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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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presenting with alarm symptoms at index gastroscopy. In addition we analysed our data to see if there was a significant association between alarm symptoms and the presence or absence of gastric malignancy using the Fishers exact two-tailed test. Results Gastric ulcers were reported in 553 patients and of these 371 (67%) presented with alarm symptoms. A total of 33 (6%) malignancies were detected histologically. Of the 33 gastric malignancies diagnosed 21 (64%) adenocarcinomas, 5 (15%) lymphomas, 3 (9%) poorly differentiated carcinomas, 2 (6%) squamous cell carcinomas and 2 (6%) carcinoid were found. Off the 371 patients with alarm symptoms 26 (7%) had cancer. Of the 182 patients without alarm symptoms 7 (4%) had a gastric malignancy. In patients with gastric ulcers there was not a statistically significant difference between the presence of alarm symptoms in predicting the presence of gastric malignancy on histology (p=0.133). Of the patients with gastric ulcers 166 (30%) had *Helicobacter pylori*. Conclusion These results confirm that alarm symptoms are not useful as positive predictors of gastric malignancy in patients who are known to have gastric ulcer. In our series 21% of the gastric malignancies were in the group undergoing gastroscopy for non-alarm symptoms.

W1074

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

Michael P. Jones, Jason Bratten, Sarah Umar, Laurie Keefer, Michael D. Crowell

Purpose: HRQOL and symptom severity are commonly assessed in FGID. We developed and validated an FGID-specific instrument assessing QOL related to bloating (Bloating Symptom Impact Scale [BSIS]; Am J Gastro 102:S505). This study prospectively evaluated symptom 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 B-SIS along with a general QOL measure (SF-12) and a GI symptom questionnaire (GISSI). Patients also completed measures of generalized anxiety and depression (HADS), visceral-specific anxiety (Visceral Sensitivity Index; VSI), and negative affect/hostility (Type D personality: DS14). Univariate analysis identified factors significantly correlated with B-SIS and symptoms of upper and lower abdominal bloating. These candidate factors were then entered into regression analysis. ***Results:*** 62 pts (mean(SD)age=49(18)yrs; 79%F) were studied. With the exception 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=0.000), BSIS (r=-0.38; p=0.004), SF12PhysicalRole (r=-0.36; p=0.006), lower abdominal bloating (LAB)(r=0.47; p=0.000) as well as symptoms of abdominal fullness (r=0.54; p=0.000) and flatulence (r=0.38; p=0.002). Regression analysis identified a 3-step model in which fullness, CP and flatus explained 43% 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=0.6; p=0.000), straining (r=0.48; 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 flatulence, fullness and pelvic pain explained 58% of LAB variance. Stepwise regression for BSIS identified a 4-step model (Table) 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.

	Variance	Variance Change	F Change	Sig. F Change
VSI	.446	.446	41.907	.000
VSI+ HADS-D	.554	.108	12.387	.001
VSI+ HADS-D+ LAB	.619	.064	8.392	.006
VSI+ HADS-D+ LAB+Age	.655	.037	5.222	.027

W1075

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

Koji Nakada, Motohiro Ozone, Shigeru Harasawa, Naruo Kawasaki, Tomoko Nakayoshi, Nobuyoshi N. Hanyu, Hideyuki Kashiwagi, Katsuhiko Yanaga

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 FD, delayed gastric emptying (27%), intolerance to volume load in DT (88%), 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)

Koji Nakada, Michio Hongo, Shigeru Harasawa, Tetsuya Mine, Iwao Sasaki, Kei Matsueda, Motoyasu Kusano, Nobuyoshi N. Hanyu, Chikashi Shibata

