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: VF% (VF% ≤ 29, n = 81) and 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
77% of these colonoscopies were performed on patients with recorded BMIs. 980 of patients, 75% of these had BMI ≥ 25 or BMI ≥ 2 hyperplastic polyps on the right side within colon. The prevalence of significant polyps in this group ≥ 25. When we evaluated the data 24% ≥ 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 increased risk of colon cancer. Key Words(s): Na

P-004
Colonic and Anorectal Disorders
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 2 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 purposes were divided into two groups: BMI ≥25 or BMI ≥ 2 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. 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 Words(s): 1. BMI: body mass index

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

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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**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
**Objective:** Açaí is well-known for its anti-oxidative action. To evaluate the protective effect of açai powder (AP) intake on azoxymethane (AOM)/dextran sulfate sodium (DSS)-induced colon tumors in an experimental mice model. **Methods:** Six groups of 5-week-old ICR mice were used. Carcinogen groups; 24 mice were injected intraperitoneally with 10 mg/kg of AOM once and orally administered with 2.5% of DSS for 7 days from a week after the injection. Both the control and AOM-treated groups were divided into three groups, respectively (G1-G6); fed with standard diet, a diet containing 2.5% or 5.0% of AP for the rest of 14 weeks after the administration of DSS. Sixteen weeks after AOM injection, all groups were sacrificed for histopathology analysis and the colon tumor assay. Key molecules of inflammation and proliferation pathway, such as IL-1β, IL-6, TNF-α, cyclooxygenase-2 (COX-2), myeloperoxidase (MPO) and proliferating cell nuclear antigen (PCNA) were assessed by ELISA and Western blot from mice colonic mucosa. **Results:** Eight (100%), 6 (75%) and 4 (50%) mice in each AOM-treated group (G4-G6) developed cancers (P trend = 0.024). Among AOM-treated mice, significant reduction in tumor multiplicity and tumor size were observed in both groups fed with AP compared to the standard diet group (multiplicity: 10.1 ± 2.3 vs. 2.8 ± 0.9 and 2.6 ± 0.8 P = 0.025, P = 0.023; size: 5.8 ± 0.8 vs. 2.5 ± 0.8 and 2.4 ± 1.0. P = 0.025, P = 0.016). Also, significant reduction in COX-2 expression in the AOM-treated group with 5% AP and inhibition of IL-1β, IL-6, TNF-α, MPO and PCNA expressions in the AOM-treated groups with AP in a dose-dependent manner (all P < 0.05). **Conclusion:** Açaí reduced the incidence, multiplicity and size of AOM/DSS-induced tumor in mice. Açaí may have a potential to prevent colon carcinogenesis via anti-inflammatory and anti-proliferative properties. **Key Word(s):** 1. açai; 2. colon cancer; 3. azoxymethane; 4. dextran aggregates and atrophy. For more confirmative diagnosis, soft tissue tumor excision was performed under general anesthesia. Histopathological examination revealed plasma cell infiltration and fibrosis. Immunohistochemistry revealed prominence of IgG4-positive plasma cells and confirmed the diagnosis of IgG4-related disease. The patient is currently under observation on low-dose oral prednisolone with no evidence of relapse. **Conclusion:** Our case demonstrates that IgG4-related disease is difficult to diagnose preoperatively and needs a steroid therapy. IgG4-related disease in low rectum is an extremely rare case. Here we report a patient with IgG4-related disease of the low rectum. **Key Word(s):** 1. IgG4-related disease; 2. rectum; 3. young patient

**Colonic and Anorectal Disorders**

**P-011**

**Awareness and perceptions of colorectal cancer and screening among the population in Sabah**

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**Objective:** General objectives: 1. This study aims to identify the possible barriers to the implementation of the screening programme such as public perception and awareness of the disease and importance of screening. 2. To make possible suggestions to overcome the barriers to implement a successful programme in the future. Specific objectives: 1. To determine the awareness of colorectal cancer and screening in the general population. To determine if the public is willing to partake in a screening programme if introduced. **Methods:** A random sample of 245 adults received a self-administered questionnaire on socio-demographic characteristics, knowledge on colorectal cancer risk and screening tools, attitudes regarding perceived risk of developing CRC, utility of screening test and source of information. **Results:** Only 27.3% identified low physical activity (modifiable risk factor) as a risk factor for colorectal cancer. There was a significant difference on the level of knowledge of familial history of CRC as a risk factor for CRC between both genders whereby the male population was more aware of this. About half of the respondents identified colonoscopy as a screening tool. Those with a higher level of education were more knowledgeable in identifying the accepted tools for CRC screening (FOBT/colonoscopy/barium enema). Two thirds of the respondents have not received any information of CRC in the past. Personal opinion that screening is useful in CRC prevention was high with a mean of 7.4. 82.8% of the respondents agreed that CRC may be treated when diagnosed at an early stage and 86.8% would participate in a CRC screening programme if offered. **Conclusion:** This study highlights the correlation between CRC awareness and the level of education and as such affirms the need to improve the level of knowledge in order to promote CRC screening adherence. **Key Word(s):** 1. colorectal; 2. cancer screening; 3. Malaysia

**Colonic and Anorectal Disorders**

**P-010**

**IgG4-related disease of the rectum**

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**Objective:** In immunoglobulin G4(IgG4)-related disease is a relatively new disease entity characterized by elevated serum IgG4 levels and marked infiltration of IgG4-positive plasma cells in mass lesions. Organ enlargement or nodular lesions consisting of abundant infiltration of lymphocytes and IgG4-positive plasma cells and fibrosis are seen in various organs. IgG4-related disease has an older male predominance, with most patients in the 6th decade of life. We report a young female patient with an inflammatory pseudotumor of the low rectum, which was histopathologically confirmed to be IgG4-related disease. **Methods:** We retrospectively reviewed the medical records of a patient with IgG4-related disease of the low rectum. **Results:** The patient was a 28-year-old woman who presented with constipation for approximately 3 months. EUS imaging revealed a lesion 2 cm sized heterogeneous low echogenic lesion involving mucosal, submucosal, and muscularis propria layer in lower rectum. Soft tissue tumor was suspected and biopsy was performed. Initial colonoscopic histopathological examination revealed chronic proctitis with lymphoid...
Colonic and Anorectal Disorders

P-012

The experience of colonoscopists affects the characteristics of detected polyps

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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 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

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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

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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

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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: ns: 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 Metropolitan, 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 analyzed 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 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 Words: 1. Clostridium difficile; 2. recurrence; 3. mortality; 4. risk factors; 5. clinical characteristics

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 Words: 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
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 ± 4.65 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 intake 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 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: Tuberculous 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

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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 Words:** 1. diverticulitis; 2. diverticular bleeding; 3. diverticulum

**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 on 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 Words:** 1. ulcerative colitis; 2. dysplasia; 3. endoscopic submucosal dissection

**Objective:** Now the first cause of the female cancer mortality is colorectal cancer in our country. However, the colorectal cancer medical
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 levels compared to healthy controls (1386 MET-min/week vs 2481 METmin/week). Subjects with colonic adenoma had lower median total physical activity scores (MET score) reflecting the energy cost of their physical activities characterised using a validated questionnaire (IPAQ).

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 colonoscopist system for women.

Key Word(s): 1. women colonoscopist

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 Words:** 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 biological investigation is warranted.

**Conclusion:** In this series colorectal carcinoma is found to be more common 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 or 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 Words:** 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, clinicoscopic 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 ± 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 (66.4%). 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 Words:** 1. colorectal cancer; 2. clinico-demographic profile
Colonic and Anorectal Disorders

P-036

Clinical course and management of sigmoid volvulus after colonoscopic treatment

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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 treatment, 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 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

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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 maker and a useful CRC staging monitor. But this fact is still unclear. The aim of this study is to address this issue. Methods: A retrospective analysis of 92 primary CRC patients (68 colon cancer and 24 rectal cancer) which measured these 3 tumor makers 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: ≥5.0 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: ≥3.7 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 CA 19-9.

Key Word(s): 1. CYFRA 21-1; 2. colorectal cancer
Colonic and Anorectal Disorders
P-038
Two cases of mesenteric phlebosclerosis
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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 Sansisii, 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 Orenegedokuto containing Sansisii 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 Orenegedokuto improved her symptoms. Case 2: An 80-year-old man complained of abdominal pain and vomiting. He had been taking Orenegedokuto 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 hemicolecotomy. 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 Sansisii 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 MPand colitic cancer. It is necessary to accumulate cases to elucidate whether MP has a potential of carcinogenesis.

Key Words: 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
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Objective: Endoscopic submucoal 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 Words: 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?

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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 Words:** 1. sex preference; 2. women subjects; 3. colonoscopy

**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 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) disease were excluded. Prednison 40 mg daily and 5-ASA 2, 4 g daily were started. The symptom disappeared completely within 2 months and mesalasine 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 Words:** 1. endoscopy; 2. lymphocytic colitis; 3. ulceration

![Figure 1](Image)
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 hemicolecotomy is the surgical treatment of choice. However, in the circumstances when a malignant tumor of the appendix is also present, right hemicolecotomy 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 hemicolecotomy 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 postoperative 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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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%), jejenum (37%), and colon (37%).
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.

<table>
<thead>
<tr>
<th>Case</th>
<th>Age</th>
<th>Sex</th>
<th>Compliant</th>
<th>GI lesion</th>
<th>Treatment</th>
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<th>HP</th>
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<tr>
<td>1</td>
<td>71</td>
<td>M</td>
<td>Lower abdominal pain</td>
<td>D,I</td>
<td>PSL60 mg (1 mg/kg)</td>
<td>–</td>
<td>+</td>
</tr>
<tr>
<td>2</td>
<td>29</td>
<td>M</td>
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<td>I</td>
<td>PSL60 mg (1 mg/kg)</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>3</td>
<td>45</td>
<td>M</td>
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<td>F</td>
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<td>Diarrhea Vomiting</td>
<td>S,D,J,I,C</td>
<td>–</td>
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<td>N/A</td>
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</table>

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 £ 5 mm in 12 patients (5 treated by EMR and 5 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 μg/kg) was administered by intraperitoneal injection. SERT expression was detected by quantitative PCR (qRT-PCR) and Western blotting. SERT function was determined 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 μg/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
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(36,6%) worked and 440 (54,4%) had income >1 million, 76 (9,4%) done colorectal screening, 25 (26,6%) good knowledge, 34 (7,6%) positive perception and attitude of Indonesia people toward CRC screening. Result: 25 (26,6%) good knowledge, 34 (7,6%) had a positive perception and 440 (54,4%) had income >1 million, 76 (9,4%) done colorectal screening, 25 (26,6%) good knowledge, 34 (7,6%) positive perception and attitude of Indonesia people toward CRC screening. Conclusion: The knowledge, perception and attitude on colorectal cancer screening test still low in Indonesian people.

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

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

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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

<table>
<thead>
<tr>
<th>SIZE</th>
<th>FIBROSIS</th>
<th>SITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>20–50 mm</td>
<td>&gt;50 mm</td>
<td>Yes</td>
</tr>
<tr>
<td>n = 120</td>
<td>n = 50</td>
<td>n = 37</td>
</tr>
<tr>
<td>EN BLOC RESECTION</td>
<td>64/120 (53%)</td>
<td>6/50 (12%)</td>
</tr>
<tr>
<td>70/170 (41%)</td>
<td>P &lt; 0.001</td>
<td>P &lt; 0.107</td>
</tr>
</tbody>
</table>

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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 resections were by SAR 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 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 £119,820, 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
Presenting Author: HYUNG KIL KIM
Additional Authors: BYONG WOOK BANG, YOUNGWOON SHIN
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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 procedure 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
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Affiliations: Dr. Cipto Mangunkusuko General Hospital – Fmui, Dr. Cipto Mangunkusuko General Hospital – Fmui, Dr. Cipto Mangunkusuko General Hospital – Fmui, 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 cleanliness 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 cleanliness and no patient was included in the inadequate category. The quality of bowel preparation 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 diagnostic and 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
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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 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,
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

**Additional Authors:** AHMAD SHUKRI MD SALLEH

**Corresponding Author:** SYUHADA DAN ADNAN

**Affiliations:** Hospital Sultanah Nur Zahirah

**Objective:** To evaluate the successful closure using OTSC system. In this case report, we described a successful closure using OTSC system. The results showed that the OTSC system is safe, effective, and a less invasive alternative for treatment of anastomotic leak. **Key Word(s):** OTSC; Over the Scope Clip; Fistula; Anastomosis; Anastomotic leak; Endoscopic application of OTSC system.

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

**Key Word(s):** OTSC; Fistula; Anastomosis; Anastomotic leak; Endoscopic application of OTSC system

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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 MASAOFUMI, 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 submucosal tumors underwent surgery after preoperative EUS-FNA were evaluated prospectively. **Results:** 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. **Conclusion:** In patients treated with antithrombotic agents, biopsy may not increase the risk for severe complications, 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. **Key Word(s):** EUS-FNA, histology, immunohistochemical analysis, gastric submucosal tumors.

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Endoscopy and Imaging

**P-060**

Endoscopic biopsy in the user of antithrombotic agents

**Presenting Author:** TEPPEI AKIMOTO

**Additional Authors:** KAZUMASA MIYAKE, YUTA MARUKI, HIROSHI YAMAWAKI, YASUHIRO KODAKA, HIROYUKI NAGOYA, NOBUE UEKI, TETSURO KAWAGOE, SEIJI FUTAGAMI, CHOITSU SAKAMOTO

**Corresponding Author:** TEPPEI AKIMOTO

**Affiliations:** Nippon Medical School, Nippon Medical School, Nippon Medical School, Nippon Medical School, Nippon Medical School, Nippon Medical School, Nippon Medical School

**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 outpatient patients who needed esophagogastroduodenoscopy 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. **Key Word(s):** Endoscopic biopsy, antithrombotic agents.
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
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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 NaP 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

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Additional Authors: NAOKI FUJIMOTO, KOUJIRO TANOUE, EISUKE AKAMINE, MIKIO NAMBARA, NORIFUMI HIROOKA, NORIFUMI HIROOKA, HIDEO YANAGI, MINORU OGAWA, ATSUHIRO OGAWA
Corresponding Author: SATOSHI ASAI
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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 colonoscope techniques, but they are not assessed objectively with respect to colonoscopy passage 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

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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 comorbidities, 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 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?
Presenting Author: JI YOUNG BANG
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Affiliations: Florida Hospital, Florida Hospital

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, choledochooduodenostomy, 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
Presenting Author: AMOL BAPAYE
Additional Authors: NACHIKET A. DUBALE
Corresponding Author: AMOL BAPAYE
Affiliations: Deenanath Mangeshkar Hospital and Research Center

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, carcinoma – 4, SMT – 7. Embloc 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, embloc resection was successful in 65% 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
Presenting Author: DAN FENG CHEN
Additional Authors: CHAI YAN, XIANYANG SU, LISHU ZHANG
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
venereal diseases using photodynamic therapy. The maximum photosensitizer dose was used in the treatment of skin affected by breast cancer, 5 mg/kg weight. Increasing the illumination time can make carcinoma necrosis and exfoliate totally, as well as healing the skin, which illustrated that necrotic tissue could be remarkable and the effect could be ideal through prolonging the treating time with limited depth of irradiation. Hematoporphyrin can match up well with 630 nm laser, which was limited to nontumorous tissue. The probability of peroration would be small unless the tube wall was penetrated by lesion. Multiple curses of photodynamic therapy was beneficial to treating cancers. The fact that using photodynamic therapy to primary lesion can reduce the metastatic lesion area has been proved by related image data, the reason of which needs further investigation and elaboration.

**Key Word(s):** 1. Photodynamic therapy; 2. digestive tract; 3. malignant tumor

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**Endoscopy and Imaging**

**P-069**

**The feasibility of removal of hemostatic clips retained in the stomach**

**Presenting Author:** JEONG HYEON CHO

**Additional Authors:** JEONG HYEON CHO, JA SUNG CHO, WON SIK KANG, JAE HYUN KIM, KYONG JOO LEE, JI HOON NA, HEE MAN KIM

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**Objective:** Hemostatic clips in gastrointestinal tract are widely used for peptic ulcer bleeding. However, there are no data on the removal of retained clips in the gastrointestinal tract. The aim of this study was to examine the feasibility to remove retained hemostatic clips by grasping forceps and investigate their complications. **Methods:** The patients in whose stomach hemostatic clips had been retained more than 2 weeks after placement were enrolled. The retained clips in the stomach were tried to be removed using grasping forceps. After removal, the removed site was carefully examined to observe potential complications like hemorrhage from the removed site. If the complications had been found, the endoscopists promptly managed them. **Results:** Between October 2010 and October 2013, 14 patients with mean age of 56.4 ± 12.1 years were enrolled, and they had Mallory-Weiss syndrome (7.1%), gastric ulcer bleeding (35.1%), and endoscopic mucosal resection or endoscopic submucosal dissection (57.1%). The median periods of clips retention were 108.5 days (range: 39–1383 days). The median numbers of used clips were 3.5 (range: 1–6), the median numbers of retained clips were 2 (range: 1–4), and the median numbers of removed clips were 1.5 (range: 0–4). A total 30 of 44 (68.2%) clips were retained. Eventually, 21 (70%) clips were safely removed using grasping forceps. An immediate hemorrhage from the removed site occurred in 2 (14.3%) patients. However, the hemorrhage was completely treated by clips placement to the same site. **Conclusion:** The removal of retained clips is relatively safe. The complication is easy to be controlled by re-placement of clips. The removal of retained clips in the gastrointestinal tract should be considered positively.

**Key Word(s):** 1. Removal of hemostatic clips

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**Endoscopy and Imaging**

**P-069**

**Efficacy of endoscopic ultrasonography versus conventional endoscopy for decision of early gastric cancer treatment**

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**Objective:** The measurement of invasion depth is essential for determining endoscopic submucosal dissection (ESD) in early gastric cancer. Endoscopic ultrasonography (EUS) is thought to be the most reliable preoperative method for evaluation depth of invasion. This study evaluated the efficacy of EUS for identifying early gastric cancer (EGC) meeting standard and expanded criteria for ESD and to compare the efficacy of EUS with that of conventional endoscopy (CE) to decide ESD according to indication. **Methods:** This study investigated 400 patients who underwent EUS and treatment for EGC at Pusan National University Yangsan Hospital from May 2009 to Feb 2014. We reviewed the medical records of 400 patients and compared preoperative EUS and CE staging. **Results:** The overall accuracy of EUS compared to CE has no significant difference (76.5% versus 73.3% (p = 0.21)). The factors associated with accuracy of EUS were size and invasion depth. The accuracy of EUS versus CE for identifying standard indication for ESD were 89.8% versus 87.6% (p = 0.57) and that for expanded criteria were 82.5% versus 78.9% (p = 0.34). Invasion depth confined to the mucosa (80.3% and 63.6%, p = 0.033) were associated with higher accuracy of EUS to select the proper candidates according to expanded ESD indication compared with CE. **Conclusion:** For patients with EGC, accuracy of EUS for ESD according to standard or expanded indication has no difference compared conventional endoscopy staging.

**Key Word(s):** 1. Endoscopic ultrasonography; 2. gastric cancer; 3. treatment
Endoscopy and Imaging
P-070
The role of cimetropium bromide during colonoscopy on detection of polyp and adenoma
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Objective: Antispasmodics, cimetropium bromide has been widely used as a premedication to exam colonoscopy. And colonoscopy is the effective method to prevent colorectal cancer because it can detect polyp and adenoma. But, it can miss polyps from 5 to 32% and recent studies have demonstrated that proximal colon cancers are not efficiently prevented by colonoscopy screening. Cimetropium bromide results in colonic spasmoly-
Results: A total of 1006 patients were analyzed in this study. Cimetropium group consisted of 203 patients and control group consisted of 803 patients. ADR, AADR in whole colorectum were significantly higher in cimetropium group, respectively (30.3% vs 26.5% (p = 0.03), 9.3% vs 5.1% (p = 0.02)). Also, PDR, ADR, and AADR in right side colon were significantly higher in cimetropium group, respectively (23.6% vs 18.9% (p = 0.012), 23.5% vs 15.8% (p = 0.023), 7.2% vs 3.1% (p = 0.024)). But, PDR in whole colorectum and ADR in right side colon were not significantly higher in cimetropium group, respectively (20.0% vs 21.0% (p = 0.152)). Conclusion: Cimetropium bromide can improve PDR, ADR and AADR in right side colon as well as colorectum in colonoscopy. Therefore, the routine use of cimetropium bromide as a premedication for colonoscopy may be beneficial in facilitating colonoscopy.
Key Word(s): 1. Colonoscopy; 2. polyp; 3. adenoma; 4. cimetropium bromide

Endoscopy and Imaging
P-071
Development of a novel robotic colonoscopy based on ergonomics designed manipulation system
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Objective: Colonoscopy has been proven as an effective diagnostic and therapeutic tool that can be useful in diseases of colorectal lesions. The purpose of this study is to propose a robotic colonoscopy for patients infected by highly virulent contagious disease or patients in remote site where medical care is not possible. Methods: A slave robot was developed to hold the colonoscopy instead of endoscopist. This slave robot performs insertion, rolling motion, and two steering motions of the distal end of the flexible endoscope. Also a master robot was developed to teach motions of the slave robot. In order to provide the endoscopist with haptic feeling, the insertion force and the rotating torque were measured and feedback to the master robot. Results: The endoscopist performed the master-slave robotic colonoscopy using a colon phantom. One endoscopist and two engineers participated in the robotic colonoscopy. The task completion time was comparable to conventional colonoscopy and gets decreased as they repeat the test. The haptic function was also helpful to feel the constrained force or torque inside colon. Conclusion: This work proposed a robotic approach for colonoscopy and this robotic device would be effective to perform colonoscopy for patients in remote sites.
Key Word(s): 1. Robotic colonoscopy; 2. robotics; 3. colonoscopy; 4. minimally invasive therapy

Endoscopy and Imaging
P-073
Efficacy of pre-endoscopy simethicone in improving mucosal visibility during upper endoscopy
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Objective: The presence of air bubbles, mucus and foam in the stomach and duodenum impairs adequate evaluation of the mucosa. This can result in missed lesions, longer endoscopy procedure time and increased patient discomfort. Methods: This was a prospective study conducted at the Metropolitan Medical Center Endoscopy Unit from July to October 2013. Adult patients for upper endoscopy were included. All patients fasted for at least 4–6 hours. Patients were consecutively assigned to either Group A: standard fast; Group B: 30 ml of water; and Group C: 30 ml of water plus 1 ml of liquid simethicone. For Groups B and C, all drinks were taken 15–30 minutes before the procedure. During endoscopy, the antrum, the upper gastric body, the lower gastric body, the gastric fundus and the duodenum were evaluated for mucosal visibility using the mucosal visibility score. The volume of water
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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**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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**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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**Objective:** Esophageal achalasia is most commonly treated with endoscopic dilatation 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
between the two groups, which meant there was no significant differences (p = 1.44). The operative Eckardt score was 7.42 in the POEM group vs 7.7 in the PD group (p value < 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 defeation 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 defeation, 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 defection 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 Words:** 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,
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 Words: 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 esophageal 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 Words: 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?
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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 adenoma showed no significant difference 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 Words: 1. Colorectal cancer; 2. screening; 3. colonoscopy; 4. aged people

Endoscopy and Imaging
P-085
A novel method for endoscopic placement of the capsule endoscopy using the transparent hood and real time viewer
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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.

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
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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

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**Endoscopy and Imaging**

**P-087**

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

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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

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**Endoscopy and Imaging**

**P-088**

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

**Presenting Author:** BYUNG IK JANG

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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

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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 scores: 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

Endoscopy and Imaging

P-091
Dexmedetomidine versus midazolam for sedation of adults undergoing gastrointestinal endoscopy: a meta-analysis and systematic review

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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

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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 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 system. 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 NBI and FICE 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 discriminating small polyt histologies during screening colonoscopy. Key Word(s): 1. Colonoscopy; 2. polyp; 3. histology
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

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Dexmedetidine</th>
<th>Midazolam</th>
<th>Std. Mean Difference</th>
<th>Std. Mean Difference IV, Random, 95% CI</th>
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<td></td>
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<td>Total</td>
<td>Mean</td>
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<tr>
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<td>0.2</td>
<td>20</td>
<td>1.4</td>
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<tr>
<td>Total (95% CI)</td>
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<td></td>
<td>105</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Heterogeneity:** Tau² = 3.20; Chi² = 86.13, df = 3 (P < 0.0001); I² = 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 (4.3.4%). However, the ADR of the remaining procedures, including later procedures, was similar throughout the workday. In the multivariate 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 semipediculated 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. \textit{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.

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

**Endoscopy and Imaging**

\textbf{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 mucosal 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**

\textbf{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).

**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

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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 and fifty five adults were included. No significant difference in age, and the presence of co-morbidities were recorded.

Conclusions: The PEG group was introduced to split method (3 L 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 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.

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
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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 has 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 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 were significant risk factors for repeated preparation failure.

**Key Word(s):** 1. Bowel preparation; 2. preparation failure; 3. interval

**Endoscopy and Imaging**

**P-100**  
**Influence of stress on bowel preparation: a prospective, single blind study**  
**Presenting Author:** JONG SUN KIM  
**Additional Authors:** YOUNG EUN JOO, HYUN SOO KIM, SUNG BUM CHO, WAN SIK LEE  
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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 determine 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 polyethylene glycol 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 among ESD and TAR. **Results:** We completed ESD procedure on 48 cases of 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:** 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 thoughted a possibility of IBD such as ulcerative colitis, and colonoscopy revealed that the multiple lobulated polyps had regressed. Case 2 A 65-year-old woman was transferred to our hospital 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. 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/mL), 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 histologic examination of the terminal biopsy specimen, 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](image-url)
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 bowel cleansing protocol. Blinded colonic scoring assessment of bowel preparation for colonoscopy with low-volume polyethylene glycol (2 L) plus lactulose versus standard volume polyethylene glycol (4 L) were 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. Colonscopy; 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 duodenal 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 mucosa, 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 endoscopist. 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 endoscopist. This study suggests 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**

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**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. The route of infection was presumed to be infected pork meat ingested in west Asia.

**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 faeces, capsule endoscopy was performed prior to antihelminthic 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 for detecting GI lesion is a very useful tool as a decision of treatment strategy for NCC.

**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; 2. neurocysticercosis

Endoscopy and Imaging
P-111
**Clinical outcomes of endoscopic submucosal dissection for 958 colorectal epithelial neoplasms**

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**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-113
Usefulness of magnified endoscopy with NBI for the detection and diagnosis of anal canal cancer

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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 and the modal 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. 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

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-114
Usefulness of transabdominal ultrasonography for improved safety of capsule endoscopy in patients with crohn’s disease

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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 before CE. 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. 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?
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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.

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

Endoscopy and Imaging

P-117
Confocal laser endomicroscopy using dye dispersion
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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 fluorescein 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
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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 fluorescein 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 present clear images with high color contrast as well as detailed

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characteristic findings with magnification, leading to the recognition of precise demarcation lines between cancer and surrounding area in all five lesions. Two lesions of 18 mm and 23 mm in diameter respectively showed unstructured areas and irregular microvascular patterns including key frets pattern, suggesting undifferentiated adenocarcinoma supported by histopathology of the resected specimens. Three lesions of 12 mm, 4 mm and 14 mm respectively showed irregular microstructural and microvascular patterns, suggesting differentiated adenocarcinoma supported histopathologically. Conclusion: BLI system is useful for detection and detailed examination of early flat gastric cancers exhibiting high color contrasted images and apparent images in both microstructural and microvascular patterns.

Key Word(s): 1. Blue laser imaging; 2. gastric cancer; 3. microvascular patterns

Endoscopy and Imaging

Ingestion of a kwik lok bag closure – a small bread bag clip poses a large health risk

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Objective: (Background) Kwik Lok™ is the producer of Bag Closures that are sold over 80 countries. Closures are small square plastic clips with no outward sharp edges and widely used as bread bag clips. Once ingested, they present serious health hazard, even deadly. 36 cases, including the following, have been reported since 1975 from 5 countries (Canada 13, UK 9, USA 6, Australia 5, Japan 3). Methods: (Case) 66-years-old male presented to the emergency department after ingesting a bag closure. CT scan showed no significant findings. Upper GI endoscopy revealed the closure device lodged in the descending part of the duodenum, which had clutched the ulcerated mucosa between its teeth. The closure was endoscopically retrieved with significant efforts and difficulty. Results: (Discussion) Among 36 cases (larynx 1, esophagus 2, stomach 2, duodenum 7, jejunum and ileum 20, colon 3, not specified 1), 10 endoscopic retrieval attempts yielded 6 successes, and 26 surgical operations revealed 11 perforations and resulted in 5 deaths. No preoperative X-rays/CT scans have ever pointed out an in-vivo Kwik Lok due to its radiolucency, however, three autopsies have discovered a closure. Reported are cases of intestinal obstruction, intestinal bleeding, ulceration and anemia. The longest period of incubation confirmed is 4 years. Conclusion: Kwik Lok™ Bag Closures should be recognized as a serious risk. If a patient presents after ingesting a Bag Closure, every possible measure should be employed to locate and retrieve the clip, or the patient needs to be followed up for years, if not decades.

