relating to social process (family, friends) more than IBD/HC (F=7.52, p<0.05). Personal concern dimensions (job, occupation, achievement) varied among the groups (F=4.99, p<0.05) with IBD using these categories more regularly than IBS/HC. IBD subjects also used causative language (because, effect) at a higher rate (F=4.01, p<0.05). Reference to death was significantly (F=3.38, p<0.05) higher in the IBS/IBD groups. Notably, there was no difference in somatic references between the groups (χ2=1.44, p=0.49). CONCLUSIONS: Qualitative language analysis of experiences on 9/11 demonstrated high negative affect amongst patients with IBS in comparison to IBD/HC. In contrast to prior research, IBS patients did not utilize more first-person singular pronouns (indicative of self-involvement) or illness-specific language within their narratives. Both illness groups referenced death more often than controls. IBS patients are thought to employ maladaptive cognitive processes amenable to cognitive therapy—our study supports this finding at a qualitative level.

M1242

Psychological Dysfunction in Patients with Gastroparesis Is Associated with Symptom Severity But Not with Disease Etiology or Degree of Gastric Retention

Gastroparesis Clinical Research Consortium

Background: Psychosocial disorders are common in gastroparesis, but relations among psychological dysfunction and gastroparesis severity, disease etiology, and degree of gastric retention are poorly characterized. **Methods:** 179 gastroparesis (Gp) patients were enrolled from 6 centers of the NIDDK Gastroparesis Clinical Research Consortium (GpCRC) from Jan 2007 to Oct 2008. Beck Depression Inventory (BDI) and State-Trait Anxiety Inventory scores for state (Y1) and trait (Y2) anxiety were obtained. Gastroparesis severity was classified as mild (diet and lifestyle controlled), compensated (stable medication use), or gastric failure (extensive health care utilization, IV therapy, supplemental nutrition) and was further assessed by (i) Gastroparesis Cardinal Symptom Index (GCSI) scores (0-5 scale averaged for 9 symptoms), (ii) antiemetic and prokinetic use, (iii) supplemental feeding needs, and (iv) hospitalizations. Etiology compared diabetic vs. idiopathic Gp. Degrees of gastric retention of standard EggBeaters meals were classified as moderate-severe (>20% retained at 4 hr) vs. mild ($\leq$20%). **Results:** BDI scores with gastric failure (20.7±10.4) and compensated gastroparesis (20.2±10.6) were greater vs. mild disease (14.5±10.7)(P=0.02). Trait (Y2) but not state (Y1) anxiety was greater in gastric failure (Y2: 47.0±13.5) and compensated gastroparesis (Y2: 45.5±11.6) vs. mild disease (Y2: 40.3±11.6)(P=0.02). BDI scores were much higher for GCSI >3.2 (median)(22.3±10.9) vs. $\leq$3.2 (16.9±9.8)(P=0.001). Y2 but not Y1 scores were greater for GCSI >3.2 (Y2: 47.1±11.6) vs. $\leq$3.2 (Y2: 43.4±12.9)(P=0.05). Antiemetic and prokinetic use was more common with BDI $\geq$14 (104/124, 80%) vs. <14 (none to minimal depression)(39/55, 67.2%)(P=0.07) but was unrelated to state and trait anxiety. Supplemental feeding was more common with higher trait anxiety: Y2 >44 (23/88, 24.7%) vs. $\leq$44 (13/91, 13.7%)(P=0.06). Hospitalizations were unrelated to BDI, Y1, and Y2 scores. BDI scores were similar in diabetic (18.3±9.2) and idiopathic (20.2±11.3) Gp as were both anxiety scores. BDI scores were similar across mild (19.4±9.7) and mod-severe (19.8±11.2) retention categories as were Y1 and Y2 scores. **Conclusions:** Gp is associated with a high degree of psychological suffering over and above the burden of physical suffering. Depression and trait (but not state) anxiety increase with gastroparesis severity determined by several investigator-rated and patient-reported assessments, but psychological dysfunction does not vary by Gp etiology or degree of gastric dysfunction. Both physical and psychological features of Gp must be considered in the developing individualized treatment plans for Gp.

