1. adult; 2. alanine transaminase; 3. aspartate aminotransferases; 4. coffee; 5. risk factors

Liver

P-438

Evaluation of Pegylated interferon (Unipeg®) for response and safety in Pakistani population (Europ)

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Objective: According to a conservative estimate from the last sero-survey of Pakistan, HCV prevalence was 7.8 million (4.9%). To assess efficacy and safety of Pegylated Interferon alfa-2a 180 µg 20 kDa (Unipeg®) in combination with Ribavirin (Ribazole®) for treatment of chronic hepatitis C infection in Pakistani population. **Methods:** Phase-IV, single-arm, open-label, multicentre study, 67 patients from major Pakistani cities included in study from August 2010 to September 2013. All were interferon naïve, anti-HCV antibodies positive and PCR HCV-RNA positive. Patients were treated with Pegylated Interferon alfa-2a 180 µg 20 kDa subcutaneous weekly and 800-1200 mg Ribavirin once daily with varying doses for 24/48 weeks depending on genotype and bodyweight. Virological responses were evaluated: Rapid Virological Response (RVR) at week 4, End Treatment Response (ETR) at week 24 or 48 and Sustained Virological Response (SVR) at 6 months after therapy completion.

Results: A total of 67 patients were enrolled and there were 3 dropouts. Male:Female ratio was 1.3 : 1 with mean age of 35.4 ± 9.5 (range: 19-62) years. Out of 64 patients, 60 (93.8%) were genotype-3 and 4 (6.2%) patients were genotype-1. RVR achieved in 48 (75%) & not achieved in 16 (25%) patients. ETR achieved in 56 (87.5%) & not achieved in 8 (12.5%) patients. One patient was lost to follow-up and fifty-five patients completed the 6 months follow-up; 48 (87.3%) patients achieved SVR and 7 (12.7%) patients relapsed at 24 weeks post-therapy. Only 10 (15.6%) patients experienced expected adverse events of non-serious nature. **Conclusion:** The results showed Pegylated Interferon alfa-2a 180 µg 20 kDa in combination with Ribavirin in chronic HCV infection is clinically effective, well tolerated with minimal adverse events similar to those reported in literature.

Key Word(s): 1. Europ; 2. Pakistani; 3. Pegylated interferon; 4. response; 5. safety

Liver

P-439

Hepatic fibrosis is associated with small intestinal permeability in chronic liver disease due to hepatitis C, hepatitis B and non-alcoholic fatty liver disease, in subjects without ascites. A prospective cohort study using non-invasive techniques

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Objective: Intestinal permeability may have a role in the development and progression of hepatic fibrosis. We aim to assess the relationship between hepatic fibrosis and small intestinal permeability in chronic liver disease (CLD) due to hepatitis C (CHC), hepatitis B (CHB) and non-alcoholic fatty liver disease (NAFLD). **Methods:** 113 subjects with CLD caused by CHC (n = 42), CHB (n = 32) and NAFLD (n = 39) were compared to 30 healthy volunteers (HV). Subjects were excluded if they drank alcohol within 24 hours of testing or had gastrointestinal pathology. Small intestinal permeability was assessed by determining the ratio of plasma concentrations of lactulose and rhamnose, 90 minutes after oral ingestion of 5 g lactulose and 1 g rhamnose. Hepatic fibrosis was measured by Transient Elastography (kPa). The limulus-amebocyte lysate assay was used to detect endotoxaemia in peripheral blood. Statistical analysis was performed utilising SPSS. **Results:** 84 subjects without ascites completed evaluation of small intestinal permeability and hepatic stiffness (54 with CLD, 30 HV). In these subjects there was a significant positive correlation between hepatic stiffness and small intestinal permeability (Spearman rank test, $r = 0.22$, p -value < 0.05). All 143 subjects (113 with CLD, 44 with cirrhosis, and 30 HV), were tested for endotoxaemia. In the 44 who had cirrhosis (defined as LSM > 13 kPa or clinical diagnosis in those with ascites), the proportion of endotoxin-positive subjects was significantly higher (7/44) compared to CLD without cirrhosis (3/69), $p < 0.05$ (Fisher's Exact). **Conclusion:** In chronic liver disease due to CHC, CHB and NAFLD, hepatic fibrosis is associated with small intestinal permeability in the absence of ascites. CLD with cirrhosis is associated with peripheral endotoxaemia.

Key Word(s): 1. intestinal permeability; 2. chronic liver disease; 3. transient elastography; 4. chronic hepatitis B; 5. chronic hepatitis C; 6. non-alcoholic fatty liver disease

Liver

P-440

Autoimmune hepatitis in Sri Lanka: are conventional serological markers less common?

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Objective: Autoimmune hepatitis (AIH) is an immune mediated chronic hepatitis of the liver of unknown etiology. AIH does not have a single diagnostic test. The diagnosis is by different scoring systems based on combination of biochemical, autoimmune, and histological parameters, and exclusion of other liver diseases. Autoantibodies are hallmark of autoimmune hepatitis and constitute an important part of the diagnostic work-up. We aim to study the serological profile of AIH in a Sri Lankan cohort.

Methods: AIH database of Gastroenterology clinic, Colombo North Teaching Hospital was analyzed retrospectively. The Revised Original Scoring System of the International Autoimmune Hepatitis Group was applied to define the cases of (definite or probable) AIH. **Results:** 18 Patients who had complete data were analyzed. 11/17 fulfilled the criteria for definite AIH and 7/18 fulfilled the criteria for probable AIH. Of 18 patients with AIH mean age was 40.25 (SD 9.1) years and 14 (77.7%) were females. Among these 18 patients only 3 (28.3%) were positive for anti-nuclear antibodies (ANA), 2 (11.1%) had smooth muscle antibodies (SMA) but none of these patients were positive for antibodies to liver/kidney microsome type 1 (anti-LKM-1). All these 18 patients were treated with prednisolone and azathioprine and 16 responded to treatment, but 2 patients did not respond to treatment and progressed to cirrhosis. **Conclusion:** Autoimmune markers appear to be less common in this cohort of patients with probable or definite AIH.

Key Word(s): 1. autoimmune hepatitis autoantibodies

Liver

P-441

Comparison of accuracy of fibrosis degree classification by liver biopsy with fibrosis 4 (Fib 4) index in chronic hepatitis B & C patients

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Objective: Non invasive test have been constructed and evaluated mainly for binary diagnoses such as significant fibrosis. Recently detail fibrosis classification for several non invasive test such as Fib4 index have been developed but their accuracy have not been thoroughly evaluated in comparison to liver biopsy. The aim of this study was to evaluate the accuracy of the detail fibrosis classification available for fib4 index with liver biopsy in Chronic Hepatitis B and C patients. **Methods:** In this cross sectional study, 71 patients confirmed with Hepatitis B and C, underwent liver biopsy in Adam Malik Hospital Medan since January 2011 to September 2013. Laboratory was taken such AST, ALT, platelet and personal data. Fib4 index was computed. We used predictive value, AUROC to assess the accuracy of fib4 index with liver biopsy. **Results:** The Fib4 index (cut off > 1.45) compared to Metavir to diagnose severe fibrosis had sensitivity

78,8%, specificity 57,9%, PPV 61,9%, NPV 75,9%, LR(+) 1,87 and LR(-) 0,37. Accuracy diagnostic was 67,6%, AUROC 0,683 (95% CI:0,558–0,809) with $p < 0,05$ **Conclusion:** Fib4 index can be used for fibrosis degree classification in chronic Hepatitis B and C patients.

Key Word(s): 1. fibrosis degree; 2. Fib 4 index

Liver

P-442

Peptidyl-prolyl isomerase, Pin1, in acute and chronic liver disease

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Objective: Peptidyl-prolyl isomerase, Pin1, a member of parvulin family of PPIase enzyme plays a crucial role in the regulation of post phosphorylation reaction, which governs important role in the cell signalling mechanism. Studies have shown the role of Pin1 in normal as well as in pathological conditions. Here we examined the role of Pin1 in acute and chronic liver injuries. **Methods:** A single dose of carbon tetrachloride (CCl₄) was injected to induce acute liver injury and apoptosis of hepatocytes in mice. Similarly, 0.1%DDC diet was fed for three weeks to induce chronic liver injury and induction of hepatic progenitor cell in mice. **Results:** Hepatocyte apoptosis was increased when Pin1 was inhibited by Juglone. Further, overexpression of Pin1 reduced hepatocyte apoptosis both invitro and invivo. Pin1 increased in the liver after three weeks of DDC diet along with the expansion of hepatic progenitor cell, which was confirmed by the expression of CD44 and A6. Cultured hepatic progenitor cell expressed high level of Pin1 along with other markers like EP-CAM, CK-19 and AFP. Pin1 in the hepatic progenitor cell were more resistant to TGF- β induced degradation compared to hepatocytes. Similarly, stimulation by IGF-1 increased the proliferation of hepatic progenitor cells with increased expression of Pin1 and other proteins that regulate cell cycle. The results also showed that Pin1 over expression increased oval cell proliferation, which was further confirmed by increased cell number in G2/M stage of cell cycle in FACS analysis. Further, Pin1 knockdown by siRNA rendered proliferation of oval cells as confirmed by WST-1 and BrdU incorporation assay. **Conclusion:** In conclusion, Pin1 protects hepatocyte apoptosis in acute liver injury and help oval cell mediated liver regeneration in an environment that is inhibitory to hepatocyte proliferation in the chronic liver injury.

Key Word(s): 1. Pin 1; 2. acute liver disease; 3. chronic liver disease

Liver

P-443

Correlation of audit score with tumor necrosis factor alpha and seromarker of liver function abnormalities in adult male drinkers

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Objective: Chronic alcohol use may cause several types of liver injury. The spectrum of alcoholic liver disease (ALD) varies from simple steatosis

to cirrhosis and even hepatocellular carcinoma. Tumor necrosis factor alpha (TNF- α) is one of the inflammatory cytokines play a role in pathogenesis of ALD. TNF- α induces liver cells damages marked by elevated of gamma glutamyl transpeptidase (GGT), aspartate aminotransferase (AST), dan alanine aminotransferase (ALT). The diagnosis of ALD is based on a combination of features, including a history of significant alcohol intake, clinical evidence of liver disease, and supporting laboratory abnormalities. Unfortunately, clinicians commonly fail to screen patients, and thus fail to recognize or treat alcoholism appropriately. The Alcohol Use Disorders Identification Test (AUDIT), developed by WHO, has been recommended as a first-line method to screen patients alcohol abuse. 1) To investigate the benefit of AUDIT score to predict liver function abnormalities characterized by increased seromarkers of liver function, 2) To investigate the role of TNF- α in increased seromarkers of liver function abnormalities in alcoholic adult males. **Methods:** This study was an observational analytic cross sectional study conducted in Manado and North Minahasa starting from July 2012 to January 2013. Samples were taken consecutively until the desired samples were obtained. **Results:** There were 40 subjects aged 20-45 years with a mean age of 34.48 years (SD 9.04). Mean alcohol consumption was 40.75 g/day (SD 32.45), mean AUDIT score was 17.92 (SD 6.4), mean serum GGT was 54.95 U/L (SD 57.63), mean serum AST was 35.70 U/L (SD 11.34), mean serum ALT was 31.69 U/L (SD 16.42) and mean serum TNF- α was 102.57 pg/mL (SD 35.45). Statistical analysis using Pearson's test showed that there was a positive significant correlation ($p < 0.05$) between AUDIT score and serum TNF- α levels ($p = 0.001$; $r = 0.508$). There was a significant correlation between serum TNF- α levels and GGT levels ($p = 0.008$; $r = 0.416$), between serum TNF- α levels and AST levels ($p = 0.029$; $r = 0.346$), between serum TNF- α levels and ALT levels ($p = 0.042$; $r = 0.323$). Pearson's correlation test showed the significant correlation between AUDIT scores and serum GGT levels ($p = 0.000$; $r = 0.586$), between AUDIT scores and serum AST levels ($p = 0.000$, $r = 0.558$), between AUDIT scores and serum ALT levels ($p = 0.000$; $r = 0.572$). Simple linear regression analysis showed that AUDIT scores had an influence on the levels of serum GGT, AST, ALT, and TNF- α . The AUDIT scores may predict 32.6% increase of serum GGT levels; 29.3% increase serum AST levels; 25.9% increase of serum ALT levels; and 23.8% increase of serum TNF- α levels. Simple linear regression analysis also showed that TNF- α had an influence on serum GGT, AST and ALT levels. TNF- α may influence increase of GGT level about 15.1%, serum AST level about 9.7%, and serum ALT level about 8%. **Conclusion:** 1) There was a positive significant correlation between AUDIT scores and serum TNF- α levels; 2) there was a positive significant correlation of serum TNF- α levels with serum GGT, AST, and ALT levels; 3) there was a positive significant correlation of AUDIT scores with serum GGT, AST, and ALT levels; 4) AUDIT scores had an influence on the increase of serum GGT, AST, ALT, and TNF- α levels; 5) the level of serum TNF- α had an influence on the increase of serum GGT, AST, and ALT levels.

Key Word(s): Na

Liver

P-444

The quality of life on patients with non alcoholic fatty liver disease

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Objective: Non-Alcoholic Fatty Liver Disease (NAFLD) is a term for hepatic fat accumulation in the absence of alcohol consumption in amounts generally considered to be harmful to the liver (less than 20 g of ethanol per week). Although in general the NAFLD patients considered asymptomatic, there has no any research study about the quality of life and it's affecting factors on NAFLD patients in Indonesia. To find out the factors affecting the quality of life on NAFLD patients. **Methods:** This is an analytic-observational research with cross-sectional design. Research participants are NAFLD patients in RSUP Dr. Kariadi Semarang. Data were collected via interview using SF-36 RAND questionnaire. Diagnosis of NAFLD and severity by liver biopsy accordingly NAFLD activity score (NAS). Data were then analyzed using Anova or Independent Sample T test. In non-parametric analysis, Mann-Whitney and Kruskal-Wallis tests were performed. **Results:** 28 participants were enrolled in this research. SF-36 (RAND) score did not differ by sex (p: 0.632), age (p: 0.993), education (p: 0.383), marital status (p: 0.488) and NAS (NAFLD activity score) (p: 0.834). **Conclusion:** SF-36 RAND score did not differ by sex, age, education, marital status and NAFLD activity score.

Key Word(s): 1. NAFLD activity score; 2. quality of life

Liver

P-445

Depressive illness among patients presenting with gastrointestinal symptoms in a tertiary care hospital in north east part of Bangladesh

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Objective: To see incidence of depressive illness among patients presenting with gastrointestinal symptoms in a tertiary care hospital in North East part of Bangladesh **Methods:** Consecutive adult patients presenting with various gastrointestinal symptoms were included. In addition to clinic-demographic features all of them were assessed for depressive symptoms using 21 items Hamilton – depression scale. Statistical analysis was done by using SPSS version 16 and chi-square test was performed. P value <0.05 was considered significant. Level of depression was rated taking score 0-7 as normal, 8-13 as mild, 14-18 as moderate, 19-22 as severe and ≥ 23 as very severe. **Results:** Total 442 patients, age from 18 to 95 years (mean 37.8) with various social, economic and occupational background were included. Among them 281 (63.57%) were male and 161 (36.42%) were female. Mild to very severe depressive illness was found in 276 (63.57%). It was found more common among 25-35 year (68.06%) and >45 years age (67.86%) group. Among them 203 (66.56%) married persons, 109 (67.71%) female, 97 (73%) housewives, 142 (66.99%) and 151 (67.41%) patients with lower economic and educational background and 206 (65.69%) from rural community had feature if depressive illness. **Conclusion:** Depressive illness is common among patients presenting with gastrointestinal symptoms. Lower educational and economic background, female sex, married, housewives and age 25-35 years and >45 years are important associated factors.

Key Word(s): 1. gastrointestinal symptoms; 2. depressive illness

Liver

P-446

Role of serial liver stiffness measurements for monitoring change in liver fibrosis in patients with chronic liver disease

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Objective: The clinical utility of serial liver stiffness measurements (LSM) for assessment of regression or progression of fibrosis in patients with chronic liver disease (CLD) has not been well established. The aim of this study was to examine the change in fibrosis grade in CLD patients undergoing serial LSM for longitudinal assessment of liver fibrosis. **Methods:** Retrospective analysis of 268 patients who underwent repeat LSM for assessment of liver fibrosis in our center between 2005-2012. Demographic, clinical and LSM data were analyzed to evaluate for change in fibrosis grade between the first two consecutive LSM measurements. **Results:** Mean age was 49.7 ± 12.2 years with 67.2% males. Etiology of CLD was chronic hepatitis B (CHB) in 63.8%, chronic hepatitis C (CHC) in 15.3% and non-alcoholic steatohepatitis (NASH) in 20.9%. 243 patients had valid repeat LSMs with failure of at least one LSM reading in 25 (9.3%). Mean duration between the baseline and repeat LSM was 18.6 ± 12.8 months. A difference in fibrosis grade between the two LSM readings was observed in 151/243 (62.1%), of which 81/243 (30.2%) demonstrated evidence of fibrosis regression whereas 70/243 (26.1%) demonstrated evidence of fibrosis progression on repeat LSM. There was no significant difference in the proportion of fibrosis regression amongst the different etiologies. 138 (56.8%) of the cohort received treatment for their underlying liver disease. However, we did not observe any significant increase in fibrosis regression among treated patients compared with untreated patients (32.8% vs. 34.2%, p=NS), even when stratified by specific etiology. A difference in fibrosis grade was observed more frequently in subjects with repeat LSM within 2 years compared to those with repeat LSM >2 years (66% vs. 50%, p=0.025). **Conclusion:** Serial LSM is a useful modality to monitor longitudinal change in liver fibrosis in patients with chronic liver disease. The optimal duration for repeat LSM assessment to demonstrate difference in fibrosis grade should be 2 years. **Key Word(s):** 1. liver stiffness measurement; 2. fibrosis grade; 3. chronic liver disease

Liver

P-448

Efficacy and factors associated with SVR in telaprevir-based triple therapy in hepatitis C patients

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Objective: Since 2011, the standard of care regimen for the treatment of HCV genotype 1 has been a combination of a non-structural 3/4 protease inhibitor, ribavirin and peginterferon. To evaluate the efficacy and factors

affecting sustained viral response (SVR), chronic hepatitis C genotype 1 patients were treated with telaprevir, ribavirin and peginterferon alfa-2b in a single institution in Japan. **Methods:** In our triple therapy, patients were treated with either 2250 mg or 1500 mg of starting dose of telaprevir and standard doses of peginterferon alfa-2b and ribavirin for 24 weeks. Fifty-four patients enrolled in the study. Basic data including viral load and liver fibrosis were obtained. Interleukin 28B (IL28B, rs8099917) polymorphism were available in 41 patients. Necessary data were collected and recorded throughout the treatment and at 6 months after the end of the treatment. Doses of three drugs varied by adverse effects such as anemia, thrombocytopenia, nausea or skin rash. Statistical analyses were conducted using SPSS Statistics. Univariate logistic regression analyses were done using the Chi-squared and Fisher's exact test. **Results:** Out of 54 patients enrolled, 7 dropped out from the treatment because of severe nausea and appetite loss, grade C skin rash, thrombocytopenia and pneumonia. Of the 47 who completed the protocol, 43 achieved SVR (91.5%). Among 4 patients who did not achieve SVR, 2 had viral breakthrough and the other 2 had relapse after the treatment. Three of the 4 non-SVR patients had IL28B type GG or TG, but IL28B polymorphism did not associate with SVR. Univariate analyses failed to show any association with SVR between baseline characteristics such as age, platelet count, viral load, liver fibrosis, RVR and adherence to three drugs. The only factor associated with SVR was the response to prior treatment. Twelve patients with transient viral response all achieved SVR, while only 4 had SVR among 7 non or null viral response to prior treatment ($p=0.0034$). **Conclusion:** Telaprevir-based triple therapy had high SVR rate when the treatment was completed, but severe adverse events limited the effect of this treatment. The only factor that associated with SVR was the response to prior treatment.

Key Word(s): 1. hepatitis

Liver

P-452

Hepatitis C virus NS5A polymorphisms in patients with HCV genotype 1B

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Objective: The one of the most important factors associated with interferon (IFN) responsiveness is HCV mutation in NS5A region and two regions such as IFN sensitivity-determining region (ISDR) and IFN ribavirin resistance-determining region (IRRDR) were reported. Recently, NS5A replication complex inhibitors were developing and clinical trials revealed drug associated resistance variant (RAV) such as L31M and Y93H. Thus, the NS5A polymorphisms of NS5A regions will play an important role but the little is known. The aim of this study is to evaluate the clinical impact of NS5A polymorphisms in patients with HCV genotype 1b. **Methods:** Twenty three treatment naïve patients with chronic hepatitis C genotype 1b were enrolled. There were 13 men and 10 women

(mean age, 54.5 ± 11.7 years). The NS5A regions (aa 2209-2248; ISDR and aa 2334-2379; IRRDR) were examined by direct sequencing. Sequences of the HCVJ strain were defined as the proto-type. **Results:** Two of 23 (8.6%) patients had RAV to NS5A inhibitors. The variants are Q54H (n=6), Y93H (n=1) L31M+Q54H (n=1), Q54H+Q62E (n=1). The sequence of the HCVJ strain were defined as the consensus sequence and the approach of counting the number of mutations to the chosen consensus sequence for ISDR and IRRDR. The number of ISDR mutations was none (n=6), 1 (n=7), 2 (n=6), 3 (n=3), 4 (n=1) and for IRRDR, 3 (n=4), 4 (n=6), 5 (n=2), 6 (n=37), 7 (n=2), 8 (n=2). There are no association between ISDR and IRRDR. We also cannot find the relationship between NS5A RAV with ISDR and IRRDR. **Conclusion:** HCV NS5A polymorphisms in patients with HCV genotype 1b is widely variety and the variants such as NS5A RAV, ISDR and IRRDR were independent.

Key Word(s): 1. HCV IFN NS5A

Liver

P-453

Serum levels of tyrosine decrease with sustained virological response in patients with chronic hepatitis C treated by interferon-based therapy

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Objective: The molar concentration ratio of branched-chain amino acids (BCAA) to tyrosine (BTR) in serum decreases with severity of liver diseases such as chronic hepatitis C (CHC). In addition, serum levels of tyrosine (Tyr) are known to increase in patients with liver cirrhosis. However, it is unclear whether these parameters change after hepatitis C virus (HCV) is eradicated in CHC patients treated with interferon (IFN)-based therapy. The aim of this study was to clarify whether serum BTR, BCAA and Tyr change in response to IFN-based therapy in association with liver histological findings. **Methods:** Data from a total of 139 patients who had received IFN-based therapy for CHC and had been followed for more than six months after treatment, and in whom serum BTR had been measured before starting therapy (baseline) and at 24 weeks after completion of therapy (assessment point), were analyzed. Enrollment criteria included the following: 26 to 73 (median: 55) years of age; baseline serum HCV-RNA quantified by RT-PCR between 3.9 and 7.4 log copies/ml; and infection with HCV genotype 1 (n=68) or 2 (n=71). All patients (98 males and 41 females) were treated with pegylated (PEG)-IFN alpha-2a alone, or PEG-IFN alpha-2a or PEG-IFN alpha-2b in combination with ribavirin. A negative result for serum HCV-RNA on RT-PCR at the assessment point was defined as sustained virological response (SVR). Serum BTR, BCAA and Tyr were determined both at baseline and at the assessment point. Of 139 patients, 121 underwent liver biopsy before starting therapy, and the tissue specimens obtained were graded according to the Histology Activity Index (HAI) of Knodell et al. Specimens were also divided into four groups from stages 1 to 4 based on Desmet's fibrosis scores. Of 139 patients, 51 consented to genetic investigation for polymor-

phisms in the interleukin (IL)-28B gene at rs8099917. **Results:** Serum BTR tended to decrease and serum Tyr tended to increase with grade or stage. Additionally, 49 of 68 CHC patients infected with genotype 1 and 66 of 71 CHC patients infected with genotype 2 showed SVR. In SVR patients, serum BTR was significantly. **Conclusion:** This study showed that, if HCV was eradicated from the liver in CHC patients infected with genotypes 1 and 2, BTR increased with reductions in serum Tyr levels.

Key Word(s): 1. chronic hepatitis C; 2. BTR

Liver

P-454

Virologic response to antiviral therapy is associated with the recurrence of hepatitis B-related hepatocellular carcinoma after curative resection

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Objective: Recent studies have shown that antiviral therapy may reduce the recurrence of hepatocellular carcinoma (HCC) in patients with hepatitis B virus (HBV). This study was aimed to investigate the effect of virologic response to anti-viral therapy on the recurrence after curative resection in patients with HBV-related HCC. **Methods:** Between January 2008 and December 2010, a total of 72 antiviral therapy naïve patients underwent curative resection for HBV-related HCC (single nodule; <5 cm in diameter, or multi-nodule; number ≤3 and diameter <3 cm). All patients were treated with antiviral therapy within 1 month after resection (entecavir, 58; clevudine, 11; lamivudine, 3 patients). We assessed the risk factors for recurrence of HCC after curative resection. Complete virologic response to anti-viral therapy was defined as undetectable HBV DNA (9 IU/mL). **Results:** The median follow-up duration was 41.7 months. Cumulative recurrence rates after resection at 1, 3, and 5 years were 14.0%, 34.2%, and 45.0%, respectively. While 45 patients had complete virologic response to antiviral therapy at 6 months after resection, 27 patients had incomplete virologic response. A multivariable analysis showed that risk factors for recurrence were the multi-nodularity (hazard ratio (HR) 8.27, $p = 0.001$), presence of microvascular invasion (HR 2.92, $p = 0.006$), and incomplete virologic response to anti-viral therapy (HR 2.98, $p = 0.009$). **Conclusion:** Virologic response to antiviral therapy was associated with the recurrence of after curative resection in patients with HBV-related HCC. This study suggests that active suppression of hepatitis B viral load can prevent the recurrence of HCC after resection.

Key Word(s): 1. hepatitis B; 2. hepatocellular carcinoma; 3. antiviral therapy

Liver

P-456

Association between road accidents and minimal hepatic encephalopathy in a cohort of Sri Lankan cirrhotic drivers

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Objective: Minimal hepatic encephalopathy (MHE) has no recognizable clinical symptoms of hepatic encephalopathy (HE) but has mild cognitive and psychomotor deficits which can interfere with executive decision making and psychomotor speed. It affects driving ability and previous studies in Western countries have demonstrated an association between MHE and increased road accidents. Our objective was to investigate this association in a cohort of Sri Lankan cirrhotic drivers. **Methods:** A prospective, case controlled study ongoing study has been conducted in the Gastroenterology Clinic, University Medical Unit, North Colombo Teaching Hospital, Ragama, from August 2013. Patients with cirrhosis of any aetiology, without overt HE, who had been driving any vehicle during the past one month were subjected to 5 standard pencil-paper based psychometric tests used to detect MHE. Road accidents were recorded for both cirrhotic drivers with MHE and controls. Accidents were categorized as major when they resulted in hospitalization of the involved person/s, and minor when there were no serious injuries. **Results:** Among 55 cirrhotic drivers with MHE [males, median age 53 years (range 30-60)], 7 (12.7%) reported any type of accident compared to 6 (10.9%) among 55 controls [males; median age 51 years (range 30-60)]. 2/55 (3.6%) cases and 2/55 (3.6%) controls reported minor accidents. There were no major accidents in either group. **Conclusion:** Preliminary results of this ongoing study do not indicate an increased frequency of road accidents in a cohort of Sri Lankan cirrhotic drivers with MHE.

Key Word(s): 1. minimal hepatic encephalopathy; 2. road accidents; 3. psychometric tests

Liver

P-457

Imaging exosome transfer from colon cancer cells to stroma at liver metastatic sites

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Objective: Exosomes play an important role in cell-to-cell communication to promote tumor metastasis. **Methods:** In order to image the fate of

cancer-cell-derived exosomes in liver metastasis of colon cancer, we used green fluorescence protein (GFP)-tagged CD63, which is a general marker of exosomes. GFP-exosomes producing RFP human colon cancer HCT cells (HCT-RFP/GFP-Exo cells) were injected in the spleen of nude mice. **Results:** By day 28, GFP-exosomes producing RFP HCT cells were visualized in the liver with the Olympus OV 100 microscope. HCT-RFP/GFP-Exo cells secrete GFP-exosomes in the liver metastasis site with the Olympus FV1000 microscope. In orthotopic nude-mouse models, colon cancer cells secreted exosomes into the tumor microenvironments. Tumor-derived exosomes were incorporated into tumor-associated cells as well as circulating in the blood of mice with colon cancer metastases. **Conclusion:** These results suggest that tumor-derived exosomes may contribute to forming a niche to promote the tumor growth and metastasis. Our results demonstrate the usefulness of GFP imaging to investigate the role of exosome in colon cancer liver metastasis.

Key Word(s): 1. pre-metastatic niche; 2. exosomes; 3. liver metastasis

Liver

P-458

Clinical chronic hepatitis C: device of individual medical treatment for over the age of 60, and the PEG-IFN α 2a low-dose therapy for carcinogenic prevention

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Objective: Although the SVR rate in Interferon free therapy became about 99%, the question is whether it leads to reduction in HCC. There are many elderly patients with higher risk for HCC at our clinic. Because of side effects directivity, Peg-IFN α 2a /RBV is mainly used for elderly patients (Peg-IFN α 2a/ α 2b = 54/12), and Peg-IFN α 2a Low-dose therapy is also introduced from the viewpoint of carcinogenic prevention. We have investigated the safety and efficacy of these treatments in comparison with the youngsters. **Methods:** Between April 2007 and March 2014, 115 patients (≥ 60 -year-olds:64) were introduced to Peg-IFN α 2a. The 30 out of 51 Peg-IFN α 2a / RBV cases were ≥ 60 -year-olds (65.3 yo, M/F = 16/14) and compared with ≤ 59 -year-olds (48.9, 11/10) and PegIFN α 2b/RBV (65.7) about side effects. The side effects such as fatigue, alopecia, appetite loss and depression were scored (0-3). The 18 examples (65.4, 9/9) were adapted to Peg-IFN α 2a small-quantity chronic administration (90-180 μ g biweekly). **Results:** Pre-treatment HCV-RNA quantity was (≤ 59 yo:6.2 / ≥ 60 : 6.0 logIU/mL). Virus-negative rate (14.3%/11.1% at 4 Weeks, EVR 52.4/58.6, ETR 76.3/72.4, SVR 47.6/43.3) is not inferior to younger patients. Side effects: Fatigue (≤ 59 : 0.76 / ≥ 60 yo:1.00/ PegIFN α 2b:1.00), appetite loss (0.67/0.80/1.33), alopecia (0.57/0.70/0.89) and depression (0.43/0.40/0.91) were higher in alpha2b. There is a different tendency about stomatitis (α 2a; ≤ 59 yo: 22.2%/ ≥ 60 yo: 51.7%/ α 2 b:8.3%), itching (22.2/75.9/28.5), taste disorder (11.1/55.2/28.6), insomnia (19.4/17.2/57.1), and energy fall (16.0/2.5/23.6). Peg-IFN α 2a small-quantity chronic therapy: ALT51.0 \rightarrow 33.4 (<30; 60%) and AFP10.3 \rightarrow 9.0 (<10 : 80) at 96-week. There was no oncogenesis, although the medicine is prescribed for three years or more, and side effect was light. **Conclusion:** The chronic hepatitis C patients are aging, and needed is the medical treatment which regards carcinogenic control as important. Good effect is expectable also to elderly people by introducing "individual treatment," including Peg-IFN α 2a Low-dose Therapy as well.

Key Word(s): 1. chronic hepatitis c; 2. peg-IFN α 2a; 3. carcinogenic prevention

Liver

P-459

Cytochrome P450 2E1 polymorphism as an antituberculous agents-induced liver injury

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Objective: Incidence of tuberculosis in Indonesia during 2012 was among top fourth worldwide. Management of tuberculosis still consist of the administration of isoniazid, rifampicin, pyrazinamide and ethambutol as a first line therapy. Isoniazid, rifampicin and pyrazinamide which were metabolized by liver had the potential hepatotoxic effects. Acknowledge risk factors which were identified are elderly, female, undernourished, alcohol consumption and previous liver disease. Individual susceptibility in drug metabolism and detoxification due to genetic factors was also reported lately. Among the individual susceptibility factors, we would like to identify the polymorphism of cytochrome P450 2E1 as a risks factors of antituberculous agent-induced liver injury. **Methods:** This is a case control study which consist of 50 tuberculosis patient divided in 2 groups based on the antituberculous agents-induced liver injury events. **Results:** From 50 subjects, the baseline characteristics were mostly female (62%), age < 45 years old (56%), normoweight (66%). Bivariate analysis were performed to identify the risk factors but no statistically significant was found including for CYP 2E1 polymorphism status. **Conclusion:** CYP 2E1 polymorphism was not a risk factor for antituberculous agents-induced liver injury.

Key Word(s): 1. antituberculous agents; 2. drug induced liver injury; 3. Cyp 2E1 polymorphism

Liver

P-460

Albumin is a plausible marker for cirrhotic cardiomyopathy: focus on QT interval prolongation in cirrhotic patients

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Objective: QT interval prolongation has been shown in cirrhotic patients and it is considered as part of the definition of 'cirrhotic cardiomyopathy'. A relationship between prolonged QT interval and mortality in cirrhotic patients has been suggested. One of mechanisms may be responsible for the alterations in ventricular repolarization duration in cirrhosis, such as electrolyte imbalance. The aim of present study was to assess the potential determinants of QT interval prolongation in cirrhotic patient. **Methods:** This study was a retrospective with randomized sampling, in Dr. Moewardi Hospital. We reviewed medical records of 50 cirrhotic patients with Child Pugh score A,B,C and evaluated baseline characteristics, hemoglobin, albumin, calcium, potassium, and sodium. P value < 0,05 is significant. **Results:** The number of cases are non QT prolong: 14 (38%) and QT prolong: 36 (72%). The mean age of 50 patients is

56,46 + 9,59 (Non QT prolong: 55,42 + 9,97, QT prolong: 56,51 + 9,56) and 72% of them were male. Child Pugh score between non QT prolong and QT prolong are A (6%; 6%), B (22%; 62%) and C (0%; 4%). The mean of variables between non QT prolong and QT prolong are haemoglobin is 9,33 + 2,2 and 9,6 + 1,4, albumin is 2,7 + 0,5 and 2,3 + 0,6, Sodium is 132,9 + 4,4 and 131,1 + 5,6, Potassium is 4,1 + 0,5 and 3,8 + 0,7, Calcium is 1,01 + 0,2 and 0,97 + 0,18. Albumin has significant differences between 2 groups ($P < 0,04$) and based on Logistic regression test, there is significant correlation between albumin and QT interval prolongation ($P < 0,033$), but not significant with the others. There is not significant correlation between QT interval prolongation and Child Pugh score. **Conclusion:** Albumin is a plausible marker of cirrhotic cardiomyopathy focus on QT interval prolongation. QT prolong group has lower electrolyte status than non QT prolong group.

Key Word(s): 1. cirrhosis; 2. Child Pugh score; 3. QT interval prolongation; 4. electrolyte status; 5. albumin

Liver

P-461

Accuracy of liver stiffness measurement by fibroscan in assessment of liver fibrosis in chronic hepatitis B and C patients

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Objective: Assessment of liver fibrosis is an important determinant for staging of disease, prognosis as well as therapeutic decision making in patients with chronic hepatitis. Liver biopsy, although is gold standard, has certain limitations. Fibroscan is simple to perform, non-invasive, has good patient acceptance and reproducible. We aimed to compare the performances of liver stiffness measurement (LSM) for the assessment of liver fibrosis in patients with chronic HBV or hepatitis C virus (HCV) infection. **Methods:** This cross-sectional study, carried out in Adam Malik Hospital Medan, included patients with compensated chronic HBV or HCV infection, consecutively admitted between 2011 and 2013 for a liver biopsy and liver stiffness measurement. discriminant values of LSM were calculated from receiver operating characteristic (ROC) curves to reasonably exclude and predict severe fibrosis. **Results:** A total of 71 subjects were evaluated, mean age 46.41 ± 12.09 years. There was significant correlation between LSM and histological fibrosis ($r = 0.56$, $P < 0.05$). The area under ROC curve of LSM for severe fibrosis (F0-2 vs F3-4) was 0.72 (95% CI: 0.605-0.845). the estimated cutoff for severe fibrosis (F3-4) was 9.4 kPa, with a sensitivity of 81.8% and specificity of 63.2%. **Conclusion:** LSM can be performed in assessment of liver fibrosis in chronic hepatitis B and C patients with a diagnostic accuracy of 71.8%.

Key Word(s): 1. liver stiffness measurement; 2. liver biopsy; 3. chronic hepatitis B and C

Liver

P-462

The influence of IL28B polymorphisms on treatment response in patients with chronic hepatitis C

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Objective: The aim of this study was to determine the role of single and combined IL28B polymorphisms (rs8099917, rs12979860 and rs12980275) and other host and viral factors in predicting response to treatment, in Caucasian patients infected with HCV genotype 1.

Methods: Predictive factors for sustained virological response (SVR) in 106 patients were analyzed, out of which 55.7% achieved SVR.

Results: This study showed that genotypes TT rs8099917, CC rs12979860 and AA rs12980275 were associated with favorable response to treatment, while GG rs8099917 and TT rs12979860 were identified as predictors of poor outcome. Patients carrying genotypes CC rs12979860 or AA rs12980275 were 3.5 and 3 times more likely to achieve SVR, respectively. In the group of patients who achieved SVR, 88.1% was identified for the presence of one of these IL28B profiles. The strongest predictive positive value of single nucleotide polymorphisms for achieving SVR was observed for CC rs12979860 (76.9%). The presence of GG rs8099917 showed the strongest negative predictive value of 85.7%. **Conclusion:** This study confirmed that IL28B polymorphisms (rs8099917, rs12979860 and rs12980275) were associated with treatment response. Presence of any of the favorable IL28B genotypes could be considered as independent pretreatment determinant of the effectiveness of therapy. This may prove useful for initial differentiation between patients that can benefit from present standard-of-care therapy and difficult-to-treat patients who can be candidates for newly available triple therapy.

Key Word(s): 1. IL28B; 2. hepatitis C virus (HCV); 3. single nucleotide polymorphism (SNP); 4. sustained virological response (SVR)

Liver

P-463

Usefulness of shearwave elastography for the evaluation of acute hepatitis

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Objective: A non-invasive method for the diagnosis of hepatic fibrosis using elasticity imaging is considered promising, because it may serve as a substitute for percutaneous liver biopsy. ShearWave Elastography™ (SWE) performed using Aixplorer® (Supersonic imagine, France) calculates tissue elasticity using the velocity of shear waves generated by a push pulse from the ultrasound machine, and can produce a real-time map of tissue elasticity. It is known that the harder the tissue, the faster the velocity of the shear wave. However, it has been reported that shear wave velocity is affected by inflammation, icterus, and congestion, in addition to fibrosis.

Therefore, in this study, we evaluated SWE values in patients with acute hepatitis who do not have fibrotic changes of the liver. **Methods:** Twenty-two patients with acute hepatitis were enrolled in this study, and SWE was performed periodically during the acute phase, from January 2012 to April 2014. The patients included 1 with hepatitis A virus, 16 with hepatitis B virus, 1 with hepatitis C virus, 1 with Epstein-Barr virus, 2 with drug-induced liver injury, and 1 with autoimmune hepatitis. The patients' clinical data were compared, such as levels of aspartate aminotransferase (AST), alanine aminotransferase (ALT), total bilirubin (T-Bil), direct bilirubin, alkaline phosphatase, gamma-glutamyl transpeptidase, albumin, ammonia, and prothrombin time-international normalized ratio (PT-INR). **Results:** The mean maximal SWE values of a patient who underwent a live donor liver transplant (38.7 kPa) and a patient who died (35.0 kPa) were very high and did not decrease during their clinical courses. The mean maximal SWE value of patients with fulminant hepatitis ($n = 2$) was 36.85 ± 2.62 kPa, and that of patients with severe acute hepatitis ($n = 3$) was 31.21 ± 7.45 kPa, whereas that of the other patients ($n = 17$) was 10.64 ± 3.45 kPa. The Pearson's correlation coefficient showed that SWE values significantly correlated with PT-INRs ($r = 0.610$), serum albumin levels ($r = -0.604$), and T-Bil levels ($r = 0.556$), but they did not correlate with AST levels ($r = 0.275$) or ALT levels ($r = 0.124$). **Conclusion:** SWE values in patients with acute hepatitis are affected by the synthetic and detoxification ability of the liver, rather than by hepatocellular injury that causes AST and ALT release into the bloodstream. Therefore, SWE values closely reflect the severity of acute hepatitis.

Key Word(s): 1. SWE ShearWave Elastography; 2. acute hepatitis

Liver

P-464

Portal hypertensive gastropathy and its related factors

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Objective: To investigate the influence of helicobacter pylori (Hp) infection, liver function, portal hypertension and gastroesophageal varicosity on patients with portal hypertensive gastropathy (PHG). **Methods:** 56 patients with liver cirrhosis included 41 patients with PHG and 15 patients without PHG from 2005 to 2013 in our hospital were included in the study. Hp infection, liver function, HPVG and gastroesophageal varicosity were detected clinically in all cases. **Results:** Significant difference was observed between the severity of PHG and the liver function classification grading, 7 light PHG, 1 heavy PHG and 7 non-PHG from Grade A; 12 light PHG, 2 heavy PHG and 4 non-PHG from Grade B; 8 light PHG, 12 heavy PHG and 3 non-PHG from Grade C ($r = 0.378$, $P < 0.05$). No definite correlation was found between Hp infection and PHG or the severity of PHG ($P > 0.05$), but the rate of Hp infection was significantly different in patients with liver cirrhosis from that in patients without cirrhosis ($P < 0.05$). The HVPG was significantly higher in patients with severe PHG than in those with mild or no PHG (absent, 4.5 ± 1.2 mmHg; mild, 9.8 ± 3.7 mmHg; severe, 16.2 ± 4.1 mmHg; $P < 0.01$). In patients with cirrhosis but not gastroesophageal varicosity, the rate of PHG was 12.3%, but in patients with cirrhosis complicated by gastroesophageal varicosity, PHG formation was 78.6% ($P < 0.05$), but there was no significant difference between the degrees of gastroesophageal varicosity and PHG ($P > 0.05$). **Conclusion:** Hp infection did not affect the formation and progression of PHG; Liver dysfunction could affect and promote PHG formation; Portal hypertension was associated with PHG and could aggravate the severity of PHG.

Key Word(s): 1. portal hypertensive gastropathy; 2. Helicobacter pylori; 3. gastroesophageal varicosity

Liver

P-465

Application of a standardized protocol for hepatic venous pressure gradient measurements improves quality of readings and facilitates reduction of variceal bleeding in cirrhotics

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Objective: Hepatic venous pressure gradient (HVPG) is used to quantitatively measure portal hypertension. This study aims to compare the quantity and quality of HVPG measurements before and after the introduction of a standardized protocol in our centre in 2009 and to evaluate the role of HVPG measurements in reducing variceal bleeding in cirrhotics.

Methods: A retrospective review was conducted of HVPG measurements done in Singapore General Hospital between 2005 to 2013. We examined the proportion of HVPG measurements fulfilling 3 quality criteria: readings in triplicate; absence of negative pressure values; variability of not more than 2 mmHg between successive readings. The main clinical outcome measured was variceal bleeding occurring after HVPG.

Results: 126 HVPG measurements were performed on 105 patients. Mean patient age was 54.7 ± 11.4 years and 55% were male. 80% had cirrhotic etiologies whereas 20% had non-cirrhotic portal hypertension (NCPH). Indications for HVPG included titration of response to beta-blockers (44%); diagnosis of portal hypertension (42%); pre-TIPS assessment (14%). Mean HVPG for all patients was 13.5 ± 7.2 mmHg and was significantly different between the cirrhosis and NCPH group (15.8 ± 6.2 vs 5.3 ± 3.9 mmHg, $p < 0.001$). The number of studies and proportion of quality readings improved significantly after the introduction of a standardized protocol in 2009; 1/18 (5.6%) vs 61/87 (70.1%), $p < 0.001$. In the 84 patients with cirrhosis, 9/60 with HVPG ≥ 12 mmHg had variceal bleeding whereas 0/24 of those with HVPG < 12 mmHg bled (15% vs 0%, $p < 0.005$). For patients who underwent repeat HVPG after beta-blocker titration, 4/9 with $< 20\%$ decrease in HVPG had variceal bleeding whereas 0/6 who achieved $\geq 20\%$ decrease in HVPG had variceal bleeding (44.4% vs 0%, $p = 0.09$). **Conclusion:** The introduction of a standardized protocol has improved the quantity and quality of HVPG measurements performed in our centre. Optimization of HVPG to < 12 mmHg or $\geq 20\%$ reduction in HVPG from baseline prevents variceal bleeding in cirrhotics.

Key Word(s): 1. hepatic venous pressure gradient; 2. HVPG; 3. Asia; 4. Singapore; 5. variceal bleeding; 6. quality

Liver

P-466

The role of transient elastography for screening of severe liver fibrosis in people with type 2 diabetes

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Objective: The prevalence of nonalcoholic fatty liver disease (NAFLD) is very high in Type 2 diabetes mellitus. NAFLD and related conditions subsequently progress to cirrhosis. Transient elastography (TE) is a non-invasive test that may be detected appropriate as a screening tool for the presence of significant liver fibrosis. The purpose of this study was to use TE for detected severe liver fibrosis in Type 2 Diabetes patients and to identify the predictive factors. **Methods:** T2DM patients without known liver disease were included. clinical, biological parameters and liver stiffness evaluation. Severe fibrosis was predicted liver stiffness > 8.7 kPa. **Results:** A total of 97 patients were identified (28 men (28%), 69 women 72%). The prevalence of severe fibrosis was seen in 29 patients (29.8%). By multivariate analysis, factors associated with severe fibrosis were High AST, HT, Dyslipidemia, and past history of foot ulcer. **Conclusion:** The prevalence of severe liver fibrosis was high in in the T2DM patient. Factors associated with severe fibrosis were High AST, HT, Dyslipidemia, and past history of foot ulcer. TE may be role for screening severe live fibrosis fibrosis in patient with type 2 diabetes.

Key Word(s): 1. diabetes mellitus; 2. non-alcoholic fatty liver disease; 3. transient elastography; 4. liver stiffness

Liver

P-467

Plasmapheresis: a lifesaving treatment in severe cases of HELLP syndrome

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Objective: HELLP syndrome is one of the important complications in pregnancy which increases the maternal mortality rate from 1.1 to 25% and the fetal mortality from 7.4 to 34% by inappropriate treatment. These patients are generally cured with supportive treatment which includes prescription of corticosteroid, magnesium sulfate, stabilization of mother and pregnancy termination. This therapeutic method is accompanied with significant rate of mortality in patients with severe HELLP syndrome. Plasmapheresis is a treatment of choice which improves clinical outcomes in complicated cases. In this article, we introduce plasmapheresis in HELLP syndrome and report our experience about two patients. **Methods:** The first case was a 22-year-old woman admitted to ICU due to class 1 HELLP syndrome, coagulopathy and respiratory distress under supportive respiration by ventilator. Plasmapheresis was prescribed because of disseminated intravascular coagulation and no response to supportive treatments. The patient was discharged with good condition after 22 sessions of plasmapheresis. The second case was a 35-year-old woman with the history of cerebellar medulloblastoma 6 years ago whose pregnancy was terminated at the 32 weeks gestation due to class 1 HELLP syndrome and placenta decolman. **Results:** After delivery, progressive thrombocytopenia occurred and 3 days after delivery in spite of prescription of systemic corticosteroid, the platelets decreased to $11 \times 10^9 /L$. In this stage, plasmapheresis initiated and after 3 sessions, the platelets reached to $145 \times 10^9 /L$ and the patient was discharged. **Conclusion:** Plasmapheresis can significantly improve patients with HELLP syndrome or cases who do not response to supportive therapy is strongly recommended to be considered in these patients.

Key Word(s): 1. HELLP syndrome; 2. plasmapheresis; 3. thrombocytopenia

Liver

P-468

Correlation between serum extracellular matrix and liver stiffness in liver fibrosis

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Objective: Liver fibrosis is the excessive accumulation of extracellular matrix protein in chronic liver disease. Detection of liver fibrosis is very important to initiate and evaluate therapy and prognosis. Liver biopsy, a gold standard in diagnosis, is an invasive procedure with many risks and potential bias in sampling and interpretation process. Recently, physician use alternative non invasive method like fibroscan and seromarker examination. The aim of this study is to determine the correlation between level of serum extracellular matrix and liver stiffness by fibroscan. **Methods:** A cross sectional study with observational analytic correlative design in Mohammad Hoesin Hospital from March until August 2013. There were 32 liver fibrosis patients eligible for this study. All of them underwent fibroscan and examination of serum extracellular matrix (hyaluronic acid, laminin, YKL-40 and type IV collagen). Results were analyzed using SPSS version 20.0 with Spearman rank correlation test. **Results:** Among 32 liver fibrosis patients, 68.8% were male and 31.3% were female. Etiology of liver fibrosis were 46.9% HBV, 15.6% HCV and 37.5% miscellaneous. Results of Spearman rank test level of hyaluronic acid ($r = 0.436$; $p = 0.014$), YKL-40 ($r = 0.43$; $p = 0.014$), Type IV collagen ($r = 0.509$; $p = 0.003$), laminin ($r = 0.733$; $p = 0.001$). Double linear regression test with stepwise method on all of the determinant factors show that the most significant determinant factor was type IV collagen ($r = 0.463$; $p < 0.001$). **Conclusion:** There was significant positive correlation between serum extracellular matrix (hyaluronic acid, laminin, YKL-40, type IV collagen) and liver stiffness in liver fibrosis patients. The most significant determinant factor was type IV collagen.

Key Word(s): 1. liver stiffness; 2. liver fibrosis; 3. serum extracellular matrix (hyaluronic acid, laminin, Ykl-40, Type Iv collagen)

Liver

P-470

Anorexia and jaundice in Addison's disease

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Objective: To introduce an uncommon cause of anorexia and jaundice. **Methods:** The medical course of a rare patient with anorexia and jaundice was presented in brief. **Results:** A 65-year-old woman was admitted to our hospital because of fatigue, anorexia and food avoidance during the past 6 months and jaundice for one month. Serum level of AST, ALT, total bilirubin and direct bilirubin were elevated at 174 U/L, 89 U/L, 163.9 umol/L and 117.9 umol/L respectively. Testes for serum cortisol level at the following time points: 0 am 76.67 nmol/L, 8 am 42.12 nmol/L, 4 pm 74.23 nmol/L, and ACTH was markedly low at 1.23 pmol/L. Hormones on other pituitary axes were within normal range. The patient responded quickly to hydrocortisone and all the symptoms relieved totally one month later. **Conclusion:** Addison's disease can be presented as hepatitis and anorexia in some rare cases.

Key Word(s): 1. Addison's disease; 2. hepatitis

Liver

P-471

Correlation between HBV DNA and HCV RNA viral load with hepatic fibrosis in chronic hepatitis B and hepatitis C**Presenting Author:** MUSTOKO NEGORO WIBOWO**Additional Authors:** ARITANTRI DAMAYANI, PAULUS KUSNANTO, TRIYANTA YULI PRAMANA, TANTORO HARMONO**Corresponding Author:** MUSTOKO NEGORO WIBOWO**Affiliations:** *Fk Uns – Dr Moewardi Hospital, Fk Uns – Dr Moewardi Hospital, Fk Uns – Dr Moewardi Hospital, Fk Uns – Dr Moewardi Hospital*

Objective: The aim of our study was to evaluate a possible correlation between HBV DNA, HCV RNA viral load and liver fibrosis assessed by Fibroscan among chronically infected subject **Methods:** Restrospective analysis of 64 patients with hepatitis B and hepatitis C undergoing Fibroscan in Dr. Moewardi Hospital Surakarta from January 2012 to March 2014. Statical analysis with Chi Square Test. Exclusion criteria were the presence of diabetes mellitus, advanced cancer and pregnancy. **Results:** Sixty four patients, 44 patients chronic hepatitis B divided into HBeAg positive (15,9%), HBeAg negative (84,1%) and 15 patients with hepatitis C were studied. Baseline liver stiffness was F2 grade. No difference between HBV DNA with HbeAg positive ($p = 0,495$) and HbeAg negative ($p = 0,571$) correlated with liver stiffness (Fibroscan). We neither found any correlation between liver fibrosis measured by Fibroscan with HCV RNA levels ($p = 0,464$). **Conclusion:** Our data indicated that there wasn't correlation between liver fibrosis measured by Fibroscan with HBV DNA and HCV RNA viral load.

Key Word(s): 1. HBV DNA; 2. HbeAg; 3. HCV RNA; 4. fibroscan

Liver

P-472

Awareness of hepatocellular carcinoma among patients with chronic viral hepatitis attending gastroenterology clinic at a tertiary medical center in Malaysia – University Kebangsaan Malaysia Medical Center (UKMMC)**Presenting Author:** ZHIQIN WONG**Additional Authors:** YING HUEY LIM, A B ROJILAH JALIL, AJIMAH JULASRIN, MUHAMMAD KHAIRI MOHD SALLEH, ROZITA HOD, JEEVINESH NAIDU, CHAI SOON NGIU, HAMIZAH RAZLAN, RAJA AFFENDI RAJA ALI, SHANTHI PALANIAPPAN**Corresponding Author:** ZHIQIN WONG**Affiliations:** *National University of Malaysia, National University of Malaysia*

Objective: Chronic hepatitis B and C predispose to the development of hepatocellular carcinoma (HCC). The aim of the study was to determine the awareness of HCC among chronic hepatitis B/ C patients at UKMMC. **Methods:** This was a cross sectional descriptive study conducted at the gastroenterology clinic, UKMMC. Patients awareness were assessed with a modified validated questionnaire which was developed based on the

health belief model. 172 questionnaires were distributed to Hepatitis B / C patients. **Results:** 120 questionnaires were analyzed, 94 (78.3%) patients had hepatitis B, 22 (18.3%) hepatitis C, 4 (3.3%) were not sure of their status. Half of the study cohort were between age 25-54 (50.8%), 46.7% achieving secondary education, 40.8% unemployed. 62 (51.7%) depend on healthcare professionals for health information, whilst 1/3 of participants chose social media. The mean score for knowledge of hepatitis and HCC was $9.92 \pm 3.666 / 17$, which was poor given that the study was conducted amongst an urban cohort. Age ($r = -0.180$, $p = 0.049$) had a significant negative correlations with knowledge. Education level ($F = 5.272$, p value < 0.001) and higher income group ($F = 4.442$, p value $= 0.002$) showed significant positive correlations with knowledge. Significant positive correlation between age and perceived severity ($p = 0.017$, $r = 0.081$) and negative correlation to benefit of action ($p = 0.023$, $r = -0.207$). Significant positive correlation were demonstrated between knowledge and benefits of action ($p = 0.000$, $r = 0.491$) and negative correlation to barrier to action ($p = 0.001$, $r = -0.301$). **Conclusion:** Current, healthcare professionals played an important role in improving patient education. More public forums / campaigns should be conducted to educate the older and lower education group. Regular screening according to recommended guidelines should be carried out among these particular groups to enable early detection of HCC so that optimum treatment strategy can be instituted early.

Key Word(s): 1. chronic hepatitis; 2. hepatocellular carcinoma; 3. awareness

Liver

P-474

Clinical characteristics and long term outcomes of latent onset congenital hepatic fibrosis patients in single center**Presenting Author:** JEE EUN YANG**Additional Authors:** DANBI LEE, JU HYUN SHIM, KANG MO KIM, YOUNG SUK LIM, HAN CHU LEE, YOUNG HWA CHUNG, YUNG SANG LEE**Corresponding Author:** JEE EUN YANG**Affiliations:** *Asan Medical Center, Asan Medical Center*

Objective: Congenital hepatic fibrosis (CHF) is rare disorder with variable degree of periportal fibrosis and irregular proliferating bile ducts. Most patients are diagnosed in their infancy or childhood, however presentations as late as in the fifth decade have been reported. Our study describes clinical manifestation and outcome of late onset CHF patients. **Methods:** We retrospectively analyzed data of patients diagnosed as CHF in adulthood at Asan Medical Center between January 1990 and December 2013. With liver biopsy or compatible CT images, 21 patients were diagnosed as latent onset CHF. **Results:** The median age of presentation was 30.0 years (range 19-58 years). 18 patients were male and 3 patients were female. The most frequent symptom was fever related to recurrent cholangitis or biliary sepsis. (6 patients, 28.6%) 5 patients presented with esophageal varix bleeding. Median total bilirubin was 1.15 mg/dL (range 0.93-2.07) and median PT (INR) was also in normal range. (1.2 INR (range 0.2-4.3) 7 patients had small or large renal cysts, however only one of them developed terminal renal insufficiency. Of our 21 patients, only 3 patients had liver transplantation. Except 6 patients with loss of follow up, all patients are alive and well after individualized treatment including esophageal variceal ligation or endoscopic retrograde cholangiopancreatography. **Conclusion:** Latent onset type of CHF is likely to develop less severe phenotype and significant comorbidity than neonatal or childhood onset CHF.

Key Word(s): 1. congenital hepatic fibrosis

Liver

P-475

Procalcitonin is a valid marker of infection in cirrhosis patients with hepatocellular carcinoma after transarterial chemoembolization**Presenting Author:** SOO HYUN YANG**Additional Authors:** WON HYEOK PARK, TAE GYOON KIM, SEO YOUNG YANG, WOONG SUN YOO, DO YOUNG KIM**Corresponding Author:** YOUNG KIM DO**Affiliations:** *Veterans Health Service Medical Center, Veterans Health Service Medical Center*

Objective: Bacterial infections are life-threatening complications in patients with cirrhosis. But it is rather difficult who patients with hepatocellular carcinoma after transarterial chemoembolization. The goal of this study was to determine the ability of serum procalcitonin in the diagnosis of bacterial infection in cirrhosis patients with hepatocellular carcinoma after chemoembolization. **Methods:** One hundred eighteen patients with HCC after TACE were analysed and stratified into three groups according bacteriological and cirrhotic finding; cirrhotic with (group A = 24) and without (group B = 73) infection, and non-cirrhotic and non-infected (group C = 21). This retrospective cohort study which was conducted from June 2011 to May 2012. Measurement of serum procalcitonin and CRP level was performed on during admission after transarterial chemoembolization. **Results:** Serum procalcitonin levels were significantly higher in cirrhotic patients with bacterial infection (Group A; 3.6 ng/ml [0.5-23.4]) rather than without infection (Group B; 0.7 ng/ml [0.1-6.7]) and non-cirrhotic and non-infected (Group C; 0.4 ng/ml [0.1-1.4]), respectively. Using a cut-off level of 0.64 ng/ml, provided the most accurate in identifying patients with infection (AUC: 0.93, Sensitivity: 95%, Specificity: 77%). However, serum CRP level was less sensitive and specific for the diagnosis of infection. (AUC: 0.81, Sensitivity: 91%, Specificity: 65%). **Conclusion:** Serum procalcitonin is a useful marker to predict the clinically significant bacterial infection in patients with hepatocellular carcinoma after transarterial chemoembolization.

Key Word(s): 1. procalcitonin; 2. bacterial infection; 3. hepatocellular carcinoma; 4. transarterial chemoembolization

Liver

P-476

Polymorphism in the NS3 region in patients with hepatitis C virus genotype 1B and response to telaprevir or simeprevir plus pegylated-interferon-alpha 2b and ribavirin combination therapy**Presenting Author:** MICHIO YOSHIZAKI**Additional Authors:** KAZUHIKO HAYASHI, HIROSHI MORI, KAZUHIRO TORIYAMA, SATOSHI FURUNE, HIROYUKI TAKENAKA, TETUO MATUURA, YUKO SHIMIZU, TAKAO HAYASHI, MASANORI KUROIWA, KEIICHI MORITA, MASATOSHI ISHIGAMI, HIDEMI GOTO**Corresponding Author:** MICHIO YOSHIZAKI**Affiliations:** *Nagoya University Graduate School of Medicine, Tosei General Hospital, Nagoya University Graduate School of Medicine, Nagoya University Graduate School of Medicine*

Objective: NS3 protease inhibitor such as Telaprevir (TPV) and Simeprevir (SMV) plus peginterferon and ribavirin (RBV) combination therapy is currently standard care for patients with hepatitis C virus (HCV) genotype 1b. It has been reported that preexisting of resistance mutations in the NS3 regions might be one reason for treatment failure. However, little was known about association between resistance mutations in the NS3 regions and effect on response to peginterferon, RBV and TPV or SMV therapy. The aim of this study was to investigate whether the preexisting of polymorphism including resistance variants in NS3 region affect the response to TPV or SMV plus peginterferon and RBV combination therapy. **Methods:** Thirty five patients with chronic hepatitis C genotype 1b were enrolled. There were 23 men and 12 women (mean age, 51.8 ± 13.0 years). Patients received pegylated-IFN-alpha 2b once each week plus oral RBV and TPV or SMV daily for 24 weeks. Identification of polymorphisms in the NS3 region was detected by direct sequencing at pretreatment. Detection of the single-nucleotide polymorphism (SNP) of interleukin 28B (IL28B) was done by a real-time PCR system. **Results:** NS3 polymorphisms T54S (N = 2), Q80L (N = 2), S122G (N = 1), Q80L + D168E (N = 1) and V36I + Q80R (N = 1) were detected and mutation rate was 2.3% at pretreatment. The frequencies of the IL28B genotypes were major homozygotes (TT), 28; heterozygotes (TG), 6; and minor homozygotes (GG), 1. There were no significant differences between polymorphisms in NS3 region were independent factors. Twenty six of 31 (83.9%) patients showed a SVR. SVR was achieved in 88.9% of the patients with drug resistance mutations in NS3 region and also 81.9% of the patients without mutations. Achievement to SVR occurred more frequently in patients with IL28B major genotype (92%) than in those with minor genotype (50%), and there was significant difference in IL28B genotype (P = 0.0376). **Conclusion:** The identification of polymorphisms including drug resistance mutations in NS3 region at pretreatment was not associated with response to peginterferon, RBV and TPV or SMV therapy in patients with HCV genotype 1b.

Key Word(s): 1. HCV IFN NS3

Liver

P-477

Safety and rapid prediction of treatment futility of boceprevir with peginterferon-ribavirin for Asian treatment experienced HCV-1 patients**Presenting Author:** MING LUNG YU**Additional Authors:** CHI CHIEH YANG, TSAI WEI-LUN, WEI WEN SU, PIN NAN CHENG, CHING CHU LO, KUO CHIH TSENG, LEIN RAY MO, WANG CHUN-HSIANG, SHIH JER HSU, HSUEH CHOU LAI, CHIEN WEI SU, CHUN JEN LIU**Corresponding Author:** MING LUNG YU**Affiliations:** Show Chwan Memorial Hospital, Kaohsiung Veterans General Hospital, Changhua Christian Hospital, National Cheng Kung University Hospital, St. Martin De Porres Hospital, Dalin Tzu Chi General Hospital, E-Da Hospital, Tainan Municipal Hospital, National Taiwan University Hospital Yun Lin Branch, China Medical University Hospital, Taipei Veterans General Hospital, National Taiwan University Hospital

Objective: The combination of Boceprevir (BOC) with pegylated interferon (P)/ ribavirin (R) has greatly improved the sustained virological response (SVR) in patients with hepatitis C virus genotype 1 (HCV-1) infection. The efficacy and safety of the BOC containing triple therapy in Asian treatment experienced patients needs to be explored. **Methods:** A Boceprevir Named Patient program (NPP) for compassionate use prior to registration was conducted in Taiwan in 2013. HCV-1 treatment experienced patients were allocated in 14 participating hospitals. After 4 weeks of PR lead in therapy, patients with cirrhosis or previous null-response received triple therapy for 44 weeks; whereas others received 32 weeks of triple therapy followed by 12 weeks of PR therapy. Patients with HCV RNA >100 IU/mL at week 12 or with detectable HCV RNA at week 24 of treatment were viewed as futility. **Results:** One hundred and six-teen patients who started treatment before November 2013 were recruited in the current study. By the end of May 2014, twenty-three (19.8%) patients early terminated treatment before week 24 (severe adverse event [SAE, n = 4], adverse event [n = 6], week 12 futility [n = 11], week 24 futility [n = 2]); whereas ninety-three (80.2%) patients have completed at least 24 weeks of treatment. By using intention-to-treat analysis, the proportion of patients with undetectable HCV RNA at week 4, week 8, week 12 and week 24 was 13.8%, 61.5%, 75.9% and 79.3%, respectively. Twenty-one (18.1%) patients experienced SAE before week 24 of treatment. Univariate analysis of factors associated with occurring SAE included female, higher aspartate aminotransferase levels and aspartate aminotransferase-to-platelet ratio index (APRI), and liver cirrhosis. Multivariate analysis revealed that APRI was the single factor associated with occurring SAE (odds ratio [OR]/95% confidence intervals [CI]:4.95/1.52-18.3, P = 0.008). The best single viral kinetics in predicting week 12/24 futility was HCV RNA > 3 log IU/mL at week 8 with the positive predictive value (PPV) of 85.7% and accuracy of 95.5%. Furthermore, merging the cut-off values of HCV RNA >7 log IU/mL at baseline and HCV RNA >6 log IU/mL at week 4 provided the best combing viral kinetics in predicting week 12/24 futility with the PPV of 100% and accuracy of 93.1%. **Conclusion:** The on-treatment responses and the safety of BOC containing triple therapy were satisfactory in HCV-1 treatment experienced Asian patients. The early viral kinetics before week 8 of treatment highly predicted futility at week 12 or 24 of treatment.

