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High Prevalence of Helicobacter pylori Infections By Multiple Strains in Patients with Dyspepsia from a Developing Country

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AGA Abstracts

W1074

Deteriorants of Bloating Severity: Symptomatic and Psychosocial Factors Influencing the Impactfullness of Bloating

Michael P. Jones, Jason Bratien, Sarah Umar, Lauree Keeler, Michael D. Crowell

Purpose: HRQOL and symptom severity are commonly assessed in FGID. We developed and validated a FGID-specific instrument assessing QOL related to bloating (Bloating Symptom Impact Scale [BSIS], Am J Gastro 102:S503). This study prospectively evaluated symptomatic and psychosocial factors influencing BSIS in FGID pts with bloating as a dominant symptom.

Methods: Rome II FD and IBS pts with bloating as a dominant complaint were recruited through the NU and MCS GI Clinic. Pts completed the BSIS along with a general QOL measure (SF-12) and a GI symptom questionnaire (GISS). Patients also completed measures of generalized anxiety and depression (HADS), visceral-specific anxiety (VSAI), and negative affect/hostility (Type D personality: DS14). Univariate analyses identified factors significantly correlated with BSIS scores of upper and lower abdominal bloating. These candidate factors were then entered into regression analysis.

Results: 62 pts (mean(SD)age=49.18ys, 78%F) were studied. With the exclusion of gender and BMI, all candidate variables were significantly correlated with BSIS. Upper abdominal bloating (UAB) was significantly correlated with VSI (r=0.5, p<0.001), BSIS (r=0.38, p=0.004), SF12PhysicalRole (r=0.36, p=0.001), lower abdominal bloating (LAB) (r=0.47, p=0.000) as well as symptoms of abdominal fullness (r=0.54, p=0.001) and flatulence (r=0.38, p=0.02). Regression analysis identified a 3-step model in which fullness, CP and flatus explained 25% of UAB variance. LAB was correlated with VSI (r=0.55, p=0.000), BSIS (r=0.51, p=0.000), UAB and symptoms of flatulence (r=0.61, p=0.000), straining (r=0.61, p=0.000), abdominal fullness (r=0.46, p=0.000) and pelvic pain (r=0.46, p=0.000). Regression analysis identified a 3-step model in which fullness, pelvic and pelvic pain explained 58% of LAB variance. Stepwise regression for BSIS identified a 4-step model (Table 1) in which VSI, HADS-D, LAB and age explained 66% of BSIS variance.

Conclusion: Symptoms of upper and lower abdominal bloating are associated with reduced general and condition-specific QOL. While symptom reporting was independent of measured psychosocial variables, BSIS was significantly influenced by visceral-specific anxiety and depression. Psychosocial comorbidities have profound implications both in clinical practice and research settings seeking to use QOL as a therapeutic endpoint.

W1075

Intolerance to Volume Load in Drink Test and Psychiatric Distress Enhance the Severity of Daily Dyspeptic Symptoms in Functional Dyspepsia

Koji Nakada, Mototsuru Ozono, Shigeru Hatanawa, Naruo Kawasaki, Tomoko Nakayoshi, Nobuyoshi N. Hanyu, Hideyuki Kashigawa, Katshuko Yamata

Underlying causes of symptoms in functional dyspepsia (FD) are multi-factorial, including delayed gastric emptying, impaired gastric accommodation, visceral hypersensitivity and psychiatric distress (PD). However, the impact of these abnormal gastric physiology and psychiatric distress on the severity of daily dyspeptic symptoms (DS), and the correlation among these causes are still unclear. Aims: To examine the impact of abnormal gastric physiology and psychiatric distress on the severity of daily DS, and to examine the correlation among these multi-factorial causes in FD. Methods: Thirty-three FD (Rome II) patients were evaluated by gastric emptying study (GE, 13C-acetate breath test with liquid meal [200 kcal/200 ml]) and drink test (DT, drink 10ml/kg of water for 5 minutes at equal rate). Subjects also completed STAI, SDS, CMI and the original dyspeptic symptoms questionnaire to examine DS severity (strength and frequency). The correlation between DS severity with GE, DT, and PD were examined. The correlation among GE, DT, and PD were also examined. Results: In the delayed gastric emptying (27% reduction in volume load in 48%, and psychiatric distress assessed by STAI-state (64%), SDS (46%), and CMI (73%) were noted. No correlation existed between DS severity and GE, whereas both DT and PD correlated significantly with DS severity (p<0.05). No correlation existed between GE with DT and PD, whereas significant correlation was noted between DT and PD (p<0.05). Conclusions: In FD, both intolerance to volume load in DT and PD enhanced DS severity. DT is a simple and non-invasive method and correlated well with DS severity, which therefore may be appropriate for routine clinical use to determine abnormal gastric physiology.

