F233

ANAL BIOFEEDBACK VS. RELAXATION TREATMENT OF CONSTIPATION WITH ANISMUS. G.K. Turnbull, P.G. Ritvo, J. Woolnough
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Anismus or pelvic floor dysynergia are terms to describe constipated patients who contract their anal sphincters on attempting defecation, thus blocking rectal emptying. We saw 50 female patients (pts.) with constipation who had intractable symptoms unresponsive to diet or laxatives before referral. Sixteen pts. had evidence of anismus on anal sphincter EMG, defecography and anal manometry, 3 had idiopathic megarectum, 1 had Hirschsprung's and 30 had normal rectal emptying. Six of the 16 anismus pts. were excluded; 4 had improvement with high fiber diet compliance plus self-monitoring of symptoms before therapy, and 2 refused therapy. Ten female pts. (age 17-38;mean 27 yr.) were randomly assigned to either general relaxation therapy (GRT) with external anal sphincter biofeedback (EASB) or GRT with "sham" EASB (biofeedback signals were random and NOT indicative of EAS muscle tension). Therapy was 2-3 hours daily for one week. Four pts. received GRT + EASB and 6 received GRT + sham EASB. All pts. completed diaries of stool frequency (SF), abdominal pain (AP) and bloating (B) for 4 weeks before and 12 weeks after therapy.

Eight pts. improved with therapy at 12 weeks; 5/6 sham EASB and 3/4 active EASB. In the eight patients responding to therapy, weekly SF increased from 1.9 to 3.8 ($p<0.05$), mean weekly B decreased from 20 to 11 ($p<0.05$) and mean weekly AP decreased from 14 to 8 (NS). For all 10 pts. weekly SF increased from 1.8 to 3.3 ($p<0.05$), mean weekly B decreased from 19 to 12 ($p<0.05$) and mean weekly AP decreased from 13 to 10 (NS). Only 3 pts. (all sham EASB) had improved rectal emptying on defecography with relaxation on EMG post-therapy despite symptom relief in the other 5 pts. Despite anal sphincter EMG, defecography and anal manometry before and 12 weeks after therapy, no parameter of rectal function predicted outcome with therapy.

Relaxation therapy appears to be an important component for achieving symptomatic improvement in women with anismus. Since EASB was not evaluated separately it is difficult to assess its role in symptom response. As well, GRT + sham EASB may provide some increased sensitivity to anal function that would not occur with GRT alone. These results show that despite continued anismus on objective testing, pts. can improve symptomatically with this therapy. Increased anal sensitization and reduced anal muscle tension may be significant factors contributing to treatment success.

F234

BIOFEEDBACK - AN ALTERNATIVE TREATMENT IN THE MANAGEMENT OF INTRACTABLE CONSTIPATION

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Twenty-two patients with symptoms of obstructive defaecation were recruited for domiciliary biofeedback self-regulatory relaxation training. Each patient served as his or her own control for anorectal and proctographic assessments, before and after biofeedback treatment.

Biofeedback training improved the obstructive symptoms of the patients. Significant changes in various parameters relating to the obstructive defaecation syndrome were observed before and after biofeedback management, as follows. The rectal sensory threshold was improved ($p<0.05$). The external anal sphincter wire EMG voltage recorded during simulated defaecation, via isotope proctography, was significantly reduced ($p<0.0005$), and this was associated with a greatly reduced anismus index ($p<0.0001$). The defaecation rate (% of evacuation/defaecation time) was significantly increased ($p<0.05$), the anorectal angles at rest and on attempted defaecation were made more obtuse ($p<0.05$) and the pelvic floor movements, as examined by isotope proctography were made more dynamic ($p<0.03$).

Biofeedback thus improves the act of defaecation in patients suffering from inappropriate contraction of the pelvic floor and sphincter musculature. It appears that the modulating effects of the afferent and efferent sides of the defaecation reflex as well as its central control mechanism can be influenced by biofeedback self-regulatory means, which in turn leads to an improved quality of anorectal function.

