# Abstracts

## Neurogastroenterology/ Motility free papers 001–011

### 001 DOES INFECTIOUS DIARRHOEA (ID) PREDISPOSE PEOPLE TO FUNCTIONAL GASTRO-INTESTINAL DISORDERS (FGIDS)? A PROSPECTIVE COMMUNITY CASE-CONTROL STUDY

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**Introduction:** Previous studies, many uncontrolled, suggest 4 to 32% of people develop irritable bowel syndrome (IBS) after ID. Little information is available on the development of other FGIDs after ID.

**Aim:** To determine if patients with stool culture confirmed bacterial diarrhoea were more likely to develop gut symptoms consistent with a diagnosis of IBS, functional dyspepsia or functional diarrhoea at 3 and 6 month follow up compared with community controls.

**Methods**: A prospective community-based case-control study over one year. Subjects with stool positive bacterial infectious diarrhoea and control subjects from the same primary care practice were invited to participate. The presence or not of IBS, functional dyspepsia or functional diarrhoea was diagnosed at the start and at follow up using self-complete Rome II modular questionnaires. The diagnosis of a baseline FGID excluded subjects from continuing. There were 128 cases and 219 community controls eligible and who consented to participate.

**Results:** At follow up there was a higher incidence of FGIDs in the cases compared with controls, mainly due to a higher incidence of IBS (see table). There was no difference in the incidence of functional dyspepsia between cases and controls.

**Conclusions:** IBS and functional diarrhoea is diagnosed more frequently in people at three and six-month follow up after an episode of stool positive bacterial diarrhoea compared with community controls despite careful exclusion of people with pre-existing FGIDS and adds further support for the concept of post-infectious IBS.

Abstract 001

| | 3 months | | | 6 months | | |
|---|---|---|---|---|---|---|
| FGID | Case | Control | Odds Ratio (CI) | Case | Control | Odds Ratio (CI) |
| IBS Yes | 18 | 4 | 9.8 (3.2–29.9) | 18 | 4 | 10.1 (3.3–30.7) |
| IBS No | 90 | 197 | | 90 | 202 | |
| F Diar Yes | 9 | 2 | 9.1 (1.9–42.7) | 6 | 0 | Lower limit CI for OR |
| F Diar No | 99 | 199 | | 102 | 206 | is 2.32 |
| F Dys Yes | 4 | 4 | 1.9 (0.5–7.7) | 3 | 2 | 2.9 (0.5–17.7) |
| F Dys No | 104 | 197 | | 105 | 204 | |

### 002 GENETIC INFLUENCES IN IRRITABLE BOWEL SYNDROME: A TWIN STUDY

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**Background:** Aggregation of irritable bowel syndrome (IBS) in families of patients with IBS has recently been described. This may be due to learned responses to abdominal symptoms or a significant genetic contribution to the visceral hypersensitivity of patients with IBS. We have therefore studied IBS symptoms in monozygotic (MZ) (100% of genes shared) and dizygotic (DZ) (approximately 50% of genes shared) twins to assess the contribution of genetic factors to IBS.

**Methods:** 4480 unselected twin pairs from a national volunteer twin register were asked to complete a validated questionnaire. IBS was defined on the basis of the Rome II criteria as abdominal pain for at least 12 weeks in the last year with two of: relief with defaecation/ change in bowel frequency with pain/change in bowel consistency with pain.

**Results:** 5032 respondents (56% response rate), including 1878 evaluable twin pairs. 892 MZ pairs (82 male, 810 female, median age 53 (range 19–81) years) and 986 DZ pairs (69 male, 917 female, age 54 (20–82) years). The prevalence of IBS among the twin pairs was 638/3756 (17%). There was no significant difference in casewise concordance rates in the MZ and DZ twins (see table).

**Conclusion:** This study suggests that genetic factors do not contribute substantially to the aetiology of IBS.

Abstract 002

| | IBS in at least one twin (pairs) | Concordant affected pairs | Discordant pairs | Casewise concordant |
|---|---|---|---|---|
| MZ | 274 | 45 (16%)* | 229 (84%) | 90/319 (28%)* |
| DZ | 273 | 46 (17%) | 227 (83%) | 92/319 (29%) |
| Total | 547 | 91 | 456 | |

* p = NS versus DZ twins.