W1076

How the Duration of Dyspeptic Symptom Affect the Therapeutic Approaches. Experience from Japanese Mega Study (Jmms)

Keiji Nakada, Michio Hongo, Shigeru Harasawa, Tetsuya Mine, Iwao Sasaki, Kei Matsuoka, Mototaro Kusano, Nobuyoshi N. Hanyu, Chikashi Shibata

Rome III redefined the diagnostic criteria of functional dyspepsia (FD), modifying the subtyping of symptom (5 categories) with symptom duration (SD). We conducted a study to compare the differences of symptoms and subtypes of FD patients 1 month to 2 years after treatment. Rome II and this change is more suitable to clinical use in practice. However, there are many dyspeptic patients in practice who do not fulfill the duration criteria. To clarify the importance of SD for the diagnostic criteria, we analyzed the characteristics of the patients enrolled to clinical trials for FD patients conducted by the Japan Gastrointestinal Motility Society (JGMS). This retrospective analysis was conducted to explore the best treatment to such patients, led by Japan-International Society for Gastrointestinal Motility, and is a nationwide cooperative study in FD patients. A total of 1,027 of 1,042 patients having feeling of gastric stasis and/or epigastric pain with frequency >1 time/week, duration >2 weeks, had endoscopy. Of these, 424 patients were excluded due to the presence of organic lesion in the EGD, 5 resolution after by negative endoscopy or patients' personal reasons. The remaining 618 patients were allocated to two treatment groups, mosapride (MHT4 agonist) and loperamide (mesa-Guco preparatory) group. Each group had pharmacotherapy for 2 weeks. (Methods) Results: Patients were classified into 4 groups according to SD, A (n=146), <1 month (B, n=352), <3 months and D (n=262), >12 months. M, gender, age, subtypes, S scores (summation of S frequency and severity) and patients' impression were analyzed. [Results] D were; younger and more male dominant than the other groups, while A were youngest in mean age. Prevalence of subtypes and S scores were statistically similar each other. S resolution after of negative endoscopy was 35% in A, 35% in B, 21% in C and 29% in D. In resolution of S scores were 3, 4, 3, 1, 3, 1 and 2 with mosapride (30g tid) in A, B, C and D, respectively, and 3, 1, 3, 2 and 1 with mesepin (50g tid) after 2 weeks of treatment. Significant difference between mosapride and loperamide was found in B, C and D (p<0.001). Patients' impression with "Much improved", "Improved" and "slightly improved" were; 58, 38, 74, 76% and 66% in A, B, C and D, while those were 54, 46, 39, 45% in D. Significant differences were found in the B, C and D (p<0.005). [Conclusion] S severity and subtypes are not different according to SD. Longer the SD, S resolution after negative endoscopy is less. However, symptom improvement was not significant among those who have SD >1 months. This indicate that the patients with SD ≤1 months are similar to the patients with SD >3 months (which meet Rome III) in terms of response to therapeutic approaches.

W1077

The Long-term Effect of Helicobacter pylori Eradication Therapy On Dyspepsia Symptoms in Industrial Workers in Japan

Yasumasa Yamao, Hisatoshi Komiyama, Hiroshi Matsuda, Tatsuya Okano, Ryuhou Masaki, Satoshi Sato, Masayuki Ohno, Hirotomo Sato, Youshiyuki Ito, Takeda Katsuo, Takashi Azuma