Key Word(s): 1. HCV; 2. treatment; 3. Daa; 4. BOC; 5. Asian

Liver

P-478

Effects of glucagon-like peptide-2 on intestine mucosal cell proliferation and ultrastructure with congestion-reperfusion injury in mice**Presenting Author:** LIANG ZHU**Additional Authors:** YUNHONG WU, SUPING LIU, JINGZHOU MU, QIUYU CHEN, YUFEI ZHAO, DEZHENG GONG, LILI GUAN, QIONG WU, BO YAUN, DEQIN YU, YUAN ZOU**Corresponding Author:** LIANG ZHU**Affiliations:** School of Public Health, Dalian Medical University, Dalian Medical University

Objective: Congestion-reperfusion (C/R) injury during the operation of orthotopic LT is one of the most important cause of gut barrier impairment following LT. We explored the influence of GLP-2 on graft mucosal cell proliferation and ultrastructure recovery with congestion-reperfusion injury in mice. **Methods:** Male C-57 mice (n = 10/group) weighing 18–22 g were randomly divided into 3 groups: sham group (Con), congestion-reperfusion injury group (C/R), C/R with GLP-2 treatment group (GLP-2). Mice receive subcutaneous injection of either GLP-2 (GLP-2 group; 250 µg/kg/day), or phosphate-buffered saline (Con group and C/R group) for 3 days. All mice but the sham group underwent 20 min of the portal vein (PV) occlusion followed by 1 hr of reperfusion on day 4. The histological changes stained with HE and changes of Microvillus by electron microscopy in the intestinal mucosal tissue were observed, and expression of PCNA was measured by immunohistochemistry. **Results:** Compared with C/R group, the intestinal villous height and crypt depth in GLP-2 group were increased significantly. Electron microscopy demonstrated that GLP-2 treatment increased number and length of Microvillus of the epithelial cells. The expression of PCNA in GLP-2 treatment group is obviously higher than transplantation group in intestinal villous and crypt. What's more, the expression of PCNA in crypts is more apparent. **Conclusion:** GLP-2 supplementation can stimulate the proliferation and promote ultrastructure recovery of Intestine mucosal cell following congestion-reperfusion injury. Our studies promote the current level of understanding of the molecular determinants of GLP-2 and the patients of LT can get benefits from this research results. Supported by the National Nature Science Foundation of China No. 81370583, No. 30801127; Liaoning BaiQianWan Talents Program No. 2013921053; Liaoning Provincial Natural Science Foundation of China NO.2014.

Key Word(s): 1. liver transplantation; 2. glucagon-like peptide-2; 3. congestion-reperfusion injury; 4. electron microscopy; 5. PCNA

Liver

P-479**Accuracy of the aspartate aminotransferase to platelet ratio index (APRI) for the noninvasive evaluation of liver fibrosis in chronic hepatitis C and B****Presenting Author:** ZULKHAIRI ZULKHAIRI**Additional Authors:** HERRY ADLIN, TARIGAN ELIAS, HAKIM ZAIN LUKMAN**Corresponding Author:** ZULKHAIRI ZULKHAIRI**Affiliations:** Adam Malik General Hospital Medan, Adam Malik General Hospital Medan, Adam Malik General Hospital Medan

Objective: Liver biopsy is the recognized gold standard for liver fibrosis staging but this procedure is invasive, and has known adverse events and limitations. A great interest has been dedicated to the development of noninvasive predictive models in recent years to liver biopsy. The aspartate aminotransferase to platelet ratio index (APRI) has been proposed as a noninvasive and readily available tool for the assessment of liver fibrosis in chronic hepatitis C and B (CHC & B). This study aimed to evaluate the diagnostic usefulness of APRI in CHC & B, in a North Sumatera provincial general hospital setting. **Methods:** Cross sectional study in 71 patients confirmed with Hepatitis B and C in Adam Malik General Hospital Medan Indonesia had liver biopsy from January 2011 to September 2013. Fibrosis was staged according to the METAVIR scale. Examination of AST and Platelet was done to fulfill the APRI score. Predictive value and AUROC were constructed to assess the accuracy of APRI compared with METAVIR scale. **Results:** Predictive value for APRI index (cut off > 1,5) to METAVIR scale in diagnose severe fibrosis is: sensitivity 42,4%, Specificity 73,7%, positive predictive value (PPV) 58,3%, negative predictive value (NPP) 59,6%, LR (+) 1,61 and LR (-) 0,78. Accuracy diagnostic is 59,1%. AUROC 0,581 (95% CI:0,446-0,715) with $p < 0,005$. **Conclusion:** APRI can be used to assess the degree of fibrosis in chronic hepatitis C and B patients.

Key Word(s): 1. APRI; 2. liver fibrosis

Pancreas

P-481**Role of contrast-enhanced endoscopic ultrasonography in the differential diagnosis of benign and malignant branch duct intraductal papillary mucinous neoplasm****Presenting Author:** HIROFUMI HARIMA**Additional Authors:** SEIJI KAINO, SHUHEI SHINODA, MICHITAKA KAWANO, SHIGEYUKI SUENAGA, ISAO SAKAIDA**Corresponding Author:** HIROFUMI HARIMA**Affiliations:** Yamaguchi University Graduate School of Medicine, Yamaguchi University Graduate School of Medicine, Yamaguchi University Graduate School of Medicine, Yamaguchi University Graduate School of Medicine

Objective: This study aimed to elucidate the role of contrast-enhanced endoscopic ultrasonography (CE-EUS) in the differential diagnosis of benign and malignant branch duct intraductal papillary mucinous neoplasm (BD-IPMN). **Methods:** A total of 50 patients undergoing computed tomography (CT) and endoscopic ultrasonography (EUS) at our institute were included in this study. CE-EUS was performed when mural

lesions were detected on EUS. The ability to diagnose the presence of mural nodules with each imaging modality was evaluated. In addition, the measurement accuracy of the height of mural nodules with each imaging modality was compared. **Results:** Resection was performed in 17 cases, with the remaining 33 patients placed under a follow-up of more than 12 months. Of the 17 patients undergoing surgery, the histopathological findings revealed 14 cases with mural nodules and three cases without. When using EUS alone, the rate of accurately diagnosing mural nodules was 72%, but this increased to 98% when using EUS combined with CE-EUS. In terms of the measurement accuracy of the height of mural nodules, CE-EUS performed significantly better than CT or EUS ($P < 0.05$). Using receiver operating characteristic curve analysis and determining the cut-off value for mural nodule height measured on CE-EUS as 8.8 mm facilitated the accuracy for diagnosing malignant BD-IPMN of 94%. **Conclusion:** CE-EUS can be used not only to diagnose the presence of mural nodules, but also as an accurate means of measuring the height of mural nodules. Furthermore, using CE-EUS to measure the height of mural nodules provides a highly precise means of determining the difference between benign and malignant BD-IPMN.

Key Word(s): 1. contrast-enhanced endoscopic ultrasonography; 2. branch duct intraductal papillary mucinous neoplasm

Pancreas

P-482**Silence of DJ-1 to overcome anti-EGFR therapy resistance in pancreatic cancer****Presenting Author:** XIANGYI HE**Additional Authors:** YAOZONG YUAN**Corresponding Author:** XIANGYI HE**Affiliations:** Ruijin Hospital

Objective: EGFR tyrosine kinase inhibitor erlotinib is shown to be promising therapy in combination of gemcitabine in pancreatic cancer. K-RAS mutation is frequently present in pancreatic cancer and is related to anti-EGFR therapy resistance. Our previous study showed DJ-1 promotes invasion and metastasis of pancreatic cancer cells by activating SRC/ERK/uPA. The aim of this study is to evaluate whether silence of DJ-1 can increase anti-EGFR therapy efficiency in pancreatic cancer. **Methods:** Anti-DJ-1 shRNA and negative control shRNA (nc) was stably transfected into BxPC-3 cell (BxPC3/DJ-1 and BxPC3/NC). BxPC3/DJ-1 and BxPC3/NC shRNA were treated with various doses of erlotinib, and then cell proliferation was measured by CCK-8, Brdu incorporation. Apoptosis was measured by TdT-mediated dUTP nick end labeling (TUNEL). RAS and K-RAS activity was measured by GST-RBD Pull-down assay. **Results:** Knockdown of DJ-1 expression decreased IC-50 of erlotinib in BxPC-3 measured by CCK-8 assay (67 μ M vs. 20 μ M $p < 0.05$). Further study showed that both inhibition of proliferation and induction of apoptosis were contributed to this effect. In BxPC-3/NC treated with erlotinib 5 and 50 μ M for 72 h, BrdU positive cell percentage was decreased to $62.3 \pm 1.9\%$, $18.5 \pm 0.6\%$ respectively of control. But in BxPC-3/DJ-1 cells, it was decreased to $41.3 \pm 1.3\%$, $8.3 \pm 0.2\%$ respectively of control (both $p < 0.05$ vs. BxPC-3/NC). Treatment with 0, 5 or 50 μ M erlotinib for 72 h increased BxPC-3/NC TUNEL positive cell from 3.0% to 7.3% and 13.1% respectively, but in BxPC-3/DJ-1 it was increased from 2.8% to 10.5% and 21.7% (both $p < 0.05$ vs. BxPC-3/NC). Knockdown DJ-1 also decreased both RAS and K-RAS activity to 71% and 40.5% in BxPC-3 ($p < 0.05$, $p < 0.05$). **Conclusion:** Silence of DJ-1 decreased K-RAS activity, augment anti-proliferation and pro-apoptotic effects of erlotinib in pancreatic cancer.

Key Word(s): 1. DJ-1; 2. anti-EGFR therapy; 3. pancreatic cancer; 4. K-RAS

Pancreas

P-483

Is the WHO 2010 classification system of pancreatic neuroendocrine neoplasms sufficient to clearly characterize pancreatic neuroendocrine carcinomas?

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Objective: Background: In 2010, World Health Organization classified pancreatic neuroendocrine neoplasm (pNEN) as follows: G1, G2, neuroendocrine carcinoma (WHO-NEC) according to the Ki67 activity index. However, the WHO-NEC may exert a heterogeneous behavior which still not fully studied. Therefore, we tried to characterize the clinicopathologic characteristics of the WHO-NEC and examine to which extent the WHO 2010 classification system can define all pNENs clearly. **Methods:** We, retrospectively, evaluate the clinic pathologic characteristics, K-ras mutations, treatment and the prognoses of eleven patients diagnosed as NEC between 2001 and 2013 according to the WHO 2010 classification. **Results:** The median Ki67 was 47.7 (32-90) and median tumor size was 35 mm. 9 (82%) patients had liver metastasis. For more morphological characterization, we divided WHO-NEC to a well-differentiated (NET-G3; n = 4), and a poorly-differentiated (Pure-NEC; n = 7) lesions and a further morphological subgrouping of the pure-NEC into large-cell type (LCNEC; n = 3), and small cell type (SCNEC; n = 4). A clinicopathological comparison between the NET-G3 and Pure-NEC group was revealed: 1) the detection of vascularity by multi-detector CT scan was 50% (2/4) in NET-G3 and 0% (0/7) in Pure-NEC (P = 0.109); 2) the median Ki67 was 45.1 (40-53) in NET-G3 and 64.2% (32-90), in Pure-NEC (P = 0.201); 3) the K-ras mutation was 0% (0/3) in NET-G3 and 85.7% (6/7) in Pure-NEC (P = 0.033); 4) the response rate of cisplatin-based chemotherapy was 0% (0/2) in NET-G3, and 100% (4/4) in Pure-NEC (P = 0.067); 5) the median survival was 330 days in NET-G3 and 206 days in Pure-NEC (P = 0.060). **Conclusion:** A significant proportion of NET-G3 was classified as NEC by WHO 2010 classifications and the WHO-NEC has the possibility to include total genetically different disease entities, namely; NET-G3 and Pure-NEC when K-ras mutation analysis is incorporated. So, a revise look to the current WHO 2010 classification is warranted in the nearby future to clearly distinguish these two entities.

Key Word(s): 1. NEC; 2. WHO; 3. NET; 4. NEN

Pancreas

P-484

A case of carcinoma in situ of the pancreas discovered by abdominal ultrasonography

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Objective: We described a case of carcinoma in situ of the pancreas—considered as the early stage of pancreatic carcinoma—that was diagnosed using abdominal ultrasonography and subsequently treated successfully. We hope that this detailed report will contribute to advances in the treatment of

pancreatic cancer. **Methods:** In a 66-year-old man being followed up in our hospital for ulcerative colitis since 6 years, we noted dilatation of the main pancreatic duct (MPD) with abdominal ultrasonography. Contrast-enhanced computed tomography revealed a cystic lesion measuring 10 mm in diameter in the body of the pancreas along with MPD dilatation; however, no apparent neoplastic lesion in the pancreas was seen. We suspected the presence of an intraductal papillary mucinous neoplasm as well as the possibility of carcinoma in situ of the pancreas, and we performed endoscopic retrograde pancreatography (ERP) and cytological examination of the pancreatic juice obtained via an endoscopic nasal pancreatic drainage (ENPD) tube for qualitative diagnosis. ERP showed sclerosis of the MPD in the pancreatic body, dilatation of its branches, and an irregular caliber of the MPD in the pancreatic head. We could not detect the cystic lesion noted on ultrasound. The mucus in the MPD was not translucent. Cytological examination revealed an atypical glandular cell cluster, which was determined to be malignant. We performed 2-segmental cytology and determined the pancreatic juice from the tail to be malignant with features of atypia. **Results:** Considering these findings together, we diagnosed carcinoma in situ, extending from the body to the tail of the pancreas, and performed distal pancreatectomy. **Conclusion:** We have reported this case of atypical epithelium considered as carcinoma in situ of the pancreas, which was first suspected based on abdominal ultrasound findings, in order to advance the possibilities of radical treatment for pancreatic cancer.

Key Word(s): 1. carcinoma in situ; 2. pancreas; 3. cytological examination

Pancreas

P-485

Tp53 codon 72 and MDM2 SNP309 polymorphisms in pancreatic cancer

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Objective: Single-nucleotide polymorphisms (SNPs) of TP53 gene (codon 72, rs1042522) and mouse double minute 2 (MDM2) promoter (SNP309, rs2279744), have been associated with increased risk of various human cancers. However, few studies have analyzed these polymorphisms in pancreatic cancer. **Methods:** We investigated TP53 codon 72 and MDM2 SNP 309 polymorphisms in 32 patients with pancreatic ductal carcinoma (PDAC) and 21 patients with controls (non-neoplastic pancreatic epithelium attached to resected specimens without pancreatic disease), using paraffin-embedded tissue sections. **Results:** The frequencies of TP53 codon72 arginine (Arg)/Arg, Arg/proline (Pro), and Pro/Pro were 6, 28, and 66% in PDAC and 29, 52, and 19% in controls, respectively. The ratio of Pro/Pro genotype to Arg/Arg genotype was significantly higher in PDAC than controls [$p = 0.004$, adjusted odds ratio (OR) = 15.75; 95% confidence interval (CI) 2.30-107.9]. On the other hand, those of MDM2 SNP309 TT, TG, and GG genotypes were 22, 44, and 34% in PDAC and 38, 33, and 29% controls, respectively. There were no significant differences among them. **Conclusion:** This is the first study evaluated the significance of TP 53 codon 72 and MDM2 SNP 309 polymorphism using

paraffin-embedded pancreas tissue. The proportion of Pro/Pro genotype was significantly higher in PDAC, while the proportion did not differ in MDM2. This finding indicates that TP53 codon 72 polymorphism is likely to be correlated with increased risk for pancreatic cancer.

Key Word(s): 1. single-nucleotide polymorphisms; 2. TP53; 3. mouse double minute 2; 4. pancreatic cancer

Pancreas

P-486

Endoscopic transmural drainage of a gigantic pancreatic pseudocyst caused by blunt abdominal injury in a child

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Objective: Blunt abdominal trauma is the most common cause of pancreas injury in children. The incidence of pseudocysts developed after acute pancreatitis caused by blunt injuries can reach up to 65%. Over the recent few years, endoscopic transmural drainage for pancreatic pseudocysts is preferred for its safety and short hospital stays. We reported a gigantic pseudocyst in a child treated by endoscopic drainage.

Methods: A 13-year-old boy with the history of abdominal blunt injury was admitted to our department because of serious abdominal distention and pain in the previous months. The contrast enhanced CT scan demonstrated a gigantic pancreatic pseudocyst (16.6 cm × 10.0 cm × 17.8 cm in size) in the left upper abdomen. The pseudocyst was so large compressing the gastric cavity that he could not eat any food even drinking. His blood tests showed white blood cells 18.92 × 10⁹/L (normal range 3.5-9.5) and serum amylase 1232 IU/L (normal range 25-125). During the procedure, the posterior gastric wall was carefully observed by the duodenoscope and a 0.5 cm incision was made by a needle knife (Olympus, Japan) at the most obviously uplifted site of the gastric wall and a balloon dilation was performed. Two 10 Fr × 7 cm pigtail stents and a drainage tube were placed in the pseudocyst lumen. The boy was treated with antibiotics and the drainage tube was removed after 7 days. Figure 1 a~c, Drainage of the pseudocyst; d~e, CT scan before and after drainage; f, CT scan follow-up at the seventh month after drainage. **Results:** The pseudocyst shrank rapidly and the serum amylase level dropped 6 folds at minimum in the following week after drainage. At a follow-up of seven months, no symptom occurred and CT scan showed no pseudocyst or stent exists. **Conclusion:** Our case shows the successful endoscopic treatment of a gigantic pancreatic pseudocyst in children with the transluminal endoscopic drainage. It was noted as an alternative conservative option to open surgeries.

Key Word(s): 1. blunt abdominal trauma; 2. endoscopic transmural drainage; 3. pancreatic pseudocyst

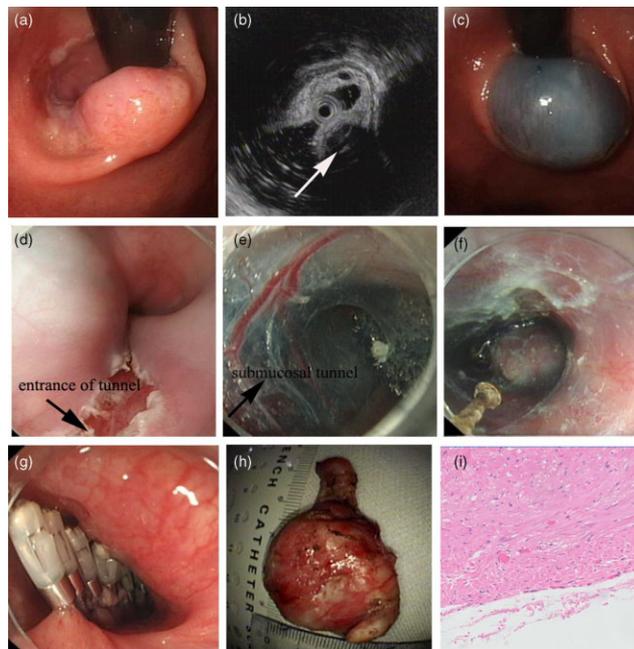


Figure 1 a~c, drainage of the pseudocyst; d~e, CT scan before and after drainage; f, CT scan follow-up at the seventh month after drainage

Pancreas

P-487

Efficacy and long-term clinical results of endoscopic pancreatic stenting with chronic pancreatitis

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Objective: For Endoscopic Pancreatic Stenting (EPS), not much consensus has been obtained in regard to the refractory severe pancreatic duct strictures and impact stones, we retrospectively evaluated the efficacy of endoscopic treatment of pancreatic duct stricture with chronic pancreatitis since May 2005 to December 2012. **Methods:** Pancreatic sphincterotomy, dilatation procedures, pancreatic brush and juice cytology was routinely performed, malignant diseases was excluded. After gradual dilatation, 10 Fr. plastic pancreatic stent was finally inserted. The stents were replaced every 3 months, and removed if the stricture was considered to be dilated after stenting. Analysis was conducted to determine the risk of MPD restenosis. **Results:** Fifty-nine patients were treated by EPS. Patients were followed up for a median period of 1134 days. The median duration of pancreatic stenting was 276.3 ± 26.3 days. Endoscopic stenting was successfully completed in 41 of 59 patients (69.5%), pain relief was obtained in 37 of 41 patients (90.2%). Seventeen of 41 patients (41.5%)

had recurrence of MPD stricture, and required re-stenting in 11 patients (average placement period 294 ± 152 days). Six of 17 patients (35.3%) had frequent restenosis. Three patients required third stenting (average placement period 212.6 ± 71.6 days). On multivariate analysis, remaining stones during stenting treatment was significantly associated with a higher rate of MPD restenosis ($p = 0.03$). **Conclusion:** EPS is an effective and useful procedure and useful for prevention of re-stricture in patients with benign pancreatic duct strictures from severe stricture and ESWL assist cases.

Key Word(s): 1. Endoscopic Pancreatic Stenting long term results chronic pancreatitis

Pancreas

P-488

Endoscopic transluminal drainage and necrosectomy for walled off pancreatic necrosis after severe necrotizing pancreatitis: report of 3 cases

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Objective: The endoscopic intervention in the management of walled-off pancreatic necrosis (WOPN) has been developed recently. Endoscopic necrosectomy (EN) for WOPN is less invasive than surgical treatment. Our purpose was to report our experience of EN. **Methods:** Three patients with a WOPN which occurred despite performed continuous regional arterial infusion of a protease inhibitor and antibiotic for severe acute pancreatitis, received EN. Case 1 was a 72-year-old woman with WOPN from the gallstone pancreatitis. Case 2 was a 49-year-old man with WOPN from severe alcoholic pancreatitis. Case 3 was a 43-year-old woman with WOPN from severe necrotic pancreatitis with severe general condition on prolonged ventilator. **Results:** The number of EN session was six in case 1, two in case 2 and one in case 3. All three patients achieved clinical remission and resume a normal life. The abscess were completely disappeared in both case 1 and 2. Only in case 3, EN was not effective for WOPN because of the presence of a fistula to descending colon. She finally required surgery. Procedure related complications were occurred in all patients, minor bleeding in case 1 and 3, and minor perforation in case 2 which were self-limiting under the conservative management. All patients are completely recovered and resume a normal life. **Conclusion:** In the present three cases with WOPN, EN was efficiently performed for the WOPN except in the presence of fistula to intestine.

Key Word(s): 1. necrosectomy; 2. WOPN

Pancreas

P-489

A benign pancreatic tumor adjacent to splenic artery aneurysm masquerading a pancreatic carcinoma

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Objective: We herein present the case of a complicated pancreatic tumor. A previously healthy 63-year-old man was admitted to our hospital with a three-day history of intermittent periumbilical abdominal pain. He had no history of hypertension, pancreatitis, abdominal trauma or excessive alcohol intake. **Methods:** A computed tomography (CT) scan showed a mildly enhanced, round-shaped mass in the body of pancreas: 23 mm in diameter with a focal stenosis of the main pancreatic duct (MPD) and dilatation in the distal end. It also showed acute pancreatitis, and we suspected obstructive pancreatitis due to pancreatic carcinoma. The calcified splenic artery was tortuous, and an aneurysm existed close to the mass. Endoscopic retrograde cholangiopancreatography confirmed the findings of MPD from the CT scan. Fluorodeoxyglucose positron emission tomography showed FDG accumulation in this mass ($SUV_{max}=4.1$). Cytology of the pancreatic fluid was class 3A. Fine needle aspiration yielded a sample of blood clot containing scant columnar epithelia, and definitive diagnosis was unobtainable. Because of the possibility of malignancy, distal pancreatectomy was performed. **Results:** Macroscopic findings revealed the mass came in contact with the splenic artery aneurysm, and microscopic findings revealed various chronological changes of hemosiderin deposits in the mass. Based on these findings, we suspected recurrent re-rupture/re-bleeding of the aneurysm. Inflammation after the rupture may have caused MPD stenosis, and atrophy of the pancreas around the aneurysm may have caused fibrosis and granulation, forming a mass. **Conclusion:** We diagnosed the mass masquerading a pancreatic tumor as the post-stage of splenic artery aneurysm re-rupture with hemorrhagic change and hemosiderin deposits.

Key Word(s): 1. pancreatic tumor; 2. splenic artery aneurysm

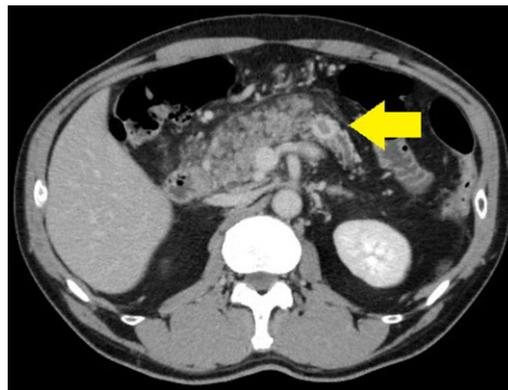


Figure 1

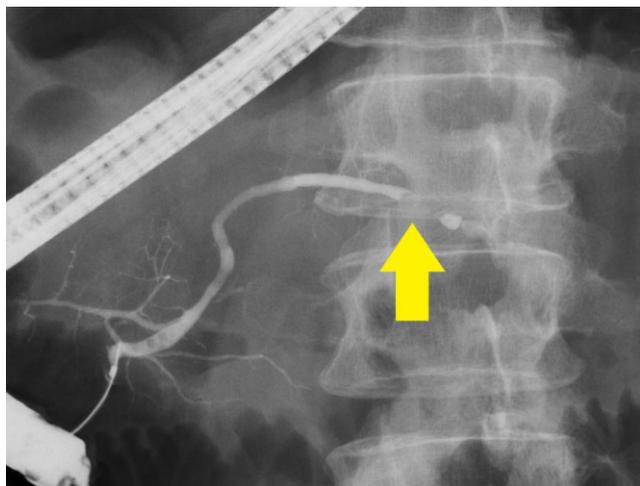


Figure 2

Pancreas

P-490

Effects of resveratrol and apocynin on pancreatic carcinogenesis in hamsters.

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Objective: Recently, epidemiological study has been shown that low plasma adiponectin levels are associated with an elevated risk of pancreatic cancer. This study aimed to elucidate effects of adiponectin on pancreatic carcinogenesis in animal model. **Methods:** Syrian golden hamsters were treated with N-nitrosobis (2-oxopropyl)amine (BOP) and were fed a high-fat diet 1 week after BOP injection. To induce up-regulation of adiponectin, they were given drinking water containing resveratrol (RV) or apocynin (AC) which are known to induce endogenous adiponectin, for 10 weeks. **Results:** The incidence of adenocarcinoma was significantly decreased in both RV and AC groups as compared to control group ($P < 0.05$). However, no significantly differences were found in serum adiponectin levels using ELISA kits in either groups. Ki-67 labeling indices and the level of lipid peroxidation in normal pancreatic ducts were decreased in both RV and AC groups, therefore, the mechanism of tumor suppression appears to involve regulation of cell proliferation and oxidative stress. Moreover, we examined roles of RV and AC using human pancreatic cancer cell lines (PANC-1 and MIA-Paca-2) in vitro. Significant inhibition of cell growth in a dose-dependent manner was detected after RV and AC treatment by WST-1 assay.

In addition, treatment with RV attenuated cells in the G1 phase of the cell cycle and induced significant reduction of reactive oxygen species generation by dichlorodihydrofluorescein diacetate (DCFH-DA) assay. **Conclusion:** RV and AC suppressed hamster pancreatic ductal carcinogenesis through regulation of cell proliferation and oxidative stress although correlation between adiponectin and pancreatic carcinogenesis was not clear.

Key Word(s): 1. pancreatic cancer; 2. animal model

Pancreas

P-491

Undifferentiated carcinoma with osteoclast-like giant cells of the pancreas misdiagnosed as a solid pseudopapillary tumor

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Objective: Undifferentiated carcinoma of the pancreas with osteoclast-like giant cells (UCPOGC) is a rare, highly malignant neoplasm composed of multinucleated giant cells admixed with mononuclear stromal cells. We report a case of UCPOGC misdiagnosed as a solid pseudopapillary tumor of the pancreas (SPT) based on endoscopic ultrasound-guided fine needle aspiration biopsy (EUS-FNAB). **Methods:** We retrospectively reviewed the medical records of a patient diagnosed for the UCPOGC. **Results:** A 58-year-old male was admitted to the hospital with abdominal pain. Abdominal CT (Figure 1a) and T1-weighted MRI (Figure 1b) revealed a low attenuated and heterogeneous mass with internal hemorrhage and necrosis in the body of the pancreas measuring 5 x 5 cm. The laboratory investigations including CEA and CA19-9 were within normal limits. EUS showed a hypoechoic mass with mixed cystic and solid components in the pancreas (Figure 2a) and FNAB showed vascular architectures with pseudopapillary pattern (Figure 2b), numerous neoplastic cells with sheet-like arrangement, several multinucleated giant cells and hemosiderin-pigments. Immunohistochemical stain revealed that the tumor cells were positive for alpha 1-antitrypsin, vimentin, beta-catenin etc. These findings were consistent with SPT with marked degenerative change. A distal pancreatectomy and splenectomy were performed (Figure 2c) and histopathological analysis showed tumor cells consisting of atypical mononuclear cells admixed with abundant osteoclastic giant cells (OGCs)(Figure 2d). The OGCs were positive for CD68 (Figure 2e). Unlike the FNAB findings, the atypical mononuclear cells were positive for cytokeratin (Figure 2f). We finally diagnosed as UCPOGC on histopathologic examination of surgical specimens.

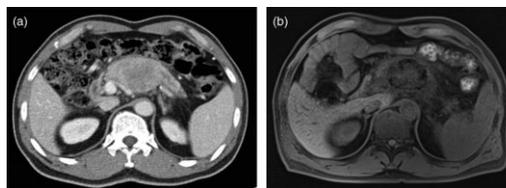


Figure 1

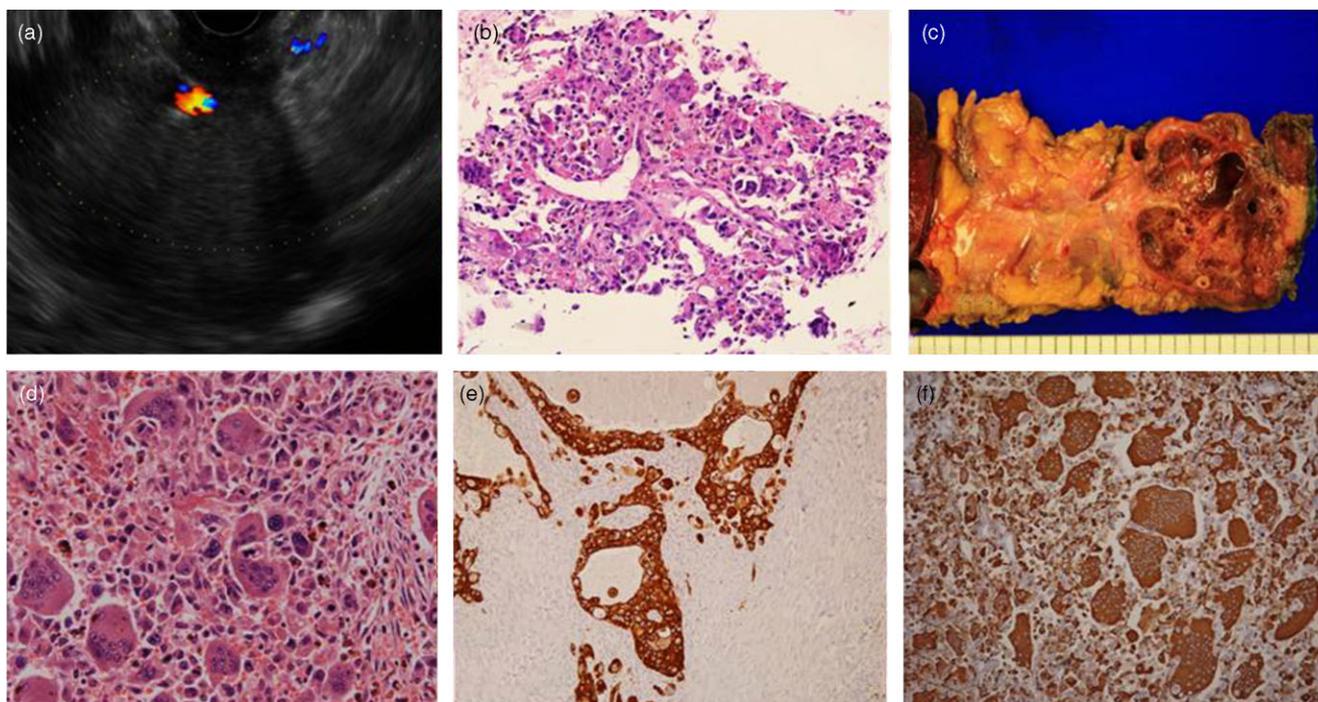


Figure 2

Conclusion: A undifferentiated carcinoma with osteoclast-like giant cells of the pancreas can be misconceived as a SPT on EUS and EUS-FNAB.

Key Word(s): 1. pancreas; 2. undifferentiated carcinoma with osteoclast-like giant cells; 3. solid pseudopapillary tumor

Pancreas

P-493

Two cases of acinar cell carcinoma of pancreas

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Objective: Acinar cell carcinoma is a rare pancreatic neoplasm. Because of its rarity, characteristics of this disease have not been fully investigated. Herein, we present two cases of acinar cell carcinoma of pancreas.

Methods: Case 1. A 60-year-old woman was referred to our hospital for evaluation of pancreatic mass found on CT scan. Abdominal CT and MRI showed a about 3 cm sized well marginated non-enhancing round mass with internal bleeding in pancreatic head. A preoperative diagnosis of solid pseudopapillary tumor was made, a pylorus preserving pancreaticoduodenectomy was performed. At laparotomy, a 3 x 3 cm sized brown soft mass was found in pancreatic head. Microscopic findings revealed invasive acinar cell carcinoma. The patient discharged 17 days following surgery without any complications. 2 months following the surgery, multiple hepatic metastases were found on follow up CT scan.

Results: Case 2. A 51-year-old woman visited our hospital presenting epigastric pain and poor oral intake. Abdominal CT and pancreas MRI showed lobulated enhancing soft tissue mass and multiple conglomerated amorphous cystic lesions around main duct of pancreas in body and tail. A preoperative diagnosis of intraductal papillary mucinous neoplasm was made, radical antegrade modular pancreaticosplenectomy was performed. At laparotomy, there were a 9 cm sized hard mass in pancreas body and multiple conglomerated lymph node around mass. Microscopic findings

revealed acinar cell carcinoma. The patient discharged 12 days following surgery without any complications. **Conclusion:** Acinar cell carcinoma of pancreas is a rare neoplasm showing a poor prognosis. To understand characteristics of this disease, more large scaled study is needed.

Key Word(s): 1. acinar cell carcinoma; 2. pancreas

Pancreas

P-494

Follow up of main duct intraductal papillary mucinous neoplasms of the pancreas

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Objective: In the IPMN/MCN international consensus guidelines 2012, main duct IPMN (MD-IPMN) with main pancreatic duct (MPD) dilation of 5-9 mm considered as one of the “worrisome feature” have changed from rather immediate resection to more deliberate observation and evaluation. In the previous guideline, surgical resection is strongly recommended for all surgically fit patients, so natural course for MD-IPMN has been limited

and still unclear. The aim of this study was to clarify the natural history of MD-IPMN without surgical resection. **Methods:** 754 patients with IPMNs were treated in our institute from April, 1996 to December, 2013. 35 patients were with MD-IPMN. 25 patients without surgical resection and more than 1 year imaging follow-up were identified and their cases reviewed retrospectively. Evaluation points were 1) initial clinical data, 2) progression rate, 3) outcomes. **Results:** Of 25 patients, mean age was 75.9 years and male was 52%. Median observation period was 49 months (13.5-189.7 months). 1) The initial median size of the MPD dilation is 8 mm (5-26), 14 patients with "worrisome feature," 11 patients with "high-risk stigmata," 4 patients had mural nodules. 2) 11 patients (44.4%) of 25 exhibited progression. 6/14 among "worrisome feature" group, 5/11 among "high-risk stigmata" group. The details of progression were 10 cases with an increasing MPD diameter, 2 cases with an increasing cyst size, 6 cases with appearance and/or enlargement of mural nodules (included overlapping). Median period to progression was 26.9 months (4.9-98.9). 3) Surgical resection was performed in 2 of 11 patients with progression. 2 patients were died. One of them died of invasive IPMC, the other died of cancer of other organ. Progression rate by the Kaplan Mayer Curve was 25.5% for 2 years and 48.0% for 5 years. **Conclusion:** This study suggested we could expect clinical course and progression rate for MD-IPMN without surgical resection. "Worrisome feature" group could have been observed, if malignant findings were not revealed. It is highly important that we decide how long we observe patients with MD-IPMN and when we suggest surgical resection to them.

Key Word(s): 1. IPMN

Pancreas

P-495

A case with which we followed up for 15 years from the occurrence to the growth of invasive ductal carcinoma of the pancreas

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Objective: At 1999 we noted dilatation of the main pancreatic duct (MPD) without apparent neoplastic lesion with abdominal ultrasound in a 71-year-old man. **Methods:** We followed up the patient using abdominal ultrasound and magnetic resonance cholangiopancreatography (MRCP) and at 2012 MRCP showed progress of dilatation of the MPD. We performed contrast-enhanced computed tomography (CT) and endoscopic ultrasound (EUS) resulting in pointing out no neoplastic lesion, but in cytological examination of the pancreatic juice obtained via an endoscopic nasal pancreatic drainage tube, we diagnosed adenocarcinoma. Though carcinoma in situ of the pancreas or minute invasive carcinoma of the pancreas was suspected, the patient refused a surgical operation and started chemotherapy with gemcitabine. We followed up the patient using contrast-enhanced CT, EUS and MRCP. **Results:** At 2014, being 86 years old, the patient complained of back pain and we noted a neoplastic lesion measuring 40 mm in diameter in the head of the pancreas and progress of dilatation of the MPD and the bile duct. Cytological examination via EUS-guided fine needle aspiration biopsy revealed adenocarcinoma. The tumor involving duodenum and portal vein, we diagnosed it as Stage IV. **Conclusion:** We have reported this case of invasive ductal carcinoma of the pancreas that could be continuously followed up with imaging examinations from before its occurrence for 15 years.

Key Word(s): 1. growth; 2. pancreas; 3. carcinoma in situ

Pancreas

P-496

Analysis of recurrence pattern and factors influencing recurrence after curative pancreaticoduodenectomy for periampullary cancer

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Objective: In numerous published studies of the past literature, the clinicopathological aspects of periampullary cancer were investigated, but most reports have focused only on the prognosis of above disease. Therefore, the aim of this study was to evaluate the recurrence pattern after curative pancreaticoduodenectomy for periampullary cancer and identify the factors affecting recurrence. **Methods:** Between January of 2002 and December of 2011, 111 patients received curative PD for periampullary cancers. Patients that underwent resection with microscopic residual tumor (R1 resection) or a palliative procedure and patients with stage IV disease were excluded. **Results:** The 59 patients had only one recurrence pattern and the 7 patients had 2 or more sites of recurrence at the time of diagnosis. Hematogenous recurrence type was most common pattern (n = 23) within 4 groups (hematogenous, locoregional, lymphatic, peritoneal recurrence group) of single recurrence pattern. The most common site of recurrence was liver (n = 22), followed by loco-regional recurrence (n = 16). Among the patients who had recurrence, 62 patients (94%) had recurrence during 3 years after curative resection. Recurrence rate increased with patients who had high total bilirubin (p = 0.007), high pre-operative CA 19-9 (p = 0.001), advanced T stage (p = 0.004), advanced N stage (p < 0.001), poorly differentiated tumor (p = 0.001), lymphovascular invasion (p = 0.034), and perineural invasion (p = 0.05). Tumor differentiation (p = 0.007) and N stage (p < 0.001) had statistical significance as independent prognostic factors for recurrence by multivariate analysis using the Cox proportional hazards model. **Conclusion:** In conclusion, hematogenous pattern is most frequent among recurrence pattern and lymph node and tumor differentiation is most significant factor for recurrence.

Key Word(s): 1. periampullary cancer; 2. recurrence; 3. overall survival

Pancreas

P-500

Comparative study of diagnostic value of cytologic sampling by endoscopic retrograde cholangiopancreatography and endoscopic ultrasonography-guided fine-needle aspiration for the management of pancreatic carcinoma

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Objective: Recently endoscopic ultrasonography-guided fine-needle aspiration (EUS-FNA) has been performed widely for pathological diagnosis of pancreatic carcinoma. This study aimed to evaluate the value of cytological diagnosis by ERCP and EUS-FNA for pancreatic carcinoma.

Methods: Between June 2011 and March 2014, seventy patients who were suspected to have a pancreatic mass by conventional ultrasonography, computed tomography and magnetic resonance imaging were enrolled. Pancreatic duct brushing cytology and/or pancreatic juice cytology sampling by ERCP (ERCP group) and EUS-FNA were performed for the cytological diagnosis of pancreatic tumor (EUS-FNA group).

Results: Final diagnosis were pancreatic carcinoma in 62, autoimmune pancreatitis in 5 and chronic pancreatitis in 3. Successful sampling rate of ERCP group was 97% and that of EUS-FNA group was 97% in case of pancreatic carcinoma. Overall result; the sensitivity, specificity and accuracy were 45%, 100% and 51% in the ERCP group. In contrast the sensitivity, specificity and accuracy were 81%, 100% and 83% in the EUS-FNA group. With regard to complications, pancreatitis occurred in eight patients, severe in one, in the ERCP group. Fever occurred in two patients in the EUS-FNA group. There were significant difference on the sensitivity, accuracy and complication rate in the both groups ($P < 0.01$).

Conclusion: EUS-FNA is more sensitive and safer for the cytological diagnosis of pancreatic carcinoma. EUS-FNA should be considered as the initial examination when a patient is suspected for pancreatic carcinoma.

Key Word(s): 1. EUS-FNA; 2. pancreatic carcinoma

Pancreas

P-501

Improvement of endoplasmic reticulum stress by enhanced perk signaling pathway reduces severe acute pancreatitis in mice

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Objective: Endoplasmic reticulum (ER) stress causes the accumulation of misfolded proteins inside the ER and initiates unfolded protein response (UPR). UPR is activated during pancreatitis to restore ER homeostasis. Although protein kinase RNA-like ER kinase (PERK) is associated with the UPR through phosphorylation of eukaryotic initiation factor 2- α (eIF2- α), the role of PERK signaling pathway in pancreatitis is not fully clarified. We investigated the significance of PERK signaling pathway in severe acute pancreatitis in mice using an eIF2- α dephosphorylation inhibitor, salubrinol. **Methods:** Severe acute pancreatitis was induced by intraperitoneal injection of cerulein (CER) at a dose of 50 mg/kg six times at 1 hour intervals. Moreover, LPS was administered at a dose of 10 mg/kg as the septic challenge immediately after the completion of CER injections. Salubrinol was administered intraperitoneally immediately after LPS injection and six hours later. Mice were sacrificed at 24 hours after the first injection of CER and the severity of pancreatitis was histologically graded with a scoring system. Serum amylase and proinflammatory cytokine levels were measured. Expression of ER stress-related proteins was examined by western blotting. **Results:** The severity of pancreatitis in mice treated with salubrinol was significantly attenuated compared with control mice. Serum amylase and proinflammatory cytokine levels were lower in salubrinol-treated mice than those of control mice. Expression level of 78 kDa glucose regulated protein (GRP78), activating transcription factor 4 and phosphorylated eIF2- α protein were elevated in mice treated with salubrinol compared with control groups. **Conclusion:** Inhibition of eIF2- α dephosphorylation decreased ER stress and reduced severe acute pancreatitis in mice. Augmentation of PERK signaling pathway could be a potential therapeutic option for the treatment of acute pancreatitis.

Key Word(s): 1. ER stress salubrinol pancreatitis PERK signaling

Pancreas

P-502

Clinical profile of adult Sri Lankans having acute pancreatitis admitted to a tertiary referral centre

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Objective: To study the clinical profile of adult Sri Lankans admitted to a tertiary referral centre having acute pancreatitis **Methods:** Case notes of patients who were diagnosed as having acute pancreatitis admitted to Sri Jayawardenepura General Hospital, Sri Lanka from 1.1.2011 to 31.12.2013, were retrospectively analysed to obtain the required data.

Results: There was a total of 55 patients with an age range of 17 to 84 years, with a mean of 39.5 ± 15.3 SD years. The sex ratio was male:female -10:3, with females having a mean age of 48.2 ± 16.3 SD years, and males having a mean age of 38.1 ± 14.3 SD years. The major presenting features were abdominal pain, vomiting, nausea, fever, haematemesis and jaundice in 98.2%, 58.2%, 36.4%, 12.7%, 3.6%, and 3.6% of the instances respectively. Etiology was unknown, alcohol, gallstones and post ERCP in 51.9%, 38.9%, 7.4%, and 1.9% of the instances respectively. Ultrasound showed oedematous pancreas, pseudocysts, peripancreatic fluid collection, calcification, dilated CBD, dilated pancreatic ducts and pancreatic masses in 23.6%, 10.9%, 10.9%, 9.1%, 7.3%, 5.4%, and 3.6% of the instances respectively. Ultrasound was not available in 27.3%. Acute on chronic pancreatitis was seen in 21.8% while diabetes mellitus was associated in 38.1%. **Conclusion:** There were many deficiencies in case history docu-

mentation, which needs re auditing after proper instructions. Alcohol was the commonest aetiological agent incriminated. Diabetes was the commonest important contributory co-morbid factor associated.

Key Word(s): 1. acute pancreatitis

Pancreas

P-503

Hypertriglyceride induced pancreatitis: bimc experience

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Objective: Hypertriglyceridemia (HTG) is the third most common cause of acute pancreatitis (AP) after alcohol and gallstones. The target to well-controlled of triglyceride level will improve clinical condition. Presenting a case of hypertriglyceride induced pancreatitis who treated with insulin and gemfibrozil tablet in our hospital. **Methods:** 49 years old male, obese, alcoholic, Asian, came due to epigastric pain. The pain was constant and worsening during oral intake. Past medical history are high cholesterol and gout, but no regular medication taken. His mother had dyslipidemia. Blood exam showed increase amylase and lipase. Other abnormal laboratories were including increasing creatinine, leucocytosis, hypocalcemia and hypoalbuminemia. On screening risk factor, noted extremely high triglyceride level, hence Hypertriglyceride Induced Pancreatitis was diagnosed. Patient was given IV hydration and pain management using pethidine and octreotide drip. Since his glucose level always within normal, hence insulin drip administered along with dextrose contained fluid. Additional gemfibrozil oral was given for controlling his triglyceride level. Antibiotic prophylaxis using Meropenem was started. However, during hospitalization, patient was developed pneumonia, hence combination antibiotic with Moxifloxacin. After 7 days, clinically patient improved and started to have oral intake. Patient was discharge improved after 18 days hospitalization. **Results:** Our patient has many risk factors which can contributed his acute pancreatitis. Alcoholism, obesity and personal also family history of hypertriglyceridemia were triggered his condition. The use of insulin decreases serum triglyceride levels by enhancing lipoprotein lipase activity, an enzyme that accelerates chylomicron metabolism to glycerol and fatty free acids. The work of gemfibrozil reduced hepatic triglyceride by inhibiting peripheral lipolysis and decreasing extraction of plasma fatty acids. The combination markedly decrease triglyceride level which seen in our patient. **Conclusion:** Combination insulin and gemfibrozil improve to control triglyceride level on case Hypertriglyceride Induced Pancreatitis. Need more study sample to have comparison combination insulin and gemfibrozil with conventional therapy.

Key Word(s): 1. hypertriglyceride; 2. acute pancreatitis; 3. Insulin; 4. gemfibrozil

Pancreas

P-504

Endoscopic transpapillary drainage for acute cholecystitis

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Objective: Although cholecystectomy is standard therapy for acute cholecystitis, palliative therapy is needed for patients at high risk for surgery, endoscopic naso-gallbladder drainage (ENGBD) is performed in patients who have ascites, coagulopathy, gallbladder carcinoma or Chilaiditi syndrome, since percutaneous transhepatic gallbladder drainage is contraindicated for these patients. We tried to treat 30 patients of acute cholecystitis by ENGBD. **Methods:** We performed ENGBD using transpapillary technique of ERCP. **Results:** The average time needed for ENGBD is 24.4 minutes in our institutions. We have successfully performed ENGBD in 28 of the 30 patients (93.3%) in the last 5 year. The successful ratio of ENGBD has become higher year by year as new technical devices have been developed. The complication rate of ENGBD is 6.6% (2/30): mild pancreatitis 3% (1/30), cystic duct perforation by guidewire 3.3% (2/30). **Conclusion:** ENGBD is an important technique for the treatment of acute cholecystitis and the diagnosis of gallbladder carcinoma.

Key Word(s): 1. ENGBD; 2. incidental gall bladder cancer

Pancreas

P-506

Risk factors for relapse of autoimmune pancreatitis**Presenting Author:** HAJIME SUMI**Additional Authors:** YOSHIKI HIROOKA, HIROKI KAWASHIMA, EIZABURO OHNO, HIROYUKI SUGIMOTO, DAIJURO HAYASHI, TAKAMICHI KUWAHARA, TOMOMASA MORISHIMA, MANABU KAWAI, HIROKI SUHARA, KAZUHIRO FURUKAWA, KOHEI FUNASAKA, MASANAO NAKAMURA, RYOJI MIYAHARA, HIDEIMI GOTO**Corresponding Author:** HAJIME SUMI**Affiliations:** Nagoya University Hospital, Nagoya University Graduate School of Medicine, Nagoya University Hospital, Nagoya University Graduate School of Medicine, Nagoya University Hospital, Nagoya University Graduate School of Medicine, Nagoya University Graduate School of Medicine, Nagoya University Graduate School of Medicine

Objective: Autoimmune pancreatitis (AIP) responds to steroid therapy, but some cases relapse. The aim was to examine the risk factors for relapse of AIP. **Methods:** 52 patients diagnosed as AIP based on ICDC were enrolled between January 2001 and November 2013. Risk factors were analyzed retrospectively. Relapse defined as dose-up of prednisolone. LPSP (lymphoplasmacytic sclerosing pancreatitis) was defined by ICDC and pathological findings including more than 2 out of 4 items was considered positive. The changes rate of the parameters by steroid therapy were defined as minimum value/ initial value up to the maintenance therapy. Three items were assessed: a) onset pattern of relapse; b) comparison of clinical characteristics, imaging, blood laboratory and pathological findings; c) Response of immunoglobulins and pancreatic enzyme. **Results:** Average follow-up period was 1061 days. Of the 52 patients, 21 patients relapsed. a) Of the 21 patients, 7 got exacerbation of pancreatic swelling, 7 experienced exacerbation of other organ involvement, 4 had marked increase of immunoglobulins value and 3 developed symptoms of acute pancreatitis. b) There were no significant differences between the two groups in clinical findings. As to imaging findings, relapse was significantly more frequent in diffuse pancreatic swelling. There were no significant differences in immunoglobulins, but in relapse group, HbA1c was significantly lower (relapse /non-relapse; HbA1c median value 6.0/7.1%, $P = 0.005$) and calstase1 values was significantly higher (593/148 ng/dl, $P = 0.045$). There was no relation between positive and negative LPSP. c) The change rate of IgG4 by steroid therapy was likely to relate to the relapse of AIP (0.434/0.262, $P = 0.092$). Erastase1 and lipase significantly reduced in the relapse groups (0.202/0.874; 0.246/0.910, $P = 0.002$ / $P = 0.007$). **Conclusion:** Marked decrease in the value of IgG4 and pancreatic enzyme by steroid therapy could predict the relapse of AIP.

Key Word(s): 1. autoimmune pancreatitis; 2. steroid therapy; 3. relapse

Pancreas

P-507

The role of genomic profiling using eus guided core biopsies of unresectable pancreatic neoplasia**Presenting Author:** DMY TAN**Additional Authors:** PC TIANG, BT TEH, CK ONG, WK LIM, S NAGARAJAN, CYC NG, KH LIM, YK CHIN, CJL KHOR**Corresponding Author:** YUNG KA CHIN**Affiliations:** Singproe General Hospital, Cancer Science Institute, National Cancer Centre of Singapore, Duke-Nus Graduate Medical School, Duke-Nus Graduate Medical School, Singapore General Hospital, Singapore General Hospital, Singapore General Hospital**Objective:** Pancreatic cancer presents late and overall survival rate is <5%. Understanding the genetic alteration may help in its treatment. Standard endoscopic ultrasound (EUS) fine needle aspiration provides inadequate material for genomic analysis. This pilot study assesses the feasibility of genomic profiling on tissue obtained using a new core needle (EchoTip ProCore needle, Cook Medical Inc, Limerick Ireland).**Methods:** Four patients with pancreatic cancer underwent EUS guided fine needle biopsy using a 19G or 22G needle to obtain a core specimen. Core specimens were extracted using Qiagen's Qiasymphony automated extractor using magnetic beads. A new low input material (200 ng) protocol Agilent Sureselect V4+UTR (71 Mb) was used for sequencing. DNA was quantitated using Picogreen & used for hybridization with the exome probes (WES) & sequenced with Hiseq 2000. Matched blood samples were collected for comparison analysis. **Results:** All four samples showed sufficient malignant cells for genomic analysis. The samples were sequenced to a mean exome coverage of at least 95x (average of 115x), with an average of 92% of each exome covered by at least 20 reads (Table 1).**Table 1** Exome Coverage and PCR Duplication Rates of Samples

Sample	Percent of Exome > 20X Coverage	Average Coverage	PCR Duplication Rate
NG02CCK	92	110	6.60%
TG02CCK	92	113	6.24%
NG03AAB	91	108	6.71%
TG03AAB	96	169	11.03%
NG08LBY	91	99	6.15%
TG08LBY	94	129	7.53%
NG14OKS	90	95	5.41%
TG14OKS	92	99	5.92%

The samples showed known mutations in pancreatic cancer; Kras mutations (3 of 4), SMAD 4 mutations (1 of 4) and P53 mutations (2 of 4) (Table 2).

Table 2 Mutations Detected in Samples

SAMPLE	Mutations		
	KRAS	SMAD4	TP53
G02CCK			
G03AAB	chr12: 25,398,284C > A; p.G12V (32%)	chr18 : 48581167 – ins[GT]; fs (29%)	chr17: 7577559G>A; p.S241F (30%)
G08LBY	chr12: 25,398,284C > A; p.G12V (17%)		chr17: 7578406 C>T; p.R175H (14%)
G14OKS	chr12: 25,398,284C > A; p.G12V (7%)		

Note: All KRAS and TP53 mutations are known mutations. The SMAD4 mutation is frameshift and expected to be truncating.

Conclusion: This is a first proof of concept study in performing genomics using a new core needle and low input genomic sequencing system. Further studies with a larger sample size are required to show the feasibility of using this needle for genomic analysis.

Key Word(s): 1. EUS; 2. pancreas carcinoma; 3. genomic; 4. core biopsy

Pancreas

P-508

Ruvbl1 directly binds actin filaments and induces formation of cell protrusions to promote pancreatic cancer cell invasion

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Objective: This study describes new and unique findings regarding the molecule RUVBL1 in pancreatic ductal adenocarcinoma (PDAC). Previous reports describe that RUVBL1 belongs to the family of AAA+ ATPases that participate in many cellular processes highly relevant to cancer.

Methods: Immunoprecipitation and mass spectrometry were used to isolate and identify proteins that interact with RUVBL1. An in vitro actin polymerization assays and immunocytochemistry were used to examine the effects of RUVBL1 on the concentration of monomeric globular-actin (G-actin) and polymerization of filamentous actin (F-actin).

Results: RUVBL1 accumulated in membrane protrusions and at the leading edges of PDAC cells. Suppression of RUVBL1 inhibited PDAC cell motility and invasion. RUVBL1 bound F-actin in cell protrusions, and increased concentration of G-actin and additional formation of actin filaments in cell protrusions. **Conclusion:** RUVBL1 contributes to the formation of membrane protrusions by promoting peripheral actin polymerization. These RUVBL1-actin interactions enhance the invasive properties of PDAC cells. Inhibition of binding between RUVBL1 and actin filaments may be a rational approach to a targeted molecular therapy for PDAC because any such therapy would inhibit the formation of cell protrusions and consequently limit the motility and invasiveness of PDAC cells.

Key Word(s): 1. pancreatic ductal adenocarcinoma; 2. AAA + ATPase; 3. invasiveness; 4. cell protrusion; 5. actin polymerization

Pancreas

P-509

ERK pathway and sheddases play an essential role in ethanol-induced CX3CL1 release in pancreatic stellate cells (PSCs), and several cellular signaling cascades are activated by CX3CL1 in PSCs and associated with cell proliferation

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Objective: Chronic pancreatitis (CP) worsens with drinking, and pancreatic stellate cells (PSCs) play an important role in the pathogenesis of alcoholic CP. Fractalkine is chemokines, and membrane type and soluble type is present. A membrane-bound extracellular region is cut by sheddase, and soluble type fractalkine shows migration activity for the inflammatory cell with CX3CR1 (fractalkine receptor). Serum levels of fractalkine (CX3CL1) are elevated in patients with alcoholic CP, however the mechanism remains unclear. This study aims to determine the effects of cytokines, pathogen-associated molecular patterns (PAMPs), and ethanol and its metabolites on CX3CL1 secretion by PSCs. **Methods:** Male Wistar/Bonn Kobori (WBN/Kob) rats were used as models of CP in vivo. PSCs were isolated from 6-week-old male Wistar rats. The effects of cytokines, PAMPs, and ethanol on chemokine production and activation of signaling pathways in PSCs in vitro were examined by real-time reverse transcription-polymerase chain reaction (RT-PCR), western blotting, and enzyme-linked immunosorbent assay. **Results:** Expression of CX3CL1 and matrix metalloprotease (MMP)-2 was increased in the pancreas of WBN/Kob rats. The rat PSCs expressed CX3CL1, MMP-2, and a disintegrin and metalloprotease domain (ADAM) 17. Cytokines and PAMPs induced CX3CL1 release. Ethanol synergistically increased CX3CL1 release via ERK and ADAM17 activation in PSCs. Several cellular signaling cascades are activated by CX3CL1 in PSCs and associated with cell proliferation. **Conclusion:** We demonstrated for the first time that ethanol synergistically increased CX3CL1 release from PSCs in part through activation of ERK and ADAM17. This might be one of the mechanisms of serum CX3CL1 elevation and disease progression in patients with alcoholic CP.

Key Word(s): 1. chronic pancreatitis; 2. PSCs; 3. chemokine; 4. CX3CL1

Pancreas

P-511

A comparative study between a 22-gauge aspiration needle and a 25-gauge biopsy needle for EUS-guided sampling of pancreatic mass lesions

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Objective: EUS biopsy needles have recently been developed in order to obtain both histologic and cytologic specimens. We conducted this study to compare 22-gauge (G) aspiration needles (FNA) and 25G biopsy needles (FNB) for EUS-guided sampling of solid pancreatic masses. **Methods:** Thirty-four patients with solid pancreatic masses underwent EUS-guided sampling with a 25G FNB from June 2012 to April 2013, and thirty-four patients with solid pancreatic masses, who underwent EUS-guided sampling with a 22G FNA from June 2011 to May 2012, served as the historical control group. EUS-guided sampling was performed using the standard technique without an on-site cytopathologist. **Results:** The diagnostic rates of cytology were 97.1% (33/34) with 22G FNA needles and 85.3% (29/34) with 25G FNB needles ($P = 0.197$). The diagnostic rates of histology were 23.5% (8/34) with 22G FNA needles and 41.2% (14/34) with 25G FNB needles ($P = 0.194$). There was no significant differences in the mean number of needle passes (5.09 vs 5.76, $P = 0.089$) or needle malfunctions (2.9% vs 11.8%, $P = 0.356$) between 22G FNA and 25G FNB needles, respectively. No complications were identified in either group. **Conclusion:** The 25G FNB needle was not superior to the 22G FNA needle in the diagnostic yield of histology for EUS-guided sampling of pancreatic mass lesions, as the diagnostic yield, technical performance, and safety profiles were comparable between both of them.

Key Word(s): 1. endoscopic ultrasound (EUS); 2. EUS-guided fine-needle aspiration; 3. pancreatic mass

Pancreas

P-512

Ultrasound-guided percutaneous free-hand implantation of iodine-125 seeds in advanced pancreatic carcinoma

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Objective: To assess the security and feasibility of ultrasound-guided percutaneous free-hand implantation of iodine-125 (125 I) seeds in advanced pancreatic carcinoma. **Methods:** 45 patients (one focal tumor for each patient) with advanced pancreatic carcinoma were enrolled in this study. Follow-up ultrasound and CT examination were repeated to estimate tumor response to therapy after implantation of 125 I seeds. Preoperative using of ultrasound: (1) Patient selection. (2) Detect the internal texture and adjacent tissue of the tumor in different sections. (3) Make primary surgical plan: select puncture site and approach. (4) Gastrointestinal tract cleaning and infection prevention were needed if gastrointestinal tract wall cannot be avoided during the puncture. Intraoperative using of ultrasound: (1) Detect blood vessels in the tumor and peripheral blood vessels and bile duct. (2) Choose relatively proximate puncture

approach. (3) Avoid the gastrointestinal tract to the greatest extent by adjusting puncture site, puncture angle and transducer compressing. (4) Avoid bile duct, pancreatic duct and important blood vessels by adjusting the angle of the transducer and the puncture needle in real time. (5) Implant 125 I seeds according to preoperative TPS (Treatment Planning System). Postoperative using of ultrasound: (1) Detect the puncture area for effusion repeatedly within 30 minutes after 125 I-seeds implantation in the operating room. (2) Follow-up ultrasound examinations were needed to eliminate delayed hemorrhage, cholangiopancreatic fistula and other causes of discomfort except radiative edema. (3) Ultrasound and CT reexamination were required to estimate tumor response to therapy at 1 month, 3 months, 6 months and 12 months after surgery. According to the result, the doctor made the decision whether subsequent 125 I-seeds implantation was needed. **Results:** (1) 125 I-seeds implantation was performed in 45 patients successfully, consuming 30-60 minutes. (2) 8 patients had a recurrence surrounding the original tumor after one month and subsequent 125 I-seeds implantation was performed. (3) Pain was relieved to different levels in all patients after 2-5 days. Pain was completely relieved in 40 patients and partially relieved in 5 patients after one month. Appetite increased in all patients. (4) At 3 months after therapy, CT and ultrasound examinations were repeated to estimate tumor response to therapy. Complete response (CR) of tumor was seen in 38 patients, partial response (PR) in 5 patients, and progressive disease (PD) in 2 patients. Total effective rate (CR + PR) was 95.6%. The median survival was 16.9 months (3.5-35 months). (5) There were no complications in need of treatment after the implantation in all patients. **Conclusion:** (1) More pancreatic tumors become indications for the treatment of 125 I-seeds implantation owing to high resolution ultrasound, flexibility of free-hand puncture and feasibility of puncture approach going through gastrointestinal tract. (2) Ultrasound-guided percutaneous implantation of 125 I seeds are less invasive, safe and effective, improving the quality of life in patients with advanced pancreatic carcinoma.

Key Word(s): 1. ultrasound-guided; 2. 125 I seeds; 3. pancreatic carcinoma

Pancreas

P-513

A retrospective evaluation of the bedside index for severity in acute pancreatitis score in assessing mortality in acute pancreatitis admitted in a tertiary hospital from July 2010 to December 2011

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Objective: To determine if BISAP scoring can accurately predict the outcome of acute pancreatitis patients admitted in a tertiary hospital from July 2010 to December 2011. **Methods:** A total of 103 patients with pancreatitis admitted in a tertiary hospital from July 2010 to December 2011 were retrospectively studied, but only 57 patients were included in the study. A review of their medical chart was done for their initial vital signs and their laboratory test results taken at the time of admission or within 24 hours from admission. A BISAP Score was calculated for each patient based on points assigned for 5 clinical and laboratory variables at the time of patient presentation. One point was assigned for each clinical variable that includes blood urea nitrogen > 25 mg/dl, glasgow coma scale < 15, systemic inflammatory response syndrome (SIRS), age > 60 and pleural effusion on imaging. A score of >3 was considered as high risk, while a score of < 3 was considered as low risk. **Results:** In this study, a total of 57 patients were included. The mean age of the population was 46.8 years.

Majority (82%) of them were low risk with a mean age of 45 and were male. The top three concomitant diseases were hypertension (32%), diabetes mellitus (14%), and bronchial asthma (9%). About 22 patients (39%) have gallstones on ultrasound, 3 patients (5%) are heavy alcohol beverage drinker and 32 patients (56%) with acute pancreatitis are not associated with gallstone nor alcohol abuse. Test of correlations revealed that there were no significant relationships among amylase and lipase to the length of stay. A BISAP score of >3 has a longer hospital stay (mean 18 days) than those with scores of <3 (mean 6.7 days). The mortality rate for each BISAP score were as follows: 0%, 0%, 0%, 22% and 100% for BISAP score of 0, 1, 2, 3 and 5 respectively. High risk BISAP score has a mortality rate of 30% as compared to low risk with 0% mortality. **Conclusion:** BISAP was a reliable prognostic tool to classify patients with acute pancreatitis into low and high risk groups, and its components are clinically relevant and easy to obtain. The score is simple to calculate, requiring only those vital signs, laboratories and imaging that are commonly obtained at the time of presentation or within 24 hours of presentation. Thirty percent of the patients admitted in this institution for acute pancreatitis with BISAP score of >3 died. Mortality was found to be associated with high risk BISAP scores.