Key Word(s): 1. Kwik Lok; 2. bag closure; 3. bread bag clip; 4. bread clip
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. 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 3: 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 type2 DM and HTN and secondary polycythaemia 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 presence of free fluid. Initial investigations were normal as per previous case history revealed no other remarkable features. 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 mm/HR 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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**Objective:** Double balloon Enteroscopy (DBE) allows complete visualization, biopsy, and therapeutic intervention in the small bowel. The aim
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 different 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 different (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.

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

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 endoscopographically 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. Screening endoscope; 2. gastric cancer

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 different 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 different (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.

Key Word(s): 1. Double balloon enteroscopy; 2. small bowel disease
A case of idiopathic hypereosinophilic syndrome with multiple organs involvement in a 61-year-old male

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**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, eosinophil 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 esophagogastroduodenoscopy 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

**Detection rate and inspection level of ampulla of vater using forward-viewing esophagogastroduodenoscope: a comparison between an expert and a trainee**

**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, Group4: 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 (group1) (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
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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
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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 = 0.0054). 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 endolumenal suturing: leak pressure study in an ex vivo porcine model
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Objective: The strength of an endoscopic suture closure of a full thickness defect is unknown. We evaluate the strength of endoscopic suture technique in 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 endolumenal 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

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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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**Corresponding Author:** WILLIAM TAM

**Affiliations:** Lyell Mcewin Hospital

**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 at the tip of the scope for colonoscopy. Water insufflation was achieved using a foot-controlled water pump. Cæcal 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 cæcum 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

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**Table 1**

**Endoscopy and Imaging**

**P-137 Treatment outcomes of cecal tumors spreading to the appendiceal orifice**

**Presenting Author:** YASUYUKI TANAKA  
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**Objective:** Endoscopic resection (ER) for cecal tumors spreading to the appendiceal orifice (CTA0s) is sometimes technically difficult, but treatment outcomes had not been reported yet. The aim of this study was to assess the treatment outcomes for CTA0s. 

**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. CTA0s were defined as lesions located within 5 mm from the orifice. Treatment outcomes were compared between CTA0s and the other cecal lesions as controls.

**Results:** We identified 16 CTA0s and other 79 cecal lesions. The median tumor size of CTA0s was larger than controls (25 mm/20 mm). Five CTA0s underwent surgery as an initial treatment because of possible technical difficulty in ER due to invisibility of the lesion margin. ER outcomes of CTA0s 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 significant frequently in CTAOs than controls (27%/44%, 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-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

P-140
Clinical outcome of endoscopic submucosal dissection for entire circumferential superficial esophageal squamous cell carcinoma

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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 EPI/LPM, 5 with MM/MM1, 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

P-141
The color doppler ultrasound and pathological correlative analysis of gastrointestinal stromal tumor

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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 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

P-143
Hem-o-lok clip in the first part of duodenum after laparoscopic cholecystectomy

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Objective: Laparoscopic cholecystectomy (LC) and common bile duct exploration (LCBDE) has become the standard surgical procedure for cholecystolithiasis and choledocholithiasis. During the operation, cystick 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

P-144
Deployment of a short, single-opening endoscopic clip versus a long, re-opening endoscopic clip in clinical practice

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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 unsuc-
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 Words:** 1. Endoscopic clip; 2. resolution clip; 3. Quick Clip2; 4. deployment; 5. hemostasis

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**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 patients 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 Words:** 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 gastrointestinal 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 lowing 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 gastrointestinal inspection. Good nursing intervention played a dispensable role in the full course of examination.

**Key Words:** 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
Although the peristaltic score was lower in group B than in group A and severity of gastric atrophy between group A and B as well as C and D. No significant differences were observed in age, sex, procedure time except 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 Words: 1. Colonoscopy reexamination; 2. colorectal cancer; 3. EMR

Enosophageal, 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. Results: 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 diagnosed 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 Words: 1. Functional dyspepsia; 2. irritable bowel syndrome; 3. overlapping diagnoses

Esophageal. Gastric and Duodenal Disorders

P-150
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 was 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 per day 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 Words: Fucoidan, chronic gastritis, endoscopic score, histopathologic inflammatory score, histopathologic atrophic gastritis score

Esophageal. Gastric and Duodenal Disorders

P-151
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 Words: 1. Dieulafoy; 2. gastrointestinal bleeding; 3. endoscopic treatment; 4. antiplatelet agents; 5. alcohol

Esophageal. Gastric and Duodenal Disorders

P-152
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 ± 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 ± 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 ± SE) was 154.0 ± 5.4° on RAO images and 131.8 ± 5.8° 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 Words: 1. Achalasia; 2. esophagography; 3. LAO (left anterior position)
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 tract 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 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 1.13:1. 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 polypl 31.8%, inflammatory polypl 9.4%, hamartoma 3.5%, fundic gland polypl 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)
Portal hypertension associated gastropathy & gastritis in children in Sudan

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 Duodenitis, 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, Omdurman, Sudan, during the last 5 years who under went 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 Cavernoama,Peri Portal fibrosis due to Schistomiasis 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 x2 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 (n190), 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 Hepatametasis Portal Vein Thrombosis, 42, Portal Vein Thrombosis 5 years-15 years 32, <or 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+/or Hepatametasis Pri
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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: mean 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

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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

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P-159 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 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 metastases 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

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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 polyoid 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
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P-161
Clinical outcome of gastric endoscopic submucosal dissection in oldest-old patients
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Objective: The average age for patients with performed with gastric endoscopic submucosal dissection (ESD) in our institution was 73.8 years old. The rate of oldest-old patients more than 85 years old was approximately 10% in patients received with the ESD. The safety of the treatment for the oldest-old patients is not established. The aim of this study was to assess the safety and the efficacy in the oldest-old patients.

Methods: Between January 2006 and May 2014, a total of 417 lesions in 345 consecutive patients were treated with gastric ESD were enrolled in this study. The cases were divided into two groups; 85 years or older (group A), and younger than 85 years (group B). We assessed the clinical outcomes between two groups as follows; patients characteristics, treatment outcome (excision diameter / resection rate / operative duration), complication (bleeding / perforation), and prognosis.

Results: The patient was 47 lesions in 37 cases in group A, and 370 lesions in 308 cases in group B. The early gastric cancer (EGC) was 85.1% of group A and 62.9% of group B. There was no significant difference in the patients having an antithrombotic medication between both groups. No significant difference in other treatment outcome and complication were observed between both groups. Only the duration of hospitalization in group A was longer than in group B due to the treatment of underlying diseases. There was no case that required an additional surgery after ESD for a non-curative resection in the group A.

Conclusion: Compared with patients less than 85 years old, the oldest-old patients needed longer hospital stay. However there were no significant differences in other treatment outcome and complication between both groups. Therefore, ESD could be performed in safety for the oldest-old patients.

Key Word(s): 1. Endoscopic submucosal dissection; 2. early gastric cancer

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P-162
The role of noncontrast computed tomography prior to the endoscopic intervention for the suspicious esophageal fish bone
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Objective: Accidental foreign body ingestion is not uncommon among patients of all age. The immediate risk to the patient ranges from negligible to life threatening. In Asian countries, fish bones (FB) are the most prevalent esophageal foreign bodies and they are usually ingested accidentally with food. The FBs have sharp polygonal or pin-like pointed structure and they can perforate or tear the esophageal wall. Therefore, endoscopic intervention should be performed if FB is impacted in the esophagus. However, it is difficult to diagnose esophageal FB with symptom, sign or plain radiography in most cases. Computed tomography (CT) has been proven to be accurate and noninvasive technique for evaluating the structures of esophagus. There is little report or practical guideline using CT scan for the diagnosis of esophageal FB till now.

Methods: The aim of this study was to evaluate the usefulness of CT scan for the diagnosis of esophageal FB. Between March 2009 and March 2014, consecutive patients with suspected esophageal FB at Jeju National University Hospital were identified. Among those, patients with normal plain radiography were included, and medical records were abstracted for CT scan and endoscopy with outcomes. In some patients, noncontrast neck CT scan was performed prior to endoscopic intervention. We evaluated the outcome in two groups (pre-endoscopic CT or No CT).

Results: During the study period, 134 patients (M : F = 55:79) who were strongly suspected of FB ingestion with normal plain radiography were enrolled. The mean age was 54.5 ± 15.6. Of those 134 patients, 91 (68%) underwent CT scan, and 43 (32%) underwent endoscopic intervention without CT scan. Among 91 patients with pre-endoscopic CT scan, 57 patients had positive CT findings of FB. The subsequent endoscopic procedure showed FB in 56 (98%), and FB was removed in all patient successfully. Among 34 patients who had negative finding of FB on the CT scan, 20 patients underwent endoscopy because of patients’ request. However, FB was found in only 2 (10%) patients at the inlet of esophagus. In these two patients, artifacts which were made by dental prosthesis interfered with detecting FB on the CT scan. Among 43 patients without pre-endoscopic CT scan, 31 patients (72%) had esophageal FB in endoscopic examination. The sensitivity, specificity, positive predictive value, and negative predictive value of CT scan for the detection of FB was 98.2%, 90.1%, 96.5%, and 94.7%, respectively.

Conclusion: Pre-endoscopic CT scan is accurate and noninvasive diagnostic modality for the detection of ingested esophageal FB. Moreover, CT scan prior to endoscopic procedure is very useful to avoid unnecessary endoscopic procedure. Further studies are needed about the advantages of pre-endoscopic CT scan for the evaluation of pre-endoscopic complication and for the planning of endoscopic removal method.

Key Word(s): 1. Computed tomography; 2. endoscopy; 3. esophageal foreign body; 4. fish bone
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P-163
Polymerisms 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 SNPs.

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 National 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

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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).

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 ± 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

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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 C57 BL/6 J mice were cultured in our three-dimensional (3D) primary culture system. We established mouse gastric 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 HI1083, demonstrating differentiation into gastric surface mucous cells and mucous neck cells, respectively.

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
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**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 categories, 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 unacceptable 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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**P-167**

**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 esophagus. **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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**P-168**

**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
Esophageal. Gastric and Duodenal Disorders

P-170

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), 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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P-172
Acute exposure of aspirin could decrease cell viability and migration of barrett’s esophagus associated adenocarcinoma, not via the transforming growth factorβ 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 μM aspirin were assessed. Reverse transcription-polymerase chain reaction (RT-qPCR) 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 μM 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 factorβ

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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 uncleared 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 cases 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 μl 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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P-177
Continuing decline in helicobacter pylori and associated upper gastrointestinal diseases in a multi-racial asian population in malaysia

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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 patients. 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 Barrett’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 multi racial 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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P-178
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), overeating (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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P-179
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 heartburn 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
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P-180
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 group 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 gastrointestine 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), compared 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% 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 Words: 1. Gastritis; 2. non-steroidal anti-inflammatory drugs; 3. rabeprazole

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P-181
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, etc. 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 superiority in improving symptoms.

Key Words: 1. Deanxit; 2. dyspepsia; 3. effect

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P-183
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 Words: 1. EUS-FNA; 2. GIST
Conclusion: Twenty-five (17.8%) patients had Barrett's esophagus, 10 (7.1%) had esophagus carcinoma, and 12 (8.5%) had female. The main endoscopic findings were normal 103 (73.5%) and esophagitis 140 gastroesophageal reflux disease. For patients with gastroesophageal reflux disease, perform endoscopy is currently the main diagnostic modality in the work-up of investigation of upper gastrointestinal symptoms. Upper gastrointestinal endoscopy has been used with increasing frequency in the investigation of upper gastrointestinal symptoms, and it is considered the standard of care for the evaluation of dyspepsia patients. We collected upper endoscopy procedures results among gastroesophageal reflux disease patients at endoscopic center. 174 patients were included. The main endoscopic findings were normal 105 (75.3%), esophagitis 25 (17.8%), Barrett’s esophagus 10 (7.1%), esophagus carcinoma 12 (8.5%).

Methods: We collected upper endoscopy procedures results among gastroesophageal reflux disease patients at endoscopic center. A detailed personal interview was conducted to establish clinical gastroesophageal reflux symptoms and medication. We also determined sociodemographic profile of each patient. The aim of this study was to establish the etiology of gastroesophageal reflux disease. For patients with gastroesophageal reflux disease, performing endoscopy can detect underlying esofagitis, barret’s esofagus and malignancy. The aim of this study was to establish the etiology of gastroesophageal reflux disease on upper endoscopic investigation. We collected upper endoscopy procedures results among gastroesophageal reflux disease patients at endoscopic center. January 2011 to July 2013. A detailed personal interview was conducted to establish clinical gastroesophageal reflux symptoms and medication. We also determined sociodemographic profile of each patient. Results: There are 140 gastroesophageal reflux disease patients, 60 (42.8%) were male and 80 (57.1%) were female. The main endoscopic findings were normal 105 (73.5%), esophagitis 25 (17.8%), barret’s esophagus 10 (7.1%), esophagus carcinoma 12 (8.5%).

Conclusion: Normal mucosa is a common diagnostic patients with gastroesophageal reflux disease.

Key Words: 1. GERD-endoscopy-normal mucosa

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Gastroesophageal Reflux Disease on endoscopic investigation

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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 patients with gastroesophageal reflux disease, performing endoscopy can detect underlying esofagitis, barret’s esofagus and malignancy. The aim of this study was to establish the etiology of gastroesophageal reflux disease on upper endoscopic investigation. We collected upper endoscopy procedures results among gastroesophageal reflux disease patients at endoscopic center. January 2011 to July 2013. A detailed personal interview was conducted to establish clinical gastroesophageal reflux symptoms and medication. We also determined sociodemographic profile of each patient. Results: There are 140 gastroesophageal reflux disease patients, 60 (42.8%) were male and 80 (57.1%) were female. The main endoscopic findings were normal 105 (73.5%), esophagitis 25 (17.8%), barret’s esophagus 10 (7.1%), esophagus carcinoma 12 (8.5%).

Conclusion: Normal mucosa is a common diagnostic patients with gastroesophageal reflux disease.

Key Words: 1. GERD-endoscopy-normal mucosa
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 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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P-190
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 mesentry 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

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P-191
Endoscopic features of gastric adenocarcinoma of fundic grand type
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Objective: Gastric adenocarcinoma of fundic grand type (GAGF) 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 GAGF.

Methods: From October 2012 to March 2013, three consecutive patients with GAGF 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 grand type

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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 4 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 (5.8%) and in 16 cases of the control group (4.4%) 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

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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
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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 69.6 ± 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

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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-ampullary 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

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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

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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. Methods: A retrospective study was conducted on 780 patients who had endoscopic retrograde cholangiopancreatography in Sanglah General Hospital Denpasar between June 2012 and May 2014. Demographic, endoscopic and histopathological findings were documented. Results: Of 780 patients undergoing gastroesophageal reflux disease (GERD), 7 (1.47%) 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
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 patient s 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 (95% CI: 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 Words:** 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 Words:** 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 tuberculous 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 Words:** 1. Tuberculosis; 2. cold abscess; 3. oesophageal ulceration

#### Esophageal. Gastric and Duodenal Disorders

**P-202 A 18-years old male with Henoch-Schönlein purpura, pan gastritis, 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...
Esophageal. Gastric and Duodenal Disorders

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 Words: 1. Chronic gastritis; 2. fucoidan; 3. clinical score; 4. endoscopy; 5. histopathology

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

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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, endoscopy 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 consecutively 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 ± 6.01 to 6.14 ± 4.53 and placebo from 17 ± 5.79 to 9.43 ± 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 ± 7.20 μm to 34.64 ± 11.09 μm compared to the placebo group from 24.93 ± 11.45 μm to ±25.37 ± 6.96 μm (P: 0.02). In the corpus, the thickness of the mucous showed a significant improvement in the group of fucoidan from 24.46 ± 9.99 μm to 41.73 ± 22.46 μm compared to the placebo group from 23.77 ± 9.66 μm to 27.06 ± 9.45 μm (P: 0.03). Conclusion: The addition of fucoidan on chronic gastritis standard therapy significantly improved mucosal thickness than placebo.

Key Words: 1. Chronic gastritis; 2. fucoidan; 3. clinical score; 4. endoscopy; 5. histopathology

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

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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 Symptom Severity Index (DSSI) score. **Methods:** Using analytic study design, conducted in outpatient Koja 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 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

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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**

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

**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
Big gastric bezoar, a case report

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Additional Authors: Tjahjadi R TEDJASAPUTRA, Rachmat, Gunadi P

Corresponding Author: SHIRLY ELISA TEDJASAPUTRA

Affiliations: Tarakan General Hospital, Tarakan General Hospital, Taran General Hospital

Objective: To report a rare case of gastric foreign body which is difficult to diagnose and treatment.


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, nottender 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 × 15 × 5 cm³) extending from the gastric corpus to antrum prepylorus. The mass consist of a big hairball Trichobezoar. 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
Table 1  The Prevalence of Dyspepsia, Heartburn and Esophagitis in the Population of Eastern Siberia

<table>
<thead>
<tr>
<th>Population</th>
<th>Dyspepsia</th>
<th></th>
<th>Weekly heartburn</th>
<th></th>
<th>Esophagitis</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Abs</td>
<td>%</td>
<td>Abs</td>
<td>%</td>
<td>Abs</td>
<td>%</td>
</tr>
<tr>
<td>1. Europoids, n = 3422</td>
<td>840</td>
<td>24.5</td>
<td>447</td>
<td>13.1</td>
<td>185</td>
<td>5.4</td>
</tr>
<tr>
<td>2. Evenks, n = 1445</td>
<td>211</td>
<td>14.6</td>
<td>92</td>
<td>6.4</td>
<td>9</td>
<td>0.6</td>
</tr>
<tr>
<td>3. Khakases, n = 2085</td>
<td>385</td>
<td>18.5</td>
<td>173</td>
<td>8.3</td>
<td>75</td>
<td>3.6</td>
</tr>
<tr>
<td>4. Tyvins, n = 572</td>
<td>122</td>
<td>21.3</td>
<td>62</td>
<td>11.0</td>
<td>29</td>
<td>5.1</td>
</tr>
<tr>
<td>OR; CI; p1-2</td>
<td>1.90; 1.61–2.24; &lt;0.001</td>
<td>2.20; 1.74–2.78; &lt;0.001</td>
<td>8.66; 4.50–16.68; &lt;0.001</td>
<td>1.73; 1.37–2.10; &lt;0.001</td>
<td>1.53; 1.16–2.01; 0.003</td>
<td></td>
</tr>
<tr>
<td>OR; CI; p1-3</td>
<td>1.44; 1.25–1.64; &lt;0.001</td>
<td>1.66; 1.38–1.99; &lt;0.001</td>
<td>1.53; 1.16–2.01; 0.003</td>
<td>1.53; 1.16–2.01; 0.003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OR; CI; p1-4</td>
<td>0.63; 0.49–0.81; &lt;0.001</td>
<td>0.55; 0.39–0.77; &lt;0.001</td>
<td>0.55; 0.39–0.77; &lt;0.001</td>
<td>0.55; 0.39–0.77; &lt;0.001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Esophageal, Gastric and Duodenal Disorders
P-211
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 questionnaire of Mejo clinic (Locke G.R., 1994).

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. %

<table>
<thead>
<tr>
<th>Population</th>
<th>Abs</th>
<th>%</th>
<th>Abs</th>
<th>%</th>
<th>Abs</th>
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<td>5.1</td>
</tr>
</tbody>
</table>

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

Esophageal. Gastric and Duodenal Disorders
P-212
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

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 (381 females, 596 males) in Dudinka (Taimyr), in 564 people (293 females, 271 males) in Atamanovo (100 km north of Krasnoyarsk) and in 675 persons (341 females, 336 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
Esophageal. Gastric and Duodenal Disorders

P-213
Ethnic features of GERD extraesophageal manifestations

Presenting Author: VLADISLAV TSUKANOVAADITIONAL AUTHORS: NIKOLAY BUTORIN, TATIANA BICHURINA, ALEXANDER VASYUTIN, OKSANATRETYAKOVA

Corresponding Author: VLADISLAV TSUKANOVA

Affiliations: Kanov Khass State University, Fsb "Srimpn" Sb Rams, Fsb "Srimpn" Sb Rams, Fsb "Srimpn" Sb Rams

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 95% of the employee list of one of the municipal factories. GERD diagnosis was 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 regularities 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

Esophageal. Gastric and Duodenal Disorders

P-214
Relation between body mass index and the severity of gastroesophageal reflux disease

Presenting Author: AMIE VIDYANI

Additional Authors: UMMI MAIMUNAH, PANGESTUADI

Corresponding Author: AMIE VIDYANI

Affiliations: Gastroenterology-Hepatology Division, Gastroenterology-Hepatology Division

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 was 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 kg/m², overweight 25–30 kg/m², and obese >30 kg/m²). 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: Microsoft Internet Explorer 4 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

Esophageal. Gastric and Duodenal Disorders

P-215
Randomised, double-blind placebo controlled trial assessing the efficacy of itopride in postprandial distress syndrome (pds): a pilot study

Presenting Author: ZHIQIN WONG

Additional Authors: UMMI NADIRAH DAUD, JEEVINESH NAIUD, CHAI SOON NGIU, RAJA AFFENDI RAJA ALI, SHANTHI PALANIAPPAN, MAZLAM ZAWAWI, HAMIZAH RAZLAN

Corresponding Author: ZHIQIN WONG

Affiliations: University Putra Malaysia, National University of Malaysia, National University of Malaysia, National University of Malaysia, National University of Malaysia, National University of Malaysia

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 (p < 0.05) but not PDS overlap symptoms. 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 (p < 0.05) but not PDS overlap symptoms.

Conclusion: Both placebo and itopride demonstrated improved 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. iopride

Esophageal, Gastric and Duodenal Disorders P-217

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

**Presenting Author:** YOSHIKAZU

**Additional Authors:** OKA SHIRO, TANAKA SHINJI, MIWATA TOMOHIRO, NUMATA NORIFUMI, SANOMURA YOJI, CHAYAMA KAZUAKI

**Corresponding Author:** YOSHIKAZU

**Affiliations:** Hiroshima University Hospital, Hiroshima University, Hiroshima University Hospital, Hiroshima University Hospital, Hiroshima University Hospital, Hiroshima University Hospital, Hiroshima University Hospital, Hiroshima University Hospital, Hiroshima University Hospital

**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 intra-vascular 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 P-218

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

**Presenting Author:** ANDREW BUCKLE

**Additional Authors:** WILLIAM TAM, MARK SCHOEMAN, JOHN ARGYRIDES

**Corresponding Author:** ANDREW BUCKLE

**Affiliations:** Royal Adelaide Hospital, Royal Adelaide Hospital, Royal Adelaide Hospital, Royal Adelaide Hospital

**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 azathioprine 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, neutropaenia, 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 neutropaenia, 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 intravenous support and she died shortly thereafter. **Conclusion:** We present 4 case reports of CMV viremia 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 neutropaenia. **Key Word(s):** 1. Thiopurines; 2. azathioprine; 3. mercaptopurine; 4. Aza; 5. 6-Mp; 6. ulcerative colitis; 7. Crohn’s disease; cytomegalovirus

IBD P-219

Microrna 429 regulates the expression level of CHMP5 in Ulcerative Colitis

**Presenting Author:** SOO-CHEON CHAE

**Additional Authors:** J. MO, K. ALAM, S. CHOI

**Corresponding Author:** SOO-CHEON CHAE

**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 miRNAs downregulated in MIR429-overexpressing cells (determined by miRNA 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 ISHI, SATOKO TSUDA, TSUYOTOSHI TSUJI, KUNIO NAKANE, MASAFUMI KOMATSU
Corresponding Author: MITSURO CHIBA
Affiliations: Seirei Women’S Junior College, Akita City Hospital, Akita City Hospital, Akita City Hospital, Akita City Hospital, Akita City Hospital, Akita City Hospital, 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, miniced 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 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
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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
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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%, hematocrit 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-4 upon multivariate logistic regression analyses (p = 0.03; odds ratio (OR), 9.00; 95% confidence interval (CI), 1.30–62.32; ≤4. Younger age, shorter duration of disease, and 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; ≤4. Younger age and disease duration ≤3 years, absence of a history of bowel resection and absence of prior anti-TNF therapy were predictive factors for clinical remission at week-4 upon univariate logistic regression 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 Words(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 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 Words(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). 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
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 aphtoid 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 Words: 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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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 Words: 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

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**Objective:** Parthenolide (PT) known as a NF-kB 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-κB p65 expression by the blockade of phosphorylation and subsequent degradation of IkB-a. Administration of PT ameliorated the carcinogenesis through the downregulation of anti-apoptotic protein Bcl-2 and Bcl-xL, mediated by inhibition of NF-kB activation. Moreover, apoptosis and caspase-3 expression also increased markedly in PT administration group. **Conclusion:** Our results demonstrate that PT downregulates NF-kB 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 Words:** 1. Colitis-associated colorectal cancer; 2. parthenolide

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**IBD**

**P-232**
The characteristics of pediatric inflammatory bowel disease in korea: comparison to eurokids data

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**Objective:** Pediatric inflammatory bowel disease (IBD) have been increasing worldwide. We investigated the clinical characteristics of pediatric IBD in Korea and compared to results from EUROKIDS.

**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 EUROKIDS 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 EUROKIDS data, Korean pediatric CD patients had higher rates of terminal ileal disease. (Korean data 10 (33.3%) vs. EUROKIDS data 46 (7.9%), p = 0.006) Korean pediatric CD patients showed higher incidence in perianal disease than EUROKIDS patients. (Korean 10 (33.3%) vs. EUROKIDS 48 (9%), p < 0.001) Korean pediatric UC group showed higher incidence of proctitis than EUROKIDS group. (Korea 6 (18.2%) vs. EUROKIDS 27 (5%), p = 0.015)

**Conclusion:** The characteristics of pediatric IBD in Korea appeared not similar to those reported by EUROKIDS study. Korean children with CD have higher incidence of ileal disease and perianal disease and proportion of proctitis was higher than EUROKIDS in children with UC.

**Key Words:** 1. Pediatric IBD; 2. clinical characteristics; 3. Korean IBD

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**IBD**

**P-233**
The safety of infliximab infusions for refractory inflammatory bowel disease

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**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. Sever ADRs were rare. Nurses were significantly in prevention and treatment of ADRs.

**Key Words:** 1. Infliximab; 2. adverse events; 3. infliximab
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 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 and 42.4% of patients, respectively. In the patients, 5.1% relapsed at 1 year. This permission rates at 1, 3, and 5 years were noted in 12.6%, 63.5% and 95.9% of the patients was 28.2 months (Range, 64.2 or IQR, 26.7). The clinical remission (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 were more likely to experience surgical resection (P = 0.016). Clinical 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

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, even though 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-238
Increased serum ifn-γ and il-6, but not il-17 concentrations are associated with crohn’s disease activity

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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 (Biolegend, 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): IFN-γ; IL-6; IL-17; Crohn’s disease

IBD

P-239
Influence of endoscopic mucosal healing on long-term efficacy of infliximab in patients with refractory ulcerative colitis

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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 ≤5. 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): ulcerative colitis; infliximab; mucosal healing

IBD

P-240
Baseline tumor necrosis factor alpha levels predict the clinical response of infliximab therapy in patients with crohn’s disease

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Objective: To investigate the possible role of baseline-tumor necrosis 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): Crohn’s disease; infliximab; TNFalpha
Paediatric inflammatory bowel disease in Singapore – an increasing trend in a multi-racial society

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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%), diarrhea 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 (18.3%), skin tags/fissures 28/82 (34.1%). Common presenting findings: 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%), diarrhea 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 (18.3%), skin tags/fissures 28/82 (34.1%). 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%), diarrhea 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 (18.3%), skin tags/fissures 28/82 (34.1%). 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%), diarrhea 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 (18.3%), skin tags/fissures 28/82 (34.1%).

Conclusions: All the patients of 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

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), 3 cases 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**

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**Objective:** Adalimumab (ADA) is an efficacious treatment for patients with Crohn’s disease who are naïve to the chimeric TNF-α blockers 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 ± 17 years old, and the mean disease duration was 10.6 ± 10.7 years. The mean values of CDAI and CRP levels at baseline were 246 ± 113 and 3.6 ± 2.6 mg/dL, respectively. Their values after the combination therapy were 105 ± 40 (p = 0.015) and 0.4 ± 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 Words(s):** 1. adalimumab; 2. Crohn’s disease; 3. granulocyte and monocyte adsorptive apheresis

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**IBD**

**P-244**

**Usefulness of tacrolimus in ulcerative colitis**

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**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 ± 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 was achieved for three patients (37.5%) and the response rate was 75%. Harf 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

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**IBD**

**P-245**

**Efficacy of low dose CT for evaluation of disease activity in ulcerative colitis**

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**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
we evaluated wall thickening, stratification, contrast enhancement and mesenteric vascular engorgement, assigning a CT score to each segment. We calculated a total CT score by the sum of CT scores of 6 segments. To assess endoscopic severity, Ulcerative Colitis Colonoscopic Index of Severity (UCCIS) was used. The clinical severity was assessed by Mayo partial score. We investigated the correlation between those CT scores and UCCIS. The correlation between partial Mayo score and total CT score also investigated. Results: Twenty three cases of ulcerative colitis were included in this study. We achieved a 57% reduction of effective dose by adjusting the scan conditions and the reconstruction conditions (P=0.00326). We observed a high degree of correlation between the sum of the CT scores of the rectum and sigmoid colon and the sum of the UCCIS of the rectum and sigmoid colon (ρ=0.629). Although the UCCIS of the rectum and sigmoid colon segment calculated by sigmoidoscopy and partial Mayo scores correlate (ρ=0.456, R2=0.267), the correlation analysis between the total CT score and the partial Mayo score indicated a higher coefficient of determination (ρ=0.643, R2=0.315). Conclusion: This study suggested that low dose CT could provide more effective images to assess the disease activity of ulcerative colitis less invasively compared with sigmoidoscopy.