F235

Patients rendered incontinent by surgery exhibit evidence of combined internal and external anal sphincter injury

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Incontinence following anorectal surgery is characterised by low anal squeeze pressures and abnormal sphincter appearance on endoanal ultrasonography. Sixteen patients (11 male; median age 43 years, range 23-71) rendered incontinent following minor anal surgery and seventeen controls (7 male ; median age 31 years range 24-73) were assessed by ambulatory anal sphincter electromyography (EMG) and manometry. Endoanal sonography revealed internal sphincter division in 7 subjects, with combined injury to the external sphincter in two.

The median internal sphincter EMG frequency was CONTROL 0.44 Hz. (0.36-0.48), TRAUMA 0.18 Hz.(0.11-0.22)($p<0.001$). Resting anal pressures were lower in the incontinent group; median TRAUMA 35cm.H2O (18-62), CONTROL 90 cm.H2O (72-98)($p<0.001$). Squeeze pressures were similarly low for the trauma patients; median TRAUMA 52 cm.H2O (28-74), CONTROLS median 234 cm.H2O (170-386)($p<0.001$). The frequency of transient internal sphincter relaxation was TRAUMA median 8/hour (6-12), CONTROL median 5 (4-6)($p< 0.05$). Recruitment of the external sphincter EMG in the incontinent group was poor in all patients during transient internal sphincter relaxation, measuring between 0-24 % (CONTROLS range 45 - 120 %) ($p<0.001$) suggesting episodes of incontinence.

Incontinence results because of combined internal and external sphincter injury. Such disruption is present despite the sphincters appearing intact in seven of the patients studied.

Oesophagus F236–F245

F236

EFFECT OF OMEPRAZOLE ON OESOPHAGEAL ACID EXPOSURE IN REFLUX OESOPHAGITIS

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Omeprazole is a very effective drug for the treatment of reflux oesophagitis. Its chief mode of action is presumed to be through powerful acid inhibition but part of its efficacy may be due to reduction in the volume of gastric juice thus reducing the frequency of oesophageal reflux and possibly the volume of refluxate. We report our results of the effect of omeprazole on oesophageal acid exposure.

Paired data from 31 patients with endoscopically documented oesophagitis who underwent 24 hour ambulatory oesophageal pH monitoring off and on omeprazole, as part of a separate study, were analysed. Within a week after endoscopy, 24 hour ambulatory oesophageal pH monitoring was performed. Following this the patients were treated with omeprazole 40 mg/day. Repeat endoscopy after a median duration of 10 weeks confirmed complete healing of oesophagitis. 24 hour oesophageal pH monitoring was then repeated while still on omeprazole 40 mg/day. There was a highly significant reduction in median % of time $pH<4$ for the total, supine and upright periods (10.7 v 0.8; 5.1 v 0.1; 10.9 v 0.9; $p < 0.001$ for all three variables). The results were abnormal in 26 patients at the first stage and in 6 patients at the second stage. The % of total time $pH<4$ in the 6 patients at the second stage was 9.8, 9.8, 19.2, 12.8, 5.3 and 11.6. The corresponding figures for supine and upright postures were : 12.1, 0.5, 39.3, 21.3, 12.1, 26.3 (supine) and 8.3, 14.1, 8.2, 8.1, 0.6, 2.0 (upright).

We have demonstrated that oesophageal acid exposure is significantly reduced by omeprazole 40 mg/day. We have also shown that healing of oesophagitis can occur despite substantial acid reflux as measured by 24 hour pH monitoring. This could be explained on the basis that omeprazole may have reduced the volume of the refluxate substantially in these patients - a potentially important factor which the pH monitoring does not measure.

F237

OESOPHAGEAL FUNCTIONAL ABNORMALITIES IN OESPHAGITIS ARE MORE SEVERE IF A COLUMNAR LINED OESOPHAGUS IS PRESENT

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34 patients with reflux oesophagitis and 9 patients with oesophagitis and a columnar lined oesophagus (CLO) underwent oesophageal manometry and oesophageal radiouclide transit studies. 30 patients in the first group and 8 patients in the second group also had 24 hour oesophageal pH monitoring. In the first group, the distribution of grades of oesophagitis was : grade 1=6; grade 2=23; grade 3=5 and grade 4=0. The corresponding figures in the second group were 1; 5; 2; 1.