### 003 ENDOGENOUS CHOLECYSTOKININ MODULATES TOLERANCE TO AN INTRAGASTRIC LIQUID LOAD BY AN EFFECT ON GASTRIC EMPTYING IN HUMANS

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The role of CCK in human eating behaviour is unclear. Exogenous CCK reduces food intake, but a similar role for endogenous CCK is not established. Fatty acid release of CCK is chain length sensitive: dodecanoic acid (C12) releases CCK but decanoic acid (C10) does not. We have shown previously that C12 reduces tolerance to an intragastric liquid load to a greater degree than C10 (Lal 2001 *Gastroenterology* 120: A710).

**Aim:** To determine whether the effect of C12 on tolerance to an intragastric liquid load is (a) mediated by an effect on gastric emptying, and (b) is blocked by Dexloxiglumide, a CCK-1 receptor antagonist.

**Methods:** (a) Vehicle (250 ml PBS/Tween-80) alone or with 0.1M C10 or C12 was infused into the stomach of 8 healthy volunteers in a randomised manner after an overnight fast. 20 minutes later, water was infused into the stomach at 200 ml/min to maximum volume tolerated. Gastric contents were then aspirated. (b) 8 subjects were randomised in a double-blind, Latin square design to receive either i.v. dexloxiglumide (Dex; 5–15 mg/kg/h) or saline (Sal) and either intragastric vehicle (Veh) or C12 followed by water infusion. Data are mean±SEM (ml) compared by ANOVA followed by post hoc multiple comparison tests as appropriate.

**Results:** (a) Subjects tolerated more water following vehicle (1481±220) and C10 (1400±227) than C12 (925±173; $p<0.05$ vs. C10 & veh), confirming previous results. There was no difference in

the volume of gastric contents aspirated at the end of the infusion period following any of the test meals (veh: 1045±162; C10:1071±153; C12:1065±147), indicating that tolerance was limited by intragastric capacity, which in turn is determined by gastric emptying. (b) Dex abolished the reduction in water tolerance induced by C12 (Dex/Veh: 1763±176; Sal/Veh: 1581±158; Dex/C12: 1625±204; Sal/C12: 1119±210 (p<0.02 Sal/C12 vs. other conditions), indicating a CCK-1 receptor mediated effect.

**Conclusion:** CCK-releasing fatty acids reduce tolerance to an intragastric liquid load in humans (a) by delaying gastric emptying and (b) via a CCK-1 receptor mediated effect.

## 004 GASTRIC MUCOSA IS INNERVATED BY HIGH THRESHOLD ACID SENSING NON-CAPSAICIN SENSITIVE SPINAL AFFERENTS

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**Introduction:** Many patients suffer from acid sensitive dyspepsia yet the gastric mucosa is normally anaesthetic to luminal acid. We have previously reported that only a small proportion of mucosal spinal afferents are sensitive to protons at pH 6.1 and hypothesised that this was an adaptation to the presence of luminal acid.

**Aims:** To determine whether gastric mucosal nerves have a higher threshold for activation by acid than non-gastric nerves.

**Methods:** To study the effects of pH on the cell bodies of gastric mucosal nerves, we injected a neuronal tracer, Texas Red, into the gastric mucosa of 10 Wistar rats 2–4 weeks before removal of their dorsal root ganglia (DRG). Cultured DRG cells were placed in a perfusion chamber mounted on a fluorescence microscope where those of gastric origin were identified by excitation of the Texas Red within them. The cells were loaded with the calcium sensitive ionophore, FURA 2-AM to detect the rise in calcium concentration accompanying cell activation and perfused with a HEPES based buffers from pH 7.4 to pH 5 to establish thresholds for cell activation. Following this, cells insensitive to pH 6.1 but sensitive to pH 5 were identified and the effects of exposure to the vanilloid receptor antagonist Capsazepine (5μM) and agonist Capsaicin (5μM ) were studied.

**Results:** Preliminary dose ranging experiments suggested 2 populations of acid sensitive gastric cells based on threshold for activation (pH 6.7 or pH 5.8). Following this, pH 6.1 and pH 5 were chosen as low and high threshold stimuli respectively. 126 cells of gastric mucosal origin were analysed. Of these 20 responded to pH 5 but not pH 6.1. 16 of these cells were not capsaicin sensitive and the response to acid was unaffected by capsazepine. In contrast only 3 cells with similar properties could be identified from 412 non-gastric cell controls (p<0.0001).