Key Word(s): 1. low dose CT; 2. sigmoidoscopy; 3. ulcerative colitis

IBD

P-246

A case report of sporadic colorectal cancer in the patient with ulcerative colitis, difficult to distinguish from colitic cancer endoscopically

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Objective: Several cases of sporadic cancer, not colitic cancer in the patients with ulcerative colitis were reported. Differential diagnosis is critical, because the first-line therapy is different. Methods: Case: A 47 y/o female was referred to our hospital, after ulcerative colitis was confirmed pathologically. 5-ASA, steroid enema and azathioprine was given, however, the remission stage could not be obtained. On colonoscopy, multiple inflammatory polyps were seen in the entire colon. A sessile polypoid lesion sized as 5 mm in diameter, surrounded by the inflammatory mucosa, was seen in the hepatic flexure, and biopsy specimen showed adenocarcinoma. Magnifying images with NBI and indigocarmine stain showed IV with partial VI type pit pattern. After obtained fully informed consent, endoscopic mucosal resection (EMR) underwent. Results: Pathological result was as follows: Tubular adenocarcinoma, tub1, pM, Intestinal type; INFs, ly0, v0, horizontal margin:-, vertical margin:- Immunohistological result with p53 and Ki-67 presented that the neoplastic area was seen only on the top of the lesion without any dysplasia in the adjacent area. (“top-down” type) Discussion: It is difficult to distinguish colitic from sporadic cancer only in the endoscopic images, therefore, histological confirmation is critical. We firstly diagnosed colitic cancer, because the extension of the lesion was entire colon type and the morbidity history was more than 10 years. However, the final result was sporadic cancer with ulcerative colitis. Conclusion: A case report of sporadic early colon cancer in the patient with ulcerative colitis was presented, difficult to differentiate from colitic cancer endoscopically. More cumulative case reports would be mandatory.

Key Word(s): 1. colitic cancer; 2. sporadic cancer; 3. ulcerative colitis

IBD

P-247

The effectiveness of adalimumab maintenance treatment for crohn’s disease and related prognostic factors: a japanese single-center study

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Objective: Very few studies have reported on Japanese patients with CD who received adalimumab maintenance treatment. We evaluated the effectiveness of adalimumab as a maintenance treatment in patients with CD and the prognostic factors related to the treatment results. Methods: We investigated all patients who were treated with adalimumab for luminal CD between October 2010 and March 2013. The effectiveness of adalimumab maintenance treatment was evaluated using the sustained treatment success rates, which were estimated using the Kaplan–Meier method. Sustained treatment success was defined as a lack of treatment failure. Treatment failure was defined as follows: 1) discontinuation of adalimumab due to loss of response or side effects; 2) the need for dose escalation due to loss of response; 3) the need for surgery. The prognostic factors related to the sustained treatment success rates were evaluated using the log-rank test. Results: A total of 88 patients were included for this retrospective study. The 1- and 2-year sustained treatment success rates were 58% and 45%, respectively. Colitis type, disease duration of more than 2 years, prior infliximab use, stricturing disease, intra-abdominal fistulas, and concomitant treatment with prednisolone were significant predictors of treatment failure. The 2-year sustained treatment success rates were higher in patients who were naïve to infliximab (71%) and had a disease duration of less than 2 years (76%) compared with other prognostic factors. Conclusion: The effectiveness of adalimumab maintenance treatment is expected to improve by selecting infliximab-naïve patients with CD and by initiating adalimumab therapy as soon as possible after the diagnosis.

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

IBD

P-248

The Role of ß-arrestin2 by enhancing the activation of Erk in the recovery of colitis

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Objective: Activation of Erk in the recovery of colitis was determined. Methods: P-248. Results: Activation of Erk in the recovery of colitis was determined. Conclusion: Activation of Erk in the recovery of colitis was determined.
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 recover 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 immunoblotting 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 repair 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-Smad-3 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 drank 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 may 2011 and may 2014. 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) 6.4%, Normal 0 false false false IN X-NONE X-NONE UC (ulcerative colitis) 96.3%, CD (chron’s disease) 6.4%, Normal 0 false false false IN X-NONE X-NONE UC (ulcerative colitis) 96.3%, CD (chron’s disease) 6.4%, Normal 0 false false false IN X-NONE X-NONE UC (ulcerative colitis) 96.3%, CD (chron’s disease) 6.4%. The mean age: UC 50.7 ± 13.4 years old, CD 44.5 ± 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%. F rom 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%, cecum-descendens 10.1%, rectosigmoid 10.1%, sigmoid-rectum 9%, anus-descendens 9%, descendens-transversum 9%, rectum-rectum 9%, cecum-ascendens 3.7%, cecum-sigmoid 2.8%, sigmoid 2.8, ascends 1.8%. Feces routine: no abnormalities 85.3%, yeast (+) 11.9%, pseudohifa (+) 9%, e. coli (+) 9%, stool color (+) 9%. The mean Hb: UC 11.8 ± 7.5 (g/dl), CD 11.9 ± 0.2 (g/dl); Ht UC 36.6 ± 5.4 (%), CD 55.7 ± 4.9 (%); AL UC 8.7 ± 4.2 (10 3 /μl), CD 10.7 ± 4.4 (10 3 /μl); AT UC 304 ± 98.2 (10 3 /μl), CD 360 ± 97.6 (10 3 /μl); stab neutrofil UC 4 ± 1 (%), CD 5 ± 0.9 (%); segment neutrofil UC 51.9 ± 7.1 (%), CD 56 ± 5 (%); limfosit UC 37.2 ± 6.8 (%), CD 33.5 ± 5 (%); monosit UC 5 ± 1.4 (%), CD 4.5 ± 1.2 (%); eosinofil UC 1.8 ± 0.7 (%), CD 1.5 ± 0.5 (%); basofil UC 0.5 ± 0.4 (%), CD 0.6 ± 0.5 (%). Conclusion: The most cases IBD was UC, especially in male with high class economy, senior high school graduated and Surakarta resident were the dominance characteristics. Chronic diarrhea and pancolitis were the dominance clinical overview. Anemia and normal feses 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

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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-TNFα 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 inflammatory bowel 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 hemicolectomy 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.

Conclusion: 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 fistulating 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 hemicolectomy 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.

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 choledochoolithiasis
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Objective: To evaluate the three steps algorithm for selective bile duct cannulation (SBDC) for naïve choledochoolithiasis. Methods: We evaluated the rate of SBDC and post-procedure pancreatitis (PPP) under the algorithm among 281 patients with choledochoolithiasis 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 (Odd’s 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 post-procedure pancreatitis (PPP) was 98.2% (276/281) and 7.5% (21/281), respectively. Conclusion: In patients with naïve choledochoolithiasis 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. choledochoolithiasis; 3. post-ERCP pancreatitis

Biliary Tract
P-256
Tuberculous cholecystitis with cholecysto-colonic fistula: a case report
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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 cholangiopancreatography 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 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 epitheloid 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 discharged 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
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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-glutamyltranseptidase (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

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

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

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**Biliary Tract**

**P-258**

**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 mesilate. 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 mesilate (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

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**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.

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36 patients underwent ESP, mean age 63 years (33–83), males – 23. Mean tumor diameter was 18 mm (7–37). Complications – 2 bleeds (managed endoasopically), 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. Conclu-

dation: 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 choledochocolonic fistula masquerading as colonic polyp**

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**Affiliations:** Cheongju Saint Mary’s Hospital, Cheongju Saint Mary’s Hospital

**Objective:** Choledochocolonic fistulas are rare complications of gallstones with a variable clinical presentation. Choledochocolonic 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 air 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 cholecystec-
tomy with segmental colonic resection was done. **Conclusion:** On operation field, a choledochocolonic fistula was noted. After the operation, the diarrhea was stopped and the patient recovered completely.

**Key Word(s):** 1. choledochocolonic 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 RUxy 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 esophagogojejunostomy, 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**

**Presenting Author:** WEN HSN HUANG

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**Corresponding Author:** WEN-HSIN HUANG

**Affiliations:** China Medical University Hospital, China Medical University Hospital, China Medical University Hospital

**Objective:** Adenomas of the major duodenal papilla are not common. Surgical resection is usually performed as a definitive treatment. Endo-

coscopic 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 techni-

cally 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 sepis. 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
Biliary Tract
P-263
Treatment of common bile duct stone for the oldest-old patients

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Objective: One of the most dangerous complications in endoscopic ultrasound-guided hepatocystogastrostomy (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.

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 occurs, coil embolization and blood injection can be an effective treatment without the need for another operation.

Key Words: 1. biliary stent; 2. complications; 3. hepatocystogastrostomy

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 hepatocystogastrostomy (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.

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 occurs, coil embolization and blood injection can be an effective treatment without the need for another operation.

Key Words: 1. biliary stent; 2. complications; 3. hepatocystogastrostomy

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: One of the most dangerous complications in endoscopic ultrasound-guided hepatocystogastrostomy (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.

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 occurs, coil embolization and blood injection can be an effective treatment without the need for another operation.

Key Words: 1. biliary stent; 2. complications; 3. hepatocystogastrostomy

Biliary Tract
P-266
Treatement of common bile duct stone for the oldest-old patients

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Objective: At our hospital, indication for EPLBD is 10 mm or larger stone diameter or 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 in May 2012 till February 2013 (Group B).

Results: Group A was found to have a mean age of 91.7, average maximum stone diameter of 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, incidental 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 Words: 1. treatment of common bile duct stone
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 somnolence, arthralgia, and hair loss. No hypertension, diabetes, asthma, and allergy. On physical examination, we found icteric sclerae, cardiomyopathy 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 thrombosis 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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Affiliations: University of Indonesia, University of Indonesia, University of Indonesia, University of Indonesia

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, in 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 yGT 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 bile 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 choledangiopancreatography, 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, cholecodochoplasty, 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
Presenting Author: SEOK JEONG
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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 12 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 Pheoporphide 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 choledangiopancreatography between elderly patients and very elderly patients
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Objective: Endoscopic retrograde choledangiopancreatography (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
Objective: The Tokyo Metropolitan Government has jurisdiction over 11 remote islands with 28,000 inhabitants. Patients with acute disease are mainly transported to our hospital by aircraft (helicopters and airplanes) due to concerns in changes of condition over time. Next to upper gastrointestinal bleeding, acute cholangitis is the second most common cause of emergency transportation from islands to our division. The aim of this study was to review cases of acute cholangitis transported from islands for assessment of relevance. Methods: Thirty-nine cases of acute cholangitis transported from islands to Tokyo Metropolitan Hiroo Hospital between April 2006 and March 2014 were reviewed retrospectively from the medical records. According to the Tokyo Guidelines, we evaluated changes in vital signs and laboratory data before transport and on arrival, together with outcomes and complications. Results: Based on the severity assessment criteria, 13 cases were considered severe and 26 were considered moderate. All cases were transported within 24 h from onset, and mean time from request for transport to arrival was about 4 h. Body temperature (P < 0.01), systolic blood pressure (P < 0.01) and blood urea nitrogen (P = 0.01) were significantly improved on arrival. On the other hand, white blood count (P < 0.01), C-reactive protein (P < 0.01) and serum total bilirubin (P = 0.03) were significantly increased and serum albumin was significantly decreased (P < 0.01). Thirty-one cases (severe, 13/13; moderate, 18/26) underwent emergency ERCP and urgent or early biliary drainage was performed in 28 cases. All cases were improved and discharged without sequelae. Conclusion: In this study, cases of severe and moderate acute cholangitis transported from islands displayed apparent improvement on arrival compared to before transport, probably due to the effect of initial medical treatment comprising general supportive care and antibiotics. Nevertheless, inflammation continued exacerbating below the surface, requiring timely and successful drainage and adequate intensive care. Key Word(s): 1. Cholangitis; 2. ERCP

Biliary Tract

P-271

Acute cholangitis from islands in Tokyo by emergency aircraft

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Objective: The Tokyo Metropolitan Government has jurisdiction over 11 remote islands with 28,000 inhabitants. Patients with acute disease are mainly transported to our hospital by aircraft (helicopters and airplanes) due to concerns in changes of condition over time. Next to upper gastrointestinal bleeding, acute cholangitis is the second most common cause of emergency transportation from islands to our division. The aim of this study was to review cases of acute cholangitis transported from islands for assessment of relevance. Methods: Thirty-nine cases of acute cholangitis transported from islands to Tokyo Metropolitan Hiroo Hospital between April 2006 and March 2014 were reviewed retrospectively from the medical records. According to the Tokyo Guidelines, we evaluated changes in vital signs and laboratory data before transport and on arrival, together with outcomes and complications. Results: Based on the severity assessment criteria, 13 cases were considered severe and 26 were considered moderate. All cases were transported within 24 h from onset, and mean time from request for transport to arrival was about 4 h. Body temperature (P < 0.01), systolic blood pressure (P < 0.01) and blood urea nitrogen (P = 0.01) were significantly improved on arrival. On the other hand, white blood count (P < 0.01), C-reactive protein (P < 0.01) and serum total bilirubin (P = 0.03) were significantly increased and serum albumin was significantly decreased (P < 0.01). Thirty-one cases (severe, 13/13; moderate, 18/26) underwent emergency ERCP and urgent or early biliary drainage was performed in 28 cases. All cases were improved and discharged without sequelae. Conclusion: In this study, cases of severe and moderate acute cholangitis transported from islands displayed apparent improvement on arrival compared to before transport, probably due to the effect of initial medical treatment comprising general supportive care and antibiotics. Nevertheless, inflammation continued exacerbating below the surface, requiring timely and successful drainage and adequate intensive care. Key Word(s): 1. Cholangitis; 2. ERCP

Biliary Tract

P-272

Intrahepatic cholangiocarcinoma as long-term outcome after hepatolithiasis treatment

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Objective: Hepatolithiasis is a well known risk factor of cholangiocarcinoma. Despite advances in diagnostic modalities, diagnosing cholangiocarcinoma in patients with hepatolithiasis still challenging and there are not enough reports on the incidence of cholangiocarcinoma in patients with hepatolithiasis after treatment. We aimed to evaluate the incidence and clinical characteristics of cholangiocarcinoma in patients with hepatolithiasis who underwent liver resection or non-resection. Methods: Among a total of 257 patients who received treatment for hepatolithiasis, 236 patients were eligible for analysis. 92 patients underwent liver resection (resection group) and 144 patients did not (non-resection group). The data was collected retrospectively and analyzed. Results: The incidence of cholangiocarcinoma was 6.8% (16/236) during follow-up period (mean 41 ± 41 months). Cholangiocarcinoma occurred 6.3% (6/95) and 7.1% (10/141) in resection and non-resection group respectively (p = 0.263). When analyzed according to completeness of stone removal regardless of treatment modality, Cholangiocarcinoma incidence was higher in patients with residual stone(10.4%) than patients with complete stone removal (3.3%), but there was no significant difference (p = 0.263). On univariate analysis, none of the factors (age, gender, CA19-9, stone location, bile duct stenosis, liver atrophy, stone recurrence and liver resection) showed relationship with the incidence of cholangiocarcinoma. Conclusion: Hepatic resection for hepatolithiasis is considered to have a limited value in preventing of cholangiocarcinoma and the patients should be carefully followed even after hepatic resection. A combination of different treatment modalities is necessary to decrease the residual stone and improve the outcome of the patients with hepatolithiasis. Key Word(s): 1. cholangiocarcinoma; 2. hepatolithiasis; 3. hepatic resection

Figure 1
Comparison of ERCP complication rate between asymptomatic and symptomatic CBD stone patients

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 asymptomatic CBD stone and 17 patients, asymptomatic CBD stone. Mean age of asymptomatic and symptomatic group was 68.2 ± 7.1 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 dilation. 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 Words: 1. endoscopic retrograde cholangiopancreatography complication common bile duct stone

Endoscopic papillary balloon dilation for the management of bile duct stones in patients with Billroth-II gastrectomy

Objective: Endoscopic common bile duct stone removal is relatively difficult in patients with a history of Billroth-II gastrectomy and endoscopic sphincterectomy (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 Words: 1. endoscopic papillary balloon dilation Billroth-II gastrectomy bile duct stone
Lymphoid hyperplasia arising from bile duct and gallbladder simultaneously mimicking cholangiocarcinoma and gallbladder cancer

**Objective:** Lymphoid hyperplasia is a rare benign lymphoproliferative disorder. It can occur in various organs. However, lymphoid hyperplasia arising from extrapancreatic 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 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 5 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 Words(s):** 1. lymphoid hyperplasia; 2. bile duct; 3. gallbladder

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**Biliary Tract**

P-280

**Bile duct adenoma mimicking a klatskin tumor in unusual location: a case report**

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**Affiliations:** 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 wall invasion.

**Results:** Extended left hepatectomy, caudate lobectomy, cholecystectomy, CBD resection was performed. At laparotomy, there was 1.5 cm sized polyoid 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 discharged 3 weeks following surgery without any problems.

**Conclusion:** Bile duct adenoma is a 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 Words(s):** 1. bile duct adenoma; 2. unusual location
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
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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
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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, and apoptosis of cholangiocarcinoma cell lines. In vivo nude mouse 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, cycloamine 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
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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. In cases 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 failed conventional ERC even in the era of EUS-guided biliary intervention.

Key Word(s): 1. rendezvous ERC

Biliary Tract

P-285
Prediction of post-ercp pancreatitis by 4-hour post-ercp serum amylase and lipase level
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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 4-hour post-ERCP serum amylase and lipase levels, 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
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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, to our knowledge, this is the first reported case of direct observer feedback demonstrating a reduction in the incidence of post ERCP pancreatitis.

Methods: 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. ERC; 2. audit; 3. pancreatitis; 4. feedback
Biliary Tract
P-287
What can histopathology say about acute appendicitis?
Presenting Author: DEWA PAKSHAGE CHULA KANISHKA ANANDA LAL
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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 appendectomy cases were included. Clinicopathological assessment was done over 2 years at the university surgical unit of National Hospital of Sri Lanka was analyzed. Histopathological evaluation 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. Fecocelitis (49%), lymphoid hyperplasia (38%), fibrosis (8%), parasites (3%) and endometrial tissue (3%) were found obstructing the lumen. 78% of appendices with fecocelitis 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 fecocelitis can commonly cause acute appendicitis. Lymphoid hyperplasia (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-289
Effect of rowachol on prevention of postcholecystectomy syndrome after laparoscopic cholecystectomy: prospective multicenter randomized controlled trial
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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 demographic, 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 and higher difficulty score to perform LC, more frequent pathology and T2 stage of the 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-288
Rationale of routine histopathological analysis of gall bladder in symptomatic gallstone disease
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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 cholecystectomy cases were included 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% was 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
**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

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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%), 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**

**P-291**

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
Therapeutic ERCP for common bile duct stones is safe and effective even in the elderly

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 = 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

P-294
The risk factor of spontaneous hemobilia after liver transplantation
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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 Words(s): 1. liver transplantation; 2. biliary complication; 3. spontaneous hemobilia; 4. risk factor

Biliary Tract

P-295
Intraductal placement of modified fully covered metallic stent for distal malignant biliary obstruction
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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 Words(s): 1. distal malignant biliary obstruction; 2. covered self-expandable metallic stent
Biliary Tract

P-296

Repetitive endoscopic revision for high-grade malignant hilar biliary strictures previously managed by bilateral stent-in-stent placement with cross-wired metallic stents

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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 gall-bladder 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; 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

P-297

Obstructive jaundice prognostic factors based on hospital length of stay and mortality

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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 was 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 suggests hepatorenal 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

P-298

The efficacy of ercp under intubated general anesthesia for the management of common bile duct stones in elderly patients

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Objective: Endoscopic retrograde cholangio-pancreaticography (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. biliary stone; 3. elderly; 4. Vietnamese

### Biliary Tract

**P-299**

**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, 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**

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

**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...
Novel, modified approach to single-balloon enteroscopy for endoscopic retrograde cholangiography in patients with altered gastrointestinal anatomy

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**Objective:** Increasing evidence has reported the usefulness of single-balloon enteroscopy (SBE) for endoscopic retrograde cholangiography (ERC) in postoperative patients with altered gastrointestinal anatomy. However, the technical limitations or parameters of SBE necessitate the use of special endoscopic instrumentation or the replacement endoscope with another one through the overtube. Here, we evaluated the efficacy of a novel SBE approach using PCF-PQ260L (with passive bending and a high-force transmission; working length, 168 cm; working channel diameter, 2.8 mm; Olympus Medical Systems Corp., Tokyo, Japan) in patients with altered gastrointestinal anatomy, without the use of special or prototype instrumentation or enteroscope replacement.

**Methods:** Between February 2012 and March 2014, 19 modified SBE-assisted ERC procedures were performed in 14 postoperative patients with altered gastrointestinal anatomy (Roux-en-Y gastrectomy in five, Roux-en-Y hepaticojejunostomy in three, Billroth-II gastrectomy in two, pancreatoduodenectomy in two, and gastrojejunostomy in two). In all cases, a side hole was made 110 cm from the distal end of the overtube. ERC was performed using a PCF-PQ260L inserted through the side hole into the gastrointestinal tract. We retrospectively evaluated the success rate of reaching the blind end, the mean time required to reach the blind end, the diagnostic success rate, the therapeutic success rate, the mean procedure time, and complications.

**Results:** The success rate of reaching the blind end was 94.7% (18/19). The mean time required to reach the blind end was 34.0 min. The diagnostic success rate was 89.5% (17/19). The mean procedure time was 72.6 min. The success rate of overall modified SBE-assisted ERC was 78.9% (15/19). The complication rate was 26% (hyperamylasemia in four patients).

**Conclusion:** Diagnostic and therapeutic ERC using our novel approach of modifying SBE without the use of special or prototype instrumentation or enteroscope replacement is safe and effective.

**Key Word(s):** 1. single-balloon enteroscopy; 2. endoscopic retrograde cholangiography (ERC); 3. roux-en-y reconstruction; 4. billroth-II gastrectomy
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 transamidase (GGT), aspartate transaminase (AST), and alanine transaminase (ALT) level s 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

<table>
<thead>
<tr>
<th>Liver biochemical test</th>
<th>Gallstone location</th>
<th>n</th>
<th>Median (min.-max.)</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct bilirubin (mg/dL)</td>
<td>Choledocholithiasis</td>
<td>16</td>
<td>0.15 (0.02–9.86)</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Cholecystolithiasis</td>
<td>97</td>
<td>4.40 (0.42–9.39)</td>
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<tr>
<td>ALP (U/L)</td>
<td>Choledocholithiasis</td>
<td>8</td>
<td>78.5 (45–552)</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Cholecystolithiasis</td>
<td>36</td>
<td>252 (111–1093)</td>
<td></td>
</tr>
<tr>
<td>GGT (U/L)</td>
<td>Choledocholithiasis</td>
<td>5</td>
<td>103 (14–430)</td>
<td>0.017</td>
</tr>
<tr>
<td></td>
<td>Cholecystolithiasis</td>
<td>17</td>
<td>326 (220–803)</td>
<td></td>
</tr>
<tr>
<td>SGOT (U/L)</td>
<td>Choledocholithiasis</td>
<td>14</td>
<td>23 (8–224)</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Cholecystolithiasis</td>
<td>104</td>
<td>56 (14–168)</td>
<td></td>
</tr>
<tr>
<td>SGPT (U/L)</td>
<td>Choledocholithiasis</td>
<td>14</td>
<td>27 (7–323)</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Cholecystolithiasis</td>
<td>103</td>
<td>52.5 (28–248)</td>
<td></td>
</tr>
</tbody>
</table>

*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

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**Biliary Tract**

**P-305**

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. None of these 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

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**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 lower CI upper 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), and 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
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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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 subjects 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 back ground from internet-based survey was better than community based (college or better 79.2%/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: 7.46g%). Esophagastroduodenoscopy (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 (jejenum) 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 (jejenum) 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. double balloon enteroscopy
Gastrointestinal Bleeding

P-310
Risk factors of stress related mucosal disease in intensive care unit dr. Kariadi hospital semarang

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Objective: Background: Stress related mucosal disease (SRMD) is a gastric mucosal damage as a result of physiological stress of severe illness. Gastrodoudenal erosions and subepithelial bleeding usually occurs within 24 hours after the critically ill patients were admitted to the intensive care unit (ICU). The endoscopic diagnosis for majority of patients during in ICU can not be done, so diagnosis only the presence of overt gastrointestinal bleeding in patients with no previous symptoms of gastrointestinal bleeding. Based on the references, if the gastrointestinal bleeding occurs in critically ill patients, the possibility of the disease is more severe conditions. If the risk factors of SMRD have known, the prevention of bleeding in patients with a risk of SMRD who were treated in the ICU Dr Kariadi Hospital can be done. Objective: To determine risk factors SMRD in patients admitted to the ICU Dr.Kariadi Hospital. Methods: A retrospective case-control study in patients who admitted to the ICU Dr. Kariadi Hospital Semarang in 2010. Samples were taken in 52 patients with SRMD cases and 52 control patients with no SRMD. Results: In bivariate analysis, the use of a ventilator for more than 48 hours (p = 0.001, OR = 4.34, CI: 1.84–10.28), sepsis (p = 0.003 OR = 5.8, CI: 1.80–18.84), acute renal impairment (p = 0.03 OR = 2.8, CI :1.21–6.37) and hypotension (p = 0.001, OR = 8.2, CI: 3.41–19.84) shows the risk factors that influence the incidence SRMD. Multivariate analysis found three variables that influence risk factors independently of SRMD events, there were: the use of a ventilator for more than 48 hours (p = 0.001 OR = 6.26, CI: 2.23 to 17.63), p = 0.002 hypotension (OR = 6.45, CI: 1.99–20.84) and sepsis p = 0.005 (OR = 6.88, CI: 1.78–26.66), which were the strong influence of risk factors on the incidence SRMD Conclusion: In this study, the use of a ventilator for more than 48 hours, sepsis and hypotension are risk factors that strongly influence the incidence of SRMD.

Key Word(s): 1. SMRD; 2. risk factors

Gastrointestinal Bleeding

P-311
A case of hematochezia due to mycobacterium atypical

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Objective: Infection from Mycobacterium species has a variety of clinical presentations. Atypical mycobacteria was also known as nontuberculous mycobacteria (NTM) or mycobacteria other than tuberculosis. The most common type of atypical mycobacteria that may cause significant disease are Mycobacterium avium complex (MAC), Mycobacterium fortuitum complex and Mycobacterium kansasii. Atypical mycobacteria have caused many types of infection including gastrointestinal infection. The most common clinical manifestation of NTM disease are Lung disease (94%), lymphatic (3%), skin/foul tissue and disseminated disease (3%). Diagnosis of infection due to atypical mycobacterial differs depending on the site of infection. Results: Herein, we presented a case of hematochezia due to mycobacterium atypic. A 22 years old female, came to hospital and complained of bloody stool since 1 month prior to admission. Fever, weight loss, abdominal pain, vomiting were not found. There is no abnormality on physical examination. Laboratory findings were negative for stool acid fast test, IgG anti TB, and TB PCR. Other routine blood studies were normal. From Computed tomography (CT) we found thickening of rectum mucous, 4 cm from anal with suspicion of inflammation. No enlargement of lymphnode, no enlargement of bowel suspicious to malignacy were found. Colonoscopy showed cobblestone appearance in the rectum. No abnormality in the other part of colon and terminal ileum was observed. Histopathology showed granulomatous colitis due to atypical mycobacteria. Conclusion: This pasien was treated with Rifampicin, Isoniacid, ethambutol and pyrazinamid and the result was good.

Key Word(s): 1. hematochezia; 2. mycobacterium atypic

Gastrointestinal Bleeding

P-312
Two cases with advanced gastric cancer showing massive bleeding successfully treated by transcatheter arterial embolization

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Objective: Transcatheter arterial embolization (TAE) is employed as an alternative procedure to achieve hemostasis of massive gastrointestinal hemorrhage in patients in whom endoscopic procedures failed to arrest bleeding. Methods: We report on 2 cases with gastrointestinal hemorrhage showing massive hemorrhage successfully treated by TAE. Results: (Case-1) A 80 year old man showing shock condition was admitted to our hospital due to hematemesis. Although he diagnosed with gastric cancer 2 month before, he refused to receive surgical therapies. Emergent endoscopy revealed an advanced gastric cancer with massive spurting bleeding, but vessels responsible for bleeding were not detected. Angiography through the celiac artery visualized extravasation of contrast medium from the gastric artery. TAE with micro-coils was performed, and complete hemostasis was achieved without complications. Re-bleeding did not occur for more than 2 months after the procedure. (Case-2) A 64 year old man was admitted to our hospital due to hematemesis and melena.
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 Words:** 1. gastrointestinal hemorrhage; 2. gastric cancer; 3. transcatheter arterial embolization (TAE)

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**Gastrointestinal Bleeding**

**P-313**

**Gastropathy nsaid is the most cause of upper gastrointestinal bleeding in pekanbaru, riau, indonesia**

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**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 undergone 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 cases were 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 Words:** 1. endoscopic finding; 2. upper gastrointestinal bleeding; 3. gastropathy NSAID

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**Gastrointestinal Bleeding**

**P-314**

**Spleen size: a predictor of variceal bleeding in myeloproliferative disease with portal hypertension**

**Presenting Author:** RAVISHANKAR ASOKKUMAR  
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**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 (30%), 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 cm 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 Words:** 1. portal hypertension; 2. myeloproliferative disease; 3. variceal bleeding

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**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**

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**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 intest-
Non-variceal upper gastrointestinal bleeding in cirrhotic portal hypertensive patients

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 report 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 portal systemic shunts in a patient with Turner syndrome.