Univariate analysis was done to examine the effect of age, sex, body mass index, smoking, alcohol consumption, hiatus hernia, grade of oesophagitis and presence or absence of CLO on lower oesophageal sphincter (LOS) pressure, oesophageal body amplitudes, duration of contraction, velocity of propagation, oesophageal transit times and the % of total time pH< 4. Any variables which gave a p value of 0.1 or less were then used together as predictor variables in a multivariate analysis. The presence of CLO was found to have a significant negative association with the LOS Pressure (p=0.005) and positive association with the transit time in supine posture (p=0.003) and the % of total time pH < 4 (p <0.0001). None of the other variables had any significant effect. These results were confirmed when patients with and without CLO were compared as two separate groups. The median LOS pressure was significantly lower in patients with CLO (9.5 v 17; p=0.014). They also tended to have significantly longer median transit times in supine posture (180 v 13.5 sec; p<0.001) and higher median % of total time pH < 4 (46.2 v 8.3; p=0.0003). There was no significant difference in any of the other parameters.

These results indicate that presence of CLO in oesophagitis is associated with more severe oesophageal functional abnormalities and greater acid exposure which in turn may be responsible for the development of CLO.

F238

A MORPHOMETRIC STUDY OF BENIGN OESOPHAGEAL STRICTURES BY ENDOSCOPIC ULTRASONOGRAPHY (EUS)

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EUS is considered the most accurate method to assess the integrity of the oesophageal wall. The aim of the study was to evaluate EUS in patients with peptic oesophageal strictures for diagnostic purposes and to acquire additional anatomical information in vivo.

EUS examinations were performed in 17 subjects (11 men and 6 women: mean age 66.6 years; range: 42-80), with histologically diagnosed benign oesophageal strictures, present from 2 to 48 months, using the GF-UM3 ultrasound endoscope and EUM3 ultrasound unit (Olympus/Aloca) with frequency of 7.5 or 12 MHz. At least 3 of the 5 wall layers could be visualised and their integrity was confirmed in all cases (diagnostic accuracy:100%). The mean (SEM) thickness of the oesophageal wall at the stricture level was significantly greater than the normal oesophagus, 5.41 (0.42)mm v 3.35 (0.22)mm (p<0.01). Further analysis showed that this thickening was not confined to any particular layer. The diameter of the strictures (using the barium spheres method of measurement) was 10.1mm (0.77) and this was found to correlate inversely with the thickness of the oesophageal wall at the stricture level, Spearman's r= -0.81; p< 0.001.

Detailed images obtained in vivo by EUS show that patients with benign oesophageal strictures have a significantly thicker wall at the level of the narrowing, which affects all layers and has a negative correlation with the luminal diameter of the stricture.

F239

PRODUCTION AND CHARACTERISATION OF A POLYCLONAL ANTIBODY TO THE erbB-3 PROTEIN: EXPRESSION OF erbB-3 PROTEIN IS A FEATURE OF BARRETT'S OESOPHAGUS

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erbB-3 is a recently discovered gene which codes for a putative growth factor receptor protein with presumed tyrosine kinase activity showing considerable structural and amino acid sequence homology to both the epidermal growth factor receptor (EGFR) and c-erbB-2 proteins. We have produced a polyclonal rabbit antibody to the erbB-3 protein via the synthetic peptide route. The antibody was raised in rabbits using a 13 amino acid peptide corresponding to part of the intracellular domain of the predicted amino acid sequence of the erbB-3 protein conjugated via cysteine to keyhole limpet haemocyanin and injected intramuscularly and subcutaneously into rabbits with high ELISA titres (1:500,000). The antibody produces single bands on Western blots of primary breast carcinomas at 160 kd corresponding to erbB-3. We have conducted a preliminary study of erbB-3 protein expression in Barrett's Oesophagus using immunohistochemistry. The pattern of expression of the erbB-3 protein in Barrett's Oesophagus is similar to that seen EGFR with supranuclear, Golgi zone and basal nuclear cytoplasmic staining in Barrett's change of complete (intestinal metaplastic) type. A similar pattern of erbB-3 protein expression is also seen in the enterocytes of normal large intestinal type mucosa. Expression of EGFR and erbB-3 protein in Barrett's Oesophagus may by important in neoplastic transformation possibly via an autocrine mechanism.