**Conclusion:** The gastric mucosa is innervated with high threshold non-capsaicin sensitive neurons. These cells may be important in sensing acidification of the mucosa in response to injury, probably through activation of acid sensing ion channels.

## 005 5-HT$_1$ RECEPTOR AGONISM SUPPRESSES POST-PRANDIAL ANTROPYLORO-DUODENAL MOTILITY IN MAN

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5-HT$_1$ receptor agonism delays gastric emptying.[1,2] This is associated with prolongation of the lag phase[1,2] and relaxation of the gastric fundus.[2] The aim of this study was to assess the effect of 5-HT$_1$ receptor agonism on post-prandial antro-pyloro-duodenal motility.

**Methods:** Antral (3 sites, 1.5 cm apart), pyloric (sleeve sensor positioned by measurement of transmucosal PD) and duodenal (4 sites, 3 cm apart) motility was recorded for 3 hours after ingestion of a solid meal and subsequent administration of either sumatriptan (S) (6mg, s.c.) or saline control (s.c.) in 8 healthy volunteers (aged 18–37, 1 female). Treatment order was randomised and double blind.

**Results:** During the first post-prandial hour S significantly decreased antral (activity index: S 27 mmHg (8, 109) mmHg, median (IQR) v placebo 105 mmHg (67, 320) mmHg; p < 0.05), pyloric (13 mmHg (5, 25) mmHg v 63 mmHg (40, 82) mmHg; p < 0.02) and duodenal (78 mmHg (40, 203) mmHg v 291mmHg (143, 458) mmHg; p < 0.05) motility. During the 2nd post-prandial hour, only pyloric motility remained significantly reduced (21 mmHg (8, 34) mmHg v 38 mmHg (21, 62) mmHg; p < 0.02), with neither antral (30 mmHg (15, 199) mmHg v 238 mmHg (231, 365) mmHg) or duodenal (92 mmHg (55, 207) mmHg v 251 mmHg (120, 355) mmHg) motility being significantly affected. By the 3rd hour there were no significant differences in either antral (56 mmHg (11, 230) mmHg v 143 mmHg (11, 338) mmHg), pyloric (18 mmHg (7, 42) mmHg v 12 mmHg (5, 24) mmHg) or duodenal (70 mmHg (57, 101) mmHg v 85 mmHg (46, 138)mmHg) motility between S and placebo groups. Finally the number of isolated pyloric pressure waves[3] were not affected by S (1st hour: 77 (40, 90) v 68 (50, 94), 2nd hour: 53 (18, 168) v 40 (27, 163), 3rd hour: 36 (8, 64) v 18 (3, 50)).

**Conclusion:** 5-HT$_1$ receptor agonism with S suppresses antro-pyloro-duodenal motility immediately after meal ingestion, which may contribute to the increase in lag phase seen during gastric emptying. GlaxoWellcome, UK, kindly supplied the sumatriptan for this study.

[1]*Alimen Pharmacol Ther* 1992;**6**:685; [2]*Am J Physiol* 1997;**272**: G902; [3]*Gastroenterology* 1988;**94**:276.

## 006 A ROLE FOR 5-HYDROXYTRYPTAMINE (5-HT) IN THE POSTPRANDIAL EXACERBATION OF SYMPTOMS IN FEMALE PATIENTS WITH DIARRHOEA PREDOMINANT IRRITABLE BOWEL SYNDROME (IBS)

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Meal ingestion is often associated with an exacerbation of gastrointestinal symptoms in patients with IBS.[1] Furthermore, plasma 5-HT concentrations appear to increase more after a meal in patients with diarrhoea predominant IBS than healthy volunteers,[2] suggesting that abnormalities in 5-HT release may be responsible for the postprandial symptoms associated with IBS. We have assessed platelet depleted plasma 5-HT concentration for 2 hours (60 minute intervals) under fasting conditions, and then for a further 4 hours (at 30 minute intervals) after a standard carbohydrate meal (457 kcal) in 21 female patients with diarrhoea predominant IBS (aged 19–50 yrs). IBS symptomatology, in particular abdominal pain and urgency, was assessed throughout the study, and platelet depleted plasma 5-HT concentration compared in patients "with" and "without" a postprandial exacerbation of their IBS symptomatology. 5-HT concentration was measured by a reverse-phase high performance liquid chromatography with fluorimetric detection.