Key Word(s): bleeding; hyperammonaemia; intestinal phlebectasia; congenital absence of the portal vein; 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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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, endoscopic 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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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 report 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 portal systemic shunts in a patient with Turner syndrome.

Key Word(s): bleeding; hyperammonaemia; intestinal phlebectasia; congenital absence of the portal vein; Turner syndrome.
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 cirrhatic 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 hepatogastroenterology.

Key Word(s): 1. bleeding; 2. non-variceal; 3. cirrhosis; 4. varices; 5. endoscopy

Gastrointestinal Bleeding

P-318

Multidisciplinary treatment of repeated massive bleeding after endoscopic mucosal resection (emr)

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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

Figure 1
Gastrointestinal Bleeding
P-319
Hepatocellular carcinoma: twenty-seven years experience from a medical center in Eastern Taiwan
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Objective: Background: The patients who had simultaneous hepatocellular carcinoma and cholangiocarcinoma was not frequent. Aims: In order to investigate the manifestations of patients with hepatocellular carcinoma, we performed this retrospective study. Methods: From August 1986 to April 2014, the patients with diagnosis of hepatocellular 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 (M 8, F2) were included. The average age was 58.1 years (49–71). The AFP was 384 14 ng/mL (5.3–382 000 ng/mL, normal <81), 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. Hepatocellular 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 Words: 1. hepatocellular 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
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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% (538/1934) of specimens. After endoscopy, 1 patient of 1049 patients who took no antiithrombotic 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 Words: 1. endoscopic biopsy; 2. antiplatelet agent; 3. bleeding; 4. biopsy forceps; 5. anti-thrombotic agent

Gastrointestinal Bleeding
P-321
Current clinical features in elderly patients with gastrointestinal bleeding
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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 (LGB) 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 LGB 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**

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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 pancreatic tissue 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

**P-323**

**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

P-324
Postoperative hemorrhage after endoscopic treatment of colorectal tumors undergoing antithrombotic treatment

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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%(1/1834) in No medication group, and there were no significant differrence. It was 1.4%(1/73) in continuation of aspirin, 0.8%(1/128) in withdrawal of aspirin, and there were no significant differrence. 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 (odd ratio 14.80[95 % CI 3.22–67.96], p = 0.001), location(odd ratio 3.46[95 % CI 1.25–9.61], p = 0.017) and antithrombotic therapy(odd ratio2.96[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 is reasonable to observe the new guidelines.

Key Word(s): 1. postoperative hemorrhage; 2. antithrombotic treatment; 3. colorectal

Gastrointestinal Bleeding

P-325
Factors related to re-bleeding after endoscopic hemostasis of peptic ulcer

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Objective: Our hospital is one of the member s of Tokyo ER, and peptic ulcer s are one of the main disease s 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 mediation, 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

P-327
A comparison between endoscopic clipping and conservative treatment in patients with diverticular bleeding

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Objective: In July 2005, the Japan Gastroenterological Endoscopy Society published new guidelines (GL) for the endoscopic hemostasis of peptic ulcer. The factors related to re-bleeding were Forrest classification (Ia vs. others; OR = 2.03, P < 0.05) and ulcer location (duodenum vs. stomach; OR = 2.21, P < 0.05). 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
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 (A, n = 22) and conservative treatment 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 were 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 was also 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
P-328
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
P-329
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
P-330
Clinical characteristics of rebleeding cases with overt obscure gastrointestinal bleeding
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Objective: This study aimed to characterize the clinical characteristics of rebleeding cases with overt obscure gastrointestinal bleeding. Methods: This study 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

Poster
Objective: Capsule endoscopy (CE) and double balloon endoscopy (DBE) are useful tools 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 Words: 1. obscure gastrointestinal bleeding; 2. rebleeding

Gastrointestinal Bleeding

P-331
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 analysed. 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 DI/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; angiobembolisation (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 Words: 1. duodenal ulcer; 2. bleeding ulcer; 3. therapeutic endoscopy; 4. surveillance

Gastrointestinal Bleeding

P-332
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 non-steroidal 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 Words: 1. peptic ulcer; 2. gastrointestinal bleeding; 3. Helicobacter pylori; 4. non-steroidal anti-inflammatory drug
Gastrointestinal Bleeding

P-333
Comparison of clinical outcome between first year GI fellows and attending doctors on the treatment of UGIB in the emergency department at night

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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). 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 Words(s): 1. first year GI fellows upper gastrointestinal bleeding emergency department case control study

Gastrointestinal Bleeding

P-334
Small-intestinal mucosal injury induced by non-steroidal anti-inflammatory drugs or antiplatelet agents in our hospital

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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. Endoscopichemostasis 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 Words(s): Na
Gastrointestinal Bleeding

P-335
Clinical features of cases with insufficient endoscopic hemostasis against hemorrhagic gastroduodenal ulcers

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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: 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: 4.377, P = 0.0049) and location of lesion on duodenum and 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

P-336
Successful endoscopic treatment of bleeding anorectal varices in a terminally ill cancer patient

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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

P-337
Clinical outcomes of endoscopic bleeding control in patients with gastric cancer

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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 forceps (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. 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 Words:** 1. gastric cancer; 2. bleeding control; 3. endoscopy

### Gastrointestinal Bleeding

**P-338 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 Words:** 1. non-variceal upper GI bleeding; 2. transarterial embolization

### Gastrointestinal Bleeding

**P-339 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 Words:** 1. OGIB; 2. CE
Gastrointestinal Bleeding
P-340
Is routine second-look endoscopy effective in managing acute non-variceal upper gastrointestinal bleeding?
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Objective: The efficacy of routine second-look endoscopy in acute non-variceal upper gastrointestinal (UGI) bleeding has been evaluated in several randomized, controlled trials that yielded disparate results. It may be more optimally performed in selected patients at very high risk of rebleeding. This study aims to analyze the clinical and endoscopic factors that contribute to intractable endoscopic hemostasis and to determine the optimal role of second-look endoscopy.

Methods: Prospectively collected UGI bleeding registry data was reviewed and data from 464 patients who underwent UGI endoscopy for acute non-variceal UGI bleeding from 8 hospitals in Korea between February 2011 and December 2013 were analyzed. Significant predictive factors (P < 0.05) of intractable endoscopic hemostasis in univariate analysis were entered in a multivariate logistic regression analysis.

Results: Successful hemostasis was achieved in 394 patients by using initial endoscopic procedures. Seventy patients at the second-look endoscopy were considered intractable or insufficient to the initial endoscopic hemostasis, and they required second endoscopic hemostasis. Univariate analysis significantly related intractable endoscopic hemostasis with large amount of transfusion (≥5 units), Glasgow-Blatchford score, Rockall score, Forrest bleeding type Ia and degree of initial endoscopic hemostasis. Multivariate analysis showed that large amount of transfusion and Rockall score were only predictive factors of secondary endoscopic hemostasis.

Conclusion: Large amount of transfusion and Rockall score are identified as independent risk factors associated with intractable initial endoscopic hemostasis in patients with acute non-variceal bleeding. Second-look endoscopy after initial endoscopic hemostasis in these patients is not routinely indicated and be reserved for selected patients with high risk of rebleeding.

Key Word(s): 1. second look endoscopy; 2. acute non-variceal upper gastrointestinal bleeding

Gastrointestinal Bleeding
P-341
Clinical differences and outcomes of non-ulcer bleeding compared with ulcer bleeding in non-variceal upper gastrointestinal bleeding: multicenter database study
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Objective: This study aimed to clarify the features of non-peptic ulcer related bleeding compared with peptic ulcer related bleeding in non-variceal upper gastrointestinal bleeding (NVUGIB) patients.

Methods: We investigated date from prospectively registered database of 1843 patients who underwent endoscopy due to UGIB in six medical centers in Daegu, Korea between January 2011 and December 2013. Patients with NVUGIB were divided into two groups: Group UB, peptic ulcer bleeding; Group NUB, non-peptic ulcer bleeding except for cancer bleeding. We compared the clinical characteristics, comorbidities, and clinical outcomes of UGIB between the two groups.

Results: Of 1494 patients with NVUGIB, 1116 (74.7%) were Group UB and 318 (21.3%) was Group NUB. The mean hemoglobin levels (8.93 ± 2.84 versus 10.28 ± 3.12, p < 0.001) and systolic blood pressure (115.17 ± 23.26 versus 119.54 ± 25.36, p < 0.001) on admission were significantly lower in Group UB than in Group NUB. Glasgow-Blatchford score (11.19 ± 3.56 versus 9.82 ± 4.18, p < 0.001) and full Rockall score (4.70 ± 2.06 versus 3.91 ± 2.32, p < 0.001) were higher in Group UB than in Group NUB. However, there was no significant difference in overall mortality (OR = 1.167, 95% CI: 0.600–2.272, p = 0.648), bleeding related mortality (OR = 2.901, 95% CI: 0.879–9.567, p = 0.087) and rebleeding (OR = 1.319, 95% CI: 0.850–2.046, p = 0.215) between the two groups.

Conclusion: Although Group UB exhibited relatively severe clinical signs, there was no significant difference in clinical outcomes between the two groups. Therefore hemostatic strategies using medical, endoscopic, or other modality are also important in the treatment of non-peptic ulcer bleeding.

Key Word(s): 1. non-variceal gastrointestinal bleeding; 2. ulcer bleeding; 3. non-ulcer bleeding

Gastrointestinal Bleeding
P-342
Clinical differences of scoring systems for upper gastrointestinal bleeding
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Objective: Upper gastrointestinal bleeding is a considerable cause of mortality and hospital admission. Acute management for upper gastroin-
Gastrointestinal Bleeding

P-343
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 = 0.882, 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 Words: 1. antibiotics prophylaxis; 2. peptic ulcer bleeding; 3. liver cirrhosis
Gastrointestinal Bleeding

P-345
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

P-346
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

P-347
Choosing between endoscopic schlerotherapy and endoscopic ligation for esophageal varices case report and literature review

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Objective: Endoscopic schlerotherapy 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 schlerotherapy. 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 woman get senal variceal ligation. At the last endoscopic evaluation, there was esophageal varices lining between cicatrix, the shape of varix is wide and look like a fan, schlerotherapy was done. Case 2. A man with liver cirrhosis and has esophageal varices continue to the gastroesophageal varices, it’s better schlerotherapy. Case 3. A man with liver cirrhosis and has esophageal varices continue to the gastroesophageal varices, it’s better schlerotherapy. 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 schlerotherapy. When the shape of the varix is wide and look like a fan, the diameter of ‘adaptor’ smaller then the varix, so better schlerotherapy. Also the varix has connection to the GOV, liquid which was injected will be spread out to the GOV than ligation. Conclusion: Schlerotherapy 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. schlerotherapy endoscopy; 3. type of esophageal varices
Gastrointestinal Bleeding
P-348A
A 2-year study: etiology of upper gastrointestinal bleeding in Cipko Mangunkusumo Hospital
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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 at obtaining recent data on the etiology of UGB in Cipko Mangunkusumo hospital.

Methods: Data was collected from Endoscopy Record System at Gastrointestinal Endoscopy Centre, Cipko 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. endoscopic finding; 2. upper gastrointestinal bleeding; 3. erosive gastritis

Gastrointestinal Bleeding
P-349
Erosive gastritis is the most cause of gastrointestinal bleeding in Pontianak, West Kalimantan
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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 was 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
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Objective: This aims to present a 17 year old Filipino male who presented for intermittent hematoma 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
Gastrointestinal Bleeding

**P-351**

**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

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**Gastrointestinal Bleeding**

**P-352**

**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

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**Gastrointestinal Bleeding**

**P-353**

**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 min ± 1.52 min in group A vs 9.35 min ± 4.8 min in Group B, p < 0.05) was shortened in the hood-assisted group. The success rate was 100% in group A and 82.8% 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 sclero-therapy; 3. hood-assisted
Gastrointestinal Bleeding

**P-354**

**Therapeutic barium enema for colonic diverticular bleeding**

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**Objective:** Colonic diverticular bleeding is one of the most common causes of lower intestinal bleeding. Although most bleeding episodes are mild and stop spontaneously, massive bleeding requiring therapeutic intervention occurs in a significant number of patients. Therapeutic barium enema was first reported in 1970. The effectiveness and the less invasiveness of this therapy has been reported. However it has not been performed widely. The aim of this study was to evaluate the effectiveness and adverse events of barium enema for the treatment of colonic diverticular bleeding.

**Methods:** We examined 90 consecutive patients admitted between January 2000 and March 2014 with colonic diverticular bleeding. The diagnosis was made when all three of the following criteria were fulfilled, 1) There was fresh lower intestinal bleeding, 2) Diverticulum were detected by colonoscopy or barium enema, 3) It was possible to exclude other diseases which caused lower intestinal bleeding. 

**Results:** 90 patients (49 males, 41 females, median age 75.0 years, range 29–97) were included. 59 patients (65.6%) were considered to bleed from the left colon and 31 (34.4%) from the right. 23 patients (25.6%) required blood transfusion. 13 patients (14.4%) were in a state of shock. 53 patients (58.9%) had comorbidities causing arteriosclerosis. 23 patients (25.6%) were treated successfully by conservative treatment (Group A). 48 patients (53.3%) required therapeutic barium enema (Group B). 46/48 patients (95.8%) achieved hemostasis. One patient who combined diverticulitis developed a perforation following barium enema requiring emergency surgical treatment. One elderly patient died due to cerebral infarction. The rates of recurrent bleeding following discharge were 15/42 (35.7%) in Group A and 11/48 (22.9%) in Group B (P = 0.181).

**Conclusion:** Therapeutic barium enema achieved a high rate of hemostasis. Careful attention was needed for the treatment of patients who showed the signs of diverticulitis and who were elderly with comorbidity. The rate of recurrent bleeding was lower in Group B, however there was no statistically significant difference between the groups.

**Key Word(s):** 1. barium enema; 2. colonic diverticular bleeding

Gastrointestinal Bleeding

**P-355**

**Endoscopic hemostasis for the gastrointestinal bleeding from the diverticulum of third portion of duodenum, a case report**

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**Objective:** Diverticulum at the third portion of duodenal diverticulum is a rare cause of upper gastrointestinal bleeding. All of reported cases were required surgical or transcatheter arterial intervention. Methods: Here, we report a case of diverticular bleeding at the third portion of duodenal diverticulum successfully treated by endoscopic hemostasis. Results: A 68-year-old female referred to St. Marianna University Hospital to evaluate her episode of tarry stool without abdominal pain. Her past history was the operation of an atrial septal defect (ASD) 15 years previously. She took aspirin and warfarin for ASD. Her physical examination was unremarkable except for tarry stool on rectal examination. Laboratory values were normal including haemoglobin concentration of 12.7 g/dL. She underwent esophagogastrooduodenoscopy using GIF-Q260J (Olympus, Tokyo, Japan). No blood retention or bleeding point was observed in the esophagus, stomach nor duodenal bulb. A little fresh blood was observed when the endoscope was inserted to the inferior duodenal angle, but the bleeding source was not able to be confirmed. We then changed the scope to PCF-PQ260L (Olympus) with passive bending function and it was 1680 mm in length, because using this endoscope, insertion to the third portion of duodenum or even beyond the ligament of Treitz is relatively easy. A transparent cap was also attached on the tip of the endoscope. Pulsatile bleeding vessel in a diverticulum at the third portion of duodenum was recognized, and endoscopic hemostasis was successfully performed with argon plasma coagulation. We re-started the antithrombotic medication on the third hospital day. She discharged our hospital without re-bleeding on the sixth hospital day. Conclusion: Thus, a long scope with passive bending function is suggested to be useful for endoscopic hemostasis for diverticular bleeding at the third portion of duodenum.

**Key Word(s):** 1. duodenal diverticulum bleeding
Gastrointestinal Bleeding

P-358

Protective effect of GLP-2 on intestinal barrier function of stress ulcer rat

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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-kB 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 function of stress ulcer rat. Due to the complex diversity of the collateral circulation, left gastric vein color Doppler examination cannot make a precise assessment of all cases.

Key Words: 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

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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, node number, ECOG grade).

Gastrointestinal Bleeding

P-359

Left gastric vein color Doppler evaluate the efficacy of endoscopic variceal ligation

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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 Words: 1. color Doppler; 2. left gastric vein; 3. varicose veins; 4. ligation
Liver

P-362

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, with no 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 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 [1.91–5.53], p < 0.0001). 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 < 0.0001, HR 14.72 [6.57–33], p < 0.0001). 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 distinguishes unrectable HCC and therefore optimize treatment: continuation of TACE, systemic therapy or therapeutic trial.

Key Word(s): 1. hepatocellular carcinoma nodule number infiltrative cancer AFP Child-Pugh score ECOG grade

Liver

P-363

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 cases. 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 was more frequent in patients without TIPS (respectively 31% vs. 8%, p < 0.0001, 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
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 < 0.001 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 B patients was 0.630 ± 0.029 in the same range as survival probability of BCLC B patients (0.656 ± 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-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 50 mm (p = 0.27) probably due to the size of resected tumors in the metabolic syndrome group. Conclusion: Steatosis 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 macrostructure, 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 cirrhosis surgical resection TACE
Liver
P-366
The association between serum ferritin level and severity of liver cirrhosis measured by Child-Pugh Turcotte score
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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 P value 0.05.

Results: There was 69 patient, 43 (62.3%) male and 17 (24.7%) female. Mean age was (54.23 + 10.29). There was patients with hepatitis B and C 35 (50.72%); 18 (30%) respectively. The Child Pugh Turcotte score was B and C 34 (49.23%) respectively. Mean ferritin was (SD 156.72; 47.2). There was positive correlation between ferritin serum, serum iron with Child-Pugh Turcotte score. 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 hepatis: a case report
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Objective: An operation is seldom done in patients with cirrhosis hepatis. Cirrhosis hepatis 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 hepatis who undergone endovascular repair of aorta abdominalis aneurysm suc-

Liver
P-368
Usefulness of balloon-occluded retrograde transvenous obliteration for the treatment of portal vein thrombosis in patients with liver cirrhosis
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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-Nordenstadt, 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 ± 3.5 × 10^10/μl) were significantly lower than those with fibrosis F1 (23.6 ± 13.8 × 10^10), F2 (15.45 ± 4.8 × 10^10), or F3 (14.10 ± 7.1 × 10^10; 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 significantly 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 significant 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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Affiliations: Mackay Memorial Hospital

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 gastronemius 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 treatment. We though early stage of liver cirrhosis (A) and peripheral muscles involved (B, C) may be the reason of better survival in our patient. Intra-muscular 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

<table>
<thead>
<tr>
<th>Case</th>
<th>Age</th>
<th>Gender</th>
<th>Etiology</th>
<th>Location</th>
<th>Treatment</th>
<th>Outcome</th>
<th>Child-Pugh score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>73</td>
<td>Male</td>
<td>HCV</td>
<td>Rectus abdominis</td>
<td>Conserve</td>
<td>Alive</td>
<td>A</td>
</tr>
<tr>
<td>B</td>
<td>63</td>
<td>Female</td>
<td>HCV</td>
<td>Vastus intermedius, lateralis muscle Adductor magnus muscle &amp; astronautus muscle</td>
<td>Conserve</td>
<td>Alive</td>
<td>B</td>
</tr>
<tr>
<td>C</td>
<td>72</td>
<td>Female</td>
<td>Alcohol</td>
<td>Rectus abdominis</td>
<td>Conserve</td>
<td>Alive</td>
<td>B</td>
</tr>
<tr>
<td>1</td>
<td>48</td>
<td>Female</td>
<td>Alcohol</td>
<td>Rectus abdominis</td>
<td>Conserve</td>
<td>Alive</td>
<td>B</td>
</tr>
<tr>
<td>2</td>
<td>46</td>
<td>Female</td>
<td>Alcohol</td>
<td>Rectus abdominis</td>
<td>Conserve</td>
<td>Died</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>56</td>
<td>Male</td>
<td>Alcohol</td>
<td>Rectus abdominis</td>
<td>Conserve</td>
<td>Died</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>58</td>
<td>Female</td>
<td>Virus</td>
<td>Rectus abdominis</td>
<td>Liver transplantation</td>
<td>Died</td>
<td></td>
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<tr>
<td>5</td>
<td>60</td>
<td>Male</td>
<td>Alcohol</td>
<td>Iliopsoas</td>
<td>Conserve</td>
<td>Died</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>62</td>
<td>Male</td>
<td>Alcohol</td>
<td>Iliopsoas</td>
<td>TAE</td>
<td>Died</td>
<td></td>
</tr>
<tr>
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<td>56</td>
<td>Male</td>
<td>Alcohol</td>
<td>Iliopsoas</td>
<td>Conserve</td>
<td>Died</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>60</td>
<td>Male</td>
<td>Alcohol &amp; HCV</td>
<td>Gluteus max &amp; biceps femoris &amp; pectsrales</td>
<td>Conserve</td>
<td>Died</td>
<td></td>
</tr>
</tbody>
</table>

Case A–C: Our Patients; Case 1–8 Previous reported 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 ccDNA 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 ($r = -0.20$, $p = 0.249$). 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 ($p = 0.468$).

**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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**Corresponding Author:** WAH KHEONG CHAN  
**Affiliations:** University of Malaya, Hospital Alor Setar, University of Malaya

**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.

**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
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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Additional Authors: ZACHARY GOODMAN, NEZAM AFDHAL, MARIA BUTI, EDWARD GANE, ZACHARY KRASTEV, LAKSHMI ALAPARTHI, FANNY MONGE, RAUL AGUILAR SCHALL, SUN SOOK KIM, JEFFREY BORNSTEIN, JOHN MCHUTCHISON, GEOFFREY DUSHEIKO, KELLY KAITA, MICHAEL MANNS, PATRICK MARCELLIN

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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 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 therapy for chronic hepatitis B infection is associated with sustained virological, biochemical and serological responses with no detectable resistance

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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 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 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 3 years of evaluation. No resistance to TDF has been detected through year 3. 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. alanine aminotransferase; 2. aspartate aminotransferase; 3. normal range of serum AST and ALT levels. 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

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Affiliations: Jeju National University Hospital, Jeju National University Hospital, Jeju National University Hospital, Jeju National University Hospital, Jeju National University Hospital, Jeju National University Hospital, 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 range of serum AST and ALT levels.

Liver

P-379

microRNAs involved in tumorigenesis of hepatocellular carcinoma

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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

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**Liver**

**P-380**

**Prognostic factor as 18F-FDG PET CT in hepatocellular carcinoma**

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Additional Authors: MOON JONG HAN, CHAN YOUNG OAK, DONG IK KIM, MI YOUNG KIM, DU HYEON LEE, SHI HYUN YOO

Corresponding Author: EUNAE CHO

**Affiliations:** Chonnam National University Hospital, Chonnam National University Hospital, Chonnam National University Hospital, 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 exrahepatic 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 (SUVMmax) 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 SUVMmax (≥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 SUVMmax (≥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 = 0.015). **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

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**Liver**

**P-382**

**Pyogenic liver abscess in the elderly**

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**Affiliations:** Chonnam National University Medical School

**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, hepatoiliary disease, hepatoiliary procedure, associated gastrointestinal malignancy, sepsis at admission, culture positivity of antibiotic resistant organism, occurrence of complication and higher WBC, but lower prevalence of chronic alcohols, 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

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**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**

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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...
Liver

P-386
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 lypolisis, 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 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-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/mm$^3$ (p = 0.02). Platelet count lower than 105,500/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.

**Key Word(s):** 1. large esophageal varices; 2. liver cirrhosis; 3. platelets

**Liver**

**P-387**

Hepatocholangiocarcinoma: twenty-seven years experience from a medical center in eastern Taiwan

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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 hepatocellular carcinoma, we performed this retrospective study. **Methods:** From August 1986 to April 2014, the patients with diagnosis of hepatocellular 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 (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 <17), 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. Hepatocholangiocarcinoma 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. hepatocholangiocarcinoma; 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-angiotenzin system (RAS) is frequently activated. Angiotenzyn – II (AT-II), produced by angiotenzin 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 Gastroenterology 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. angiotenzin 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 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 HBs 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 HBs 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 HBs 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 HBs seroconversion have lesser mutations than patients with HBs seroconversion and dose not have mutations of pre-S2 region. Conclusion: Mutations of pre-S2 region and S region may contribute to HBs seroconversion after AE rather than mutations of pre-S1.

Key Word(s): 1. chronic hepatitis B; 2. acute exacerbation; 3. HBs 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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Additional Authors: OMAR KADHIM

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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
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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Additional Authors: Na
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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 teetotaller. 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 (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 Words: Na

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 HBVAg 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 Words: 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
Presenting Author: DO YOUNG KIM
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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
3. agent orange

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 (R2 = 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 ≥ 25% in non-cirrhotic patients, and sFLR ≥ 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, HBsAg, 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 transfact 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 prognostic. 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-28B 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/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.

**Keyword(s):** 1. large esophageal varices; 2. liver cirrhosis; 3. platelets

**Liver**

**P-410**

**Increased galexcin-3 expression but not galexcin-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 pathological 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.

**Keyword(s):** 1. hepatocellular carcinoma; 2. galectin-3; 3. galectin-9; 4. prognosis
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 ≥800,000 IU/mL, and prior treatment failure were significantly associated with relapse. SVR rates were above 90% in all genotypes when patients had 53 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. Periodic laboratory evaluations and clinical assessment of liver disease were performed for up to 3 years. **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.
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 splenomagaly (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).

Conclusion: (Figure 2).

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 ≤ 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.
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, accompanying 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 Words: 1. liver injury; 2. endoplasmic reticulum stress; 3. apoptosis; 4. carbon tetrachloride

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 Juny 20014. 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 (43.61%). 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 Words: 1. tuberculosis; 2. drug induced liver injury; 3. hemoglobin; 4. hematocrit; 5. thrombocytes; 6. albumin
Hepatoprotection by S-adenosylmethionine and the associated mechanism with farnesoid X receptor in intrahepatic cholestasis rats

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 i.p) 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 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

Correlation between serum triglycerides with alanine aminotransferase levels in non alcoholic fatty liver disease

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 hepatoocyte 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 obesity 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 levels. 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

Liver

P-430

Efficacy of antiviral therapy in HBV infection with peglated interferon alfa 2a in regards to epidemiological profile of the patients

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 intermediate 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 were 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 virusological analysis. Peglated 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-433**

**Impaired random blood glucose in liver cirrhosis patients at Dr Soedarso General Hospital Pontianak on January 1st, 2008 – December 31st, 2010**

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**Objective:** The objective of this study was to known the relationship between liver cirrhosis severity level according to Child Turcotte criteria with hyperglycemia in cirrhosis patients at Dr Sudarso General Hospital Pontianak. **Methods:** This study was an analytical with cross sectional approach. The data were collected by taking a secondary data from patient medical records as many as 92 samples. Data were analyzed by chi square test. **Results:** Hyperglycemia are found 30 subject (32,6%), normoglycemia are found 58 subject (63%), and hypoglycemia are found 4 (4,3%). Chi square analyzed show no significant correlation between liver cirrhosis severity level according Child Turcotte criteria with hyperglycemia in cirrhosis patients (p = 0.172). **Conclusion:** No significant correlation between liver cirrhosis severity level according Child Turcotte criteria with hyperglycemia in cirrhosis patients at Dr Sudarso General Hospital Pontianak.

**Key Word(s):** 1. liver cirrhosis; 2. Child Turcotte criteria; 3. hyperglycemia

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Liver

**P-434**

**Balloon-occluded retrograde transvenous obliteration (B-RTO) for the treatment of hepatic encephalopathy and liver failure in patients with cirrhosis**

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**Objective:** Porto-systemic shunts cause refractory hepatic encephalopha- thy in patients with liver cirrhosis. The shunts are also responsible for the development of liver failure through reduction of blood flow in the portal vein. B-RTO is a shunt occlusion procedure established in Japan for the treatment of gastric fundal varices. To evaluate the usefulness of this procedure for the treatment of refractory hepatic encephalopathy and liver failure in cirrhotic patients, B-RTO was performed in those with huge porto-systemic shunts. **Methods:** The subjects were 26 cirrhotic patients with porto-systemic shunts showing refractory hepatic encephalopathy. The etiologies of liver disease was HBV, HCV, alcoholic and NASH in 3, 12, 8 and 3 patients, respectively. Liver functions classified according to the Child-Pugh score were grade A, B and c in 1, 14 and 11 patient(s), respectively. A balloon catheter was inserted into porto-systemic shunts followed by injection of 5% ethanolamine oleate as a sclerosant under balloon inflation. The balloon was deflated between 6 and 48 hours later. **Results:** B-RTO was successfully performed in 21 patients (81%). In these patients, hepatic encephalopathy did not occur after the procedures. Both serum ammonia levels (mean ± SD: 175 ± 65 vs 58 ± 24 μg/dL, p < 0.01) and the Child-Pugh scores (9.0 ± 2.3 vs 6.6 ± 1.7, p < 0.01) were significantly improved after the procedures in comparison with the baseline. Blood flows in the portal vein were evaluated in 8 patients, and the flows were increased after the procedures in 6 patients. Esophageal varices were aggravated in 4 patients (18%). Intractable ascites did not develop in any of the patients. **Conclusion:** B-RTO was a useful procedure for the treatment of refractory hepatic encephalopathy in cirrhotic patients with huge porto-systemic shunts. The procedure can also improve liver function through increase of blood flow in the portal vein.