M1243

Successful Biofeedback in Patients with Multiple Sclerosis Is Related to Disability and Mood Factors More Than Anorectal Physiology Variables

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Introduction: Bowel dysfunction, manifest as constipation and incontinence, occurs in two-thirds of patients with multiple sclerosis (MS). Current treatments are empirical and often unsuccessful. This is unsurprising given the paucity of knowledge about bowel pathophysiology, but what is known suggests that the abnormalities are akin to patients with lower motor neurone spinal cord injury (LMN-SCI). Biofeedback (BF) however is successful in some patients with MS, but not usually helpful in LMN-SCI. We therefore hypothesised that successful BF is related to disability variables, not pathophysiological change. Materials and methods: We prospectively studied 39 patients with MS (30 female, mean age 41, mean disease duration 13 years) referred to a neuro-gastroenterology clinic with constipation and/or faecal incontinence. Bowel function scores (Wexner), the HAD questionnaire and Disability Status Scale (DSS) were performed in all patients at baseline and immediately after completion of biofeedback (median 3 sessions). At these same time points anal manometry, rectal distension sensitivity and electro-sensitivity were undertaken. Results: 22/39 (56%) patients improved Wexner scores (fall to <10) after BF treatment. Comparing those treated successfully with those who remained symptomatic, the only baseline variables which differed were DSS score (3.6±1.8 vs 6.3±1.9 resp, p<0.0001), HAD-anxiety (3.2±2.8 vs 7.3±5.3 resp, p=0.004) and HAD-depression (5.4±3.8 vs 10.2±5.6 resp, p=0.003). Age, gender and disease duration were not different between groups, and none of the anorectal physiology parameters differed either. Following treatment, successfully treated patients reduced HAD-anxiety (3.2±2.8 vs 2±1.4 resp, p=0.04) and HAD-depression scores (5.4±3.8 vs 3.8±2.6 resp, p=0.02). The following physiological variables improved significantly in this group: anal squeeze pressure (66±42 vs 76±35 resp, p=0.03), 5-second endurance squeeze (36±29 vs 55±23 resp, p<0.0001), but none of the sensory parameters were altered. Conclusions: MS patients with bowel dysfunction and less severe disability are the most likely to improve with biofeedback. In contrast to neurologically intact patients, HAD anxiety and depression scores also predicted good outcome. These scores improved with successful treatment, as did measures of external anal sphincter function (but not rectal sensitivity parameters). This suggests that whilst neural dysfunction may underlie bowel symptoms in MS patients, the key determinant of response to biofeedback in less disabled patients is related to mood and reversible anal coordination.

M1244

Dysfunctional Cognitions, Anxiety and Depression: Key Factors in Irritable Bowel Syndrome

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Introduction: In patients with Irritable Bowel Syndrome (IBS) quality of life (QoL) is significantly impaired. In addition, dysfunctional cognitions, anxiety and depression related symptoms have been reported to be more prevalent in IBS patients. In the present study we investigated the presence of dysfunctional cognitions, anxiety and depression, in relation to daily symptoms and the overall impact on QoL in a large IBS cohort. Materials and methods: A group of 268 IBS patients (Rome II criteria, from primary -tertiary care settings), between 18 and 65 years of age, were included. All subjects completed a daily symptom diary (ranging from no symptoms to very severe symptoms) during a 2-week period. The SF-36 was used to score QoL. The 31-item Cognitive Scale for Functional Bowel Disorders (CSFBD) was used to analyse the level of dysfunctional cognitions concerning IBS. The Hospital Anxiety and Depression Scale (HADS) was used to score symptoms of depression and anxiety. Results: IBS patients (72% female, age mean ± SD: 41,6 ± 12,7 yrs) were characterized by an impaired QoL. Cognitive dysfunction correlated significantly with the mean symptom score based on bothersome discomfort, pain, constipation, diarrhoea and bloating (R = 0,40; p< 0,001). Furthermore, cognition correlates significantly with QoL (R = 0,49; p < 0,001). In subjects with anxiety (37 %) and depression (27%) symptoms, cognitive dysfunction was significantly more frequent (p < 0,001 for both). Patients with anxiety and depression also had significantly more impaired QoL than those without (all p < 0,05), but this was independent of the daily symptom scores. QoL, CSFBD and anxiety scores were gender independent. Only depressive symptoms were significantly more prevalent in female IBS patients (p < 0,01). CSFBD and QoL scores did not differ between IBS subtypes (IBS-Diarrhoea 25%, IBS-Constipation 28%, IBS-Alternating 27%, IBS-Undefined 20%), except for IBS-Diarrhoea patients having significantly more physical role limitations in QoL (p < 0,05). Conclusion: In this IBS cohort cognitive dysfunction correlates significantly with symptom scores and QoL. Especially patients with anxiety and/or depression have high cognitive dysfunction scores, independent of symptom severity. The results point towards an important role of psychiatric co-morbidity and cognitive behavioural therapy in IBS patients.