Background and Aim: The relationship between Helicobacter pylori (H. pylori) infection and Functional Dyspepsia (FD) is still controversial. The potential benefits and the potential risks of the treatment could depend on local conditions, such as the prevalence of the infection and the local rates of gastric cancer and other relevant diseases. The long-term effect of H. pylori eradication therapy on functional dyspepsia symptoms in industrial workers. Materials and Methods: Two hundred and ninety-five of 1,287 positive industrial workers were enrolled in this study. H. pylori infection was diagnosed by serological test or urea breath test. The serum pepsinogen(II) levels, PGII value and PGII/I ratio, were measured. Atrophic gastritis was diagnosed by PGII value and PGII/I ratio, (< PGII 70mg/ml and < PGII/I 3.0). Seven dyspepsia symptoms, upper abdominal pain, bloating, nausea and vomiting, upper abdominal fullness and loss of appetite were examined by symptom scores. Symptom scores were also analyzed 3, 6, 12month and 5years after H. pylori eradication therapy. Ninety eradicated cases without peptic ulcer history and fifty-two not eradicated cases without it suffered from some dyspepsia symptoms. After all, one hundred and forty-two cases, ninety eradicated cases and fifty-two not eradicated ones, were analyzed. Moreover, incidence of the gastro-duodenal diseases during the study period was investigated. Results: The symptom scores of upper abdominal pain, regurgitation, nausea, vomiting and loss of appetite improved significantly in the cured cases. However, the eradicated group showed improvement of dyspepsia symptoms compared with the not eradicated group at the time point of 5 years. The serum PG levels did not significantly related with or without the eradication therapy. In addition, the incidence rate of the gastro-duodenal diseases was 2.0% (21/1030) in the eradicated cases (gastric cancer 1, gastric ulcer 7 and 9.5% (60%) in the not eradicated ones (gastric cancer 3, gastric ulcer 3, duodenal ulcer 2) (p<0.05). The eradicated group showed significantly decreased incidence of the gastro-duodenal diseases compared with the not eradicated one during the study period. Conclusion: The cure of H. pylori infection provides a beneficial effect on dyspepsia symptoms and the incidence of the gastro-duodenal diseases in industrial workers in Japan.

W1078

High Prevalence of Helicobacter pylori Infections By Multiple Strains in Patients with Dyspepsia from a Developing Country


BACKGROUND: No convincing evidence has been found that eradication of Helicobacter pylori (H. pylori) relieves the symptoms of functional dyspepsia 12 months after treatment. Diversity in genotypes of Helicobacter pylori (H. pylori) have been reported with varying results in different areas of the world. AIM: The aim of this study was to investigate the prevalence of multiple strain infection in a symptomatic Pakistan population and to correlate it with endoscopic and histological findings. METHODS: Patients with dyspeptic symptoms

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with *H. pylori* were enrolled. C-14 Urea breath test and rapid urease test were done to confirm the presence of *H. pylori* infection before the enrolment. Gastric biopsies from both antral and body were taken for rapid urease test and polymerase chain reaction-restriction fragment length polymorphism analysis (PCR-RFLP). Forward primer (5'-TGGGACGATGCGGCTGAGG-3') and reverse primer (5'-AAGGGCTGTTAGATGGTT-3') prepared from the urease gene C gene were used to amplify 620 bp gene product and San-3 and Hia 1 restriction enzymes were associated in RFLP analysis. RESULTS: There were ninety-five patients with 68 (72%) males. On endoscopy, 53 (56%) had gastric antral and 39(41%) had pangastric erythema. and 3(3%) had duodenal ulcer. *H. pylori* associated chronic active gastritis on histology was present in 76(83%). PCR-RFLP patterns were similar in 77(81%) on both antrum and body and different in 18 (19%). On endoscopy, antral gastritis was present in 44(79%) with same RFLP pattern from both antrum and body and 12(21%) with different RFLP patterns, while pangastric erythema was present in 33(83%) with same RFLP pattern and 6(15%) with different RFLP patterns on histobands (p=0.46). On histology, chronic gastritis was associated in 61(79%) patients with both single RFLP pattern and in 15(83%) with different *H. pylori* strain (p=0.69) on both antrum and body. Patients with cortex dominant gastritis had chronic active gastritis in 16(21%) with single RFLP pattern and 3(17%) with multiple RFLP patterns (p=0.89). CONCLUSION: Almost one third of dyspeptic patients had *H. pylori* infection with more than one strain in our series. This might contribute to lack of response to treatment especially in patients having *H. pylori* infection with multiple strains.