**Key Word(s):** 1. B-RTO; 2. hepatic encephalopathy; 3. porto-systemic shunts

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Liver

**P-436**

**Alcoholic liver disease is associated with the increased risk of advanced colonic neoplasm**

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**Objective:** The aim of this study is to investigate whether alcoholic liver disease (ALD) is associated with the increased risk of advanced colonic neoplasm in patients with ALD. **Methods:** We analyzed 118 consecutive patients with ALD who performed colonoscopy between January 2000 and December 2013. For each case, age (~ 55 years) and sex-matched controls were identified from patients with non-alcoholic fatty liver disease (NAFLD) and healthy controls. Clinical characteristics were reviewed through medical records, colonoscopic finding, pathologic finding, images. **Results:** The prevalence of colorectal cancer was 6 (5.1%) in ALD patients, 5 (2.5%) in NAFLD patients, 0 (0.0%) healthy control (P = 0.007). In addition, the prevalence of advanced colonic adenoma was 18 (15.3%) in ALD patients, 17 (8.6%) in NAFLD, in 6 (2.8%) healthy control (P < 0.001). A case-control study showed that odds for detecting a colorectal advanced neoplasm among ALD patients without decompensated liver cirrhosis were approximately 10.1 times greater than in healthy controls [OR,10.095; 95% Confidential interval (CI), 3.638-28.014; P < 0.001]. There was no significant difference in the prevalence of colorectal cancer (P = 0.428) and advanced colonic adenoma (P = 0.876) according to the presence of decompensated liver cirrhosis (LC) in ALD patients. Age is an independent risk factor for detecting advanced colonic neoplasm in patients with ALD [OR, 1.091; 95% CI, 1.025-1.162; P = 0.007] **Conclusion:** The
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 cup/day (ALT: aOR=0.83, 95% CI=0.76-0.91; AST: aOR=0.83, 95% CI=0.76-0.91). In subgroup analysis, coffee consumption more than 2 cups/day were 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. Conclusion: Increased coffee consumption was associated with lower risk of elevated aminotransferase in Korean adults. Further study is needed to investigate the underlying mechanisms between coffee and aminotransferase level.

Key Word(s): 1. adult; 2. alanine transaminase; 3. aspartate aminotransferases; 4. coffee; 5. risk factors

Liver

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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 serosurvey 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: A 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
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 (SMA). The limulus-amebocyte lysate assay was used to detect endotoxaemia. 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

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

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 develop 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...
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 injuries.

Results: Hepatocyte apoptosis was increased when Pin1 was inhibited by Juglone. Further, overexpression of Pin1 reduced hepatocyte apoptosis both invivo and invitro. 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

correlation with 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), 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 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 (r = 0.572), between AUDIT scores and serum AST levels (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-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

Key Word(s): 1. fibrosis degree; 2. Fib 4 index
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 clinical-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 (32.0%) 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 amongst 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
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 HCV 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 HCV 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 varied and the variants such as NS5A RAV, ISDR and IRRDR were independent.

Key Word(s): 1. HCV IFN NS5A
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 hepatocellular carcinoma 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 OV100 microscope. HCT-RFP/GFP-Exo cells secrete GFP-exosomes in the liver metastasis site with the Olympus PV1000 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

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**Liver**

**P-458 Clinical chronic hepatitis C: device of individual medical treatment for over the age of 60, and the PEG-IFNα2a low-dose therapy for carcinogenic prevention**

**Presenting Author:** MASAHIKO SUGANO  
**Additional Authors:** TAKAKO MATSUNO  
**Corresponding Author:** MASAHIKO SUGANO

**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-IFNα2a/RBV is mainly used for elderly patients (Peg-IFNα2a/RBV cases were ≥60-year-olds (65.3 yo, M/F = 16/14) and compared with <60-year-olds (48.9, 11/10) and PegIFNα2a/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-IFNα2a small-quantity chronic administration (90-180 μg biweekly). 

**Results:** Pre-treatment HCV-RNA quantity was (≤59 yo:6.2 / ≥60:6.0 log IU/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 / ≥60:1.00 / PegIFNα2a:0.00), 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 alpha2a. There is a different tendency about stomatitis (α2a: ≤59 yo: 22.2%/≥60 yo: 51.7%/α2b:8.3%), itching (22.2/75.9/28.5), taste disorder (11.1/55.2/28.6), insomnia (19.4/17.2/7.5), and energy fall (16.0/25.2/23.6). Peg-IFNα2a small-quantity chronic therapy: ALT51.0→33.4 (<30:60%) and AFP10.3 → 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 expected also to elderly people by introducing “individual treatment,” including Peg-IFNα2a Low-dose Therapy as well.

**Key Word(s):** 1. chronic hepatitis c; 2. peg-IFNα2a; 3. carcinogenic prevention

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**Liver**

**P-459 Cytochrome P450 2E1 polymorphism as an antituberculous agents-induced liver injury**

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**Additional Authors:** RINO ALVANI GANI, ARI FAHRIAL SYAM, CLEOPAS MARTIN RUMENDE  
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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 P4502E1 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 characteristic 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

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**Liver**

**P-460 Albumin is a plausible marker for cirrhotic cardiomyopathy: focus on QT interval prolongation in cirrhotic patients**

**Presenting Author:** COANA SUKMAGAUTAMA  
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**Objective:** QT interval prolongation has seen 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

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Liver

Poster 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 of 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 Words: 1. liver stiffness measurement; 2. liver biopsy; 3. chronic hepatitis B and C.

Liver

Poster 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 rs809917 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 Words: 1. IL28B; 2. hepatitis C virus (HCV); 3. single nucleotide polymorphism (SNP); 4. sustained virological response (SVR).

Liver

Poster 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. shear Wave ElastographyTM (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.

Key Words: 1. IL28B; 2. hepatitis C virus (HCV); 3. single nucleotide polymorphism (SNP); 4. sustained virological response (SVR).
Therefore, in this study, we evaluated SWE values in patients with acute hepatitis who do not have fibrictic 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-465**

**Application of a standardized protocol for hepatic venous pressure gradient measurement improves quality of readings and facilitates reduction of variceal bleeding in cirrhosis**

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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 titeration 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 ≥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 ≥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:** Non-alcoholic fatty liver disease (NAFLD) is increasingly common worldwide. The most severe form of NAFLD is non-alcoholic steatohepatitis (NASH), and the most serious complication is cirrhosis. The risk of cirrhosis is increased in people with type 2 diabetes (T2D). **Methods:** A retrospective study was performed in a general population who underwent liver biopsy in Thailand from 2007 to 2012 at a general university hospital. Liver biopsy was 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 titeration 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 ≥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 ≥20% reduction in HVPG from baseline prevents variceal bleeding in cirrhotics.
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 11×10^9/L and the patient was discharged. Conclusion: Plasmapheresis can significantly improve patients with HELLP syndrome or cases who do not respond to supportive therapy is strongly recommended to be considered in these patients.

Key Words: 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 Words: 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. Tests 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 pitiatory axes were within normal range. The patient responded quickly to hydrocortison 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 Words: 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

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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: Retrospective analysis of 64 patients with hepatitis B and hepatitis C undergoing Fibroscan in Dr. Moewardi Hospital Surakarta from January 2012 to March 2014. Statistical 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 HBsAg positive (15.9%), HBsAg 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)

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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 ± 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

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Objective: Congenital hepatic fibrosis (CHF) is rare disorder with variable degree of perilobar 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 varical 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
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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
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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
Safety and rapid prediction of treatment futility of boceprevir with peginterferon-ribavirin for Asian treatment experienced HCV-1 patients

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 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 sixteen 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-treatment 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 transaminase, 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. Daac; 4. BOC; 5. Asian
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
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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 provisional 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
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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
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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/PI3K/AKT. 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 siRNA and negative control siRNA (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 mutation is frequently present in pancreatic cancer and is related to anti-EGFR therapy resistance. Our previous study showed DJ-1 decreases both RAS and K-RAS activity to 71% and 40.5% in BxPC-3 (p < 0.05 vs. BxPC-3/NC). Knockdown DJ-1 decreased both RAS and K-RAS activity to 71% and 40.5% in BxPC-3 (p < 0.05, p < 0.05 vs. BxPC-3/NC). Knockdown 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

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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 clinicopathologic 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 = 7) and poorly-differentiated (Pure-NEC; 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 = 0.01); 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 by WHO 2010 classifications and the WHO-NEC has the possibility to encompass most of the pancreatic endocrine carcinomas. Key Word(s): 1. NEC; 2. WHO; 3. NET; 4. NEN

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.

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 \( \times \) 10.0 cm \( \times \) 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 \( \times \) 10^9/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 \( \times \) 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

**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:** Nineteen patients were treated by EPS. Patients were followed up for a median period of 1134 days. The median duration of pancreatectomy stenting was 276.3 \( \pm \) 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%)
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 case1 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 (SUVmax=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
Effects of resveratrol and apocynin on pancreatic carcinogenesis in hamsters.

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, for 10 weeks.

Results: The incidence of adenocarcinoma was significantly decreased in hamsters treated with 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 although correlation between adiponectin and pancreatic carcinogenesis was not clear.

Key Word(s): 1. pancreatic cancer; 2. animal model

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

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 CA 19-9 were within normal limits. EUS showed a hypechoic 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 osteoclast-like giant cells (OOGs)(Figure 2d). The OOGs 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 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 3x3cm 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 MRI showed lobulated enhancing soft tissue mass and multiple conglomerated anomorphic cystic lesions around main duct of pancreas in body and tail. A preoperative diagnosis of intraductal papillary mucinous neoplasm was made, radical antegrade modular pancreaticoduodenectomy 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/CMN 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 dilatation 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 choangiopancreatography (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

Poster

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, loco-regional, 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
ESWL treatment of pancreatic stones complicated with advanced stage autoimmune pancreatitis

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Objective: Although autoimmune pancreatitis (AIP) responds favorably to corticosteroid therapy and results in the amelioration of clinical findings. However, some patients suffered from severe pancreatic calculi which needed ESWL treatment. The aim of this study was to clarify whether the efficacy of ESWL therapy in AIP was different from that in ordinary chronic calcific pancreatitis (CP), and propose the effective treatment strategy of pancreatic duct stones in AIP.

Methods: We examined the ESWL records of 8 patients with chronic stage AIP and 92 patients with ordinary chronic calcific pancreatitis, all of whom were treated at Shinshu University Hospital between 1992 and 2012. Results: AIP group was significantly more elderly than CP group (69.0 vs. 56.5, p = 0.018). In the indication of ESWL therapy, patients with chronic pain were significantly less frequent in the AIP group (0% vs. 45.7%, p = 0.001), adversely patients with prospecting preservation of pancreatic function were significantly more frequent in the AIP group (75% vs. 19.6%, p = 0.001). Compared with CP group, AIP group showed pancreatic duct stenosis proximal to pancreatic calculi more frequent (50% vs. 23.9%, p = 0.017), and complete extraction ratio of pancreatic stones in main pancreatic duct was lower, but not significantly (62.5% vs. 77.2%, p = 0.394). Conclusion: We thought about the need to devise a strategy of the pancreatic calculus treatment for AIP, which is different from that for CP. We suggest that we do not perform aggressive ESWL treatment in the case with AIP who meet the factors of 1) advanced age, 2) few chronic pain and pancreatitis attack, and 3) pancreatic duct stenosis proximal to pancreatic calculi.

Key Word(s): 1. autoimmune pancreatitis; 2. chronic pancreatitis; 3. pancreatic stone; 4. pancreatic calcification; 5. ESWL

Pancreas

Natural history of IPMNs of the pancreas, based on international consensus guidelines 2012 for IPMN/MCN

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Objective: New international consensus guideline (GL) for IPMN/MCN was published in 2012. In this GL, Surgical indications of branch-duct type IPMN were stratified with or without high-risk stigmata (HS) and worrisome features (WF). The aim of this study was to assess the natural history of IPMNs based on morphological features in this GL.

Methods: Five hundred seventy-three patients with IPMNs have been examined by contrast-enhanced EUS (CE-EUS) since January, 2001, and of these 255 cases with more than 12 months of follow-up were enrolled in this study. The morphological change rate and the malignant transformation rate, including the malignant alteration of IPMNs itself and the concomitant pancreatic ductal adenocarcinoma (PDAC), were evaluated. Additionally, the prognosis of this cohort stratified with or without HS based on international consensus guidelines was assessed.

Results: Follow-up observation was performed for 255 patients (141 male) (median: 48.4 months). During follow-up term, IPMNs with WF increased 36 cases to 48 cases, and IPMNs with HS 10 cases to 18 cases. The rate of malignant alteration of IPMNs itself was 8.6% (22/255) and the 5-year rate was 10.7%. The rate of concomitant PDAC was 3.1% (8/255), 4 operated cases and 4 unresectable cases. Six patients died of pancreatic cancer, and 9 patients died from other illness. The 5-year survival rate stratified with or without HS at the latest examination and with concomitant PDAC were 98.3%, 90.5% and 57.1%. The prognosis of the patients with developing PDAC was significantly poor.

Conclusion: The malignant transformation of IPMN is not uncommon. We need to concern about developing concomitant PDAC for surveillance of IPMNs.

Key Word(s): 1. IPMN; 2. EUS; 3. guideline

Pancreas

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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 was 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 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, specificity and accuracy between 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

P-501

Improvement of endoplasmic reticulum stress by enhanced perk signaling pathway reduces severe acute pancreatitis in mice

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Objective: To study the clinical profile of adult Sri Lankans admitted to a tertiary referral centre having acute pancreatitis admitted to a tertiary referral centre.

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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-alfa (eIF2-a), 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-a dephosphorylation inhibitor, salubrinal. 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. Salubrinal 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 salubrinal was significantly attenuated compared with control mice. Serum amylase and proinflammatory cytokine levels were lower in salubrinal-treated mice than those of control mice. Expression level of 78 kDa glucose regulated protein (GRP78), activating transcription factor 4 and phosphorylated eIF2-a protein were elevated in mice treated with salubrinal compared with control groups. Conclusion: Inhibition of eIF2-a 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 salubrinal pancreatitis PERK signaling...
mentation, which needs re auditing after proper instructions. Alcohol was the commonest aetiological agent incriminated. Diabetes was the common-est important contributory co-morbid factor associated.

**Key Word(s):** 1. acute pancreatitis

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**Pancreas**  
**P-503**  
**Hypertriglyceride induced pancreatitis: bimc experience**  
**Presenting Author:** RAYMOND SEBASTIAN  
**Additional Authors:** Na  
**Corresponding Author:** RAYMOND SEBASTIAN  
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**Objective:** Hypertriglycerideremia (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

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**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. 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
P-506
Risk factors for relapse of autoimmune pancreatitis

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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. LPS (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 = 0.092). 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

P-507
The role of genomic profiling using eus guided core biopsies of unresectable pancreatic neoplasia

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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>
<thead>
<tr>
<th>Sample</th>
<th>Percent of Exome &gt; 20X Coverage</th>
<th>Average Coverage</th>
<th>PCR Duplication Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>NG02CCK</td>
<td>92</td>
<td>110</td>
<td>6.60%</td>
</tr>
<tr>
<td>TG02CCK</td>
<td>92</td>
<td>113</td>
<td>6.24%</td>
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<tr>
<td>NG03AAB</td>
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<td>108</td>
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<tr>
<td>TG03AAB</td>
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<td>11.03%</td>
</tr>
<tr>
<td>NG08LBY</td>
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<tr>
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<tr>
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</tr>
<tr>
<td>TG14OKS</td>
<td>92</td>
<td>99</td>
<td>5.92%</td>
</tr>
</tbody>
</table>

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).
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

Table 2  Mutations Detected in Samples

<table>
<thead>
<tr>
<th>SAMPLE</th>
<th>KRAS</th>
<th>SMAD4</th>
<th>TP53</th>
</tr>
</thead>
<tbody>
<tr>
<td>G02CK</td>
<td>chr2: 25,398,284C &gt; A; p.G12V (32%)</td>
<td>chr18: 48581167 – ins[GT]; fs (29%)</td>
<td>chr17: 7577599&gt; A; p.S241F (30%)</td>
</tr>
<tr>
<td>G03AB</td>
<td>chr2: 25,398,284C &gt; A; p.G12V (17%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G08LY</td>
<td>chr2: 25,398,284C &gt; A; p.G12V (7%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: All KRAS and TP53 mutations are known mutations. The SMAD4 mutation is frameshift and expected to be truncating.
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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Additional Authors: JAE CHUL HWANG, JIN HONG KIM
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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 23.5% (8/34) with 22G FNA needles and 41.2% and 85.3% (29/34) with 25G FNB needles (P = 0.356) between 22G FNA and 25G FNB needles (P = 0.089) or needle malfunctions (2.9% vs 11.8%, P = 0.352) with 22G FNA needles and 41.2% (14/34) with 25G FNB needles (P = 0.194). There was no significant difference in the mean number of needle passes (5.09 vs 5.76, P = 0.089) or needle malfunctions (2.9% vs 11.8%, P = 0.352) 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 and was associated with a lower diagnostic rate 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

Presenting Author: DONGYAN YANG
Additional Authors: DAN JIAO, BAODONG GAI, LINA SUN
Corresponding Author: DONGYAN YANG
Affiliations: Jilin University, Jilin University, Jilin University

Objective: To assess the security and feasibility of ultrasound-guided percutaneous free-hand implantation of iodine-125 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. Preoperatively using of ultrasound: (1) Patient selection. (2) Detect the intraabdominal 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 reexaminations 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 – seed 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: More pancreatic tumors become indication for the treatmen 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 is 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

Presenting Author: DANNY JR. YAP
Additional Authors: VIRNA JOSEFA AMOR
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Affiliations: Chong Hua Hospital

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, gallstew 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 Words: 1. pancreatitis; 2. BISAP score

Endoscopy and Imaging
P-514
Factors affecting willingness to undergo another colonoscopy in a screening population
Presenting Author: YAN PANG
Additional Authors: HONG GU HE, JANE JIA XIN LIM, KAYSHINI VIJAKUMAR, OMAR ALSIYABI, CALVIN JIAN YI KOH, JUANDA LEO HARTONO, KEAT HONG LEE, KEWIN TIAN HO SIAH
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Affiliations: National University of Singapore, National University Hospital, National University Hospital, National University Hospital, National University Hospital
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 Words: 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
Presenting Author: ESTI TANTRI ANANDANI
Additional Authors: ARITANTRI DARMAYANI, PAULUS KUSNANTO, TRIANTA YULI PRAMANA, MICHAEL TANTORO HARMONO
Corresponding Author: ESTI TANTRI ANANDANI
Affiliations: Moewardi Hospital, Moewardi Hospital, Moewardi Hospital, Moewardi Hospital
Objective: The Helicobacter pylori bacteria, which has previously been suspected of playing a role in the development of type 2 diabetes mellitus, has 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 January 2012 until July 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, hypothyroidism, 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 ± 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 ± 1.12%) compare to negative H. pilory group (9.08 ± 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 Words: 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?
Presenting Author: MOHAMMAD BAGHERZADEH
Additional Authors: NAFISEH POURMOHAMMADI
Corresponding Author: MOHAMMAD BAGHERZADEH
Affiliations: Qom University of Medical Sciences
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 (49.2%) 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 both 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

Presenting Author: NIKKO DARNINDRO

Additional Authors: ARI FAHRIAL SYAM, DIAH RINI HANDJARI, DADANG MAKMUN

Corresponding Author: NIKKO DARNINDRO

Affiliations: Gastroenterology Division, Anatomical Pathology, Gastroenterology Division

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 pathologichal 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. Prevalence 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

Presenting Author: MENG MENG GUO

Additional Authors: MENG MENG GUO, YONG XIE, DONGSHENG LIU, CONGHAU SONG

Corresponding Author: YONG XIE

Affiliations: The First Affiliated Hospital of Nanchang University, The First Affiliated Hospital of Nanchang University, The First Affiliated Hospital of Nanchang University, The First Affiliated Hospital of Nanchang University

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-Ampicillin, C-Clarithromycin, M-Metronidazole, L-Levofloxacin and T-Tetracycline) – 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 ≤ 0.5 was defined as synergism, 0.5 < FICI ≤ 1 as accumulation, 1 < FICI ≤ 2 as independence and FICI > 2 as antagonism. Results: Results: The MIC of SGE against 25 strains of antibiotic-resistant H. pylori were 2.5%–62.5%. The FICI in 5 groups of SGE with antibiotics against 10 antibiotic-resistant H. pylori strains were respectively [Form: Drug+r Drugβ = FICI (NO. of strains)]: ①S+As≤0.5(10), >0.5(5); ②S+Ms≤0.5(7), 0.5–1(3), >1(10); ③S+L≤0.5(6), 0.5–1(4), >1(10); ④S+T≤0.5(10), >0.5(10); 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 additive 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

Presenting Author: JONG-SAM HONG

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Corresponding Author: JONG-SAM HONG

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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
eradication regimen and to also find out if eradication rate can be improved. **Methods:** From 2012 September to 2014 June, patients who were 18 years or older who visited Gangneung Asan hospital with H. pylori infection were randomly assigned to the standard triple eradication therapy and propolis administered group. The propolis group was administered with ethanol extract of Korean propolis 20 drops three times a day for 14 days with the standard triple eradication therapy. We evaluated the eradication rate and side effects in both groups. **Results:** From a total of 149 patients (Men 86, Women 63, average age 54.23 ± 11.1), 79 patients were enrolled in the standard triple eradication group and the propolis administered group enrolled 70 patients. There were no differences in age and sex in the both groups. Assorting according to the disease categories, Peptic ulcer disease 73 patients (48.9%), MALT lymphoma 2 patients (1.3%), early gastric cancer 9 patients (6%), and etc was 65 patients (43.6%). Eradication rate after ITT analysis were after triple therapy 62/79 (78.5%) and the propolis administered group 55/70 (78.6%) which showed no statistical differences (p = 0.989). According to the PP analysis, after triple therapy was 60/70 (77.9%) and the propolis administered group was 52/66 (78.8%) which showed a slightly higher eradication rate in the propolis group but there was no statistical significance (p = 0.090). There were no differences in the underlying diseases, compliance to the medication and side effects in the both groups. **Conclusion:** Adding propolis to the previous standard triple therapy did not show statistically significant improvement in the eradication rate. **Key Word(s):** 1. Korean propolis; 2. Helicobacter pylori

**H. Pylori**

**P-521**

**The effect of empirical rescue therapy for two or more consecutive Helicobacter pylori eradication failures**

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**Corresponding Author:** JAE JIN HWANG  
**Affiliations:** Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital

**Objective:** The eradication rate of first and second-line therapies have been decreasing progressively due to increasing antimicrobial resistance of Helicobacter pylori. After two or more consecutive H. pylori eradication failures, clinicians have faced the dilemma of determining which of the following therapy would be the most appropriate. The aim of this study was to elucidate clinical course and treatment strategies of refractory H. pylori infection. **Methods:** From 2003 to 2013, total 154 (mean age 62.0: male 75, female 79) patients who had experienced at least two consecutive H. pylori eradication failures were enrolled at the Seoul National University Bundang Hospital. Efficacy of different rescue regimens was compared by confirming of eradication rate. H. pylori status was evaluated by histologic finding, Campylobacter-like organism test and 13-C urea breath test. Anti-biotic susceptibility test for H. pylori was not done in all cases. **Results:** The clinical and endoscopic findings were as follows: 79 patients (51.3%) had erosive or atrophic gastritis and functional dyspepsia, 21 patients (13.7%) – gastric ulcer (GU), 25 patients (16.2%) – duodenal ulcer (DU), 15 patients (9.7%) – GU + DU, 14 patients – other findings (8 Tubular adenoma, 5 Gastric adenocarcinoma, 1 MALT lymphoma). There was no significant difference in the eradication rate between each rescue regimens. H. pylori eradication rates with the 3 rd, 4 th and 5 th -line rescue regimens were 53.9% (83/154), 41.2% (21/51), and 26.3% (5/19), respectively. Finally, cumulative H. pylori eradication rate with the 3–7 th rescue regimens (mean 3.51 times) was 78.7% (111/141). The cumulative incidence rate of gastric cancers did not differ between the eradicated group and failed group (mean observation period: 39.1 months). **Conclusion:** Even with the consecutive treatments of refractory H. pylori infection using empirical regimens, H. pylori eradication rate was gradually declining. Finally, cumulative overall eradication rate could not achieve over 80%. Now that repeated empirical treatment without culture cause a significant limitation for effective eradication in the future, we should consider careful treatment strategies in refractory H. pylori infection. **Key Word(s):** 1. Helicobacter pylori; 2. treatment failure; 3. rescue regimen; 4. cumulative eradication rate

**H. Pylori**

**P-522**

**The association between eradication of Helicobacter pylori and increasing of platelet count in patients with idiopathic thrombocytopenic purpura**

**Presenting Author:** JAE JIN HWANG  
**Additional Authors:** DONG HO LEE, AE RA LEE, YONG HWAN KWON, YEON SANG JEONG, HYUN JOO LEE, KI CHUL YOON, HYO YOUNG KIM, RYOUNG HEE NAM, HYUK YOON, CHEOL MIN SHIN, YOUNG SOO PARK, NAYOUNG KIM  
**Corresponding Author:** JAE JIN HWANG  
**Affiliations:** Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital, Seoul National University Bundang Hospital

**Objective:** The eradication of Helicobacter pylori (H. pylori) can increase the platelet count in patients with idiopathic thrombocytopenic purpura (ITP) is still a controversial issue. We investigate the association between eradication of H. pylori and increase of platelet count in patients with idiopathic thrombocytopenic purpura. **Methods:** This was a retrospective study created from chart review for patients who diagnosed by idiopathic thrombocytopenic purpura between 2008 and 2013. All patients (n = 42) were assessed for H. pylori infection by use of a urea breath test. The patients of positive result by urea breath test were received 7-days standard triple therapy (amoxicillin, clarithromycin, and rabeprazole) to eradication of H. pylori infection. At the 6 months after eradication therapy, idiopathic thrombocytopenic purpura patients with a platelet count recovery of greater than 100 x 10 9 L−1 were defined as thrombocytopenic
H. Pylori

P-524

Reversal of endoscopic gastric atrophy during long term follow up after H. pylori eradication

Presenting Author: TAKUMA KAGAMI

Additional Authors: MITSUSHI GUGIMOTO, SHU SAHARA, HITOMI ICHIKAWA, TAKAHISA FURUTA

Corresponding Author: TAKUMA KAGAMI

Affiliations: Hamamatsu University School of Medicine, Hamamatsu University School of Medicine, Hamamatsu University School of Medicine, Hamamatsu University School of Medicine

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 investigate 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 into 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 were 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

Presenting Author: HODONG KIM

Additional Authors: SEUNG CHOI, JAEWON BEOM

Corresponding Author: HODONG KIM

Affiliations: Saint Carollo Hospital, Saint Carollo Hospital

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.

Results: For two results for 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.

Key Word(s): 1. monoclonal antibody disease; 2. Helicobacter pylori; 3. urease

Table 1 Detection of Helicobacter pylori by HPU

<table>
<thead>
<tr>
<th>H. pylori status</th>
<th>UBT</th>
<th>CLO</th>
<th>Histology</th>
<th>HPU</th>
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<td>Positive (n = 73)</td>
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<td>Negative (n = 34)</td>
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Table 2. Sensitivities specificities and predictive values for positive and negative results of HPU in detecting Helicobacter pylori.

<table>
<thead>
<tr>
<th></th>
<th>Subjects without AG or IM (n = 77)</th>
<th>Subjects with AG or IM (n = 30)</th>
<th>All subjects (n = 107)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>86%</td>
<td>96%</td>
<td>89%</td>
</tr>
<tr>
<td>Specificity</td>
<td>82%</td>
<td>43%</td>
<td>74%</td>
</tr>
<tr>
<td>PPV</td>
<td>92%</td>
<td>85%</td>
<td>88%</td>
</tr>
<tr>
<td>NPV</td>
<td>76%</td>
<td>75%</td>
<td>76%</td>
</tr>
</tbody>
</table>

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 unacceptable 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 (NHIID), 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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Affiliations: Gumi Medical Center, Cha University, Gumi Medical Center, Cha University, Gumi Medical Center, Cha University

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 moxifloxin 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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Additional Authors: Na
Corresponding Author: ERNEST HAN FAI LI

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.

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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Corresponding Author: KEUN JOON LIM

Affiliations: Incheon St. Mary’s Hospital, Incheon St. Mary’s Hospital, Incheon St. Mary’s Hospital, Inha University Hospital, Inha University Hospital, Soonchunhyang University Hospital, Soonchunhyang University Hospital

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 32 mg/L; to rifampicin 2.5% (16/653), MIC from 0.016 mg/L to 256 mg/L; to amoxicillin 3.1% (20/653), MIC from 0.016 mg/L to beyond 256 mg/L; to Levofloxacin, 17.9% (117/653), 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 tetracycline, 4.4% (13/653), MIC ranged 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 Levofloxacin, azithromycin (15.9%, 17.9% and 15% respectively), the resistance rate of H. pylori to amoxicillin, rifabutin and tetracycline was low.