**Results:** Thirteen patients experienced abdominal pain and/or urgency with meal ingestion. These patients exhibited significantly higher postprandial levels of platelet depleted 5-HT concentration than patients without any symptoms (postprandial area under the curve (AUC)/fasting AUC: with symptoms, 2.23 (adjusted geometric mean) v without symptoms, 1.34; ratio with:without symptoms (95% CI), 1.66 (1.05, 2.62); p=0.033). Furthermore, the peak postprandial concentration of 5-HT was significantly higher in patients "with" compared with those "without" a postprandial exacerbation of their IBS symptomatology (peak: with symptoms, 18.53ng/ml v without symptoms, 8.71ng/ml; ratio with:without symptoms, 2.13 (1.09,4.15); p=0.029).

**Conclusions:** These data support a role for 5-HT in the postprandial exacerbation of symptoms seen in female patients with diarrhoea predominant IBS.

[1]Ragnarsson et al, *Eur J Gastroenterol Hepatol* 1998;**10**:415–21; [2]Bearcroft et al, *Gut* 1998;**42**:42–6.

## 007 CORRELATION OF 5HT-CONTAINING ENTEROENDOCRINE CELL NUMBERS WITH MUCOSAL LYMPHOCYTES IN NORMAL RECTAL MUCOSA

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Recent studies have suggested that low grade inflammation occurs with irritable bowel syndrome (IBS), which is also associated with an increase in enteroendocrine cells. IBS peaks in the early 20s, when exposure and responsiveness to intestinal infections is maximal.

**Aims:** To determine the relationship between enteroendocrine (E) cell to inflammatory cell numbers in young and older healthy controls.

**Methods:** Twenty young (median 27 yrs (21–33)) and twenty older healthy volunteers (66 (59–70) p<0.001 underwent colonic transit measurement and rectal biopsy. These were immuno-stained using antibodies to the following markers: synaptophysin, 5HT & PYY (enteroendocrine cells), CD3 (lymphocytes) and mast cell tryptase (mast cells).

**Results:** 5HT-containing E cell numbers correlated with CD3+ lamina propria lymphocyte counts, $R^2$=0.8861, p=0.009. There was a reduction in synaptophysin+ E cells (p=0.007), CD3 lamina propria lymphocytes (p<0.02), crypt intraepithelial lymphocytes (p<0.02) and mast cells (p=0.02) in the older group. Median colonic transit was 28.8 (13.8–43.5) and 45.6 (23.4–57) for the old and young respectively (p=NS) with no correlation to E or lymphocyte count.

**Conclusions:** In health lymphocyte numbers correlate with E cell numbers. Age-related decline in inflammatory cells may account for reduced E cell numbers in the older age group.

## 008 THE ROLE OF ANTICIPATION IN THE BRAIN PROCESSING OF HUMAN VISCERAL PAIN

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**Introduction:** Psychophysiologists have demonstrated that learned autonomic responses can be produced in the gastrointestinal (GI) tract to external stimuli. By employing classical conditioning techniques, the formation of a learned association between a previously unrelated stimulus (conditioned stimulus, CS) and a biologically relevant stimulus (unconditioned stimulus, UCS) can be maximised in order to interrogate the effect that anticipation has on the cortical processing of oesophageal pain.

**Methods:** Six healthy volunteers (5 male) with a mean age of 22 years (age range 20–26 years) participated in the study.

Oesophageal stimulation: a standard manometry catheter with a silicone balloon attached was passed trans-nasally into the distal oesophagus.

Protocol: Comprised of three contiguous phases. (1) *Learning phase:* Presentation of 20 trials of a blue coloured circle (CS) paired with a phasic, painful oesophageal distension (UCS). (2) *Anticipation:* Randomised presentation 10 trials of CS alone, and 10 trials of CS + UCS. (3) *Extinction:* Presentation of 20 trials of CS alone. Behavioural data measuring subjective perception of stimulus was acquired pre and post acquisition using visual analogue scales.

Magnetic Resonance Imaging: Non-contiguous axial slices were acquired using a 1.5 Tesla system and an event related design.