**W1079**

**Curcumin Vs Domperidon in Functional Dyspepsia: Better the Prokinetic or An Agonist of Vanilloid Receptor?**

Antonio Nouvenne, Andreet Mairi, Lucio Cavestro, Roberta Merli, Loredana Guida, Ester Morana, Margherita Carlo, Andrea Iori, Laura Martelli, Marta Martelli, Giulia Martinavagreste, Ivo Pelusino, Carmelo Scarpignato, Angelo Frances, Francesco Di Mario

**INTRODUCTION:** Functional dyspepsia is a very frequent disease. Up to now many treatments have been proposed with conflicting results. Curcumin, the main component of the turmeric powder extract from Curcuma Longa, shows both antiinflammatory and antiototoxic properties. Indeed it is an agonist of vanilloid receptor (TRPV1) which plays a critical role in thermal nociception and inflammatory hyperalgesia. Domperidon is a dopamine antagonist currently used for treatment of dyspepsia. AIM: To evaluate if a two months schedule based on Curcumin or Domperidon is effective on (1)Symptoms relief (2) gastric inflammation assessed by means of serum pepsinogen II in functional dyspepsia.

**MATERIALS AND METHODS:** 48 consecutive *H. pylori* negative patients (17 M, mean age 47.7±13 years, range 20-72) with functional dyspepsia, according with Rome III Criteria, were enrolled from January to December 2006. Patients after informed consent were randomized in two groups to take i.d. for 2 months: A tablet, containing curcumin 30 mg, Zn++acetate 15 mg, bovine lactoferrin 100 mg (LF-300, Dicolor, Rome, Italy) (Group A) or tablet (27 patients) of Domperidon 10mg (Group B). In Group B 21 patients improved and scored by validated questionnaire (Veldhuyzen S. APT. 2006;23:521-9) at baseline (T0) and after two months. CONCLUSION: Almost one third of dyspeptic patients had *H. pylori* infection with more than one strain in our series. This might contribute to lack of response to treatment especially in patients having *H. pylori* infection with multiple strains.

**W1080**

**The Accuracy and Predictors of a Clinical Diagnosis of Dyspepsia or Pptic Ulcer Disease By Gastroneterologists and Family Practitioners**

Namshi Vakil, John Dent, Roger Jones, Tore Lind, Ola Junghard

Aim: To determine the accuracy of a clinical diagnosis of dyspepsia or peptic ulcer disease compared to an endoscopic and/or abnormal pH-metry. METHODS: Consecutive pts presenting to primary care practices with any upper gastrointestinal (GI) symptoms thought to be of upper GI tract origin were studied. Pts were evaluated by the family practitioner (FP) and gastroenterologists(GEs). A diagnosis was recorded. Pts were then evaluated by a gastroenterologist (GE) and a diagnosis was recorded. Physicians were blinded to each other's diagnoses. Within 7 days, pts underwent upper endoscopy with Bravo pH-metry. A 24-hour period from midnight on day 1 to midnight on day 2 was used to evaluate acid exposure. Pts were considered to have GERD if either erosive esophagitis was present or if distal acid exposure was > 55% (or Symptom Association Probability (SAP) was 95% or more). Endoscopy findings that were considered abnormal for this analysis were: erosive esophagitis, duodenal or gastric ulcers or erosions. Results: 308 pts with upper GI symptoms were evaluated and 18 (6%) and 6 (2%) were diagnosed with peptic ulcer disease by the FP and GE, respectively. In these pts with peptic ulcer disease, 4 of 18 were diagnosed by PEs and 14 (78%) were diagnosed by Gastroneterologists. Table 1 shows the sensitivity, specificity, positive and negative predictive values for a clinical diagnosis of functional dyspepsia and peptic ulcer disease by PEs and GEs. Conclusions: (1) The clinical diagnosis of functional dyspepsia and peptic ulcer disease is unreliable. (2) GERD is often misdiagnosed as functional dyspepsia or peptic ulcer disease in primary care and gastroenterologist evaluations.

**W1081**

**Non-Digestible Capsule Technology to Measure Gastric Motility-Correlation Between Healthy Controls and Gastroparetic Patients with a Normal Gastric Emptying Study**