Key Words: 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
Presenting Author: ZHIFA LV
Additional Authors: ZHIFA LV, YONG XIE, HUI WANG
Corresponding Author: YONG XIE
Affiliations: First Affiliated Hospital of Nanchang University, First Affiliated Hospital of Nanchang University, First Affiliated Hospital of Nanchang University

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 abstracts 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 systematic review and meta-analysis. The pooled OR was 0.55 (95% confidence interval : 0.35, 0.85) using a fixed effects model (I² = 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 (I² = 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 (I² = 83.4%, P = 0.000).

Conclusions: 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 Words: 1. Helicobacter pylori; 2. amoxicillin; 3. rifabutin; 4. systemic review; 5. meta-analysis

H. Pylori
P-532
Association between Helicobacter pylori infection and estimated glomerulos filtration rate in dyspepsia syndrome
Presenting Author: KIKI MAHARANI
Additional Authors: ARITANTRI DARMAYANI, PAULUS KUSNANTO, TRI YULI PRAMANA, M. TANTORO HARMONO
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Affiliations: Moewardi Hospital, Moewardi Hospital, Moewardi Hospital, Moewardi Hospital

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 January 2014 until June 2014 in Moewardi Hospital Surakarta. Inclusion criteria was dyspepsia syndrome. Exclusion criteria was chronic kidney disease, chronic liver disease, malignancy, infection and diabetes mellitus. Glermular filtration rate (eGFR) were estimated by Cockroft-Gault formula. H pylori infection identified by positive biopsi 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 Words: 1. Helicobacter pylori; 2. dyspepsia syndrome; 3. estimated glomerulos filtration rate

H. Pylori
P-533
Effects of Helicobacter pylori eradication on metabolic parameters
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Additional Authors: HIROKI SHIMODA, RIKI NAKANO
Corresponding Author: HIROKI SHIMODA
Affiliations: Jcho Takanawa Hospital, Jcho Takanawa Hospital

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-
Helicobacter pylori infection is not associated with colon neoplasm: single center study in South Korea

Presenting Author: HEE SEOK MOON
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Corresponding Author: HEE SEOK MOON
Affiliations: Chungnam National University School of Medicine, Chungnam National University School of Medicine

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 eletronic medical record database, we selected 367 subjects who underwent colonoscopy and esophago-gastro-duodenoscopy with biopsy results from both procedures 174 patients was normal colonoscopic finding. This result is probably due to high prevalence of H. pylori infection in South Korea.

Key Words: 1. Helicobacter pylori; 2. colon neoplasm.

Helicobacter 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 (EGH), Endoscopic Erythematous and Exudative Gastritis (EEG), Endoscopic Congestive Gastritis (EGC), 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, statistical significant differences in Kammrötung, EGH, RAC and FGPs were observed. In H. pylori-infected individuals, AG (moderate or severe), EEG, EGC, 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 Words: 1. endoscopic diagnosis H. pylori; 2. colon gastritis.
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) or PPI-based triple therapy for 7 days and 14 days were 90.2% (37/41) and ≤1 and ≤2 (12) C+C+M: ≤0.5/9, >0.5 and ≤1/24 C+H:L: ≤0.5/3, >0.5 and ≤1/6, >1 and ≤2/8, >2/6 C+C+F: >1 and ≤2/26, >1 and ≤2/7 C+T: >0.5 and ≤1/29, >1 and ≤2/4 M+L: ≤0.5/13, >0.5 and ≤1/14, >1 and ≤2/6 M+F: >1 and ≤2/33 M+T: ≤0.5/7, >0.5 and ≤1/17, >1 and ≤2/9 L+F: >1 and ≤2/17, >2/16 L+T: ≤0.5/18, >0.5 and ≤1/15 F+T: ≤0.5/13, >0.5 and ≤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+F 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 shown in the combinations of C+T (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 Words: 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 apoptotic 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 intramuscal 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.
**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 have 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

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**H. Pylori**

**P-541**

In-house rapid urease test incubated at 37°C for the diagnosis of Helicobacter pylori infection

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**Additional Authors:** MUHAMMAD BRIAN RISTIANTO, IBNU SINA IBROHIM, FAHMI INDRARTI, LENENG RATNASARI, SUTANTO MADUSENO, PUTUT BAYUPURNAMA, SITI NURDJANAH  
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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 perform, 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 patient. 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

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**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:** In-house rapid urease test incubated at 37°C for diagnosis of Helicobacter pylori. Presenting Author: CATHARINA TRIWIJKATMANI  
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**Key Word(s):** 1. rapid urease test; 2. Helicobacter pylori

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**H. Pylori**

**P-542**

The prevalence of Helicobacter pylori and gastroduodenal pathology in children of native and alien population in Tyva

**Presenting Author:** VLADISLAV TSUKANOV  
**Additional Authors:** TAMARA POLIVANOVA, VITALY VSHIVKOV, ALEXANDER VASYUTIN  
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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
**H. Pylori**

**P-543**

**Association of Helicobacter pylori infection with coronary artery disease: is it a risk factor?**

**Presenting Author:** JAMSHID VAFAEIMANESH  
**Additional Authors:** FAKHROLDIN HEJAZI, VAHID DAMANPAK, MOHAMMAD BAGHERZADEH  
**Corresponding Author:** JAMSHID VAFAEIMANESH  
**Affiliations:** Clinical Research Development Center, Clinical Research Development Center, Clinical Research Development Center

**Objective:** Helicobacter pylori (HP) infection is the most common infection worldwide and it looks like that coronary artery disease (CAD) is one of extragastrointestinal 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 steno) 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 proving causal relationship, it can be considered as a reversible risk factor for CAD.  
**Key Words(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**

**Presenting Author:** JAMSHID VAFAEIMANESH  
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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 Words(s):** 1. diabetes mellitus; 2. diabetes complications; 3. Helicobacter pylori
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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Additional Authors: MOHAMMAD BAGHERZADEH
Corresponding Author: JAMSHID VAFAEIMANESH

Affiliations: Clinical Research Development Center

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 in comparison 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 an 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 patients (81.1%) based on UBT. 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 an 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 patients (81.1%) based on UBT.

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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Additional Authors: MOHAMMADREZA SEYYEDMAJIDI
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Affiliations: Gastroenterologist, Golestan Research Center of Ga

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

Presenting Author: KE WANG
Additional Authors: NAN JIN ZHOU, YONG XIE, YANG YANG, DONG SHENG LIU
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Affiliations: Institute of Medical Sciences of Jiangxi Province, The First Affiliated Hospital of Nanchang Universi, The First Affiliated Hospital of Nanchang University, The First Affiliated Hospital of Nanchang University

Objective: To find out the relationship between CagA EPIYA motif polymorphism and H. pylori related disease outcomes in China.

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 seen with 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. 29 strains with EPIYA-B mutations were from gastric cancer, and 7/9 were from duodenal ulcers. 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
Presenting Author: KE WANG
Additional Authors: NANN JIN ZHOU, YONG XIE, DONG SENG LIU, YANG YANG
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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

<table>
<thead>
<tr>
<th></th>
<th>Single homA (+)</th>
<th>Single homB (+)</th>
<th>homA and homB (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSG</td>
<td>10.4% (5/48)</td>
<td>68.8% (33/48)</td>
<td>20.8% (10/48)</td>
</tr>
<tr>
<td>DU</td>
<td>13.3% (10/75)</td>
<td>68.0% (51/75)</td>
<td>18.7% (14/75)</td>
</tr>
<tr>
<td>GU</td>
<td>20.0% (4/20)</td>
<td>75.0% (15/20)</td>
<td>5.0% (1/20)</td>
</tr>
<tr>
<td>GCa</td>
<td>22.2% (6/27)</td>
<td>74.1% (20/27)</td>
<td>3.7% (1/27)*</td>
</tr>
</tbody>
</table>

chi square = 2.480, p value = 0.479, p value = 0.890, p value = 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 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: 1. RAW264.7 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; 2. Tim-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: 1. RAW264.7 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; 2. Tim-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. Strictureing (Hazard ratio, 5.38; 95% CI, 2.76-10.48; \(P = 0.001\)) and penetrating disease behavior (HR, 13.15; 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 was associated with decreased risk while strictureting 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 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 randomised 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
Immunology/Microbiology
P-558
Conventional adenomas may be frequent on the right-side large intestine in human intestinal spirochetosis (HIS)
Presenting Author: SHO OGATA
Additional Authors: KEN SHIMIZU, KUNIAKI NAKANISHI
Corresponding Author: SHO OGATA
Affiliations: Jcho Saitama Medical Center, National Defense Medical College

Objective: HIS is a colorectal bacterial infection caused by Brachyspira species, and its clinicopathologic features remain unclear. The aim of this study is to examine its characteristics. Methods: We histologically reviewed paraffin-embedded section-slides that had been made in JCHO Saitama Medical Center. In this study, samples were limited to those taken under colonoscopy in 2001, 2006, and 2011. Cases providing more than one sample histologically exhibiting a distinct fringe-formation were considered to have HIS. Information was also provided from pathology request forms. Results: We considered there to be 7 HIS cases (0.5%) in 2001, 29 (1.7%) in 2006, and 49 (2.8%) in 2011. HIS was found in the right-side large intestine more frequently than in the left. Among these 85 cases, 65 had conventional adenomas. In our HIS group, we found them right-side a little more frequently than left-side (79 samples vs. 66). When comparing the characteristics of these adenomas by region, we found no difference in size or in morphology (sessile or pedunculated). This might suggest that right-side conventional adenomas of HIS cases share a tumorigenesis pathway with the left-side ones more usually observed. Conclusion: Histologic evaluation suggested that the prevalence of HIS in this population was increasing progressively, reaching almost 3% in 2001. Our HIS cases had conventional adenomas more frequently in the right-side large intestine, this being the side where histologic sign of HIS was also found more frequently. These right-side adenomas had similar characteristics to those seen on the left, possibly suggesting a common tumorigenesis pathway.

Key Word(s): 1. human intestinal spirochetosis; 2. adenoma; 3. large intestine

Immunology/Microbiology
P-559
The clinical characteristics of patients with gastrointestinal cytomegalovirus infection in Japan
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Objective: Human intestinal spirochetosis (HIS) is a condition defined by the presence of a layer of spirochetes attached by one cell end to the colorectal epithelium. Two spirochete species, Brachyspira pilosicoli and Brachyspira aalborgi, are associated with HIS. Some HIS patients have intestinal symptoms, such as chronic diarrhea and rectal bleeding, but most patients are asymptomatic. This study investigated the effect of antimicrobial eradication therapy in the treatment of HIS caused by B. pilosicoli. Methods: Five patients with intestinal symptoms had been diagnosed as having HIS by colonoscopy and histopathological examination. We isolated B. pilosicoli strains from the colorectal mucosa of the patients and performed the antimicrobial susceptibility tests. Then we treated them with the antimicrobial eradication therapy. Results: Three of the patients had diarrhea, one had rectal bleeding, and one had both. The endoscopic findings revealed that two of the patients had edematous mucosa, red spots, erosions and ulcers in their colon, and that other patients had no mucosal lesions. We treated all the patients with antimicrobial eradication therapy. We used metronidazole for the therapy according to the results of the antimicrobial susceptibility tests. After the eradication therapy, the symptoms disappeared in four of the patients. Follow-up colonoscopy showed that mucosal lesions had disappeared in both of the two patients, and B. pilosicoli turned negative by histopathological and culture examinations. Conclusion: The pathogenesis of B. pilosicoli and B. aalborgi is uncertain. B. pilosicoli infection

Immunology/Microbiology
P-560
Effect of antimicrobial eradication therapy in the treatment of human intestinal spirochetosis caused by Brachyspira pilosicoli
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Additional Authors: TEPEI SASAHARA, SHUNJI HAYASHI, MANABU NAGAYAMA, YUJI INO, HIROTOSU G SAKAMOTO, HAKUEI SHINHATA, YOSHIMASA MIURA, YOSHIAKU HAYASHI, HIROYUKI SATOU, TOMONORI YANO, KEIJIRO SUNADA, HIRONORI YAMAMOTO
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Objective: Human intestinal spirochetosis (HIS) is a condition defined by the presence of a layer of spirochetes attached by one cell end to the colorectal epithelium. Two spirochete species, Brachyspira pilosicoli and Brachyspira aalborgi, are associated with HIS. Some HIS patients have intestinal symptoms, such as chronic diarrhea and rectal bleeding, but most patients are asymptomatic. This study investigated the effect of antimicrobial eradication therapy in the treatment of HIS caused by B. pilosicoli. Methods: Five patients with intestinal symptoms had been diagnosed as having HIS by colonoscopy and histopathological examination. We isolated B. pilosicoli strains from the colorectal mucosa of the patients and performed the antimicrobial susceptibility tests. Then we treated them with the antimicrobial eradication therapy. Results: Three of the patients had diarrhea, one had rectal bleeding, and one had both. The endoscopic findings revealed that two of the patients had edematous mucosa, red spots, erosions and ulcers in their colon, and that other patients had no mucosal lesions. We treated all the patients with antimicrobial eradication therapy. We used metronidazole for the therapy according to the results of the antimicrobial susceptibility tests. After the eradication therapy, the symptoms disappeared in four of the patients. Follow-up colonoscopy showed that mucosal lesions had disappeared in both of the two patients, and B. pilosicoli turned negative by histopathological and culture examinations. Conclusion: The pathogenesis of B. pilosicoli and B. aalborgi is uncertain. B. pilosicoli infection
Interventional Radiology

P-564
Safety and outcome of de novo 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 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 then 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 nvo 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)/oxidized (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 μA/cm2; 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-567
Increased caloric extraction in neonatal intestine by early microbial colonization stimulates infant growth

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Additional Authors: Na

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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 used to grow 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. Results: 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 27.74±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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Affiliations: Molecular Pathophysiology Division, Molecular Pathophysiology Division, Molecular Pathophysiology Division, John Hopkins University, Molecular Pathophysiology Division, Molecular Pathophysiology Division

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 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 ± 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 tight junction in infected cells. This effect was reversed in the presence of Zn. Electrogenic studies in Ussing chambers demonstrated 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 pro-inflammatory cytokines. Zn restitute 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: 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 27.74±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

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 21 FDRs and 12 controls, all asymptomatic, anti-tTG Ab negative and having normal light microscopy. 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

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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 hematemia 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 dependent 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 new 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 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 haeamorrhage. 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 Words: 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 bands 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 recent 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-rh. 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, defeation, abdominal circumference, and abdominal discomfort and vomiting were 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, defeation, 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 Words: 1. postoperative ileus; 2. thoracic surgery; 3. mosapride

Nerve Gut and Motility

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 Words: 1. manometry; 2. high resolution manometry; 3. oesophageal motility disorder; 4. achalasia cardia; 5. dysphagia

Nerve Gut and Motility

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, was enrolled for sonological ultrasound 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 non-alcoholic fatty liver disease (18.5%) is common in our apparently healthy adults. BMI over 23 kg/m 2 was the most important predictor for NAFLD.

Key Words: 1. sonologically detected non-alcoholic fatty liver disease; 2. healthy adults; 3. prevalence and associated factors

Nerve Gut and Motility

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 anorectal 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.
**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

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**Nutrition and Metabolism**

**P-583**

The changes of nutritional status among non-surgery patients in Cipto Mangunkusumo General Hospital, Jakarta

**Presenting Author:** ARI FAHRIAL SYAM

**Additional Authors:** DADANG MAKMUN, MURDANI ABDULLAH, ACHMAD FAUZI, CECEP SURYANI SOBUR

**Corresponding Author:** ARI FAHRIAL SYAM

**Affiliations:** Dr. Cipto Mangunkusumo General Hospital, Dr. Cipto Mangunkusumo General Hospital, Dr. Cipto Mangunkusumo General Hospital, Dr. Cipto Mangunkusumo General Hospital

**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 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)
Nutrition and Metabolism

P-584
Nutritional profile of patients with compensated alcoholic liver disease (ALD)-cirrhosis in tertiary care center in northern India

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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

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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 assess the compliance to gluten free diet. Anthropometric, clinical signs of nutritional deficiencies, dietary assessment (by 24 hour dietary recall method), hematological and biochemical parameters were used for nutritional assessment. 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 PFM (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

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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 × 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

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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, Faculty of Medicine, University of Indonesia

Objective: There is a correlation between IG and hs-CRP in CAD patients.
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

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Control</th>
<th>DSS</th>
<th>DSS + PM</th>
<th>DSS + PM + BP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intestinal length</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small intestine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tx</td>
<td>42.38</td>
<td>42.42</td>
<td>43.10</td>
<td>38.0</td>
</tr>
<tr>
<td>Px</td>
<td>42.42</td>
<td></td>
<td>43.10</td>
<td>38.0</td>
</tr>
<tr>
<td>Large intestine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tx</td>
<td>9.68</td>
<td>9.70</td>
<td>6.93</td>
<td>7.0</td>
</tr>
<tr>
<td>Px</td>
<td>9.70</td>
<td></td>
<td>6.93</td>
<td>7.0</td>
</tr>
<tr>
<td>Organ weight (g)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spleen</td>
<td>0.12</td>
<td>0.12</td>
<td>0.14</td>
<td>0.09</td>
</tr>
<tr>
<td>Liver</td>
<td>1.07</td>
<td>1.07</td>
<td>1.13</td>
<td>1.09</td>
</tr>
<tr>
<td>Brain</td>
<td>0.42</td>
<td>0.42</td>
<td>0.43</td>
<td>0.44</td>
</tr>
<tr>
<td>CD4/CD8 ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spleen</td>
<td>0.03 ± 0.02</td>
<td>0.03 ± 0.02</td>
<td>0.03 ± 0.02</td>
<td>0.06 ± 0.03</td>
</tr>
<tr>
<td>Peyer’s patch</td>
<td>0.08 ± 0.01</td>
<td>0.06 ± 0.02</td>
<td>0.43 ± 0.05</td>
<td>0.06 ± 0.02</td>
</tr>
<tr>
<td>Mesenteric LN</td>
<td>0.01 ± 0.00</td>
<td>0.03 ± 0.01</td>
<td>0.09 ± 0.04</td>
<td>0.03 ± 0.01</td>
</tr>
</tbody>
</table>

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 pneumonia caused by 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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Additional Authors: ARI FAHRIAL SYAM, DADANG MAKMUN
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Affiliations: Medical Faculty Indonesia Univ-Cipto

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: 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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Additional Authors: RYUICHI IWAKIRI, KAZUMA FUJIMOTO
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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 non-embedded 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 promotes 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

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**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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**Additional Authors:** ARI FAHRIAL SYAM, C RINALDI LESMANA, SUHENDRO SUHENDRO, MUDJADDID ENDANG, DADANG MAKMUN

**Corresponding Author:** TAUFIQ TARKASAN

**Affiliations:** Faculty of Medicine, University of Indonesia, Faculty of Medicine, University of Indonesia, Faculty of Medicine, University of Indonesia, Faculty of Medicine, University of Indonesia, Faculty of Medicine, University of Indonesia

**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 ± 8.5 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

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**Nutrition and Metabolism**

**P-596**

**The relationship between serum concentrations of bile acids and body mass index of healthy subjects**

**Presenting Author:** LIBOR VITEK

**Additional Authors:** TOMAS PETR

**Corresponding Author:** LIBOR VITEK

**Affiliations:** 1st Faculty of Medicine, Charles University

**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 umol/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 umol/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

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**Oncology**

**P-597**

**Prolong survival with complete resolution of hepatocellular carcinoma following sorafenib therapy – case report**

**Presenting Author:** AHMAD NAJIB AZMI

**Additional Authors:** KHEAN LEE GOH

**Corresponding Author:** AHMAD NAJIB AZMI

**Affiliations:** University of Malaya

**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 10^9 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

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**Oncology**

**P-598**

**Multiple metastase colorectal carcinoma in young patient**

**Presenting Author:** RINI RACHMAWARNI BACHTIAR  
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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 pericolica, mesenterial, parailiaca and inguinal lymphadenophaty and suggestive metastate 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 vescaurnaria. Multiple lymphadenopathy at the pericolica, meccentrical, parailiaca, and inguinal. Hepatic lesion and multiple nodule pulmonary suggestive metastate. 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

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**Oncology**

**P-599**

**An uncommon cause of raised serum carcinoembryonic antigen – a non gastrointestinal malignancy**

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**Affiliations:** Tan Tock Seng Hospital

**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 hypoechoic liver lesion and found to have rising CEA levels. 

**Results:** Oesophaogastroduodenoscopy and colonoscopy were unrewardable. 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 parametral 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 GINvestigations, 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
Objectives: 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 Mangunkusu Faculty of Medicine, University of Indonesia Mangunkusumo Hospital Mangunkusomo 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. Study ini bertujuan untuk melihat karakteristik dan faktor-faktor yang berhubungan dengan terjadinya komplikasi pasca operasiSurvival 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. Tujah puluh enam pastien 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 Sosio ekonomi rendah 72 pasien (94.7%). Diet Tenggi 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 masakan asap/ kurang masakan sebanyak 45 pasien (59.2%), merekok 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 tersiering 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 rekuruzensi 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 smoked/less cook as many as 45 patients (59.2%), smoking as many as 44 patients (57.9%), Batakinese 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 Words:** 1. advanced gastric cancer; 2. metastatic; 3. palliation; 4. surgery.
Oncology

P-602
Canolol inhibits hyperplastic gastric tumors initiation and progression in K19-C2mE transgenic mice
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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 tumorgenesis 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, EP2, Gα, IL-1β, 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, Gαs 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 expression levels of COX-2, mPGE2-1, Gαs, IL-1β 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 National 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 subfamily G member 2 by pegylated-photosensitizer in pancreatic cancer
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Additional Authors: MYUNG GYO CHOI, YOON JIN ROH, IN WOOK KIM, JU HEE KIM, JAE MYUNG PARK, TAYYABA HASAN
Corresponding Author: MYUNG-GYO CHOI

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 polyethyleneimine. 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 μM 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 by photomultiplier-tube based singlet oxygen detection system. An antimur PDT effects in AsPC-1 cell-bearing BALC/c 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 significantly 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
conducted a matched case-control study between the normal CEA arm and elevated CEA arm. We analyzed 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 ($n = 202$)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Normal CEA Arm ($n = 101$)</th>
<th>Elevated CEA Arm ($n = 101$)</th>
<th>$p$-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (year)</td>
<td>63.2</td>
<td>62.8</td>
<td>0.811</td>
</tr>
<tr>
<td>Pre-CRT CEA, mean (ng/mL)</td>
<td>2.6</td>
<td>14.2</td>
<td>$&lt;0.001$</td>
</tr>
<tr>
<td>Gender – no. (%)</td>
<td>Male 62 (48.8)</td>
<td>65 (51.2)</td>
<td>0.662</td>
</tr>
<tr>
<td></td>
<td>Female 39 (52.0)</td>
<td>36 (48.0)</td>
<td></td>
</tr>
<tr>
<td>Clinical T stage – no. (%)</td>
<td>cT3 94 (50.5)</td>
<td>92 (49.5)</td>
<td>0.758</td>
</tr>
<tr>
<td></td>
<td>cT4 7 (43.8)</td>
<td>9 (56.2)</td>
<td></td>
</tr>
<tr>
<td>Clinical N stage – no. (%)</td>
<td>cN0 30 (46.9)</td>
<td>34 (53.1)</td>
<td>0.546</td>
</tr>
<tr>
<td></td>
<td>cN1-2 71 (51.4)</td>
<td>67 (48.6)</td>
<td></td>
</tr>
<tr>
<td>Histological grade* – no. (%)</td>
<td>Low 93 (50.0)</td>
<td>93 (50.0)</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>High 8 (50.0)</td>
<td>8 (50.0)</td>
<td></td>
</tr>
<tr>
<td>Distance of tumor from anal verge (cm) – no. (%)</td>
<td>&lt;6 61 (52.6)</td>
<td>55 (47.4)</td>
<td>0.393</td>
</tr>
<tr>
<td></td>
<td>≥6 40 (46.5)</td>
<td>46 (53.5)</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2** Tumor Response according to the CEA Group

<table>
<thead>
<tr>
<th>Downstaging (ypT0-2N0)</th>
<th>Normal CEA Arm ($n = 101$)</th>
<th>Elevated CEA Arm ($n = 101$)</th>
<th>$p$-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>49</td>
<td>29</td>
<td>0.004</td>
</tr>
<tr>
<td>No</td>
<td>52</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Downstaging rate (%)</td>
<td>48.5</td>
<td>28.7</td>
<td></td>
</tr>
</tbody>
</table>

**Table 3** Multivariate Analysis of Factors associated with Tumor Response after Chemoradiotherapy

<table>
<thead>
<tr>
<th>Factor</th>
<th>Adjusted Odds Ratio and 95% Confidence Interval</th>
<th>$p$-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, year</td>
<td></td>
<td>0.195</td>
</tr>
<tr>
<td>$&lt;$60</td>
<td>1.00 (referent)</td>
<td></td>
</tr>
<tr>
<td>$\geq$60</td>
<td>1.55 (0.80–3.00)</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td>0.673</td>
</tr>
<tr>
<td>Male</td>
<td>1.00 (referent)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1.15 (0.59–2.21)</td>
<td></td>
</tr>
<tr>
<td>CEA, ng/mL</td>
<td></td>
<td>0.004</td>
</tr>
<tr>
<td>$&lt;$5</td>
<td>1.00 (referent)</td>
<td></td>
</tr>
<tr>
<td>$\geq$5</td>
<td>0.38 (0.20–0.73)</td>
<td></td>
</tr>
<tr>
<td>Clinical T stage</td>
<td></td>
<td>0.315</td>
</tr>
<tr>
<td>T3</td>
<td>1.00 (referent)</td>
<td></td>
</tr>
<tr>
<td>T4</td>
<td>1.12 (0.08–2.19)</td>
<td></td>
</tr>
<tr>
<td>Clinical N stage</td>
<td></td>
<td>0.733</td>
</tr>
<tr>
<td>N0</td>
<td>1.00 (referent)</td>
<td></td>
</tr>
<tr>
<td>N+</td>
<td>1.63 (0.57–2.22)</td>
<td></td>
</tr>
<tr>
<td>Histological grade</td>
<td></td>
<td>0.310</td>
</tr>
<tr>
<td>Low</td>
<td>1.00 (referent)</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>1.12 (0.73–3.04)</td>
<td></td>
</tr>
<tr>
<td>Distance of tumor from anal verge, cm</td>
<td></td>
<td>0.074</td>
</tr>
<tr>
<td>$&lt;$6</td>
<td>1.00 (referent)</td>
<td></td>
</tr>
<tr>
<td>$\geq$6</td>
<td>1.89 (0.87–3.66)</td>
<td></td>
</tr>
<tr>
<td>Tumor size</td>
<td></td>
<td>0.029</td>
</tr>
<tr>
<td>$&lt;$4</td>
<td>1.00 (referent)</td>
<td></td>
</tr>
<tr>
<td>$\geq$4</td>
<td>0.48 (0.25–0.92)</td>
<td></td>
</tr>
<tr>
<td>Interval between radiation and operation</td>
<td></td>
<td>0.301</td>
</tr>
<tr>
<td>$&lt;$8</td>
<td>1.00 (referent)</td>
<td></td>
</tr>
<tr>
<td>$\geq$8</td>
<td>1.43 (0.72–2.86)</td>
<td></td>
</tr>
</tbody>
</table>

**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
Novel biomarker candidates for predicting high-risk GIST

**Objective:** The clinical features of gastrointestinal tract mesenchymal tumors (GIST) are diverse, that is to say, range widely from benign to malignancy. However, it has been thought too difficult to distinguish them pathologically or genetically so far. On the other hand, molecular biological research has been going on to explore new candidate genes which are related to characteristics of GIST. The aim of study is to explore novel candidate markers to predict high-risk GIST. This study is preliminary, compared them with clinical risk classification.

**Methods:** Exogenous Mutated c-kit varied eleven genes expression dramatically. 10 out of 11 target genes were confirmed their expression in clinical samples. However, there were no genes which expressed exclusively in GIST like c-kit or Ano1. One gene expression (ANKRD36BP2) of high-risk GIST was comparatively different expression between low-risk GIST. Ano1 and SMCR7L showed comparatively different expression between low-risk and high-risk GIST. Our study suggests 5 genes as new candidate biomarkers to predict high-risk GIST. This study is preliminary, so it is necessary to analyze more additional clinical samples in order to confirm clinical application.

**Key Word(s):** 1. gist

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**Influenza vaccination among cancer survivors in Korea: the Korea National Health and Nutrition Examination Survey**

**Objective:** Cancer survivors are at an increased risk of developing influenza-related complications. The purpose of this study was to investigate the vaccination rate and related factors among cancer survivors in Korea using the Korea National Health and Nutrition Examination Survey (KNHANES). The vaccination status in cancer survivors 65 years. Shorter duration since cancer diagnosis was the only factor associated with vaccination status in cancer survivors ≥65 years. Conclusion: Influenza vaccine coverage remains much lower than recommended among cancer survivors, particularly in younger age groups. These results may help better target preventive health care efforts to increase vaccination prevalence and reduce health risks for cancer survivors.