Rome III redefined the diagnostic criteria of functional dyspepsia (FD), modifying the subgroups, symptom (S) categories, symptom duration (SD), from Rome II. 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 dyspeptic patients conducted in Japan, called JMMS. Japan Mosapride Mega-Study (JMMS) 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 > 2 times/week, duration > 2 weeks, had endoscope. Of these, 424 patients were excluded due to the presence of organic lesion in the EGD, S resolution after assurance by negative endoscopy or patients' personal reasons. The remaining 618 patients were allocated to two treatment groups; mosapride (5HT4 agonist) group and teprenon (gastric mucosa protectant) group. Each group had phamacotherapy for 2 weeks. [Methods] 1.027 patients were classified into 4 groups according to SD; A (n=146), <1 month (M); B (n=352), 1 to <3 M; C (n=267), 3 to <12 M; and D (n=262), >12 M. Age, gender, S 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 assurance of negative endoscopy was 35% in A, 35% in B, 21% in C and 29% in D. Reduction in S scores were 3.4, 3.1, 3.1 and 2.9 with mosapride (5mg tid) in A, B, C and D, respectively, and 3.7, 1.9, 2.0 and 1.8 with teprenon (50mg tid), after 2 weeks of treatment. Significant difference between mosapride and teprenon was found in B, C and D ($p<0.001$). Patients' impression with "Much improved", "Improved" and "slightly improved" were; 56, 58, 73 and 70% with mosapride in A, B, C and D, while those were 45, 30, 24 and 22% with teprenon. Significant difference was 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, symptomatic improvement was not different among those who have SD >1 M. This indicate that the patients with SD 1 to <3 M are similar to the patients with SD >3 M (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

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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 has not been evaluated sufficiently. The aim of this study is to investigate the long-term effect of *H. pylori* eradication therapy on dyspepsia symptoms in industrial workers. Materials and Methods: Two hundred and ninety-five of *H. pylori* -positive industrial workers were enrolled in this study. *H. pylori* infection was diagnosed by serological test or urea breath test. The serum pepsinogen(PG) levels, PGI value and PGI/II ratio, were measured. Atrophic gastritis was diagnosed by PGI value and PGI/II ratio, (< PGI 70ng/ml and < PGI/II 3.0). Seven dyspepsia symptoms, upper abdominal pain, heart burn, regurgitation, nausea 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. In short, 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% (2/130) in the eradicated cases (gastric cancer 1, gastric ulcer 1) and 9.5% (6/63) in the not eradicated ones (gastric cancer 1, 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

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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

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 enrollment. Gastric biopsies from both antrum and body were taken for rapid urease test, histology and polymerase chain reaction-restriction fragment length polymorphism analysis (PCR-RFLP). Forward primer (5'-TGGGACTGATGGCGTGAGGG -3') and reverse primer (5'-AAGGGCGTTTTTAGATTTTT -3') prepared from the urease gene C gene were used to amplify 820 bp gene product and Sau-3 and Hha I restriction enzymes for 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(80%). PCR-RFLP patterns were similar in 77(81%) on both antrum and body and different in 18(19 %). On endoscopy, antral gastric erythema 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(85%) with same RFLP pattern and 6(15%) with different RFLP patterns on bothsides (p=0.46).On histology, chronic active gastritis was associated in 61(79%) patients with single RFLP pattern and in 15(83%) with different *H. pylori* strain (p=0.69) on both antrum and body. Patients with corpus 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 fifth 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?

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INTRODUCTION: Functional dyspepsia is an very frequent disease. Up to now many treatments are been proposed with conflicting results. Curcumin, the main element of turmeric powder extract from Curcuma Longa, shows both antinflammatory and antioxidant properties. Infact 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. AIMS: To evaluate if a two months therapy 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 t.i.d. for 2 months: A tablet, containing curcumin 30 mg, Zn++-acetate 15 mg, bovine lactoferrin 100 mg (LF-500, Dicofarm, Rome, Italy) (Group A, 27 pts)or Domperidon 10 mg (Group B, 21 pts). Upper GI symptoms were assessed and scored by administering a validated questionnaire (Veldhuyzen S. APT.2006;23:521-9) at baseline (T0) and after two months(T1). Gastro-oesophageal mucosal integrity and *H. pylori* status were assessed by upper endoscopy with histology (five biopsies histologically classified according with the Sydney System) and a blood sample for serum pepsinogens (sPGI,sPGII), gastrin-17(G-17) and anti-Helicobacter IgG (IgG-Hp) (EIA,Biohit,Helsinki,Finland). RESULTS: There was a significant decrease in the global overall symptoms both in Group A and in Group B (Group A: T0: 17.6±4.6, T1: 10.77±3.44, p< 0.001; Group B: T0 17.19±4.49, T1 12.79±3.44 p<0.001). sPGII levels decreased in Group A in a statistically significant manner (T0: 14.7±5.7; T1: 10.13±2.15, p=0.003)but not in Group B. sPGI,IgG and G-17 values did not significantly decrease after two months. CONCLUSION: Curcumin as well Domperidon is effective on improving dyspeptic symptoms. Curcumin but not Domperidon seems to reduce gastric inflammation assessed by serological marker according with its properties in improving the TNF cascade events. Further studies are necessary to confirm this results.