Key Word(s): 1. pancreatitis; 2. BISAP score

Endoscopy and Imaging

P-514

Factors affecting willingness to undergo another colonoscopy in a screening population

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Objective: As screening colonoscopy should be performed at regular intervals in order to be effective, patients must be willing to undergo repeated procedures. The aim of this study was to examine the patient's anxiety, pain, and experience before, during, and after screening colonoscopy, and contrast these with colonoscopy done for symptoms.

Methods: A total of 161 consecutive patients (aged 26-83 years; 89 males; 135 Chinese) scheduled for elective colonoscopy completed the Spielberger State Trait Anxiety Inventor (SSTAI), and Visual Analogue Scale for Anxiety (VASA) before the procedure. Endoscopy nurses completed Numeric Rating Scale for Pain Intensity to record pain level during the procedure. Patients were asked about peri-procedure experience, and willingness to repeat colonoscopy prior to discharge. **Results:** Eighty (50%) participants reported anxiety before colonoscopy (mean SSTAI = 43.6, SD, 8.0). Thirty four (21%) reported their experience to be painful and uncomfortable. Most patients (63%) rated bowel preparation as the most unpleasant part of the entire experience. The colonoscopy itself was only considered to be the most unpleasant experience by 24% of the patients. 53 patients (33%) were reluctant or not willing to undergo another colonoscopy. Pre-procedure anxiety did not appear to influence the experience, and willingness to undergo another colonoscopy. Sixty (38%) patients underwent colonoscopy for screening/surveillance purpose. Compared with the symptomatic population, the screening population reported the same level of pre-procedure anxiety (SSTAI: 43.4 vs. 43.7; VASA: 4.1 vs. 3.8), pain during procedure (1.3 vs. 1.4), and post-procedure unpleasant experience

(15% vs. 25%). **Conclusion:** Patients who are undergoing screening colonoscopy are no more likely to experience anxiety, pain, and unpleasant experience when compared with patients who were scoped because of symptoms. Bowel preparation is perceived to be the most unpleasant part of the experience. Effort should be directed towards improving the bowel preparation to achieve adherence to screening programs.

Key Word(s): 1. screening colonoscopy; 2. bowel preparation; 3. anxiety; 4. pain; 5. experience; 6. adherence

H. Pylori

P-516

Association of Helicobacter pylori infection with glycemic control in patients with type 2 diabetes mellitus

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Objective: The Helicobacter pylori bacteria, which has previously been suspected of playing a role in the development of type 2 diabetes mellitus, have been linked to impaired blood glucose control in adult with type 2 diabetes mellitus. The aim of the study is to investigate the association between Helicobacter pylori infection with glycemic control in patients with type 2 diabetes mellitus. **Methods:** We conducted retrospective analyses in type 2 diabetes mellitus patients who had an esophagogastroduodenoscopy in Moewardi General Hospital between Januari 2012 until Juli 2014. The inclusion criteria was patient with type 2 diabetes mellitus who has been doing ongoing therapy for type 2 diabetes mellitus and routine check-up and has dyspepsia and performed esophagogastroduodenoscopy in Moewardi General Hospital. Exclusion criteria were anemia, infection, hyperthyroidism, patient who take medication that alter blood glucose level (except type 2 diabetes mellitus therapy), chronic kidney disease. Statistic analyses using t test, mann-whitney test, and pearson correlation, significant if $p < 0,05$. **Results:** A total of 30 patients included in this research with mean age $54,85 \pm 4,3$ years old, 18 males and 12 females, and 5 patients have positive H. pilory. The HbA1c in positive H. pilory group ($9.52 \pm 1.12\%$) compare to negative H. pilory group ($9.08 \pm 1.22\%$) was correlated positively ($r = 0,45$, $p = 0,001$). **Conclusion:** This study demonstrated that H. pilory infection was negatively associated with glycemic control in type 2 diabetes mellitus patients.

Key Word(s): 1. H. Pylori; 2. HbA1c; 3. esophagogastroduodenoscopy; 4. type 2 diabetes mellitus

H. Pylori

P-517

Insulin resistance in non-diabetic patients and Helicobacter pylori: is there any association?

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Objective: Recent epidemiological studies show that insulin resistance degree is significantly higher in otherwise healthy individuals that are infected with Helicobacter pylori (HP). It is also shown that this infection

can increase the incidence of type 2 diabetes mellitus. In this study, the association of HP and in non-diabetic patients has been evaluated. **Methods:** In this cross-sectional study, we have studied homeostatic model assessment in 245 non-diabetic patients with *Helicobacter pylori* referring to endocrinology clinic of Shahid Beheshti Hospital. They were assigned to HP+ (90 non-diabetic patients, 36.88%) and HP- (154 non-diabetic patients, 63.12%) groups based on seropositivity of *Helicobacter pylori* IgG antibody. **Results:** Out of 245 patients, 122 ones (49.8%) were female. The mean insulin resistance was 58.01 ± 97.18 in HP- group and 92.04 ± 330.27 in HP+ group and was not statistically different in both groups ($p = 0.276$). No significant difference was found between these groups with respect to the risk factors for diabetes and diabetic complications. The mean HDL, LDL, TG, FBS, insulin and cholesterol was not significantly different in both groups. **Conclusion:** In this study 245 patients were evaluated and 123 patients were HP+ while 122 ones were HP- and no significant difference was found between both groups. Also other findings like abdominal circumference, blood pressure, dyspepsia, exercise, family history, lipid profile and GIB were not significantly different between groups. It is concluded that HP and insulin resistance are not associated and HP has no role in development of diabetes in non-diabetic patients.

Key Word(s): 1. *Helicobacter pylori*; 2. insulin resistance; 3. non diabetes

H. Pylori

P-518

Prevalence of gastric mucosal atrophy and intestinal metaplasia in patients with *Helicobacter pylori* infection

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Objective: *Helicobacter pylori* (*H. pylori*) is one of the most common bacteria found in human and cause chronic infection. Recent study conducted in one of private hospitals in Jakarta shows that there is a trend of declining prevalence of *Helicobacter pylori* from 12.5% in 1998 to 2.9% in 2005. **Methods:** This is a case control study using medical records data and histopathology results. Control sample was taken consecutively from negative *H. pylori* patient undergone esophagogastroduodenoscopy procedure in 2013. **Results:** Result The average age for patient with *H. pylori* was 50.45 years slightly higher than patient with negative *H. pylori* ($p > 0.05$). Generally, the prevalence rate among males was slightly lower than females ($p > 0.05$). From Histopathology findings, active chronic gastritis was found in 62.9% patients with positive *H. pylori* than only 12.7% in patient with negative *H. pylori* ($p < 0.000$). Mild (51.4% vs 42.3%) and moderate (15.7% vs 4.2%) atrophy was higher among *H. pylori* positive ($p = 0.012$). Gastric mucous metaplasia was also higher (10% vs 1.4%) among positive *H. pylori* patient ($p = 0.03$). Discussion Histology has been known for a long time as gold standard for diagnosis of *H. pylori* infection. This assessment can identify pathological changes associated with *H. pylori* infection, such as inflammation, atrophy, intestinal metaplasia and also sign of malignancy. The prevalence of mucosal atrophy was the same with a study in Iran but higher prevalence was found for metaplasia in this study. Higher intestinal metaplasia and gastric cancer also found in study from Japan. This difference can be caused by genetic factors, and dietary factors. **Conclusion:** *H. pylori* infection can cause atrophy and intestinal metaplasia in gastric mucosa. Prevalance of gastric intestinal metaplasia caused by *H. pylori* infection is lower in this study compared to the same study abroad.

Key Word(s): 1. *Helicobacter pylori*; 2. histopathology; 3. mucosal atrophy; 4. intestinal metaplasia

H. Pylori

P-519

The efficacy of *Sarcandra glabra* extract alone or combined with antibiotics against antibiotic-resistant *Helicobacter pylori* in vitro

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Objective: To investigate the effect of *Sarcandra glabra* extract (SGE) alone or combined with antibiotics against drug-resistant *Helicobacter pylori* (*H. pylori*) isolated from clinic. **Methods:** The minimum inhibitory concentrations (MICs) of SGE and antibiotics (A-Amoxicillin, C-Clarithromycin, M-Metronidazole, L-Levofloxacin and T-Tetracycline) alone against 25 strains of antibiotic-resistant *H. pylori* were determined by twofold dilution method. The MICs of SGE with antibiotics were determined by agar plate method. The fractional inhibitory concentration indexes (FICI) were calculated to evaluate the combined antibacterial activity. When $FICI \leq 0.5$ was defined as synergism, $0.5 < FICI \leq 1$ as accumulation, $1 < FICI \leq 2$ as independence and $FICI > 2$ as antagonism. **Results:** The MIC of SGE against 25 strains of antibiotic-resistant *H. pylori* were 2.5%~0.625%. The FICI in 5 groups of SGE with antibiotics against 10 antibiotic-resistant *H. pylori* strains were respectively [Form: Drug α + Drug β = FICI (NO. of strains)]: ①S+A \leq 0.5(10), $>0.5(0)$; ②S+M \leq 0.5(7), 0.5~1(3), $>1(0)$; ③S+L \leq 0.5(6), 0.5~1(4), $>1(0)$; ④S+T \leq 0.5(10), $>0.5(0)$; ⑤S+C=0.5(8), 0.5~1(2), $>1(0)$. **Conclusion:** 1. SGE have bacteriostasis against antibiotic-resistant *H. pylori* strains. 2. SGE combined with amoxicillin or tetracycline have synergistic action. SGE combined with Clarithromycin, Metronidazole or Levofloxacin have additivity action. 3. Supplementation with SGE during *H. pylori* eradication therapy maybe improve antibiotic-resistant *H. pylori* eradication.

Key Word(s): 1. *Helicobacter pylori*; 2. antimicrobial combinations; 3. agar dilution method; 4. *Sarcandra glabra* extract; 5. MIC; 6. FIC

H. Pylori

P-520

Effects of Korean propolis on standard triple therapy for *Helicobacter pylori* eradication

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Objective: A small clinical study that showed that propolis can depress *H. pylori*. However, there has been no study that reported about the efficacy of triple therapy combining propolis. Authors tried to find out and compare the *H. pylori* eradication rate by adding Korean propolis to the triple

purpura improved group. **Results:** Fourteen patients were identified as idiopathic thrombocytopenic purpura improved group; twenty-eight patients were considered ITP non-improved group. The total rates of patients with *H. pylori* infection were 52.4% (22/42). The eradication rates of *H. pylori* were better in ITP improved group (8/8, 100%) than ITP non-improved group (6/14, 42.9%). Platelet counts improved by more than $100 \times 10^9 L^{-1}$ in 14 (63.6%) of the 22 patients cured of *H. pylori* infection, 6 (30%) of the 20 patients *H. pylori*-negative patients experienced the same improvement ($p = 0.018$). The eradication of *H. pylori* increased the odds ratio (OR) of the increasing platelet count in ITP patients (OR: 5.35, 95% CI: 1.09-26.33, $p = 0.039$). **Conclusion:** Eradication of *H. pylori* in idiopathic thrombocytopenic purpura patients resulted in improvement of disease activity. The eradication of *H. pylori* increased the odds ratio (OR) of the increasing platelet count in ITP patients (OR : 5.35, 95% CI: 1.09-26.33, $p = 0.039$)

Key Word(s): 1. Helicobacter pylori; 2. eradication; 3. idiopathic thrombocytopenic purpura; 4. platelet count

H. Pylori

P-523

Reversal of endoscopic gastric atrophy during long term follow up after H. pylori eradication

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Objective: Recent studies have indicated that the eradication of *H. pylori* improves the histological gastric atrophy. However, there are no reports on the long-term observation of endoscopic changes of gastric atrophy and its expansion after eradication of *H. pylori*. We investigated the long-term effect of *H. pylori* eradication on the gastric mucosal atrophy assessed by endoscopy. **Methods:** Thirty-eight patients who underwent gastroscopy every 1-3 years after eradication of *H. pylori* from 1998 to 2003 were retrospectively studied. Gastric mucosal atrophy was endoscopically assessed according to the Kimura – Takemoto classification system and scored from 0 to 6 corresponding to C-0 (no atrophy), C-I, C-II, C-III, O-I, O-II, and O-III of the system, respectively. Endoscopic atrophy before eradication were also graded into mild (1-2), moderate (3-4) and severe atrophy (5-6). Follow up periods were divided to pre-eradication, the early (1-5 years after eradication), middle (6-9 years), and late (10-15 years) periods. Successive changes in scores for endoscopic atrophy before and after eradication were analyzed. **Results:** The median of atrophy score was significantly decreased from 3.5 to 3.5 (early: $P = 0.023$), 3 (middle: $P < 0.001$) and 2 (late: $P < 0.001$) after eradication. When stratified based on the atrophic grades before eradication therapy, decreases in the score for atrophy was more evident in the mild atrophy group in comparison with the intermediate and severe groups. **Conclusion:** Eradication of *H. pylori* infection improved gastric mucosal atrophy assessed by endoscopy during the long-term period, especially in the patients with mild atrophy.

Key Word(s): 1. gastric atrophy *H. pylori*

H. Pylori

P-524

New monoclonal antibody-based test for Helicobacter pylori urease in gastric tissue

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Objective: To evaluate a new monoclonal antibody for the urease of *Helicobacter pylori* in gastric tissue biopsy specimens from humans by an immunochromatographic assay. **Methods:** One hundred seven volunteers were enrolled in the study. All of the subjects underwent a ¹³C-urea breath test (UBT) before esophagogastroduodenoscopy. Gastric aspirates were analyzed for pH and ammonia. Six biopsy specimens in the gastric antrum and body were obtained for a rapid urease test (RUT) and histology. Positive results for two of UBT, histology, and RUT confirmed *H. pylori* infection. The new monoclonal antibody-based test (Helicobacter pylori urease test, HPU) for the rapid, qualitative detection of urease was performed with two biopsy specimens in the gastric antrum and body. **Results:** *H. pylori* infection was diagnosed in 73 subjects. The sensitivity, specificity, positive predictive value, and negative predictive value of the new monoclonal antibody-based test was 89%, 74%, 88%, and 76%, respectively. All subjects were divided into two groups – subjects with true positive and true negative results of HPU (group I, 90 subjects) and subjects with false positive and false negative results of HPU (group II, 17 subjects). Ammonia levels in gastric aspirates were 900.5 ± 646.7 and $604.3 \pm 594.3 \mu\text{mol/L}$ in group I and group II, respectively ($p > 0.05$). pH level in gastric aspirates was 3.37 ± 1.64 in group I and 2.82 ± 1.51 in group II ($p > 0.05$). When the diagnostic performance of the HPU test was evaluated with regard to the histological diagnosis of atrophic gastritis or intestinal metaplasia, the sensitivity was higher and specificity was lower in the presence of atrophic gastritis or intestinal metaplasia. **Conclusion:** The new monoclonal antibody-based test can detect *H. pylori* specific antigen in approximately 10 minutes. Gastric aspirate ammonia and pH levels did not affect the test results. Sensitivity was good in the presence of atrophic gastritis or intestinal metaplasia.

Key Word(s): 1. monoclonal antibody-based test; 2. Helicobacter pylori; 3. urease

Table 1 Detection of *Helicobacter pylori* by HPU

<i>H. pylori</i> status	UBT	CLO	Histology	HPU	
Positive (n = 73)	+	+	+	+	45
	+	+	-	+	14
	+	-	+	+	3
	-	+	+	+	3
	+	+	+	-	6
	+	+	-	-	2
	+	-	+	-	0
Negative (n = 34)	-	+	+	-	0
	+	-	-	+	1
	-	-	+	+	0
	-	-	-	+	8
	+	-	-	-	1
	-	+	-	-	3
	-	-	+	-	1
Total					107

A, true positive; B, false negative; C, false negative; D, true negative based on definition of *H. pylori* status, Group I; A and D, Group II; B and C.

Table 2. Sensitivities specificities and predictive values for positive and negative results of HPU in detecting *Helicobacter pylori*.

	Subjects without AG or IM (n = 77)	Subjects with AG or IM (n = 30)	All subjects (n = 107)
Sensitivity	86%	96%	89%
Specificity	82%	43%	74%
PPV	92%	85%	88%
NPV	76%	75%	76%

PPV, positive predictive value; NPV, negative predictive value.

H. Pylori

P-525

Concomitant therapy achieved the best eradication rate for *Helicobacter pylori* among various treatment strategies: a prospective, multi-center, randomized controlled trial

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Objective: Currently, the *Helicobacter pylori* (H. pylori) eradication rate of clarithromycin-based triple therapy has decreased to an unacceptably low level, and novel therapeutic strategies are necessary. **Methods:** A total of 680 patients infected with H. pylori were divided into 4 groups, and each group was treated with a different eradication therapy. Clarithromycin-based triple therapy was applied to the first group (PAC group), whereas the second group was treated with metronidazole-based triple therapy (PAM group). The third group was treated with rabeprazole and amoxicillin, followed by rabeprazole, clarithromycin, and metronidazole (sequential group). The final group was simultaneously treated with rabeprazole, amoxicillin clarithromycin, and metronidazole (concomitant therapy group). In the case of a failure to eradicate H. pylori, second-line quadruple and third-line eradication therapies were administered. **Results:** The eradication rates were 76.2% (109/143) in the PAC group, 84.2% (117/139) in the PAM group, 84.4% (119/141) in the sequential group, and 94.4% (135/143) in the concomitant group ($p = 0.0002$). The second-line therapy was applied to 90 patients, and the eradication rate was 84.4% (76/90). The eradication rate for the third-line therapy was 42.9% (6/14). **Conclusion:** The eradication rate for the concomitant therapy was much higher than those of the standard triple therapy or sequential therapy.

Key Word(s): 1. *Helicobacter pylori*; 2. eradication; 3. drug resistance; 4. concomitant therapy; 5. sequential therapy

H. Pylori

P-526

The relationship between Alzheimer's disease and *Helicobacter pylori*-application of national health insurance database

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Objective: *Helicobacter pylori* (H. pylori) is a risk factor for Alzheimer's disease. We investigated whether H pylori eradication is associated with Alzheimer's disease risk in patients with peptic ulcer diseases. **Methods:** This nationwide cohort study was based on the Taiwan National Health Insurance Database (NHID), which provided data on 30142 patients who were the Alzheimer's disease patients between 1997 and 2008 with a primary diagnosis of peptic ulcer diseases and. The patient population was divided into peptic ulcer diseases and non peptic ulcer diseases and in the peptic ulcer diseases group was divided into received H pylori eradication therapy and no received H pylori eradication therapy eradication cohorts; standardized odd ratios (OR) were determined. **Results:** We examined 405 Alzheimer's disease and with peptic ulcer diseases and H pylori eradication therapy cases and 405 controls. Compared with the group with no use of H pylori eradication therapy, the adjusted ORs were 0.62 (95% CI = 0.37–0.71). **Conclusion:** The results of this study suggest that H pylori eradication may reduce the risk of Alzheimer's disease.

Key Word(s): 1. Alzheimer's disease; 2. *Helicobacter pylori*

H. Pylori

P-527

The efficacy of moxifloxacin-based triple therapy as second-line H. pylori eradication regimen

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Objective: The eradication rate of *Helicobacter pylori* (H. pylori) with traditional triple therapy has declined due to antibiotic resistance, especially clarithromycin and metronidazole. The aim of this study was to determine the efficacy of moxifloxacin-based triple regimen as a second-line treatment of *Helicobacter pylori* infection. **Methods:** Patients who previously failed 1 week of standard triple regimen as indicated by positive 13C-UBT or positive CLO test were enrolled. They received seven days therapy with moxifloxacin 400 mg once a day, rabeprazole 10 mg twice a day and amoxicillin 1,000 mg twice a day. At least 4 weeks after the completion of therapy, the patients conducted the 13C-UBT or CLO test. **Results:** Twenty patients with 10 males were recruited. The mean age of the patients was 50.2 years, ranging from 29 to 67 years. Five patients defaulted follow up. One patient dropped out this treatment due to mild urticaria. The eradication rate (Per Protocol analysis) was 85.7% (12/14).

Conclusion: In consider with little adverse effect and high eradication rates, the moxifloxacin-based triple therapy may be a safe and effective second-line treatment option for *H. pylori* eradication. Extended treatment duration with this regimen may enhance the eradication rate.

Key Word(s): 1. *H. pylori*; 2. moxifloxacin; 3. eradication

H. Pylori

P-528

Primary antibiotics resistance of *Helicobacter pylori* and eradication rate with clarithromycin-based triple drug therapy in Hong Kong

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Objective: Eradication rate for *Helicobacter pylori* infection with clarithromycin-based triple therapy has fallen worldwide. The primary purpose of this study is to find out the current eradication success rate in Hong Kong. Secondary objectives are the primary resistance rate of *Helicobacter pylori* to antibiotics commonly used in eradication regimens; risk factors for treatment failure; and risk factors for antibiotics resistance.

Methods: One hundred and forty-seven treatment-naïve patients were identified by 13C-urea breath test from May 2011 to September 2012. Biopsy samples were taken during esophagogastroduodenoscopy for histological analysis, culture and antibiotics susceptibility testing. Enrolled patients were then treated with lansoprazole 30 mg, clarithromycin 500 mg, and amoxicillin 1 g b.d. for 7 days. Eradication success was evaluated by 13C-urea breath test at least 4 weeks after treatment.

Results: *Helicobacter pylori* eradication was achieved in 82.9% and 85.2% of patients by intention-to-treat and per-protocol analysis respectively. Clarithromycin-resistance was detected in 13.1% of subjects and correlated to an eradication rate of 6.3% ($p < 0.001$). Levofloxacin-resistance was detected in 15.6% of subjects and type 2 diabetes mellitus is a risk factor for levofloxacin-resistance (OR 4.3, $p = 0.019$). Metronidazole-resistance rate was 59.0%. No amoxicillin- or tetracycline-resistances were detected. **Conclusion:** The 7-day clarithromycin-based therapy is still a valid empirical first-line treatment for *Helicobacter pylori* infection in Hong Kong. However, its effectiveness is decreasing owing to the increased prevalence of primary resistance to clarithromycin. Alternative effective regimen is yet to be determined as bismuth is no longer available in Hong Kong, and the resistant rate to levofloxacin is considerable.

Key Word(s): 1. *Helicobacter pylori*; 2. antibiotics resistance; 3. eradication rate

H. Pylori

P-529

Triple therapy, sequential therapy, and concomitant therapy for *Helicobacter pylori* infection in Korea: a multicenter, randomized controlled trial

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Objective: Eradication of *Helicobacter pylori* infection with triple therapy (TT) has been reported to achieve unacceptable rates in Korea. The aim of this study was to compare the efficacy of sequential therapy (ST) and concomitant therapy (CT) with that of TT in Korea. **Methods:** For this multicentre, randomized trial, patients with *H. pylori* infection from 4 centers in Korea were recruited. Patients were randomly allocated to TT (PPI, amoxicillin and clarithromycin for 10 days), ST (PPI and amoxicillin for the first 5 days, followed by PPI, clarithromycin and metronidazole for the next 5 days) or CT (PPI, amoxicillin, clarithromycin and metronidazole for 10 days). **Results:** From March, 2013 a total of 227 patients were enrolled in our study. Seventy nine patients were allocated to the TT, 72 patients to CT group, and 65 patients to the ST group. For ITT analysis, the eradication rates of TT, ST and CT were 59.5% (47/79), 68.1% (49/72), 80.0% (52/65), respectively. For PP analysis, the eradication rates were 79.7% (47/59), 86.0% (49/57), 96.2% (50/52), respectively. CT achieved higher eradication rates than TT and ST. The rate of adverse events and adherence to the medication was similar between the three treatment groups.

Conclusion: Our prospective, multicenter study suggests that concomitant therapy may be better than triple therapy and sequential therapy for eradication of *Helicobacter pylori* in Korea. More data from more patients will be followed and this should allow us to reach more definite conclusions.

Key Word(s): 1. triple; sequential; 2. concomitant; 3. *Helicobacter pylori*; 4. Korea

H. Pylori

P-530

Antibiotic resistance status of *H. pylori* in Jiangxi Province of China

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Objective: To monitor the resistance to metronidazole, clarithromycin, levofloxacin, tetracycline, azithromycin, rifampicin and amoxicillin of

Helicobacter pylori (H. pylori) strains in Jiangxi Province. **Methods:** The tissue samples were collected by gastroscopy biopsy from the outpatients and inpatients with gastric diseases from 2010 to 2014. 653 tissue samples cultured in microaerobic condition were identified as typical H. pylori strains by biochemical and slice checking methods. E-test method was used to measure the minimum inhibitory concentration (MIC) of these identified H. pylori strains resistant to metronidazole, clarithromycin, levofloxacin, tetracycline, azithromycin, rifampicin and amoxicillin. **Results:** Among 653 H. pylori strains, the resistance rate to metronidazole was 76.1% (497/653), and the MIC ranged from 0.016 mg/L to beyond 256 mg/L; to tetracycline, 4.4% (13/653), MIC ranged from 0.016 mg/L to 32 mg/L; to clarithromycin, 15.9% (104/653), MIC ranged from 0.016 mg/L to beyond 256 mg/L; to Levofloxacin, 17.9% (117/653), MIC from 0.02 mg/L to beyond 32 mg/L; amoxicillin 3.1% (20/653), MIC from 0.016 mg/L to 256 mg/L; azithromycin 15% (98/653), MIC from 0.016 mg/L to 256 mg/L; rifampicin 2.5% (16/653), MIC from 0.016 mg/L to 8 mg/L. **Conclusion:** In Jiangxi Province, the resistance rate of H. pylori to metronidazole was the highest (76.1%), and the second was to clarithromycin, Levofloxacin, azithromycin (15.9%, 17.9% and 15% respectively). the resistance rate of H. pylori to amoxicillin, rifampicin and tetracycline was low.

Key Word(s): 1. H. pylori; 2. antibiotics; 3. resistance

H. Pylori

P-531

The efficacy of regimens with PPI, rifabutin and amoxicillin for Helicobacter pylori rescue therapy: a systemic review and meta-analysis

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Objective: To conduct a systematic review and meta-analysis of clinical trials with treatment in one study arm including PPI, rifabutin, and amoxicillin for eradication of *Helicobacter pylori*, thus providing clinical practice guidelines for successful eradication worldwide. **Methods:** Pubmed, Embase, Cochrane Central Register of Controlled Trials, Science Citation Index databases and abstract books of major European, American, and Asian gastroenterological meetings were searched. All clinical trials that examined the efficacy of *Helicobacter pylori* eradication therapies and included PPIs, amoxicillin and rifabutin in one study arm were selected for this systematic review and meta-analysis. Statistical analysis was performed with Comprehensive Meta-Analysis Software (Version 2). Subgroup and sensitivity analyses were also carried out. **Results:** Twenty-six studies were included in the systemic review and meta-analysis. The pooled OR was 0.55 (95% confidence interval : 0.35, 0.85) using a fixed effects model ($I^2 = 18.59\%$, $P = 0.283$;) for triple regimen with PPIs, amoxicillin and rifabutin versus other triple regimens, and the total H. pylori eradication rates were 68.4% (158/231) in the experimental group and 81.9% (222/271) in the control group by ITT analysis, respectively. The eradication rate of regimens with PPIs, rifabutin and amoxicillin was inferior to the combination of levofloxacin and amoxicillin. While the pooled odds ratio (OR) was 1.08 (95%CI: 0.45, 2.58) by random effects model ($I^2 = 66.0\%$, $P = 0.019$) for triple regimen with PPIs, amoxicillin and rifabutin versus quadruple regimens. The pooled eradication rate was 66.4% (99/149) by ITT in experiment group and 67.4% (85/126) by ITT in control group. The incidences of total adverse effects were 21.7% (97/435) in the experimental groups and 26.4% (140/474) in the control groups. The pooled OR was 0.79 (95%CI:

0.34-1.85) by random effect model ($I^2 = 83.4\%$, $P = 0.000$). **Conclusion:** Available data suggest that the effectiveness of regimens with rifabutin, PPIs and amoxicillin for *Helicobacter pylori* rescue therapy may be not superior to that of control regimens.

Key Word(s): 1. *Helicobacter pylori*; 2. amoxicillin; 3. rifabutin; 4. systemic review; 5. meta-analysis

H. Pylori

P-532

Association between Helicobacter pylori infection and estimated glomerulus filtration rate in dyspepsia syndrome

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Objective: It is generally known that *Helicobacter pylori* (H. pylori) infection is associated with renal dysfunction. Many reports suggest that chronic H. pylori infections may be associated with atherosclerosis and inflammations. Atherosclerosis and inflammation will decrease renal function. The aim of this study was to investigate the association between *Helicobacter pylori* infection and creatinin clearance in patient with dyspepsia. **Methods:** This retrospective study was conducted between Januari 2014 until Juni 2014 in Moewardi Hospital Surakarta. Inclusion criteria was dyspepsia syndrome. Exclusion criteria was chronic kidney disease, chronic liver disease, malignancy, infection and diabetes mellitus. Glomerular filtration rate (eGFR) were estimated by Cockcroft-Gault formula. H pylori infection identified by positive biopsy specimen from endoscopy. Statistical analysis using independence t-test and Pearson correlation test with SPSS 20, significant if $p < 0.05$. **Results:** There were 121 patient, 53 man and 68 woman with 34 positive H. pylori and 87 negative H pylori. The mean creatinin was 1.50 ± 2.01 mg/dL, mean ureum 53.88 ± 52.98 mg/dL, and mean eGFR 90.32 ± 104.37 mL/min/1.73 m². There was negative correlation between h pylori infection and eGFR in patient with syndrom dyspepsia ($p:0.002$, $r:-0.378$).

Key Word(s): 1. *Helicobacter pylori*; 2. dyspepsia syndrom; 3. estimated glomerulus filtration rate

H. Pylori

P-533

Effects of Helicobacter pylori eradication on metabolic parameters

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Objective: Introduction : In Japan, due to the improved sanitation and hygiene, the prevalence of *Helicobacter pylori* infection has been decreasing among young people, but its prevalence is still high among middle-aged or elderly people. And more and more people are diagnosed with diabetes in today's Japan. Although a lot has been revealed about the differences of metabolic parameters between people who are infected with *Helicobacter pylori* and people who are not, little has been reported about what kind of differences are made when *Helicobacter pylori*-infected patients with dia-

betes undergo *Helicobacter pylori* eradication. We conducted retrospective research into the differences in metabolic parameters in such cases. **Methods:** About 29 insulin-free patients with type-2 diabetes who underwent *Helicobacter pylori* eradication, we analyzed how seven metabolic parameters changed after *Helicobacter pylori* eradication. The seven parameters were: plasma HDL and LDL cholesterol concentration, fasting blood insulin concentration, HOMA-IR, HbA1c level, body weight, and body mass index. The parameters were measured before *Helicobacter pylori* eradication and six months after *Helicobacter pylori* eradication. **Results:** Before Eradication (mean \pm SD) 6 months after eradication (mean \pm SD) P Value HDL (mg/dl) 66.31 \pm 15.37 64.75 \pm 11.14 0.734 LDL (mg/dl) 105.5 \pm 22.66 98.65 \pm 24.06 0.996 Insulin 10.07 \pm 9.97 11.78 \pm 15.30 0.602 HOMA-IR 4.22 \pm 5.67 3.56 \pm 4.31 0.996 HbA1c (%) 6.33 \pm 0.528 6.38 \pm 0.136 0.654 Body weight (kg) 62.4 \pm 9.9 61.83 \pm 10.78 0.693 BMI 23.03 \pm 3.04 23.12 \pm 3.26 0.704 **Conclusion:** *Helicobacter pylori* eradication seems to have no effect on plasma HDL and LDL cholesterol concentration, fasting blood insulin concentration, HOMA-IR, HbA1c level, body weight, or body mass index.

Key Word(s): 1. *Helicobacter pylori*;

H. Pylori

P-534

Helicobacter pylori infection is not associated with colon neoplasm: single center study in South Korea

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Objective: Evidence concerning the role of *Helicobacter pylori* (*H. pylori*) infection in the development of colon cancer remains controversial. It has been suggested that *H. pylori* constitutes a risk for the development of neoplasm of the colon. We aimed to assess the association between *H. pylori* infection and the risk of colon cancer in single center study, South Korea. **Methods:** From the electronic medical record database, we selected 367 subjects who underwent colonoscopy and esophago-gastro-duodenoscopy with biopsy results from both procedures 174 patients was *H. pylori*-positive (A) and 193 patients showed *H. pylori*-negative (Group B). In the group A, 88 patients (50.57%) had colonic neoplasm and 86 patients (49.42%) was normal colonoscopic finding. In the group B, 88 patients (45.59%) had colonic neoplasm and 105 patients (54.12%) was normal colonoscopic finding. **Results:** In a total of 367 patients, 174 patients showed *H. pylori*-positive as a result of Giemsa stain (Group A) and 193 patients showed *H. pylori*-negative (Group B). In the group A, 88 patients (50.57%) had colonic neoplasm and 86 patients (49.42%) was normal colonoscopic finding. In the group B, 88 patients (45.59%) had colonic neoplasm and 105 patients (54.12%) was normal colonoscopic finding ($p > 0.05$). Presence of gastritis, intestinal metaplasia, polyp, cancer of stomach in duodenoscopy had no association with occurrence of colonic neoplasm ($p > 0.05$). In addition the size and number of adenoma in colon has no relationship with *H. pylori* status. **Conclusion:** In this single center study, we found that *H. pylori* infection does not seem to be related to development of colonic neoplasm. However absence of *H. pylori* exhibits a tendency to normal colonoscopic finding. This result is probably due to high prevalence of *H. pylori* infection in South Korea.

Key Word(s): 1. *H. pylori* infection; 2. colon neoplasm

H. Pylori

P-535

Endoscopic diagnosis of H. pylori infection gastritis patterns by age

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Objective: *H. pylori* infection is a known risk factor for the occurrence of gastric cancer. Therefore its early eradication, particularly in young people, is highly desirable. With the aim of assessing the ability of endoscopy to determine the presence or absence of *H. pylori* infection, endoscopic findings were compared between *H. pylori*-infected and non-infected individuals from different age groups. **Methods:** 418 cases of health diagnosis, with no history of *H. pylori* eradication and who underwent upper gastrointestinal endoscopy and *H. pylori* antibody testing were examined. Endoscopic findings were compared between different age groups of people with or without *H. pylori* infection. These included Kammrötung (Ridge-like redness:RR), Endoscopic Flat Erosive Gastritis (EFEG), Endoscopic Raised Erosive Gastritis (EREG), Atrophic Gastritis (AG: mild, moderate or advanced), Endoscopic Hemorrhagic Gastritis (EHG), Endoscopic Erythematous and Exudative Gastritis (EEG), Endoscopic Congestive Gastritis (ECG), Endoscopic Rugal Hyperplastic Gastritis (ERHG), Nodular Gastritis (NG), Regular Arrangement of Collecting Venules (RAC), Fundic Gland Polyps (FGPs), Hyperplastic Polyps (HPs), and Stomach Xanthomas (XAs). **Results:** In non-infected individuals, statistically significant differences in Kammrötung, EHG, RAC and FGPs were observed. In *H. pylori*-infected individuals, AG (moderate or severe), EEG, ECG, ERHG, HPs, XAs, and NG were observed. There were statistically significant differences in the findings between different age groups. **Conclusion:** Endoscopy could be an adequate method for determining the presence or absence of *H. pylori* infection, further large-scale studies should be performed to confirm these results.

Key Word(s): 1. endoscopic diagnosis *H. pylori*

H. Pylori

P-536

Effectiveness of sequential therapy for Helicobacter pylori eradication in Suncheon, South Korea

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Objective: The standard therapy for *Helicobacter pylori* infection in Korea consists of a triple-drug regimen containing a proton pump inhibitor with two antibiotics such as clarithromycin, amoxicillin, and metronidazole. However, the eradication rate of this regimen is decreasing, mainly due to increased primary bacterial resistance to antibiotics. Sequential therapy is a novel alternative proposal. We aimed to evaluate whether sequential therapy eradicated *H. pylori* infection better than the PPI-based triple therapy in Suncheon, South Korea. **Methods:** 310 patients with proven *H. pylori* infection were to receive either sequential therapy (30 mg of lansoprazole, 1.0 g of amoxicillin, each administered twice daily for the first 5 days, followed by 30 mg of lansoprazole, 500 mg of clarithromycin, 500 mg of metronidazole, each administered twice daily for the remaining 5 days) or PPI-based triple therapy (30 mg of lansoprazole, 1.0 g of amoxicillin, 500 mg of clarithromycin, each administered twice daily for 7 days and for 14 days). Urea breath test was performed four weeks after the treatment. Eradication rates and drug compliance with side effects were compared between three groups. **Results:** Eradication rates of sequential therapy and PPI-based triple therapy for 7 days and 14 days were 90.2% (37/41) and 69.5% (169/243) and 88.5% (23/26) by ITT analysis, respectively. Eradication rates of sequential therapy and PPI-based triple therapy for 7 days and 14 days were 92.5% (37/40) and 71.2% (168/236) and 88% (22/25) by per protocol analysis, respectively. Adverse effects were more frequent in sequential therapy (29.3%) and PPI-based triple therapy for 14 days (26.9%) than PPI-based triple therapy for 7 days (11.3%), but they were tolerable. There was no significant difference in treatment compliance between three groups. **Conclusion:** Sequential therapy is more effective than triple therapy for 7 days for *H. pylori* eradication. Triple therapy for 14 days is also more effective than triple therapy for 7 days for *H. pylori* eradication.

Key Word(s): 1. *Helicobacter pylori*

H. Pylori

P-538

The effects of antimicrobial combination against antibiotic resistant *Helicobacter pylori* of clinical isolates in vitro

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Objective: To illuminate the combination effects of antimicrobial combinations that are combined with each other by 6 common antibiotics (A-Amoxicillin, C-Clarithromycin, M-Metronidazole, L-Levofloxacin, T-Tetracycline, F-Furazolidone) against antibiotic resistant *H. pylori* of clinical isolates in vitro. **Methods:** The susceptibility testing was conducted by agar double dilution method and checkerboard method to measure the minimal inhibitory concentrations (MIC) of 6 single drugs against 33 strains of antibiotic resistant *H. pylori*, then the fractional inhibitory concentration index (FICI) was calculated to evaluate combination effects. When $FICI \leq 0.5$ was defined as synergism, $0.5 < FICI \leq 1$ as accumulation, $1 < FICI \leq 2$ as independence and $FICI > 2$ as antagonism. **Results:** The FIC index in 15 groups of antimicrobial combinations against 33 strains antibiotic resistant *H. pylori* were respectively [Form: Drug α + Drug β : FICI (NO. of strains)]: ①A+C: $\leq 0.5(7)$, >0.5 and $\leq 1(23)$, >1 and $\leq 2(3)$ ②A+M: $\leq 0.5(28)$, >0.5 and $\leq 1(5)$ ③A+L: $\leq 0.5(31)$, >0.5 and

$\leq 1(2)$ ④A+F: $\leq 0.5(3)$, >0.5 and $\leq 1(19)$, >1 and $\leq 2(11)$ ⑤A+T: $\leq 0.5(3)$, >0.5 and $\leq 1(8)$, >1 and $\leq 2(12)$ ⑥C+M: $\leq 0.5(9)$, >0.5 and $\leq 1(24)$ ⑦C+L: $\leq 0.5(3)$, >0.5 and $\leq 1(6)$, >1 and $\leq 2(8)$, $>2(6)$ ⑧C+F: >1 and $\leq 2(26)$, >1 and $\leq 2(7)$ ⑨C+T: >0.5 and $\leq 1(29)$, >1 and $\leq 2(4)$ ⑩M+L: $\leq 0.5(13)$, >0.5 and $\leq 1(14)$, >1 and $\leq 2(6)$ ⑪M+F: >1 and $\leq 2(33)$ ⑫M+T: $\leq 0.5(7)$, >0.5 and $\leq 1(17)$, >1 and $\leq 2(9)$ ⑬L+F: >1 and $\leq 2(17)$, $>2(16)$ ⑭L+T: $\leq 0.5(18)$, >0.5 and $\leq 1(15)$ ⑮F+T: $\leq 0.5(13)$, >0.5 and $\leq 1(20)$. **Conclusion:** 1. In vitro, effects of combinations, such as A+M, A+L and L+T, were mainly synergistic, while A+C, A+F, C+M, C+F, C+T, M+L, M+T and F+T were additive. A+T, C+L, M+F and L+F primarily showed indifferent. It is noteworthy that antagonistic action were also showed in the combinations of C+L(18.2%) and L+F(48.5%). 2. Hence, rational choice of antibiotics to efficient combinations to solve the problem of antibiotic resistant of *H. pylori* is required.

Key Word(s): 1. *Helicobacter pylori*; 2. antimicrobial combinations; 3. agar dilution method; 4. checkerboard method; 5. MIC; 6. FIC

H. Pylori

P-539

Endoscopic and histological changes of gastric adenoma after *Helicobacter pylori* eradication

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Objective: *Helicobacter pylori* infection causes gastric adenoma and gastric cancer through the developments of chronic atrophic gastritis and intestinal metaplasia. The efficacy of *Helicobacter pylori* eradication for existing gastric neoplasia is unknown. This study investigated the efficacy of *Helicobacter pylori* eradication therapy for existing gastric adenoma.

Methods: We reviewed retrospectively 27 patients with gastric adenoma underwent *Helicobacter pylori* eradication therapy from April 1997 to December 1997. We evaluated the endoscopic and histological changes of gastric adenoma more than 3 years. We analyzed the relationship between endoscopic and histological changes and the following clinicopathological factors using univariate analysis: follow-up periods, age, gender, serum pepsinogen level, lesion size, lesion location, and phenotypic expression.

Results: The total mean follow-up periods were 91.9 months. 12 lesions (44.4%) disappeared in endoscopic findings, and 7 lesions (25.9%) disappeared in both endoscopic and histological findings. The mean period of showing endoscopic disappearances were 21.8 months after *Helicobacter pylori* eradication therapy. 14 (51.9%) lesions were not shown any endoscopic changes. In these lesions, 6 (22.2%) lesions were diagnosed intramucosal cancer in the follow-up periods, resulting in performed endoscopic treatments. Univariate analysis revealed that gender ($p = 0.009$), lesion size ($p = 0.025$), and serum pepsinogen 2 level before *Helicobacter pylori* eradication therapy ($p = 0.041$) were significant associated with endoscopic and histological disappearance of lesions. **Conclusion:** *Helicobacter pylori* eradication therapy might effect to some of gastric adenoma disappearing. Therefore, *Helicobacter pylori* eradication therapy can be first therapy for gastric adenoma.

Key Word(s): 1. gastric adenoma; 2. Helicobacter pylori; 3. eradication treatment

H. Pylori

P-540

Infiltrations of mononuclear cell and lymphoid follicle continue to decline for five years even after successful eradication of Helicobacter pylori

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Objective: The infiltrations of mononuclear cell and lymphoid follicle which are chronic immune responses to Helicobacter pylori (HP) infection has been seemed to decline more slowly than neutrophil infiltration after successful eradication of HP. To elucidate the long term course of these infiltrations, we investigated the patients with 5 to 10 years follow-up. **Methods:** (1) A total of 110 patients with more than five years follow-up were evaluated the decline of neutrophil, mononuclear cell and lymphoid follicle at the gastric antrum and corpus scored according to the Sydney classification. (2) A total of 75 patients with more than 10 years follow-up were recruited to compare the changes of these scores between 5 and 10 years after eradication. (3) The cases of five years after eradication (n = 58) and the age-sex matched controls of HP naïve (n = 58) were assessed whether these infiltrations were normalized up to five years. **Results:** (1) Scores of neutrophil and mononuclear cell immediately decreased at 2 months [P < 0.001]. After that, neutrophil had no decline, but mononuclear cell [2 mo/1 y/5 y antrum; 0.97/0.83/0.71, corpus; 0.81/0.72/0.57] and lymphoid follicle [0.31/0.19/0.06, 0.31/0.26/0.13] continued to decline significantly. (2) Compared 5 and 10 years, mononuclear cell decreased at antrum [0.75 to 0.66 P = 0.083]. Lymphoid follicle of both sites decreased but not significantly [0.07 to 0.03 at antrum P = 0.125, 0.09 to 0.03 at corpus P = 0.132]. (3) Among cases and age-sex matched controls, there are no significant differences at five years after therapy. **Conclusion:** The present study elucidated the long term course of inflammatory cell infiltration and concluded that the infiltrations of mononuclear cell and lymphoid follicle continue to decline for five years even after successful eradication.

Key Word(s): 1. mononuclear cell; 2. lymphoid follicle; 3. H. pylori

H. Pylori

P-541

In-house rapid urease test incubated at 37°C for the diagnosis of Helicobacter pylori infection

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Objective: In-house rapid urease test (iRUT) is an attractive method for the detection of Helicobacter pylori because it is rapid, inexpensive, easy to prepare, and requires only visual interpretation. Warming of iRUT by incubating at 37°C may accelerate the color change. This study was undertaken to evaluate diagnostic values of iRUT incubated at 37°C for diagnosing H. pylori infection. **Methods:** Fifty-seven consecutive patients with dyspeptic symptoms attending the endoscopy suite Dr. Sardjito General Hospital were enrolled in this study. Two antral biopsy samples were taken from each patients. The samples were subjected to iRUT and histologic examination as the reference standard. The results of iRUT were read and recorded at 5, 30, 60 minutes, and 24 hours. **Results:** Fourteen (24.56%) patients were infected as defined by histologic examination. The sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy of iRUT were 35.7%, 90.7%, 55.6%, 81.3%, 77.2% at 5 minutes; 42.9%, 86.1%, 50%, 82.2%, 75.4% at 30 minutes; 61.5%, 80%, 50%, 86.5%, 75.5% at 60 minutes; and 100%, 57.5%, 45.2%, 100%, 68.5% at 24 hours, respectively. **Conclusion:** In-house RUT incubated at 37°C has the highest sensitivity and NPV at 24 hours, and has the highest specificity, PPV, and accuracy at 5 minutes. Acknowledgements The authors' work relating to iRUT is based on the Tohoku University Hospital iRUT formula. We thank staffs of the Division of Gastroenterology Tohoku University Graduate School of Medicine, especially Prof. Tooru Shimosegawa and Dr. Akira Imatani.

Key Word(s): 1. rapid urease test; 2. Helicobacter pylori

H. Pylori

P-542

The prevalence of Helicobacter pylori and gastroduodenal pathology in children of native and alien population in Tyva

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Objective: To study prevalence of H. pylori, dyspepsia and erosive gastroduodenitis in children native and alien population in Tyva. **Methods:** The prevalence of H. pylori and dyspepsia were studied in 558 Tuvinians children (223 boys and 335 girls) and 506 Caucasoids children (232 boys and 274 girls) in age from 7 to 17 years in one of the rural areas of Tuva. Esophagogastroduodenoscopy was performed in 90 Tuvinians and 91 alien children. H. pylori was diagnosed by serological method using the

IgG H. pylori determination in blood serum. Dyspepsia was determined using Rome III criteria recommendations (Tack J. et al., 2006). **Results:** The prevalence of H. pylori was 65.6% in Tuvinians children and 45.1% in Caucasoids children (OR = 2.32; CI 1.81-2.97, $p < 0.001$), the prevalence of dyspepsia was 15.6% and 19.2%, respectively (OR = 0.78, CI 0.57-1.07, $p = 0.1$) and the prevalence of erosive gastro-duodenitis was 6.7% and 9.9%, respectively (OR = 0.67, CI 0.24-1, 90, $p = 0.6$). No gender differences were observed in the prevalence of these factors. H. pylori infection was associated with erosive gastro-duodenitis in both populations. Similar relationship was not determined for dyspepsia. **Conclusion:** Ethnic differences are registered in school age children Mongoloid and Caucasoids in Tyva for the prevalence of H. pylori. For dyspepsia and erosive gastro-duodenitis these differences were observed less.

Key Word(s): 1. Helicobacter pylori; 2. prevalence; 3. dyspepsia

H. Pylori

P-543

Association of Helicobacter pylori infection with coronary artery disease: is it a risk factor?

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Objective: Helicobacter pylori (HP) infection is the most common infection worldwide and it looks that coronary artery disease (CAD) is one of extragastrintestinal diseases which was shown to be associated with HP infection in some studies. The aim of this study was to evaluate the association between HP infection and CAD. **Methods:** The study prospectively involved patients with suspected CAD referred for coronary angiography. Patients with creatinine > 2 mg/dL or hepatic failure, anemia, endocrine or neurological diseases or malignancies and HP eradication within the last year were excluded. The coronary angiography was performed using Judkins method and based on the results, the patients were assigned to participate in CAD positive ($> 50\%$ luminal diameter stenosis) and negative groups. Blood samples were collected for biochemical assay and evaluating the association with CAD. The serum HP IgG antibody was checked and seropositivity for HP was detected based on the serum titers of > 30 AU/mL. **Results:** Positive and negative CAD groups consisted of 62 and 58 patients respectively. HP was more prevalent among patients with CAD and with increasing the number of coronary arteries with stenosis, the HP seropositivity increased so that 76.3% of patients with multiple vessel diseases (MVD) and 70% of patients with single vessel diseases (SVD) were HP seropositive versus 50% in control group and this difference was statistically significant between groups (OR=3.86, 95%CI=1.48-10; $P = 0.006$). Positive CAD was significantly associated with HDL level (OR=0.92, 95%CI=0.86-0.96; $P = 0.01$) and ESR (OR=1.07, 95%CI=1.02-1.13; $P = 0.006$). Also, CAD positive patients had higher CRP levels than controls and it was statistically different in SVD group compared to controls ($p < 0.05$). HP seropositive patients had no difference with seronegative ones. **Conclusion:** HP infection is more prevalent in CAD positive patients and in case of proofing causal relationship, it can be considered as a reversible risk factor for CAD.

Key Word(s): 1. Helicobacter pylori infection; 2. coronary artery disease; 3. risk factor

H. Pylori

P-544

Association of Helicobacter pylori IgG antibody with microvascular complications in diabetic patients

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Objective: Chronic complications of diabetes are one of the major causes of morbidity and mortality of this disease and of the most common complications, vascular events have a special role. Although prolonged hyperglycemia appears to play a key role in these events, but the precise mechanisms of these effects are not fully understood, and recent studies have discussed about the role of inflammation. Regarding the effect of infections in systemic inflammation and high prevalence of Helicobacter pylori (HP) in the population, the aim of this study was to investigate the association between HP infection and microvascular complications of diabetes. **Methods:** In this cross-sectional study 211 patients with type II diabetes have been examined. Subjects were divided into two groups (HP+ and HP-) based on HP infection (diagnosed with IgG serology), and the association between these groups and microvascular complications of diabetes including nephropathy (based on protein excretion in 24-hour urine collection), retinopathy (based on examination by an ophthalmologist) and neuropathy (diapason and monofilament examination) has been evaluated. **Results:** Of the 211 subjects studied, 125 (59.24%) were HP+. The mean duration of diabetes was not significantly different in both groups. In this study, we found a significant association between HP infection and diabetic neuropathy ($p = 0.04$), but there was no correlation between HP infection and diabetic nephropathy and retinopathy ($p = 0.2$ and $p = 0.43$, respectively). **Conclusion:** Infection with H. pylori increases the risk of diabetic neuropathy and is considered as a possible risk factor diabetic neuropathy.

Key Word(s): 1. diabetes mellitus; 2. diabetes complications; 3. Helicobacter pylori

H. Pylori

P-545

Association of Helicobacter pylori infection and serum albumin in patients on hemodialysis

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Objective: Helicobacter pylori infection in gastric mucosa may cause systemic inflammatory reaction. We investigated the inflammatory effect of H pylori infection on nutritional factors such as serum albumin in hemodialysis patients and influence of eradication of H pylori on this association. **Methods:** Ninety-eight patients on hemodialysis were divided into 2 groups according to H pylori infection. Eradication of H pylori, 8 weeks after treatment, was confirmed by urease breath test and H pylori stool antigen. Serum albumin, lipid profile, and metabolite levels were checked before and after 8 weeks and 6 months of eradication of H pylori. **Results:** Thirty-nine patients (39.8%) were infected with H pylori. There were no significant differences between the two groups in age, dialysis duration, serum albumin, serum creatinine, blood urea nitrogen, hemoglobin, serum calcium, serum phosphorus, and lipid profile. Thirty-seven patients with H pylori completed the treatment period.

Eradication was successful in 30 patients (81.1%). Eight weeks and 6 months after anti-H pylori drug therapy, the mean serum albumin level significantly decreased from 4.2 mg/dL to 3.6 mg/dL ($P < 0.001$) and 3.7 mg/dL ($P < 0.001$), respectively. Significant decreases were seen in serum cholesterol ($P = 0.001$), blood urea nitrogen ($P = 0.005$), and serum calcium level ($P = 0.03$) and a significant increase in hemoglobin level ($P = 0.02$). **Conclusion:** Our study did not demonstrate nutritional benefits after H pylori eradication treatment, as the level of nutritional markers reduced. This relationship needs to be confirmed by further prospective studies.

Key Word(s): 1. serum albumin; 2. Helicobacter pylori; 3. hemodialysis

H. Pylori

P-546

Noninvasive stool antigen assay for screening of Helicobacter pylori infection and assessing success of eradication therapy in patients on hemodialysis

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Objective: Helicobacter pylori infection can be diagnosed by biopsy-based or noninvasive methods. Our aim was to identify H. pylori-positive patients on hemodialysis by the noninvasive method of H. pylori stool antigen (HPSA) and investigate its diagnostic accuracy for assessment of the eradication of infection after treatment with urea breath test (UBT). **Methods:** Serology, HPSA, and UBT were performed on 87 hemodialysis patients. Infection with H. pylori was confirmed if at least 2 tests were positive. Patients with H. pylori infection received a 2-week course of triple therapy. To evaluate success of eradication HPSA and UBT were done after 8 weeks. **Results:** Eighty-seven patients were enrolled in the study, of whom 39 (44.8%) were proved to have H. pylori infection. The HPSA was positive in the stool specimens of 37 patients (42.5%) and the serology test was positive in 39 (44.8%). The HPSA had a 87.1% sensitivity and a 93.7% specificity for detection of H. pylori infection. Thirty-seven patients completed the treatment period. Success of H. pylori eradication was documented in 30 of the 37 patients (81.1%) based on UBT. After the treatment, the HPSA was negative in 32 of 37 of the stool specimens (86.4%), showing a 42.8% sensitivity and a 93.3% specificity to detect the failure of eradication of H pylori. **Conclusion:** Helicobacter pylori stool antigen assay is a noninvasive reliable tool to screen H. pylori infection before therapy and assess the success of eradication in patients on hemodialysis.

Key Word(s): 1. Helicobacter pylori; 2. hemodialysis; 3. diagnosis; 4. sensitivity and specificity

H. Pylori

P-547

Role of Helicobacter pylori in biliary stone formation and correlation with its gastric infection

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Objective: Recent studies have revealed the presence of Helicobacter species in the biliary system. The aim is to determine whether Helicobacter pylori (HP) infection could be detected in bile obtained at ERCP of patients with biliary stones and to evaluate the correlation with its gastric infection.

Methods: 150 consecutive patients undergoing ERCP for common bile duct (CBD) stones were asked to participate in this study. Bile juice was aspirated after selective cannulation of the CBD and stored at -20°C . Each of the patient samples had been tested for HP by PCR. Two specimens were obtained from the antrum of all patients for HP histopathological examination. **Results:** Helicobacter DNA was detected by PCR in 16 bile samples, 10 of 87 cholesterol gallstones, 4 of 41 black pigmented stones and 2 of 22 brown pigmented stones ($p = 0.383$). Direct sequencing confirmed strains of HP in all bile samples. Antral samples are positive for HP in 103 subjects (68.7%). All of 16 positive bile samples for HP were in patients with HP infection of stomach ($p < 0.001$). **Conclusion:** HP was found in 10.6% bile juice samples of the patients with biliary stone diseases. It may be a just innocent bystander than etiological importance in biliary stone formation. The route of HP infection in biliary diseases may be ascending through the sphincter of Oddi.

Key Word(s): 1. Helicobacter pylori; 2. biliary stone; 3. PCR; 4. gastric infection

H. Pylori

P-548

The relationship of CagA EPIYA motif polymorphism and H. pylori related disease outcomes in China

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Objective: To find out the relationship between CagA EPIYA motif polymorphism and H. pylori related disease outcomes. **Methods:** PCR was performed on 170 clinical H. pylori strains from the first affiliated hospital of Nanchang university to study the polymorphism of CagA EPIYA motif. **Results:** For 170 clinical H. pylori strains, 100% of them have cagA gene. There were 0-4 EPIYA motifs in them, and 4 strains contained 4 EPIYA motifs, including two strains of gastric cancer, and 2 strains containing 2 EPIYA motifs were all chronic gastritis strains. 161 strains containing 3 EPIYA motifs and 3 strains without EPIYA motifs were no significant correlation with diseases. All H. pylori isolates can be divided into 3 sequence types, including AB type (2EPIYA motifs), ABD type (3 EPIYA motifs) and AABD type (4 EPIYA motifs), all of which are oriental type (TIDD). In this study, all strains were identified as TIDD. We further analyzed EPIYA motif polymorphisms and found 2 strains with EPIYA-A mutation were from chronic gastritis. 2/9 strains with EPIYA-B mutations were from gastric cancer, and 7/9 were from duodenal ulcer. These results demonstrated that the EPIYA-B mutated strains had stronger virulence. **Conclusion:** 1. CagA gene positive rate in our study was 100% which was significantly higher than other western countries, and all the cagA gene types are East Asian type. 2. H. pylori pathogenicity enhanced with the number of CagA EPIYA motifs. And the virulence of strains with EPIYA-B mutation was stronger than strains with EPIYA-A mutation and non-mutation.

Key Word(s): 1. Helicobacter pylori; 2. CagA; 3. EPIYA motif; 4. polymorphism

H. Pylori

P-549

A study of Helicobacter pylori outer-membrane (hom) protein B polymorphism in China

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Objective: Detecting homA and homB gene, to determine whether the homA and homB associated with clinical outcome of H. pylori infection, especially with gastric cancer. **Methods:** PCR was performed on 170 clinical H. pylori strains from the first affiliated hospital of Nanchang university to study the presence of the homA and homB. **Results:** 1. The distribution of homA and homB in clinical diseases

	Single homA (+)	Single homB (+)	homA and homB (+)
CSG	10.4% (5/48)	68.8% (33/48)	20.8% (10/48)
DU	13.3% (10/75)	68.0% (51/75)	18.7% (14/75)
GU	20.0% (4/20)	75.0% (15/20)	5.0% (1/20)
GCa	22.2% (6/27)	74.1% (20/27)	3.7% (1/27)*
chi square	2.480	0.630	6.231
p value	0.479	0.890	0.101

Note: *is vs CG p < 0.05

2. After optimizing PCR and sequencing conditions, 59 full-length sequences were obtained ultimately from 145 homB gene positive strains. Among them, the sequencing success rate of gastric cancer (9.5%) was significantly lower than the other three groups (50.0%~66.7%) (p < 0.05).

Conclusion: 1. HomA gene positive rate of H. pylori from China was lower than homB gene, and homB positive rate was much higher than that of Western countries. 2. HomA and homB single positive rate was no significant difference within different diseases, but homA and homB double positive rate in gastric cancer strains was significantly lower than that in chronic gastritis strains. Furthermore, sequencing failure proportion of homB from gastric cancer strains was significantly higher than other three kinds of diseases, suggesting homB gene of gastric cancer strains may occupied complex senior structure and multi-repetitive sequences.

Key Word(s): 1. Helicobacter pylori; 2. outer-membrane protein; 3. HomB

H. Pylori

P-550

The influence of Tim-3 on TLR4 pathways in RAW264.7 infected with H. pylori

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Objective: Macrophages play an important role in H. pylori infection. Toll-like receptor 4 (TLR4) activated macrophages to secrete plenty of cytokines which regulated inflammation and immunity reaction; T-cell immunoglobulin and mucin-domain-containing molecule-3 (Tim-3), an important member of TIM family, was also expressed on macrophages and could impact macrophages function through interacting with TLR4 pathways. Until now, it is unclear that how H. pylori impacts Tim-3 and TLR4 pathways in macrophages. **Methods:** ①RAW264.7 cells were co-cultured with H.pylori SS1 at different bacteria/cell ratio (MOI) at 3h, 6h, 12h, 24h and 48h were detected by MTT assay, respectively. At 12h, the mRNA expressions of Tim-3\TLR4\MyD88 were measured by RT-PCR; ②Tim-3-overexpressing RAW264.7 cells were constructed by transfer pLVX-IRES-ZsGreen-Tim-3 and co-cultured with H.pylori. The mRNA and protein expressions of Tim-3\TLR4\MyD88 were determined by RT-PCR and Western Blot. The concentrations of cytokines (TNF- α , IL-6, IFN- γ and IL-10) in supernatants were measured by ELISA. **Results:** ①RAW264.7 cells were co-cultured with H.pylori SS1 at different bacteria/cell ratio (MOI) at 3h, 6h, 12h, 24h and 48h were detected by MTT assay, respectively. At 12h, the mRNA expressions of Tim-3\TLR4\MyD88 were measured by RT-PCR; ②Tim-3-overexpressing RAW264.7 cells were constructed by transfer pLVX-IRES-ZsGreen-Tim-3 and co-cultured with H.pylori. The mRNA and protein expressions of Tim-3\TLR4\MyD88 were determined by RT-PCR and Western Blot. The concentrations of cytokines (TNF- α , IL-6, IFN- γ and IL-10) in supernatants were measured by ELISA. **Conclusion:** Over-expression of Tim-3 reduces H. pylori-induced inflammation through down-regulating TLR4 pathways expressions and pro-inflammatory cytokines release from RAW264.7 infected with H. pylori.

Key Word(s): 1. Helicobacter pylori; 2. RAW264.7; 3. Tim-3; 4. TLR4

IBD

P-552

Cross-cultural adaptation and development of an environmental factor questionnaire for inflammatory bowel disease in Asia

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Objective: The rapid increase in incidence of inflammatory bowel disease (IBD) in Asia indicated the importance of environmental factors in disease pathogenesis. An Asian-specific questionnaire to investigate the impact of environmental factors, particularly in childhood, on disease development is lacking. We aimed to (i) translate the International Organisation for study of Inflammatory Bowel Disease (IOIBD) environmental questionnaire from English to Chinese, and (ii) develop a Chinese self-administered environmental questionnaire for IBD patients in Asia. **Methods:** (i) Forward translation was independently performed by two bilingual translators, and checked by a bilingual gastroenterologist. A reconciliated version was backward translated and verified. Forward-backward translation was repeated for any major revision. Pilot testing was conducted in 5 patients and test-retest reliability was assessed in 32 IBD patients. (ii) A modified Chinese questionnaire was developed after literature review and the content was verified by 2 gastroenterologists. **Results:** In 32 IBD patients (median age 44, IQR 33-56), test-retest

reliability of the translated questionnaire showed moderate to strong agreement in 85 of 87 questions (98%) (kappa or ICC, 0.5-1.0). Modifications were made to 2 questions with low kappa coefficient based on consensus. Subsequently, a Chinese version 39-item environmental questionnaire was developed. The items were grouped into 5 areas (childhood immunizations, hygiene conditions, dietary habits, smoking and lifestyle factors). Test-retest reliability of this new questionnaire on 49 subjects showed moderate agreement in most questions. **Conclusion:** The Chinese version of Environmental Factor questionnaire is valid and reliable. Further validation in other Asian populations may improve our understanding on environmental exposure in IBD aetiology.

Key Word(s): 1. inflammatory bowel disease; 2. questionnaire; 3. environmental factor

IBD

P-553

Risk factors for bowel resection in Chinese with inflammatory bowel disease

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Objective: Patients with Inflammatory Bowel Disease (IBD) are primarily managed with medical treatment. However, for patients with severe disease, many required bowel resection eventually. This study aims to evaluate the risk factors associated with bowel resection among patients with IBD. **Methods:** This study was a retrospective cohort study. Prevalent cases were identified from hospital record in Prince of Wales Hospital. Data were collected by reviewing medical notes. **Results:** Four hundred ninety-nine IBD cases [234 Crohn's disease (CD), 259 ulcerative colitis (UC), mean age 33, disease duration 8 years] were identified. Stricturing (Hazard ratio, 5.38; 95% CI, 2.76-10.48; $P < 0.001$) and penetrating disease behavior (HR, 13.151; 95% CI, 6.54-26.46; $P < 0.001$) were significant risk factors for surgical resection in CD, while colonic disease was a significant protective factor (HR, 0.395; 95% CI, 0.180-0.896; $P = 0.021$). Age of onset below 18 was a significant risk factor (HR, 1.963; 95% CI, 1.21-3.20; $P = 0.007$) for the use of immunosuppressants in CD. Extent of disease was a significant factor associated with surgical resection ($p = 0.012$) in univariate analysis but not in multivariate analysis. Extensive disease in UC was a significant risk factor in multivariate cox model (HR, 3.558; 95% CI, 1.32-9.58; $P = 0.012$) for primary use of immunosuppressants. **Conclusion:** In CD, colonic disease were associated with decreased risk while stricturing and penetrating behavior were associated with increased risk of surgical resection. In UC, extensive disease was associated with the need for immunosuppressants.