**Key Word(s):** 1. influenza; 2. human; 3. influenza vaccines; 4. neoplasms; 5. survivors
Oncology

P-614

Primary hepatic neuroendocrine carcinoma

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Affiliations: International Islamic University Malaysia, Hospital Tengku Ampuan Afzan, Hospital Tenngku Ampuan Afzan

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 heterogeneous 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 chromogranin; 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 Octreotide 50 mcgs tds. Her symptoms significantly improved. Subcutaneous injection Octreotide 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

Figure 1

Key Word(s): 1. leiomyosarcoma; 2. stomach; 3. gastrointestinal
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 clinicalpathologic 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
Utility of the Asia Pacific Colorectal Screening score in prioritizing screening colonoscopies for asymptomatic subjects

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**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 $\geq 10$ 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), $\geq 70$ 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 categories respectively. The prevalence of advanced neoplasia in the AR, MR and HR categories was 2.9% (95% CI 0.31%–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 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 AR, MR and HR category had 1.9 (95% CI 0.818–3.969, $p = 0.01$) 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
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

P-624
Risk of venous thromboembolism associated with chemotherapy and central venous ports in gastric cancer

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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 subclavien and administered anticoagulant drugs to high-risk patients for VTE prevention.

Key Word(s): 1. venous thromboembolism chemotherapy central venous port
Oncology

P-626
Involvement of STAT3 activation in the development of early gastric cancers

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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 phospholylated 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

P-627
A rare association of diffuse squamous cell carcinoma of the oesophagus with pernicious anemia

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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 gastrooesophageal junction, the biopsy of which showed squamous cell carcinoma. Gastric 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

P-628
The interval between diagnosis of hepatocellular carcinoma and chronic liver cell disease: the Sri Lankan experience

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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 hepato ma admitted to the principal authors’ unit at SIGH, 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 comorbidity 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 hepatitis 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

P-629
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 Jayawardenepeura 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 a higher incidence of poorly differentiated adenocarcinoma in diabetes mellitus. Large scale multi-center studies are needed for further evaluation.

Key Word(s): 1. diabetes mellitus; 2. histological grades of colonic carcinoma

Oncology

P-630
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 (NACRT) prior to surgery in non metastic locally advanced rectal cancers (LARCs). Methods: A retrospective audit of prospectively maintained data of 119 consecutive patients of LARCs 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 chemoradiation. Results: Out of 119 patients, 71 patients were CRM threatened and 48 patients were CRM + at initial evaluation. 113 completed NACRT of which 11 patients defaulted post chemoradiation. Of these 102 patients available for evaluation 16 patients (13.73%) progressed while on NACRT and became metastatic (16.6% 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 extenteration (Lung Retropertitoneal Lymph nodes). Histologically 56.25% of these patients were high risk patients (Signet ring, mucinous). Conclusion: Post NACRT 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

P-631
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 (pHCC) 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 pHCC. We compared post-transplant survival of iHCC, Ci group and pHCC 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-
Oncology  
P-632  
Is a complete remission of intestinal metaplasia a suitable endpoint in patients undergoing radiofrequency ablation (RFA)?  
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 years) 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 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  
P-634  
FOLFOX (oxaliplatin and leucovorin plus fluorouracil) versus FOLFIRI (irinotecan and leucovorin plus fluorouracil) chemotherapy as a first-line treatment in patients with unresectable metastatic or recurrent gastric adenocarcinoma  
Objective: We performed retrospective study in order to compare oxaliplatin, leucovorin and fluorouracil (FOLFOX) versus irinotecan, leucovorin and fluorouracil (FOLFIRI) in recurrent or metastatic gastric adenocarcinoma.  
Methods: We investigate 72 patients who were diagnosed with recurrent 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 differences between FOLFOX (42 patients) and FOLFIRI (30 patients) groups 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 differences (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 recurrent or metastatic gastric adenocarcinoma and there were no significant differences between FOLFOX and FOLFIRI in response rate and overall survival.  
Key Word(s): 1. stomach neoplasm; 2. chemotherapy
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**

**P-636**

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**

**P-637**

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
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)

<table>
<thead>
<tr>
<th>Year</th>
<th>Krasnoyarsk Region</th>
<th>Tyva</th>
<th>Khakassia</th>
<th>Evenkia</th>
<th>Russia</th>
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<td>2012</td>
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<td>26.14</td>
<td>32.86</td>
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<td>26.1</td>
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<tr>
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<td>=0.8</td>
<td>=0.8</td>
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</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Year</th>
<th>Krasnoyarsk Region</th>
<th>Tyva</th>
<th>Khakassia</th>
<th>Evenkia</th>
<th>Russia</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>4.15</td>
<td>4.48</td>
<td>4.84</td>
<td>6.08</td>
<td>5.04</td>
</tr>
<tr>
<td>2012</td>
<td>5.38</td>
<td>6.78</td>
<td>6.2</td>
<td>6.16</td>
<td>5.1</td>
</tr>
<tr>
<td>p</td>
<td>=0.7</td>
<td>=0.5</td>
<td>=0.7</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
</tr>
</tbody>
</table>

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

Poster
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 (88%) 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): colorectal; polyps; 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): colorectal cancer; surveillance; colonoscopy; 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, ture 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): MEG3; hepatocellular carcinoma; methylation; prognosis; p53
The role of demethylation on adenosine and homocysteine-induced apoptosis in human hepatocellular carcinoma cells

**Objective:** To investigate the role of DNA methyltransferases (DNMTs) and methylation on adenosine (ADO)-induced apoptosis in human hepatocellular carcinoma HepG2 cells. **Methods:** HepG2 cells were treated with different concentrations of ADO alone or in combination with homocysteine (HCY) for different durations. 5-aza-2′-deoxycytidine (5-Aza-CdR) as a positive control. Cell proliferation inhibition rates were evaluated by CCK8 assay. Cell apoptosis was detected by AnnexinV-FITC/PI staining. The mitochondrial membrane potentials were measured by flow cytometry. The mRNA and protein expression of DNMT1, DNMT3a, DNMT3b, MDM-2, P53, caspase-3, caspase-9 and cytochrome C were detected by qRT-PCR and Western blotting, respectively. The mRNA expression of lncRNA-MEG3 was also detected by qRT-P CR. **Results:** ADO alone or in combination with HCY significantly suppressed the cell proliferation of HepG2 cells in a dose- and time-dependent manner. The apoptotic rates of HepG2 cells in ADO alone or combination treatment with HCY were significantly increased, compared with the control group; and the mitochondrial membrane potentials were significantly decreased after ADO alone or combination treatment with HCY from 650.87 ± 72.41% (control group) to (314.23 ± 46.32%, 257.18 ± 26.5%, p < 0.01) respectively. The mRNA expressions of DNMT1, DNMT3a and DNMT3b were down-regulated after ADO alone or combination treatment with HCY. The mRNA expressions of lncRNA-MEG3, P53, caspase-3, caspase-9, cytochrome C were up-regulated and MDM-2 were down-regulated after ADO alone or combination treatment with HCY. **Conclusion:** ADO alone or combination treatment with HCY can suppress DNMTs and decreased cellular methylation metabolism. The effects of demethylation may activate lncRNA-MEG3 gene, P53 pathway and the mitochondrial pathway and at last led to cell apoptosis. **Key Word(s):** 1. adenosine; 2. homocysteine; 3. methylation; 4. hepatocellular carcinoma; 5. apoptosis

Endoscopic resection for rectal nets (neuroendocrine tumors): EMR-C (EMR using a cap), EMR-L (EMR with a ligation device), or conventional EMR

**Objective:** The aim of this study was to compare efficacy and safety EMR-C/EMR-L and conventional EMR as the treat for rectal NETs. **Methods:** We have encountered 60 cases of gastrointestinal NETs from July 2004 to July 2014. Among them 40 cases were located in the rectum. For endoscopic treatment in our institute is less than 10 mm diameter, with no ulceration or no depression at the top, and the tumor depth is not beyond the submucosal layer in EUS. Thus, we have treated 31 cases of rectal NET with conventional or modified method of EMR. We further confirmed the potential candidate genes by tissue arrays in 243 cancer tissues and 126 normal tissues of esophagus from Taiwan, Korea, and USA and by ELISA in 78 serum specimens of ESCC patients from Taiwan. **Results:** Four candidate genes, including ATP1A1, SPINT2, CMTM8, and AGR2, were chosen by microarray-based screening of 17 paired tissues from 17 ESCC patients. Only ATP1A1 (ATPas Na+/K+ transporting alpha 1 polypeptide) passed validation by RT-PCR and IHC staining in ESCC tissue specimens. We found positive ATP1A1 immunostaining in 207 (85%) of the 243 cancer tissues and 88 (70%) of the 126 normal tissues. After adjustment for age and sex, ATP1A1 overexpression had a 3.2-fold (95% CI = 1.8–5.6) to be likely in cancer tissues than in normal tissues. Using the median level of 1,465.0 pg/mL of serum ATP1A1 protein expression as the cut-off point, we found that patients with stage III-IV had a 2.91-fold (1.12–7.36) likely to have high serum ATP1A1 levels than those with stage I-II after adjustment for age and sex. **Conclusion:** ATP1A1 overexpression may be a potential noninvasive marker of the clinical diagnosis and staging for ESCC patients. **Key Word(s):** 1. ATPase Na+/K+ transporting alpha 1 polypeptide; 2. microarray-based screening; 3. N-nitrosomethylbenzylamine; 4. arecoline; 5. F344; 6. esophageal squamous cell carcinoma

ATP1A1 overexpression correlates with clinical diagnosis and staging of esophageal cancer: from in-vivo to human

**Objective:** This study aims to identify the novel and potential upregulated genes related to secretory or membranous proteins for the clinical diagnosis and staging of esophageal squamous cell carcinoma (ESCC). **Methods:** By combining microarray-based screening, which contained at least 25,000 DNA oligonucleotide probes, of esophageal tumors from both N-nitrosomethylbenzylamine- and arecoline-induced F344 rats and 17 human ESCC specimens, we further confirmed the potential candidate genes by tissue arrays in 243 cancer tissues and 126 normal tissues of esophagus from Taiwan, Korea, and USA and by ELISA in 78 serum specimens of ESCC patients from Taiwan. **Results:** Four candidate genes, including ATP1A1, SPINT2, CMTM8, and AGR2, were chosen by microarray-based screening of 17 paired tissues from 17 ESCC patients. Only ATP1A1 (ATPas Na+/K+ transporting alpha 1 polypeptide) passed validation by RT-PCR and IHC staining in ESCC tissue specimens. We found positive ATP1A1 immunostaining in 207 (85%) of the 243 cancer tissues and 88 (70%) of the 126 normal tissues. After adjustment for age and sex, ATP1A1 overexpression had a 3.2-fold (95% CI = 1.8–5.6) to be likely in cancer tissues than in normal tissues. Using the median level of 1,465.0 pg/mL of serum ATP1A1 protein expression as the cut-off point, we found that patients with stage III-IV had a 2.91-fold (1.12–7.36) likely to have high serum ATP1A1 levels than those with stage I-II after adjustment for age and sex. **Conclusion:** ATP1A1 overexpression may be a potential noninvasive marker of the clinical diagnosis and staging for ESCC patients. **Key Word(s):** 1. ATPase Na+/K+ transporting alpha 1 polypeptide; 2. microarray-based screening; 3. N-nitrosomethylbenzylamine; 4. arecoline; 5. F344; 6. esophageal squamous cell carcinoma
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 = 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-654**

Overexpression of Rap1b indicates a poor prognosis for esophageal squamous cell carcinoma and promotes tumor cell invasion via p38 MAPK

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**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) is 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 Rap1b 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 tissue.

**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

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**Oncology**

**P-655**

Role of miR-320b on regulation of cancer related inflammation in esophageal squamous cell carcinoma

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**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 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

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**Oncology**

**P-656**

Microrna-381 regulates radiosensitivity in esophageal squamous cell carcinoma

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**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-miRNA-381 or antisense of miRNA-381 in vitro and in vivo.

**Results:** The trend of radiosensitivity in these six cell lines was TE1>TE10>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, inh-
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
Pediatric Gastroenterology and Hepatology
P-661
Change of the estimated GFR in chronic hepatitis B patients treated with nucleot(id)ide analogues in Taiwan
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Objective: The decline of the glomerular filtration rate (GFR) has been a concern for nucleot(id)ide 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) mono-therapy (n = 72), adefovir dipivoxil (ADV)/lamivudine (LAM) combination therapy for YMDD variants (N = 165) and entecavir (ETV) mono-therapy (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 ± 0.267, −4.81 ± 14.63, −4.10 ± 17.39 and −2.85 ± 12.89; all Ps < 0.001) and TBV (−0.07 ± 0.15, +9.17 ± 25.17, +11.92 ± 29.38 and +8.89 ± 24.40; all Ps < 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 Ps < 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 Words: 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, compared 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 Words: Na
Pediatric Gastroenterology and Hepatology

P-663
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 polyps 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 polyp in children. Colonoscopic polypectomy is effective and safe. Surveillance colonoscopy is required in juvenile polyposis only.

Key Word(s): 1. juvenile polyposis; 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 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. polypsectomy; 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
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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 Words(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
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Objective: Buried Bumber 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 jejunum 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. The trocar was then inserted the blue nylon string 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 Words(s): 1. buried bumper syndrome; 2. peg

Surgery
P-668
Retrospective clinical analysis of 1944 cases bowel obstruction: diagnosis and assessment of intestinal strangulation
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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 retrospectively 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% (905/1954). 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 96%. 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 Words(s): 1. bowel obstruction; 2. diagnosis; 3. intestinal strangulation; 4. computer tomography
Liver biopsy: is it safe in children?

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Objective: The blind liver biopsy technique has been widely used in Sudan as the availability of the ultra sound machines and the committed Pediatric 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 Gafar 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 Words: 1. blind liver biopsy; 2. children

Surgery

P-672

Chemical thromboprophylaxis is safe and decreases the risk of pulmonary embolism after hepatobiliary-pancreatic surgery

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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 Words: 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
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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 retrospec-
tively 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: 58–76). 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 dissec-
tion was performed in 4 patients. TG with D2 lymph node dissection with
spleenectomy was performed in 3 patients. UICC (7th edition) stage were
IA: 6, IB: 1, IIB: 5, IIIA: 1 and IIB: 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 under-
gate DG/D2, one left subphrenic abscess (patients who underwent
DG/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
± 8 days. Long term outcome: The one-year survival rate was 85%, and two-year survival rate was 47%. Eight cases were died. In these cases four cases died of the recurrent
gastric cancer (stage IIB: 2, IIA: 1, IIB: 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
I: 2, II: 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
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
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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), espe-
cially intrastragastric-type SMT, wedge resection of the stomach is quite
difficult. Thus intrastragastric-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 intrastragastric-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 intrastragastric-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 endos-
copy. 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 opera-
tion 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 ste-
nosis occurred in one. Conclusion: LECS for dissection of intrastraga-
string-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 gastroscope**  
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**Objective:** In Japan, percutaneous endoscopic gastroscope (PEG) is used mainly in stage 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:** The age 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

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Surgery  

P-677  
**A discussion on the indications of laparoscopic and endoscopic cooperative surgery for gastrointestinal stromal tumor**  
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**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
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
P-679
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.

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
P-680
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 computed tomographic scans showed intra-abdominal fluids, bowel loops edema, omental cakes, and/or mesenteric fat edema without mention of the clues of SEP. The CAFD 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 interventions 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
P-681
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 be 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 day, 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
P-682
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
Therapeutic Endoscopy/Interventional Radiology

P-685

The prevention of early death after percutaneous endoscopic gastrostomy

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Objective: Percutaneous Endoscopic Gastrostomy (PEG) is a accepted method of placing a feeding tube to enable enteral nutrition in patients with swallowing difficulties and upper GI tract problem. Not only to avoid procedure related events, but also to give better information to patients referred for PEG regarding risk of complications, it is important to have better knowledge about factors that affect adverse events. Previously, we retrospectively analyzed a series of 268 patients who underwent PEG in our hospital, and reported nutrition status was one of the predictive factors (Prognostic Nutritional Index: PNI) associated with complications, and procedure related death. Methods: We prospectively assessed 144 patients who planned PEG at Sapporo Shirakabada Hospital during the period 2011 – 2013. We placed a nutritional improvement period for more than 10 days before PEG for those poorer nutritional status (PNI < 37). For those with better nutritional status, no nutritional intervention was performed. Results: Out of 144 patients enrolled in this study, 117 patients were actually received PEG. Survival rates were 97.5% (80 procedure) at 30-days in better nutritional group and 100% (37 procedure) at 30-days in poorer nutritional group. The most of patients who did not received PEG early died within 30 days. Overall survival rate was 98.3% which is remarkably improved from previous study (91.8%). Conclusion: In this analysis, it was not very clear that nutritional status is a predictive factor for survival after PEG. But comparing with our previous study, overall survival was remarkably improved which indicated that a nutritional intervention especially for those poor nutritional status is one of the key factors to avoid procedure related events.

Key Word(s): 1. PEG; 2. micro-bubbles; 3. liver transplantation; 4. hepatic artery stenosis

Therapeutic Endoscopy/Interventional Radiology

P-686

Risk factors for delayed post-polypectomy bleeding

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Objective: Of the many complications that can occur following therapeutic endoscopy, bleeding is the most serious, occurring in 1.3% of all colonoscopic polypectomies. The aim of this study was to identify risk factors associated with the development of delayed post-polypectomy bleeding. Methods: In a retrospective case-control study of 1745 colonoscopic polypectomy patients, we compared those who developed delayed bleeding with those who did not. Control patients were selected at a ratio of 3:1. A total of 21 (1.2%) patients developed post-polypectomy bleeding, and 63 age- and sex-matched patients were selected to form the control group. Univariate and multivariate logistic regression analyses were used to compare size, number, location, and shape of polyps; body mass index (BMI); the experience of the attending endoscopist; and comorbidity among patient groups. Results: Multivariate logistic regression analysis revealed a significant association between delayed post-polypectomy bleeding and polyps larger than 10 mm (odds ratio [OR]: 2.605, 95% confidence interval [CI]: 1.035–4.528, P = 0.049), the presence of polyps in the right hemicolon (OR: 3.10, 95% CI: 1.291–5.761, P = 0.013), and an elevated BMI (OR: 3.681, 95% CI: 1.876–6.613, P = 0.013). An association between delayed bleeding and endoscopist experience was found in univariate analysis only. Conclusion: Endoscopists performing polypectomies on patients with large or pedunculated polyps, polyps in the right hemicolon, or an elevated BMI, should be particularly vigilant against the possibility of delayed bleeding after surgery.

Key Word(s): 1. colonoscopy; 2. polypectomy; 3. complication; 4. bleeding

Therapeutic Endoscopy/Interventional Radiology

P-688

Procedure time and submucosal fibrosis are independent predictors of perforation during colorectal endoscopic submucosal dissection

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Objective: Although endoscopic submucosal dissection (ESD) is becoming the standard treatment for superficial colorectal neoplasia ≥2 cm, barriers to the adoption of ESD include greater technical difficulty as well as the increased risk of perforation. Interestingly, previous alleged risk factors for ESD-associated colonic perforation were also associated with difficulty of colorectal ESD. Difficulty of colorectal ESD might be mea-
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 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 ≥29.45 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 ≥290 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 < 0.0001), 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-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 cmms 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 cmms straight stents) with papilla with and without a diverticulum and the third group in cases with cholangitis where 10 Fr–12 cmms straight stents were placed. This data showed a significant proximal migration of 7 Fr–10 cmms stents and especially those associated with a peri Ampullary diverticulum. Therefore prospectively the authors changed the straight 7 Fr–10 cmms stents to 7 Fr–12 cmms in papilla without peri Ampullary diverticuli and 7 Fr- Double pigtail stents 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 cmms straight stent)- migration 36 (5.1%), 216 cases stone with papilla associated with peri Ampullary diverticulum (7 Fr–10 cmms straight) migration 30 (13.9%), 50 cases of leaks with normal papilla (7 Fr–12 cmms straight), migration 3 (6%), 13 cases of leak with papilla associated with peri Ampullary diverticulum (7 Fr–12 cmms straight stents), migration 2 (11.5%), 99 cases with cholangitis (10 Fr–12 cmms straight stent), migration 1 (1%). From 2011–2014 – (Total- 1320 cases) – 871 cases stones with normal papilla (7 Fr–12 cmms 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 cmms straight stents), migration 4 (5.8%), 8 leaks with papilla associated with peri Ampullary diverticulum (7 Fr–10 cmms double pigtail stent), proximal migration 0 and distal migration 1 (6%) and 114 cases of cholangitis (10 Fr–12 cmms 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 cmms 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 Words: 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 budge. 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 secondarily 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 18 100.0% Puncture Possible around marked site17 94.4% Bleeding (Minor) 3 16.7% Necrosis Present 5 27.7% Infected Fluid 4 22.2% Naso Cystic Drain removed12 63.1% Stents still present 4 22.2% ERCP Performed 6 33.3% Cystogastrostomy stents Removed12 22.2% 4 22.2% ERCP Performed 6 33.3% Cystogastrostomy stents Removed12 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 Words: 1. pseudocyst; 2. varices; 3. EUS marking; 4. puncture
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 whereas 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

Complete defect closure of gastric submucosal tumors with purse-string sutures

Poster

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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

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 squamous carcinoma 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 ± 0.06 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 3.8%. 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-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 systemic 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 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 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 epitheloid hamangioendothelioma 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 ultrasonography 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 epitheloid 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 5 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. epitheloid hamangioendothelioma; 2. transcatheter arterial chemoembolization

Therapeutic Endoscopy/Interventional Radiology
P-698
A case of epitheloid hemangioendothelioma which was treated by TACE
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Objective: Epitheloid hemangioendothelioma (EHE) is a rare vascular tumor which shows intermediate malignancy between hemangiomas and malignant hemangioendotheliomas. 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 epitheloid hamangioendothelioma 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 ultrasonography 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 epitheloid 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 5 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. epitheloid hamangioendothelioma; 2. transcatheter arterial chemoembolization

Poster
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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 = 0.04). 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 I/V 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
Therapeutic Endoscopy/Interventional Radiology P-702
A prototype holder adequately supports the overtube in balloon-assisted ESD
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Objective: Endoscopic maneuverability and stability are essential for colorectal endoscopic submucosal dissection (ESD). However, in certain circumstances, increased mobility of the colon may result in endoscopic instability and diminished colonoscope tip control. Maintaining a straight instrument with effective tip control is difficult to achieve in the presence of a dolichocolon or post-operative abdomen-pelvic adhesions, for example. If the necessary degree of endoscopic control cannot be achieved with conventional colonoscopy, the intrinsic design of balloon-assisted ESD (BAESD) can enhance endoscopic maneuverability and provide the operator with a more effective alternative to conventional colonoscopy in such circumstances. However, BAESD requires an assistant to hold the overtube throughout the procedure. Therefore, we devised a prototype mechanical overtube holder as an alternative to an assistant. We analyzed the clinical results to determine if the prototype overtube holder effectively took the place of an assistant. Methods: A total of 244 colorectal neoplasms were treated using ESD from August 2012 to March 2014. In patients where there was endoscopic instability or difficult colonoscopy during a preoperative detailed colonoscopy, the use of BAESD was indicated. The BAESD procedure was begun using the prototype mechanical holder. If the operator could not continue the procedure using the prototype holder, an assistant took over holding the overtube. We evaluated whether the prototype holder was adequate to complete an entire BAESD procedure. Results: A total of 34 lesions required BAESD for resection, including 4 lesions in the cecum, 15 in the ascending colon, 13 in the transverse colon, and 2 in the sigmoid colon. The prototype holder was used in all of the BAESD procedures (34/34) without relief by an assistant. The mean duration of the BAESDs was 120 ± 108 minutes. Conclusion: The prototype holder can take the place of an assistant during BAESD procedures eliminating
Key Word(s): 1. ESD; 2. BAESD; 3. balloon-assisted endoscopic submucosal dissection; 4. overtube; 5. holder

Therapeutic Endoscopy/Interventional Radiology P-703
Long-term outcome after ESD for early gastric cancer: focusing on a group beyond expanded indication
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Objective: In order to know the long-term outcome after ESD in EGC, we analyzed the results and the clinical outcomes after ESD of EGC according to the pathologic extent. Methods: The ESDs were performed in 309 EGCs of 280 patients. Among them, 228 patients, who had ESD for EGC were classified by pathological severity based on absolute indication (AI), expanded indication (EI) or beyond expanded indication (BEI). Results: The complete resection rates were 96.4% in AI-group, 78.7% in EI-group, and 41.2% in BEI-group (P = 0.000). The en bloc resection rates were 97.6% in AI-group, 87.4% in EI-group, and 86.3% in BEI-group (P = 0.023). The 5-year tumor recurrence rates were 1.8% in the AI-group, 1.5% in the EI-group and 15.4% in the BEI-group (P = 0.000). The 5-year disease-specific survival rates were 100% in the AI-group, 100% in the EI-group, and 97.4% in the BEI-group (P = 0.088). The 5-year disease-free survival rates were 98.2% in the AI-group, 98.5% in the EI-group, and 84.6% in the BEI-group (P = 0.000). Conclusion: ESD was effective and safe in the AI or EI group but a comparatively high rate of recurrence resulted from performance of ESD in the BEI-group. ESD may be useful in EGC patients at high-risk for surgery.
Key Word(s): 1. early gastric cancer; 2. endoscopic submucosal dissection; 3. expanded indication; 4. long-term; 5. outcome

Therapeutic Endoscopy/Interventional Radiology P-704
Ex vivo bovine training model for colorectal endoscopic submucosal dissection (ESD) for the trainee endoscopists
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Objective: Background: Colorectal ESD (CR-ESD) procedure is highly technically demanding due to the inherent histological and anatomical features of the human colorectum, and has a steep learning curve. Endoscopists clinically should start to perform CR-ESD on rectum because of the lower risk of perforation and less difficulty. Training using animal model is generally recommended before starting CR-ESD in human. Aim: To assess the usefulness of an animal training model for CR-ESD.
**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 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/cm^2), 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/cm^2) 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

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**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 largediameter 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 para papillary diverticulum. One patient had a history of gastronomy 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
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:**

**Results:** Case report A 62-year-old man with recurred 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 histoacryl, and bile leaks were not observed any more (Figure 3).
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 were reviewed retrospectively with a focus 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 Words: 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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Additional Authors: DO HOON KIM, EUN JEONG GONG, JI YONG AHN, KWI SOOK CHOI, JEONG HOON LEE, KEE WOOK JUNG, KEE DON CHOI, HO JUNE SONG, GIN HYUG LEE, HWOO YONG JUNG, JIN HO KIM

Corresponding Author: KYOUNGWON JUNG
Affiliations: Asan Medical Center, Asan Medical Center, Asan Medical Center, Asan Medical Center, Asan Medical Center, Asan Medical Center, Asan Medical Center, Asan Medical Center

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 Words: 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
Presenting Author: SEIJI KAINO
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Corresponding Author: SEIJI KAINO
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, Yamaguchi University Graduate School of Medicine

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 used 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.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Complete Response at One Week</th>
<th>Complete Response at Two Months</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGN</td>
<td>5/7 (71.4%)</td>
<td>3/6 (50.0%)</td>
<td>0.735</td>
</tr>
<tr>
<td>CPN</td>
<td>4/5 (80.0%)</td>
<td>2/4 (50.0%)</td>
<td>1.000</td>
</tr>
<tr>
<td>Tumor size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;4.0 cm</td>
<td>3/4 (75.0%)</td>
<td>2/4 (50.0%)</td>
<td></td>
</tr>
<tr>
<td>&lt;4.0 cm</td>
<td>6/8 (75.0%)</td>
<td>3/6 (50.0%)</td>
<td></td>
</tr>
<tr>
<td>Tumor location</td>
<td></td>
<td></td>
<td>0.310 (0.197)</td>
</tr>
<tr>
<td>head</td>
<td>6/7 (85.7%)</td>
<td>4/6 (66.7%)</td>
<td></td>
</tr>
<tr>
<td>body or tail</td>
<td>3/5 (60.0%)</td>
<td>1/4 (25.0%)</td>
<td></td>
</tr>
</tbody>
</table>

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
Therapeutic Endoscopy/Interventional Radiology

Clinical outcomes of endoscopic colorectal stenting as a bridge to surgery in the management of acute malignant obstruction

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Objective: Endoscopic colorectal stenting have been used to manage large bowel obstruction as a palliative treatment or to initially decompress the colon as a bridge to definitive surgery. Especially, endoscopic colorectal stenting in malignant obstruction has been reported to have the advantages such as high successful primary anastomosis and low overall stoma rate as a bridge to surgery, shorter hospital stay and cost effectiveness. But recent studies reported that colorectal stenting was no more effective and safe compared to emergency surgery in clinical success rate and overall complication rate. Out goal of this study was to compare the clinical outcomes between operation after colorectal stenting and surgery only for curative purpose in patients with colorectal obstruction.