Introduction: The SmartPillTM wireless pH and pressure recording capsule has been recently approved by the Food and Drug Administration to assess gastric emptying. Sometimes patients referred to gastroenterologists with typical gastroparesis symptoms have a normal gastric emptying assessed by scintigraphy (GES). Hence, the aims of this study were to determine whether differences could be identified in gastric motility (number of contractions per minute of gastric motor activity) using data obtained from the SmartPill pressure measurements between normal subjects and patients with symptoms suggestive of gastroparesis but whose scintigraphic gastric emptying was normal. Methods: In a multicenter trial, after an overnight fast (last 108 subjects HealthCare-65, History of GP-38, DM16, idiosyncrasy-22) swallowed the SmartPill capsule, and then ingested a 99m Eggbeater meal (2% fat) and had a standardized 4 hour measurement of gastric emptying. At the completion of the study pressure, and pH data were analyzed. The GES was measured as the difference between the time of ingestion of the capsule and the abrupt and sustained rise of pH to at least 3 pH units above baseline indicating duodenal arrival of the capsule. Frequencies of gastric contractions expressed as number of contractions per minute (cpm) were calculated for the entire duration of the GES beginning after intake of the SmartPill capsule and ending when a duodenal arrival was documented. GES was considered abnormal if >10% of the radio-labeled meal was retained in the stomach at the end of 4 hours. A two tailed unequal variance t-test was used for statistical analysis, and a p < 0.05 was considered significant. 95% confidence intervals (CI) were also calculated. Results: 22/38 (10%) diabetics patients with a history of GP had a normal GES and were included for statistical analysis. Mean frequency of gastric contractions in healthy controls was 1.7 cpm (1.5-1.9), which was significantly higher (p<0.05) compared to patients with a history of gastroparesis and normal GES 1.3 cpm (1.1-1.5). Conclusions: 1) Gastric contraction frequency data analyzed from combining motility data (obtained from both the postprandial period and that associated with ingestion of a non-digestible capsule using the SmartPill pressure sensor) can identify impaired gastric motility in patients suspected of gastroparesis, although their GES may be normal on the day of the study. 2) SmartPill is a novel, safe, and non-invasive technology suitable for use in the office setting to provide data regarding gastric motority with a patient friendly technique that can be used to make decisions regarding medical therapy.

**W1082**

**Lack of Discriminant Value of Dyspepsia Subgroups According to the ROME III Consensus in Dyspeptic Patients On Acid-Suppressive Therapy Referred for Upper Gastrointestinal Endoscopy**

Sebasten Kindt, Joris Arts, Stefan Bourgeois, Christophe Caesens, Philip Caenepeel, Liesleot Holvot, Dominiek De Wull, Raf Bischops, Gerrit A. Van Assche, Severine Vermeiren, Jan F. Tack

Background: According to the Rome 3 consensus, functional dyspepsia (FD) is subcategorized into Postprandial Distress Syndrome (PDS) and Epigastric Pain Syndrome (EPS). It has been suggested that underlying pathophysiology differs between both groups, and that acid-related mechanisms are more likely in EPS (comprising epigastric pain and burning) than in PDS (comprising early satiation and postprandial fullness). We reported that EPS is associated with a higher prevalence of erosive esophagitis in patients not on anti-secretory therapy (who were referred for open access endoscopy)(Arts, DWD 2008). Our aim was to investigate whether the Rome 3 subdivision identifies more acid-related lesions at endoscopy in dyspeptic patients who are on acid-suppressive drugs. Methods: Consecutive patients referred for open-access endoscopy for dyspeptic symptoms, persisting during empirical anti-secretory therapy (within the previous month), were recruited. All patients filled out demographic, Rome 3 dyspepsia and heartburn word-picture questionnaires. The symptom pattern was used to identify EPS, PDS and persisting heartburn according to established criteria. Results: 197 patients(mean age 53.4 ±80) participated. Criteria for EPS were fulfilled by 130(66%) and 120(61%) patients, with overlap in 98(50%). In 44 patients(22%), the symptom pattern did not fulfill Rome 3 criteria for EPS or PDS. Co-existing heartburn was present in 62 patients(32%), with similar overlap in PDS and EPS(both 38%). Erosive esophagitis was found in 40 patients, mostly grade A (82%) and 8(8%). A hiatal hernia, Barrett esophagus, pylorospastic and peptic ulcer disease were found in 27, 24 and 10 patients, respectively. Table 1 shows the sensitivity, specificity, positive and negative predictive values for a clinical diagnosis of functional dyspepsia and peptic ulcer disease by PEs and GEs. Conclusions: (1) The clinical diagnosis of functional dyspepsia and peptic ulcer disease is unreliable. (2) GERD is often misdiagnosed as functional dyspepsia or peptic ulcer disease in primary care and gastroenterologist evaluations.