Key Word(s): 1. inflammatory bowel disease; 2. bowel resection

Immunology/Microbiology

P-555

A comparison of efficacy of 6 months and 9 months of intermittent anti-tuberculous therapy for abdominal tuberculosis (intestinal and peritoneal): a randomized controlled trial

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Objective: Whether patients with abdominal tuberculosis (both gastrointestinal and peritoneal) should be treated with six months or nine months is a debatable. There is also a lack of data on the efficacy of short course intermittent therapy in treatment of abdominal tuberculosis. We conducted a multicenter single blinded randomized controlled trial to assess the efficacy of 6 months and 9 months of anti-tuberculous therapy (ATT) in abdominal tuberculosis using Directly Observed Therapy Short Course (DOTS). **Methods:** Of 499 patients screened, 197 patients with abdominal tuberculosis (gastrointestinal-154, peritoneal-40, mixed-3) were randomized to receive 6-mo (Group A, $n = 104$) and 9-mo (Group B, $n = 93$) of ATT using DOTS strategy. All patients were evaluated for primary end point (complete clinical response, partial clinical response, no response, or death) and secondary end point (mucosal healing). Patients were followed up further for one year after completion of treatment to assess recurrence.

Results: Both groups had similar baseline characteristics, clinical manifestations, site of disease, proportion of definitive or presumptive diagnosis of tuberculosis. Per protocol analysis showed no difference in complete clinical response (91.5% vs 90.8%, $P = 0.882$) between group A and group B. Intention to treat analysis also showed no difference between the two groups, complete clinical response being 75% vs 75.8%, $P = 0.895$. Over follow up for one year, one patient had recurrence of disease elsewhere in group A. **Conclusion:** Short course intermittent treatment for 6 months is as effective as 9 months in the management of abdominal tuberculosis. There was no difference in the recurrence rate at one year of follow up.

Key Word(s): Intestinal tuberculosis, Peritoneal tuberculosis, Randomized controlled trial

causes various intestinal symptoms with relatively high incidence, though most patients with *B. aalborgi* infection are asymptomatic. *B. aalborgi* may be commensal in the human intestine. In this study, we treated five HIS patients with antimicrobial eradication therapy, after which their clinical symptoms disappeared in four of the five patients. These cases suggest that *B. pilosicoli*-positive HIS patients with intestinal symptoms should be treated with a antimicrobial eradication therapy.

Key Word(s): 1. human intestinal spirochetosis; 2. *Brucyspira pilosicoli*; 3. *Brachyspira aalborgi*

Interventional Radiology

P-564

Safety and outcome of de nove two third PTFE-covered nitinol stent for palliation of biliary obstruction secondary to peripancreatic cancer

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Objective: Uncovered metal stents rather than covered metal stents are commonly used for palliation of biliary obstruction secondary to peripancreatic cancer because of the low risk of stent migration. But de nove two third PTFE-covered nitinol stent have advantage at low reintervention rate and safety because both large and silicone covering prevents leakage and tissue ingrowth. The goal of this study was to evaluate the safety and efficacy of de nove two third PTFE-covered nitinol stent for the palliative treatment of malignant biliary obstruction. **Methods:** Five patients (mean age 69.2 years) with peripancreatic cancer were retrospectively involved and underwent endoscopic retrograde cholangiopancreatography and newly designed two third PTFE partially covered self-expandable metal stents placement. The de nove partially covered SEMS (Niti-S stent; Taewoong Medical) is made with triple layer which is an PTFE (polytetrafluoroethylene) membrane sandwiched between two uncovered nitinol wires. Silicone covering prevents the risk of tumor ingrowth. Differently than traditional, this stent was longer covered. We evaluated self-expandable metal stents patency, survival and reintervention-rate after two third covered self-expandable metal stents placement during 6 months. **Results:** Five stents were placed successfully in all of 5 patients. One patient died without signs of stent dysfunction. All patients did not need to repeat procedures. All patients experienced adequate palliative drainage for the remainder of their lives. There were no immediate complications. Stent insertion resulted in acute elevations of the amylase and lipase levels one day after stent insertion in all patients but it just bact to normalize spontaneously. The bilirubin levels were significantly reduced one week after stent insertion. The 30 day mortality rate was zero. **Conclusion:** The de nove two third PTFE-covered nitinol stent is safe to use with acceptable complication rates and effective for palliation of biliary obstruction secondary to peripancreatic cancer.

Key Word(s): 1. PTFE-covered nitinol stent; 2. biliary obstruction; 3. peripancreatic cancer

Intestine – Absorption/Secretion

P-565

Diosmectite effects on the rotavirus-induced oxidative stress, enterotoxic and cytotoxic damages in human enterocytes

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Objective: Rotavirus (RV) induces a severe gastroenteritis in children and induces a sequence of enterotoxic and cytotoxic effects in enterocytes. Diosmectite (DS) has been included in the ESPGHAN guidelines for management of gastroenteritis. The aim is that DS prevents RV-induced ion secretion, epithelial damage and oxidative stress in an in-vitro intestinal experimental model. **Methods:** RV was incubated with DS (100 mg/ml) for 60 min at 37°C. The supernatant of this preparation was used to infect Caco-2 cells. The cytotoxic and enterotoxic effects were evaluated by the transepithelial resistance (TER) and the short circuit current (Isc) in Ussing Chambers. NSP4 expression was evaluated by western blot. Reactive oxygen species (ROS) and reduced (GSH)/oxidated (GSSG) glutathione ratio were assessed using dichlorofluorescein (DCF) and a colorimetric assay. Immunofluorescence methods were used to evaluate the actin structure and RV infected cells. **Results:** DS decreased RV-induced chloride secretion (Isc 0.039 ± 0.002 vs 0.25 ± 0.09 $\mu\text{A}/\text{cm}^2$; $p < 0.05$) and reduced NSP4 expression. DS reduced the RV-induced ROS production (29 ± 3.6 vs 115 ± 33.8 RFU; $p < 0.05$) and GSH/GSSG ratio (1.5 ± 2.1 vs 0.1 ± 0.3 RFU; $p < 0.05$). The actin staining revealed that RV altered the cytoskeleton structure already after 24 hours post-infection but this damage was not detected in DS pretreated-virus. TER measurement indicated that DS reduced the cytotoxic damage induced by RV at 24 hours but not at 48-72 hours post-infection ($p < 0.01$). Finally, DS reduced the infected cells at 2 and 3 days post-infection. **Conclusion:** DS is able to significantly inhibit the chloride secretion and oxidative stress in RV-infected enterocytes. The short-term cytotoxic damage is also prevented. These data provide a new mechanism for the efficacy of DS in acute gastroenteritis.

Key Word(s): 1. rotavirus; 2. diosmectite; 3. ion secretion; 4. mucosal damage; 5. oxidative stress

Intestine – Absorption/Secretion

P-566

Structural and functional changes in the tight junctions in asymptomatic and serology negative first degree relatives of patients with celiac disease

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Objective: In addition to genetic susceptibility and exposure to environmental triggers, abnormalities in barrier functions of small intestine is

initiating event in pathogenesis of autoimmune diseases including celiac disease (CeD). 10-15% of first degree relatives (FDRs) of CeD patients develop CeD. Entry of antigen (gluten peptides) is initial step in pathogenesis of CeD; it is therefore intriguing to know structure and function of tight junctions in anti-tTG Ab negative FDRs of CeD. **Methods:** The ultrastructure of tight junctions were studied in 12 FDRs and 12 controls, all asymptomatic, anti-tTG Ab negative and having normal light microscopy (Marsh grade 0). The expression of key tight junction proteins (ZO-1, Occludin, Claudin-2, 3 and 4 and JAM-A) and Zonulin was studied in 24 anti-tTG Ab negative FDRs and 24 controls using qPCR and immunohistochemistry. Functional assessment of tight junctions was done by measuring intestinal permeability (using lactulose mannitol ratio, LMR using HPLC) in 97 asymptomatic, anti-tTG Ab negative FDRs and 75 healthy controls. Serum zonulin level was also measured in 172 anti-tTG negative FDRs and 198 controls. **Results:** Ultra-structural abnormalities such as dilatation of tight junction (p = 0.0037) and loss of pentalaminar structure (p = 0.001) were more common in FDRs compared to controls. The LMR was significantly increased in FDRs as compared to controls [0.48 (0.25-0.94) v/s 0.17 (0.07-0.53), (p = 0.05)]. There was significant under-expression of tight junction proteins ZO-1 (p = 0.006) and occludin (p = 0.019) and over-expression of claudin-3 in FDRs than controls. There was no significant difference in serum zonulin level in FDRs compared with controls (p = 0.154). **Conclusion:** Even asymptomatic, anti-tTG-Ab negative and with normal histology FDRs have both ultra-structural and functional abnormalities in tight junctions. These findings further indicate that abnormality in paracellular route is an initial pathogenic event and allows entry of antigen through the tight junctions and may have therapeutic implications.

Key Word(s): First degree relatives; Celiac disease; Tight junctions; intestinal permeability; Zonulin

Intestine – Absorption/Secretion

P-567

Increased caloric extraction in neonatal intestine by early microbial colonization stimulates infant growth

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Objective: To see the metabolic and growth promoting effect of intestinal microflora on neonatal mice. **Methods:** Naturally inhabiting commensal intestinal bacteria were isolated from mouse fecal samples and taxonomically classified through morphological observation, biochemical typing, and/or 16S rDNA typing. The isolated Probiotics, Bacteroidetes, Firmicutes, or a combination of the Bacteroidetes and Firmicutes groups (B/F) were fed to germ-free (GF) neonatal mice immediately after birth, and the effect on growth was monitored periodically by measuring the change in body weight. **Results:** The immediate colonization of neonatal mice with the Bacteroidetes, Firmicutes, or combined groups resulted in an increased gain in body weight compared to the non-colonized, GF controls. The Firmicutes group of bacteria most significantly increased the body weight of neonatal mice compared to GF control [34.55±0.86 g (Firmicutes) versus 27.7±0.88 g (GF); n = 13–15; p < 0.05]. Unexpectedly, the colonization with a group of probiotics bacteria was fatal to the neonates. These results suggest that the immediate intestinal colonization of low birth weight infants with the Firmicutes group of bacteria could be an ideal therapeutic treatment for boosting proper development and growth of the infants. **Conclusion:** In conclusion, these studies are showing that the Firmicutes group of bacteria has an excellent potential as a therapeutic agent for weight gain of neonates but application of probiotics in an attempt to activate weight gain of neonate should be reconsidered.

Key Word(s): Na

Intestine – Absorption/Secretion

P-568

Effect of zinc on altered intestinal ion-transport, barrier function and cytokine release by shigella infection in T84 cells

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Objective: Zinc (Zn) has emerged as one promising approach against diarrhea. However the mechanism linking Zn to improve inflammatory diarrhea caused by *Shigella* sp remains to be elucidated. This study aims at better understanding of underlying physiological mechanisms of Zn to limit inflammatory diarrhea. **Methods:** Human colonic T84 cells were grown onto transwell inserts for measurements of permeability to non-charged particles, transepithelial electrical resistance (TER), short-circuit current (Isc) and dilution potential (DP) in using chamber. Immunofluorescence and Western-blot analysis were examined to assess the localization of tight junction (TJ) and ion transport proteins. Bacterial adherence and invasion was quantified and inflammation was determined by cytokine assay. **Results:** Cells infected with *Shigella flexneri* 2a caused reduction of TER by ~71% [3500 ± 1.2 vs. 1000 ± 1.5 Ω.cm²] and DP by ~65% [4 ± 1.2 vs. 1.5 ± 0.3 mV]. This was prevented in the presence of apical Zn. An increase of paracellular flux of 4 kDa dextran [2.1 ± 0.6 vs. 0.8 ± 0.2 µg/3.5 hr/cm²] compared to 70 kDa dextran in infected cells while in the presence of Zn, flux of 4 kDa dextran was reversed by 52%. Immunofluorescence study revealed removal of claudin2 and 4 from the level of TJ, correlated with the loss of TER and DP in *Shigella* infected cells. This effect was reversed in the presence of Zn. Electrogenic studies in Ussing chambers demonstrate reduced cAMP and Ca²⁺ induced Chloride secretion (Cl⁻) in infected cells, while Zn ameliorate this transport function. Zn administration inhibits *Shigella* invasion along with IL-6 and IL-8 secretion in infected T84 cells. **Conclusion:** We conclude that *Shigella* infection caused (1) altered barrier function and Cl⁻ secretion (2) stimulate proinflammatory cytokines. Zn reconstitute these transport and barrier functions along with pro-inflammatory cytokines, thus Zn may have potential therapeutic value in inflammatory diarrhea.

Key Word(s): 1. zinc; 2. inflammatory diarrhea; 3. chloride secretion; 4. tight junction

Intestine – Absorption/Secretion

P-570

Intestinal obstruction due to intramural hematoma caused by systemic lupus erythematosus

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Objective: To introduce an uncommon cause of intestinal obstruction and intramural hematoma. **Methods:** The medical course of a rare patient with intestinal obstruction and odynuria was presented in brief. **Results:** We present a case of a 25-year old man who had suffered a sudden abdominal pain and odynuria for three days. Microscopic hematuria was found. The prothrombin time was 18 seconds and the activated partial thromboplastin time was 102 seconds. The abdominal CT showed the intestinal obstruction due to an intramural hematoma of the colon. The symptoms were aggravated by vitamin k and relieved by corticosteroids. However, the diagnosis of systemic lupus erythematosus can only be made a month later when the antinuclear antibody became positive. **Conclusion:** Intestinal obstruction due to intramural hematoma can be caused by systemic lupus erythematosus.

Key Word(s): 1. intestinal obstruction; 2. systemic lupus erythematosus

Intestine – Absorption/Secretion

P-571

Small bowel obstruction caused by extramedullary hematopoiesis in primary myelofibrosis

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Objective: To introduce an uncommon cause of intestinal obstruction. **Methods:** The medical course of a rare patient with small bowel obstruction was presented in brief. **Results:** Here we report a rare case of primary myelofibrosis who suffered from anemia, small bowel obstruction due to extramedullary hematopoiesis and ascites due to portal hypertension. The diagnosis is depended on pathology and a little difficult to be made before operation. The ascites was controlled by diuretics well. **Conclusion:** Extramedullary hematopoiesis can be the cause of intestinal obstruction.

Key Word(s): 1. small bowel obstruction; 2. extramedullary hematopoiesis; 3. primary myelofibrosis

Intestine – Absorption/Secretion

P-572

Small bowel obstruction due to intramural hematoma caused by superwarfarin poisoning

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Objective: To introduce an uncommon cause of intestinal obstruction. **Methods:** The medical course of a rare patient with small bowel obstruction and hematuria was presented in brief. **Results:** A 67-year old man with a history of taking warfarin suffered a sudden abdominal pain and then macroscopic hematuria. The prothrombin time was 82 seconds and the abdominal CT showed small bowel obstruction due to an intramural hematoma. The patient was cured by fasting and supplementation with

plasma and vitamin k. **Conclusion:** Over dose of warfarin can cause intramural hematoma and intestinal obstruction.

Key Word(s): 1. small bowel obstruction; 2. hematoma; 3. warfarin

Intestine – Absorption/Secretion

P-573

Intestinal pseudo-obstruction caused by systemic lupus erythematosus.

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Objective: To introduce a rare cause of intestinal pseudo-obstruction. **Methods:** The medical course of a rare patient with intestinal pseudo-obstruction caused by systemic lupus erythematosus was presented in brief. **Results:** A 32-old woman suffered intestinal obstruction for 3 weeks which is characterised by ineffective intestinal motility, clinical and radiological evidence of intestinal obstruction while there is no identifiable mechanical lesion. The diagnosis of systemic lupus erythematosus was made depending on laboratory tests. Thus intestinal pseudo-obstruction serves as the rare first manifestation of systemic lupus erythematosus. A successful treatment needed the combination of high-dose intravenous corticosteroids and neostigmine, while the common laxative did not work. **Conclusion:** Systemic lupus erythematosus can present as intestinal pseudo-obstruction as the first manifestation.

Key Word(s): 1. systemic lupus erythematosus; 2. intestinal pseudo-obstruction

Intestine – Absorption/Secretion

P-574

Meckel's diverticulum with ectopic pancreas and diaphragm-like ileal ulceration presenting with small bowel hemorrhage – diagnosis with a single balloon enteroscope

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Objective: Meckel's diverticulum is a rare congenital anomaly with an incidence of 0.2-3.0%. Small bowel bleeding is the most common presentation but it can also manifest as intussusception, strangulation, diverticulitis and perforation. **Methods:** We present a case report of a patient who presented on multiple occasions with obscure small bowel bleeding from a Meckel's diverticulum. **Results:** A 27-year-old male presented twice with hematochezia over a 2-year period. His evaluation included a normal gastroscopy and a colonoscopy which showed blood in the terminal ileum. Capsule endoscopy confirmed distal small bowel bleeding and single balloon enteroscopy was attempted, but was unsuccessful due to visualisation obscured by blood. A mesenteric CT angiogram was normal and the Technetium-99 m pertechnetate scintigraphy scan showed radiotracer uptake in the stomach and urinary bladder. He presented to our hospital one year later with the 3rd episode of hematochezia. The mesenteric CT angiogram identified an area of ileal outpouching with enhancement and no active haemorrhage. Retrograde single balloon enteroscopy showed a diaphragm-like luminal narrowing associated with ulceration and scarring in the proximal ileum. Beyond it, was a diverticulum extruding a small amount of stale blood. The area was tattooed and clipped for localization. Biopsies confirmed gastric metaplasia. A repeat Meckel's scan with

SPECT-CT imaging showed radiotracer uptake in the diverticulum adjacent to the clip. Laparoscopic ileum resection was performed and the specimen contained a 4.5 cm diverticulum with ectopic gastric and pancreatic tissue. **Conclusion:** Meckel's diverticulum is associated with small bowel peptic ulcerations. These may present with haemorrhage and a diaphragm-like narrowing of the intestine. A Meckel's scintigraphy scan although diagnostic, may be false negative at times. These patients can be further evaluated with balloon enteroscopy. Surgical excision is the recommended treatment and the co-existence of ectopic pancreatic tissue is an extremely rare occurrence.

Key Word(s): 1. Meckel's diverticulum; 2. ectopic pancreas; 3. single balloon enteroscopy

Nerve Gut and Motility

P-575

Autonomic nerve system dysfunction in achalasia

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Objective: Achalasia is one of the most common esophageal motility disorder which is characterized by dysphagia and noncardiac chest pain. Various pathogenesis of achalasia has been suggested that hereditary, degenerative, autoimmune and infectious factor. Impairment of vagal function has been reported in achalasia. Therefore, we aimed to evaluate the autonomic nerve system (ANS) dysfunction in achalasia and correlation of ANS dysfunction and clinical significance in achalasia. **Methods:** Nineteen patients with achalasia (6M/13F; 47.1 ± 16.3 years) and 10 healthy peoples (4M/6F; 34.8 ± 10.7 years) were prospectively enrolled at Gangnam Severance hospital from June 2013 to June 2014. All patients completed questionnaire for ANS dysfunction symptoms and heart rate variability test (HRV). **Results:** ANS dysfunction symptoms were presented in thirteen patients with achalasia (69%) and three controls (30%). ANA dysfunction score was significantly higher in patients with achalasia than that of control (P-value=0.035). There were no statistical differences in standard deviation of all normal RR intervals, high frequency (HF), low frequency (LF), LF/HF ratio in HRV test. At subgroup analysis between female achalasia patients and control, cardiac activity that indicating susceptibility to cardiac overload was significantly higher in female achalasia patients (P-value=0.036). Cardiac activity (P-value=0.004) and endurance of stress (P-value=0.004) were significantly higher in achalasia patient with ANS dysfunction symptoms. **Conclusion:** ANS dysfunction symptoms are common in patients with achalasia. In this study, achalasia patients with ANS dysfunction symptoms or female gender showed an increased cardiac activity. We should more be paid attention to the cardiac overload in achalasia patient with ANS dysfunction symptoms or female gender.

Key Word(s): 1. achalasia; 2. autonomic nerve system; 3. HRV

Nerve Gut and Motility

P-576

Microscopic colitis is a functional gastrointestinal disorder in Asia?

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Objective: The diagnosis of microscopic colitis (MC) relies on identification of histopathological changes such as lymphocytic inflammation or thickened collagenous band in biopsy specimens of colon in patients with chronic diarrhea. The etiology of MC is most likely multifactorial, and some drugs could be caused or worsened MC. There is a lack of information on the long-term prognosis of MC in Asia. We investigated an evidence of inflammatory activation and long-term prognosis in the patients with MC. **Methods:** The patients with chronic loose stool (over 4 weeks) were performed by colonoscopy and random biopsy of colonic mucosa. We searched for drug consumption, manner of treatments, symptom questionnaire and long-term prognosis by recently telephone interview (from Jan. 2004 to Mar. 2012). Indirect evidences of inflammatory activation were checked by immunohistochemical stain such as TLR4, NOD-2, COX-2 and NK- κ B. **Results:** The prevalence of MC was 12.0% (15/125) in patients with chronic loose stool from Jan. 2004 to Dec. 2009. Average period of treatment was 12.4 month (1 week to 25 months). The consumption of NSAID, ACE inhibitors, calcium antagonists and statin were more frequent in MC than in non-MC group. Especially, NSAID consumption is more related with collagenous colitis. Expression of TLR4 was significantly increased in MC than in non-MC group. Expression of mast cell (CD117) also increased in MC. Clinically, 75–85% of patients in MC were compatible with functional diarrhea in Rome III criteria. Long-term prognosis of MC was favorable in a total of 28 patients, and only 2 patients have taken medication (ramosetron and intermittent loperamide). **Conclusion:** Low grade inflammation and favorable long-term prognosis of MC might suggest a possibility of functional gastrointestinal disorder in Asia, and pharmaceutical verification should be important.

Key Word(s): 1. microscopic colitis; 2. low-grade inflammation; 3. prognosis

Nerve Gut and Motility

P-577

The effect of mosapride on postoperative ileus after thoracic surgery; prospective case control study

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Objective: Postoperative ileus (POI) prolongs hospital stays and makes increased medical costs. There were many studies about POI of abdominal surgery, but it was not well known about POI of thoracic surgery.

Ambulation and diet were known as effective treatment of POI. This study was designed prospectively to ensure that other treatment could resolve POI after thoracic surgery **Methods:** All patients were applied to ambulation and diet. Control group (group A) were applied to ambulation and diet. Same dose of oral NSAIDs and patient controlled analgesia were given to all group of patients to control pain after operation. Same protocols of anesthesia, operation method and transfer time to general ward after post operation were applied to all group of patients. Case group patients were divided two groups. Hot bag and massage on abdomen as physical therapy were applied to group B. Gum chewing and administration of 5 mg mosapride for three times a day as stimulation of digestive system were applied to group C. Gas out, defecation, abdominal circumference, and abdominal discomfort and vomiting was evaluated. **Results:** From March, 2012 to April 2013, total 84 patients were enrolled. Control group patients are 29 (34.5%), B group are 30 patients (35.7%) and C group are 25 patients (29.8%). The gas out, defecation, abdominal circumference, abdominal discomfort and vomiting were not significance between groups (respectively, p-value was 0.54, 0.38, 0.65, 0.61 and 0.46) **Conclusion:** Physical therapy and stimulation of digestive system were not effective to POI after thoracic surgery in this study. There was not additional effects of mosapride on POI

Key Word(s): 1. postoperative ileus; 2. thoracic surgery; 3. mosapride

Nerve Gut and Motility

P-578

Utility of esophageal manometry in evaluation of dysphagia in patients with normal endoscopy

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Objective: EGD, Barium swallow (BaS) and high-resolution manometry (HRM) are complimentary investigations in dysphagia evaluation. HRM may be superior in evaluation of motility disorders. This study evaluates the utility of esophageal manometry for diagnosis of normal endoscopy dysphagia. **Methods:** From a prospective database of patients undergoing HRM (N), those with dysphagia and normal EGD (n) were included. Study period – 24 months (April 2012 – March 2014). HRM was performed using 16-channel water perfusion based system and data was analyzed using unique Trace™ software. Chicago classification was used for reporting and nomenclature. **Results:** N = 310, n = 78 (25.1%), M: F – 42 : 36 (1.17: 1), mean age – 45 years (range 19–80). Manometry findings: achalasia cardia (AC) – 33 (42%), non-specific motility disorder with focal peristaltic failure – 11 (14.1%), ineffective esophageal motility – 6 (7.7%), nutcracker esophagus – 5 (6.4%), diffuse esophageal spasm – 3 (3.8%), neuromuscular dysphagia related to UES – 2 (2.6%), normal HRM – 8 (10.3%). AC group – subtype – Type 1–4 (12%), Type 2–25 (76%), Type 3–4 (12%). M: F ratio (Types 1, 2 and 3) – 1: 1, 3: 1, 1.2: 1 respectively. 10 patients underwent pre and post POEM HRM. All showed post procedure reduction in basal LES pressure. **Conclusion:** HRM has high sensitivity (90%) to diagnose motility disorders in patients with dysphagia and normal EGD. Achalasia cardia was the commonest disorder in our study. **Key Word(s):** 1. manometry; 2. high resolution manometry; 3. oesophageal motility disorder; 4. achalasia cardia; 5. dysphagia

Nerve Gut and Motility

P-579

Sonologically detected non alcoholic fatty liver disease (NAFLD) in apparently healthy adults

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Objective: This hospital-based study was done to see the prevalence of sonologically detected non alcoholic fatty liver disease and associated factors in the apparently healthy adult population. **Methods:** Apparently healthy and non alcoholic company of the patients visiting the Centre of Nuclear Medicine and ultrasound, Sylhet were subjected to abdominal ultrasonography to see the presence of fatty liver. Demographic features and other relevant data were collected in a semi structured questionnaire to find out the associated factors for NAFLD. **Results:** Total 1019 persons with mean age of 37.23 years were included in the study. Among them 703 (69%) were female and 316 (31%) were male. Out of them 189 (18.5%) persons had sonologically detectable nonalcoholic fatty liver disease. NAFLD was more prevalent in male than female (25.6% vs. 15.4%, P 0.000). In univariate analysis NAFLD were more. **Conclusion:** Sonologically detected nonalcoholic fatty liver disease (18.5%) is common in our apparently healthy adults. BMI over 23 kg/m² was the most important predictor for NAFLD.

Key Word(s): 1. sonologically detected non-alcoholic fatty liver disease; 2. healthy adults; 3. prevalence and associated factors

Nerve Gut and Motility

P-580

The effect of biological feedback treatment of the outlet obstructive constipation

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Objective: To study the effect of biological feedback treatment of the outlet obstructive constipation. **Methods:** A analysis of the clinical data of 56 cases of biological feedback treatment of the outlet obstructive constipation was made. **Results:** Among 54 cases who completed the biological feedback treatment, the results of rectal manometer detection in 35 cases indicated that the rectum sensitivity threshold and the maximum tolerance capacity and recto-anal inhibitory reflex decreased, compared with those before treatment. Paradoxical contraction of pelvic floor disappeared and normal bowel movement was regained; in cases the symptoms were improved, including times of bowel movement, functional constipation and anorectic distention. The effective rate of biofeedback treatment was 92.6%. Only 4 cases were ineffective and 2 cases stopped treatment. **Conclusion:** The short-term effect of biological feedback treatment for the outlet obstructive constipation is satisfactory, and has advantages of low cost and no need for hospital admission.

Key Word(s): 1. outlet obstructive constipation; 2. biological feedback treatment; 3. functional constipation

Nerve Gut and Motility

P-581

Intracerebroventricular injection of ghrelin-effect and mechanism on the small intestinal motility

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Objective: The central effects and mechanism of ghrelin on the small intestinal motility are not clear. Our study aimed to explore the effects and mechanism of ghrelin after intracerebroventricular (ICV) injection on the interdigestive myoelectric complex (IMC) in rats. **Methods:** (1) In the electrophysiologic experiment, two pairs of silver electrodes were implanted in the duodenum and jejunum. Rats were received ICV injection of ghrelin (6.4 µg kg⁻¹) during fasting. Some rats were pretreated with intravenous injection of phentolamine, propranolol and atropine respectively. Other groups of rats were received ICV injection of anti-neuropeptide Y (NPY) IgG and (D-Lys3) GHRP-6 before ghrelin injected. (2) The c-Fos activation on the central nervous system (CNS) and enteric nervous system (ENS) through ICV injection of ghrelin was studied by the immunohistochemistry. **Results:** (1) Ghrelin showed an excitatory effect on the IMC. This effect was inhibited by atropine, anti-NPY IgG and (D-Lys3) GHRP-6, but not by propranolol and phentolamine. (2) In the CNS, the c-Fos expression of several nuclei such as paraventricular nucleus, arcuate nucleus, medial amygdaloid nucleus, and so on, was activated by ICV injection of ghrelin. The c-Fos expression of the stomach, duodenum and proximate colon was also increased. **Conclusion:** Ghrelin can act as central modulator of the small intestinal motility when injected into the ICV. Its excitatory effect relies on the cholinergic pathway and the central NPY pathway. Ghrelin receptor GHS-R involved in its activity. ICV administration of ghrelin could regulate the small intestinal motility through the CNS and ENS.

Key Word(s): 1. ghrelin; 2. intracerebroventricular (ICV); 3. interdigestive myoelectric complex (IMC); 4. c-Fos

Nutrition and Metabolism

P-583

The changes of nutritional status among non-surgery patients in Cipto Mangunkusumo General Hospital, Jakarta

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Objective: This study investigated the prevalence of malnutrition and its risk factors in hospitalized adult non-surgery patients in Dr. Cipto Mangunkusumo General Hospital, Jakarta, Indonesia. **Methods:** 177 patients were hospitalized from June to November 2013. Socio-demographic characteristic was collected at the admission. Nutritional status was assessed at admission and discharge using Subjective Global Assessment, Body Mass Index (BMI) and albumin level. **Results:** Prevalence of malnutrition at admission and discharge was 65.5% and 70.1% respectively by SGA, 22.6% and 24.3% by BMI, and 46.9% and 58.8% by albumin. There was no statistically significant change in malnutrition status between admission and discharge. Female patients or with anemia or tuberculosis were at risk factors of nutritional worsening. Male patients or with dyslipidemia had more improvement than others. 89.3% patients met their nutritional intake target but their nutritional status didn't change significantly. Nutritional status didn't influence the length of hospitalization but patients with worsen nutritional status had insignificant longer period of hospitalization. SGA at discharge p Severe undernourished Mild-moderate undernourished Well nourished SGA at admission Severe undernourished 66.7% (16/24) 33.3% (8/24) 0% (0/24) 0.739 Mild-moderate undernourished 1.1% (1/92) 90.2% (83/92) 8.7% (8/92) Well nourished 1.6% (1/61) 24.6% (15/61) 73.8% (45/61) **Conclusion:** Prevalence of hospital malnutrition is high in Dr. Cipto Mangunkusumo National General Hospital. Although there was improvement in nutritional intake but the nutritional status at discharge didn't change significantly between admission and discharge.

Key Word(s): 1. hospital malnutrition; 2. Subjective Global Assessment (SGA)

Table 1

		SGA at discharge			p
		Severe Undernourished	Mild-Moderate Undernourished	Well Nourished	
SGA at admission	Severe undernourished	66.7% (16/24)	33.3% (8/24)	0% (0/24)	0.739
	Mild-moderate undernourished	1.1% (1/92)	90.2% (83/92)	8.7% (8/92)	
	Well nourished	1.6% (1/61)	24.6% (15/61)	73.8% (45/61)	

Nutrition and Metabolism

P-584**Nutritional profile of patients with compensated alcoholic liver disease (ALD)-cirrhosis in tertiary care center in northern India****Presenting Author:** AMIT BERY**Additional Authors:** DINESH GUPTA, RAJOO CHHINA, CANDY SODHI**Corresponding Author:** AMIT BERY**Affiliations:** Dayanand Medical College, Dayanand Medical College, Christian Medical College

Objective: To assess the nutritional profile of patients with compensated alcoholic liver disease (ALD) cirrhosis in tertiary care center in Northern India. **Methods:** Nutritional profile in hundred patients of compensated ALD-cirrhosis was studied for its relationship to amount and duration of alcohol intake. Anthropometric, clinical signs of nutritional deficiencies, dietary assessment (by 24 hour dietary recall method), hematological and biochemical parameters were used for nutritional assessment. **Results:** Clinical signs of nutritional deficiencies were found in all subjects. The mean value of body mass index (bmi), triceps fold thickness (TFT) and midarm circumference (MAC) were found to be decreased as compared to normal subjects. Vitamins b12 and serum folate levels were decreased in 16% and 52% cases respectively. Serum magnesium, serum phosphorus and serum zinc levels were also lower than that found in normal population (in 48%, 40% and 40% cases respectively). Total calorie intake was found to be significantly decreased in these subjects. Nutritional deficiencies were more pronounced in patients with increased amount and duration of alcohol. **Conclusion:** thus, nutritional deficiencies are present even in compensated ald-cirrhotics and correlate with amount and duration of alcohol intake.

Key Word(s): 1. alcoholic liver disease; 2. cirrhosis; 3. nutritional profile

Nutrition and Metabolism

P-585**Nutritional status and dietary compliance to gluten free diet in celiac disease patients in tertiary care center in northern India****Presenting Author:** AMIT BERY**Additional Authors:** SHAVETA BATTA, VANDANA MIDHA**Corresponding Author:** AMIT BERY**Affiliations:** Dayanand Medical College, Dayanand Medical College

Objective: To assess the health and nutritional status and dietary compliance to gluten free diet in celiac disease patients in tertiary care center in northern India. **Methods:** a follow up study was conducted on randomly selected hundred recently diagnosed adult (18-30 years) patients with celiac disease. An interview schedule/questionnaire was drafted to obtain information on various aspects such as availability of gluten free food products, facility to cook separate meals, gastrointestinal symptoms, anthropometric measurements, biochemical analysis, histopathological reports and dietary intake of subjects. **Results:** the mean age of presentation was 24.6 years. Out of 100 biopsy proven cases 65 were females and 35 were males. Most of the respondents (70%) were aware about the gluten free products. Ninety six percent of the patients were able to cook their meals separately. Majority of the patients presented with anemia (80%) and diarrhea (70%). Good improvement in hemoglobin levels and weight of adults was seen after 3 months of follow up on gluten free diet. Significant improvement was seen in BMI (body mass index) and PEM (protein

energy malnutrition) status. The average daily consumption showed that total energy consumption was less than the RDA (recommended dietary allowance) in all the cases, as compared to the protein intake which was near to recommended values; however, the mean intake of fat was double than the recommendations. Eighty percent of the patients were found to be compliant with gluten free diet. **Conclusion:** compliance to gluten free diet results in subjective improvement and normalization of nutritional parameters in celiac disease patients.

Key Word(s): 1. nutritional status; 2. celiac disease

Nutrition and Metabolism

P-585A**Correlation between glycemic index diet and HS-CRP in patients with coronary arterial disease****Presenting Author:** OKTO DEWANTORO**Additional Authors:** LUKMAN HAKIM MAKMUN, IMAM SUBEKTI**Corresponding Author:** OKTO DEWANTORO**Affiliations:** Faculty of Medicine, University of Indonesia, Faculty of Medicine, University of Indonesia

Objective: Glycemic Index (GI) significantly correlated with cardiovascular disease, especially coronary arterial disease (CAD). High sensitivity CRP is a marker to predict the risk of cardiovascular disease, and the higher CRP the higher risk of CAD. Glycemic Index is also known to have a positive correlation with hs-CRP. In Indonesia there is no research which is trying to see correlation between IG, hs-CRP and CAD. The objective of this study to get the average value of GI and hs-CRP and to know if there is a correlation between GI and hs-CRP in CAD patients. **Methods:** A cross sectional study was done to this research. Fifteen CAD patients with especially stable chronic angina which was already diagnosed with treadmill had their blood examined and then they filled the FFQ form to see their GI pattern. **Results:** The average result of GI was 81.2 (high) and average result of hs-CRP was 2.68 (high). There were a positive correlation between GI and hs-CRP in patient with CAD in this research. A formula to calculate CRP was also provided. Formula: $CRP = (0.17 \times \text{Glycemic Index}) - 11.26$. **Conclusion:** There is a high average value of GI and hs-CRP in patients with CAD. There is a positive correlation between GI and hs-CRP in CAD patients.

Key Word(s): 1. glycemic index; 2. hs-CRP; 3. CAD

Nutrition and Metabolism

P-586**Different changes in several parameters of nutritional status after one month supplementation of late evening snack in cirrhosis patients****Presenting Author:** SUWITO INDRA**Additional Authors:** RINO ALVANI GANI, ARI FAHRIAL SYAM, HAMZAH SHATRI, IRSAN HASAN, MUDJADDID E, ANDRI SULAIMAN**Corresponding Author:** SUWITO INDRA**Affiliations:** Faculty of Medicine, University of Indonesia, Faculty of Medicine, University of Indonesia, Faculty of Medicine, University of Indonesia, Medical Faculty, University of Indonesia, Medical Faculty, University of Indonesia, Medical Faculty, University of Indonesia

Objective: Several parameters such as mid upper arm circumference (MUAC), mid-arm muscle circumference (MAMC), triceps skinfold thickness (TSF), body mass index (BMI), body fat mass (BFM), serum prealbumin and albumin levels is widely used to assess the nutritional status of patients with cirrhosis. But whether any of these parameters equally well when used to assess changes in nutritional status in patients with cirrhosis, is still unknown. **Objective:** To see the change of these nutritional status parameters in cirrhotic patients after one month supplementation of late evening snack (LES). **Methods:** This is a cohort study. The made the measurements of MUAC, MAMC, TSF, IMT, MLT, serum prealbumin and albumin levels in CP A and B cirrhosis patients that are malnourished or suffering unintentional weight loss. After supplementation of 200 kcal LES for a month, we repeated the same nutritional status parameters measurement, to see the changes that occurred after supplementation, and to see the correlation between each change in nutritional status parameters. **Results:** The study included 35 subjects. At the beginning of the study only body mass index and serum prealbumin levels showed no significant correlation ($p = 0.56$), whereas the other parameters of nutritional status showed correlation with each other despite the strength of correlation varies. After one month supplementation of LES there was increasing in the nutritional status when measured from the MUAC, TSF, MAMC, and BMI, whereas MLT, prealbumin and serum albumin showed no significant changes. Strong correlation only obtained between changes in MUAC with MAMC. There is a weak correlation between MUAC with IMT. There is a negative correlation between changes in MAMC and TSF with serum albumin. While changes in the nutritional status of the other parameters showed no significant correlation. **Conclusion:** Each parameter of nutritional status did not show the same changes to the LES supplementation. Anthropometric examination such as MUAC, MAMC, TSF, and IMT seems to be able to see the changes in nutritional status in cirrhotic patients is better, compared to other parameters such as MLT, serum albumin and prealbumin levels.

Key Word(s): 1. cirrhosis; 2. late night snack; 3. coconut milk; 4. carbohydrates; 5. Child Pugh score; 6. triceps skinfold thickness; 7. mid-arm muscle circumference; 8. body mass index; 9. body fat mass; 10. serum prealbumin levels; 11. serum albumin levels

Nutrition and Metabolism

P-591

The effect of *Prunus mume* by the biopolymer in mice model presenting inflammatory bowel disease

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Objective: Inflammatory bowel disease (IBD) involves complicated etiology and presents variable symptoms including intestinal inflammation, abdominal pain and diarrhea. *Prunus mume* (PM) was used to treat gastrointestinal symptoms in traditional Korean medicine. In this study, we investigated the effect of *Prunus mume* by the biopolymer (BP) for the treatment and prevention of inflammatory bowel disease in mice.

Methods: For the recovery and prevention of inflammatory bowel disease mice induced by 3% dextran sodium sulfate (DSS) for 7 days, mice were fed with PM and PM + BP during 7 days before and after DSS-induced colitis. We divided 4 groups; control, DSS, DSS + PM and DSS + PM + BP. We measured the signs of large and small intestinal lesion, change of total weight, organ weight, intestinal length, CD4/CD8 ratio and IgA, IgM and IgE production in the spleen, Peyer's patch, mesenteric lymph nodes, and biopsy samples in each group. **Results:** In all cases of the recovery and prevention of IBD mice, there was no difference of small intestinal length but large intestinal length in each group. There was significant weight reduction in the DSS mice but no difference existed in organ weight, spleen, liver and brain. CD4/CD8 ratio in spleen, Peyer's patch and mesenteric lymph nodes showed variable levels without regularity (Table 1).

Table 1 Changes in Intestinal Length, Organ Weight, CD4/CD8 Ratio by the Effect of *Prunus mume* before and after DSS-Induced Colitis in Mice

	Control		DSS		DSS + PM		DSS + PM + BP	
	Tx	Px	Tx	Px	Tx	Px	Tx	Px
Intestinal length (cm)								
Small intestine	42.38	42.42	43.10	38.0	40.50	39.2	41.00	39.6
Large intestine	9.68	9.70	6.83	7.0	6.67	7.0	7.03	7.1
Organ weight (g)								
Spleen	0.12	0.12	0.14	0.09	0.14	0.08	0.13	0.09
Liver	1.07	1.07	1.13	1.09	1.15	1.07	1.10	1.20
Brain	0.42	0.42	0.43	0.44	0.44	0.42	0.43	0.40
CD4/CD8 ratio								
Spleen	0.03 ± 0.02	0.03 ± 0.02	0.03 ± 0.02	0.05 ± 0.03	0.14 ± 0.03	0.03 ± 0.02	0.02 ± 0.01	0.08 ± 0.07
Peyer's patch	0.08 ± 0.01	0.06 ± 0.02	0.43 ± 0.05	0.06 ± 0.02	0.13 ± 0.03	0.69 ± 0.96	0.01 ± 0.00	0.05 ± 0.01
Mesenteric LN	0.01 ± 0.00	0.03 ± 0.01	0.09 ± 0.04	0.03 ± 0.01	0.08 ± 0.05	0.03 ± 0.01	0.09 ± 0.04	0.02 ± 0.00

Note: * DSS; 3% dextran sulfate. PM; *Prunus mume*. BP: biopolymer. Tx; treatment (after DSS ingestion). Px; prevention (before DSS ingestion). LN; lymph node.

The concentration of immunoglobulin in each organ revealed the tendency to be lower level in control, DSS + PM and DSS + PM + BP mice, comparing to DSS mice. In the pathologic outcomes of colitis in DSS-induced mice, inflammatory cell infiltration in control and DSS + PM + BP mice presented to be similar. **Conclusion:** In mice model, PM may have anti-inflammatory effect and suppress the disease progression in IBD. Especially, these results suggest that the preventive effect of PM is larger than the therapeutic effect in mice model.

Key Word(s): 1. Prunus mume; 2. biopolymer; 3. inflammatory bowel disease

Nutrition and Metabolism

P-592

Percutaneous endoscopic gastrostomy with jejunal extension (PEG-J) can save peg related problems

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Objective: Percutaneous endoscopic gastrostomy (PEG) with jejunal extension (PEG-J) is one of the most useful methods of enteral nutrition for patients who already have gastrostomy tracts and who suffer from aspiration pneumonia caused by gastroesophageal reflux (GERD). The purpose of this report is to describe the efficacy of PEG-J and introduce the indication for PEG-J, insertion method and tube management in our hospital.

Methods: Thirty-eight patients received PEG-J tube placements over a period of 42 months. Indications for PEG-J were aspiration pneumonia caused by GERD in 23 patients, early enteral feeding in serious pneumonia in 3 patients, PEG site dilatation and leakage in 7 patients, early enteral feeding in acute pancreatitis, superior mesenteric artery syndrome, gastric emphysema, duodenal stenosis caused by duodenal ulcer, paralytic ileus after digestive surgery in 1 patient each. An ultrathin endoscope was inserted through the gastrostomy tract to the proximal jejunum after removing the PEG tube. A guidewire was passed through the endoscope and placed at the jejunum. After pulling the endoscope out, 20-Fr PEG-J tube was placed at the jejunum over the guidewire under fluoroscopy. At first concentrated liquid diet was used as PEG-J tube feedings but tube occlusion occurred easily in a few days because of milk constituent deposition in PEG-J tube inner cavity. Elemental diet (Elental®) which is highly liquid was used as PEG-J tube feedings to prevent tube occlusion.

Results: No recurrence of vomiting and serious aspiration pneumonia caused by GERD was observed after the PEG-J tube placements. PEG-J tube placements were successfully completed within 5 minutes in all cases. There were no complications. PEG-J tube feedings were safely performed even in the acute phase such as serious pneumonia, acute pancreatitis. PEG-J tube could also be used as decompression tube in ileus cases. Elemental diet can prevent tube occlusion because of its high fluidity. Elemental diet seems to be the best for PEG-J tube feedings. **Conclusion:** The efficacy of PEG-J was clear because PEG-J tube have two lumens for transjejunal feedings and gastric decompression. PEG-J is useful to save PEG related problems.

Key Word(s): 1. percutaneous endoscopic gastrostomy; 2. peg; 3. percutaneous endoscopic gastrostomy with jejunal extension; 4. PEG-J

Nutrition and Metabolism

P-593

Handgrip strength as a marker of nutritional status in hospitalized patient at Cipto Mangunkusumo Hospital Jakarta

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Objective: Introduction Handgrip strength (HGS) is a simple, easily performed bedside test that has been shown to correlate with patients mortality, surgery complication and length of stay. Many hospitalized patient need a bedside test to assess their nutritional status. Whether HGS can be used for this purpose is still under investigation. This study aimed to investigate handgrip utility as a marker of nutritional status in hospitalized patient, compared to other nutritional marker. **Methods:** This is a retrospective study. Data from hospitalized internal medicine patients were recorded at the time of their entry and discharge, consist of HGS value, subjective global assessment, anthropometry and bioimpedance analysis (BIA) measurement and albumin. **Results:** We collect data from 177 inpatients. Handgrip strength significantly differ between those with good nutrition compared to those with mild undernourish, also if compared to severe undernourish ($p = 0,0005$). Handgrip strength significantly correlate with circumference arm muscle area, muscle mass and albumin but it doesn't correlate with arm fat area and body fat. These results are consistent from entry time to discharge. There is no significant HGS differences between patient whose able to achieve nutrition target based on subjective global assessment. **Conclusion:** Conclusion Handgrip strength correlate significantly with subjective global assessment, albumin and muscle mass calculated from anthropometry and BIA. Handgrip strength couldn't detect nutrition improvement during hospitalization.

Key Word(s): 1. handgrip strength; 2. nutritional status

Nutrition and Metabolism

P-594

The active relationship between esophageal squamous cell carcinoma and adipose tissue in vitro

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Objective: Given that abundant adipose tissue exists in the esophageal subadventitia, adipose tissue seems critical for the survival and progression of esophageal squamous cell carcinoma (ESCC). However, their interaction is unknown. **Methods:** ESCC cells (EC-GI-10 and TE-9) were cultured on rat or human subcutaneous adipose tissue-embedded or -nonembedded collagen gel. Culture assembly was analyzed by electron microscopy, immunohistochemistry, Western blotting, ELISA and small interfering RNA (siRNA) transfection, in terms of cell survival, growth, differentiation and invasion. **Results:** Adipose tissue promoted the expression of Ki-67 antigen in the cancer cell types, whereas it inhibited that of cleaved caspase-3. Adipose tissue promoted the superficial expression of the differentiation marker, involucrin, within the epithelial layer

formed by cancer cell types. Adipose tissue increased the expression of filamin A, laminin-5 and membrane type 1-matrix metalloproteinase (MT1-MMP), and with decreased display of E-cadherin, in cancer cell types. Adipose tissue accelerated the expression of mitogen-activated protein kinase (MAPK), phosphoinositide 3-kinase-AKT (PI3K-AKT) pathways, and insulin-like growth factor-1 receptor (IGF-1R) in the cell types, while it decreased that of human epidermal growth factor receptor 2 (HER2). Cancer cell types in turn decreased IGF-1, adiponectin, leptin and resistin production in adipose tissue. IGF-1 promoted the growth of cancer cell types, while IGF-1R inhibitor (picropodophyllin) enhanced the apoptosis. Finally, TE-9 cells treated with IGF-1R siRNA transfection couldn't reproduce the adipose tissue-induced phenomena above. **Conclusion:** The data suggest that adipose tissue may promote the progression of ESCC with the increased growth/invasion and the decreased apoptosis through MAPK, PI3K-AKT and IGF-1R up-regulation of the cancer cells. **Key Word(s):** 1. esophageal squamous cell carcinoma; 2. adipose tissue; IGF-1

Nutrition and Metabolism

P-595

Differences of bioelectric impedance analysis assessment results between well nourished and malnourished gastrointestinal and liver diseases hospital inpatients which are hospitalized in Cipto Mangunkusumo Hospital during 2013

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Objective: Malnutrition remains a serious problem commonly unidentified, especially in the gastrointestinal and liver diseases hospital inpatients. Subjective Global Assessment (SGA) is a validated method commonly used to assess nutrition status and malnutrition screening in some cases. Bioelectric Impedance Analysis (BIA), which is objective, easy to use, quick, and reproducible to measure body composition changes. Currently in Indonesia there has not been any study employing BIA in nutrition study, especially gastrointestinal and liver disease inpatients. The objective of this study was to identify the different means of BIA examination results between good nutrition status and malnutrition for inpatients with gastrointestinal and liver diseases. **Methods:** A retrospective cross-sectional study for the patients hospitalized in internal ward of Cipto Mangunkusumo Hospital for the period of 1 June to 31 December 2013 was conducted to identify the mean of BIA examination results for good nutritional status patients and malnutrition status for gastrointestinal and liver diseases. **Results:** Mean of BIA examination results between well nourished and malnourished were: lean body mass 49.5 ± 8.59 vs 39.68 ± 6.28 kg, $p < 0.001$; body cell mass 32.19 (20.49-40.95) vs 25.23 (17.83-31.64) kg, $p = 0.003$; total body water 35.69 ± 1.17 vs 28.58 ± 0.85 kg, $p < 0.001$; and phase angle, 6.18 (3.73-10.11) vs 3.46 (0.40-6.51), $p < 0.001$. **Conclusion:** BIA examinations revealed well nourished inpatients with gastrointestinal and liver diseases had higher results of lean body mass, body cell mass, total body water and phase angle than malnutrition inpatients.

Key Word(s): 1. nutrition status; 2. bioelectric impedance analysis; 3. examination; 4. gastrointestinal and liver diseases

Nutrition and Metabolism

P-596

The relationship between serum concentrations of bile acids and body mass index of healthy subjects

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Objective: Bile acids (BA), for long time considered to be involved only in lipid solubilization, appear now to have other important metabolic functions. Due to their agonist effect on TGR5 receptor in the enteroendocrine small intestinal L cells, muscle or brown adipose tissue, endogenous BA are involved in energy homeostasis with potential implications related to obesity, metabolic syndrome and diabetes. The aim of the present study was thus to assess serum concentrations of BA in healthy subjects in relationship with their body mass index.

Methods: The study was performed on 117 healthy subjects (median age=38 years, M:F ratio=1.39). Routine clinical and laboratory work-up was performed in all subjects. Highly sensitive (hs) determination of serum BA was performed using GC/MS technique; subjects with serum BA up to 8 $\mu\text{mol/L}$ (the upper limit of normal) were included in the study. **Results:** The mean BMI was 24.9 ± 4 kg/m², whereas the mean serum BA concentrations were 2.83 ± 1.8 $\mu\text{mol/L}$. There was close positive association between BMI and serum BA for the whole population as well as separately for both males and females ($p < 0.001$, for all comparisons). Similar positive association trend was found also for waist-to-hip ratio ($p = 0.057$) and diastolic blood pressure ($p = 0.076$). No correlation was found between BA and either lipid or glucose metabolism markers, as well as thyroid hormone concentrations, presumably due to the fact that none of these parameters was deteriorated in our healthy subjects. **Conclusion:** Strong association between physiological levels of serum BA and body mass index was observed in healthy subjects. BA determination within the physiological concentration range (hsBA) seems to reflect the overweight status. Clinical studies on patients with diabetes and metabolic syndrome are needed to assess the role of hsBA as a possible marker or predictor of these conditions. Supported by a grant NT13151-4 given by the Czech Ministry of Health.

Key Word(s): 1. bile acids; 2. overweight; 3. obesity; 4. body mass index

Oncology

P-597

Prolong survival with complete resolution of hepatocellular carcinoma following sorafenib therapy – case report

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Objective: We report a case of advance, inoperable Barcelona Clinic Liver Cancer (BCLC) C hepatocellular carcinoma with CP score A that survives following Sorafenib therapy. **Methods:** A 63-year-old woman presented with complaint of vague abdominal pain, nausea, fatigue and general malaise for 1-month duration. She was not known to have viral hepatitis nor any liver disease prior to this. Clinically she appeared very

lethargic. She was not pale nor jaundice. Abdominal examination revealed enlarged liver, 6 cm below the costal margin and no ascites. **Results:** Blood investigations showed hemoglobin 16 g/dl, platelet 200 x 10⁹ IU/ml, total bilirubin 18 umol/L, albumin 40 g/L, alanine aminotransferase 71 IU/L, international normalization ratio (INR) 1.1, alpha-fetoprotein (AFP) 101,506 IU/L and anti-HCV antibody was positive. CT liver 5-phase revealed a right lobe liver lesion (segment V & VIII) measured 7.5 x 8.0 cm consistent with HCC, no portal vein thrombosis. Surgery and radiofrequency ablation was not possible. Trans-arterial chemo-embolization was offered but patient did not keen to proceed. Sorafenib was initiated at 400 mg twice daily. She developed several side effects; low-grade fever but later subsided, minimal rash on and off and diarrhea, which were controlled with medication. AFP level at week 10, 12, 16 and 32 dropped tremendously to 652, 206, 19 and 5 respectively. CT liver 5-phase at week 24 showed complete tumor necrosis with evidence of complete response. Subsequent follow-up CT scan up to 4 years since Sorafenib was initiated showed stable disease with no evidence of recurrence and AFP remain below 3 IU/L. She is currently asymptomatic with good performance status. She received a total 30 weeks of Sorafenib treatment. **Conclusion:** Sorafenib is a multi-kinase inhibitor, which is effective in advance HCC. Sorafenib Hepatocellular Carcinoma Assessment Randomised Protocol (SHARP) trial showed that median survival and time to radiologic progression of patients on Sorafenib are up to 3 months compared to placebo, only 2% had partial response and none had complete response. To our knowledge, only 3 cases were reported to achieve complete response to Sorafenib so far and our case is the longest survival recorded.

Key Word(s): 1. sorafenib; 2. complete response; 3. survival; 4. advance hepatocellular carcinoma

Oncology

P-598

Multiple metastase colorectal carcinoma in young patient

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Objective: Colorectal cancer ranks as the 10th most common cancer in the world, including Indonesia. In developed countries, the incidence of colorectal cancer increases sharply after the age of 50 years; whereas only 3% are found among those patients less than 40 year of age. Data derived from Ministry of Health reveals the incidence of colorectal cancer under 45 years of age in 4 major cities of Indonesia, i.e. 47.85%, 54.5%, 44.3% and 48.2% in Jakarta, Bandung, Makassar and Padang, respectively. Compared to developed countries, there is higher incidence of young colorectal cancer patients in Indonesia. **Results:** We report a 36-years-old female patient, who has diagnosed as tumor colon with multiple pulmonary nodule, a hepatic nodule, multiple pericolic, mesenteric, parailiac and inguinal lymphadenopathy and suggestive metastase in uterus and urinary bladder. She came with the complaint of diarrhea and abdominal pain since 3 months before admission. Patient had no family history of colorectal cancer or other form of malignancy. She had a disliking in fiber rich diet and had no routine regular exercise. Physical examination revealed vital sign normal. There was increase peristaltic, rectal to use no mass and active bleeding. Laboratory findings were anemia, hypoalbuminemia and hyponatremia. The radiologic report rectosigmoid mass infiltrating to perifatty area, uterus and vesicaurinary. Multiple lymphadenopathy at the pericolic, mesenteric,

parailiac, and inguinal. Hepatic lesion and multiple nodule pulmonary suggestive metastase. Colonoscopy found there was mass in the rectum that almost cover the lumen and vulnerable. The histopathology result from biopsy mass in rectum was appropriate with adenocarcinoma moderate differentiation. Patient already do colostomy and decided to get chemotherapy. **Conclusion:** We report a real case colorectal carcinoma in young patient with multiple metastase.

Key Word(s): 1. multiple metastase colorectal carcinoma in young patient

Oncology

P-599

An uncommon cause of raised serum carcinoembryonic antigen – a non gastrointestinal malignancy

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Objective: Raised serum carcinoembryonic antigen (CEA) is usually associated with gastrointestinal (GI) malignancies but can be raised in non-GI malignancies. Associations with gynaecological malignancies have infrequently been reported. **Methods:** We report a case of a middle-aged, non-smoking lady with stage 3 Primary Biliary Cirrhosis/ Autoimmune Hepatitis overlap syndrome who was initially evaluated for a hypochoic liver lesion and found to have rising CEA levels. **Results:** Oesophagoduodenoscopy and colonoscopy were unremarkable. Initial Magnetic Resonance Imaging (MRI) abdomen showed no liver or pelvic malignancy, only mild lymphadenopathy thought to be related to Primary Biliary Cirrhosis. Serum CEA levels rose gradually over 2 years from 9 to 35 µg/l. During this period, repeat endoscopy and scans of the thorax and abdomen were done with no cause found. Mammogram was unremarkable. Finally, pelvic ultrasound revealed a cervical vascular lesion which MRI pelvis detailed a lobulated enhancing cervical mass with adjacent parametrial stranding. Histology confirmed Stage 2/3 cervical adenocarcinoma with positive stains for CEA. After completing cisplatin chemotherapy for 6 weeks, the serum CEA normalized to 3 µg/l indicating response to treatment and confirming the cervical cancer as the cause of her raised CEA. **Conclusion:** Our case highlights the importance of considering non-GI malignant causes of raised serum CEA with negative GI investigations, in which early detection of these cancers are imperative for early intervention and improved prognosis and survival. Initial scans may not show up early gynaecological malignancies but continued rise in CEA trend should prompt repeat investigations.

Key Word(s): 1. carcinoembryonic antigen; 2. cervical cancer; 3. gynaecological malignancies; 4. adenocarcinoma

Oncology

P-600

Characteristics of advanced gastric cancer patients and factors associated with post-surgical complications in Mangunkusumo Hospital Mangunkusumo The period January 2009–July 2014

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Objective: The prevalence of advanced gastric cancer is 4% of the total cancer prevalence of poor prognosis and life expectancy of five years in ranged between 3% and 13%. There geographic variation and risk factors that play a role in the incidence and delays the diagnosis of advanced gastric cancer to reduce the recurrence rate and improve the survival of a variety of aggressive surgical procedures have been implemented. Surgical treatment for advanced gastric cancer is controversial. **Methods:** We analyzed the surgical experience with advanced gastric carcinoma in Division of Digestive Surgery, Department of Surgery Fakultas Kedokteran Universitas Indonesia-Rumah Sakit Cipto Mangunku Faculty of Medicine, University of Indonesia Mangunkusumo Hospital Mangunkusumo Jakarta, Agustus 201 from January 2009 through July 2014. This study aims to look at the characteristics and factors associated with the occurrence of postoperative complications We retrospectively analyzed surgical morbidity, mortality, and factors associated with prognosis. Studi ini bertujuan untuk melihat karakteristik dan faktor-faktor yang berhubungan dengan terjadinya komplikasi pasca operasi Survival was analyzed with the Kaplan-Meier method, and the curves were compared with the log-rank test. Significance was assigned at $p < 0.05$. **Results:** Seventy-six cases were identified. Mean patient age was 56 + 14.5 years. Thirty-nine patients (51.3%) were male. Tujuh puluh enam pasien telah dilakukan tindakan pembedahan oleh divisi bedah digestive RSCM yang terdiri dari 44 pasien laki-laki dan 32 pasien perempuan dengan usia berkisar antara 40–70 tahun Keluhan utama pasien kanker lambung lanjut adalah perut terasa cepat penuh sebanyak 69 pasien (90.8%) dengan durasi ≤ 1 bulan sebanyak 63 pasien (82.9%) dan median durasi adalah 1 tahun sampai dilakukan tindakan beda The main complaint advanced gastric cancer patients is the stomach feel full faster by 60 patients (79%) with a duration of ≤ 1 month were 63 patients (82.9%) and the median duration was 1 year until surgical intervention. Faktor risiko yang paling banyak ditemukan adalah Socio ekonomi rendah 72 pasien (94.7%), Diet Tinggi garam sebanyak 71 pasien (93.4%), golongan darah A sebanyak 68 pasien (89.5%), makan sayuran dan buah mentah sebanyak 58 pasien (79.3%), makan masakakan asap/kurang masak sebanyak 45 pasien (59.2%), merokok sebanyak 44 pasien (57.9%), suku Batak 28 pasien (36.7%), suku Jawa 20 pasien (26.3%), suku Padang 11 pasien (14.5%) Tindakan operasi yang dilakukan terbanyak adalah sub total gastrectomi sebanyak 28 pasien (36.8%). Tipe histopatologi yang sering ditemukan adalah adenokarsinoma tubular sebanyak 73 pasien (96.1%). Angka morbiditas adalah 21.7%. Komplikasi tersering infeksi luka operasi sebanyak 2 pasien (2.6%). Median lama perawatan pasien kanker lambung lanjut adalah 9 hari dengan rentang 7–15 hari. Pada studi ini tidak ditemukan rekurensi dalam 1 tahun pasca operasi maupun hubungan yang bermakna antara karakteristik pasien dengan komplikasi pasca operasi. The risk factors most commonly found is the low economic Socio 72 patients (94.7%), High salt diet were 71 patients (93.4%), blood group A were 68 patients (89.5%), eating raw vegetables and fruits as much as 58 patients (79.3%), eating smoke / less cook as many as 45 patients (59.2%), smoking as many as 44 patients (57.9%), Bataknese 24 patients (31.6%), Javanese 20 patients (26.3%), Padang tribe 14 patients (18.4%) Patients were grouped according to surgical procedure: group 1 underwent resection (40 patients), group 2 underwent bypass procedures (10 patients), and group 3 underwent either celiotomy and biopsy alone or

jejunostomy placement (26 patients). Twenty patients (26%) developed operative complications, but most were minor. There was no difference in morbidity between surgical groups and no difference according to patient's age. Operative mortality was 2.6%. Good palliation of symptoms was significantly more common in group 1 patients (82%) than in group 2 patients (60%) ($P = 0.0001$). Median survival was 8 months (95% confidence interval 4 to 12) for the entire cohort and 13, 5, and 3 months for groups 1, 2, and 3, respectively ($P = 0.00001$ for group 1 vs groups 2 and 3). **Conclusion:** Surgical resection for advanced gastric cancer can be done with low operative mortality and acceptable morbidity rates, and it provides patients with good symptomatic relief. Advanced patient age is not a contraindication for surgical treatment.

Key Word(s): 1. advanced gastric cancer; 2. metastatic; 3. palliation; 4. surgery

Oncology

P-601

MiRNA-128 and miRNA-30 down-regulation in 18 β -glycyrrhetic acid treated gastric tumors in K19-C2mE transgenic mice

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Objective: 18 β -Glycyrrhetic acid (GRA), extracted from Licorice root (*Glycyrrhiza glabra*), is known for its anti-tumor properties. And the anti-tumor properties might correlates with miRNA expression level, while the mechanism and target genes are not clear. K19-C2mE transgenic (Tg) mice model could spontaneously develop the hyperplastic tumors in stomach. The purpose of this study was to systematically identify miRNAs correlated with hyperplastic tumor progression using K19-C2mE Tg mice model. **Methods:** K19-C2mE transgenic animal model of gastric tumor was established by Oshima M. Six-week-old K19-C2mE Tg mice were randomly divided into two groups: Control group ($n = 40$) and GRA-treated group ($n = 40$, drinking water containing 0.05% GRA). After 52 weeks, total RNA enriched in miRNA samples were extracted from the tumors of Control group and GRA-treated group (mirVana™ miRNA Isolation Kit, ambion), reverse-transcribed (TaqMan® MicroRNA Reverse Transcription Kit) and assayed using Affymetrix GeneChip miRNA 3.0 Array. The incidence of gastric tumors was also detected. **Results:** The tumor incidence was decreased from 77.8% (28/36) to 33.4% (13/39) ($P = 0.002$) after GRA administration. MicroRNA array analysis found 30 miRNAs expression levels changed significantly ($P < 2.0$), and 19 microRNAs were up-regulated and 11 miRNAs were down-regulated by GRA treatment. Two miRNAs correlated with tumor growth, MiRNA-128 and miRNA-30 were significantly down-regulated. And the abnormal expression of miRNA-128 and miRNA-30 was correlated with Wnt/ β -Catenin/BCL9 signaling pathway. **Conclusion:** 18 β -Glycyrrhetic acid could inhibit hyperplastic tumor growth and progression in K19-C2mE transgenic mice, and the inhibition effects might correlate with miRNA modulation. This work was supported by Norman Bethune Program of Jilin University [2013025], National Natural Science Foundation of China (81072369 and 81273065).