Methods: A retrospective review was done of patients undergoing placement of a endoscopic colorectal stent for obstructive colorectal cancer between May 2009 and May 2013. 37 patients underwent endoscopic colorectal stent as a bridge to curative surgery (stent group). 40 patients underwent a curative operation without colorectal stent (surgery only group). Primary outcomes included the stoma rate and the length of hospital stay after surgery, postoperative complication including in-hospital mortality, emergency surgery rate and open surgery rate. Secondary outcomes included the technical success rate of stent insertion and symptom improvement rate after stenting, perforation during procedure. Results: The stoma rate was 27.0% (10/37) in stent group versus 45.0% (18/40) in surgery only group (p = 0.10). The median postoperative hospital stay was 12.3 ± 5.8 days versus 12.2 ± 7.4 days (p = 0.92). The postoperative complication rate was 8.1% (3/37) versus 10.0% (4/40) (p = 1.00). In-hospital death happened two case (5.4%, 2/37) in stent group and one case in surgery only group (p = 0.60). 7 patients (18.9%) in stent group and 11 patient (27.5%) in surgery group underwent emergency surgery (p = 0.37). Open surgery rate was 32.4% (12/37) versus 40.0% (16/40), respectively (p = 0.49). Subgroup analysis showed that emergency surgery rate of stent group who had successful stent insertion was significantly lower compared to surgery only group (6.7%, p < 0.01). The overall success rate of colorectal stent insertion for malignant colorectal obstruction was 88.7% (77/86). The success rate of stent as a bridge to curative surgery was 81.1% (30/37). Failure of the guidewire passage through lesions occurred in 5 patients (13.5%). Perforation during procedure occurred in 2 patients (5.4%). All patients who were performed stent insertion successfully, achieved symptom improvement.
Conclusion: Clinical outcomes of endoscopic colorectal stenting as a bridge to surgery showed no additional clinical benefit comparing with surgery only for curative purpose of obstructive colorectal cancer. Although, emergency surgery rate in stent group was lower than in surgery group. If the patients are at increased risk for complications of emergency surgery, stent can be considered as alternative approach to emergency surgery.

Key Word(s): 1. colon; 2. stent; 3. malignant obstruction

Therapeutic Endoscopy/Interventional Radiology

Laparoscopy-assisted endoscopic full-thickness resection with basin lymphadenectomy based on sentinel lymph nodes for early gastric cancer

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Objective: Endoscopic submucosal dissection (ESD) has been reserved for patients with early gastric cancer (EGC) that are unlikely to have metastatic lymph nodes. However, the identification of metastatic lymph nodes before resection is challenging in usual clinical setting. We performed a prospective pilot study to evaluate the efficacy of laparoscopy-assisted endoscopic full-thickness resection (LAEFTR) with sentinel node navigation surgery for patients with EGC. Methods: We enrolled patients who were diagnosed as early gastric cancer with submucosal invasion or undifferentiated mucosal cancer of 2 cm or less cm without ulceration between January 2012 and March 2013. Laparoscopic full-thickness resection was performed with the endoscopic knife by a half of tumor circumference. And then, laparoscopic resection was performed for the rest of tumor circumference. Sentinel node was navigated by indocyanine green injected with endoscope around the tumor and then resected. Patients received a follow-up endoscopy after 6 month and the interview was done every 2 months for 6 months. Results: Nine patients successfully underwent the procedure. The mean age of patients was 52.0 ± 23.1 years. The mean number of total lymph nodes in the dissected basin was 8.4 ± 6.8. The mean operation time was 183.8 ± 71.4 minutes. No patients had metastatic lymph nodes. No malignant cells were seen at resection margin of the primary tumors. Significant postoperative complication did not occur. Conclusion: Our technique could be utilized as a novel treatment option for patients who have early gastric cancer with inconclusive lymph node metastasis before resection.

Key Word(s): 1. gastric neoplasm; 2. early gastric cancer; 3. laparoscopy-assisted surgery; 4. endoscopic resection; 5. sentinel lymph node

Therapeutic Endoscopy/Interventional Radiology

A novel method of porcine benign esophageal stricture model

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Objective: Endoscopic submucosal dissection (ESD) has been reserved for patients with early gastric cancer (EGC) that are unlikely to have metastatic lymph nodes. However, the identification of metastatic lymph nodes before resection is challenging in usual clinical setting. We performed a prospective pilot study to evaluate the efficacy of laparoscopy-assisted endoscopic full-thickness resection (LAEFTR) with sentinel node navigation surgery for patients with EGC. Methods: We enrolled patients who were diagnosed as early gastric cancer with submucosal invasion or undifferentiated mucosal cancer of 2 cm or less cm without ulceration between January 2012 and March 2013. Laparoscopic full-thickness resection was performed with the endoscopic knife by a half of tumor circumference. And then, laparoscopic resection was performed for the rest of tumor circumference. Sentinel node was navigated by indocyanine green injected with endoscope around the tumor and then resected. Patients received a follow-up endoscopy after 6 month and the interview was done every 2 months for 6 months. Results: Nine patients successfully underwent the procedure. The mean age of patients was 52.0 ± 23.1 years. The mean number of total lymph nodes in the dissected basin was 8.4 ± 6.8. The mean operation time was 183.8 ± 71.4 minutes. No patients had metastatic lymph nodes. No malignant cells were seen at resection margin of the primary tumors. Significant postoperative complication did not occur. Conclusion: Our technique could be utilized as a novel treatment option for patients who have early gastric cancer with inconclusive lymph node metastasis before resection.

Key Word(s): 1. gastric neoplasm; 2. early gastric cancer; 3. laparoscopy-assisted surgery; 4. endoscopic resection; 5. sentinel lymph node

Poster
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).

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).

But four pigs (4/6, 80%) were died within a month due to malnutrition and esophageal perforations (Figure 3).

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...
Second look endoscopy following endoscopic resection does not reduce the risk of delayed bleeding

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Additional Authors: DAE YOUNG CHEUNG, JAE HYUN SEO, MIN YOUNG JEONG, HYUNG JUN CHO, IL KYU KIM, JIN IL KIM, SOO HEON PARK, JAE KWANG KIM

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

Experience with balloon–catheter-assisted, self-expanding metal stents inserted for malignant gastrointestinal obstruction

Presenting Author: JU HWAN KIM
Additional Authors: KWANG HYUN KO, SUNG PYO HONG, SANG WOO HAN, SUK PYO SHIN

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. Methods: Records of patients who underwent endoscopic SEMS insertion were reviewed. The SEMS insertion was performed under endoscopic monitoring alone. An insertion of a guide wire that was introduced into a balloon catheter

Risk factors and management for ERCP related perforations: an analysis of 5,642 cases

Presenting Author: JAE WOO KIM
Additional Authors: KYONG JOO LEE, HEE MAN KIM, HONG JUN PARK, HYUN SOO KIM

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

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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

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**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 latency 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

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**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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**Additional Authors:** YOUNG EUN JOO, HYUN SOO KIM, SUNG BUM CHO, WAN SIK LEE

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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

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**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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**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: A 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 in the 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 been occasionally detected during follow-up after ESD. The clinical pathologic 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).

Conclusion: Metachronous lesions tended to develop in the U area. There was a slightly higher frequency of metachronous lesions 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 Words: 1. metachronous gastric neoplasms; 2. 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 = NS) and delayed bleeding rates (3.4%/3.9%; p = 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 = 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 Words: 1. endoscopic mucosal resection; 2. endoscopic submucosal dissection; 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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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...
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 bile 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 with active bleeding were ligated, and injected tissue glue at the bleeding followed by a local injection of tissue glue. In case 2, esophageal varices reduction for liver transplantation patients with massive UGB was 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

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
Therapeutic Endoscopy/Interventional Radiology

P-729

Effective peroral direct cholangioscopy with an ultrasmall 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 ultrasmall 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-450BI5 or EI-530B, Fujifilm, Tokyo) was performed in all patients. Following removal of hepatolithiasis, the DBE was exchanged for an ultrasmall 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 follow-up after PDCS was 15.5 month (range, 3–27), and only one patient (8.3%) had recurrence of hepatolithiasis.

Conclusion: PDCS using an ultrasmall 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

P-730

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

P-732
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

Therapeutic Endoscopy/Interventional Radiology

P-733
The pocket-creation method makes endoscopic submucosal dissection feasible for duodenal 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 Words(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 4cm5 (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 chemotheraphy. 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 Words(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. Thirty 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 choledocho-duodenostomy (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, choledolithiasis treated by PTGBA, and bleeding. Eight (28%) developed late complications: 5 CMS 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 (6.2%; 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. esophageal

**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 short balloon s-SBE for therapeutic ERCP in patients with gastrointestinal

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Therapeutic Endoscopy/Interventional Radiology

P-741
Comparison of bolus injection and continuous infusion of proton pump inhibitor for the control of bleeding after endoscopic submucosal dissection

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Objective: After endoscopic submucosal dissection (ESD), elevated intra-gastric pH is important to control of bleeding and healing the artificial ulcer. The most powerful acid suppression agent is the Proton Pump Inhibitor (PPI). Continuous infusion of PPI after intravenous bolus injection is the standard treatment for the control of gastric ulcer bleeding. Our aim is to compare the effects bolus injection of and continuous infusion of PPI for the control of delayed bleeding after ESD. Methods: This is prospective randomized (by computer generation method) controlled study. From March 2012 to Feb 2013, enrolled patients were 273 patients with gastric superficial epithelial neoplasm. We divided into two groups. The one was bolus injection group, the other one was continuous infusion group. All enrolled patients were undergone ESD. We used the pantoprazole for PPI. In continuous infusion group, we used to initial pantoprazole 80 mg bolus loading for 30 min before ESD. Then 8 mg/hr continuous infusion for 72 hours was done. For bolus injection group (n = 136), pantoprazole 40 mg bolus is injected q 12 hours for 72 hours. After 72 hours, Oral pantoprazole 40 mg daily for 4 to 8 week. Follow-up endoscopy is performed the 2 days and 4 weeks after ESD. (In case of incomplete ulcer healing, 8 week endoscopy and pantoprazole 8 week medication was done.) Results: Between two group of treatment, clinical
Therapeutic Endoscopy/Interventional Radiology P-742
Colorectal endoscopic submucosal dissection for large tumors (>5 cm in diameter) is safe and reliable as for smaller tumors (2–5 cm in diameter)

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Objective: In April 2012, the Japanese government approved insurance coverage for colorectal endoscopic submucosal dissection (CR-ESD). Insurance coverage is limited to colorectal tumors 2–5 cm in diameter. However, CR-ESD for tumors over 5 cm in diameter has been performed as an “advanced medical treatment” without insurance coverage. The aim of this study is to assess the need for this size limitation, in the hopes of extending insurance coverage.

Methods: From April 2010 to March 2014, 481 consecutive colorectal lesions were resected using CR-ESD at Jichi Medical University. Of the lesions, 359 superficial tumors were included in this study, after exclusion of 82 lesions (n.s.), rate of perforation; 4.4%/0% (n.s.), usage of hyaluronic acid (HA); 90.0%/87.2% (n.s.), rate of post-ESD hemorrhage; 2.8%/0% (n.s.), rate of en bloc resection; 98.7%/97.8% (n.s.), rate of histological complete resection; 90.0%/87.2% (n.s.), rate of post-ESD hemorrhage; 2.8%/0% (n.s.), rate of perforation; 4.4%/0% (n.s.), usage of hyaluronic acid (HA); 41.7 ± 24.1 ml/112.1 ± 84.1 ml (P < 0.05), procedure time; 67.1 ± 51.0 min/165.4 ± 126.6 min. (P < 0.05). CR-ESD is applicable to patients with large tumors (>5 cm), with safety and reliability comparable to that in patients with smaller tumors (2–5 cm). However, CR-ESD for larger lesions requires more procedure time and HA.

Conclusion: From our data size of the lesion is an important factor associated with tissue sampling yield for gastric GISTs. Tissue sampling of gastric gastrointestinal stromal tumors (GISTs) by biopsy or fine needle aspiration (FNA) via endosonography is often performed to confirm diagnosis and management but yield can be variable especially in smaller lesions. We analysed our experience in Western Australia across all tertiary centres.

Methods: All patients undergoing EUS for evaluation of a gastric subepithelial lesion in Western Australia, February 2002–May 2014 were identified. Data was represented as mean or median ± standard deviation.

Results: 263 patients with gastric subepithelial lesions were identified, male 107 (41%), median age 58.7 years (range 21–89), EUS diagnosis was GIST in 161 cases (62%). Of the 161 suspected GISTs, 91 (57%) had attempted tissue sampling, by EUS FNA 75 (82%), tunnel biopsy (TB) 16 (18%), standard biopsy 3 (3%). 3 patients had both EUS FNA and TB. Mean lesion size 34.5 mm, median 28 (range 6–150 mm). Overall diagnostic rate for gastric GIST with tissue sampling was 73.6%; EUS FNA 80%, TB 37.5%, standard biopsy 33.3%. Median size of lesion was larger in the diagnostic group, 34 mm (range 10–150) compared to 15 mm (range 6–70) in the non-diagnostic group (p = 0.0001). Categorising by size the diagnostic rate for all modalities of tissue sampling was <10 mm 85% (0%), 10–19 mm 50%, >20 mm 89%. EUS FNA diagnostic rate was <10 mm 0%, 10–19 mm 56%, >20 mm 88%. GIST layer and anatomical location were not variables found to be associated with increased diagnostic yield for any type of biopsy.

Conclusion: From our data size of the lesion is an important factor associated with tissue sampling yield for gastric GISTs. Tissue sampling of small GISTs (<2 cm) has a poor yield and should be limited to those where there is significant diagnostic doubt which may have subsequent management implications.

Key Word(s): 1. gastric; 2. EUS; 3. FNA; 4. GIST
Therapeutic Endoscopy/Interventional Radiology

P-744
The ‘pocket-creation method’ facilitates colorectal ESD for giant sessile and subpedunculated neoplastic lesions
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Objective: Endoscopic submucosal dissection (ESD) for giant sessile and subpedunculated neoplastic lesions is associated with technical difficulties because the center of the lesions has severe submucosal fibrosis due to prolapse, which pulls up the muscle layer. To overcome this difficulty, we developed the Pocket-Creation Method (PCM). To evaluate the safety and efficacy of PCM compared with conventional ESD.

Methods: The key feature of PCM is to create a large submucosal pocket under the lesion using an ST hood. If there is severe fibrosis at the center of the lesion, the pocket is created on both sides of the fibrosis. Dissection of the fibrosis is made along an imaginary line at the top of the “mountain” which is the pulled up muscularis. PCM has two advantages including maintenance of the thick submucosal layer with a minimal mucosal incision preventing leakage of injection solution, and providing good traction, thus stretching the submucosal tissue and facilitating the submucosal dissection.

SUBJECT: From September 2009 to December 2013, 88 sessile or subpedunculated lesions >20 mm in size were treated by ESD at Jichi Medical University Hospital.

Results:
- PCM was performed for 29 lesions (P-group) and conventional ESD was performed for 59 lesions (C-group).
- The mean tumor size was 44.9 mm in the P-group and 41.6 mm in the C-group.
- The F2 rate (Hirozu) in the P-group and 41.6 mm in the C-group. The F2 rate (Hirozu) was 51.7% vs 28.8%, p = 0.04. En-bloc resection rate and resection speed (resection area/time) were not significantly different in the two groups.

Conclusions: PCM had outcomes similar to ESD, even when a significantly greater number of lesions had submucosal fibrosis, suggesting that PCM may be a superior technique. These results support further study of this technique.

Key Words: 1. ESD; 2. diathermic sheath

Therapeutic Endoscopy/Interventional Radiology

P-745
A case of vascular injury by a diathermic sheath during endoscopic ultrasound-guided cyst drainage (EUS-CD)
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Objective: A 79-year-old man who had alcoholic pancreatitis was diagnosed with a pancreatic pseudocyst around the tail of the pancreas.

Methods: As the pseudocyst was infected, we performed endoscopic ultrasound-guided cyst drainage (EUS-CD). EUS showed a large blood vessel in the puncture route, and we therefore made the puncture taking care to avoid the vessel. A guidewire was left in place through the route, and we attempted to dilate it with a diathermic sheath; however, we could not move the sheath smoothly owing to resistance. Electrocautery for 20–30 s was required to dilate the whole route. After we successfully expanded the route and passed the diathermic sheath, we completed the procedure with a nasal cyst drainage tube left in place. At 2–4 d after the procedure, we detected bloody drainage from the tube, and after 7 d, the patient vomited blood. We performed upper gastrointestinal endoscopy to stop the bleeding and found that the hole of the puncture was the source of the bleeding; however, we could not stop the bleeding via the endoscope. We then performed angiography and embolized the splenic artery using coils. To clarify the process of damage, we performed an experiment for examining vascular injury by a diathermic sheath using uncured ham and porcine blood vessels.

Results: Our results showed that the extent of cauterization was proportional to the time of electirciation but that it does not spread over a certain one. It was also shown that the blood flow itself did not interfere with cauterization.

Conclusions: We have reported here a case of vascular injury by a diathermic sheath. If blood vessels are present near a puncture route in EUS-guided drainage, cauterization should be performed for a very short time or blunt dilatation should be substituted in place of cauterization.

Key Words: 1. EUS-CD; 2. diathermic sheath
into the cyst. We underwent endoscopic necrosectomy by inserting through the fistula once per week for about 2 months. Huge pancreatic pseudocyst had completely disappeared. Results: We report a case of endoscopic necrosectomy for WOPN by using both an ultrasonic probe and a nasal endoscope. Conclusion: We suggest that any hospitals which have not EUS-FNA system could put the necrosectomy into operation. This alternative approach could potentially be enforceable in the general hospitals.

Key Word(s): 1. pancreas; 2. endoscopy; 3. necrosectomy

Therapeutic Endoscopy/Interventional Radiology

P-747

Long-term follow-up of extremely elderly patients with early gastric neoplasms treated by endoscopic submucosal dissection

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Objective: Endoscopic submucosal dissection (ESD) has been established as a standard treatment for early gastric neoplasms. This study aimed to investigate the long-term clinical outcomes of early gastric neoplasm in patients aged ≥85 years who underwent ESD. Methods: The study subjects were 1123 cases with early gastric neoplasms that underwent ESD at three institutions. The patients were classified into two groups as follows: the elderly group (≥85-years-old) and the non-elderly group (<85-years-old). We compared the characteristics of patients and lesions, treatment outcomes, procedure-related complications, and follow-up time between the two groups. Results: The elderly group included 62 cases and the non-elderly group included 1061 cases. The mean follow-up period was approximately 51 months. The female to male ratio was significantly higher in the elderly group. The underlying incidences of hypertension and heart disease were significantly higher in the elderly group. The en-bloc resection rate (97% vs. 93%) and curative resection rates (89% vs 84%) were high in both groups. No significant procedure-related complications were observed in the two groups. The rates of residual disease or recurrence in both groups were very low (0% vs. 1.1%), and the differences were not observed in the two groups. The rates of residual disease or recurrence in elderly group were higher in both groups. No significant procedure-related complications were observed in the two groups. The rates of residual disease or recurrence in both groups were very low (0% vs. 1.1%), and the differences were not significant. The death rate because of other diseases was significantly higher in the elderly group (26% vs. 7.1%). Conclusion: In the elderly group, the treatment of early gastric neoplasms by ESD was equally effective in extremely elderly patients and non-elderly patients. Furthermore, it was elucidated that the death rate because of other diseases is higher in extremely elderly patients and that they have more underlying diseases were clarified. Therefore, the indications for performing ESD in extremely elderly patients should be carefully considered.

Key Word(s): 1. early gastric neoplasms; 2. endoscopic submucosal dissection; 3. extremely elderly patients

Therapeutic Endoscopy/Interventional Radiology

P-748

The influence of aspirin on the ulcer healing after gastric ESD (endoscopic submucosal dissection)

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Objective: It is recommended in some guidelines that aspirin should be continued in ESD procedure to prevent thrombosis. It is well known that aspirin injures the mucosa through Cyclooxygenase inhibition and its direct effects. However, it is unclear whether aspirin influences the ulcer healing after ESD. Methods: We investigated 73 consecutive patients undergoing ESD for gastric neoplasm, except for 4 cases of long-term Non-steroidal anti-inflammatory drug administration patients and 5 cases that were injected triamcinolone in post-ESD ulcers for the prevention of stenosis after ESD. All cases were administered Proton pump inhibitor and performed endoscopy in four weeks after ESD. We calculated a reduction rate of ulcer in four weeks after ESD from ESD specimen size. The size was calculated by multiplication of the major and minor diameters. We defined age, gender, tumor location, tumor depth and ESD procedure time as risk factors. Results: There is no significant difference in the risk factors among 3 groups. The residual ulcer rates were 3.5 ± 4.3, 8.3 ± 16.3, and 7.6 ± 12.4 in each group, respectively. The residual ulcer rate in patients treated with antiplatelet agents (B+C-group: 7.9 ± 13.6) was significantly higher than that in A-group, respectively (p = 0.039). Conclusion: Aspirin may delay the ulcer healing after ESD, not through its mucosal toxicity, but it seems to be related with the antithrombotic effects, which could lead to developing ulcer bleedings after ESD common to antiplatelet agents and antiplatelet agents. Aspirin may injure the mucosa through Cyclooxygenase inhibition and its direct effects. However, it is unclear whether aspirin influences the ulcer healing after ESD. It is recommended in some guidelines that aspirin should be continued in ESD procedure to prevent thrombosis. Aspirin may injure the mucosa through Cyclooxygenase inhibition and its direct effects. However, it is unclear whether aspirin influences the ulcer healing after ESD. It is recommended in some guidelines that aspirin should be continued in ESD procedure to prevent thrombosis.

Key Word(s): 1. antithrombotics; 2. aspirin; 3. endoscopic submucosal dissection
Therapeutic Endoscopy/Interventional Radiology

P-749
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 (bump-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). Follow-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 methods of care and complications observation 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 humanitarian 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. 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).
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, ×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 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
(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 Words: 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), gastrointestinal 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).

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 and the case was transferred to perform the laparoscopic right hemi-colectomy. Final histological diagnosis was malignant 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
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), and the mean resected specimen size was 38.7 mm (mean lesion size 18.2 mm), and submucosal fibrosis was noted in 27.6% (27/98). Immediate closure using endoclips was attempted at all lesions where perforation hall was detected by endoscopy (n = 74). Treatment success rate of endoclipping 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

<table>
<thead>
<tr>
<th></th>
<th>Total perforation (n = 90)</th>
<th>Early perforation (n = 85)</th>
<th>Delayed perforation (n = 5)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (range), years</td>
<td>64.7 (28–85)</td>
<td>64.4 (28–85)</td>
<td>70.2 (50–78)</td>
<td>0.307</td>
</tr>
<tr>
<td>Sex, male/female</td>
<td>68/22</td>
<td>64 / 21</td>
<td>4 / 1</td>
<td>&gt;0.999</td>
</tr>
<tr>
<td>Site of the tumor, n (%)</td>
<td></td>
<td></td>
<td></td>
<td>0.137</td>
</tr>
<tr>
<td>Esophagus</td>
<td>7 (7.1)</td>
<td>7 (7.5)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Stomach</td>
<td>89 (90.8)</td>
<td>85 (91.4)</td>
<td>4 (80)</td>
<td>0.463</td>
</tr>
<tr>
<td>upper</td>
<td>23 (23.5)</td>
<td>23 (24.7)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>mid</td>
<td>32 (32.7)</td>
<td>30 (32.3)</td>
<td>2 (40)</td>
<td></td>
</tr>
<tr>
<td>lower</td>
<td>34 (34.7)</td>
<td>32 (34.4)</td>
<td>2 (40)</td>
<td></td>
</tr>
<tr>
<td>Duodenum</td>
<td>2 (2.0)</td>
<td>3 (1.1)</td>
<td>1 (20)</td>
<td></td>
</tr>
<tr>
<td>Mean tumor size (range), mm</td>
<td>18.2 (2–70)</td>
<td>18.4 (2–70)</td>
<td>14.6 (3–25)</td>
<td>0.503</td>
</tr>
<tr>
<td>Histology</td>
<td></td>
<td></td>
<td></td>
<td>0.838</td>
</tr>
<tr>
<td>Low grade dysplasia</td>
<td>21 (21.4)</td>
<td>20 (21.5)</td>
<td>1 (20)</td>
<td></td>
</tr>
<tr>
<td>High grade dysplasia &amp; CIS</td>
<td>7 (7.1)</td>
<td>7 (7.5)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Differentiated carcinoma</td>
<td>43 (43.9)</td>
<td>40 (43)</td>
<td>3 (60)</td>
<td></td>
</tr>
<tr>
<td>Undifferentiated carcinoma</td>
<td>9 (9.1)</td>
<td>8 (8.6)</td>
<td>1 (20)</td>
<td></td>
</tr>
<tr>
<td>Squamous cell carcinoma</td>
<td>5 (5.1)</td>
<td>5 (5.4)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Etc</td>
<td>13 (13.3)</td>
<td>13 (14)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Depth of tumor, n (%)</td>
<td></td>
<td></td>
<td></td>
<td>0.59</td>
</tr>
<tr>
<td>Mucosa</td>
<td>39 (39.8)</td>
<td>36 (38.7)</td>
<td>3 (60)</td>
<td></td>
</tr>
<tr>
<td>Submucosa</td>
<td>17 (17.3)</td>
<td>16 (17.2)</td>
<td>1 (20)</td>
<td></td>
</tr>
<tr>
<td>proper muscle</td>
<td>1 (1.0)</td>
<td>1 (1.1)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Submucosal fibrosis, n (%)</td>
<td></td>
<td></td>
<td></td>
<td>0.865</td>
</tr>
<tr>
<td>F0</td>
<td>23 (23.5)</td>
<td>21 (22.6)</td>
<td>2 (40)</td>
<td></td>
</tr>
<tr>
<td>F1</td>
<td>4 (4.1)</td>
<td>3 (4.3)</td>
<td>1 (20)</td>
<td></td>
</tr>
<tr>
<td>F2</td>
<td>23 (23.5)</td>
<td>22 (23.7)</td>
<td>1 (20)</td>
<td></td>
</tr>
<tr>
<td>unknown</td>
<td>48 (49)</td>
<td>46 (49.5)</td>
<td>2 (40)</td>
<td></td>
</tr>
<tr>
<td>Vessel infiltration, n (%)</td>
<td></td>
<td></td>
<td></td>
<td>&gt;0.999</td>
</tr>
<tr>
<td>Present</td>
<td>6 (6.1)</td>
<td>6 (6.5)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Absent</td>
<td>69 (70.4)</td>
<td>65 (69.9)</td>
<td>4 (80)</td>
<td></td>
</tr>
</tbody>
</table>

### Table 2. Short-term outcomes after perforation

<table>
<thead>
<tr>
<th></th>
<th>Total perforation (n = 90)</th>
<th>Early perforation (n = 85)</th>
<th>Delayed perforation (n = 5)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air accumulation, n (%)</td>
<td></td>
<td></td>
<td></td>
<td>&gt;0.999</td>
</tr>
<tr>
<td>None</td>
<td>18 (20)</td>
<td>17 (20)</td>
<td>1 (20)</td>
<td></td>
</tr>
<tr>
<td>Peritoneum</td>
<td>62 (68.9)</td>
<td>58 (68.2)</td>
<td>4 (80)</td>
<td></td>
</tr>
<tr>
<td>Retroperitoneum</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Mediastinum</td>
<td>7 (7.8)</td>
<td>7 (8.2)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>peritoneum &amp; retroperitoneum</td>
<td>2 (2.2)</td>
<td>2 (2.4)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>peritoneum &amp; pneumothorax</td>
<td>1 (1.1)</td>
<td>1 (1.2)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Mean duration of intravenous antibiotic treatment (range), days</td>
<td>6.8 (0–27)</td>
<td>6.5 (0–27)</td>
<td>12.2 (5–23)</td>
<td>0.21</td>
</tr>
<tr>
<td>Mean duration of nil-by-mouth regime (range), days</td>
<td>3.8 (1–19)</td>
<td>3.4 (1–11)</td>
<td>11.4 (4–19)</td>
<td>0.055</td>
</tr>
<tr>
<td>Mean maximum body temperature (range), ºC</td>
<td>38.3 (37.9–40.0)</td>
<td>38.2 (37.9–39.0)</td>
<td>39.0 (38.0–40.0)</td>
<td>0.003</td>
</tr>
<tr>
<td>Mean maximum WBC count (range), cells/mm³</td>
<td>9,598 (3,590–18,060)</td>
<td>9,393 (3,590–16,300)</td>
<td>13,080 (10,820–18,060)</td>
<td>0.018</td>
</tr>
<tr>
<td>Mean maximum CRP (range), mg/dl</td>
<td>15.4 (0–93)</td>
<td>14.0 (0–93)</td>
<td>31.8 (3–64)</td>
<td>0.06</td>
</tr>
<tr>
<td>Time from ESD to discharge from the ward (range), days</td>
<td>7.7 (3–30)</td>
<td>7.1 (3–30)</td>
<td>17.8 (6–28)</td>
<td>0.068</td>
</tr>
<tr>
<td>Abdominal pain score (range), VAS</td>
<td>4.2 (0–10)</td>
<td>4.2 (0–9)</td>
<td>5.60 (1–10)</td>
<td>0.191</td>
</tr>
</tbody>
</table>
Vascular Disease

P-768
Factors affecting the hepatic hemodynamics parameters after liver transplantation
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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, for mainly 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
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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 enhanced and playback analysis arterial contrast agent arrival time, the diameter 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
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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)
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Additional Authors: TRIANTA YULI PRAMANA, PAULUS KUSNANTO
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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 hematemia-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
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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, upper 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 upper digestive tract hemorrhage 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.
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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