**Results:** During the learning phase anterior cingulate cortex, bilateral insula, thalamus, left cerebellum, inferior frontal cortex, periaqueductal grey and secondary sensory cortex were activated. These regions were also activated in the anticipation and the extinction phases with the exception of the periaqueductal grey matter and with additional activation in the right dorsolatereral prefrontal cortex (DLPFC).

**Conclusions:** Anticipation of painful visceral stimuli results in activation of cerebral regions normally associated with processing painful sensory information.We therefore demonstrate that the cognitive-evaluative component of the pain matrix significantly contributes to the central processing of visceral pain.

## 009 VALUE OF A DIETITIAN-LED CLINIC IN THE MANAGEMENT OF YOUNG PATIENTS WITH IRRITABLE BOWEL SYNDROME (IBS)

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**Introduction:** Irritable bowel syndrome (IBS) entails a heavy clinical load for gastroenterologists. It may often successfully be treated by diet. In order to reduce medical outpatient attendances we have established a dietitian-led IBS clinic (DLC).

**Methods:** Patients aged 16–45 were selected by review of GP referral letters by consultants, and randomised to DLC or standard medical appointments (MOPD). Those fulfilling the Rome criteria, with no history of rectal bleeding, chronic medication, or psychiatric illness, were eligible for DLC if screening before their clinic visit revealed there was no evidence of an anxiety state using a validated questionnaire, stool culture was negative and haematological and biochemical markers including C reactive protein and gliadin antibodies normal. Physicians who saw the patients randomised to MOPD were allowed to investigate them as appeared clinically indicated.

**Results:** Of 58 patients randomised to DLC, 15 were excluded (11 because of an anxiety state), but 43 fulfilled admission criteria. 7 failed to keep the first appointment, so that 36 followed a standardised dietary protocol. In 22, (61%) symptoms were successfully relieved. 47 patients were randomised to MOPD. Only 1 received a full IBS screen, and 23 unnecessary investigations were performed, including colonoscopies and barium x-rays. 17 were referred for dietary treatment and 12 accepted, of which 42% obtained symptomatic relief.

**Conclusion:** DLC provides an effective way of screening and treating young patients with IBS whose results compare favourably with those obtained when these patients are referred to MOPD.

## 010 THE IMPACT OF GUT DIRECTED HYPNOTHERAPY UPON HEALTH RELATED QUALITY OF LIFE IN PATIENTS SUFFERING FROM IRRITABLE BOWEL SYNDROME

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**Introduction:** Health related quality of life (HRQoL) is impaired in patients suffering from irritable bowel syndrome (IBS), but measurement of this remains poorly quantified. The treatment of severe IBS is often unsuccessful, although gut directed hypnotherapy has been shown to improve IBS symptoms but its effect upon HRQoL status has not been defined.

**Aim:** In this study we have defined the impact of gut directed hypnotherapy upon HRQoL status in IBS patients.

**Methods:** Seventy five patients (55 females; median age 37.1) with a diagnosis of IBS (consistent with Rome II diagnostic criteria) underwent gut directed hypnotherapy. The predominant symptoms were abdominal pain in 46 patients (61%), altered bowel habit in 24 (32.5%) and abdominal bloating in 5 (6.5%). Physical symptoms were prospectively recorded using seven day diary cards. Outcome measures were Hospital Anxiety and Depression Scales (HAD-A & HAD-D) and a IBS disease specific quality of life tool (IBSQoL). Measurements were taken at baseline (pre-treatment ) and at three months (post-treatment). Pre and post treatment scores were coded and compared using Wilcoxon signed ranks test.

**Results:** There were statistical improvements (p<0.001) in all domains of the IBSQoL (emotional health, mental health, physical health, sleep, energy, diet, social role and physical role) after treatment. Improvements were most marked in female patients, particularly those with predominant abdominal pain. Significant improvements were seen for both males and females for anxiety and (HAD-A p<0.001; HAD-D p<0.05).

**Summary/Conclusion:** Gut directed hypnotherapy has a very positive impact upon psychological well being and HRQoL in IBS. This appears most effective in patients with a predominant symptom of abdominal pain and bloating. A randomised controlled study of hypnotherapy is recommended in IBS.

## 011 ATTITUDES OF GENERAL PRACTITIONERS AND HOSPITAL SPECIALISTS TO FUNCTIONAL GASTROINTESTINAL DISORDERS

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Patients with functional gastrointestinal (GI) disorders in primary care differ from those seen in hospital clinics. General practitioners (GPs) and hospital specialists may have different views of functional disorders.