Key Word(s): 1. miRNA-128; 2. miRNA-30; 3. 18 β -glycyrrhetic acid; 4. gastric tumors; 5. transgenic mice

Oncology

P-602**Canolol inhibits hyperplastic gastric tumors initiation and progression in K19-C2mE transgenic mice****Presenting Author:** DONG HUI CAO**Additional Authors:** XUEYUAN CAO, JING JIANG, TETSUYA TSUKAMOTO, MASAHIRO OSHIMA**Corresponding Author:** XUEYUAN CAO**Affiliations:** *First Hospital of Jilin University, First Hospital of Jilin University, School of Medicine, Fujita Health University, Kanazawa University*

Objective: Canolol (4-vinyl-2, 6-dimethoxyphenol), a natural antioxidant product, was shown anti-inflammatory and anti-tumor effects. The object of our research was to study the role of Canolol on COX-2/PGE2 inflammatory pathway and gastric tumorigenesis using the attribution of K19-C2mE mice. **Methods:** Eighty Six-week-old K19-C2mE transgenic (Tg) mice were randomly divided into two groups: Normal control group (n = 40) and Canolol group (n = 40, Canolol in the AIN93G diet). Specimens of gastric mucosa were collected after 52 weeks. The incidence of gastric tumor and tumor size were calculated. The expression levels of COX-2, mPGES-1, G α s, IL-1 β , IL-12b and miR-7 were detected by immunohistochemical analysis and real-time quantitative PCR. **Results:** 0.1% Canolol effectively decreased tumor incidence from 77.8% to 41.2% (P = 0.002), and diminished the mean tumor size from 6.5 mm to 4.5 mm (P < 0.001). HE staining indicated Canolol administration significantly suppressed the neutrophils and lymphocytes infiltration in gastric mucosa. COX-2, EP2, G α s and β -catenin were showed positive staining with higher Hscores in Tg mice through immunohistochemical analysis, while 0.1% Canolol inhibited their expression levels. qRT-PCR results showed the expressional levels of COX-2, mPGES-1, G α s, IL-1 β and IL-12b were downregulated, meanwhile, miR-7 was activated after Canolol administration, and the results indicated miR-7 as a tumor suppressor may play some regulation role in COX-2/PGE2 signaling transduction. **Conclusion:** Canolol as an anti-oxidant natural product could inhibit hyperplastic tumor initiation and progression through blocking COX-2/PGE2 signaling pathway. Canolol has potential to be developed as a new natural anti-gastric carcinoma agent. This work was supported by Norman Bethune Program of Jilin University [2013025], National Natural Science Foundation of China (81072369 and 81273065).

Key Word(s): 1. canolol; 2. hyperplastic; 3. gastric tumors; 4. transgenic mice

Oncology

P-604**Enhanced efficacy of photodynamic therapy through escaping of ATP-binding cassette sub family G member 2 by pegylated-photosensitizer in pancreatic cancer****Presenting Author:** MYUNG GYU CHOI**Additional Authors:** MYUNG GYU CHOI, YOON JIN ROH, IN WOOK KIM, JU HEE KIM, JAE MYUNG PARK, TAYYABA HASAN**Corresponding Author:** MYUNG-GYU CHOI**Affiliations:** *Catholic-Harvard Wellman Photomedicine Center, Catholic-Harvard Wellman Photomedicine Center, Catholic-Harvard Wellman Photomedicine Center, Catholic-Harvard Wellman Photomedicine Center, Catholic-Harvard Wellman Photomedicine Center, Wellman Center For Photomedicine*

Objective: Porphyrin-based photosensitizers are most commonly used in photodynamic therapy (PDT). However, these drugs are exported extracellularly by a cell-membrane transporter, the ATP-binding cassette subfamily G member 2 (ABCG2), which decreases the PDT-induced cytotoxicity in cancer treatment. Pegylation of a drug increases its molecular size. We hypothesized that intracellular level of a porphyrin can be increased by its pegylated form, which enhance the PDT-induced cytotoxicity. Our aim of study was to examine the escaping of ABCG2 function in the PDT using pegylated-Chlorin E6 (Che6) in the pancreatic cancer cells. **Methods:** We pegylated Che6 using a methoxy polyethylene glycol and branched polyethylenimine. AsPC-1 and MiaPaCa-2 cells were selected, which showed the low and high ABCG2 expression level, respectively. Intracellular level of Che6 and pegylated-Che6 was detected by Fluorescence meter, FACS and confocal microscope. Cells were incubated with 0.1–10 μ M of Che6 and pegylated-Che6. They were exposed to a diode laser emitting at 670 nm wave length with total radiation dose of 6 J/cm². Cell viability was determined by MTT assay. Production level of singlet oxygen was detected with photomultiplier-tube based singlet oxygen detection system. An antitumor PDT effects in AsPC-1 cell-bearing BALC/nude mice of the Che6 and pegylated-Che6 were investigated. **Results:** The intracellular level of Che6 was higher in MiaPaCa-2 than AsPC-1 cells. Accordingly, cell viability after PDT was significantly decreased in MiaPaCa-2 compared to AsPC-1. However, that of pegylated-Che6 was similarly decreased in both cells, which showed the similar PDT-induced cytotoxicity. The production level of singlet oxygen was higher in pegylated-Che6-treated cells than Che6-treated cells. The tumor volume after PDT using pegylated-Che6 was significant smaller than that of Che6 in AsPC-1 xenograft mouse model. **Conclusion:** These results showed that pegylated-photosensitizer has potential for improving ABCG2-related resistant to porphyrin-based PDT in cancer treatment.

Key Word(s): 1. photodynamic therapy; 2. pegylation; 3. photosensitizer; 4. ABCG2; 5. pancreatic cancer

Oncology

P-606**Carcinoembryonic antigen is a predictor for tumor response in patients with locally advanced rectal cancer who received preoperative chemoradiation therapy followed by surgery: a case-matched control study****Presenting Author:** MI JOO CHUNG**Additional Authors:** JONG HOON LEE, SUNG HWAN KIM, BYOUNG YONG SHIM, JI HAN JUNG, BONG HYEON KYE, HYUNG JIN KIM, HYUM MIN CHO**Corresponding Author:** MI JOO CHUNG**Affiliations:** *St. Vincent's Hospital, The Catholic University, St. Vincent's Hospital, The Catholic University of, St. Vincent's Hospital, The Catholic University of, St. Vincent's Hospital, The Catholic University of, St. Vincent's Hospital, The Catholic University, St. Vincent's Hospital, The Catholic University*

Objective: The purpose of this retrospective study was to compare the tumor responses of pretreatment normal serum carcinoembryonic antigen (CEA) arm and elevated CEA arm in rectal cancer patients who received curative intent surgery after preoperative chemoradiation therapy (CRT). **Methods:** Between May 2003 and February 2010, we reviewed two hundred two patients whose serum CEA levels were checked at the time of diagnosis. All patients were classified by the normal CEA arm (CEA levels < 5.0 ng/ml) or elevated CEA arm (CEA levels \geq 5.0 ng/ml), and underwent 5-fluorouracil based preoperative CRT followed by surgery. We

conducted a matched case-control study between the normal CEA arm and elevated CEA arm. We analyzed the several considerable clinical factors, including age, gender, clinical T, N stage, serum CEA level and tumor size as possible predictors for the tumor response. **Results:** There were no significant differences in age, gender, clinical T, N stage, histological grade, distance of tumor from anal verge between the normal CEA arm and elevated CEA arm. Tumor downstaging was 48.5% with normal CEA arm and 28.7% with elevated CEA arm ($p = 0.004$). In multivariate analysis, normal CEA level ($p = 0.004$) and tumor size under 4 cm ($p = 0.029$) were significantly associated with good regression.

Table 1 Patient and Tumor Characteristics (n = 202)

Characteristic	Normal CEA Arm (n = 101)	Elevated CEA Arm (n = 101)	p-Value
Age, mean (year)	63.2	62.8	0.811
Pre-CRT CEA, mean (ng/mL)	2.6	14.2	<0.001
Gender – no. (%)			0.662
Male	62 (48.8)	65 (51.2)	
Female	39 (52.0)	36 (48.0)	
Clinical T stage – no. (%)			0.602
cT3	94 (50.5)	92 (49.5)	
cT4	7 (43.8)	9 (56.2)	
Clinical N stage – no. (%)			0.545
cN0	30 (46.9)	34 (53.1)	
cN1-2	71 (51.4)	67 (48.6)	
Histological grade* – no. (%)			1.000
Low	93 (50.0)	93 (50.0)	
High	8 (50.0)	8 (50.0)	
Distance of tumor from anal verge (cm) – no. (%)			0.393
<6	61 (52.6)	55 (47.4)	
≥6	40 (46.5)	46 (53.5)	

Table 2 Tumor Response according to the CEA Group

	Normal CEA Arm (n = 101)	Elevated CEA Arm (n = 101)	p-Value
Downstaging (ypT0-2N0)			0.004
Yes	49	29	
No	52	72	
Downstaging rate (%)	48.5	28.7	

Table 3 Multivariate Analysis of Factors associated with Tumor Response after Chemoradiotherapy

Factor	Adjusted Odds Ratio and 95% Confidence Interval	p-Value
Age, year		0.195
<60	1.00 (referent)	
≥60	1.55 (0.80–3.00)	
Gender		0.673
Male	1.00 (referent)	
Female	1.15 (0.59–2.21)	
CEA, ng/mL		0.004
<5	1.00 (referent)	
≥5	0.38 (0.20–0.73)	
Clinical T stage		0.315
T3	1.00 (referent)	
T4	1.12 (0.08–2.19)	
Clinical N stage		0.733
N0	1.00 (referent)	
N+	1.63 (0.57–2.22)	
Histological grade		0.310
Low	1.00 (referent)	
High	1.12 (0.73–3.04)	
Distance of tumor from anal verge, cm		0.074
<6	1.00 (referent)	
≥6	1.89 (0.87–3.66)	
Tumor size		0.029
<4	1.00 (referent)	
≥4	0.48 (0.25–0.92)	
Interval between radiation and operation		0.301
<8	1.00 (referent)	
≥8	1.43 (0.72–2.86)	

Conclusion: Normal CEA level at the time of diagnosis, smaller tumor size were independent clinical predictors for tumor response. We recommended prospective analysis for more meticulous risk factor of tumor regression.

Key Word(s): 1. serum carcinoembryonic antigen; 2. preoperative chemoradiation; 3. rectal cancer

than 25% of the longest diameter in the last EUS finding comparing the initial study. **Results:** A total of 131 upper GIT SETs in 122 patients were examined two more times using EUS. The median follow up interval for SETs was 25 months (range, 3 to 124 months). The location of SETs was 31 (23.7%), 93 (71.0%), 7 (5.3%) in esophagus, stomach, and duodenum, respectively. The majority of SETs were located in the 4th layer (90/131, 68.7%), and 117 SETs (89.3%) had hypogenicity and 107 SETs (81.1%) had homogeneity. Among 131 SETs, 28 SETs (21.4%) showed significant increase in follow up EUS. However, initial size, echogenicity, presence of echogenic foci, layer of origin, and marginal regularity were not significantly associated with the growth of the tumor. **Conclusion:** Although there were no significant relative factors about the SETs growth, however, about one fifth of the SETs showed the size changes. Therefore, regular observation of SETs by using EUS might be needed.

Key Word(s): 1. subepithelial lesions; 2. endoscopic ultrasound; 3. natural course

Oncology

P-614

Primary hepatic neuroendocrine carcinoma

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Objective: Primary hepatic neuroendocrine carcinomas (PHNECs) are extremely rare. Liver is the most frequent metastatic site of neuroendocrine carcinomas. Thus, differential diagnosis between PHNECs and metastatic hepatic neuroendocrine carcinomas is very important for the diagnosis of PHNECs. **Methods:** Case description: We presented a 38 year-old lady with an advanced PHNEC. She initially complained of frequent watery diarrhea and vomiting for 5 months. There was associated rapid weight loss of more than 15 kg. Clinical examination revealed gross liver enlargement. CT scan of the abdomen showed multiple heterogenous liver lesions involving both lobes. The largest was in segment VIII measuring 15.0 cm × 11.2 cm. There was no other lesion in other organs or lymphadenopathy noted. Tumour markers and hepatitis serology were normal. **Results:** Liver biopsy performed showed features consistent with neuroendocrine tumour. They were positive for synaptophysin and chromagranin; and negative for CK20, CK7, CEA, TTF1 and alpha fetoprotein. Subsequent PET CT showed exclusive somatostatin receptor avid disease in the liver with no extrahepatic foci. Unfortunately, the lesions were too extensive and surgical resection was not an option. She was started on Octeotide 50 mcgs tds. Her symptoms significantly improved. Subcutaneous injection Octeotide LAR 30 mg monthly was successively given. After 6 months, repeated abdominal CT scan showed considerable reduction in numbers and size of the PHNEC. **Conclusion:** We illustrated the importance of prompt identification and diagnosis for PHNECs to initiate proper treatment regimen for the patient.

Key Word(s): 1. hepatic neuroendocrine carcinoma; 2. diagnosis; 3. treatment; 4. octreotide

Oncology

P-615

A case of gastric leiomyosarcoma with multiple metastasis

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Objective: Introduction: Leiomyosarcoma is an uncommon tumor that originates from various organs, including the uterus and kidney, as well as the retroperitoneum and soft tissues. In particular, leiomyosarcoma of the stomach are extremely rare. Only 9 cases have been reported worldwide since the discovery of KIT-activating mutation. In contrast to many cases of GIST, the leiomyosarcoma is rare in the stomach and has higher mitotic activity and a worse prognosis. We present a rare case of gastric leiomyosarcoma with multiple metastasis involving lymph nodes. **Case Report:** A 48-year-old woman was admitted to our hospital with abdominal discomfort and general weakness. Upon detection of multiple nodules in both lungs on chest PA performed at the time of admission, chest CT was performed, which revealed masses in the lung, liver, and pancreas, with multiple lymph node metastases. In addition, an endoscopic examination revealed about 1.2-cm sized polyp with central ulceration on the posterior wall of the gastric upper body. In the immunohistochemical staining after an endoscopic biopsy, the tumor cells were oval to spindle shaped with hyperchromatic nuclei and acidophilic cytoplasm and stained strongly positive for SMA, but negative for KIT, CD34. The diagnosis of leiomyosarcoma was confirmed. Chemotherapy was then initiated, but the cancer progressed and the patient died after 1 year. Our experience suggests that leiomyosarcoma can manifest aggressive biological behavior in its early stage with only vague symptoms. Therefore, although the size of leiomyosarcoma is small, the possibility of metastasis must be taken into consideration.

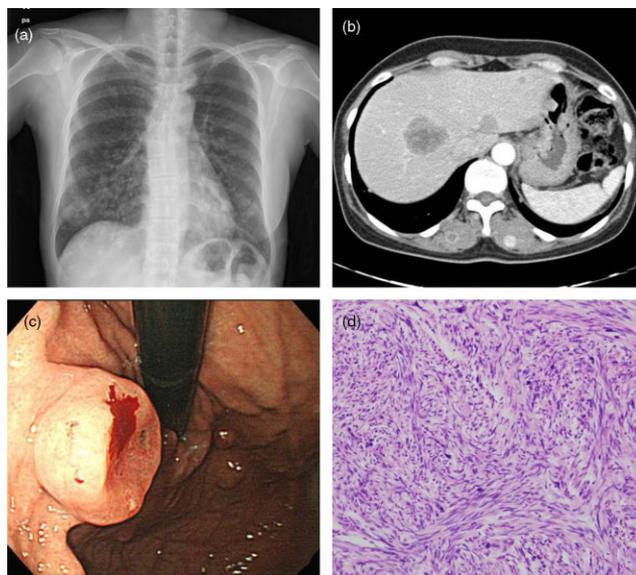


Figure 1

Key Word(s): 1. leiomyosarcoma; 2. stomach; 3. gastrointestinal

Oncology

P-616

Clinicopathologic characteristics of gastric-type differentiated adenocarcinoma of the stomach**Presenting Author:** TOMOKO KITAICHI**Additional Authors:** ASTUSHI MAJIMA, YURIKO ONOZAWA, YUSUKE HORII, AKIRA TOMIE, KENTARO SUZUKI, OSAMU DOHI, KAZUHIRO KAMADA, NOBUAKI YAGI, YUJI NAITO, YOSHITO ITOH, YASUKO FUJITA, MITSUO KISHIMOTO, AKIO YANAGISAWA**Corresponding Author:** TOMOKO KITAICHI**Affiliations:** *Kyoto Prefectural University of Medicine, Kyoto Prefectural University of Medicine, Murakami Memorial Hospital Asahi University, Kyoto Prefectural University of Medicine, Kyoto Prefectural University of Medicine*

Objective: Adenocarcinoma of the stomach is classified into gastric-type, intestinal-type and mixed gastric- and intestinal-type, according to the histopathologic phenotype. It is often difficult to make clinical and pathologic diagnosis of gastric-type differentiated adenocarcinoma, because of its mild cellular and structural atypia. **Methods:** Among 582 early gastric cancers (475 patients) treated by endoscopic submucosal dissection (ESD) between April 2010 and June 2014 at our institution, we performed a retrospective clinicopathologic analysis of 16 gastric-type differentiated adenocarcinomas (15 patients). Using a hematoxylin-eosin staining and immunohistochemical approach, we defined gastric-type differentiated adenocarcinoma as the gastric cancer with differentiation into proper gastric gland or foveolar epithelium, and glandular cavity formation. The mean age of the patients was 73 years (range, 58–84 years), and 11 (68.8%) patients were men. **Results:** The mean diameter of the lesions was 20 ± 14 mm. 12 lesions (75%) were limited in the mucosal layer, and four lesions (25%) had invaded into the submucosal layer. The colors of lesions were reddish in 11 cases (68.8%) and whitish in five cases (31.2%). Ten tumors (62.5%) were elevated type, two of them (12.5%) were flat type, four (25%) were depressed type. Histopathologic findings from initial forceps biopsy were: 10 adenocarcinomas (62.5%), two adenomas (12.5%), four had pathologically negative neoplastic findings (25%). These four lesions required several times of endoscopic biopsies to make a diagnosis of cancer. Three lesions had submucosal invasion and two were vessel invasion positive in the final histopathologic diagnosis after ESD. **Conclusion:** Most of gastric-type differentiated adenocarcinomas of the stomach showed reddish appearance or elevated type. Gastric-type differentiated adenocarcinoma was histopathologically similar to hyperplastic epithelium, making it difficult to establish the pathologic diagnosis. Despite mild cellular and structural atypia, gastric-type adenocarcinoma could invade into the deeper regions. When histopathologic findings are not neoplasm from the lesion that endoscopists suspected a cancer, they should discuss it in detail with pathologists.

Key Word(s): 1. gastric-type differentiated adenocarcinoma

Oncology

P-619

Combination analysis of tumor markers with a higher cut-off value can increase the diagnostic rate of malignancies in a health screening**Presenting Author:** CHANG HUN LEE**Additional Authors:** KYUNG BO YOO, BUM SU CHOUNG, SEUNG YOUNG SEO, SEONG HUN KIM, SANG WOOK KIM, SOO TEIK LEE, IN HEE KIM, DAE GHON KIM, SEUNG OK LEE**Corresponding Author:** CHANG HUN LEE**Affiliations:** *Chonbuk National University Hospital, Chonbuk National University Medical School And Hos, Chonbuk National University Medical School And Hos, Chonbuk National University Medical School And Hos, Chonbuk National University Hospital, Chonbuk National University Medical School And Hospital*

Objective: Cancer accounts for the largest proportion of total deaths worldwide and various diagnostic techniques for early detection have been attempted. Tumor markers can be detected through a simple blood test, but it has some limitations to be used as a screening test. We aimed to analyze the prevalence of elevated tumor markers and discuss how to properly interpret results in routine health screenings. **Methods:** A retrospective analysis was done on individuals that have had a health screening from Jan. 2000 to Sep. 2010 in Chonbuk National University Hospital, Jeonju, Korea. The data with regard to demographics, laboratory results, cancer origin site and histologic type was obtained from medical records. AFP, CEA, CA 19-9, PSA, and CA 125 levels were quantified by chemiluminescent microparticle immunoassay. People were divided into two groups according to the presence of malignancy and their basic clinical characteristics were compared. The relationship between malignant tumors depending on different cut-off values of CEA and CA 19-9 was analyzed. Moreover, the relative ratio for malignancy according to the different combination of tumor markers was also analyzed. **Results:** Among the 30,171 people examined (15,487 men and 14,684 women), 366 people were diagnosed with cancer histologically (1.21%). In the case of the PSA, the prostate cancer showed a sensitivity of 91.3% and a specificity of 97.7%, and 11.8% positive predictive value. In the case of the AFP, the hepatocellular carcinoma (HCC) showed a sensitivity of 77.8%, a specificity of 98.6%, and 3.25% of positive predictive value. And our study showed that the relative risk of a malignant tumor rose significantly as the cut-off value of CEA and CA 19-9 increased ($p < 0.05$). Moreover, combined tumor marker elevation increased the relative risk of malignancy. Among the patients with elevated CEA and CA 19-9 levels, the relative risk was 10.217. It is higher than the elevated CEA alone (relative risk 3.694) or the elevated CA 19-9 alone (relative risk 5.154). Similar results were represented in sub-groups of lung, gastric and bile duct cancer, but not shown in pancreatic cancer. **Conclusion:** Usefulness of tumor markers for cancer detection is limited because of low sensitivity and low positive predictive value. However, higher cut-off values and combined tumor marker elevation have increased the relative risk of malignancy. We need to set up fine-grained methodology for analysis of tumor markers. And application to individuals will increase the usefulness of tumor markers for purposes of conducting at health screenings.

Key Word(s): 1. tumor markers; 2. early detection of cancer; 3. carcinoembryonic antigen; 4. carbohydrate antigen 199; 5. alpha-fetoprotein

Oncology

P-620

Utility of the Asia Pacific Colorectal Screening score in prioritizing screening colonoscopies for asymptomatic subjects**Presenting Author:** SOH EE LEE**Additional Authors:** REUBEN WONG, SOH EE LEE, WAI-KIT CHEONG, YOCK YOUNG DAN, LI LIN LIM, FENG ZHU, CHRIS LEE, WAI LEONG QUAN, STEPHEN TSAO, CHARLES VU, WEI-LYN YANG, RICHARD SIM, KHAY GUAN YEOH**Corresponding Author:** SOH EE LEE**Affiliations:** National University Health System, National University of Singapore, National University Health System, National University Health System, National University Health System, National University of Singapore, National University of Singapore, Tan Tock Seng Hospital, Tan Tock Seng Hospital, Tan Tock Seng Hospital, Tan Tock Seng Hospital, National University of Singapore**Objective:** Background: The Asia Pacific Colorectal Screening (APCS) score is a clinical risk score predictive of risk for colorectal advanced neoplasia for Asia. Aim: To assess the utility of the APCS score in prioritizing screening colonoscopies for asymptomatic subjects.**Methods:** Methods: Colonoscopy data incorporating demographic risk factors and endoscopy findings were prospectively collected via an automated endoscopy system. Advanced neoplasia was defined as adenomas >10 mm, villous polyps, high grade dysplasia or adenocarcinoma. To calculate an APCS score, points were assigned to each risk factor for advanced neoplasia: age 50–69 years (2), ≥70 years (3), male gender (1), family history of colorectal cancer (2), and smoking (1). According to their APCS score, subjects were grouped into three risk tiers: score 0–1 ‘average risk’, AR; score 2–3 ‘moderate risk’, MR; and score 4–7 ‘high risk’, HR.**Results:** Results: Applying the APCS score to 2054 asymptomatic subjects, 238 (11.6%), 1333 (64.9%) and 483 (23.5%) were in the AR, MR and HR groups respectively. The prevalence of advanced neoplasia in the AR, MR and HR categories was 2.9% (95%CI 1.31%–6.06%), 5.2% (95%CI 4.10%–6.51%) and 8.1% (95%CI 5.94%–10.87%) respectively. Subjects in the MR and HR category had 1.9 (95%CI 0.818–3.969, $p = 0.14$) and 2.9 times (95%CI 1.28–6.58, $p = 0.01$) higher risk of developing advanced neoplasia than those in the AR category respectively. **Conclusion:** Conclusion: Using the APCS score, the HR group identifies 23.5% of subjects with higher risk for advanced neoplasia and is potentially useful for prioritizing colonoscopic examinations for these individuals.**Key Word(s):** 1. screening; 2. colorectal cancer; 3. colorectal neoplasia; 4. colonoscopy; 5. risk stratification

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The probability of colorectal cancer finding in symptomatic patients using component elements of APCS (Asia Pacific colorectal screening)**Presenting Author:** M YAMIN LUBIS**Additional Authors:** MURDANI ABDULLAH, ARI FAHRIAL SYAM, DADANG MAKMUN, MARCELLUS SIMADIBRATA, IRSAN HASAN, SUHENDRO SUHENDRO, ENDANG MUDJADDID**Corresponding Author:** M YAMIN LUBIS**Affiliations:** Faculty of Medicine, University of Indonesia, Faculty of Medicine, University of Indonesia**Objective:** Colorectal cancer (CRC) is still a major problem in the world in general and Indonesia in particular. Colonoscopy has been proved to be the most cost effective way to detect colonic lesion. However modalities to predict the colonoscopy finding scarcely available. The objective for this study to determine the probability of colorectal cancer finding in symptomatic patients underwent colonoscopy. **Methods:** The study uses a retrospective case-control study. Data were collected from patient medical record in Dr. Cipto Mangunkusumo General National Hospital. Group of cases is subject to the colorectal cancer, the control group is the subject of non-CRC. Bivariate analyzes performed on 4 independent variables are age, gender, family history and smoking suffer CRC. All variables that have a value of $p < 0.25$ on bivariate analysis included in the multivariate analysis with logistic regression. **Results:** In 246 subjects, found 127 women (51.6%), 119 men (48.4%). Mean age 53 years, age range 17 to 90 years. Based on the results of the multivariate analysis, there are two variables that had a statistically significance, ie age ≥50 years (OR 1.682; CI 95% 1.002 to 2.823, $p = 0.049$) and family history suffer from CRC (OR 4.865; CI 95% 1.340 to 17.665 $p = 0.016$). The probability of CRC patients with symptomatic at age ≥50 years is 53.33%, patients who have a family history of suffering from the CRC was 76.49%, while patients aged ≥50 years and had family history of the CRC is at 84.74%. **Conclusion:** The probability of colorectal cancer finding was highest among patient with age above 50 years and family history of CRC.**Key Word(s):** 1. probability CRC; 2. apcs; 3. symptomatic

Oncology

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Our clinical experiences of 6 gastroenteropancreatic neuroendocrine tumor (GEP NETs) patients with recurrent liver metastases**Presenting Author:** SHOKO NAKAMURA**Additional Authors:** KOTA TOMISATO, AKIRA TERAMOTO, AKIYUKI KONDO, SHINOBU MATSUKAWA, AKIRA YABUTANI, ATSUSHI IRAHA, KASEN KOBASHIKAWA, MASAMOTO NAKAMURA, TOMOKUNI NAKAYOSHI, NOBUFUMI UCHIMA, FUKUNORI KINJO**Corresponding Author:** SHOKO NAKAMURA**Affiliations:** Urasoe General Hospital, Urasoe General Hospital

Objective: The incidence of gastroenteropancreatic neuroendocrine tumors (GEP NETs) is recently increasing worldwide, and some researches have been carried out for the standardization of its treatment. The standard treatment for patients with liver metastases from GEP NETs is operation, and even in patients having unresectable metastases, multidisciplinary therapy including reduction surgery of over 90% of the tumor may lead to a favorable prognosis. Here, we report the clinical characteristics of 6 GEP NETs cases with recurrent liver metastases. **Methods:** We evaluated 6 GEP NET patients (3 males and 3 females) experienced at Urasoe General Hospital between 2009 and 2013. Data were collected and updated up to June 2014. **Results:** As tumor origins among the 6 GEP NET patients, 3 were from the pancreas, 2 were from the ampulla of duodenum, 1 was from the gallbladder. The length of time till recurrence after the initial operation varied from 2 to 12 months (average; 5.8 months) and recurrence was only seen in the liver among all 6 patients although there were multiple metastases. As the pathological type, there were 2 patients with NET G2, 3 patients with NEC G3, 1 patient with MANEC (mixed adenoneuroendocrine carcinoma). The two pancreatic NET patients with NET G2 are still alive after 4 years from the multidisciplinary therapy (reduction surgery, TACE, RFA and targeted medical therapies, etc). The one patient with NEC G3 showed the relatively good response to CDDP and VP16 chemotherapy although 3 patients with NEC G3 and MANEC showed poor prognosis. **Conclusion:** We experienced 6 GEP NETs cases with recurrent liver metastases. Our results show that there is a possibility of a better prognosis by multidisciplinary therapy if patients with recurrent liver metastases have the pathological type of NET.

Key Word(s): 1. neuroendocrine tumor; 2. liver metastases

Oncology

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Risk of venous thromboembolism associated with chemotherapy and central venous ports in gastric cancer**Presenting Author:** MITSUYOSHI OKAZAKI**Additional Authors:** SACHIO FUSHIDA, KATUNOBU OYAMA, TOMONARI TSUKADA, JUN KINOSHITA, KOICHI OKAMOTO, KEISHI NAKAMURA, HIRONORI HAYASHI, HISATOSHI NAKAGAWARA, TOMOHARU MIYASHITA, HIDETOSHI TAJIMA, HIROYUKI TAKAMURA, ITASU NINOMIYA, HIROHISA KITAGAWA, TAKASHI FUJIMURA, ETSURO ORITO**Corresponding Author:** MITSUYOSHI OKAZAKI**Affiliations:** Kanazawa University, Kanazawa University

Objective: Most patients with advanced gastric cancer require surgery and chemotherapy. The use of central venous (CV) ports in these patients is increasing for several reasons, including ease of insertion, multiple uses (drug administration and venous access), and perceived safety. Venous thromboembolism (VTE) is a frequent cause of morbidity and mortality in gastric cancer patients and those receiving chemotherapy. The purpose of this study was to investigate the precise incidence of and risk factors for VTE in gastric cancer. **Methods:** Retrospective analysis identified 401 patients with gastric cancer who received treatment through the Department of Gastroenterological Surgery, Kanazawa University, Japan, from 2008 to 2012. We analyzed many risk factors, including treatment method, coagulation factors, and the site and purpose of the CV port. **Results:** The incidence of symptomatic VTE was 4% (18) of all 401 gastric cancer patients and 10% (15) of 151 chemotherapy patients. Of the 18 VTE patients, thrombophlebitis occurred in 9 (50%), cerebral infarction in 5 (28%), venous thrombosis in 3 (17%), and pulmonary embolism in 1 (5%). Risk factors positively associated with VTE were advanced stage, chemotherapy, coagulation disorders (abnormal FDP and D-dimer), and CV port implantation ($P < 0.01$). Of the 151 patients with CV port implantation, risk factors were upper arm implantation and implantation for the purpose of chemotherapy ($P < 0.05$). **Conclusion:** Chemotherapy and CV ports were associated with a significantly increased risk of VTE, especially in patients of advanced stage and with coagulation disorders. These results may aid in determining preventative strategies for VTE risk reduction. Our division performed CV port implantation at the subclavian and administered anticoagulant drugs to high-risk patients for VTE prevention.

Key Word(s): 1. venous thromboembolism chemotherapy central venous port

Oncology

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Involvement of STAT3 activation in the development of early gastric cancers**Presenting Author:** HARUKA SAKAMOTO**Additional Authors:** HIROKAZU FUKUI, TOMOAKI KONO, HISATOMO IKEHARA, TOSHIHIKO TOMITA, TADAYUKI OSHIMA, JIRO WATARI, HIROTO MIWA**Corresponding Author:** HIROKAZU FUKUI**Affiliations:** *Hyogo College of Medicine, Hyogo College of Medicine*

Objective: Signal transducer and activator of transcription 3 (STAT3) plays a central role in the regulation of inflammatory cytokines. It has been reported that gastritis and its associated gastric cancer develops in mice with STAT3 hyperactivation, suggesting that dysregulation of STAT3 signaling is crucial in gastritis-gastric cancer sequence. Therefore, we investigated the non-neoplastic gastric mucosa of patients with early gastric cancer in terms of phosphorylated STAT3 (p-STAT3) expression and suppressor of cytokine signaling 3 (SOCS3) methylation. **Methods:** Tissue specimen of non-neoplastic gastric mucosa were obtained from early gastric cancer patients who received endoscopic submucosal dissection. The methylation status of the SOCS3 gene promoter was analyzed by methylation specific PCR. Expression of p-STAT3 and Ki67 was examined by immunohistochemistry. These experiments were repeated in those subjects after *H. pylori* eradication. The relationships among SOCS3 methylation, p-STAT3 and Ki67 expression were investigated statistically. **Results:** SOCS3 methylation was positive in non-neoplastic gastric mucosa in 18 (34.0%) of 53 early gastric cancer patients. The p-STAT3 labeling index was significantly higher in patients with SOCS3 methylation ($P < 0.05$). In addition, the Ki67 labeling index was significantly higher in patients with SOCS3 methylation ($P < 0.05$). In the SOCS3 methylation-negative group, the eradication treatments significantly reduced not only p-STAT3 but also Ki67 labeling index. However, neither p-STAT3 nor Ki67 labeling index was affected in SOCS3 methylation-positive group by eradication. **Conclusion:** STAT3 activation is involved in the development of early gastric cancer by exerting mucosal proliferation.

Key Word(s): 1. STAT3; 2. gastric cancer; 3. SOCS3; 4. proliferation

Oncology

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A rare association of diffuse squamous cell carcinoma of the oesophagus with pernicious anemia**Presenting Author:** RAVINDRA L SATARASINGHE**Additional Authors:** SACHITH C WIJESIRIWARDENA, CHAMPIKA GAMAKARANAGE, NARMATHEY THAMBIRAJAH, DL PIYARISI**Corresponding Author:** RAVINDRA L SATHARASINGHE**Affiliations:** *Sri Jayawardenepura General Hospital, Sri Jayawardenepura General Hospital, Sri Jayawardenepura General Hospital, Sri Jayawardenepura General Hospital*

Objective: To report a rare incidence of oesophageal carcinoma associated with pernicious anemia. Adenocarcinoma of the stomach is well known to be associated with pernicious anaemia. To the best of our knowledge, oesophageal carcinoma with pernicious anemia has not been described on literature survey. **Methods:** Case notes of a 59 year old adult

Sri Lankan male, who presented with history of loss of appetite, loss of weight and dysphagia for 6 months duration were retrospectively analyzed. Diabetes mellitus was the only significant past medical history. **Results:** Examination revealed hyperpigmentation in sun exposed areas, pallor, glossitis and an asthenic build. Rest of the examination was unremarkable. The significant investigative abnormalities were as follows: FBC – Hb 7.3 g/dl, MCV 112 fl, Plt 110,000/mm³, WBC 5600/mm³, S. Bilirubin of 2.2 mg/dl with an indirect fraction of 1.4, LDH 1991 U/L (200–400), Ferritin 325 ng/ml (16.4–293.9). The rest of the biochemical investigations, thyroid function tests and ANA were normal. Blood picture showed hypersegmented neutrophils with oval macrocytes. Gastric biopsy showed chronic atrophic gastritis with complete intestinal metaplasia. Endoscopy showed an abnormal area at the gastroesophageal junction, the biopsy of which showed squamous cell carcinoma. Gastro oesophagectomy showed full thickness squamous cell carcinoma of the oesophagus. **Conclusion:** This case report is probably the first reporting of pernicious anemia complicated by squamous cell carcinoma of the oesophagus.

Key Word(s): 1. diffuse squamous cell carcinoma of the oesophagus

Oncology

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The interval between diagnosis of hepatocellular carcinoma and chronic liver cell disease: the Sri Lankan experience**Presenting Author:** RAVINDRA L SATARASINGHE**Additional Authors:** ANUSHA NAKANDALAGE, NARMATHEY THAMBIRAJAH, CHAMPIKA GAMAKARANAGE, SACHITH C WIJESIRIWARDENE**Corresponding Author:** RAVINDRA L SATHARASINGHE**Affiliations:** *Sri Jayawardenepura General Hospital, Sri Jayawardenepura General Hospital, Sri Jayawardenepura General Hospital, Sri Jayawardenepura General Hospital*

Objective: There were many deficiencies in case history documentation, which needs re auditing after proper instructions. Alcohol was the commonest aetiological agent incriminated. Diabetes was the commonest important contributory co-morbid factor associated. **Methods:** Case notes of adult Sri Lankans who were diagnosed to have CLCD and hepatoma admitted to the principal authors' unit at SJGH, Kotte, Sri Lanka, from 1.1.2011 to 31.12.2013, were retrospectively analysed to obtain the required data. **Results:** The sample size was 20, the male:female ratio was 4:1 and the mean age for the population was 68.2 ± 9.4 SD years with an age range of 50–87 years. The mean age of presentation for males and females were 68.7 ± 9.2 SD and 66.0 ± 11.5 SD years respectively. Alcoholism was seen in 20%. 30% were diagnosed to have HCC at the same time when their CLCD was diagnosed. CLCD had been diagnosed in 75% while 25% had undiagnosed CLCD. Abdominal pain was seen in 27%, ascites in 21.6%, jaundice in 10.8%, anorexia in 16.2% and weight loss in 5.4%. The most important associated comorbid factor was diabetes in 36.1%. AFP levels were elevated, normal and undocumented in 60%, 15% and 25% respectively. Anaemia was documented in 30%. **Conclusion:** Approximately one third of hepatoma had been diagnosed at the time of presentation of the CLCD. Diabetes could have been a contributory factor causing NAFLD. There seems to be poor detection of asymptomatic CLCD as well as faulty follow-up leading to a late diagnosis of hepatoma; rendering treatment fruitless.

Key Word(s): 1. hepatocellular carcinoma; 2. chronic liver cell disease

Oncology

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Association between diabetes mellitus and histological grades of colonic carcinoma: an observational study

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Objective: This research was carried out to find out the association between diabetes and histological grade and invasiveness of colonic carcinoma. **Methods:** 64 patients' medical records who underwent surgery for colorectal cancers in the last 4 years at the leading surgical unit at Sri Jayawardenepura General Hospital, Kotte, Sri Lanka, was taken into the study. Mean FBS, HbA1c levels and histological reports were considered. **Results:** 65.1% of the patients were diabetic and 34.9% were non-diabetic. 44.4% of the patients had Dukes B malignancies, out of whom 39.3% were non-diabetics and 60.7% were diabetics. 42.85% had Dukes C malignancies out of whom 25.9% were non-diabetics and 74.1% were diabetics. Duration of diabetes positively correlates with Dukes C malignancies according to spearman correlation. Poorly differentiated adenocarcinoma was 83.3% and 16.7% in diabetics and non diabetics respectively. Moderately differentiated adenocarcinoma was 70% and 30% in diabetics and non diabetics respectively. Incidence of well differentiated adenocarcinoma in diabetics was 55.6% while in non-diabetics it was 44.4%. **Conclusion:** There seems to be an increased association of colonic carcinoma with diabetes. Frequency of all histological grading is observed to be higher in diabetics than in non diabetics. Invasiveness of the carcinoma is also higher in patients with diabetes. Large scale multi-center studies are needed for further evaluation.

Key Word(s): 1. diabetes mellitus; 2. histological grades of colonic carcinoma

Oncology

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Is restaging CT chest and abdomen required after neoadjuvant chemo radiation in locally advanced rectal cancers?

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Objective: To evaluate the need of restaging CT chest and abdomen post Neoadjuvant chemo radiation (NACTRT) prior to surgery in non metastatic locally advanced rectal cancers (LARCa). **Methods:** A retrospective audit of prospectively maintained data of 119 consecutive patients of LARCa evaluated in the Colorectal Unit at Tata Memorial Hospital from August 2013 to April 2014. Inclusion Criteria: 1: Histologically proved Adenocarcinoma. 2: Locally advanced on basis of pretreatment MRI [CRM {Circumferential resection margin} threatened (T3 N1)/ CRM involved (T4, N2, Lat pelvic wall)]. 3: No distant Metastases on pre

treatment CT (abdomen + thorax) Exclusion criteria: 1: Squamous cell on histology. 2: Patient who underwent upfront Surgery and then were referred for postoperative chemo radiation. **Results:** Out of 119 patients, 71 patients were CRM threatened and 48 patients were CRM + at initial evaluation. 113 completed NACTRT of which 11 patients defaulted post chemoradiation. Of these 102 patients available for evaluation 16 patients (13.73%) progressed while on NACTRT and became metastatic (16.6 7% in CRM+ group and 8.45% in CRM threatened group). 8 of these 16 patients (50%) were identified during Surgery (Peritoneal, Omental and Liver metastases) after lesion was deemed resectable on post CT RT MRI. Thirty five percent had symptomatic progression (Skin nodules on abdominal wall, Bone pain), 15% had stable disease on MRI and were subjected to PET CT prior to planning a radical surgery like exenteration (Lung Retroperitoneal Lymph nodes). Histologically 56.25% of these patients were high risk patients (Signet ring, mucinous). **Conclusion:** Post NACTRT restaging CT (abdomen and thorax) may be considered in patients who had positive CRM in the pre treatment MRI and especially in those who are having high risk histological lesions. This approach can reduce the morbidity associated with unwarranted surgical explorations. **Key Word(s):** 1. restaging; CT scan; chemoradiation locally advanced rectal cancer

Oncology

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Risk factors of incidental hepatocellular carcinoma occurrence: single-centre experience

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Objective: Orthotopic liver transplantation (OLT) currently represents the treatment of choice for early hepatocellular carcinoma (HCC). Preoperatively known HCC (pkHCC) is diagnosed via imaging methods prior to OLT or HCC, denoted as incidental HCC (iHCC), is found postoperatively in the liver explant. The aim of our study was a comprehensive analysis of post-transplant survival of patients with iHCC and identification of risk factors of iHCC occurrence in cirrhotic liver. **Methods:** We retrospectively reviewed 33 adult cirrhotic patients with incidentally found HCC comparing them with 606 tumor-free adult cirrhotic patients with end-stage liver disease (group Ci) who underwent OLT in our center between January 1995 and August 2012. Within the same period, a total of 84 patients were transplanted for pkHCC. We compared post-transplant survival of iHCC, Ci group and pkHCC patients. In the group of cirrhotic patients (Ci + iHCC) we searched for risk factors of iHCC occurrence. **Results:** There was no difference in sex, MELD score and time spent on the waiting list in either group. In the multivariate analysis we identified the age >57 years (OR 3.37, 95% confidence interval (CI) 1.75–8.14, PP < .001), HCV or alcoholic liver disease (ALD) (OR 3.89, 95% CI 1.42–10.7, P < .001) and alpha-fetoprotein (AFP) level >6.4 µg/l (OR 6.65, 95% CI 2.82–15.7, P = .002) to be independent predictors of iHCC occur-

rence. 1-, 3- and 5-year overall survival differed in iHCC patients compared with Ci group (iHCC: 79%, 72% and 68%, respectively vs. Ci group: 93%, 94% and 87%, respectively; $P < .001$). **Conclusion:** We conclude that the survival of iHCC patients is worse than in tumor-free cirrhotic patients, but comparable with survival of pKHC patients. Independent risk factors for iHCC occurrence in cirrhotic liver are age, HCV or ALD etiology of liver cirrhosis and AFP level.

Key Word(s): 1. incidental hepatocellular carcinoma; 2. liver cirrhosis; 3. liver transplantation; 4. outcomes

Oncology

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Is a complete remission of intestinal metaplasia a suitable endpoint in patients undergoing radiofrequency ablation (RFA)?

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Objective: Radiofrequency ablation (RFA) in combination with endoscopic resection (ER) is a method of choice for treatment of early esophageal neoplasia. Complete remission of intestinal metaplasia (CR-IM) and complete remission of dysplasia (CR-D) are commonly used as the endpoints of successful treatment. **Methods:** The aim of this prospective, single center study was to assess the long-term efficacy of RFA. **Results:** The study involved 67 consecutive patients (mean age 62) undergoing endoscopic treatment for esophageal neoplasia in our center. Sixty-five patients were diagnosed with Barrett esophagus related neoplasia, the remaining 2 patients had squamous carcinoma. 72 1024 × 768. The median follow-up was 30 months. In 20 patients (30%), RFA was a single treatment modality while in 47 patients (70%), RFA was combined with endoscopic resection or dissection of a visible lesion. The indications for endoscopic treatment were as follows: early adenocarcinoma: 25 (37,3%), early squamous carcinoma: 2 (3%), high-grade dysplasia: 22 (32,8%), low-grade dysplasia: 18 (26,9%). A total of 125 RFA treatment sessions were performed (38× with HALO 360, 86× with HALO 90 and once with HALO 60). CR-IM and CR-D were achieved in 66% and 94,5%, respectively. In a majority of patients without CR-IM (83%), the neo-Z-line was normal without macroscopically visible islands or tongues of metaplastic mucosa. During the follow-up, there were 10 recurrences of IM at the level of neo-Z-line. In 9 of these patients, the neo-Z-line was macroscopically normal. LGD (within the Z-line) recurred in 2 patients (3,8%). HGD and/or carcinoma have not recurred. **Conclusion:** Treatment of BE with RFA results in CR-D and CR-IM in a high proportion of patients 72 1024 × 768 with a low recurrence rate. A majority of patients without CR-IM or with a recurrence of IM have macroscopically normal neo-Z-line. CR-IM and a recurrence of IM might not be clinically relevant endpoints in patients with macroscopically normal neo-Z-line after RFA.

Key Word(s): 1. radiofrequency ablation; 2. Barrett's esophagus; 3. early esophageal neoplasia; 4. intestinal metaplasia

Oncology

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FOLFOX (oxaliplatin and leucovorin plus fluorouracil) versus FOLFIRI (irinotecan and leucovorin plus fluorouracil) chemotherapy as a first-line treatment in a patients with unresectable metastatic or recurred gastric adenocarcinoma

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Objective: We performed retrospective study in order to compare oxaliplatin, leucovorin and fluorouracil (FOLFOX) versus irinotecan, leucovorin and fluorouracil (FOLFIRI) in recurred or metastatic gastric adenocarcinoma. **Methods:** We investigate 72 patients who were diagnosed with recurred or metastatic gastric adenocarcinoma in a single center (Chungnam National University Hospital) during March, 2008 to July, 2012. The patient received either FOLFOX or FOLFIRI chemotherapy. **Results:** There were no significant difference between FOLFOX (42 patients) and FOLFIRI (30 patients) group in sex, age, prior surgery, histology and ECOG performance ($P > 0.05$). FOLFOX group showed response rate 52.4% (CR 21.4% and PR 31%) and FOLFIRI group showed response rate 46.6% (CR 3.3%, PR 43.3%), but response rate showed no significant difference ($P = 0.171$). The Time to progression was longer among patients treated with FOLFOX (median, 8.58 month) than among those with FOLFIRI (median, 5.0 month), and this difference statistically significant ($P = 0.032$). The overall survival showed no significant difference ($P = 0.094$), with the oxaliplatin group (28.96 month) being slightly longer than the irinotecan group (16.48 month). Grade 3/4 Hematologic toxicity (Neutropenia, Anemia and Thrombocytopenia) occurred similarly in both groups. **Conclusion:** Both combination therapy can be used effectively in recurred or metastatic gastric adenocarcinoma and there were no significant difference between FOLFOX and FOLFIRI in response rate and overall survival.

Key Word(s): 1. stomach neoplasm; 2. chemotherapy

Oncology

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Predictive factors in patients with anaemia associated with lesions on endoscopy

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Objective: To explore predictive factors associated with diagnosis of lesions, defined as ulcers and carcinomas on endoscopy. **Methods:** Clinico-pathological data of 133 inpatients that underwent endoscopy for investigation of anaemia between October 2013 and January 2014 were analyzed retrospectively. Patients were separated into two groups; patients who had endoscopic and/or histological findings of ulcers and carcinomas constitute the group with lesions and patients without lesions constitute a control group. Patients were scored for each of the associated factors of anaemia including mean corpuscular volume (MCV), ferritin, iron saturation, vitamin B12 levels (B12), folate, presence of end stage renal failure (ESRF) and faecal occult blood (FOB) and a total score was computed for

each patient. Univariate analysis was performed to analyze the above individual factors and the total scores for each group of patients. **Results:** There were 35 patients with lesions and 98 patients without lesions. Univariate analysis showed a high total score is suggestive of a lesion (OR = 1.218, P = 0.024), with low MCV (OR = 2.428, P = 0.021) and positive FOB (OR = 1.826, P = 0.027) individual predictors of a lesion. When patients with lesions was further divided into groups of patients with ulcers and carcinomas, we found that a high total score is suggestive of carcinomas (RRR = 2.275, P = 0.003) but not ulcers (RRR = 1.075, P = 0.444); with low MCV (RRR = 9.104, P = 0.036), low ferritin (RRR = 3.129, P = 0.016) and positive FOB (RRR = 2.7439, P = 0.007) individual predictors for carcinomas. **Conclusion:** Anaemic patients with a high total score, low MCV, low ferritin and positive FOB are more likely to have carcinoma on endoscopy.

Key Word(s): 1. anaemia; 2. lesion; 3. ulcer; 4. carcinoma; 5. endoscopy

Oncology

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β -Arrestin2 regulates radiation-induced intestinal progenitor/stem cells injury

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Objective: To study the effect of β -arrestin2 in radiation-induced progenitor/stem cells apoptosis by mediating NF-B pathway. **Methods:** β -arrestin2 Knockout (KO) mice, stem cells marker Lgr5 knock-in (Lgr5-EGFP) and β -arrestin2 KO mice and their respective counterparts were or were not injected with NF-B inhibitor of Bay117082 3 hour before exposure to radiation. Their small intestines were examined for histological and apoptosis and proliferation analysis. Intestinal epithelial cells were isolated for analyzing NF-B activity-related events. Moreover, β -arrestin2 and NF-B activity were down-regulated in vitro by RNA interference and chemical agent respectively following radiation. Cell apoptosis and NF-B activity-related events were investigated. **Results:** β -arrestin2 has a critical role in radio-sensitivity of intestinal injury and apoptosis. β -arrestin2 deficient mice exhibited decreased apoptosis in the intestinal progenitor/stem cells, promoted crypt proliferation and reproduction, and protracted survival following lethal doses of radiation. The intestinal radio-protection by β -arrestin2 deficiency depends on prolonged NF-B activation and subsequent inhibition of PUMA mediated mitochondrial dysfunction. Unexpectedly, β -arrestin2 deficient had little effect on radiation-induced intestinal vascular endothelial apoptosis. Consistently, β -arrestin2 knock-down also provided significant radio-protection through NF-B/PUMA in vitro. **Conclusion:** Our results suggest that β -arrestin2-mediated apoptosis in progenitor/stem cells compartments is crucial for radiation-stimulated intestinal injury and β -arrestin2 is a potential target for limiting the damaging effect of radiotherapy on the gastrointestinal system.

Key Word(s): 1. β -arrestin2; 2. progenitor/stem cells; 3. radiation-stimulated intestinal injury

Oncology

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PI3K/p53 pathway regulated chemotherapy-induced intestinal mucositis

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Objective: Intestinal mucositis is a common complication of chemotherapy. Chemotherapy-induced intestinal mucositis (CIIM) leads to a higher mortality in cancer patients. Since the mechanisms of CIIM are remain unclear, the therapeutic effect of CIIM is still unsatisfactory. Hence, our study is aimed to investigate the cellular and molecular mechanisms of CIIM. **Methods:** In this study, mice were intraperitoneal (i.p.) injected 5-FU at a dose of 75 mg/kg/day for 1, 3, and 5 days, respectively to build up CIIM models. The villus height and crypt depth were examined to evaluate CIIM. Meanwhile, the apoptosis and proliferation in the crypt were also observed. Whereafter, the expression of p53, PUMA, and p21 in the intestinal mucosa were detected. At last, we analyzed the signal transduction of CIIM with intestinal mucosa scraping samples and cell lines. **Results:** The intestinal villus height and crypt depth were decreased following 5-FU treatment, and apoptosis in the crypt was enhanced, while proliferation was impaired. The activation of p53 was major in the intestinal crypt, and cells expressing p53 usually resulted in apoptosis. The upregulation of PUMA and p21 was also centralized in the intestinal crypt, where apoptosis and hypoplasia occurred. Protein analysis confirmed that chemotherapy suppressed PI3K/Akt, and activated p53 which targeted PUMA and p21, then finally induced apoptosis and cell cycle arrest. **Conclusion:** Our data suggested that CIIM is mediated by PI3K/Akt/p53 signal pathway.

Key Word(s): 1. chemotherapy; 2. mucositis; 3. PI3K; 4. p53; 5. PUMA; 6. p21; 7. apoptosis; 8. 5-fu

Oncology

P-638

The analysis of clinical characteristics of 62 primary duodenal carcinoma patients

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Objective: To investigate the clinical characteristics of primary duodenal carcinoma. **Methods:** Clinical data of 52 patients with primary duodenal carcinoma confirmed pathologically or by operation from May, 2008 to May, 2013 were analyzed retrospectively. **Results:** The age of most patients was from 40 to 60 years old. Jaundice, abdominal pain, abdomen bulge and weight loss were common manifestations. Endoscopy, hypotonic duodenography, computed tomographic scan and ultrasound definite diagnosis rates were 93.8%, 75%, 56% and 30% respectively. The masculine rates of CA19-9 were 73.8%. Total error diagnosis rate was 24.6%. 44 (84.6%) cases underwent pancreatoduodenectomy and their 3-year's survival rate was only 31.8%. **Conclusion:** Primary duodenal carcinoma has

no characteristic manifestations, high rate of error diagnosis and bad prognosis; Using endoscope, hypotonic duodenography and computed tomographic scan can help to achieve a high definite diagnosis rate.

Key Word(s): 1. duodenal carcinoma; 2. diagnosis; 3. operation

Oncology

P-639

The incidence of gastric cancer in the population of different regions of Siberia

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Objective: To study the dynamics of gastric cancer incidence in the last 5 years in different regions of Siberia. **Methods:** It was analyzed reporting documentation obtained from the regional oncology dispensaries, and the official statistics of the Russian Federation for the period between 2008 and 2012 years. **Results:** The incidence of gastric cancer in the last 5 years have not experienced significant fluctuations in different regions of Siberia, as on the whole in the Russian Federation (Table 1). It should highlight the tendency of ethnic differences of gastric cancer incidence. In 2012 this index was in 1.8 times higher in Khakassia in comparison with Evenkia (OR = 1.75; CI 1,00–3,08, p = 0.06). Gastric cancer was first detected in stages 3–4 in 59%–64% of cases in all regions. Mortality during the first year also had no significant regional differences and varied from 51% to 62%.

Table 1. The Incidence of Gastric Cancer in the Population of Different Regions of Siberia (Per 100 000)

Year	Krasnoyarsk Region	Tyva	Khakassia	Evenkia	Russia
2008	26,71	28,21	30,97	18,25	28,61
2012	23,75	26,14	32,86	18,53	26,1
p	=0,7	=0,8	=0,8	>0,9	=0,7

Conclusion: The incidence of gastric cancer in the population of different regions of Siberia is high and does not have a significant tendency to decrease.

Key Word(s): 1. gastric cancer; 2. incidence

Oncology

P-640

The incidence of esophageal cancer in the population of different regions of Siberia

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Objective: To study the dynamics of esophageal cancer incidence in the last 5 years in different regions of Siberia. **Methods:** It was analyzed reporting documentation obtained from the regional oncology dispensaries, and the official statistics of the Russian Federation for the period between 2008 and 2012 years. **Results:** The incidence of esophageal cancer in the last five years has increased by 51% in Tyva and by 28%–30% in Khakassia and Krasnoyarsk region, but this difference was not significant (Table 1). There was no evidence of ethnic differences in the incidence of esophageal cancer. Esophageal cancer was first detected in stages 3–4 in 63%–75% of cases in all regions. Mortality during the first year also had no significant regional differences and varied from 50% to 63%.

Table 1. The Incidence of Esophageal Cancer in the Population of Different Regions of Siberia (Per 100 000)

Year	Krasnoyarsk Region	Tyva	Khakassia	Evenkia	Russia
2008	4.15	4.48	4.84	6.08	5.04
2012	5.38	6.78	6.2	6.16	5.1
p	=0.7	=0.5	=0.7	>0.9	>0.9

Conclusion: The incidence of esophageal cancer in the population of different regions of Siberia is relatively low and does not have a significant tendency to increase.

Key Word(s): 1. esophageal cancer; 2. incidence

Oncology

P-641

Prevalence of synchronous lesions in patients with colorectal cancer undergoing primary colonoscopies at a tertiary cancer centre in India

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Objective: Adenomatous polyps are a marker of a neoplasm-prone colon. A synchronous adenoma can be found in 30–50% of colons harboring one adenoma, 30% of colons having a carcinoma and in 50–85% of colons harboring two or more synchronous cancers. The incidence of colorectal cancer (CRC) varies worldwide and possibly polyp prevalence also varies

accordingly. We audited primary colonoscopies done at the time of diagnosis in consecutive patients with CRC presenting to Tata Memorial Hospital over 2 years (2012–2013). We evaluated the yield of synchronous lesions. **Methods:** 594 consecutive patients with CRC underwent a primary unsedated colonoscopy after standard bowel preparation. Patient demographics and colonoscopy findings were reviewed. Data was collected prospectively and analysed. **Results:** The mean age was 50 years (range 13–86 yrs). There were 403 (68%) males. The commonest site of primary tumor was anorectum in 356 (60%), rectosigmoid/sigmoid in 103 (17%), right colon 80 (13%), and transverse colon 37 (6%). The bowel preparation was graded subjectively as good in 23 (4%), fair in 448 (75%) and poor in 73 (12%). 341 (57%) subjects underwent a complete colonoscopy. Common reasons for incomplete colonoscopy were obstructive disease in 185 (31%), poor bowel preparation in 30 (5.1%), abdomen discomfort / pain and excessive looping in 11 each (1.8%). 9 subjects (1.5%) had synchronous tumors. 76 (11.3%) had synchronous polyps of which 39 (6.6%) had multiple polyps. 37 subjects (6.2%) had tubular adenomas, 6 (1%) had tubulovillous adenomas and 5 (0.8%) had villous adenomas. 6 subjects (1%) had inflammatory polyps and 5 (0.8%) had hyperplastic polyps. 12 (2%) subjects with an adenoma had another synchronous adenoma. **Conclusion:** 48 subjects (8%) had a synchronous adenoma in the colon and 1.5% had a synchronous primary which is lower than described. As only 57% subjects underwent a complete colonoscopy, we need to evaluate the yield of completion colonoscopies in these to get the exact prevalence of synchronous polyps and tumors.

Key Word(s): 1. colorectal; 2. polyps; 3. synchronous

Oncology

P-642

Yield of surveillance colonoscopies in patients with colorectal cancer at a tertiary cancer centre in India

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Objective: Colonoscopy is the gold standard for the detection of polyps and cancers in the colon and rectum. The adenomatous polyp is regarded as a marker of a neoplasm-prone colon. The incidence of new adenomas in series of surveillance colonoscopies ranges from 16% to 41% depending on individuals risk status. The incidence of adenomas/ carcinomas in patients with CRC undergoing surveillance colonoscopy is unknown. We audited consecutive surveillance colonoscopies done in patients with CRC at Tata Memorial Hospital over 2 years (2012–2013). We evaluated the yield of polyps /cancers. **Methods:** 373 consecutive patients with CRC who had completed treatment underwent an unsedated surveillance colonoscopy after standard bowel preparation. Patient demographics and colonoscopy findings were reviewed. Data was collected prospectively and analysed. **Results:** The mean age was 52 years (range 15–82 yrs). There were 247 (66%) males. The site of primary tumor was in the anorectum in 186 and colon in 187 (50% each). The bowel preparation was graded subjectively as good in 22 (6%), fair in 267 (72%) and poor in 40 (11%). 327 (88%) subjects underwent a complete colonoscopy. Common reasons for incomplete colonoscopy were stenotic tumor/ stricture in 15 (4%), poor bowel preparation in 10 (2.7%) and abdomen discomfort/pain or excessive looping in 19 (5%). 18 subjects (5%) had metachronous tumors with one subject having 3 tumors. 24 (6.4%) had polyps of which 4 (1.1%) had multiple polyps. 13 polyps (3.5%) were tubular adenomas, 11 (2.9%) were tubulovillous adenomas and 3 (0.8%) were hyperplastic polyps. 1 subject

each had a non hodgkins lymphoma and a serrated adenoma. **Conclusion:** Of the subjects undergoing surveillance colonoscopy, 18 (5%) had a metachronous cancer in the colon and 24 (6.4%) had a polyp. 1 subject was diagnosed to have a second tumor (lymphoma). 12% patients could not have a complete colonoscopy.

Key Word(s): 1. colorectal cancer; 2. surveillance; 3. colonoscopy; 4. yield

Oncology

P-646

Expression, regulation and roles of long non-coding RNA MEG3 in hepatocellular carcinoma

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Objective: The aim of the present study was to confirm whether long non-coding RNA MEG3 is downregulated, determine its possible mechanism of action and elucidate the role of MEG3 in human HCC. **Methods:** Differences in the expression of MEG3 and in the methylation status of the MEG3 promoter were analyzed in HCC tissues and HepG2 cell line using RT-PCR and methylation-specific PCR (MSP), respectively. CCK-8 assay and colony formation assays were used to assess the effect of MEG3 on cell proliferation; Flow cytometric analysis was used to evaluate the cell apoptosis. pcDNA 3.1-MEG3 vectors were constructed and transfected to HepG2 cells. Target genes regulated by MEG3 were detected with the Dual Luciferase reporter system and their expression levels were confirmed using qRT-PCR and Western blotting. **Results:** In contrast to matched adjacent non-neoplastic tissues, the expression of MEG3 was absent or decreased in most HCC tissues as well as in HepG2 cells. Low expression levels of MEG3 were associated with advanced pathologic stage, tumor size and a relatively poor prognosis in HCC patients. Hypermethylation of MEG3 differentially methylated regions was identified by MSP in both HCC tissues and HepG2 cells and MEG3 expression was increased with the inhibition of DNA methyltransferase with 5-aza-2'-deoxycytidine treatment. MEG3 was overexpressed by transfection with pcDNA3.1-MEG3 in HepG2 cells. qRT-PCR analysis revealed that MEG3 expression was increased by 51-fold in HepG2 cells, compared with the empty vector group. Overexpression of MEG3 decreased cell proliferation and increased 11% cell apoptosis ratio in vitro. MEG3 activated P53 and ILF-3 in HepG2 cells. **Conclusion:** Our data suggest that MEG3 is epigenetically silenced due to promoter hypermethylation, which may contribute to the development of HCC. MEG3 plays a tumor suppressor role by activating P53 and ILF-3 gene.

Key Word(s): 1. MEG3; 2. hepatocellular carcinoma; 3. methylation; 4. prognosis; 5. p53

EMR-L and conventional EMR. **Results:** The mean age was 59.7 years (range 25–84). Male: Female ratio was 15: 16. The mean tumor size was 5.9 mm (range 3–10) in diameter. The region was Ra in 4 cases, Rb in 26 cases, and Rs in 1 case. The breakdown of endoscopic treatment was EMR-C in 14 cases, EMR-L in 6 cases, and conventional EMR in 11 cases. In all the cases treated by EMR-C/EMR-L the resection was completed. Incomplete resection in horizontal and vertical margin was found in one case of conventional EMR. In terms of complication, delayed bleeding occurred one case of EMR-C and in two cases of conventional EMR. There has been neither recurrence nor metastasis within the follow-up period. **Conclusion:** Rectal NETs which met our criteria were successfully treated endoscopically without local recurrence or distant metastasis. EMR-C and EMR-L would be better than conventional EMR technique from the view point of en bloc resection with tumor-free margin. **Key Word(s):** 1. carcinoid neuroendocrine tumor (net)

Oncology

P-650

Clinical features and histological findings of appendiceal tumors

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Objective: Appendiceal tumors are rare and often unexpectedly encountered. We elucidate clinical feature of appendiceal tumors. **Methods:** From September 1999 to May 2013, 39 appendiceal tumors were resected and diagnosed histologically at Ehime Prefectural Central Hospital. We evaluated their clinical features and histological findings, retrospectively. **Results:** Average age was 68.0 ± 16.1 years old (range: 27–91, male: female = 10:29). The frequent symptoms were right lower quadrant pain (32.1%) and abdominal distension (17.8%). Only 21.4% of patients were diagnosed with appendiceal tumor and 14.3% were with cecal tumor preoperatively. Eleven (39.3%) had been diagnosed with appendicitis preoperatively, and 7 (25.0%) were accidentally found in resection for other diseases. Of all 39 cases, tumor markers (CEA and CA 19-9) were examined in 19 cases. Cases that showed elevation of serum levels of CEA were 36.8% (7/19), and those showed elevation of serum levels of CA19-9 were 15.8% (3/19). Pathological findings showed benign epithelial neoplasms in 17 cases (43.6%), malignant epithelial neoplasms in 18 cases (46.1%), and carcinoid tumors in 4 cases (10.3%). Among 17 cases with benign tumors, 16 were diagnosed with mucinous cystadenoma and 1 was with tubular adenoma. Among 18 cases with malignant tumors, 14 were with adenocarcinoma, and 4 were with mucinous cystadenocarcinoma. Survival rates of malignant cases were 83.3%/1 year, 66.7%/2 years, and 66.7%/3 years. **Conclusion:** Preoperative diagnosis for appendiceal tumors was difficult. Especially in elderly patients who showed the physical and laboratory findings of appendicitis, appendiceal tumors including malignancy should be kept in mind.