W1080

The Accuracy and Predictors of a Clinical Diagnosis of Dyspepsia or Peptic Ulcer Disease By Gastroenterologists and Family Practitioners

Nimish 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 endoscopy 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 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 >5.5% (or Symptom Association Probability (SAP) was 95% or more). Endoscopic 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, a peptic ulcer was present in 4 of 18 pts (22%) diagnosed by FPs and 2 of 6 pts (33%) diagnosed by GEs. When functional dyspepsia was diagnosed, endoscopy and pH-metry (including SAP) were negative in 44 of 112 pts (39%) diagnosed as functional dyspepsia and 8 of 18 pts (44%) diagnosed as peptic ulcer disease by FPs. Corresponding values for GEs were 48 of 116 pts (41%) and 2 of 6 pts (33%), respectively. Table I shows the sensitivity, specificity, positive and negative predictive values for a clinical diagnosis of functional dyspepsia and peptic ulcer disease by FPs 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 gastroenterology evaluations.

	Sensitivity	Specificity	Positive predictive value	Negative predictive value
Peptic ulcer				
FP	6%	94%	22%	79%
GE	3%	98%	33%	79%
Functional dyspepsia				
FP	49%	69%	39%	77%
GE	62%	72%	48%	82%

W1081

Non-Digestible Capsule Technology to Measure Gastric Motility- Comparison Between Healthy Controls and Gastroparetic Patients with a Normal Gastric Empyting Study

Savio Reddymasu, Irene Sarosiek, Henry P. Parkman, Kenneth L. Koch, Michael D. Sitrin, John M. Wo, William L. Hasler, Leonard A. Katz, William D. Chey, Jack Semler, Braden Kuo, Richard McCallum

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 gastroparetic 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 SmartPilltm 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, 108 subjects (Healthy-66, History of GP-38; DM16, idiopathic-22) swallowed the SmartPilltm 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 GET was measured as the difference between the time of ingestion of the capsule to an abrupt and sustained rise of pH to >4 and 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 GET beginning after intake of the SmartPilltm capsule and ending when 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), was significantly higher (p-0.005) 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 emptying of a non-digestible capsule using the SmartPilltm 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.) SmartPilltm is a novel, safe, and non-invasive technology suitable for use in the office setting to provide data regarding gastric motility 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

Sebastien Kindt, Joris Arts, Stefan Bourgeois, Christophe Claessens, Philip Caenepeel, Lieselot Holvoet, Dominiek De Wulf, Raf Bisschops, Gert A. Van Assche, Severine Vermeire, 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 presumed 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, DDW 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(PPI >1 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±1.2, 80 men) participated. Criteria for PDS and EPS were fulfilled by respectively 130(66%) and 120(61%) patients, with overlap in 98(50%). In 44 patients(22%), the symptom pattern did not fulfil 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% of patients, mainly grade A(28%) and B(8%). A hiatal hernia, Barrett's esophagus and peptic ulcer were found in respectively 47, 24 and 10 patients, and no cancers were detected. The prevalence of erosive esophagitis did not differ significantly between patients who fulfilled EPS criteria compared to those who did not(44% vs. 33%, NS), nor for PDS versus non-PDS(42% vs. 38%, NS). The prevalence of esophagitis did not differ between patients with or without positive heartburn word-picture questionnaire(47% vs. 37%, NS), but the prevalence of hiatal hernia was higher in heartburn positive patients(34% vs. 20%, p<0.05). Conclusion: In contrast to findings in patients who are not on acid-suppressive therapy, the Rome 3 subdivison does not identify subgroups with a different prevalence of erosive esophagitis in dyspepsia. As the higher prevalence of hiatal hernia is higher in PDS, distinctive symptom or endoscopic features may be lost during