A questionnaire asking about understanding of functional GI disorders was sent to a random sample of 200 UK GPs, and a random sample of 200 clinician members of the British Society of Gastroenterology (consultants). Non-responders were sent reminders after 1 month.

137 (69%) GPs and 167 (84%) consultants replied. Not all answered all questions. 62 GPs believed functional GI symptoms to represent a "real" currently unexplained GI disorder; 67 believed the symptoms to have a psychosomatic basis, probably somatisation of a psychological illness. One GP believed such symptoms were imaginary. In contrast most, 120, consultants believed functional GI symptoms represent a real GI disorder with 36 perceiving them to have a psychological basis, $\chi^2$ = 26.7, p<0.001. However GPs and consultants had similar perceptions about the prevalence of psychological illness in their functional GI patients. A fifth of each group believed psychological disturbance to be present in <15% patients, a third believed it to be present in 15–30%, and the rest believed it to occur in >30% patients. More consultants believed understanding of functional GI disorders has improved in the last 20

years (101 responding positively, 65 negatively) than GPs (66 positive, 69 negative), $\chi^2 = 4.31$, $p<0.05$. Most consultants, 115, and most GPs, 81, thought that treatment for functional GI disorders had not improved in the past 20 years.

Only 29 of 137 GP respondents had heard of the Manning criteria for diagnosing IBS, compared to 134 of 166 consultants, $\chi^2 = 107$, $p<0.0001$. Only 16 of 137 GPs had heard of the Rome criteria for diagnosing functional GI disorders, compared to 139 of 167 consultants, $\chi^2 = 154$, $p<0.0001$. Despite greater awareness among consultants, 60 did and 104 did not use Manning criteria, 67 did and 100 did not use Rome criteria. Of 123 responding GPs, only 14 use Manning and 4 use Rome criteria.

GPs and consultants have some differing views on functional GI disorders, but in both primary and secondary care most doctors do not use Manning or Rome criteria to diagnose functional GI disorders.

# Oesophageal free papers 012–025

## 012 OESOPHAGEAL CANCER AND CACHEXIA: THE EFFECTS OF THALIDOMIDE ON WEIGHT LOSS AND LEAN BODY MASS IN A SEQUENTIAL (METABOLIC) STUDY

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**Aim:** To investigate the potential for using thalidomide as an anti-cachectic agent in patients with advanced oesophageal cancer by studying its effect on body composition and weight.

**Methods:** 11 patients with non-obstructing and in-operable oesophageal cancer were included in the study.

Study protocol: Patients were established on an isocaloric diet over a 10-day period. Body weight, body composition studies with DEXA scanning, REE (resting energy expenditure) and serum levels of insulin, thyroxine, catecholamines and cortisol were measured at the entry and then after two weeks on diet alone. Patients were then started on thalidomide for 2 weeks and the measurements were repeated. Quality of life (QOL) was similarly measured as a secondary end point.

**Results:** Ten patients completed the study protocol. The average caloric intake remained the same throughout the study period in all these patients. 9/10 (95% CI 0.60, 0.98) lost weight on diet alone. The mean gain on thalidomide in the following two weeks was 1.29 kg (median 1.25kg). A similar trend was shown in lean body mass. There were missing data for one patient, so nine were analysed. 8/9 (95% CI 0.57, 0.98) initially lost mass on diet alone. The mean gain on thalidomide in the following two weeks was 1.75 kg (median 1.33 kg). The mean change in REE was 1.75 (95% CI –0.42, 3.91) on thalidomide. Amongst hormonal assay, changes in catecholamines approached statistical significance.The mean change in catecholamines on thalidomide was –0.71 (95% CI –1.60, 0.02) .

**Conclusions:** In this sequential study of patients with progressive inoperable cancer, thalidomide treatment appeared to reverse loss of weight and lean body mass over the two week trial period. However to establish its role as an anti-cachectic treatment a full placebo-controlled trial is warranted.

## 013 A 5-YEAR, DOUBLE-BLIND, RANDOMISED COMPARISON OF RABEPRAZOLE AND OMEPRAZOLE IN GORD MAINTENANCE TREATMENT: EFFICACY RESULTS

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**Background:** Many studies have found proton-pump inhibitors to be effective and safe in preventing relapse of gastro-oesophageal reflux disease (GORD) over a period of several months to a year. There is, however, little evidence from randomised trials about their long-term safety and efficacy.