Key Word(s): 1. appendiceal tumors

Oncology

P-651

Parthenolide sensitizes colorectal cancer cells to trail-induced apoptosis by regulating mitochondrial pathway

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Objective: Combination therapy of tumor necrosis factor-related apoptosis-inducing ligand (TRAIL) and other anticancer agents is a promising strategy to overcome TRAIL resistance in malignant cells. Parthenolide (PT) has proven to be a promising anticancer agent recently, and several studies have explored its use in combination therapy. Here, we aimed to analyze the effects of the combination treatment using PT and TRAIL. **Methods:** We investigated the molecular mechanisms by which PT sensitizes colorectal cancer (CRC) cells to TRAIL-induced apoptosis. Degree of cell growth of HCT116 and HT-29 according to the two treatment groups: TRAIL alone and combination therapy of TRAIL and PT, was analyzed, and molecular analyses were also done. **Results:** TRAIL inhibited HCT116 cell growth in a dose-dependent manner; however, this reduction did not occur in TRAIL resistant HT-29 cells with an even higher dose of TRAIL. A combination of PT with TRAIL significantly inhibited cell growth of TRAIL resistant HT-29 cells. Consistent with cell growth inhibition, apoptotic cell death was significantly increased by a combination of PT with TRAIL in both of HCT116 and HT-29 cells. Results of flow cytometry analysis demonstrated that TRAIL-sensitive HCT116 cells had much higher death receptor (DR) 5 than TRAIL-resistant HT-29 cells. Interestingly, treatment of PT and/or TRAIL did not affect DR4/DR5, these results indicate that the apoptotic effect of combination is death receptor-independent apoptosis. We observed that the synergistic effect was associated with Bcl-2 family members, p53 and cytochrome C. Moreover, activation of caspase -3, -8 and -9 was increased by combination treatment in both of TRAIL-resistant and -sensitive cells. **Conclusion:** Our results suggest that PT sensitizes TRAIL-induced apoptosis via death receptor-independent and mitochondrial-dependent pathway. Combination treatment using PT and TRAIL might offer an effective strategy to overcome TRAIL resistance in certain CRC cells.

Key Word(s): 1. apoptosis; 2. parthenolide; 3. trail

Oncology

P-654

Overexpression of Rap1b indicates a poor prognosis for esophageal squamous cell carcinoma and promotes tumor cell invasion via p38 MAPK**Presenting Author:** MINGXIN ZHANG**Additional Authors:** MINGXIN ZHANG, QINGLING FAN, PEI WANG, QINSHENG WEN, JINGJIE WANG**Corresponding Author:** MINGXIN ZHANG**Affiliations:** Tangdu Hospital Fourth Military Medical University, Tangdu Hospital Fourth Military Medical University**Objective:** Rap1b is known to play a role in the progression of angiogenesis and migration. But the functions of Rap1b in invasion of esophageal squamous cell carcinoma (ESCC) are largely unexplored.**Methods:** In this study, we examined the expression of Rap1b by quantitative RT-PCR and Western blotting to evaluate mRNA and protein expressions, respectively in paired ESCC patient specimens. Then, to determine the possible correlation between Rap 1b expression and various clinical characteristics including survival, 90 samples from patients with ESCC were evaluated by immunohistochemical staining. Furthermore, we detected the effect of suppression of Rap1b on invasion of ESCC using Rap1b mediated siRNA and potential molecular mechanisms in vitro and in vivo. Finally, immunohistochemical staining and western blotting analysis of human aggressive ESCC specimens were carried out to reveal correlation between Rap1b and p38 MAPK expression. **Results:** Strong Rap1b expression was a significant prognostic marker and predictor of aggressive ESCC. The progression free survival rates were significantly correlated with strong expression of Rap1b ($P < 0.001$). Functionally, the suppression of Rap1b expression was sufficient to decrease cell motility by inhibiting expression of p38 MAPK rather than VEGF or p42/44 ERK in vitro and in vivo. Moreover, there was a significantly positive correlation between Rap1b and p38 MAPK expression in ESCC tissues. **Conclusion:** Our results suggest that the Rap1b/p38 MAPK pathway is associated with survival, tumor progression, and metastasis of ESCC patients.**Key Word(s):** 1. Rap1b; 2. esophageal squamous cell carcinoma; 3. invasion; 4. P38 MAPK

Oncology

P-655

Role of miR-320b on regulation of cancer related inflammation in esophageal squamous cell carcinoma**Presenting Author:** MINGXIN ZHANG**Additional Authors:** MINGXIN ZHANG, PENGJIANG ZHANG, QI YANG, QINSHENG WEN, JINGJIE WANG**Corresponding Author:** MINGXIN ZHANG**Affiliations:** Tangdu Hospital Fourth Military Medical University, Tangdu Hospital Fourth Military Medical University**Objective:** Cancer related inflammation (CRI) is abnormal signal pathway in cancer cell induced by inflammation and plays important role

in esophageal squamous cell carcinoma (ESCC). Our previous study found that miR-302b down-regulated in ESCC, but the exact role of miR-302b in the regulation of CRI and its molecular mechanism in ESCC is still unclear.

Methods: First, we examined the expression of miR-302b by quantitative RT-PCR in ESCC patient specimens compared to paired esophagitis tissues and normal esophageal tissues (NET). Then, to determine the possible correlation between miR-302b and CRI signal pathway, ESCC cell lines (EC9706, Eca109, TE1, TE10, TE11, and OE33) were treated with by various inflammation stimulation factors (LPS, IL-6, IFN- γ , and TGF- β). Expression of miR-302b was detected by quantitative RT-PCR and gene profiles were tested by gene microarray. Finally, immunohistochemical staining and western blotting analysis of ESCC specimens were carried out to reveal correlation between miR-302b and miR-302b potential targeted CRI related gene (ERBB4, TGFBR2, CXCR4, and IRF2) expression. **Results:** Expression of miR-302b showed a trend to decrease form NET to ESCC tissues. After inflammation stimulation, miR-302b decreased. Gene profiles revealed an inflammatory gene signature with upregulation of numerous cancer-related inflammation genes including some miR-302b potential targeted CRI related genes (ERBB4, TGFBR2, CXCR4, and IRF2). Moreover, there was a significantly negative correlation between miR-302b and CRI related genes (ERBB4, TGFBR2, CXCR4, and IRF2) expression in ESCC tissues. **Conclusion:** Our results suggest that miR-302b plays important role in the CRI of ESCC possibly by regulation expression of CRI related genes (ERBB4, TGFBR2, CXCR4, and IRF2).**Key Word(s):** 1. miR-302b; 2. esophageal squamous cell carcinoma; 3. cancer related inflammation

Oncology

P-656

Microrna-381 regulates radiosensitivity in esophageal squamous cell carcinoma**Presenting Author:** SUNA ZHOU**Additional Authors:** SUNA ZHOU, WENGUANG YE, QIUJU SHAO, JUN LIANG, MINGXIN ZHANG**Corresponding Author:** SUNA ZHOU**Affiliations:** Tangdu Hospital, Fourth Military Medical University, Tangdu Hospital, Fourth Military Medical University**Objective:** Radiation resistance presents a major clinical challenge in treatment of esophageal squamous cell carcinoma (ESCC). Since accumulating evidence demonstrates that aberrant expression of microRNAs (miRNAs) contributes to tumor radiosensitivity, we attempted to identify miRNAs associated with radioresistance of ESCC. **Methods:** In this study, we detected the radiosensitivity of six ESCC cell lines including TE1, ECA109, EC9706, KYSE30, KYSE150, and KYSE450 by colony formation assays. Then we used GeneChip miRNA array to perform a comparison of miRNAs expression in these ESCC cell lines. One miRNA candidate found to be down-regulated in radiation resistant cells was miRNA-381. Furthermore, we detected the effect of miRNA-381 on radiosensitivity, cellular proliferation and migration of ESCC by using pre-miR-381 or antisense of miRNA-381 in vitro and in vivo. **Results:** The trend of radiosensitivity in these six cell lines was TE1>ECA109>EC9706>KYSE30>KYSE150>KYSE450. The expression of miRNA-381 in radiation sensitive ESCC cell lines was higher. Enforced expression of miRNA-381 increased radiosensitivity of radioresistant ESCC cells and promoted the formation of nonaggressive phenotype including decreased cellular proliferation and migration. In contrast, inhi-

bition of miRNA-381 in radiosensitive ESCC cells promoted radiation resistance and development of an aggressive phenotype. In vivo assays extended the significance of these results, showing that miRNA-381 overexpression decreased tumor growth and resistance to radiation treatment in tumor xenografts. **Conclusion:** Together, our work reveals miRNA-381 expression as a critical determinant of radiation resistance in esophageal cancer cells.

Key Word(s): 1. microRNA; 2. esophageal squamous cell carcinoma; 3. radioresistance; 4. aberrant expression

Pediatric Gastroenterology and Hepatology

P-657

Cow's milk protein allergy (CMPA) as a cause of diarrhea in infants – a single center experience from western India

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Objective: Cow's milk protein allergy (CMPA) is a leading cause of food allergy in infants and children up to 5 years of age. We aimed this study to know the clinical profile of CMPA in western India and need of special formula for management. **Methods:** Design: Retrospective Duration: Jan 2011 to May 2014 Diagnosis of CMPA was based on 1. Relevant clinical history 2. Endoscopic mucosal biopsy showing eosinophils >6 / HPF & 3. Response to milk free diet **Results:** N = 26, M: F = 14:12. Median age: 16.88 months (SD +/- 10.27). Mean duration between presentation and introduction of cow milk: 8.18 months (0.5–29). Presentation: 15 (57.6%) – chronic diarrhea and blood in stool, 10 (38.4%) – chronic diarrhea and failure to thrive. Endoscopic rectal mucosal biopsies were performed in 20 (76.9%) and EGD with duodenal biopsies in 6 (23%) – all were positive. Mean follow up: 7.23 months (SD +/- 5.49). All patients responded to milk free diet. Peptide based chicken formula prescribed in 9 (34.6%) and extensively hydrolyzed amino acid formula given to 3 (11.5%). Remaining 14 (53%) were managed on home made diet. Re-challenge was undertaken in 7 after parental consent. Re – challenge was done at 2 years of age or one year after stopping milk. Only one patient presented with recurrence following re-challenge. **Conclusion:** Chronic diarrhea, blood in stool and failure to thrive are common presenting symptoms of CMPA. Mucosal biopsies help in establishing diagnosis. More than 50% patients can be managed with a home-modified diet.

Key Word(s): 1. cow milk protein allergy; 2. milk protein allergy; 3. paediatric diarrhoea

Pediatric Gastroenterology and Hepatology

P-660

Eosinophilic oesophagitis in children: a 5 year experience at the children's hospital at Westmead, Sydney

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Objective: Eosinophilic oesophagitis (EO) is a chronic, immune/antigen-mediated oesophageal disease characterized by oesophageal dysfunction and histologically by eosinophil-predominant inflammation. This study will report on our 5 year experience in children diagnosed with EO at the Children's Hospital at Westmead, a tertiary paediatric institution in Sydney, Australia. **Methods:** A retrospective audit was performed between January 1, 2008 and December 31, 2012 to evaluate all patients newly diagnosed with EO. The follow up period was included up to May 31, 2014. Demographic data, clinical symptoms, associated conditions, atopic history and treatment modalities were collated. **Results:** A total of 108 patients were diagnosed with EO: 71% male, median age 6.8 years (range 0.8–16.8 years); representing an average of 4% of total endoscopies performed per year. 41 patients had dysphagia symptoms, 34 patients had gastro-oesophageal reflux symptoms, 11 patients with abdominal pain and 23 patients with non-EO symptoms. Atopic history was elicited in 54% of patients whilst 36% had food allergy. Concomitant diagnosis included coeliac disease, Helicobacter pylori gastritis and proctitis/ulcerative colitis. Endoscopic appearance was normal in 8.3% of patients. Patients required a median of 2 (range 0–10) follow up endoscopies. Treatments are presented in Table 1. In patients with follow up endoscopy, 56% of patients had histologic remission of EO at last re-endoscopy. 33% of patients were eventually lost to follow up. **Conclusion:** Management of EO is complex and requires a multidisciplinary approach. Patients with EO are subjected to significant amounts of repeat endoscopy and clinical scoring systems/non-invasive methods are required to reduce this.

Key Word(s): 1. eosinophilic oesophagitis; 2. epidemiology; 3. paediatrics

Table 1. Treatment Modalities and Percentage of Patients, with Multiple Therapies Given Either as Combination or Sequential

Swallowed Topical Steroid (STS)	STS and Elemental Diet/Dietary Elimination	Elemental Diet/Dietary Elimination	Systemic Oral Steroid (SOT), STS, and Elemental Diet/Dietary Elimination	SOT	SOT and STS	SOT and Elemental Diet/Dietary Elimination	No EO Specific Therapy
41%	35%	9%	5%	2%	2%	2%	4%

Note: Swallowed topical steroid: swallowed aerosolised fluticasone/viscous budesonide slurry Systemic oral steroid: prednisolone.

Pediatric Gastroenterology and Hepatology

P-661

Change of the estimated GFR in chronic hepatitis B patients treated with nucleot(s) ide analogues in Taiwan

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Objective: The decline of the glomerular filtration rate (GFR) has been a concern for nucleos(t) tide analogs (NUCs) therapy in patients with chronic hepatitis B (CHB). The aim of the study was to compare the impact of the estimated GFR (eGFR) of NUCs in Taiwanese CHB patients.

Methods: Total 593 patients (456 males, mean age: 48.9 ± 11.5 years) treated with telbivudine (TBV) monotherapy ($n = 72$), adefovir dipivoxil (ADV)/lamivudine (LAM) combination therapy for YMDD variants ($N = 165$) and entecavir (ETV) monotherapy ($N = 356$) for more than 2 years and with followed up every 3 months were enrolled. Patients with baseline creatinine clearance (CrCl) <60 ml/min, with hepatocellular carcinoma and bilirubin >3 mg/dl were excluded. **Results:** The change of Cr and estimated GFR (by CrCl: Cockcroft-Gault method, ml/min, MDRD and Chronic Kidney Disease-epidemiology Collaboration: CKD-EPI formulas, ml/min/1.73 m²) after 2-year therapy were significantly different in patients with ADV/LAM ($+0.06 \pm 0.267$, -4.81 ± 14.63 , -4.10 ± 17.39 and -2.85 ± 12.89 ; all $P_s < 0.01$) and TBV (-0.07 ± 0.15 , $+9.17 \pm 25.17$, $+11.92 \pm 29.38$ and $+8.89 \pm 24.40$; all $P_s < 0.001$) groups, and only CrCl was significantly different in patients with ETV (-2.47 ± 16.71 , $P < 0.006$) therapy. In TBV group, the significantly increase of eGFR was observed in patients with baseline MDRD < 90 (all $P_s < 0.005$) but not in patients with baseline MDRD ≥ 90 . In multivariate analyses, baseline MDRD < 90 was the only independent factor associated with the increase of eGFR. **Conclusion:** Treatment with TBV for 2 years for Taiwanese patients with CHB was associated with a significant decrease of Cr and an improvement in eGFR, particular in patients with a baseline decreased eGFR.

Key Word(s): 1. hepatitis

Pediatric Gastroenterology and Hepatology

P-662

Prevalence of HBeAg in hepatitis B carriers in southern Taiwan: a community-based study

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Objective: Taiwan is an endemic area of viral hepatitis infection with high prevalence of chronic hepatitis B (CHB) and C (CHC). The present community-based study aimed to assess the clinical characteristics of patients with positive and negative hepatitis B e antigen (HBeAg) in CHB patients in southern Taiwan. **Methods:** We conducted a cross-sectional survey in the townships in southern Taiwan from 2010 to 2013. Total 1840 residents with positive hepatitis B surface antigen (HBsAg) were enrolled (794 males, aged 13–92 years, mean 52.0 ± 13.5). All subjects received tests for serum liver enzyme (AST and ALT), HBeAg and antibodies to HCV (anti-HCV). **Results:** In CHB patients, the prevalence of HBeAg and anti-HCV was 6.6% and 7.7%, respectively. The prevalence of HBeAg and anti-HCV in <20 , 20–29, 30–39, 40–49, 50–59, 60–69, and ≥ 70 years groups was 41.2%, 21.3%, 13.3%, 6.9%, 3.5%, 3.3% and 3.1% respectively ($P < 0.001$) and 0%, 4.3%, 2.9%, 5.4%, 8.16%, 11.9% and 12.8%, respectively ($P < 0.001$). In univariate analyses, patients with positive HBeAg, compare to those with negative HBeAg, have significantly higher AST ($P = 0.007$) and ALT ($P = 0.002$) values, significantly lower mean age ($P < 0.001$) and BMI ($P < 0.001$), and a higher prevalence of female gender ($P = 0.052$). In multivariate analyses, the independent factors associated with positive HBeAg were younger age, lower BMI, and a higher ALT value (odds ratio/95% confidence interval/ P value: 0.949/ 0.933–0.965/ < 0.001 ; 0.886/0.833–0.943/ < 0.001 ; 1.011/1.000–1.019/0.039, respectively). **Conclusion:** The prevalence of HBeAg and anti-HCV was associated with age in hepatitis B carriers in southern Taiwan. Patients with positive HBeAg have a significantly higher ALT value and lower BMI.

Key Word(s): Na

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Colonic polyps in children: experience from a tertiary care center in eastern province of north India

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Objective: We studied the clinical profile, histology, and efficacy of polypectomy in colonic polyps in children <18 years. **Methods:** Eighty children with colonic polyps were studied from August 2011 to May 2014. Children with five or more juvenile polyps were defined as having juvenile polyposis and serial colonoscopic polypectomy were done every 4 wk. Colectomy was done only for intractable symptoms or when colonoscopic removal was not possible. Follow-up colonoscopy was done in juvenile polyposis only. **Results:** The mean age of these children was 8.23 ± 1.2 years, with male: female ratio 3.5:1. Rectal bleeding was the presenting symptom in 95% with a mean duration of 10 ± 2 months. Solitary polyps 80%, multiple polyps in 15%, and juvenile polyposis in 5% were seen. Mostly (95%) the polyps were juvenile and 90% were in rectosigmoid. Adenomatous changes were seen in none. Three children with juvenile polyposis achieved colonic clearance and one required colectomy. Recurrence was seen in 2 children with juvenile polyposis. Bleeding was the major complication occurred in 4 children and all were managed conservatively. **Conclusion:** Juvenile polyps are the most common colonic polyps in children. Colonoscopic polypectomy is effective and safe. Surveillance colonoscopy is required in juvenile polyposis only.

Key Word(s): 1. juvenile polyps; 2. rectal polyps

Pediatric Gastroenterology and Hepatology P-664

Pseudocysts following acute pancreatitis in children: incidence, clinical features and natural history

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Objective: Our study evaluated the frequency, clinical characteristics and natural history of pseudocysts in children with acute pancreatitis (AP). **Methods:** Children diagnosed and managed as AP were evaluated. Subjects with inadequate follow-up or recurrent AP were excluded. **Results:** 60 AP children (14 [1–18] y) were enrolled. 36 (60%) developed acute fluid collection (AFC), which resolved in 12 and progressed to pseudocyst in 24. On comparing children with or without pseudocyst (25 vs. 36 cases), there was no difference in age (14 [4–18] vs. 13 [1–16]y), etiology (idiopathic 66% vs. 47%, traumatic 25% vs. 22.2% and systemic complications (pulmonary [17% vs. 11%], renal [21% vs. 11%], shock [13% vs. 10%]) between two groups. 11/24 cases of AP with pseudocyst resolved spontaneously (size 6.4 [3–14.4] cm) over 110 (12–425) days and 13 required drainage. 11 were drained due to symptoms (gastric outlet

obstruction [7], infection [2], persistent pain [1], intracystic bleed [1]) and 2 due to size >6 cm and persistence >6 weeks. Symptomatic pseudocysts requiring drainage were larger (11 [8–60] vs. 6.4 [3–14.4] cm, $p = 0.02$) and secondary to traumatic AP (6/6 vs. 6/16 [idiopathic] $p = 0.002$) than asymptomatic pseudocysts resolving spontaneously. Percutaneous catheter drainage (PCD) was the primary drainage modality and successful in 7/12 cases. 5 subjects required additional intervention (EUS guided endoscopic cystogastrostomy-1, ERCP and drainage-4). **Conclusion:** 60% and 40% children with AP develop AFC and pseudocysts respectively. Only 45% children with AP and pseudocysts are symptomatic requiring drainage, more often with traumatic than other etiologies. Asymptomatic pseudocysts, irrespective of size, can be managed conservatively. PCD is successful in ~60% cases.

Key Word(s): 1. acute pancreatitis; 2. pseudocyst; 3. children

Pediatric Gastroenterology and Hepatology P-665

Follow-up of patients who undergo colonoscopic polypectomy and reasons for non-attendance: Royal Adelaide Hospital experience

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Objective: Polyps increase incidence of colonic carcinoma and therefore follow-up colonoscopy is recommended. We aimed to determine the attendance rate of these patients that had known colonic polyps at our institution and the reasons for non-attendance for a repeat procedure. **Methods:** We conducted observational study on all patients who had a colonoscopy performed at our institution during the year 2000. The study followed up all patients who had large polyps or multiple polyps. All patients were recommended to repeat procedure in 3 or 5 years according. **Results:** There were 113 patients who had greater than 3 polyps and 119 patients had polyps with size equal or greater than 1 cm. After the index Colonoscopic Polypectomy 232 patients were booked and advised to return for a repeat colonoscopy. The attendance rate for repeat colonoscopy was 74.6%. Fifty nine patients (25.4%) who had either large polyp(s) or greater than 3 and who did not attend for follow-up colonoscopy were evaluated in our study. In the study there were 59 patients who did not attend for follow up. Twenty eight were males (47.5%) and 31 females (52.5%) with an average age of 71 years and a median age of 75 years. The reasons for non attendance were: Deceased 37%, Patient not informed 31%, Significant medical conditions 17%, Institutional care 7% and declined follow up 8%. **Conclusion:** In patients who undergo Polypectomy there is a significant rate of non-attendance for a follow-up colonoscopy. In our study the high rate of morbidity and mortality due to unrelated medical conditions was the primary cause for attendance failure.

Key Word(s): 1. colonoscopy; 2. polypectomy; 3. follow up

Surgery

P-666

Concurrent robot assisted distal gastrectomy and partial nephrectomy for synchronous early gastric cancer and renal cell carcinoma; an initial experience**Presenting Author:** JAE MOON BAE**Additional Authors:** JI EUN KIM, SU MI KIM, JEONG EUN SEO, MIN GEW CHOI, JUN HO LEE, TAE SUNG SOHN, SUNG KIM, SEONG IL SEO**Corresponding Author:** JAE MOON BAE**Affiliations:** Samsung Medical Center/Sungkyunkwan University, Samsung Medical Center/Sungkyunkwan University

Objective: We would like to report our experience on a concurrent robot assisted distal gastrectomy and partial nephrectomy for synchronous early gastric cancer and renal cell carcinoma. **Methods:** A 55 year old female patient was diagnosed with early gastric cancer on screening endoscopy. Abdominal computed tomography showed incidental right renal cell carcinoma. **Results:** Robot assisted distal gastrectomy was performed followed by partial nephrectomy. **Conclusion:** Robot assisted combined operation could be a treatment option for early stage of synchronous malignancies.

Key Word(s): 1. gastric cancer; 2. robot assisted gastrectomy; 3. robot assisted nephrectomy

Surgery

P-667

Buried bumper syndrome treated with a one-step pull through method**Presenting Author:** DEWI NORWANI BASIR**Additional Authors:** WAI LEONG QUAN**Corresponding Author:** DEWI NORWANI BASIR**Affiliations:** Tan Tock Seng Hospital

Objective: Buried Bumper Syndrome is a known but uncommon complication in patients with Percutaneous Endoscopic Gastrostomy (PEG) tubes. We describe an elderly man with a background of laryngeal cancer with post radiotherapy swallowing impairment. He also had stomach cancer with Billroth II gastrectomy performed previously. A Percutaneous Endoscopic Jejunostomy (PEJ) tube was recently inserted because of a persistently misplaced nasogastric tube. It was placed through the jejunal wall due to altered anatomy with no other suitable sites found. Patient presented with a blocked tube and was referred for endoscopic re-evaluation and change of PEJ tube. **Methods:** On endoscopy, a small punctum located at the site where the internal bumper was expected to be was identified. This finding is diagnostic of a complete buried bumper syndrome. We proceeded with the one step pull through method to remove and replace the PEJ tube at the same time. The PEJ tube was cut approximately 2 to 3 cm from the skin and an ordinary PEG trocar was inserted through the cut end of the PEJ tube into the stomach under endoscopic view. The trocar was removed leaving the white sheath in place. We then inserted the blue nylon string through the white sheath into the stomach in the usual manner. The string was then captured with a snare and pulled out

through patient's mouth. **Results:** Once outside the body, a new PEG tube was attached to the nylon string the usual manner and gently pulled back into the stomach. The tapering plastic end of the new tube was made to push against the buried bumper which forced it to exit through the skin while the new tube was pulled into position. This one step pull through method not only removed the buried bumper syndrome but also replaced the PEJ tube at the same time thereby minimising the risk of peritoneal leak. The final position of the new PEJ tube appeared satisfactory endoscopically. **Conclusion:** The 1 step pull through method is simple and safe to perform. No new incision is needed and the removal and reinsertion of PEG/PEJ tube can be performed at the same setting.

Key Word(s): 1. buried bumper syndrome; 2. peg

Surgery

P-668

Retrospective clinical analysis of 1944 cases bowel obstruction: diagnosis and assessment of intestinal strangulation**Presenting Author:** XUEYUAN CAO**Additional Authors:** QUAN WANG, YAN CHEN, JINGYU WANG**Corresponding Author:** XUEYUAN CAO**Affiliations:** First Hospital of Jilin University, First Hospital of Jilin University, First Hospital of Jilin University

Objective: Acute bowel obstruction is still an important condition in the department of gastrointestinal surgery. Determine whether there is intestinal strangulation, was considered essential for the treatment and prognosis of bowel patients. **Methods:** From July 2008 to December 2012, 1944 hospitalized cases diagnosis with bowel obstruction were collected in the First Hospital of Jilin University. Etiology of bowel obstruction, determination methods of intestinal strangulation, operation rate, and the accuracy of computer tomography (CT) imaging were retrospective analyzed. **Results:** A total of 1944 cases of bowel obstruction were analyzed. Main causes of bowel obstruction are including intestinal adhesion, tumor, abdominal internal hernia, abdominal external hernias, volvulus, intussusception, fecalith obstruction, and early postoperative inflammatory intestinal obstruction. Nine hundred and five cases were received surgical operation treatment. The operation rate was 46.6% (905/1944). It was including 9.3% (84/905) of laparoscopic surgery. The results showed that serum enzyme changes, factors of systemic inflammatory response, intra-peritoneal free fluid, and intestinal wall enhancement reduction of CT imaging have higher values to the assessment of intestinal strangulation. The accurate rate of spiral CT examination in diagnosing intestinal strangulation was 90.6%. **Conclusion:** The inpatient surgery rates are still above 40% of intestinal obstruction in our department. Abdominal enhanced CT examination has become an essential diagnosis method, especially for judgment of intestinal strangulation. Furthermore, laparoscopic surgery was gradually increased.

Key Word(s): 1. bowel obstruction; 2. diagnosis; 3. intestinal strangulation; 4. computer tomography

Surgery

P-669

Clinical application of fast track surgery with laparoscopic-assisted gastrectomy for advanced gastric cancer**Presenting Author:** XUEYUAN CAO**Additional Authors:** QUAN WANG, IKRAM ABDIKARIM, YINQUAN ZHAO**Corresponding Author:** XUEYUAN CAO**Affiliations:** First Hospital of Jilin University, First Hospital of Jilin University, First Hospital of Jilin University

Objective: To investigate the feasibility and safety of fast-track surgery when combined with laparoscopic-assisted gastrectomy for advanced gastric cancer patients. **Methods:** We designed a prospective randomized, controlled clinical trial then recruited 61 consecutive advanced gastric cancer patients. (Trial registration number: JLUFHC1722013) Further divided into a fast-track surgery group (n = 30) and a conventional surgery group (n = 31). Surgical technique in both groups was same laparoscopic-assisted gastrectomy with D2 lymphadenectomy. Compared outcomes included length of hospital stay, return to normal diet and postoperative complications. **Results:** Fast track surgery combined with laparoscopic-assisted gastrectomy was successfully carried out in current study. Recovery parameters such as the length of time to return to normal diet 2.9 ± 0.7 vs. 3.5 ± 0.8 day, $P = 0.003$; to the first defecation 3.1 ± 0.7 vs. 3.6 ± 0.8 day, $P = 0.01$; start of ambulation time 2.6 ± 0.9 vs. 3.1 ± 1.0 day, $P = 0.04$; were all significantly less in patients assigned to the fast track surgery protocol compared with those in the conventional care programme. The mean hospital stay was 8.3 ± 1.3 and 9.9 ± 1.1 day for the Fast track surgery group and the conventional care group, respectively. We found no statistical difference in postoperative complications in the two groups. No readmitted cases or mortalities were reported during the follow-up period. **Conclusion:** Fast-track rehabilitation was considered as a safe and feasible measures in advanced gastric cancer patients. Moreover, it results in decreased hospital stay.

Key Word(s): 1. fast-track surgery; 2. laparoscopic gastrectomy; 3. advanced gastric cancer

Surgery

P-670

Liver biopsy: is it safe in children?**Presenting Author:** OSAMA ELGEMAABI**Additional Authors:** Omayma M Sabir, Ahmed B Ali**Corresponding Author:** OSAMA ELGEMAABI**Affiliations:** Al Neelain University, Al Neelain University

Objective: The blind liver biopsy technique has been widely used in Sudan as the availability of the ultra sound machines and the committed Pediatrics Radiologist were not always at hands. Liver biopsy is an essential tool in the diagnosis of liver diseases and subsequently, initiating the appropriate treatment. The aim of the study was to observe the safety of blind liver biopsy in our children. **Methods:** One hundred fifteen consecutive liver biopsies in hospitalized children were evaluated retrospectively. Using a standard percussion technique biopsy sites were chosen and through intercostals space blind liver biopsies were performed by TruCut biopsy needle. The study was conducted at Gafaar Ibn Oaf Specialized Children Hospital, Khartoum Sudan, over the last five years, between January 2005-January 2010. **Results:** The first biopsy sample was considered macroscopically adequate in 94.8% of cases. A definitive histological diagnosis was possible in 99.1% of cases. seventy children were more than 5 years of age and of these 8 (11.4%) complained of pain at the biopsy site, External hemorrhage from the biopsy site was seen in 1 (0.6%) case

but no sign of internal hemorrhage was detected during the 24 hours follow up period. No child died following the procedure. **Conclusion:** Blind liver biopsy in the studied hospitalized children was found to be a safe procedure.

Key Word(s): 1. blind liver biopsy; 2. children

Surgery

P-672

Chemical thromboprophylaxis is safe and decreases the risk of pulmonary embolism after hepatobiliary-pancreatic surgery**Presenting Author:** HIROKI HAYASHI**Additional Authors:** TAKANORI MORIKAWA, HIROSHI YOSHIDA, KEI NAKAGAWA, TAKAHO OKADA, MASAMICHI MIZUMA, KOJI FUKASE, FUYUHIKO MOTOI, TAKESHI NAITOH, YU KATAYOSE, MICHIKI UNNO**Corresponding Author:** HIROKI HAYASHI**Affiliations:** Tohoku University School of Medicine, Tohoku University School of Medicine

Objective: We previously reported the safety of postoperative chemical thromboprophylaxis after major hepatobiliary-pancreatic (HBP) surgery and it decreased postoperative venous thromboembolism (VTE) (Safety of postoperative thromboprophylaxis after major hepatobiliary-pancreatic surgery in Japanese patients. Hayashi et al.: Surg Today. 2014). However, the efficacy for preventing pulmonary embolism (PE) after HBP surgery is still unclear. **Methods:** To assess the rate of VTE and hemorrhage after elective HBP surgery, as a general rule, enoxaparin or fondaparinux for postoperative thromboprophylaxis was administered from January 2009 to December 2012 (former period), whereas it was not administered from January 2013 to June 2014 (latter period). In former and latter period, 366 of 490 (74.4%) and 8 of 161 (5%) patients received chemical thromboprophylaxis at the chief surgeon's discretion, respectively. **Results:** VTE and PE were occurred to 29 (5.9%) and 5 (1.0%) patients in former period, and were occurred to 11 (6.8%) and 6 (3.7%) patients in latter period, respectively. Administration of chemical thromboprophylaxis did not decrease VTE rate compared with non-administrated patients (4.8% vs 7.9%, respectively, $p = 0.1025$), but PE rate was significantly high in non-administration group (0.8% vs 2.9%, $p = 0.0410$). Postoperative hemorrhage was occurred at significantly high rate in administration group (23.9% vs 10.6%, $p = 0.0001$), but the rate of major hemorrhage, which required blood transfusion or hemostasis with surgery or IVR technique, was equivalent in both groups (5.9% vs 8.3%, $p = 0.2313$). Logistic regression analysis showed age 69 or over is significant risk factor of VTE ($p = 0.0091$, odds ratio (OR): 2.40, 95% CI: 1.24–4.78) and PE ($p = 0.0466$, odds ratio (OR): 3.63, 95% CI: 1.02–16.96). Non-administration of chemical prophylaxis also significantly increased the risk of PE ($p = 0.0433$, odds ratio (OR): 3.67, 95% CI: 1.04–17.00). **Conclusion:** Administration of chemical thromboprophylaxis after HBP surgery is safe and beneficial because it did not increase the major hemorrhage risk and decreases the risk of PE.

Key Word(s): 1. venous thromboembolism; 2. pulmonary embolism; 3. thromboprophylaxis; 4. hepatobiliary-pancreatic surgery

Surgery

P-673

Short and long term outcome of the surgery for the gastric cancer in patients on maintenance hemodialysis**Presenting Author:** KIYOSHI HIRAMATSU**Additional Authors:** TOSHIYUKI ARAI, SATOMI SAEKI, TAKESHI AMEMIYA, HIDENARI GOTO, TAKASHI SEKI**Corresponding Author:** KIYOSHI HIRAMATSU**Affiliations:** Anjo Kosei Hospital, Anjo Kosei Hospital

Objective: Major surgery for hemodialysis patients with nephropathy seems to be at high risk. In this report we analyzed short term outcome (postoperative mortality and morbidity) and long term outcome (over all survival) of the surgery for gastric cancer in patients with nephropathy under the maintenance of hemodialysis. **Methods:** From January 2008 to December 2012, we had performed 442 operations for gastric cancer in our hospital. Fifteen patients with nephropathy under the maintenance of hemodialysis had undergone gastrectomy for gastric cancer. We retrospectively reviewed the medical records of these patients to assess short term and long term outcome. There were 12 males and 3 females. The average age of these patients was 70.4 ± 7.1 (range: 60–87). Distal gastrectomy (DG) with D1 and D2 lymph node dissection was performed in 2 and 6 patients, respectively. Total gastrectomy (TG) with D1 lymph node dissection was performed in 4 patients. TG with D2 lymph node dissection with splenectomy was performed in 3 patients. UICC (7th edition) stage were IA: 6, IB: 1, IIB: 5, IIIA: 1 and IIIB: 2. **Results:** Short term outcome: There was no mortality in the studied patients. Postoperative complications were observed in 4 patients: one acute cholecystitis (patients who underwent DG/D2, one left subphrenic abscess (patients who underwent TG/D2), and two wound infections (patients who underwent TG/D1 and TG/D2). The mean hospital stay after surgery of 15 patients was 17.6 ± 6.8 (range: 12–36) days. They were not significantly different between the studied fifteen patients and the other patients with no co-morbidity. Eleven patients with no complications were discharged from the hospital in 14.4 ± 3.0 (range: 12–21) days, whereas four patients with complications were discharged in 26.5 ± 6.4 (range: 22–36) days. Long term outcome: The one-year survival rate was 85%, and two-year survival rate was 40%. Eight cases were died. In these cases four cases were died of the recurrent gastric cancer (stage IIB: 1, IIIA: 1, IIIB: 2). These cases were all advanced stage comparably. In contrast, four cases were died of the other disease associated with chronic renal failure with in two years after surgery (stage IA: 2, IIB: 2). These cases were all early stage comparably. **Conclusion:** Although intensive perioperative management is necessary, our results indicated that a gastrectomy can be performed safely in the patients on maintenance hemodialysis. But, long term outcome was not satisfied compared to healthy patients.

Key Word(s): 1. gastric cancer; 2. hemodialysis

Surgery

P-674

Laparoscopy and endoscopy cooperative surgery for gastric submucosal tumor located near the esophagogastric junction**Presenting Author:** TOSHIAKI HIRASAWA**Additional Authors:** NAOKI HIKI, YORIMASA YAMAMOTO, SOUYA NUNOBE, JUNKO FUJISAKI, MASAHIRO IGARASHI, TAKESHI SANO, TOSHIHARU YAMAGUCHI**Corresponding Author:** TOSHIAKI HIRASAWA**Affiliations:** Cancer Institute Hospital Ariake, Cancer Institute Hospital Ariake

Objective: Laparoscopic wedge resections are increasingly applied for gastric submucosal tumors (SMT) such as gastrointestinal stromal tumor (GIST). For tumors located near the esophagogastric junction (EGJ), especially intragastric-type SMT, wedge resection of the stomach is quite difficult. Thus intragastric-type SMT located near the EGJ usually undergo total gastrectomy or proximal gastrectomy. This study aimed to introduce a laparoscopy and endoscopy cooperative surgery (LECS) for gastric wedge resection that is applicable for resections of intragastric-type SMT located near the EGJ. **Methods:** We retrospectively analyzed 16 patients [8 men and 8 women, mean age 58 years (range, 26–79 years)] who underwent LECS for the resection of intragastric-type SMT located within 2 cm from the EGJ at the Cancer Institute Hospital, Tokyo, between June 2006 and April 2014. To decide the precise resection line, both mucosal and submucosal layers around the tumor were circumferentially dissected using endoscopic submucosal dissection (ESD) via intraluminal endoscopy. Subsequently, the seromuscular layer was laparoscopically dissected along the incision line by ESD. After three-fourths of the circumference around the tumor had been resected, the SMT was exteriorized to the abdominal cavity and dissected with a standard endoscopic stapling device. **Results:** The mean tumor size was 3.6 cm (range, 2.0–5.0 cm). The mean distance from the lesions to EGJ was 0.5 cm (range, 0–2 cm). All surgical margins were clear. Histopathologic examination of the tumors showed GIST (n = 8), leiomyoma (n = 7), schwannoma (n = 1). The mean operation time was 210 min, and the estimated blood loss was 30 ml. In 11 of 16 cases, the LECS procedure was successful for dissecting out the gastric SMT and the postoperative course was uneventful. The remaining four were converted to open surgery because of extensive resection more than half of circumference of the EGJ. Among the cases converted to open surgery, anastomotic leakage occurred in two cases and anastomotic stenosis occurred in one. **Conclusion:** LECS for dissection of intragastric-type SMT located near the EGJ may be performed safely with minimal resection lines, therefore is helpful for preserving cardia. But extensive resection around the EGJ is not feasible.

Key Word(s): 1. endoscopic submucosal dissection (ESD); 2. gastric submucosal tumor; 3. gastrointestinal stromal tumors; 4. laparoscopy and endoscopy cooperative surgery

Surgery

P-676

Examination of early mortality after percutaneous endoscopic gastrostomy**Presenting Author:** RYUSUKE HORIE**Additional Authors:** KUGAI MUNEHIRO**Corresponding Author:** RYUSUKE HORIE**Affiliations:** *Molecular Gastroenterology and Hepatology*

Objective: In Japan, percutaneous endoscopic gastrostomy (PEG) is used mainly in stroke and dementia patients, particularly when oral intake is not adequate. PEG is an established procedure that was developed in the late 1970s, and experience has shown that it is associated with rare occurrences of early mortality. Long-term survival (31 days or more) is usually achieved after PEG is performed. However, we have encountered cases of mortality within 30 days after PEG in our hospital. **Methods:** We conducted a study on 115 patients who underwent PEG at our hospital to determine the risk factors for postoperative early mortality after PEG. Death within 30 days after PEG was defined as early mortality, and eight such cases were observed in the study group. We then compared the age and hematological parameters (WBC, CRP, Hb, BUN, Cre, Che, Alb and Tcho) between cases of early mortality and long-term survival. All readings were taken on the day before the PEG procedure. **Results:** Che and Tcho levels were found to be significantly lower in cases of early mortality than in cases of long-term survival. **Conclusion:** PEG must be implemented only when the prognosis and estimated risk factors of the patients condition are understood. It is important to establish a good balance between the patients chance of long-term survival, and improvement in QOL.

Key Word(s): 1. PEG risk

Surgery

P-677

A discussion on the indications of laparoscopic and endoscopic cooperative surgery for gastrointestinal stromal tumor**Presenting Author:** BING HU**Additional Authors:** HONG ZE ZENG**Corresponding Author:** HUI LIU**Affiliations:** *West China Hospital, Sichuan University*

Objective: In recent years, laparoscopic and endoscopic cooperative surgery (LECS) has become increasingly frequently used for gastrointestinal stromal tumors (GISTs). The aim of our study is to hold a preliminary discussion to the choice between laparoscope-assisted endoscopic technique (LAET) and endoscope-assisted laparoscopic technique (EALT). **Methods:** From January 2006 to December 2011, a total of 72 patients received LECS in our hospital. All the patients underwent preoperative endoscopy, endoscopic ultrasonography (EUS) and upper abdominal CT scan. For endogenous tumors with neither serosal invasion nor surrounding organs or lymph nodes metastases, LAET was chosen if preoperative evaluation showed risks of massive bleeding or perforation and difficulties in simple endoscopic resection. For tumors located at cardia or pylorus, LAET was chosen if possible. For exogenous tumors or endogenous tumors with serosal invasion, EALT was chosen. **Results:** 32 cases were treated by LAET. 40 cases were treated by EALT, of which, 10 cases were indicated for LAET initially but turned to EALT during surgeries. Among the 10 cases, perforation occurred in 6 cases during endoscopic dissection and high chance of serosal invasion was found in the other 4 cases with tumors located near cardia or pylorus during endoscopic surgeries. All the tumors were completely resected and none of the cases were converted to open surgery. During a median follow-up of 35 months, none of the patients suffered metastasis or recurrence. **Conclusion:** LECS is safe and

effective for gastric GISTs. For endogenous tumors without serosal invasion which can be fully removed by endoscopy, LAET should be considered. Even if an endogenous tumor can be resected simply by endoscopy, LAET is safer. For exogenous tumors or endogenous tumors with invasion beyond the stomach wall, EALT should be chosen.

Key Word(s): 1. gastrointestinal stromal tumor; 2. laparoscopic and endoscopic cooperative surgery

Surgery

P-678

A controversial huge splenic pseudocyst**Presenting Author:** CHUNXIANG JIN**Additional Authors:** YU HE, HUI WANG**Corresponding Author:** CHUNXIANG JIN**Affiliations:** *Third Hospital of Jilin University, Third Hospital of Jilin University*

Objective: Pseudocysts are so called because they do not have a capsule of epithelium like most cysts, but are merely collections of fluid surrounded by adjacent tissues. Splenic pseudocyst are uncommon and thought to result from resolution and liquefaction of hematoma of remote or recent trauma. Here we represent a case of a huge splenic pseudocyst which is accompanied by a pancreatic pseudocyst. **Methods:** A 55-year-old man, who had a 30-year history of alcohol consumption and just discontinued 2 years ago, was admitted to our hospital for treatment of aching pain over left upper quadrant (LUQ) of the abdomen, which was worsening after meal without nausea or vomiting. He denied any medical or surgical history, but the patient mentioned a fracture of the left 10th rib eight years ago, without any medical observation after it. The physical examination was essentially normal. The patient's complete blood count showed an elevated leukocyte count of $14.46 \times 10^9/L$ with the neutrophil count of $12 \times 10^9/L$ and a slightly decreased erythrocyte count of $3.6 \times 10^{12}/L$ with hemoglobin 106 g/L. Other blood tests were unremarkable. Ultrasonography (UG) revealed a complex cyst 11–12 cm in diameter on the lower part of the spleen, which contained thick echoes from tissue debris and was loculated incompletely (Figure 1A). The consistency of the splenic inferior edge was interrupted and the shape of the spleen was irregular. The parenchyma of the spleen was compressed, displaced and found around the complex cyst. The main splenic artery and vein and their branches could be demonstrated at the splenic hilum. The shape, size and echogenicity of pancreas (head, body and tail) seemed normal (Figure 1B). The abdominal computed tomography (CT) indicated the lesion in the spleen and splenic hilum, similar to what had been found in UG. CT revealed an irregular, hypodense cystic lesion in the spleen and around the splenic hilum, part of which was not separated from the tail of pancreas and stomach. The head and body of pancreas were homogenous with the normal size and shape. The contour of the tail of pancreas was unclear (Figure 2A). Because of persistent LUQ pain, the patient underwent an exploratory laparotomy. During the operation, surgeons found a huge cystic mass among the gastric fundus, pancreatic tail and spleen, which was encapsulated by greater omentum and indistinguishable from adjacent tissues, thus leading to the dilemma that it was impossible to remove the cyst integrally. Then the cystic content was aspirated to check amylase, which was black-brown and turbid and showed the level of amylase being as high as 86464 IU/L. Finally, a drainage catheter was placed in the cyst and abdomen was closed. Five days after operation, UG revealed distinctly decreased splenic pseudocyst (Figure 2B, the white arrow points towards the catheter). The pancreas echogenicity (including the tail) seemed as normal as preoperative examination.

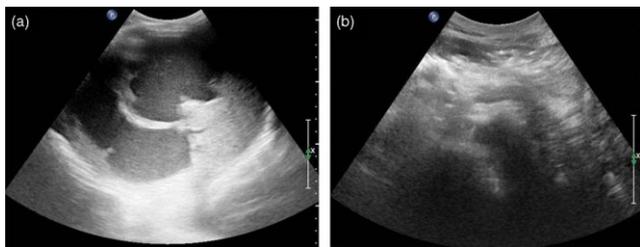


Figure 1

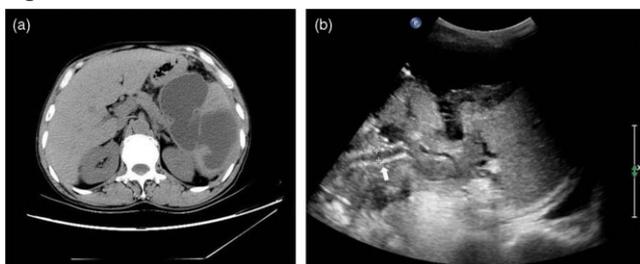


Figure 2

Results: According to the intraoperative findings, postoperative diagnosis of a pancreatic pseudocyst involving the spleen was established. Controversially, in this case, the patient presented with few symptoms and no clinical history of the acute or chronic pancreatitis. Both UG and CT lacked features of inflammatory changes in pancreas except for the uncertainty in the contour of pancreatic tail. Although pancreatitis may occur focally, but in this case, the lesion in the spleen was far more impressive. Combined the traumatic experience in this patient, another possibility that a post-traumatic splenic pseudocyst involving the pancreas was posed. As the time going on, post-traumatic splenic hematoma developed into the splenic pseudocyst through resolution and liquefaction. With the enlargement and secondary infection of the splenic pseudocyst, the tail of pancreas was invaded. As the condition progressed, digestive enzymes leaked out, forming the pancreatic pseudocyst. **Conclusion:** Because of the absence of further pathological analysis of cystic content, though it was black-brown, it was not sure about the elements in the pseudocyst, such as erythrocytes, leukocytes, macrophages, etc. So it made the cause of this huge splenic pseudocyst complicated and confusing.

Key Word(s): 1. pseudocyst; 2. spleen; 3. pancreas

Surgery

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Clinical outcome of curative surgery in elderly patients with colorectal cancer

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Objective: Surgery for elderly patients with colorectal cancer (CRC) may be curative, but age-related risks are present. We compared clinical course

of elderly patients with CRC who underwent curative surgery and who did not. **Methods:** Clinical course of elderly patients aged 80 years or more who were diagnosed as having advanced CRC were analyzed retrospectively in a tertiary facility. Cox proportional hazards models were used to compare multivariable-adjusted risk for mortality. **Results:** There were 92 patients aged 80 years or more who were diagnosed as having advanced CRC in our center. Among them, 57 patients (62%) underwent curative resection. The American Society of Anesthesiologists (ASA) classification was I/II in 46 (50%) and III/IV in 46 (50%) patients. TNM stage was I in 10 (10.9%), II in 25 (27.2%), III in 32 (34.8%), and IV in 25 (27.1%) patients. Disease location was rectum in 22 patients (24.3%), colon in 65 (70.7%), and multiple in 5 (5.5%) patients. Disease related mortality among patients who underwent surgery was 8.8% (5/57) during a median follow up time of 521 days, and that of those who did not receive surgery was 17.1% (6/35) during 91 days. Surgery was associated with decreased mortality (hazard ratio 0.26; 95% confidence interval 0.07–0.94; $p = 0.040$), adjusting for baseline American Society of Anesthesiologist classification and TNM stage.

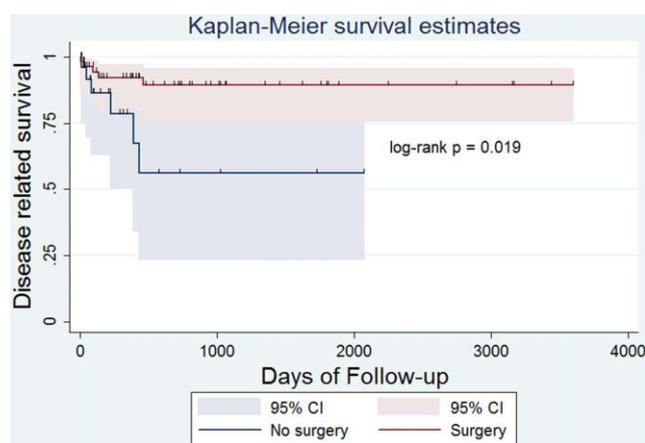


Figure 1

Conclusion: Curative surgery for colorectal cancer among elderly patients seems to be associated with a lower risk for mortality. Further studies with a larger scale are needed.

Key Word(s): 1. colorectal cancer; 2. surgery; 3. aged; 4. survival

Surgery

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Sclerosing encapsulating peritonitis in patients on long term peritoneal dialysis

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Objective: Sclerosing Encapsulating Peritonitis (SEP) is a rare surgical condition especially in patients with long term peritoneal dialysis (PD). The reported incidence was about 1.2 percent in PD patients and increases along with the dialysis period. The diagnosis of SEP is hard before operation and usually made during surgery. The prognosis of SEP is poor with postoperative mortality reaching 20–80%. We report three consecutive cases of SEP accidentally found during exploratory laparotomy for CAPD (Continuous Ambulatory Peritoneal Dialysis) related peritonitis. **Methods:** Patients were 77, 57, and 49 years old and the former one was

male. The peritoneal dialysis time were around 5–6 years. They were admitted due to abdominal pain and turbid dialysate. The dialysate cultures were *E. coli* in two and none in the other initially. The abdominal computerized tomographic scans showed intra-abdominal fluids, bowel loops edema, omental cakes, and/or mesenteric fat edema without mention of the clues of SEP. The CAPD tubes were removed after failure of conservative measures including intra-peritoneal instillation of antibiotics. All three patients then received laparotomy with adhesiolysis, enterolysis and cleansing of intra-abdominal and inter bowel loops abscesses. The youngest patient received additional sigmoid resection and Ascending-colostomy due to sigmoid perforation and colostomy closure was done six weeks later uneventfully. All these three patients recovered from the operations smoothly and were switched to hemodialysis thereafter. **Results:** Here we report three rare cases of Sclerosing Encapsulating Peritonitis 5–6 years after continuous ambulatory peritoneal dialysis. They are all recovered from the surgical managements smoothly. Patients are doing well now under hemodialysis without abdominal symptoms. **Conclusion:** The diagnosis of SEP is hard before operation. Therefore, high index of suspicion of SEP is warranted. The mechanism of this disease entity is unknown. Most likely related to the compositions of the dialysate has been proposed. Bowel resection is better to avoid in addition to the stripping of the membranes with intestinal releasing and drainage.

Key Word(s): 1. sclerosing encapsulating peritonitis; 2. peritoneal dialysis

Surgery

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Liver abscess following acute appendicitis: a case report

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Objective: Liver Abscess as complication of acute pancreatitis is rare condition nowadays. Hepatic clearance of bacteria via the portal system appears to be normal phenomenon in healthy individuals, however, organism proliferation, tissue invasion and abscess formation still can occur. This aim of this report to present a case of liver abscess as complication of appendicitis perforation **Methods:** 51 years old male Caucasian complained right lower quadrant pain 3 days prior the consultation. Tenderness at Mc Burney area was noted. Abdominal ultrasound showed enterocolitis, cystitis, cholecystitis with tiny cholelithiasis. Initially admitted for pain management and antibiotic administration, but discharged after 1 days, improved. Ciprofloxacin was continued. However, after 5 days, patient came back due to recurrent pain, accompanied with low grade fever. CT scan abdomen with contrast showed acute appendicitis with perforation and abscess formation extending along inferior aspect of liver. Digestive surgeon was consulted and request for urgent laparotomy and abscess drainage. Post operatively, patient was treated with meropenem and metronidazole. Patient was discharged improve after 7 days hospitalization. **Results:** Appendicitis was traditionally the major cause of liver abscess. However, as diagnosis and treatment of this condition has advanced, its frequency as a cause for liver abscess has decreased. The liver receives blood from the both systemic and portal circulations. Increased susceptibility to infections would expected given exposure to bacteria. Our patient has several factors which can develop liver abscess such appendicitis and cholecystitis. However, the position of the abscess, which at inferior part of left liver lobe, hence suggestive hematologic transmission thru portal vein from appendix area. **Conclusion:** Liver abscess as complication of appendicitis is rare condition. Early detection and proper management will improve the outcome.

Key Word(s): 1. pyogenic liver abscess; 2. complication acute pancreatitis

Surgery

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Strangulation ileus is the critical factor in cases of bowel obstruction in elderly patients

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Objective: Intestinal obstruction is one of the cause of emergency surgery, and The purpose was to assess the critical factor in cases of intestinal obstruction. **Methods:** We analyzed with regard to the cause of intestinal obstruction, history of previous abdominal surgery, use of decompression tube, surgical intervention, use of respirator after surgery. Moreover, we clarified the relationship with these factors and age. **Results:** The cause of intestinal obstruction is adhesion in 51.2%, strangulation in 26.6% and colon cancer in 10.1%. Insertion rate of decompression tube was significantly higher in cases with history of previous abdominal surgery compared with those without it, but surgery rate was higher in cases without history of previous surgery, and strangulation accounted for 54.5% of the cause of surgery. Bowel resection rate was significantly higher in cases of strangulation than those with cases of cause other than strangulation. Period between admission and surgery was significantly shorter in cases of strangulation than those with cases of other cause. The cases of strangulation required higher use rate of respirator after operation. Cases 75 years or more showed higher rate of strangulation and higher operation rate compared with those younger than 75, requiring bowel resection. Multivariate analysis revealed that strangulation ileus is the critical factor in elderly patients. **Conclusion:** Strangulation ileus is the critical factor in elderly cases, leading to emergency operation.

Key Word(s): 1. strangulation ileus; 2. bowel obstruction; 3. elderly

Surgery

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Diagnostic value of contrast-enhanced ultrasound in the assessment of hepatic arterial anastomotic stenosis after liver transplantation

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Objective: To investigate contrast-enhanced ultrasound (CEUS) assessed value of the hepatic artery anastomotic stoma stenosis after liver transplantation. **Methods:** 25 cases of patients after liver transplantation underwent CEUS examination to prove whether there is significant hepatic artery anastomotic stenosis. Under the patient supine resting state, on the right elbow shallow intravenous bolus injection of ultrasound contrast agent (SonoVue) 1.5 ml, Siemens s2000, 4s-1 probe, under the scanning

sured by procedure time to complete the ESD. We aimed to investigate the risk factors for perforation during colorectal ESD, which focused on the procedure time of colorectal ESD. **Methods:** This cross-sectional analysis were performed the 320 patients, who had colorectal neoplasia ≥ 2 cm in diameter and treated by ESD from September 2009 to October 2013 in Samsung Medical Center, Seoul, Korea. The associations between ESD-associated perforation and patient factors (age, gender, co-morbidity), tumor-related factors (gross morphology, size, location), procedure-related factors (type of ESD, submucosal injection solution, submucosal fibrosis), en bloc resection, final pathology, and procedure time were investigated. **Results:** Perforation during colorectal ESD occurred in 14 cases (4.4%), which contained 6 frank perforation and 8 micro-perforation. Using the multivariate analysis, perforation was associated with submucosal fibrosis (adjusted OR, 5.80; 95% CI, 1.28–26.32) and total procedure time (adjusted OR of every 10 minutes increase of total procedure, 1.12; 95%, 1.02–1.23). The ROC analysis for association between perforation and procedure time showed AUC of 0.73 (95% CI: 0.60–0.86). According to the Youden index for total procedure time, optimal cutoff points may be set as ≥ 94.5 min (sensitivity, 78.6%; specificity, 68.3%). **Conclusion:** Total procedure time and submucosal fibrosis are independent predictors of perforation during ESD for superficial colorectal neoplasia ≥ 2 cm. Physicians should be aware of increased risk of perforation when ESD procedure time was greater than about ≥ 90 minutes. **Key Word(s):** 1. colorectal neoplasia; 2. endoscopic submucosal dissection; 3. perforation; 4. procedure time

Therapeutic Endoscopy/Interventional Radiology P-689

The safety of restarting diet within 24 hours after endoscopic submucosal dissection for colorectal neoplasia

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Objective: Endoscopic submucosal dissection (ESD) has been widely accepted as a treatment option for early colorectal neoplasia (CRN). However, little is known about the optimal time to restart diet after ESD. We aimed to investigate the optimal time to restart diet after ESD. **Methods:** We retrospectively reviewed medical records of 293 patients who underwent colorectal ESD without perforation between 2008 and 2013. These patients were divided into early (≤ 24 hours after ESD) and late (>24 hours after ESD) diet group. Baseline characteristics, therapeutic outcomes of ESD, post-diet complications and duration of hospitalization were investigated. A propensity score for duration of NPO was constructed using multivariate logistic regression, and case-matching was performed to adjust the effect of selection bias. **Results:** Among 293 patients, 257 were early and 36 were late diet group. The baseline characteristics of the early diet group were as follows: mean age was 61.6 years and 152 (59.1%) were male. Mean size of the lesion was 31.3 mm. 109 (42.4%) of the lesions were located in the rectum. Mean NPO and hospitalization time after ESD were 16.6 and 23.7 hours, respectively. Post-diet complications were fever ($n = 5$, 1.9%), vomiting ($n = 4$, 1.4%), ileus ($n = 10$, 3.4%),

abdominal pain ($n = 3$, 1.0%), and immediate post-procedural bleeding ($n = 7$, 2.7%). After discharge, 3 (1.0%) patients experienced delayed bleeding requiring endoscopic hemostasis, but delayed perforation was not reported. Propensity score case-matched analysis was conducted for early and late diet group ($n = 32$ in each group). Compared with late diet group, the mean length of hospitalization was shorter in early diet group (24.2 ± 1.8 hours vs 55.4 ± 4.7 hours; $P < 0.001$), but post-diet complications were similar. **Conclusion:** Restarting diet within 24 hours after ESD in patients without perforation is generally well-tolerated and shortens the length of hospitalization.

Key Word(s): 1. ESD; 2. colorectal neoplasia; 3. diet

Therapeutic Endoscopy/Interventional Radiology P-691

Feasibility of EUS guided FNA without on site cytopathologist and comparison of core tissue attainment with 19G and 22G needle-a prospective analysis of 196 cases in a tertiary care unit

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Objective: 196 cases referred to our centre from April 2012 to May 2014 were studied retrospectively for feasibility of FNA without an on site cytopathologist for predicting the positive pick up rate and possibility of obtaining core tissue for IHC staining. In addition simultaneously comparison of core tissue acquisition by 19G and a 22G needle was performed. A protocol was designed where all patients referred for FNA were included and the above mentioned parameters studied retrospectively. **Methods:** All the 196 cases were subjected to EUS guided FNA using an Olympus EU ME1 echoendoscope. The procedure was performed in left lateral position and under conscious sedation using midazolam and propofol. FNA was performed using a 25 G needle for masses beyond the Pylorus. A 22G and 19G needle were used for masses accessible from the stomach. A total number of five passes were made for each case. Also for all lymph nodal masses and sub mucosal masses FNA was performed and in addition core tissue was acquired with a 22G and a 19G needle making two passes with each needle and results studied. Total 123 patients with lymph node masses and sub mucosal gastric and duodenal masses were subjected to core biopsy. **Results:** 1) Out of 196 cases 9 cases had poor cellularity and 16 were non conclusive. i.e. tissue diagnosis was not possible in 12.7%. 2) The tissue diagnosis was possible 87.3% in absence of an on site cytopathologist. 3) Core tissue was obtained in 123 case of which with both the needles a positive diagnosis was obtained in 107 cases (86.9%) and 16 cases failed to revealed significant cellularity (13.1%). 4) Out of the 107 positive cases of core biopsies, the biopsies were positive in 85 cases (79.4%) with a 19G needle with failure credited to blood contamination. With a 22G needle 22 positive biopsies (20.6%) were obtained and they had less blood contamination. 5) Adenocarcinoma of the head of the pancreas was the commonest etiology in pancreatic head masses. 6) The most non conclusive cytology was in uncinate process masses (33.3%). 7) Tuberculous lymphadenopathy was the commonest etiology in lymph nodal masses. The table of the result does not fit in this box so is sent separately. **Conclusion:** Out of 196 cases 9 cases had poor cellularity and 16 were non conclusive. i.e. tissue diagnosis was not possible in 12.7%. 2) The tissue diagnosis was possible 87.3% in absence of an on site cytopathologist. 3) Core tissue was obtained in 123 case of which with both the needles a positive diagnosis was obtained in 107 cases (86.9%) and 16 cases failed to revealed significant cellularity (13.1%). 4) Out of the 107 positive cases of

core biopsies, the biopsies were positive in 85 cases (79.4%) with a 19G needle with failure credited to blood contamination. With a 22G needle 22 positive biopsies (20.6%) were obtained and they had less blood contamination. 5) Adenocarcinoma of the head of the pancreas was the commonest etiology in pancreatic head masses. 6) The most non conclusive cytology was in uncinata process masses (33.3%). 7) Tuberculous lymphadenopathy was the commonest etiology in lymph nodal masses.

Key Word(s): 1. FNA; 2. cytopathology; 3. core tissue sampling; 4. onsite cytopathologist

Therapeutic Endoscopy/Interventional Radiology P-692

Study from a single tertiary care centre of proximal migration of biliary stents. Methods of prevention and the best method of retrieval of these migrated stents

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Objective: Study from a single Tertiary care centre of proximal migration of Biliary stents. Methods of prevention and the best method of retrieval of these migrated stents. **Methods:** The study was divided into two phases. From 2008 to 2011 when retrospectively 1080 cases were studied in whom Biliary stents were placed. Only those cases in whom stents were placed post stone removal (7 Fr–10 cms straight) where the papilla was associated with a diverticulum and when it was not. The second group was cases of post cholecystectomy leaks or strictures (7 Fr–12 cms straight stents) with papilla with and without a diverticulum and the third group in cases with cholangitis where 10 Fr–12 cms straight stents were placed. This data showed a significant proximal migration of 7 Fr–10 cms stents and especially those associated with a peri Ampullary diverticulum. Therefore prospectively the authors changed the straight 7 Fr–10 cms stents to 7 Fr–12 cms in papilla without peri Ampullary diverticuli and 7 Fr–12 cms in papilla associated with a peri Ampullary diverticulum and 1320 case were studied and data studied. **Results:** From 2008 to 2011 (Total 1080 cases). 702 cases stones with normal papilla (7 Fr–10 cms straight stent)- migration 36 (5.1%), 216 cases stone with papilla associated with peri Ampullary diverticulum (7 Fr–10 cms straight) migration 30 (13.9%), 50 cases of leaks with normal papilla (7 Fr–12 cms straight), migration 3 (6%), 13 cases of leak with papilla associated with peri Ampullary diverticulum (7 Fr–12 cms straight stents), migration 2 (11.5%), 99 cases with cholangitis (10 Fr–12 cms straight stent), migration 1 (1%). From 2011–2014 – (Total- 1320 cases) – 871 cases stones with normal papilla (7 Fr–12 cms straight stents), migration 27 (3.1%), 266 cases stones with papilla associated with peri Ampullary diverticulum (7 Fr–Double pigtail stent), proximal migration was nil and distal migration 19 (5.2%), 61 cases with normal papilla (7 Fr–12 cms straight stents), migration 4 (5.8%), 8 leaks with papilla associated with peri Ampullary diverticulum (7 Fr–10 cms double pigtail stent), proximal migration 0 and distal migration 1 (6%) and 114 cases of cholangitis (10 Fr–12 cms straight stent), migration 1 (1%). The techniques of stent removal were – Total 104 cases. Removal with balloon extractor (34 cases), rat tooth foreign body forceps (47 cases), dormia basket (16 cases) and with Soehendra retriever (7 cases). Successful removal in all cases. Complications were 2 cases of mild pancreatitis with the rat tooth removal group. **Conclusion:** 1) Highest stent migration rate was in cases where 7 r–10 cms stents were placed in papilla associated with peri Ampullary diverticulum. 2) Double pigtail stents prevent proximal migration. But the distal migration prevents them from being put for long term intention. 3) 10 Fr stents exhibit the least proximal migration rates. 4) The rat tooth foreign body forceps is the best modality of retrieval of proximally migrated Biliary stents followed by balloon extraction.