M1245

Somatisation Predicts Symptom Severity and Consulting Behaviour in Irritable Bowel Syndrome Patients and Those with Symptomatic Diverticular Disease: Cause or Effect?

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BACKGROUND: When assessing patients with abdominal pain and disturbed bowel habit associated with normal physical findings it is useful to also assess psychological variables to aid management. However although standard measures of anxiety and depression are often abnormal in IBS these fail to reliably distinguish IBS from organic disease. Non gastrointestinal symptoms are also often prominent but their diagnostic value has not be formally assessed. AIMS & METHODS: To assess the value of a modified version of the Personal Health Questionnaire 15 (PHQ15)[1] which excludes gastrointestinal symptoms, here called the PHQ12, in differentiating various subtypes of IBS from healthy volunteers and a disease control group with diverticulosis. 151 healthy volunteers (HV) were age and sex matched to 319 IBS patients and compared with 91 subjects who had had Campylobacter enteritis 6 months previously and 296 patients with diverticular disease (DD) (113 asymptomatic [ADD], 173 with symptoms of recurrent abdominal pain of whom 70 had a past history of diverticulitis [PHDD] and 103 had no such history, here called symptomatic DD [SDD]). RESULTS: PH12 scores for all IBS groups were significantly higher than HV and the diverticulosis patients except for the PHDD group. Receiver-operator curves showed a cut-off of 6 gave the best combination of sensitivity 66.4% and specificity 94.7. An elevated anxiety score (>7) gave a similar sensitivity of 74.4% but lower specificity at 74.8%. while depression >7 gave a poor sensitivity 30.1% though specificity was acceptable at 95.4. Within the IBS patient group PHQ12 correlated more strongly with IBS severity scale (IBSSS) than anxiety or depression (r= 0.41 versus 0.29 and 0.34, all p<0.00, n=845). PHQ12 but not anxiety nor depression was a significant predictor of GP visits in both IBS and DD. PHQ12 score is surprisingly unaffected by age and is only partly explained by associated anxiety and depression. Those with a past history of diverticulitis also scored highly on PHQ12 with 58% abnormal, while 40% were abnormally anxious and 51% depressed. CONCLUSION: The PHQ12 questionnaire is a simple useful clinical tool since it predicts symptom severity and GP visits for both IBS and SDD. Elevated values after acute diverticulitis are unexplained but suggest that gut inflammation can contribute to multiple somatic pains, possibly by causing widespread visceral and somatic hypersensitivity. 1. Kroenke et al Psychosom Med 2002;64:258-266.

M1246

Reactivity to Imagery in Health and Irritable Bowel Syndrome

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Background and aims: Irritable bowel syndrome (IBS) patients frequently exhibit rectal hypersensitivity and are also hypersensitive to sound. We have been using a medical artist to record the imagery of IBS and have hypothesized that the reaction to such images might differ in health and IBS. Methods: Part 1. The four most evocative images of IBS were determined by showing 70 patients twelve paintings of the condition and scoring their responses. Part 2. The spontaneous response to these four images along with four non-IBS painful paintings and four neutral paintings was then assessed in a further 100 IBS patients and 100 controls. In addition the prompted reaction in terms of whether an image evoked the notion of pain, discomfort or bloating and to what degree, was recorded. Results: Part1. Four images depicting bloating and pain rather than bowel dysfunction scored highest irrespective of symptom severity score. Part 2. These four IBS images prompted a significantly