**Objectives:** To compare the efficacy and safety of rabeprazole and omeprazole in the prevention of relapse in patients with healed gastro-oesophageal reflux disease during 5 years of treatment.

**Methods:** Patients were eligible for the study if they had previously been diagnosed with GORD, which had healed as shown by endoscopy. Patients received randomised, double-blind treatment with rabeprazole (10 mg or 20 mg) or omeprazole (20 mg) once daily for up to 5 years. The main outcome measure was endoscopically confirmed GORD relapse (Hetzel–Dent score = 2). Endoscopy was done after 13, 26, and 52 weeks, and yearly thereafter, or if symptoms suggested GORD relapse.

**Results:** 243 patients entered the study, of whom 123 completed all 5 years of treatment. Relapse rates were 9/78 (11.5%) in the 20 mg rabeprazole group, 8/82 (9.9%) in the 10 mg rabeprazole group, and 11/83 (13.3%) in the 20mg omeprazole group. The differences in relapse rates were not statistically significant. All three treatments were safe and well tolerated.

**Conclusions:** Rabeprazole at a daily dose of 10 mg is as effective as rabeprazole 20 mg or omeprazole 20 mg in preventing relapse of GORD over 5 years of treatment.

## 014 OESOPHAGEAL MANOMETRY AND PH STUDIES CHANGE THE MANAGEMENT AND OUTCOME OF PATIENTS WITH NON-CARDIAC CHEST PAIN

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**Background:** Oesophageal disease is a well-recognized cause of non-cardiac chest pain (NCCP). The role of Oesophageal Manometry (OM) and pH studies remain unclear, particularly in changing outcome.

**Aim:** To assess whether Oesophageal Manometry and pH studies affect the management and outcome of NCCP patients in a district hospital.

**Methods:** Retrospective study of patients with NCCP with repeated admissions to hospital (Negative ETT, normal Coronary Angiogram or normal Thallium scan) who were further investigated with OM and pH studies between November 1998 and May 2001 (2.5 years/60 patients). Diffuse Oesophageal Spasm (DOS), Nutcracker oesophagus and Achalasia, as defined by Spechler and Castell (*Gut* 2001;**49**:145–51), were the only motility disorders recognized as causes of NCCP in this study.

**Results:** All patients had normal endoscopy or barium swallows. 17 (28%) patients had significant reflux disease, 14 (23%) had DOS and 6 (10%) had nutcracker oesophagus (of whom 50% also had reflux). Normal studies were found in 25%. 5 patients had non-specific oesophageal dysmotility and 2 patients had hypomotility. All patients with significant reflux disease were treated with PPI and 3 patients had anti-reflux surgery. 90% of patients with nutcracker Oesophagus and DOS were treated with Nitrates or calcium blockers with/without PPI. 37% of patients had reflux symptoms and predictive values for significant reflux were 64% (positive), and 92% (negative). 22% of patients had dysphagia. Predictive values for significant dysmotility were 69% (positive) and 72% (negative). Management was changed in 67% (40 patients) who had OM and pH studies. The nature of the diagnosis was carefully explained in all patients with positive studies. Only one (1.6%) has been readmitted and one (1.6%) had further cardiac investigations (mean follow-up 1.5years).

**Conclusions:** A positive diagnosis of oesophageal dysmotility or reflux changed the management, reduced readmission rates and the need for further cardiac investigations. The presence or absence of GI symptoms has a high predictive value for OM and pH abnormalities in NCCP.

## 015 OESOPHAGEAL MOTOR FUNCTION AND GASTRO-OESOPHAGEAL REFLUX IN VENTILATED NEONATES

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**Introduction:** Sick neonates often require ventilation for prolonged periods of time. Gastro-oesophageal reflux (GOR) is very common in newborn infants, particularly those who are preterm. This can lead to significant morbidity and in extreme cases the neonate can only be successfully weaned off the ventilator after anti-reflux surgery.

**Aim:** To evaluate oesophageal motor function and acid clearance mechanisms in ventilated neonates.

**Methods:** Combined pressure and pH monitoring was undertaken in 10 neonates requiring assisted ventilation using Dentsleeve