Key Word(s): 1. proximal biliary stent migration; 2. type of stents; 3. method of retrieval

Therapeutic Endoscopy/Interventional Radiology P-693

An alternative method of drainage of pseudocysts in presence of big varices in the fundus

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Objective: A study 18 cases of draining pseudocysts complicated by portal hypertension and gastric varices with EUS guided locating the site of puncture distally on the bulge. **Methods:** 18 cases from all that were referred to us from 1st January 2011 to May 30, 2014 with pseudocysts were found to be complicated with fundic and esophageal varices secondary to splenic vein. UES revealed big varices around the GE junction and the proximal body and no window was found for EUS guided cyst drainage in the conventional manner. The bulge of the cyst was followed distally with an EUS scope and an area devoid of varices was found distally. Here the tip of the EUS scope was fully up and it was impossible to get a 19G needle out for puncture and further steps of conventional cyst drainage. Therefore we marked the area with biopsy forceps taking a pinch of tissue for identification on passage of the side viewing scope subsequently. A conventional ERCP 4.2 mm channel scope from Olympus was then passed, positioned in front of the marked area and the cyst punctured around the mark with a needle knife papillotome from Boston and guide wire placed under fluoroscopic control. The tract was then dilated with a 6.5 Fr cystotome from Endoflex and dilated with a CRE balloon up to 12 mm only to avoid bleeding. Two 10 Fr Double pig tail stents were kept. In cases with necrosis and additional naso cystic catheter was placed for lavage which was removed after 48 to 72 hours exchanging it for an additional 10 Fr DPT stent. ERCP done if a leak was suspected at the time of removal of naso cystic drain and stent placed. Stents were removed after six weeks to three months and the PD stent removed or changed as needed. **Results:** Bulge Present 18 100.% Puncture Possible around marked site 17 94.4% Bleeding (Minor) 3 16.7% Necrosis Present 5 27.7% Infected Fluid 4 22.2% Naso Cystic Drain kept 9 50% Perforation 0 0 Sepsis 4 22.2% ERCP Performed 6 33.3% Cysto gastrostomy stents Removed 12 63.1% Stents still present 4 22.2% Lost to Follow up 2 11.1% Procedure Related Mortality 0 0 The bleeding was minor from the wall and was treated with injection of adrenaline and balloon tamponade. The sepsis was treated with antibiotics for 5 to 7 days and was seen in patients with necrosis and infected fluid. 4 patients had a disrupted duct and hence the stents have not been removed. **Conclusion:** In difficult situations of pseudocysts complicated with varices, puncturing distally on the bulge at a site marked by EUS scope is a feasible alternative. EUS guide drainage is difficult in these situations as the scope is angled acutely and this makes the procedure very difficult. The complications rates are also reasonable.

Key Word(s): 1. pseudoocyst; 2. varices; 3. EUS marking; 4. puncture

Therapeutic Endoscopy/Interventional Radiology P-694

The efficacy and safety of colorectal ESD for elderly patients

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Objective: Since colorectal ESD is already accepted in the insurance adaptation. It is thought that colorectal ESD is still technically difficult and we often need to examine the example of the indications carefully. In this study, we evaluated the efficacy and safety of colorectal ESD for highly aged group patients. **Methods:** From April 2012 to November 2013, consecutively, patients having colorectal cancer or adenoma at Nagoya City University Hospital who underwent ESD were included in this study. By definition, 6 patients which were 85 and over are considered old patients whereas 60 patients aged under 85 are grouped as young patients. **Results:** En bloc resection rate was 66.7% in old patients while there are 90% in young patients. Operation time was 150 ± 80.3 minutes in old patients whereas it is only 110 ± 112.3 minutes in young patients. Complications were observed. In every 5 patients in young aged group, 3 of them have perforation while 2 patients were post-ESD bleeding. In old patients no complications were observed. Since 2 patients in old patients were not able to control their body movement during ESD, their tumor were resected by endoscopic piecemeal mucosal resection (EPMR). **Conclusion:** If a perforation occurs in old patients, it is possible that the condition of patients become more severe and even have death-dealing complications. We should fully consider adaptation of ESD and we should choose other treatment methods. The colorectal ESD for old patient has been proven to be effective and safe.

Key Word(s): 1. ESD elderly patients

Therapeutic Endoscopy/Interventional Radiology P-695

Complete defect closure of gastric submucosal tumors with purse-string sutures

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Objective: Gastric submucosal tumors (SMTs) originating from the muscularis propria layer are treated endoscopically. The successful closure of the wall defect is a critical step. This study evaluated the safety and feasibility of endoscopic purse-string suture (EPSS) method with an endoloop and several metallic clips after endoscopic full-thickness resection (EFTR) or perforation due to endoscopic submucosal dissection (ESD). **Methods:** Thirty patients with SMT originating from the muscularis propria layer receiving EFTR or ESD were retrospectively analyzed from December 2009 to April 2013. After successful tumor resection, an endoloop was anchored onto the circumferential margin of the gastric

defect with several metallic clips and tightened gently. Patient characteristics, tumor size, en bloc resection, and postoperative complications were evaluated. **Results:** EPSS was successfully performed in all the 30 patients following EFTR or perforation due to ESD. The mean size of the resected specimen was 1.9 cm in diameter. No severe complications occurred during or after the procedure. One month after the procedure, the healed lesions were endoscopically confirmed. **Conclusion:** EPSS with an endoloop and clips is an effective and safe technique for closing the gastric defect after EFTR or perforation due to ESD.

Key Word(s): 1. complete defect closure with purse-string sutures in gastric submucosal tumors

Therapeutic Endoscopy/Interventional Radiology P-696

The effect of paclitaxel-eluting covered metal stents versus covered metal stents in a rabbit esophageal squamous carcinoma model

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Objective: The use of self-expanding metallic stents (SEMSs) is the current treatment of choice for malignant gastrointestinal obstructions. However, the stents can only promote the drainage but have no antitumor effect. Some studies have reported that drug-eluting SEMS may have the potential of tumor inhibition. The aim of the study was to evaluate the efficiency and safety of paclitaxel-eluting SEMS (PEMS) in rabbit esophageal cancer model. **Methods:** A PEMS was covered with a paclitaxel-incorporated membrane in which the concentration of paclitaxel was 10% (wt/vol). The rabbit models were created endoscopically. And then PEMS or SEMS was endoscopically inserted into rabbit esophagus. After inserting stents for 2 weeks, the rabbits were executed during which we evaluated the tumor volume, area of the wall defect, area of the tumor under endoscopic ultrasound (EUS) before and after stent placement, status of proximal esophageal obstruction, tumor metastasis and the expression of vascular endothelial growth factor (VEGF). Food-intake and weight loss after stent placement were recorded as well. **Results:** All 30 rabbits were anesthetized and received stent placement and 22 rabbits survived to the sacrificed time. The average tumor volume was 7.00 ± 4.30 cm³ in SEMS group and 0.94 ± 1.51 cm³ in PEMS group, respectively ($P < 0.05$). The area of the esophageal wall defect was 0.70 ± 0.63 cm² in SEMS group and 0.17 ± 0.16 cm² in PEMS group, respectively ($P < 0.05$). Tumor area 2 weeks after stent placement under EUS was 4.40 ± 1.47 cm² in SEMS group and 1.30 ± 1.06 cm² in PEMS group, respectively ($P < 0.05$). Other indices were not significantly different among these two groups. **Conclusion:** A PEMS can be an alternative tool for advanced esophageal cancer which may inhibit tumor growth by serving a drug sustained-release platform. Clinical trials of this stent are needed in the near future.

Key Word(s): 1. complete defect closure with purse-string sutures in gastric submucosal tumors

Therapeutic Endoscopy/Interventional Radiology P-697

Reassessing specimens by endoscopic submucosal dissection for lymphatic vessel infiltration: study of patients with early gastric cancer who underwent additional gastrectomy

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Objective: From January 2002 to December 2012, 611 cases (662 lesions) of early gastric cancers (EGCs) were treated by endoscopic submucosal dissection (ESD) at Yamagata Prefectural Central Hospital. Out of 611 cases of EGCs treated by ESD, lymphatic vessel infiltrations were pathologically diagnosed in 3.3%. All cases underwent additional gastrectomy and lymph node metastases were pathologically diagnosed in 25%. This result means that 75% of cases were over-treated by surgery. We need to research more diagnostic factors of lymphatic vessel infiltration patterns which indicate the risk factor for lymph node metastases.

Methods: [Patients] From January 2005 to June 2012, specimens by ESD undertaken in 19 EGC patients were reassessed for lymphatic vessel infiltration (ly). [Methods] Sections of specimens were stained with hematoxylin-eosin (HE) and immunostained for D2-40 expression. They were evaluated by counting the number of infiltrating lymphatic vessels and measuring the maximum extent of infiltration (or determining the number of slides from the same specimen showing lymphatic vessel infiltration). **Results:** Five of 19 patients (26.3%) with ly(+) ESD specimens and none of 14 patients with ly(-) ESD specimens had metastatic lymph nodes. The 5 patients with metastatic lymph nodes had ESD specimens with 5 or more infiltrating vessels and a maximum distance of infiltration greater than 2 mm. Eight patients with ly(+) specimens having less than 5 infiltrating vessels or a maximum distance of infiltration less than 2 mm had no metastatic lymph nodes. **Conclusion:** These findings suggest that the criteria for additional gastrectomy after ESD might exclude ly(+) patients with less than 5 infiltrating vessels or a maximum distance of infiltration less than 2 mm. For further confirmation, objective evaluation of ESD specimens for lymphatic vessel infiltration should be undertaken in a large number of patients who subsequently undergo additional gastrectomy.

Key Word(s): 1. early gastric cancer ESD lymphatic vessel infiltration

Therapeutic Endoscopy/Interventional Radiology P-698

A case of epithelioid hemangioendothelioma which was treated by TACE

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Objective: Epithelioid hemangioendothelioma (EHE) is a rare vascular tumor which shows intermediate malignancy between hemangiomas and malignant hemangioendotheliosarcomas. Although tumor progression is generally slow, the outcome may be poor without proper treatment. However, because of the rarity of this disease, algorithm for optimal

treatment is yet to be determined. Surgical resection, liver transplantations, systemic chemotherapy, local chemotherapy, and ablation are proposed for the treatment of this rare disease in previous case reports. **Methods:** We herein report a case of epithelioid hemangioendothelioma which was successfully treated with transcatheter arterial chemoembolization (TACE). **Results:** Case: 69 year-old woman was referred to our hospital for multiple liver tumors without any symptoms. A whole body CT scan, an upper gastrointestinal endoscopy and an colonoscopy pointed out no primary tumor other than 11–14 mm sized multiple liver tumors located in the hepatic bilateral lobes. Tumors showed ring-like enhancement on early phase of dynamic CT scan. Liver tumor biopsy revealed infiltrating growth of epithelioid tumor cell with atypical nuclei in fibrous stroma with vascular staining pattern of immunohistochemistry, confirming a diagnosis of EHE. Taking advantage of fewer complications, we performed TACE. CT scan taken 3 month after the last treatment session showed sustained lipiodol deposition, although the tumor regression was not obtained. **Conclusion:** TACE should be a good option for the treatment of EHE, with similar outcome to surgical resection and acceptable toxicity.

Key Word(s): 1. epithelioid hemangioendothelioma; 2. transcatheter arterial chemoembolization

Therapeutic Endoscopy/Interventional Radiology P-699

Meta-analysis of randomized controlled trials on small sphincterotomy plus large balloon dilation versus sphincterotomy alone for retrieval of choledocholithiasis

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Objective: Endoscopic sphincterotomy (EST) has become the most commonly used endoscopic technique to extract choledocholithiasis, small sphincterotomy plus endoscopic papillary large balloon dilation (SES+ELBD) is also an important technique. However, the comparisons between them were inconsistent, and therefore a meta-analysis was performed based on randomized controlled trials (RCTs). **Methods:** A systematic search was performed using PubMed, EMBASE, the Cochrane Library, and Web of Science for relevant articles published in English. The data was first evaluated using the Cochrane Collaboration's tools, and then analysed using RevMan 5.2. Relative risk or Peto's odds ratio was computed as the measures of pooled effects. Heterogeneity was assessed using the I² test, and the level of significance was set to be P < 0.05. **Results:** Four randomized controlled trials (RCTs) and 538 patients were involved. The results showed that stone removal in the first session (p = 0.48) and complete stone removal (p = 0.90) were not significantly different between SES+ELBD and EST. A statistically significant difference was found in the use of endoscopic mechanical lithotripsy (EML) (RR = 0.64, p = 0.007). There was no significant difference in the overall complication rate, post-ERCP pancreatitis (PEP) and bleeding. For the

treatment of larger (≥ 15 mm) CBD stones, SES + ELBD significantly reduced the rate of EML (RR = 0.61, $p = 0.001$). **Conclusion:** The SES+ELBD and EST have similar stone clearance and complication rates. Although SES+ELBD decreased the rate of using EML, especially in the patients of common bile duct stones ≥ 15 mm in diameter, the long-term prognosis of SES+ELBD is still unclear. Therefore, large scale and well-designed RCTs will be needed.

Key Word(s): 1. endoscopic papillary large balloon dilation; 2. endoscopic sphincterotomy; 3. choledocholithiasis; 4. mechanical lithotripsy; 5. meta-analysis

Therapeutic Endoscopy/Interventional Radiology P-700

A risk for laryngeal edema undergoing endoscopic submucosal dissection for early gastric cancer

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Objective: Endoscopic submucosal dissection (ESD) has been a useful therapeutic method for early gastric cancer. Among over 1000 cases undergoing ESD for early gastric cancer, we have experienced one case complicated with acute airway obstruction due to laryngeal edema. Symptoms of laryngeal edema are airway obstruction, hoarseness and laryngeal pain. Laryngeal edema can be considered as an adverse event of ESD procedure, while its prevalence or possible risk factors have not been elucidated.

Methods: The aims of this study were to investigate the prevalence of laryngeal edema after ESD, and to examine the influence of the presence of external water channel, the mean operating time and patient characteristics. A total of 235 patients undergoing ESD for early gastric cancer in Hirosaki University Hospital and Seihoku Central Hospital from April 2009 to March 2013, were studied. ESD has been performed under conscious sedation. Laryngeal edema was visually evaluated before and just after ESD as follows: grade 0, no edema; grade 1, mild thickening and redness of plica aryepiglottica or arytenoid cartilage; grade 2, edema between grade 1 and 3; grade 3, airway obstruction. **Results:** 67 patients (28.5%) developed laryngeal edema after ESD (64 for grade 1, 3 for grade 2, none for grade 3). Laryngeal edema occurred frequently in patients who treated using external water channel (Use 41.2% vs Not use 24.1%, $p < 0.05$). 67 patients with laryngeal edema have had significantly longer mean operation time (119.8 ± 57.9 min, $p < 0.01$) than those without (99.7 ± 45.1 min). In 184 patients who treated not using external water channel, 46 patients with laryngeal edema have had significantly longer mean operation time (119.5 ± 60.9 min, $p = 0.04$) than those without (101.9 ± 46.4 min). **Conclusion:** The prevalence of laryngeal edema after ESD was 28.5%, and long operating time was a possible risk for laryngeal edema. The use of external water channel may increase a risk for laryngeal edema. Laryngeal edema may be caused by physical irritation,

exactly mechanical and time factor. It may be decreased by using soft flexible tube device for abide larynx, shorten procedure period or not using external water channel.

Key Word(s): 1. laryngeal edema; 2. ESD

Therapeutic Endoscopy/Interventional Radiology P-701

Percutaneous endoscopic gastrostomy (PEG) tube, an experience from a low cost tertiary care centre in Karachi, Pakistan

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Objective: To assess the indications and complications of Percutaneous Endoscopic Gastrostomy (PEG) tube and its acceptability by patients and their families **Methods:** Cross-Sectional study. Gastroenterology Unit, Patel hospital Karachi. 100 patients were included, indications and complications evaluated, patients and their families were periodically counselled. **Results:** Out of 100 patients, 68 were males, age range 18–90 years. 70 patients had procedure done as out-patient. 70 patients had neurological Dysphagia, of which 58 (82.85%) had stroke. 17 had oropharyngeal, 8 had laryngeal and 2 patients had esophageal growth. 3 patients had esophageal fistulae. Pre procedure IV Cefuroxime was given, followed by 5 days of enteral antibiotic. All procedures were done under sedation with aseptic technique. PEG feeding was started after 4 hours, dressing was done with Pyodine for 1 week. Patient and family were educated about tube care and feeding. Our endoscopy staff remained in contact with the patient either personally or on phone up to 5 days and subsequently if required. 8 patients had mild PEG site infection which resolved spontaneously. 4 patients had severe infection requiring parenteral anti-biotics and holding of PEG feed for up to 5 days; 2 of these patients required removal of PEG tube. **Conclusion:** PEG tube placement is a safe and acceptable modality for enteral feeding. In our study no major complications occurred and all patients tolerated the procedure well. Although most of our patients had low educational background, they were able to manage PEG tube well. Good counselling and close follow up is essential for long term tolerability of PEG tube.

Key Word(s): 1. percutaneous endoscopic gastrostomy tube; 2. mechanical dysphagia; 3. neurological dysphagia

Methods: Training model design; An ex vivo animal training model using a bovine rectum was constructed. A bovine rectum was readily available in a local meat store. A plastic box with a side hole for insertion of the endoscope was created and the overtube was ligated in the hole. One end of the overtube was attached to an isolated bovine rectum. The bovine rectum was dipped in saline and placed on a metal plate with the electrode to turn on electricity from the electrosurgical generator to the bovine rectum. Study design; Two endoscopists participated in this study. None had enough experience in colorectal ESD (less than 5 cases), but both had some experience in performing gastric ESD (endoscopist A, 60 cases; endoscopist B, 50 cases). A single-channel colonoscope with a distal attachment was used. Each lesion was 3 cm in diameter. Each endoscopist performed ESD of the artificial lesions in 30 consecutive sessions using this model. The procedure time per unit (sec/cm²), the en bloc resection rate, the degree of muscularis propria (MP) layer injuries were recorded. We used a 4-point grading system to assess the degree of MP layer injuries (Score 1; No damage, Score 2; Injury to surface of the MP layer, Score 3; Laceration of the MP layer, Score 4; Perforation). We evaluated the effects of this training in the two endoscopists by comparing the results of the first 15 sessions (Former Period (FP)) with those of the last 15 sessions (Latter Period (LP)). **Results:** The average procedure times per unit (sec/cm²) were statistically long in FP than LP for both endoscopists (Endoscopist A: FP/LP; 226/111, $p = 0.01$, Endoscopist B: FP/LP; 225/125, $p < 0.05$). The en bloc resection rate for Endoscopist A was 100% both in FP and LP, for Endoscopist B was 93% (14/15) in FP and 100% (15/15) in LP. The average point of MP layer injuries were statistically higher in FP than LP for both endoscopists (Endoscopist A: FP/LP; 2.1/1.4, $p < 0.01$, Endoscopist B: FP/LP; 2.2/1.5, $p = 0.01$). One perforation occurred in FP by endoscopist B. **Conclusion:** An ex vivo animal training model using a bovine rectum showed the potential to be helpful to endoscopists in acquiring basic skills for efficient and safety ESD before starting the colorectal ESD in humans. **Key Word(s):** 1. training model; 2. colorectal; 3. endoscopic submucosal dissection

Therapeutic Endoscopy/Interventional Radiology P-706

The characteristics of difficult cases of endoscopic papillary large-diameter balloon dilation for choledocholithiasis

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Objective: Recently, the efficacy of endoscopic papillary large-diameter balloon dilation (EPLBD) after endoscopic sphincterotomy for the removal of bile duct stones has been reported; nevertheless, there have been few reports on difficult cases of EPLBD for choledocholithiasis. The purpose of this study is to investigate the characteristics of difficult cases of endoscopic papillary large-diameter balloon dilation. **Methods:** The patients with choledocholithiasis who had an incomplete extraction of bile duct stones in the first session between November 2009 and September 2013 were included in this study. After sphincterotomy large-diameter balloon dilation was performed. Bile duct stones were then removed with mechanical lithotripsy. **Results:** Twelve patients with choledocholithiasis who had a failed extraction by EPLBD in the first session were enrolled in the study. The success rate in the first session was 87.5%. In five cases cholecystectomy was previously performed. Seven patients had a duodenal parapapillary diverticulum. One patient had a history of gastrectomy and open surgical clearance of common bile duct stones. Nine patients had been treated with endoscopic removal of bile duct stones previously. The number of mean endoscopic treatment session was 1.6. There were no significant differences

in patients' background between technically succeeded cases and failed cases. The cause of failure was as follows: in six cases poor bile duct expansion, in six cases stone impaction due to too many stones in the bile duct or too large stone for the basket catheter. Ten of twelve cases had experienced recurrent cholangitis after first treatment. In two cases, second attempt of endoscopic clearance of bile duct stones was succeeded. **Conclusion:** This study suggested that the cases with poor dilated intrapancreatic bile ducts, small diameter of the bile duct, too large stone and stone impaction due to too many stones in the bile duct require close attention.

Key Word(s): 1. choledocholithiasis; 2. large balloon dilation

Therapeutic Endoscopy/Interventional Radiology P-707

The pilot study of laparoscopic assisted endoscopic submucosal dissection (LAESD)

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Objective: Endoscopic submucosal dissection (ESD) is widely accepted as less invasive treatment for early gastric cancer. However, regarding duodenal neoplasms, high perforation rate of duodenal ESD has been reported. Duodenal perforation causes severe peritonitis in some cases. Laparoscopic assisted endoscopic submucosal dissection (LAESD) is newly developed local resection method for duodenal tumor. The aim of this study was to evaluate the efficacy and safety of LAESD. **Methods:** From October 2012 to June 2014, six patients underwent LAESD for duodenal tumor. LAESD method consists of following steps. Initially, the tumor location is confirmed by laparoscopy and endoscopy. Then, the marking suture was performed on the serosa side by laparoscopy. After marking, tumor is removed by ESD method. If the lesion is small, hybrid ESD (snaring resection following circumferential mucosal cutting) is performed. Laparoscopic serosal suturing is performed for mucosal defect to cover the dissected area. Finally, endoscopic mucosal closure is performed. In this method, muscular layer is preserved basically to avoid the cancer seeding into peritoneal cavity. The resected specimen was carried out via the per-oral route. **Results:** LAESD was performed on six consecutive patients with six epithelial neoplasms who had preoperative diagnoses of intramucosal cancer by magnifying endoscopy. All of six patients were male. All targeted lesions consisted as mucosal cancer or adenoma. The mean size (\pm SD) of tumor was 22.8 ± 11.8 mm (range: 12–40). Locations of lesions were as follows: one lesion in the SDA; and four lesions in the second portion of the duodenum; and one lesion in the third portion of the duodenum. Among these patients, two perforations were observed during the endoscopic resection. Of these two lesions, one lesion was removed endoscopically and carried out via the per-oral route. Another lesion was removed laparoscopically and carried out through the port. The mean operation time was 225 ± 90.4 (range: 107–298) min. Estimated blood loss was little during the operation. En-broc resection rate was 83%. In all postoperative course, no delayed perforation was observed. The mean postoperative stay was 6 days. Pathological result showed as four mucosal cancers and two adenomas. No lymph-vascular involvement was observed. During the follow up period, no tumor recurrence was

observed. **Conclusion:** In the present cases, LAESD was successfully achieved to an intramucosal duodenal cancers and adenomas that would have been difficult to treat with ESD alone because of the high incidence of perforation and severe peritonitis. When peritonitis occurs after duodenal ESD, disease state is severe and uncontrollable even in the surgical intervention. These data suggest that endoscopic resection alone is not recommended for duodenal lesion. In conclusion, LAESD for duodenal neoplasms seems promising treatment to reduce the risk of delayed perforation.

Key Word(s): 1. ESD LECS LAESD

Therapeutic Endoscopy/Interventional Radiology P-708

Endoscopic treatment using a coil and histoacryl for a refractory biloma caused by TACE

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Objective: Introduction Bilomas are localized cystic collections of bile extravasated after biliary injury. Infected biloma is a rare complication of transarterial chemoembolization (TACE) for hepatocellular carcinoma (HCC), although bile duct injuries following TACE have been reported occasionally. Large or symptomatic bilomas are treated by percutaneous drainage, some cases coupled with endoscopic biliary drainage. However, the optimal treatment has not been established in the cases of intractable bilomas due to biliary fistula. Here, we describe a case of endoscopic treatment using a coil and histoacryl for a refractory biloma resulting from persistent biliary fistula complicated by TACE.

Methods:



Figure 1



Figure 2

Results: Case report A 62-year-old man with recurrent HCC in the hepatic segment 2 was discharged after the 4th TACE, but was readmitted because of fever and left upper quadrant pain 2 weeks later. Computed Tomography (CT) scan was performed which showed a hypodense lesion in the lateral segment of liver adjacent to a target site of TACE (Figure 1).

Under ultrasound guidance, placement of percutaneous drainage (PCD) was successfully done which drained out infected bile fluid. Because amount of bile had not changed in PCD during 2 weeks, endoscopic retrograde cholangiopancreatography (ERCP) was performed to confirm the bile leak, and endoscopic nasobiliary drainage (ENBD) was inserted into the fistula tract to decrease ductal pressure. Although a large amount of bile was drained through ENBD, bile was not decreased in the external drain after 2 weeks. PCD tubography was performed to confirm the persistent bile leak, and the existing fistula tract was still observed (Figure 2). Additory ERCP was planned to occlude the fistula tract directly using a coil and histoacryl, because we thought that the bile duct was not recovered spontaneously due to irreversible damages following TACE. During ERCP, fistula tract was selectively cannulated and an angiographic coil (3 mm, 2 cm) was introduced into the distal portion of fistula. After deployment of the coil, histoacryl (0.5 cc) was infused on the coil to make plug at the fistula tract. After 3 days, bile was not observed in PCD. On the tubography using PCD and ENBD, the fistula tract was occluded completely with combination of a coil and ENBD, and bile leaks were not observed any more (Figure 3).

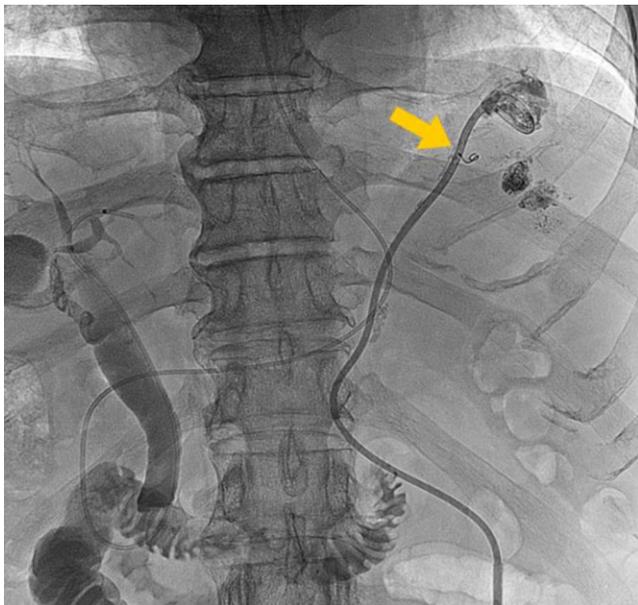


Figure 3

Conclusion: Endoscopic treatment using a coil and histoacryl was feasible and safe in the patient with the refractory biloma caused by a biliary fistula.

Key Word(s): 1. biloma; 2. biliary fistula; 3. coil; 4. histoacryl

Therapeutic Endoscopy/Interventional Radiology P-709

Clinicopathological and endoscopic features of undifferentiated type early gastric cancer accidentally diagnosed after endoscopic submucosal dissection

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Objective: We evaluated the clinicopathological and endoscopic features of unintentionally undifferentiated adenocarcinoma diagnosed after endoscopic submucosal dissection (ESD), which initially had been diagnosed as differentiated adenocarcinoma via forceps biopsy. **Methods:** The medical records of 214 cases in 205 patients who were treated with ESD and diagnosed with early gastric cancer (EGC) were reviewed retrospectively with a focused on endoscopic findings. **Results:** Seven were an undifferentiated type EGC that initially had been diagnosed as differentiated adenocarcinoma (U group). The other 207 cases were diagnosed as differentiated type EGC (D group). Flat lesion was significantly more dominant in the U group than the D group (43% vs. 10%, $p = 0.032$). A moderate differentiated type at initial biopsy and submucosal invasion were more significantly diagnosed in the U group than the D group

($p = 0.009$ and $p = 0.029$, respectively). **Conclusion:** Of the EGC cases initially diagnosed as differentiated adenocarcinoma by forceps biopsy, the rate of cases of undifferentiated adenocarcinoma finally diagnosed after ESD was approximately 5%. Moderate differentiation and submucosal invasion were significant factors of undifferentiated EGC with a histological discrepancy between the initial forceps biopsy and ESD specimens. Also, this study suggests that the flat lesion is the dominant endoscopic finding of unintentionally undifferentiated adenocarcinoma.

Key Word(s): 1. early gastric cancer; 2. endoscopic finding; 3. endoscopic submucosal dissection; 4. undifferentiated type

Therapeutic Endoscopy/Interventional Radiology P-710

Clinical outcomes of endoscopic resection of gastric gastrointestinal stromal tumor

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Objective: Gastrointestinal stromal tumors (GIST) are the most common mesenchymal tumors of the gastrointestinal tract. With the recent advances in endoscopic technology, endoscopic resection (ER) has been attempted for the curative treatment of gastric GIST. Here we aim to investigate the feasibility and safety of ER of gastric GIST. **Methods:** Subjects who underwent ER for gastric GIST at the Asan Medical Center from May 2005 to April 2014 were eligible. Patient factors, tumor factors, procedure factors, and clinical outcomes were evaluated using medical record.

Results: A total of 25 patients underwent ER for GIST. The median age was 58 years (42–72 years), and the male to female ratio was 1.5:1. The location of tumors were upper third of the stomach in 11 patients (44%), middle third in 5 (20%), and lower third in 9 (36%). The median size of tumors was 24.1 mm (range: 10–40 mm). The median procedure time was 37.5 minutes (range: 10–80 minutes). All lesions were divided into three groups according to the size and mitotic index; very low risk (16/25, 64%), low risk (7/25, 28%), and intermediate risk (2/25, 8%). Complications occurred in 5 patients (20%) including microperforation ($n = 4$, 16%) and delayed bleeding ($n = 1$, 5%). Five patients underwent sequential wedge resection of stomach because of microperforation and noncurative resection, and the pathologic evaluation revealed residual tumors in 2 patients. There was no recurrence or metastasis occurred during the median follow-up period of 49.9 months (range: 2–108 months). **Conclusion:** ER of gastric GIST may be a feasible and safe method, on the basis of favorable clinical outcomes.

Key Word(s): 1. gastric gastrointestinal stromal tumor(gist); 2. endoscopic resection

Therapeutic Endoscopy/Interventional Radiology P-711

Endoscopic treatment of malignant gastric or duodenal obstruction using self-expandable metal stent placement

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Objective: Self-expandable metal stents (SEMS) can be used to palliate patients with malignant obstruction. We tried to assess the feasibility and efficacy of self-expandable metal stents (SEMS) for the palliation of malignant obstruction in stomach and duodenum. **Methods:** During January 2011 to March 2013, 167 patients with gastric or duodenal obstruction due to malignancy underwent endoscopic SEMS insertion at Asan Medical Center. We analyzed technical/clinical outcomes and complications according to the type of stent and the location of obstruction. **Results:** Among 167 patients (median age was 62 years, men were 97), full covered SEMS was inserted in 13 patients, partial covered SEMS in 60 patients, and uncovered SEMS in 87 patients. The location of obstruction was shown in gastric outlet including duodenal bulb (n = 57), in duodenal 2nd and 3rd portion (n = 87), and in other obstruction of anastomosis site and cardia (n = 23). Technical success was found in 160 of 167 cases (98.8%) and clinical success was in 126 of 160 (78.8%). According to the site and type of stent, clinical success was shown in like these; full covered SEMS (10/13, 76.9%), partial covered SEMS (53/60, 88.3%), and uncovered SEMS (63/87, 72.4%). Clinical success was done in 50 of 56 cases with gastric outlet obstruction (39.7%), in 60 of 83 with duodenal obstruction (47.6%), and in 16 of 21 with other obstruction (12.7%). Of total, migration was happened in 16 cases (9.4%) and obstruction was happened in 31 cases (19.4%). **Conclusion:** Endoscopic insertion of SEMS shows feasibility and efficacy in patients with inoperable gastric or duodenal obstruction caused by malignancy, especially when type of stent is selected properly according to the site of obstruction.

Key Word(s): 1. self expanding metal stent (sems); 2. gastric outlet obstruction

Therapeutic Endoscopy/Interventional Radiology P-712

Eus-guided neurolysis is a safe and effective method to provide palliative care in pancreatic cancer patients

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Objective: Cancer-related pain is present in up to 33% of patients at the time of diagnosis and in 90% of patients with advanced disease. Celiac plexus neurolysis is performed for pain relief of patients with advanced pancreatic cancer. We analyzed efficacy of endoscopic ultrasound- (EUS-) guided neurolysis for pancreatic cancer patients in our hospital retrospectively. **Methods:** Between August 2008 and March 2014, 12 patients, 6 males and 6 females, with advanced pancreatic cancer received EUS-guided neurolysis (EUS-guided celiac ganglia neurolysis (EUS-CGN) 7 cases and EUS-guided celiac plexus neurolysis (EUS-CPN) 5 cases). We use a curved linear-array echoendoscope, the GF-UCT240. A 22- or 25-gauge needle is used for puncture. The needle had been previously filled with 0.5% bupivacaine. After confirming the lack of backflow of blood with aspiration, we injected the patient with absolute ethanol mixed with 10% iopamidol. The total amount of alcohol injected did not exceed 20 milliliters. Patients scored their pain according to numeric rating scale (NRS) and were interviewed one week and 2 months after the procedure. We measured the response of EUS-CGN against EUS-CPN. And we investigated the effects of the procedure with respect to the tumor size and tumor location. **Results:** A complete response, NRS score was less than three and the patient did not require the administration of narcotics or an increase in the dose of medications, was observed in 75.0% of the patients one week after the procedure. And 50.0% of the patients reported recurring their pain 2 months after the procedure. No statistically differences were observed between the patients treated with EUS-CGN and EUS-CPN in this study. Furthermore, we found no statistically significant differences regarding tumor size or tumor location in this study. Treatment-related side effects included severe pain immediately postprocedure in two patients.

Table 1.

	Complete Response at One Week	Complete Response at Two Months	P value
Procedure			0.735
CGN	5/7 (71.4%)	3/6 (50.0%)	
CPN	4/5 (80.0%)	2/4 (50.0%)	
Tumor size			1.000
<4.0 cm	3/4 (75.0%)	2/4 (50.0%)	
>4.0 cm	6/8 (75.0%)	3/6 (50.0%)	
Tumor location			0.310 (0.197)
head	6/7 (85.7%)	4/6 (66.7%)	
body or tail	3/5 (60.0%)	1/4 (25.0%)	

Complete response at one week Complete response at two months P value
Procedure 0.735 CGN 5/7 (71.4%) 3/6 (50.0%) CPN 4/5 (80.0%) 2/4 (50.0%) Tumor size 1.000 < 4.0 cm 3/4 (75.0%) 2/4 (50.0%) >4.0 cm 6/8 (75.0%) 3/6 (50.0%) Tumor location 0.310 (0.197) head 6/7 (85.7%) 4/6 (66.7%) body or tail 3/5 (60.0%) 1/4 (25.0%) **Conclusion:** EUS-CGN and EUS-CPN were effective for pain relief in patients with pancreatic cancer without serious complications.

Key Word(s): 1. EUS-CPN; 2. pancreatic cancer; 3. palliative care

Objective: Esophageal dilatations with mercury weighted bougies were used for esophageal benign strictures. But, high esophageal restenosis rates and recurrent complications (esophageal perforation, mediastinitis, e.g.) were troublesome. And, many therapeutic modalities (pneumatic dilation, anti-fibrotic drug injection and stent insertion, e.g.) are developing. Therefore, we aimed to develop an appropriate porcine benign esophageal stricture model. **Methods:** A total of ten mini pigs were sequentially divided into three groups by two, six and two pigs. Two pigs of first group were injected into the four directions of esophagus by NaOH (0.10N) 2 ml each. Six pigs of Second group were injected into the four directions of esophagus by NaOH(0.20N) 2 ml each. Two pigs of third group were injected into the four directions of esophagus by NaOH (0.15N) 2 ml each. We defined successful esophageal stenosis as unable endoscopic passage (scope diameter; 10 mm) without immediate mortality. **Results:** Minimal esophageal strictures were noted at the two porcine esophagus of first group (Figure 1).



Figure 1

But, endoscopes could be passed through the esophageal stenosis. Moderate to severe esophageal strictures were noted at the all of porcine esophagus of second group (Figure 2).



Figure 2

But four pigs (4/6, 80%) were died within a month due to malnutrition and esophageal perforations (Figure 3).



Figure 3

Moderate esophageal strictures were developed at the two porcine esophagus of third group without serious complications. **Conclusion:** Porcine benign esophageal strictures were developed successfully by NaOH (0.15N) 2 ml injection into the four directions of esophagus each. **Key Word(s):** 1. benign esophageal stricture; 2. porcine model

Therapeutic Endoscopy/Interventional Radiology P-716

Risk factors for the recurrence after endoscopic resection of advanced colorectal adenoma

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Objective: Advanced colorectal adenoma (ACA) is defined as colorectal adenomas with at least one of three categories showing 1 cm or greater, villous component, and high-grade dysplasia. The aims of this study were to assess the clinical outcomes of ACA after endoscopic resection and identify risk factors of recurrence. **Methods:** From 2005 to 2011, patients who underwent endoscopic resection for ACA in Seoul National University Hospital were retrospectively reviewed. The primary outcomes were local recurrence and metachronous advanced neoplasm after the endoscopic resection for ACA. **Results:** A total of 1,206 cases of ACA detected in 917 patients were enrolled. Median follow-up duration was 28.5 months (12.8–51.7). Local recurrence and metachronous advanced neoplasm occurred in 44 (3.6%) and 167 (13.8%) cases, respectively. Cumulative rates of local recurrence in cases with one and more than two categories of ACA were 2.2% and 7.6% at 3 years, respectively. Cumulative rates of metachronous advanced neoplasm in cases with 3 or more adenomas and advanced adenomas were 19.4% and 23.6% at 3 years, respectively. Independent risk factors of local recurrence were ACA with two or three categories and piecemeal resection. Independent risk factors

of metachronous advanced neoplasm were male sex, 3 or more adenomas, and 3 or more of ACA. **Conclusion:** ACA with 2 or 3 categories could show higher local recurrence rate after the endoscopic resection than that in ACA with 1 category, which suggests the novel risk stratification of ACA according to the number of categories at index colonoscopy.

Key Word(s): 1. advanced colorectal adenoma; 2. endoscopic resection; 3. recurrence

Therapeutic Endoscopy/Interventional Radiology P-717

Second look endoscopy following endoscopic resection does not reduce the risk of delayed bleeding

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Objective: The necessity of routine second look endoscopy (SLE) after endoscopic resection remains unclear. **Methods:** Records of patients who underwent endoscopic resection with or without SLE were reviewed retrospectively. The occurrence of delayed bleeding was measured as primary outcome. **Results:** A total of 218 patients were enrolled and 6 were excluded due to perforation during endoscopic resection. A total of 6 patients presented delayed bleeding in forms of hematemesis or melena. Delayed bleeding occurred at 6.7 ± 3 days after endoscopic resection. The drop of Hb level was 2.7 ± 0.9 g/dL. The frequency of delayed bleeding were not different in both groups, 2.8% ($n = 4/139$) in SLE group and 2.7% ($n = 2/73$) in NSE group. Large resection size over 4.0 cm needed more hemostatic procedure during SLE ($p = 0.033$), however, hemostatic intervention during SLE does not reduce the risk of delayed bleeding. The resumption of oral intake and the length of hospital stay were not different between two groups. **Conclusion:** SLE strategy proved no additional benefit over NSE strategy in terms of prevention of delayed bleeding. Timely endoscopic interventions rather than routine SLE can manage delayed bleeding and successfully avoid associated morbidity and mortality.

Key Word(s): 1. endoscopic submucosal dissection; 2. endoscopic mucosal resection; 3. second look endoscopy; 4. delayed bleeding

Therapeutic Endoscopy/Interventional Radiology P-718

Risk factors and management for ERCP related perforations: an analysis of 5,642 cases

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Objective: Although endoscopic retrograde cholangiopancreatography (ERCP)-related perforations are rare, the morbidity and mortality rates are high. The aim of study was to access the management and risk factors of patients with ERCP-related perforations. **Methods:** From March 2006 to June 2014, total 5,642 ERCP procedures were performed and, of those, 28 ERCP-related perforations were occurred. Fifteen patients were male, and the mean age was 67.8 years. All except one case was performed with therapeutic aim. **Results:** The rate of ERCP related perforations was 0.5% (28/5,642) and the overall mortality rate was 7.1% (2/28). Perforations were categorized into two groups based on injury location; sphincterotomy site ($n = 23$; 82.1%) due to sphincterotomy ($n = 12$; 42.8%) and guidewire injury ($n = 11$; 39.3%) and remote site from the papilla ($n = 5$; 17.9%) due to severe duodenal stenosis ($n = 4$; 14.3%) and altered anatomy ($n = 1$; 3.6%). In 24 patients, perforation was detected during the procedure, and in four patients the diagnosis was made after procedure. Twenty-three patients (82.1%) were treated conservatively and five patients (17.9%) underwent surgery. Four of the 5 patients that had remote perforation from the papilla had surgical intervention and were discharged home except one patient died with pneumonia progression. The other one patient was managed conservatively due to severe co-morbid conditions and denial of surgery. However, she died 17 days due to sepsis. All patients with sphincterotomy site perforation were successfully recovered after conservative therapy except one patient with severe post-ERCP pancreatitis. By multiple logistic regression analysis, there was no significantly associated with mortality and surgical intervention. **Conclusion:** If the patient had post-ERCP pancreatitis in addition, even if the sphincterotomy site perforation was occurred, may be needed intensive care including surgery. Also, in case of duodenal stenotic patients, careful insertion may reduce the risk of duodenal perforation as shown in our cases.

Key Word(s): 1. ERCP; 2. perforation; 3. pancreatitis

Therapeutic Endoscopy/Interventional Radiology P-719

Experience with balloon-catheter-assisted, self-expanding metal stents inserted for malignant gastrointestinal obstruction

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Objective: The endoscopic insertion of self-expandable metal stents (SEMS) for the treatment of malignant gastrointestinal obstruction has usually been performed under the guidance of fluoroscopic monitoring. By precisely measuring the length of the stenosis and maneuvering the guide wire appropriately through the stricture one can place the SEMS accurately regardless of fluoroscopic monitoring. To report our experience with SEMS insertion using balloon catheter assistance for the treatment of malignant gastrointestinal obstruction, especially without fluoroscopic monitoring. We compared the success rates and complication rates between the two groups. **Methods:** The 31 patients in whom SEMS insertion was done with the new balloon-catheter-assisted method consisted of seventeen with malignant gastric outlet obstructions and 14 with malignant colonic obstructions. In 13 of the cases the SEMS insertion was performed under endoscopic and fluoroscopic monitoring, and in 18 cases the SEMS insertion was performed under endoscopic monitoring alone. An insertion of a guide wire that was introduced into a balloon catheter

through the stenosis initiated the procedure. Next the balloon catheter passed through the stenosis over the guide wire was fully inflated and withdrawn until it reached the distal margin of the stenosis. The length of the stenotic area was measured with the scale marked on the surface of the catheter. Finally, SEMS with adequate length was positioned

Results: Stent placement was successful in all 31 patients. Clinical success was achieved in 30 of 31 patients (97%); 1 patient died because of uncontrolled tumor bleeding. All remaining patients were able to maintain adequate oral nutrition and hydration within 3 days. Overall, there was no treatment-related mortality. During the follow-up period, stent-related problems required treatment in 5 of 30 patients (16.7%).

Conclusion: SEMS insertion with balloon catheter assistance can be useful and safe, and has many advantages compared with the conventional method. It might be an alternative tool to treat malignant obstructions in the gastrointestinal tract. More data is needed to confirm the effectiveness, feasibility, and, especially, the convenience and procedure time saved with this procedure

Key Word(s): 1. SEMS; 2. balloon catheter; 3. malignant obstruction

Therapeutic Endoscopy/Interventional Radiology P-720

Clinical comparison between percutaneous endoscopic and radiologic gastrostomy

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Objective: Percutaneous gastrostomy can be inserted by endoscopically (PEG) or radiologically (PRG). The aims of the present study were to analyze and compare the clinical outcome and long term efficacy of percutaneous. **Methods:** We retrospectively reviewed the 138 patients who underwent percutaneous gastrostomy. The patients were classified into PEG and PRG group. The indication, complication and tube patency were compared between groups. **Results:** PEG was performed in 90 patients and the other 48 patients were underwent PRG. Mean age was 60.0 ± 17.5 years and male to female ratio was 102: 36. The indications were mostly unable to eat (67.4%), followed by recurrent aspiration (18.1%) and esophageal stricture (10.1%). Among 48 patients in PRG group, 14 cases (29.2%) were due to the failure of scope passage. Immediate complication occurred in 5 cases. Wound infection was the most common immediate complication. One case (0.7%) of bleeding at gastrostomy site in PEG groups and one case (0.7%) of stomal leakage in PRG group were noted. Delayed complication occurred in 8.0% at 398 ± 546.9 days and insertion site infection was the most common complication. The patency was longer in PEG group (227.0 ± 50.1 days vs. 132.0 ± 32.8 days, $p = 0.012$). The associated factors with poor patency were presence of esophageal stricture and malignancy. **Conclusion:** Both PEG and PRG are relatively safe procedure. Moreover, PRG can be substituted for PEG in patients unable to pass the scope or in over-weighted patients. The presence of stricture and malignancy of esophagus were predictors of the poor tube patency.

Key Word(s): 1. percutaneous endoscopic gastrostomy percutaneous radiologic gastrostomy

Therapeutic Endoscopy/Interventional Radiology P-721

Clinical impact of prophylactic antibiotic treatment for self-expandable metallic stent insertion in patients with malignant colorectal obstruction

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Objective: There is no reliable evidence to support the clinical impact of prophylactic antibiotics (PA) for reducing the infectious complications after stent insertion for malignant colorectal obstruction. The aim of this study was to determine the efficacy of PA for reducing the infectious complications and the potential risk factors responsible for the infectious complications after stent insertion. **Methods:** We performed a retrospective review of 224 patients who underwent self-expandable metallic stent (SEMS) insertion for malignant colorectal obstruction from May 2004 to December 2012. Patients with SEMS insertion were analyzed on an intention-to-treat basis. The risk factors related to post-SEMS infectious complications were analyzed after using a propensity score to correct for selection bias. **Results:** There were 145 patients in the PA group and 79 in non-PA group. The CRP level in PA group was significantly higher than that in non-PA. Abdominal tenderness and mechanical ileus were significantly more frequent in PA group than those in non-PA. The frequency of post-SEMS insertion fever, systemic inflammatory response syndrome (SIRS) and bacteremia was not significantly different between PA and non-PA groups. There was no post-SEMS insertion sepsis in both groups. In multivariate analysis, the CRP level was risk factor related to post-SEMS insertion SIRS, except for fever and bacteremia. However, in propensity score matching analysis, there was no independent risk factor related to post-SEMS insertion fever, SIRS and bacteremia. **Conclusion:** The use of PA in patients with malignant colorectal obstruction may be not effective to prevent the development of infectious complications after SEMS insertion.

Key Word(s): 1. antibiotic prophylaxis; 2. self-expandable metallic stent; 3. colon cancer obstruction

Therapeutic Endoscopy/Interventional Radiology P-722

Hepatic infarction followed by liver abscess d/t migration fiducial marker implanted under endoscopic ultrasonography (EUS) guidance in the patient with intrahepatic cholangiocarcinoma

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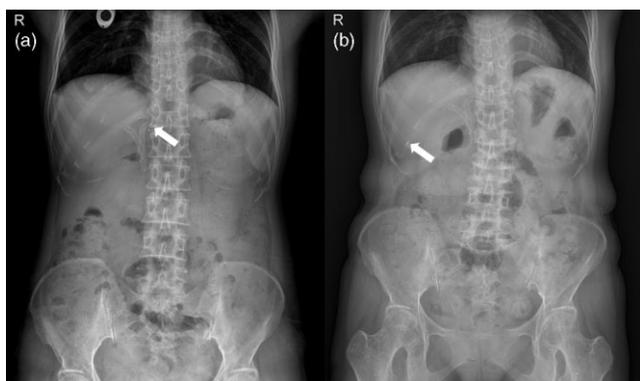
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Objective: Introduction: Stereotactic body radiation for hepatobiliary malignancy requires the implantation of fiducial marker to ensure safe radiation field. Recently EUS guided fiducial marker implantation was introduced for malignancy which is not suitable for percutaneous approach.

However complication after the procedure is not well demonstrated. The following report shows a case in which migration of EUS-guided fiducial marker resulted in a clinically significant complication. **Methods:** Case description: 40-year-old woman was admitted for the chilling sensation and general weakness. Six months ago, she was diagnosed with intrahepatic cholangiocarcinoma in the caudate lobe and the metastatic nodule was observed pelvic area. To secure bile duct patency, she was treated with photodynamic therapy and with TS-1 based concurrent chemoradiation therapy (CCRTx). Before the CCRTx, three gold fiducial markers were implanted under EUS guidance (Figure 1-A). After the CCRTx, Y-shaped bilateral self-expandable metallic stents were inserted. And then systemic chemotherapy was started with gemcitabine and cisplatin. On admission, abdominal plain film showed that one fiducial marker was moved to the right lower lobe of the liver (Figure 1-B). On abdominal computed tomography (CT) scan, the migrated fiducial marker was observed in segment 6 (Figure 2-A), and hepatic infarction was observed in the peripheral region of the right lower lobe (Figure 2-B). *Klebsiella pneumoniae* was identified from the blood culture test. And then intravenous antibiotics such as cefotaxime and metronidazole were administered. On hospital days seven, abscess pocket was observed in segment 6 (Figure 2-C), and percutaneous drainage was inserted (Figure 2-D). And the patient was improved after 6 weeks of antibiotics therapy.

Results



Conclusion



Figure 1.

Key Word(s): 1. fiducial marker; 2. endoscopic ultrasonography

Therapeutic Endoscopy/Interventional Radiology P-723

Endoscopic mucosal resection for nonampullary duodenal tumors

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Objective: Endoscopic mucosal resection (EMR) is a viable alternative to surgery for removal of mucosal neoplastic lesions found along the GI tract. However, few studies have reported on the safety and efficacy of EMR for nonampullary duodenal tumors. The aim of this study was to evaluate the utility of EMR for nonampullary duodenal tumors. **Methods:** Forty-three nonampullary duodenal tumors from 41 patients were excised by EMR between April 2008 and March 2014 at our hospital, and assessed. EMR was performed in patients with duodenal adenocarcinoma or adenoma suspected of harboring a cancerous component, but without nodal or distant metastasis. Tumor characteristics, en block resection and histologically-complete resection rates, procedure-related complications, and tumor recurrence were retrospectively analyzed. **Results:** Of the 41 patients, 32 (78.0%) were men. Mean patient age was 58.1 years (range, 32–84 years). Mean tumor size was 9.4 mm (range, 2–25 mm). Twenty-four were high-grade neoplasias (revised Vienna classification category 4), and 19 were below category 3. En block resection rate was 76.7% (33/43), and histologically-complete resection was accomplished in 25 of 43 lesions (58.1%) at initial attempt. Procedure-related complications included bleeding after EMR in 4 patients, who were treated with endoscopic hemostasis, and perforation during the endoscopic procedure in 1 patient, who was successfully treated by endoscopic closure. After a median follow-up period of 11 months (range, 0 to 47 months), recurrence of the duodenal neoplasm was observed in 1 patient (2.3%). However, no distant metastasis and procedure-related mortality were observed. **Conclusion:** Endoscopic mucosal resection is considered a safe and effective therapeutic option for small nonampullary tumors with relatively few complications and low mortality rate. Even if the tumor is small (around 10 mm), it is important to perform EMR as diagnostic treatment. Further, close follow-up is necessary if the lesion exhibit indeterminate margins.

Key Word(s): 1. duodenum; 2. EMR; 3. nonampullary

Therapeutic Endoscopy/Interventional Radiology P-724

Characteristics of metachronous neoplasms occurring after endoscopic submucosal dissection for gastric adenomas and early gastric cancers

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Objective: With the progress of endoscopic diagnosis and treatment, endoscopic treatment has come to be used for gastric adenomas and early gastric cancers (EGCs). Endoscopic submucosal dissection (ESD) has become accepted as a minimally invasive treatment for superficial gastric neoplasms. However, the development of metachronous gastric neoplasms has been occasionally detected during follow-up after ESD. The clinicopathologic characteristics of these lesions occurring after ESD were investigated. **Methods:** From August 2006 to May 2014, stomach ESD was performed for 302 patients with 351 lesions of gastric adenoma and differentiated-type EGC at Aichi Cancer Center Aichi Hospital. Periodic upper gastrointestinal endoscopy, blood tests, and chest and abdominal computed tomography were performed every 6 to 12 months after treatment. During the follow-up period, 24 metachronous lesions (21 patients) were discovered at endoscopy more than 1 year after initial ESD. The characteristics of these lesions were examined retrospectively. **Results:** The median age at initial ESD was 72 (range, 56–82) years. The male to female ratio was 18:3. On endoscopy, all patients were found to have atrophic gastritis of the open-type according to the Kimura-Takemoto classification. Helicobacter pylori testing was positive in 15 patients (71.4%), negative in 5 patients (23.8%), and unknown in 1 patient (4.8%). Of these 15 H. pylori-positive patients, 14 underwent H. pylori eradication therapy after initial ESD, and it was successful in 13 (92.9%). The median duration from initial ESD to the detection of a metachronous lesion was 31.6 (range, 12.8–83.8) months. The locations of the lesions were classified as follows: upper third (U), middle third (M), and lower third (L). Of 22 primary lesions, 1 lesion (4.5%) was U, 9 lesions (41%) were M, and 12 lesions (54.5%) were L. The gross type was 0-I in one lesion (4.5%), 0-IIa in 11 lesions (50%), and 0-IIc in 10 lesions (45.5%). The median tumor size was 13 (range, 2–50) mm. En bloc resection was performed for 21 lesions (95.5%). There were no complications. On pathological examination, 16 were tubular adenocarcinoma, and 6 were tubular adenoma. Histologically, curative resection was obtained in 20 lesions (90.9%). In contrast, the location of 24 metachronous lesions was U in 8 lesions (33.3%), M in 5 lesions (20.8%), and L in 11 lesions (45.8%). The gross type was 0-IIa in 13 lesions (54.1%), 0-IIb in 1 lesion (4.2%), 0-IIc in 9 lesions (37.5%), and 0-IIa+IIb in 1 lesion (4.2%). The median tumor size was 10 (range, 1.5–38) mm. En bloc resection was performed for 22 lesions (91.7%). Aspiration pneumonia occurred in one patient after ESD, but the patient was successfully treated by intravenous antibiotics. There were no treatment-related deaths. On pathological examination, 17 were tubular adenocarcinoma, and 7 were tubular adenoma. Histologically, curative resection was obtained in 21 of the 24 lesions (87.5%). There were no differences in gross type (elevated type/flat and depressed type), tumor size, or histology between primary and metachronous lesions. However, location (U/M/L) was significantly different ($P = 0.037$). Furthermore, there were significant differences in U/M ($P = 0.016$) and U/L ($P = 0.038$).

Therefore, there was a slightly higher frequency of metachronous lesions in the U area. **Conclusion:** Metachronous lesions tended to develop in the U area. These results suggest that it is necessary to carefully observe the U area by surveillance endoscopy after ESD for gastric neoplasms.

Key Word(s): 1. metachronous gastric neoplasms; 2. after endoscopic submucosal dissection

Therapeutic Endoscopy/Interventional Radiology P-725

Endoscopic mucosal resection and endoscopic submucosal dissection for colorectal laterally spreading tumors over 20 mm in diameter

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Objective: Colorectal laterally spreading tumors (LST) >20 mm are usually treated by endoscopic mucosal resection (EMR) or endoscopic submucosal dissection (ESD). Endoscopic piecemeal mucosal resection (EPMR) is sometimes required. The aim of our study was to compare the effectiveness of EMR (including EPMR) and ESD for such LST. **Methods:** A total of 309 patients with a colorectal LST >20 mm were treated endoscopically at our hospital. We retrospectively evaluated the clinical outcomes of EMR and ESD for large colorectal LST. **Results:** A total of 232 colorectal LSTs were treated by EMR and 77 were treated by ESD. EMR was associated with a lower en bloc resection rate (72.8%/94.8%; $p < 0.001$) and smaller tumor size (26.8 ± 9 mm/ 37.7 ± 12 mm; $p < 0.001$) than ESD. Between-group differences in perforation rates (5.2%/9.1%; $p = \text{NS}$) and delayed bleeding rates (3.4%/3.9%; $p = \text{NS}$) were not significant. One ESD case of perforation was managed by surgical operation and the others of perforation were managed effectively treated endoscopically. Additional colectomy rates due to non-curative resection were 6 (2.6%) in EMR and 4 (5.2%) in ESD, respectively and no significant differences ($p = \text{NS}$). One (1.4%) recurrence was detected in EMR, whereas there were no recurrences observed in ESD during a mean endoscopic follow-up period of 13.0 months. The one recurrence case was managed endoscopically. **Conclusion:** ESD is a feasible technique for en bloc resection and showed no local recurrences. Although EMR was associated with local recurrences and lower en bloc resection rates, EMR showed similar complication rates and additional surgical resection rates. And its local recurrences could obtain complete cure by additional endoscopic treatment. EMR including EPMR is oncologically safe for treating a selected colorectal LST over 20 mm in diameter.

Key Word(s): 1. endoscopic mucosal resection; 2. endoscopic submucosal dissection (ESD); 3. laterally spreading tumor

Therapeutic Endoscopy/Interventional Radiology P-726

The efficiency and safety of esophageal varices banding by analgesic endoscopy

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Additional Authors: ZHI E WU, JIN TAO

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Objective: To investigate the efficiency and safety of esophageal varices banding by analgesic endoscopy. **Methods:** 113 patients of liver cirrhosis complicated with esophageal varices were randomly divided into two

groups. Regular group including 69 patients treated by ordinary endoscopy, and analgesic group including 135 patients treated by analgesic endoscopy. Heart rate, blood pressure, and blood oxygen saturation were observed and recorded 30 min before operation, during operation, and 20 min after operation. Adverse reactions, intraoperative bleeding, doctor's satisfaction and the incidences of throat ache in 24 h were also recorded. **Results:** In analgesic group, heart rates and blood pressure reduced during the banding procedure, while all rise to normal line after the operation. Blood oxygen saturation stayed stable. Contrarily, in ordinary group, heart rates and blood pressure increased during the banding, then fall down after the surgery. Blood oxygen saturation reduced a bit conversely. During the operation, the operators were more satisfactory with visual field and esophageal peristalsis than that of the ordinary group. The mean time of operation of painless group was 28.3 ± 8.6 min, obviously shorter than that of ordinary group of 41.5 ± 11.8 min. The incidence of pharyngalgia in analgesic group in 24 h is 32.5%, comparing that of 79.7% in ordinary group. **Conclusion:** Endoscopic esophageal varices banding by painless technique is safe and efficient, which turn out to be an easy way for both patients and the operators to accept.

Key Word(s): 1. analgesic; 2. esophageal varices; 3. endoscopic banding

Therapeutic Endoscopy/Interventional Radiology P-727

Emergency endoscopic treatment for massive upper gastrointestinal bleeding after liver transplantation

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Objective: To evaluate the effectiveness of emergency endoscopic treatment for patients who have massive upper gastrointestinal bleeding (UGB) after liver transplantation. **Methods:** Three patients who suffered UGB after liver transplantation were treated in our department from May 2012 to December 2013. The clinical data including treatment methods and outcome was collected. **Results:** All patients were supplement blood volume and close supervision. In case 1, hemostatic clips were used to stop active bleeding from the bare vessels on the horn of the duodenal bulb followed by a local injection of tissue glue. In case 2, esophageal varices with active bleeding were ligated, and injected tissue glue at the bleeding spots of gastric varices. We succeeded to stop the bleeding in both case 1 and 2. In case 3, the stomach was filled with a lot of blood clots and dark red blood. The patient was urgently transferred to artery embolism treatment, but still died after the operation because of pulmonary infection, hemorrhagic shock and cardiac insufficiency. Emergency endoscopy associated mortality was zero. **Conclusion:** Emergency endoscopic hemostatic for liver transplantation patients with massive UGB was safe and effective. And the doctors and nurses should make well preparation and cooperation, pay close attention to the patients and keep clear of the endoscopic view, chose the most appropriate hemostatic method in order to reduce the fatality rate.

Key Word(s): 1. liver transplantation; 2. gastrointestinal hemorrhage; 3. gastroscopy; 4. perioperative

Therapeutic Endoscopy/Interventional Radiology P-728

Limitations of endoscopic submucosal dissection (ESD) for early gastric cancer: a retrospective analysis of positive vertical margin cases

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Objective: Recently, ESD has been widely accepted as a curative, less-invasive treatment for early gastric cancer and contributes greatly to the preservation of gastric function. In clinical practice, however, for cases not indicated for ESD, we occasionally encounter treatments such as diagnostic ESD that are considered overindications. Some cases result in incomplete resection because of positive vertical margins. In this study, we examined the limitations of ESD (conditions of lesions worthy of full-thickness resection) by identifying the clinicopathological factors involved in positive vertical margins (pVM1) among cases of early gastric cancer resected using ESD. **Methods:** The therapeutic outcomes of ESD were retrospectively assessed for 478 patients with 490 EGC lesions resected en bloc with ESD at the St. Marianna University Hospital, Kanagawa, from June 2005 to December 2013. All cases were categorized into the pVM1 and pVM0 groups. Factors that influenced pVM1 were extracted by univariate analysis of factors such as patient background (age, sex) and pathological background (en-bloc resection rate, site, tumor diameter, macroscopic type, ulcerative findings, pathological invasion depth, degree of differentiation) followed by multivariate analysis of those factors. **Results:** The pVM1 group included 14 lesions (2.9%). On univariate analysis, tumor diameter ($p < 0.001$), pathological invasion depth (pT1b; $p < 0.0001$) had a significant effect on pVM1. On multivariate analysis of those factors, pT1b was the only factor that had a significant effect on pVM1. The pVM1 rates in pT1a and pT1b lesions were 0.047% and 17.9% ($p < 0.0001$), respectively, and the diagnostic rate of invasion depth was 96.1% overall. **Conclusion:** Submucosal (SM) invasion depth had a significant effect on pVM1. When SM invasive cancer is suspected prior to surgery, it may become incomplete resection when ESD is performed for the primary tumor. In such cases, full-thickness resection is desirable for cT1b gastric cancer. The future development of function-preserving or reductive surgeries that bridge the gap between ESD and standard surgery in such cases of potentially invasive gastric cancer is desired.

Key Word(s): 1. ESD

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Effective peroral direct cholangioscopy with an ultraslim endoscope for treatment of hepatolithiasis in patients with altered gastrointestinal anatomy

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Objective: Postoperative hepatolithiasis is one of the complications, which often occur in patients who underwent hepaticojejunostomy due to various pancreatobiliary diseases. In treatment for hepatolithiasis, it is important to remove the stones completely. We evaluated the efficacy of peroral direct cholangioscopy (PDCS) using an ultraslim endoscope for treatment of hepatolithiasis in patients hepaticojejunostomy. **Methods:** Between April 2012 and April 2014, 14 patients with hepatolithiasis, who had undergone bowel reconstruction with hepaticojejunostomy, were included. Firstly, diagnostic and therapeutic ERC by using a short double-balloon enteroscope (DBE) (EC-450B15 or EI-530B, Fujifilm, Tokyo) was performed in all patients. Following removal of hepatolithiasis, the DBE was exchanged for an ultraslim endoscope (EG-530NW; Fujifilm, Tokyo) through the overtube for performing PDCS. **Results:** The success rate of PDCS was 85.7% (12/14). In 5 of 12 (41.7%) patients with successful PDCS, the residual stones were detected and removed completely by using a 5-Fr basket and/or suction after normal saline irrigation. In the remaining 7 (58.3%) patients, no residual stone was detected. The median PDCS procedure time was 14 min (range, 8–36). No serious procedure-related complications were observed. Median followed up after PDCS was 15.5 month (range, 3–27), and only one patient (8.3%) had recurrence of hepatolithiasis. **Conclusion:** PDCS using an ultraslim endoscope appears to be a useful tool for both detecting and treating residual stones after treatment of hepatolithiasis using a DBE. The combined use of DBE and PDCS might be reduced the recurrent risk of hepatolithiasis with altered gastrointestinal anatomy.

Key Word(s): 1. peroral direct cholangioscopy

Therapeutic Endoscopy/Interventional Radiology
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Clinical features of endoscopic submucosal dissection for early gastric cancer in the pyloric area

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Objective: Endoscopic submucosal dissection (ESD) has enabled en bloc resection in the pyloric area that was difficult using conventional EMR (endoscopic mucosal resection) techniques. However, the post-ESD stenosis should be noted as an important complication. In this study, clinical features of cases undergoing ESD for early gastric cancer in the pyloric area were evaluated. **Methods:** Among 431 cases with early gastric cancer treated by ESD between 2004 and 2014, 18 cases with a lesion in the pyloric area were retrospectively reviewed. The lesion of the pyloric area was defined as that located within 1 cm from the pylorus ring. Stenosis after ESD was defined as that requiring balloon dilation. **Results:** Among 18 cases with lesions in the pyloric area, all lesions were removed as complete en-bloc curative resection. Nine cases among 18 needed retrograde approach with an endoscope in a retroflexed manner in the duodenal bulb. ESD-associated stenosis occurred in 5 cases. As factors contributing to the post-ESD stenosis, circumferentially removed range of mucosa in the pylorus ring, diameter of the removed lesion, endoscopic retroflexion in the duodenal bulb, and local injection of triamcinolone acetonide after ESD were evaluated. Univariate analysis indicated that circumferentially removed range of mucosa in the pylorus ring (51%<) was significantly associated with the incidence of stenosis. All cases with stenosis were successfully treated with endoscopic balloon dilation performed at the time from 14 to 107 days after ESD. The local injection of triamcinolone acetonide at the ulcer floor was also conducted to prevent stenosis in 6 cases, among which only 1 case needed balloon dilation. **Conclusion:** The incidence of stenosis after ESD in the pyloric area was associated with the removed range of mucosa in the pylorus ring. In such cases, endoscopic balloon dilation should be applied at the appropriate time.

Key Word(s): 1. ESD; 2. pylorus; 3. stenosis

Therapeutic Endoscopy/Interventional Radiology
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Appropriate surveillance strategy after curative endoscopic resection for early gastric cancer based on the incidence and patterns of local, metachronous and extragastric recurrence

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Objective: To suggest an appropriate surveillance strategy after curative endoscopic resection (ER) for early gastric cancer (EGC) based on the incidence and patterns of local, metachronous, and extragastric recurrence (LR, MR, and EGR). **Methods:** Between 2000 and 2011, 1695 consecutive patients with 1740 differentiated-type EGCs meeting absolute (EGC-absolute) or expanded indication criteria (EGC-expanded) underwent curative ER. They were followed-up with esophagogastroduodenoscopy (EGD) and abdominal computed tomography (CT) under a standardized surveillance protocol. Long-term outcome analysis was performed in 1460 patients undergoing at least one-year follow-up. **Results:** Incidence of residual (three EGCs) and synchronous lesions (12 EGCs and one pT2 advanced gastric cancer (AGC)) detected within one year were 0.18% and 0.77%. During median 48 months of follow-up, two cases of LR (0.14%, two EGCs) and 58 cases of MR (4.0%, 55 EGCs and three pT2 AGCs) occurred and were curatively treated in all cases. During five-year surveillance period, cumulative incidence curve of MR showed a linear increase. Median time from ER to MR was 31 months. Two cases of EGR (0.14%) occurred in lymph nodes 63 months and 49 months after curative ER for EGC-absolute and EGC-expanded, respectively. The patient with EGC-expanded underwent a palliative operation and died of gastric cancer progression. **Conclusion:** Given established precancerous changes, constant incidence rate of MR during five-year surveillance period, and EGR after four-year follow-up even in cases of EGC-absolute, surveillance EGD and abdominal CT might be necessary for at least five years after curative ER in cases of EGC-absolute as well as EGC-expanded.

Key Word(s): 1. early gastric cancer; 2. endoscopic resection

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The pocket-creation method makes endoscopic submucosal dissection feasible for duodenum neoplasms

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Objective: Endoscopic submucosal dissection (ESD) for duodenal neoplasms is considered a difficult procedure with relatively high risk, even by advanced endoscopists. The pocket-creation method (PCM) is a new ESD strategy to overcome difficulties in conventional ESD. The features of PCM include entering the submucosal layer using a small-caliber-tip transparent hood (ST hood) with a minimal mucosal incision, and dissecting submucosal layer completely under the lesion before completion of mucosal resection. Therefore, PCM has two advantages including maintenance of the thick submucosal layer preventing the leakage of injection solution, and providing good traction thus stretching the submucosal tissue and facilitating the submucosal dissection. Adjusting the approach angle of the knife to be tangential to the muscle layer is easy with this method. The aim of this study is to evaluate the safety and efficacy of PCM compared with conventional ESD. **Methods:** From August 2008 to July 2013, a total of 37 duodenal neoplasms (cancer 20, adenoma 17) in 34 patients were treated by ESD at Jichi Medical University Hospital. We selected two groups, patients treated by PCM (P-group) or by conventional ESD (C-group). The resection speed (resection area/operating time, mm²/min), en-bloc resection rate, complete resection rate, and perforation rate were analyzed retrospectively. **Results:** The resection speed was faster in the P-group than the C-group (20.1 vs 15.2 mm²/min, P = 0.15). The en-bloc resection rate and complete resection rate were higher in the P-group than in the C-group (100% and 87.5%, P = 0.17, 85.7% and 71.4%, P = 0.22, respectively). The perforation rate was lower in the P-group than in the C-group (6.7% vs 19.0%, P = 0.27). **Conclusion:** For each parameter evaluated, PCM was better than a conventional ESD, trending toward significance, enabling better and safer ESD procedures. These results establish feasibility and support further evaluation of this technique.

Key Word(s): 1. endoscopic submucosal dissection pocket-creation method

Therapeutic Endoscopy/Interventional Radiology P-734

Initial experience with a new antireflux covered metal stent for distal malignant biliary obstruction

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Objective: We report our initial experience of antireflux metal stent (ARMS) placement for distal malignant biliary obstruction.

Methods: Twenty-six patients with unresectable distal malignant biliary obstruction received endoscopic ARMS placement between February and June 2014 (Male/female = 15/11; Median age = 71 years old [43–87]). Causes of stricture were pancreatic cancer (n = 22), lower biliary tract cancer (n = 2), gallbladder cancer (n = 1) and ampullary cancer (n = 1). Sixteen patients (62%) had duodenal invasion. In 12 patients (46%), ARMS placements were performed without previous biliary drainage, and in 6 patients (23%), ARMS placements were done as the re-interventional procedures to the occlusion of previously placed self-expandable metallic stents. The technical success rate, the functional success rate (improvement of jaundice), the require time for procedure, early complications (occurred within 30 days after the procedure) and stent patency were evaluated retrospectively. **Results:** The technical rate and the functional success rate were 100%. The median procedure time was 33 min (25–60 min). No procedure-related complications were occurred. Acute cholecystitis occurred in two patients (7.6%), but managed by temporary percutaneous transhepatic gallbladder drainages. Stent occlusion caused by sludge formation occurred in 3 patients (11.5%), and stent migration was observed in one patient (3.8%). In these patients, ARMSs were all successfully removed and subsequently replaced new stents. **Conclusion:** The placement of ARMS is technically feasible, and ARMS may prevent stent occlusion caused by duodenobiliary reflux and extend the functioning period of stents. To evaluate the efficacy of ARMS to prevent stent occlusion, a prospective randomized study comparing ARMS with the usual covered stent is required.

Key Word(s): 1. antireflux covered metal stent; 2. distal malignant biliary obstruction

Therapeutic Endoscopy/Interventional Radiology P-735

Endoscopic treatment of Barrett's oesophagus with dysplasia or intramucosal carcinoma: experience and outcomes from an Australian tertiary centre

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Objective: To evaluate efficacy, safety and durability of endoscopic treatment of Barrett's with dysplasia and Intramucosal Carcinoma

Methods: Retrospective analysis of endoscopic treatment of Barrett's oesophagus with persistent low-grade dysplasia (LGD), high grade dysplasia (HGD) and Intramucosal carcinoma with RFA. Patients with mucosal nodularity or vascular irregularity underwent EMR prior to RFA. Patients with at least a 6-month follow up gastroscopy were analysed.

Results: Total of 53 patients had RFA. 37 patients were analysed. 86% were male (mean age 62 years). 15 patients had baseline EMR (6 with IMC, 9 with HGD). Median Barrett's length was C4M5 (range of circumferential extent 0–19 cm). Histological diagnoses prior to ablation were LGD 11, HGD 15, IMC 11. 34 (92%) patients achieved complete remission of dysplasia (CRD) and 33 (89%) achieved complete remission of intestinal metaplasia (CRIM). 1 patient developed adenocarcinoma and had oesophagectomy and chemotherapy. 1 patient underwent oesophagectomy for IMC and multifocal HGD and 1 patient had surveillance for LGD. Median follow up 22 months (7 – 64). During follow up 1 patient developed early adenocarcinoma and received brachytherapy. 1 patient developed recurrent Barrett's, and had RFA. Durability of endoscopic treatment is 100% at 1 year. Only 2 patients (6%) had recurrent Barrett's (up to 5-year follow up). None with treated IMC had distant disease on surveillance CT or FDG PET (mean of 32 months). **Conclusion:** Endoscopic treatment of Barrett's with LGD, HGD and IMC with EMR and HALO RFA is effective and durable. Close surveillance during and after treatment remains necessary to detect development of neoplasia.

Key Word(s): 1. Barrett's oesophagus; 2. radiofrequency ablation; 3. intramucosal carcinoma; 4. endoscopic mucosal resection

Therapeutic Endoscopy/Interventional Radiology P-736

Endoscopic papillary large-diameter balloon dilation for elderly patients with choledocholithiasis

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Objective: Recently, the efficacy of endoscopic papillary large-diameter balloon dilation (EPLBD) after endoscopic sphincterotomy for the removal of bile duct stones has been reported; nevertheless, there have been few reports on the efficacy of EPLBD for elderly patients with choledocholithiasis. The purpose of this study is to investigate the efficacy of endoscopic papillary large-diameter balloon dilation for elderly patients with choledocholithiasis. **Methods:** The elderly patients with choledocholithiasis aged 65 years or older who had undergone extraction of bile duct stones between November 2009 and September 2013 were included in this study. After sphincterotomy large-diameter balloon dilation was performed. Bile duct stones were then removed with mechanical lithotripsy. The cases were divided into 3 age groups for comparison: Group I, 65 to 74 years; Group II, 75 to 84; Group III, 85 years or older. **Results:** Seventy seven cases of choledocholithiasis treated with extraction by EPLBD were included in this study. There were 19 cases in Group I, there were 44 cases in Group II and there were 14 cases in Group III. Sixty six cases were successfully treated with EPLBD in the first session. The success rate in the first session was 85.7%. In 4 cases of Group I, 6 cases of Group II and 1 case of Group III failed to clear the common bile duct in the first session. There were no relationship between age and the success rate (P = 0.742). Ten of eleven failed cases had experienced recurrent cholangitis after first treatment. In two cases, second attempt of endoscopic clearance of bile duct stones was succeeded. Five patients had died of other diseases during observation periods of up to 46 months. **Conclusion:** EPLBD was a safe

method for elderly patients with choledocholithiasis and produced good long-term outcomes.

Key Word(s): 1. choledocholithiasis; 2. elderly patients; 3. large balloon dilation

Therapeutic Endoscopy/Interventional Radiology P-737

Long-term outcomes and reinterventions in EUS-guided biliary drainage for malignant biliary obstruction

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Objective: EUS-guided biliary drainage (EUS-BD) has been increasingly reported as salvage therapy in failed ERCP cases, but its long-term outcomes are unknown. **Methods:** Long-term outcomes and reinterventions for stent dysfunction and complications were retrospectively studied in patients undergoing EUS-BD for unresectable malignant biliary obstruction. **Results:** EUS-BD using covered metallic stent (CMS) was performed in 29 patients: 22 hepatico-gastrostomy (HGS) and 7 choledochoduodenostomy (CDS). Primary cancer was pancreatic in 59%. Six patients (21%) developed early complications: stent misplacement in the peritoneum treated by tandem HGS placement, migration treated by stent-in-stent, 2 cholangitis due to kinking treated by stent-in-stent and PTBD, cholecystitis treated by PTGBA, and bleeding. Eight patients (28%) developed late complications: 5 HGS dysfunction and 3 CDS dislocation. Median time to dysfunction was 129 days. Dysfunction due to sludge/food impaction in HGS was treated by balloon cleaning followed by PS placement via HGS in one and trimming of long HGS stent by APC, followed by antegrade CMS placement in distal CBD in the other. Three hyperplasia at uncovered portion of HGS was treated by stent-in-stent PS placement. Three cholangitis due to CDS dislocation was treated either by a new CDS placement, balloon cleaning alone via choledochoduodenal fistula, or transpapillary stenting. **Conclusion:** Stent dysfunction in EUS-BD was not rare, but reinterventions via EUS-BD route was technically feasible using an ERCP technique.

Key Word(s): 1. EUS; 2. biliary drainage; 3. hepaticogastrostomy; 4. malignant biliary obstruction

Therapeutic Endoscopy/Interventional Radiology P-738

Endoscopic resection of esophageal neoplasia: comparison of endoscopic submucosal dissection (ESD) with endoscopic mucosal resection (EMR) in our institution

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Objective: Endoscopic submucosal dissection (ESD) is widely accepted as a more reliable therapeutic procedure for superficial gastrointestinal tract neoplasms compared with endoscopic mucosal resection (EMR). However, ESD for esophageal neoplasms is still associated with a high complication rate compared with EMR. For elderly patients in particular, only a few reports have evaluated the feasibility and safety of esophageal ESD. In this study, we compared consecutive elderly patients undergoing esophageal ESD with those undergoing esophageal EMR to evaluate the efficiency and complications of ESD. **Methods:** From April 2005 to April 2014, we performed EMR or ESD for esophageal neoplasms in 97 patients. Of the 97 patients, 74 (76.2%) underwent ESD and 21 (21.6%) underwent EMR; the endoscopic procedure failed in two patients because of the large tumor size. **Results:** The mean patient age was 70.1 years in the ESD group and 66.0 years in the EMR group ($p = 0.114$). The resected specimen size was 29.6 mm in the ESD group and 21.5 mm in the EMR group ($p = 0.003$). The en bloc resection rate was 98.6% (75/76) in the ESD group and 61.9% (13/21) in the EMR group ($p = 0.002$). Although intraprocedural complications such as oxygen desaturation and hypotension occurred in the ESD group (6.21%; 7/76), there were no life-threatening complications. On the other hand, no complications were observed in the EMR group (0%; 0/21) ($p = 0.01$). **Conclusion:** The technical problems associated with ESD are now being resolved with improvements in needles and electric cautery devices. ESD for esophageal lesions is expected to achieve good outcomes without serious side effects.

Key Word(s): 1. ESD; 2. EMR; 3. elderly; 4. esophagus

Therapeutic Endoscopy/Interventional Radiology P-739

Utility of therapeutic ERCP using a newly developed short type single balloon endoscopy in patients with altered gastrointestinal anatomy: comparison of double balloon endoscope and single balloon endoscope

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Objective: This present study aimed to evaluate the usefulness of a newly developed s- SBE for therapeutic ERCP in patients with gastrointestinal

Therapeutic Endoscopy/Interventional Radiology
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Clinical investigation of percutaneous endoscopic gastrostomy (PEG) in our clinic

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Objective: While a shift to home care is currently being promoted, what gastrostomy should be and its indications have again become controversial. In the study, we included patients who underwent percutaneous endoscopic gastrostomy (PEG) in our clinic. **Methods:** We examined underlying diseases, methods for gastrostomy, complications, and outcomes in 281 patients aged between 5 and 94 years (mean age: 73 years; 161 males and 120 females) who underwent PEG in our clinic for five years between January 2009 and December 2013. **Results:** The most common underlying disease was cerebrovascular disorders in 111 patients (39.5%), followed by neurodegenerative diseases in 66 (23.5%), dementia in 47 (16.7%), and malignancies in 29 (10.3%). About half of the patients were associated with a previous history of aspiration pneumonia. The common preoperative nutrition was transnasal nutrition in 155 patients (55.2%), followed by peripheral parenteral nutrition alone and in combination with oral feeding in each 45 (16.0%) and parenteral nutrition in 20 (9.6%). Methods for gastrostomy included an introducer method in 24 patients and a push method in 257 (bumper-button-type in 221 and bumper-tube-type in 36). Early complications within 30 postoperative days were noted in 62 patients (22.0%); wound infection in 27 (peritonitis in 7), aspiration pneumonia in 17, and wound bleeding in 8. Early death within 30 postoperative days occurred in 13 patients (4.6%) due to peritonitis (3 patients), aspiration pneumonia (3), underlying diseases (5), and other cases (2). For comparison, the patients were divided into two groups based on a preoperative serum albumin level <3.0 mg/dL (137 patients; A group) or ≥3.0 mg/dL (144; B group). Early postoperative complications were observed in 35 and 27 patients of the A (25.5%) and B groups (18.7%), respectively. This suggests no significant difference but a trend toward more common early postoperative complications for the A group. Early postoperative death occurred in 11 and 2 patients of the A and B groups, respectively, showing a significantly higher mortality rate for the A group ($p < 0.01$). Followed-up were possible for 134 of the patients. The outcomes were survival in 40 patients (29.2%), death in 89 (66.4%), and possible oral feeding resulting in a removal of gastrostomy in 5 (3.7%). The cause of the 89 deaths was primarily underlying diseases (48 patients), followed by aspiration pneumonia (25). The mean survival was 7.5 months. **Conclusion:** PEG is an invasive procedure where preoperative evaluation of general conditions and nutrition management are important. We may need to carefully consider whether a patient is indicated for the procedure.

Key Word(s): 1. percutaneous endoscopic gastrostomy

Therapeutic Endoscopy/Interventional Radiology
P-750

Toothpick perforation of the intestine presenting as abdominal pain mimicking appendicitis

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Objective: To introduce an uncommon cause of abdominal pain mimicking appendicitis. **Methods:** The medical course of a rare patient with abdominal pain mimicking appendicitis caused by toothpick perforation of the intestine was presented in brief. **Results:** We present a case of a 37-year old man who had suffered a sudden right lower abdominal pain for three days. On physical examination, he was afebrile and lower right abdominal tenderness and tender flank on palpation was found. The white blood cell increased dramatically. Acute appendicitis was suspected by ultrasound B examination. However, during the course of laparoscopic operation, the patient was noted to have a toothpick as the foreign body sticking out of the wall of the terminal ileum. The stick was so closed to large blood vessels. After removing the foreign body and sewing up the perforation hole, the patient recovered soon. **Conclusion:** Toothpick perforation of the intestine can cause abdominal pain mimicking appendicitis.

Key Word(s): 1. toothpick perforation; 2. abdominal pain;

Therapeutic Endoscopy/Interventional Radiology
P-753

Radiofrequency ablation for Barrett esophagus and low-grade dysplasia

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Objective: To explore whether endoscopic radiofrequency ablation could decrease the risk rate of neoplastic progression. **Methods:** 101 patients with Barrett esophagus containing low-grade dysplasia in our hospital between June 2006 and June 2010 were enrolled and patients' follow-up was ended at June 2013. 56 patients were received ablation and 45 cases were received no definite treatment. Adverse events after complete eradication were recorded during a 3-year follow-up. **Results:** Ablation reduced the risk of progression from low-grade to high-grade dysplasia or adenocarcinoma by 18% (1% for ablation and 19% for control group; $P < 0.01$) and the risk of progression to adenocarcinoma by 6% (1.3% for treatment group and 7.4% for control group; $P < 0.05$). Among these patients in the treatment group, 89.4% of dysplasia and 83.5% of intestinal metaplasia were complete eradicated, in compared with 16.3% for dysplasia and 0% for intestinal metaplasia among patients in the control group ($P < 0.05$). Ablation-related side effect appeared in 13% of patients receiving ablation and the most common side effect was esophageal stricture, most of them could remit spontaneously in a long-term phase, and 3 patients from them were cured by endoscopic dilation. **Conclusion:** patients with Barrett esophagus and a low-grade esophageal dysplasia, radiofrequency ablation could help to reduce the relative risk of neoplastic progress to carcinoma over 3-years of follow-up.

Key Word(s): 1. endoscopic; 2. radiofrequency ablation; 3. Barrett esophagus; 4. esophageal dysplasia

Therapeutic Endoscopy/Interventional Radiology P-754

The observation and coordination of nursing in emergency gastric variceal obliteration with tissue adhesive for gastric variceal bleeding

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Objective: To investigate the methods of care and complications observation of emergency gastric variceal obliteration (GVO) with tissue adhesive for the treatment of gastric variceal bleeding (GVB). **Methods:** A total of 251 liver cirrhotic patients with GVB, who received emergency GVO with tissue adhesive treatment in our hospital between 2010 and 2013, were enrolled in the study. The experience of nursing cooperation with doctors and complications observation was summarized. **Results:** All patients were successfully treated by tissue adhesive injection. The hemostasis of active bleeding in 24 hours was 100%. The early rebleeding rate was 1.2%(3/251) and the total complication rate was 9.2%(23/251). **Conclusion:** GVO with tissue adhesive is effective. Comprehensive preparation, close collaboration with doctors and careful observation can significantly reduce the early rebleeding and other complications rates.

Key Word(s): 1. gastric variceal bleeding; 2. endoscopic therapy; 3. tissue adhesive

Therapeutic Endoscopy/Interventional Radiology P-755

Nursing of endoscopic retrograde cholangiopancreatography in treatment of biliary complications following liver transplantation

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Objective: To investigate the nursing cooperation methods of endoscopic retrograde cholangiopancreatography (ERCP) in the treatment of biliary complications after liver transplantation. **Methods:** The clinical data of 102 patients with biliary tract complications after liver transplantation undergoing endoscopic retrograde cholangiopancreatography (ERCP) from December 2008 to December 2012 were analyzed retrospectively. **Results:** 94 patients were successfully treated by ERCP, the success rate for intubation is 92.1% (94/102). 317 times of endoscopic treatment were performed in 94 patients, and followed up for 6 months to 2 years. The curative ratio is 76.3% (72/94), while the recovery rate is 20.2% (19/94), the total effective rate is 88.2% (91/102). **Conclusion:** ERCP is an effective method for treatment of biliary complications after liver transplantation. Accurate nursing assessment during preoperative period, appropriate humanistic care and psychological counseling, close collaboration and strict aseptic technique in operation, close observation in perioperation and effective nursing care of pipeline are important factors for the success of ERCP on biliary complications after liver transplantation.

Key Word(s): 1. liver transplantation; 2. biliary complication; 3. endoscopic retrograde cholangiopancreatography

Therapeutic Endoscopy/Interventional Radiology P-756

Long term outcome and complications of percutaneous endoscopic gastrostomy

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Objective: To investigate the long-term outcomes of patients receiving percutaneous endoscopic gastrostomy (PEG) in term of survival and the complications related to PEG. **Methods:** 45 patients who underwent successful PEG placement from 2000 to 2013 in our hospital were included in the study. **Results:** 52 PEG procedures were performed in these 45 patients. After a median follow-up of 1.5 years (0.8–2.4 years), PEG was still working in 33.3% and was obstructed in 17.7% and was removed in 17.7% and 31.3% patients were deceased. And 7 patients received the second PEG placement. Only 1 patient appeared too fast foods stomach pain and symptoms disappeared after reasonable treatment, and 2 patients occurred stoma leakage and were cured by antibiotics prescribed by doctors. The remaining patients had no abnormalities. No death was directly related to PEG. **Conclusion:** Percutaneous endoscopic gastrostomy is a safe and reliable means in maintaining normal gastrointestinal function from oral feeding difficulties which need long-term support of nutrition.

Key Word(s): 1. percutaneous endoscopic gastrostomy; 2. outcome; 3. complication

Therapeutic Endoscopy/Interventional Radiology P-757

Submucosal tunneling endoscopic resection for submucosal tumors of the esophagogastric junction originating from the muscularis propria layer: a feasibility study

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Objective: The esophagogastric junction (EGJ) is a difficult location for endoscopic resection due to its narrow lumen and sharp angle. Potential increased risks of perforation and mediastinal infection exist, especially for submucosal tumors (SMTs) originating from the muscularis propria (MP) layer. We previously demonstrated the safety and efficacy of submucosal tunneling endoscopic resection (STER) for upper GI SMTs but the feasibility of STER for the removal of SMTs at the EGJ requires systematic investigation. The aim of the investigation is to evaluate the clinical impact of STER on the removal of SMTs at the EGJ. **Methods:** A prospective study was carried out, including a consecutive cohort of 72 patients who underwent STER for 72 SMTs of the EGJ originating from the MP layer between July 2010 and August 2013 in a single Academic medical center. Adverse events, en bloc resection rate, local recurrence were evaluated (Figure 1).

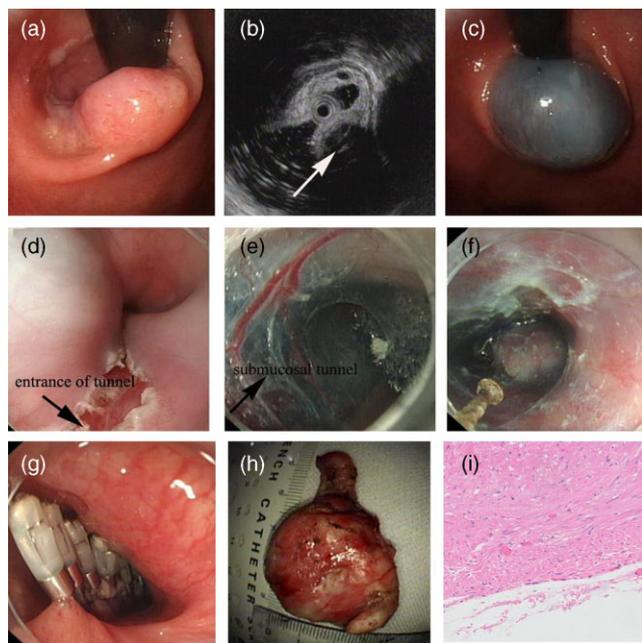


Figure 1

Submucosal tunnel endoscopic resection for a submucosal tumor of the esophagogastric junction (EGJ) originating from the muscularis propria layer in a 55-year-old woman. (a) Submucosal tumor at the EGJ. (b) EUS showing a lesion originating from the muscularis propria layer (arrowhead). (c) Submucosal injection for marking tumor location preoperatively to prevent mistaking the target tissue in the tunnel cavity. (d) A 2-cm longitudinal mucosal incision was made approximately 5 cm proximal to the SMT. (e) The submucosal tunnel is established. (f) Separating the tumor from the MP layer using the hybrid knife. (g) The mucosal entry incision is sealed with several clips. (h) Irregularly-shaped, completely resected specimen (maximum diameter, 30 mm). (i) Macroscopic findings of the resected specimen revealed a leiomyoma (H&E, $\times 20$). **Results:** The male-to-female ratio was 1.12:1. The mean age was 49 years (range, 28–84 years). The overall rates of en bloc resection and piecemeal resection were 95.4% and 4.6% respectively. No delayed hemorrhage or severe adverse events occurred in any of the 72 patients following STER. Irregular lesions accounted for 86% of all lesions and all were resected completely. The average maximum diameter of the lesions was 21.0 mm (range, 10–42 mm). The mean procedure time was 45 minutes (range, 15–110 minutes). All patients were hospitalized for observation after STER and the mean hospitalization duration was 3.0 days (range 2–7 days). The pathological diagnoses are shown in Table. All GISTs (n = 9, 12.5%) were 20 mm or less in diameter (mean, 13.6 mm; range, 8–20 mm). All had fewer than 5 mitoses per 50 high-power fields, suggesting a low risk of recurrence. The most common complication was subcutaneous emphysema and pneumomediastinum (verified by CT) (15/72, 20.8%). No adverse pulmonary events related to CO₂ insufflations. No local recurrence and distant metastasis occurred during 24 months' follow-up. **Conclusion:** Our study showed that STER was safe and effective, provided accurate histopathologic evaluation, and was curative for SMTs of the deep MP layers at the EGJ. CO₂ gas insufflation is recommended. **Key Word(s):** 1. submucosal tunneling endoscopic resection; 2. submucosal tumors; 3. esophagogastric junction

Therapeutic Endoscopy/Interventional Radiology P-758

Submucosal tunneling endoscopic resection for submucosal tumors in upper gastrointestinal tract: a feasibility study of 290 consecutive cases

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Objective: We previously reported a new technique, submucosal tunneling endoscopic resection (STER), for the resection of upper gastrointestinal SMTs originating from the muscularis propria layer, but the outcomes of this technique performed in a large number of cases have not been studied. **Methods:** From September 2010 to June 2013, a total of 290 patients with submucosal tumors (SMTs) originating from the muscularis propria of the upper gastrointestinal tract were included in the retrospective study in Zhongshan Hospital of Fudan University. Clinicopathological characteristics, en bloc resection, procedure time, complications were assessed in the present study. In addition, factors related the piecemeal resection were analyzed using logistic regression. **Results:** The male-to-female ratio was 2.05:1. The mean age was 49.0 years (range, 18–79 years). The mean time of STER procedure was 56 ± 38 minutes (median 45 minutes, range 15–200 minutes). The overall rates of en bloc resection and piecemeal resection were 95.4% and 4.6% respectively. The pathology results were 226 leiomyomas (77.9%), 53 gastrointestinal stromal tumors (GISTs, 18.4%), 3 glomus tumors, 5 Schwannoma and 3 cases of calcifying fibrous tumors. Procedure related complications included mucosal injury (n = 3), subcutaneous emphysema (n = 61), pneumothorax (n = 22), pleural effusion (n = 49), and so on. Local recurrence or distant metastasis has not occurred during follow-up. Based on statistical analysis: i) the upper-GI SMT size and shape had significant impacts on the en bloc rate of STER, ii) the SMT with large size and irregular shape were the significant risk factors for the long-time procedure, iii) the piecemeal resection rate was significantly high in the patients with irregular tumor, large tumor or long-term procedure time, iv) tumor with irregular shape and long-time procedure time were the significant contributors to STER-related complications. **Conclusion:** STER is an effective and a safe method for the upper-GI SMTs with diameter size <35 mm (length ≤ 7 cm). Meanwhile, tumors with large size and irregular shape should be treated by skilled and experienced endoscopists.

Key Word(s): 1. submucosal tunneling endoscopic resection; 2. submucosal tumors; 3. upper gastrointestinal tract

Therapeutic Endoscopy/Interventional Radiology P-759

Preliminary evaluation of submucosal tunneling endoscopic resection for the treatment of gastrointestinal stromal tumors of the stomach

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Objective: To evaluate the clinical value of submucosal tunneling endoscopic resection (STER) for treating gastrointestinal stromal tumors

(GIST) of the stomach. **Methods:** The clinicopathological data of 21 cases of gastric GISTs treated with STER from September 2010 to December 2013 were analyzed retrospectively. **Results:** Of the 23 GISTs, 7 were located in the cardia, 2 in the cardia leaned toward the fundus, 6 in the upper gastric corpus and 8 in the gastric antrum of greater curvature. All the GISTs were diagnosed by EUS-FNA before resection or confirmed by pathology after resection. STER was performed successfully in all cases. The en bloc resection rate was 100%. The average operation time was 48 min (range 35–100 min). The average lesion size was 1.8 cm (range 1.0–3.0 cm). All resected lesions were well-encapsulated and had fewer than 5 mitoses per 50 high-power fields, suggesting a low risk of recurrence. pneumoperitoneum occurred in 6 patients were successfully treated with peritoneocentesis decompression. Pneumothorax and subcutaneous emphysema occurred in four patients and one patient developed left subphrenic effusion suggesting secondary infection. All of them recovered uneventfully on conservative treatments. No delayed bleeding or GI tract leakage occurred. No tumor residual or recurrence was found during follow up period (range 8–38 months). **Conclusion:** STER is a safe, effective and feasible new method for radical treatments of GISTs in appropriate positions of the stomach. It can maintain the mucosal integrity of the GI tract and prevent the GI tract leakage. Further studies with more cases and long-term outcomes are awaited.

Key Word(s): 1. submucosal tunneling endoscopic resection; 2. gastrointestinal stromal tumors

Therapeutic Endoscopy/Interventional Radiology P-760

Submucosal tunneling endoscopic resection for the treatment of rectal submucosal tumors originating from muscularis propria layer: a feasibility study

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Objective: Rectum is a difficult location for endoscopic resection submucosal tumors (SMTs) originating from the muscularis propria (MP) layer, due to the potential increased risks of perforation and retroperitoneal infection. We previously demonstrated the safety and efficacy of submucosal tunneling endoscopic resection (STER) for upper GI SMTs but the feasibility of STER for the removal of rectal SMTs requires systematic investigation. The aim of the investigation is to evaluate the clinical impact of STER on the removal of rectal SMTs. **Methods:** A prospective study was carried out, including a consecutive cohort of 16 patients who underwent STER for 16 rectal SMTs originating from the MP layer between March 2011 and December 2013 in a single Academic medical center. Adverse events, en bloc resection rate, local recurrence were evaluated. **Results:** Of the 16 cases, there were 9 females and 7 males. The age ranged from 41 to 82 years (average 58.8 years). En bloc STER was performed successfully in all 16 cases. The tumors location was 5–15 cm from the edge of anus. The resected specimen size was ranged from 1.0 to 3.5 cm (average 1.6 cm). The mean procedure time was 48 min (range 40–75 min). One patient developed mucosa perforation during STER procedure and was repaired with metal clips. Five patients developed low fever after procedure and all were managed by intravenous antibiotics. One patient developed subcutaneous emphysema in one of her legs and faded after two weeks. No delayed hemorrhage or severe adverse events occurred in any of the 16 patients following STER. Postoperative pathological examination revealed schwannoma (n = 4), leiomyoma (n = 5), gastroin-

testinal stromal tumor (n = 5), proliferation of collagen fibers nodular degeneration (n = 3). All patients were hospitalized for observation after STER and the mean hospitalization duration was 4.0 days (range 2–14 days). Postoperative follow up ranged from 6 to 32 months (mean 21.1 months) and no residual lesion or recurrence was found. **Conclusion:** Our study showed that STER was safe and effective, provided accurate histopathologic evaluation, and was curative for rectal SMTs originating from muscularis propria layer in our initial experience. Further studies in more cases and on long-term outcome are awaited.

Key Word(s): 1. submucosal tunneling endoscopic resection; 2. rectal submucosal tumors

Therapeutic Endoscopy/Interventional Radiology P-761

Peri-operative managements of complications of submucosal tunneling endoscopic resection (STER) for the treatment of upper gastrointestinal submucosal tumors originating from the muscularis propria layer

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Objective: To investigate the managements of complications of submucosal tunneling endoscopic resection (STER) for the resection of upper gastrointestinal (GI) submucosal tumors (SMTs) originating from the muscularis propria (MP). **Methods:** A total of 290 patients with SMTs originating from the MP of the upper GI tract who underwent STER between September 2010 and June 2013 were enrolled. The medical records were thoroughly investigated. **Results:** All SMTs were successfully resected with STER. The overall rates of en bloc resection and piecemeal resection were 95.4% and 4.6% respectively. The average size of the resected tumors was 21.0 ± 11.8 mm (range 10.0–70.0 mm). The mean time of STER procedure was 56 ± 38 minutes (range 15–200 minutes). Mucosal tear occurred in 3 cases (1.0%, 3/290) and large hemorrhage (blood loss >200 ml) occurred in 5 patients (1.7%, 5/290) during the operation. Subcutaneous emphysema occurred in 61 patients (21.0%, 61/290), 13 cases with air insufflation and 48 cases with CO₂ insufflation. Pneumothorax occurred in 22 cases, including 15 cases with CO₂ insufflation and 7 cases with air insufflation. Subcutaneous emphysema were fundamentally absorbed after the operation within 1–2 hours in patients with CO₂ insufflation while were absorbed after 5–10 days in patients with air insufflations. In patients with pneumothorax, 5 cases (1.7%, 5/290) needed to be treated with thoracic drainage using venotomy catheter because of large compressed lung. 15 cases (5.2%, 15/290) with pneumoperitoneum were successfully treated with peritoneocentesis decompression. Postoperative CT revealed minimal pleural effusion accompanied with minimal bilateral lung inflammation in 49 patients (16.9%, 49/290) which can generally be self-absorbed without specific treatment. 11 patients had pleural effusion accompanied with fever or segmental atelectasis, which required thoracic drainage (3.8%, 11/290). 1 case had an esophageal-pleural fistula 3 days post-surgery due to displacement of the clips, which was treated successfully via closed thoracic drainage. During follow-up, secondary esophageal diverticulum occurred in 2 cases. **Conclusion:** STER is a safe, effective minimally invasive procedure for the treatment of SMTs originating from the MP. Common complications of STER are gas-related, which can be successfully treated by conservative treatments.

Key Word(s): 1. submucosal tunneling endoscopic resection (STER); 2. complications

Therapeutic Endoscopy/Interventional Radiology P-762

Clinical value of endoscopic full-thickness resection for the treatment of colonic submucosal tumors originating from the muscularis propria: a prospective single-center study

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Objective: Given the diminishment of quality of life caused by colectomy, a minor invasive treatment without loss of curability is desirable for colonic submucosal tumors (SMTs). The aim of the current study was to evaluate the clinical efficacy, safety and feasibility of endoscopic full-thickness resection (EFTR) for colonic SMTs originating from the MP layer. **Methods:** A pilot study was carried out, including a consecutive cohort of 21 patients who underwent EFTR for colonic SMTs originating from the MP layer between July 2009 and August 2013 in our center. Complications, complete resection rate and recurrence rate were evaluated. Figure 1 Endoscopic full-thickness resection for colonic submucosal tumors originating from the muscularis propria. (a,b) Colonic submucosal tumor. (c-e) Resecting the tumor without interrupting the tumor capsule and with active perforation. (f,g) Closing the defect with metallic clips combined with a nylon loop. (h) Completely resected specimen. (i) Histologic examination of completely resected specimen reveals a gastrointestinal stromal tumor with negative margins (H&E, original magnification×50); immunohistochemical studies reveal the presence of CD117 and CD34 (magnification×50).

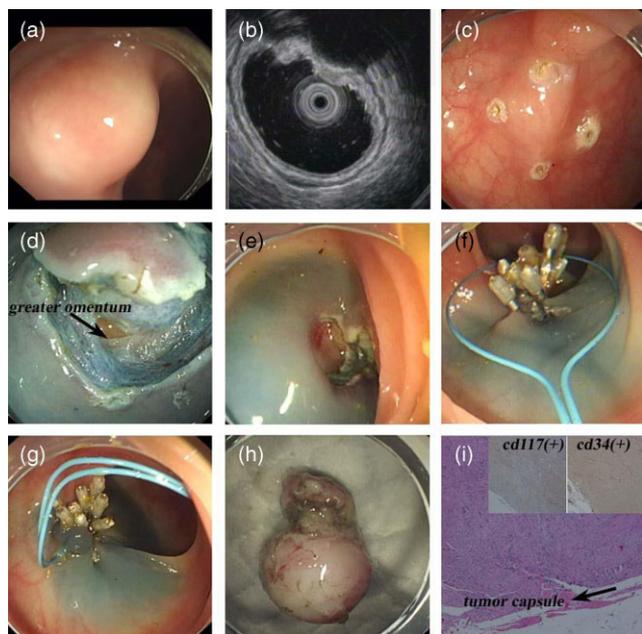


Figure 1

Results: Male-to-female ratio was 0.90:1 for the all patients. The median age was 68 years (range, 29–82 years). The complete resection rate was 95.2%. One lesion located in the ascending colon was non-en bloc resection because of involving the external organs which was very difficult to perform en-bloc resection and the case was transferred to perform the laparoscopic right hemi-colectomy. Final histological diagnosis was malig-

nant GIST. Of the 20 SMTs originating from MP layer, while 2 lesions after en-block resection were needed to close the defect with laparoscopic assistance. In the other 18 patients, full-thickness resection was carried out and the colonic wall defect closed all endoscopically. Median size (the maximum diameter) of resected tumors was 1.8 cm (range, 1.2–3.0). The pathological diagnoses included leiomyomas (n = 10, 47.6%), gastrointestinal stromal tumors (GISTs) (n = 4, 19%), schwannoma (n = 2, 9.5%), fibromatosis (n = 2, 9.5%), granuloma (n = 2, 9.5%) and hamartoma (n = 1, 4.8%). Of the 18 cases which underwent EFTR without laparoscopic assistance, 2 cases had local peritonitis and 1 case of the postoperative bleeding occurred after 12 hours of the procedure. They received the conservative treatment without the surgery intervention. For LAEFTR cases, the median day for removing the drain tube was 3 days, No procedure-related death was found. No single case had diffuse peritonitis. The median discharged day was 5 (range, 4–8) days. No lesion residual or recurrence was found during a median of 20 months follow-up period. **Conclusion:** Endoscopic full-thickness resection is a novel method enabling resection of colonic SMTs. The colonic wall mucosal defect can be closed endoscopically in the majority of cases. It appears to be a safe and effective endoscopic technique for managing these tumors, which traditionally are managed by colonic resection.

Key Word(s): 1. endoscopic full-thickness resection; 2. colonic submucosal tumors

Therapeutic Endoscopy/Interventional Radiology P-763

Possible utility of contrast enhanced computed tomography for detecting colonic diverticular bleeding by emergent colonoscopy

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Objective: The number of patients of colonic diverticular bleeding (CDB) in our country is increasing as our dietary habits get westernized. Although most of the cases stop spontaneously, some need blood transfusion for massive hemorrhage, and others relapse frequently. Therefore, emergent colonoscopy (CS) without any laxative preparation was performed for many CDB cases in our hospital to detect the responsible diverticulum and arrest hemorrhage. However, emergent CS can be burden for both patients and medical staff because the poor view of unprepared colon requires a long time to find the bleeding point. In addition, not a few cases stop spontaneously by the time we perform emergent CS. Maybe we should select the cases to perform emergent CS. In recent years we have introduced contrast enhanced computed tomography (CECT) before carrying out emergent CS. Here we evaluate retrospectively the efficacy of CECT in detecting the responsible bleeding diverticulum. **Methods:** This analysis retrospectively conducted at our hospital. We enrolled 57 patients of CDB from Jan 2010 to Dec 2012 who underwent both CECT and emergent CS. The diagnosis of CDB was based on two criteria; 1 CDB was identified with colonoscopy. 2. No other bleeding sources except diverticu-

lum were found by gastroscopy, colonoscopy and CECT. CECT was undergone in clinically suspected cases of active bleeding unless they have contraindication. **Results:** We could identify the extravasation of CDB by CECT in 22 of 57 cases (38.5%). Furthermore we could also detect the responsible diverticulum in 14 of the 22 (63%) by emergent CS. On the other hand, without the extravasation in CECT images, we could detect the responsible diverticulum in only 4 of 35 cases (8%) by emergent CS. **Conclusion:** Emergent CS is important strategy for some selected patients. The extravasation in CECT images may be a practical indication to attempt detecting CDB by emergent CS

Key Word(s): 1. colon diverticular bleeding; 2. contrast enhanced computed tomography

Therapeutic Endoscopy/Interventional Radiology

P-764

Evaluation of an electric cauterly dilator using porcine liver segment

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Objective: An electric cauterly dilator (CD) was increasingly used in pancreatobiliary intervention. The objective of this study was to investigate the efficacy of CD using porcine liver segment. **Methods:** CD (Cystgastroset, 6 Fr, Endo-flex, Germany) was evaluated and compared with a conventional mechanical dilator (MD, 4–6 Fr, Soehendra Biliary dilation catheter, Cook medical, USA). An electric generator was ESD-100 (Olympus medical, Tokyo). The pulse-cut mode with various output power (40 W to 120 W) was selected. 1) Porcine liver segment was punctured and the tract was dilated by CD or MD. Vertical sections and cross-sections of the dilated tract were observed. 2) Liver segment of 3 cm and 1 cm thick was punctured and the tract was dilated. A tube was placed on the segment, and colored water was poured into the tube. Leakage of colored water below the segment was evaluated. **Results:** 1) In cross section, the tract was not visually recognized in 80% in MD cases, while all the sections were clearly visible in CD cases. The median diameter of CD-tract was 2.87 (2.54–3.14) mm, and was negatively correlated with electric output. In vertical section, the tract seemed to be covered with coagulated tissue in CD-case with low output, though coagulation was intermittently observed in high output cases. 2) Leakage of water was not observed in MD-tract, but it was observed in 2/10 (20%) of 3 cm segment and 10/10 (100%) of 1 cm segment in CD-tract. **Conclusion:** The influence of CD was larger than that of MD. They have to be selected in different procedures.

Key Word(s): 1. cauterly dilator; 2. EUS-guided biliary drainage

Therapeutic Endoscopy/Interventional Radiology

P-765

Effective approach of endoscopic submucosal dissection by using “clip with line” method for treating early gastric corpus cancer

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Objective: We have often experienced a situation that effective counter traction is required for Endoscopic Submucosal Dissection. If you can pull the target lesion, good counter traction can be made. The “clip with line” method is a simple and useful method to make counter traction during ESD. This method was reported in 2002. We have also used it for gastric carcinoma. Especially, it is useful for the greater curvature or posterior wall of the middle body of the stomach. We could carried out more safety and effective ESD, by applying good counter traction to use it. **Methods:** We showed two typical cases used this method, to compare which side of the lesion is effective position to put a clip for treating ESD of gastric cancer at the greater curvature posterior wall of the middle body of the stomach. Case 1- we put a clip at the anal side of the lesion by look up operation. Case 2, we put a clip at the oral side by look down operation. **Results:** In case 1, the approach toward the submucosal layer got easier. However, this caused excessive tension of pulling the string. We have often experienced the clip comes off. In case 2, this method led visibility of the layer more clear significantly, and easier to complete the submucosal dissection than case 1. We could smoothly operate, because the counter traction was more stable. By comparing case1 and case 2, the method of putting the clip at the oral side was more effective. Case 2 makes ESD more safety and the duration of procedure shorter. **Conclusion:** We present the two cases, and show the “clip with line” method for treating early gastric corpus cancer.

Key Word(s): 1. ESD; 2. stomach; 3. clip

Upper GI

P-767

Clinical outcomes and management strategy of perforation associated with endoscopic submucosal dissection for upper gastrointestinal epithelial neoplasm

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Objective: Perforation is a major complication of endoscopic submucosal dissection (ESD). The aim of this study was to investigate clinical

outcomes and management strategy of ESD-related perforation. **Methods:** Between February 2010 and April 2014, a total of 3,821 consecutive patients who underwent ESD for upper gastrointestinal epithelial neoplasm were analyzed using our prospectively collected database, Yonsei University Severance Hospital, Seoul, Korea. Management strategy and clinical outcomes after perforation were investigated. **Results:** Perforation occurred at 98 lesions in 90 patients (7 in the esophagus, 88 in the stomach, 3 in the duodenum) among 3,821 patients (2.4%). Perforation was detected during ESD in 76.7% (69/90), at the first radiography after ESD in 17.8% (16/90), and at the second or later radiography in 5.5% (5/90). The mean age of patients was 64.7 years (male: female = 3.1: 1), the mean resected specimen size was 38.7 mm (mean lesion size 18.2mm), and submucosal fibrosis was noted in 27.6% (27/98). Immediate closure using endoclips was attempted at all lesions where perforation was detected by endoscopy (n=74). Treatment success rate of endoclippping was 97.3% (72/74) and mean number of applied clips was 6.2. Two patients underwent operation due to failure of endoscopic closure of perforation. Mean duration of fasting and antibiotic treatment was 3.8 and 6.8 days, respectively. Mean maximum body temperature was 38.3°C, mean white blood cell count was 9,598/mm³, and mean C-reactive protein (CRP) level was 15.4 mg/dL. All patients were discharged well after a mean time of 7.7 days after ESD. In subgroup analysis regarding time of perforation, patients with delayed perforation (n=5) had significantly higher mean maximum body temperature (39.0 vs 38.2°C, p=0.003) and mean maximum WBC count (13,080 vs 9,393/mm³, p=0.018). **Conclusion:** All ESD-related perforation were developed within 3 days after ESD and most cases could be effectively managed in conservative manner.

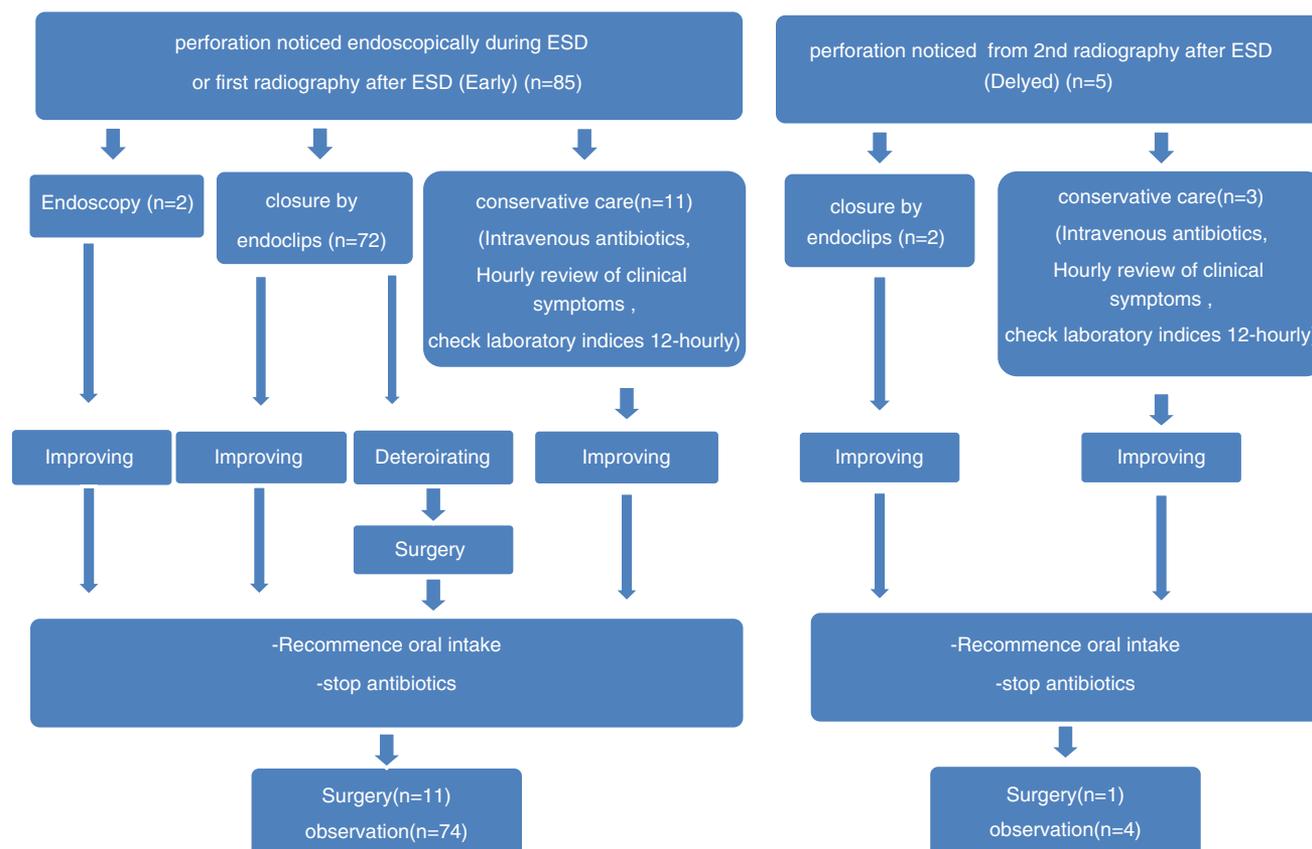


Figure 1. Algorithm for the management of perforation related to endoscopic submucosal dissection

Table 1. Demographic characteristics of the 88 patients who developed a perforation during or after endoscopic submucosal dissection procedures and the clinicopathological features of their tumors

	Total perforation (n = 90)	Early perforation (n = 85)	Delayed perforation (n = 5)	p-value
Mean age (range), years	64.7 (28–85)	64.4 (28–85)	70.2 (50–78)	0.307
Sex, male/female	68/22	64 / 21	4 / 1	>0.999
Site of the tumor, n (%)				0.137
Esophagus	7 (7.1)	7 (7.5)	0 (0)	
Stomach	89 (90.8)	85 (91.4)	4 (80)	0.463
upper	23 (23.5)	23 (24.7)	0 (0)	
mid	32 (32.7)	30 (32.3)	2 (40)	
lower	34 (34.7)	32 (34.4)	2 (40)	
Duodenum	2 (2.0)	3 (1.1)	1 (20)	
Mean tumor size (range), mm	18.2 (2–70)	18.4 (2–70)	14.6 (3–25)	0.503
Histology				0.838
Low grade dysplasia	21 (21.4)	20 (21.5)	1 (20)	
High grade dysplasia & CIS	7 (7.1)	7 (7.5)	0 (0)	
Differentiated carcinoma	43 (43.9)	40 (43)	3 (60)	
Undifferentiated carcinoma	9 (9.1)	8 (8.6)	1 (20)	
Squamous cell carcinoma	5 (5.1)	5 (5.4)	0 (0)	
Etc	13 (13.3)	13 (14)	0 (0)	
Depth of tumor, n (%)				0.59
Mucosa	39 (39.8)	36 (38.7)	3 (60)	
Submucosa	17 (17.3)	16 (17.2)	1 (20)	
proper muscle	1 (1.0)	1 (1.1)	0 (0)	
Submucosal fibrosis, n (%)				0.865
F0	23 (23.5)	21 (22.6)	2 (40)	
F1	4 (4.1)	3 (4.3)	1 (20)	
F2	23 (23.5)	22 (23.7)	1 (20)	
unknown	48 (49)	46 (49.5)	2 (40)	
Vessel infiltration, n (%)				>0.999
Present	6 (6.1)	6 (6.5)	0 (0)	
Absent	69 (70.4)	65 (69.9)	4 (80)	

Table 2. Short-term outcomes after perforation

	Total perforation (n = 90)	Early perforation (n = 85)	Delayed perforation (n = 5)	p-value
Air accumulation, n (%)				>0.999
None	18 (20)	17 (20)	1 (20)	
Peritoneum	62 (68.9)	58 (68.2)	4 (80)	
Retroperitoneum	0 (0)	0 (0)	0 (0)	
Mediastinum	7 (7.8)	7 (8.2)	0 (0)	
peritoneum & retroperitoneum	2 (2.2)	2 (2.4)	0 (0)	
peritoneum & pneumothorax	1 (1.1)	1 (1.2)	0 (0)	
Mean duration of intravenous antibiotic treatment (range), days	6.8 (0–27)	6.5 (0–27)	12.2 (5–23)	0.21
Mean duration of nil-by-mouth regime (range), days	3.8 (1–19)	3.4 (1–11)	11.4 (4–19)	0.055
Mean maximum body temperature (range), °C	38.3 (37.9–40.0)	38.2 (37.9–39.0)	39.0 (38.0–40.0)	0.003
Mean maximum WBC count (range), cells/mm ³	9,598 (3,590–18,060)	9,393 (3,590–16,300)	13,080 (10,820–18,060)	0.018
Mean maximum CRP (range), mg/dl	15.4 (0–93)	14.0 (0–93)	31.8 (3–64)	0.06
Time from ESD to discharge from the ward (range), days	7.7 (3–30)	7.1 (3–30)	17.8 (6–28)	0.068
Abdominal pain score (range), VAS	4.2 (0–10)	4.2 (0–9)	5.60 (1–10)	0.191

Vascular Disease

P-768

Factors affecting the hepatic hemodynamics parameters after liver transplantation**Presenting Author:** YANG BAI**Additional Authors:** YINGQIAO ZHU, XIAOLIN YIN**Corresponding Author:** YINGQIAO ZHU**Affiliations:** *Ultrasound, 1st Hospital, Jilin University; Ultrasound, 1st Hospital, Jilin University*

Objective: To investigate the effects factors and clinical significance of hepatic artery hemodynamic parameters changes after liver transplantation. **Methods:** There are a total of 25 patients participating in the study, within 48 hours after liver transplantation, all the patients underwent liver hemodynamics detection, recording the systolic peak velocity (PSV), resistance index, pulsatility index within hepatic artery anastomotic distal range 2 cm and left hepatic artery near sagittal department, all patients underwent CT angiography (CTA) or CEUS for the purpose of comparison. **Results:** A total of 8 patients with hepatic artery hemodynamic abnormalities at anastomosis distal and left branch. Six cases of hepatic artery anastomotic stenosis confirmed by CTA, two cases proved normal, while one case misdiagnosed. 6 cases of anastomotic stenosis distal PSV was significantly increased (PSV: 250 ± 102 cm/s), $P < 0.01$, Hepatic artery left tributary speed increased in some cases, mainly for the envelope is not smooth, the resistance index (RI) reduce ($RI < 0.5$), $P < 0.01$. Two false-positive cases mainly for lower $RI < 0.5$, The reason is moderate aortic stenosis after further examination; one missed cases without clear images of anastomotic, the left branch of the hepatic artery RI is normal, after further examination, we found the moderate aortic regurgitation caused sonographer miscarriage of justice. **Conclusion:** Hepatic Hemodynamic checks help to find early hepatic artery complications after liver transplantation, but there are still some deficiencies, especially extrahepatic factors interfering with the hemodynamic parameters should caught clinicians attention.

Key Word(s): 1. liver transplantation; 2. anastomotic stenosis; 3. hemodynamic; 4. resistance index;

Vascular Disease

P-769

The diagnostic value of contrast-enhanced ultrasound for mesenteric artery stenosis**Presenting Author:** YANG BAI**Additional Authors:** YINGQIAO ZHU, YANYAN FAN**Corresponding Author:** YINGQIAO ZHU**Affiliations:** *1st Hospital of Jilin University, 1st Hospital of Jilin University*

Objective: To investigate the value of contrast-enhanced ultrasound for mesenteric artery stenosis **Methods:** 68 cases suspected of superior mesenteric artery stenosis by color Doppler sonography underwent CEUS examination, all the patients underwent CT angiography (CTA) examination or digital subtraction angiography (DSA), as a reference standards. Under supine resting state, on the right elbow shallow intravenous bolus injection of ultrasound contrast agent (SonoVue) 1.5 ml, Siemens s2000, 4s-1 probe, scan mode at angiography, recording the whole process of enhanced and playback analysis arterial contrast agent arrival time, the superior mesenteric contrast agent filling process. Diameter stenosis is defined as: mild stenosis $< 50\%$; moderate stenosis of 50% to 75% ; severe stenosis $> 75\%$. Moderate and severe stenosis is defined as a clinically significant stenosis of the superior mesenteric artery. **Results:** CTA or DSA diagnose 52 cases of clinically significant stenosis. CEUS diagnose clinically significant stenosis 51 cases (17 cases with severe stenosis,

moderate stenosis 34 cases), color Doppler ultrasound diagnosis of mesenteric artery stenosis diagnostic specificity and accuracy were 100%, 98.1%, respectively. CEUS diagnostic specificity and accuracy of arterial stenosis of the superior mesenteric artery were 75.0% and 75.0%, respectively. **Conclusion:** CEUS is a non-invasive, accurate method to diagnose superior mesenteric artery stenosis, which provides important reference information for clinical treatment.

Key Word(s): 1. CEUS; 2. superior mesenteric artery; 3. stenosis

Vascular Disease

P-770

CEUS diagnose portal vein complications in patients underwent liver transplantation**Presenting Author:** YANG BAI**Additional Authors:** YINGQIAO ZHU, YING SUN**Corresponding Author:** YINGQIAO ZHU**Affiliations:** *Ultrasound, 1st Hospital of Jilin University; Ultrasound, 1st Hospital, Jilin University*

Objective: To evaluate the ultrasound imaging diagnostic value for portal vein complications after liver transplantation. **Methods:** there are 25 patients participating in the study. Patients underwent liver transplantation accepted color Doppler flow imaging (CDFI) examination for portal vein, in which 5 patients with portal imaging abnormalities. Supine resting state, on the right elbow shallow intravenous bolus injection of ultrasound contrast agent (SonoVue) 1.5 ml, Siemens s2000, 4s-1 probe, under the scanning contrast mode, we record the whole process enhancements. Playback analysis of contrast agent arrival time of portal vein, Time and sequence relationships between the hepatic artery and portal vein, all patients underwent CT angiography (CTA) examination for the purpose of comparison. **Results:** Two patients were found thrombosis, portal vein thrombosis after liver transplantation rate was 8%, portal vein stenosis in 3 cases, the rate was 12%. CDFI diagnosis of portal vein thrombosis in compliance with the CTA was 72%, CEUS was 93% ($p < 0.01$); CDFI diagnosis of portal vein stenosis with CTA compliance rate of 59%, CEUS was 100% ($P < 0.01$). **Conclusion:** CEUS can improve the portal vein complications diagnostic capabilities after liver transplantation.

Key Word(s): 1. ultrasound contrast liver transplantation portal vein thrombosis

Vascular Disease

P-771

Childhood onset of Banti's syndrome (non cirrhotic portal fibrosis)**Presenting Author:** ARITANTRI DARMAYANI**Additional Authors:** TRIANTA YULI PRAMANA, PAULUS KUSNANTO**Corresponding Author:** ARITANTRI DARMAYANI**Affiliations:** *Fk Uns / Rsud Dr. Moewardi, Fk Uns / Rsud Dr. Moewardi*

Objective: Non-cirrhotic portal fibrosis (NCPF) and extra-hepatic portal vein obstruction (EHPVO) are two disorders, which present only with features of portal hypertension without any evidence of significant parenchymal dysfunction. Non-cirrhotic portal fibrosis is more common in young males in third to fourth decades belonging to low socioeconomic groups, whereas EHPVO is a childhood disorder. **Results:** A 27 year-old-male, since he was at the age of 9 years, had splenomegaly and hematemesis-melena. The diagnosis and therapy at the past were unknown, but then the complaints were improved. He came in our hospital for similar complaints. Blood examination, esophagogastroduodenoscopy, ultraso-

nography with colour doppler, portal and splenic venous focused angiography, liver biopsy, bone marrow aspiration, and echocardiography was performed. We found variceal bleed from type 2 gastro-oesophageal varices (GOV-2), slight hepatomegaly and massive splenomegaly with hypersplenism, minimal ascites, portal hypertension without liver cirrhosis, and left ventricle hypertrophy with tricuspid and mitral regurgitation. There is no thrombus in portal venous system. All of these abnormalities lead to NCPF diagnosis. For pathogenesis, no findings lead to autoimmune

disease, recurrent infections and platelet hyperaggregation. He has been getting beta-blocker, diuretic, periodic glue injections and pack red cell transfusions. **Conclusion:** As the childhood onset of those disorders, at first the differential diagnosis was EHPVO, but then we concluded the diagnosis is NCPF based on portal venous system patency. The etiology is still idiopathic.

Key Word(s): 1. Banti's syndrome; 2. non-cirrhotic portal fibrosis; 3. childhood onset



Figure 1



Figure 2

Vascular Disease

P-773**Clinical characters of cavernous transformation of portal vein and its etiology****Presenting Author:** JIN TAO**Additional Authors:** XIUQING WEI, ZHIE WU, BIN WU**Corresponding Author:** JIN TAO**Affiliations:** 3rd Affiliated Hospital of Sun Yat-Sen University, 3rd Affiliated Hospital of Sun Yat-Sen University, 3rd Affiliated Hospital of Sun Yat-Sen University

Objective: To analyze the clinical characters of cavernous transformation of portal vein (CTPV) and its potential causes. **Methods:** Clinical data of patients diagnosed as CTPV and treated in our hospital from June of 2006 to May of 2010 were collected. The clinical characters and related diseases of CTPV were analyzed retrospectively. **Results:** 83 patients were enrolled in this research. The main symptoms of these patients were abdominal pain, up digestive tract hemorrhage and the clinical manifestation caused by portal hypertension and the corresponding original diseases. The diagnosis of CTPV was confirmed according to more than once examination of color doppler sonography and CT/MRI. Among these 83 patients, complications including: cirrhosis (60 cases), hepatocarcinoma (48 cases), history of abdominal surgery (24 cases), hepatic artery-portal vein fistula (HA-PVF, 15 cases), diabetes (8 cases), Budd-Chiari syndrome and pancreatic carcinoma (2 cases for each). **Conclusion:** Portal hypertension complicated with up digestive tract haemorrhage is the main clinical character of CTPV; Cirrhosis and hepatocarcinoma are main causes of CTPV, while HA-PVF and diabetes may be its potential causes.

Key Word(s): 1. cavernous transformation of portal vein; 2. cirrhosis; 3. hepatocarcinoma; 4. hepatic artery-portal vein fistula; 5. diabetes

Vascular Disease

P-774**Portal vein thrombosis and ascites caused by idiopathic hypereosinophilic syndrome.****Presenting Author:** XIUQING WEI**Additional Authors:** JIN TAO, HONG TIAN, BIN WU**Corresponding Author:** XIUQING WEI**Affiliations:** The Third Affiliated Hospital of Sun Yat-Sen University; Third Affiliated Hospital, Sun Yat-Sen University; The Third Affiliated Hospital of Sun Yat-Sen University

Objective: To introduce a rare cause of portal vein thrombosis and ascites. **Methods:** The medical course of a rare patient with portal vein thrombosis and ascites caused by idiopathic hypereosinophilic syndrome was presented in brief. **Results:** A 25-year old man had suffered from abdominal distention and ascites for one month. On physical examination, ascites was found. Hypereosinophilia was found by routine blood test without an identifiable underlying cause. An almost completed portal vein thrombosis was showed by ultrasound B examination and CT scan. The patient was prescribed high-dose corticosteroids and warfarin. And one month later, the counts of blood eosinophilic cells were in the normal range and not only the ascites but also the portal vein thrombosis disappeared. **Conclusion:** Portal vein thrombosis and ascites can be the first manifestation of idiopathic hypereosinophilic syndrome and may be cured by corticosteroids and anticoagulants.

Key Word(s): 1. idiopathic hypereosinophilic syndrome; 2. portal vein thrombosis; 3. ascites