F240

ULTRASTRUCTURAL IDENTIFICATION OF SURFACTANT-LIKE MATERIAL IN HUMAN OESOPHAGEAL MUCOSA.

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Recent biochemical, biophysical and morphological studies have suggested that phospholipid components in gastric mucosa may provide a physical barrier to the noxious luminal environment. Since the oesophagus is susceptible to damage through reflux of gastro-duodenal contents, the aim of study was to examine for the presence of surfactant-like material in human oesophageal epithelium.

Oesophageal specimens were obtained from patients during routine endoscopy or following oesophageal resection. Tissues were fixed in aldehyde fixative containing 3% tannic acid and were postfixed in 1% osmium tetroxide (O_s O_4). A non-aqueous fixative containing 1% O_s O_4 in fluorocarbon was also used to preserve mucus components. Ultrathin sections were cut, stained with uranyl acetate and lead citrate, and examined by electromicroscopy.

Several epithelial cell layers were identified; a basal cell layer, prickle cell layer, intermediate layer, and a superficial layer. Surfactant-like structures were identified by their electron density and as myelin forms. Multilayer lamellar bodies were abundantly present in the intercellular space of the intermediate and prickle cell layers. A remarkably uniform lining consisted of more than 20 bilayers of phospholipid. Myelin structures in the intercellular space of the prickle cell layer appeared similar to lamellar bodies found in alveolar type II cells. Fragments of similar material were found in the superficial layer. Variably coiled lamellar structures were also present in the lumen of oesophageal glands and capillaries. An intracellular form of this lamellar body was also recognisable in fibroblast-like, electron dense cells.

This study has demonstrated the presence of surfactant-like material in the mucosa of the human oesophagus which may play a role in the protection against the noxious effects of refluxed gastroduodenal contents.

F241

OESOPHAGEAL ACID EXPOSURE AND SPHINCTER PRESSURE AFTER BAG DILATATION FOR ACHALASIA

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Acid reflux in achalasia is common both after pneumatic LOS dilatation and after cardiomiotomy. Aim of this study was to clarify whether this is due to an excessive reduction of sphincter pressure. Fourteen achalasic patients were submitted to a 24-hour oesophageal pH recording (combined electrode 5 cm above the manometric LOS) and to eight-lumen manometry, after pneumatic dilatation (Rigiflex TTS, 300 mmHg applied twice for one minute). Scintigraphy was used to study the transit of solid and liquid boluses, and analogic scales to quantify the symptomatic outcome. In three patients the tests were performed only after a second dilatation for the persistence of symptoms. One of them had eventually to be operated for inefficacy of the treatment, in all the others a good symptomatic effect was obtained, and the resting LOS tone dropped below 25 mmHg. A pathological oesophageal acidification during the whole period (pH < 4 for >5% of the time) was found in 4 patients; in 3 it was pathological (> 7.3% of the time) during the day, in 4 during the night (>2.2% of the time). No correlation was found between post-dilatation LOS pressure and acid exposure time. Out of the 6 patients with LOS pressure <15 mmHg only one had pathological acid exposure during the night and none during the day or the overall period. Four patients complained of heartburn during pH monitoring, but in no case a correlation with acidification was found. Acid clearing was impaired (i.e., mean duration of each reflux > 2.6 min) in 9 patients, mainly during the night, whereas the number of acid refluxes was always normal. No correlation was found between acid exposure time or clearing and retention of radioactivity. In conclusion, a pathological acidification after pneumatic dilatation of acalasia is not due to an excessive reflux for a low sphincter pressure, but to a persisting obstacle to acid clearing. Paradoxically, further dilatations could be taken in consideration in some of these patients.

F242

THE USE OF PROTON PUMP BLOCKER FOR RESISTANT REFLUX OESOPHAGITIS IN CHILDREN.

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Omeprazole is a relatively new drug which acts by inhibiting the proton pump in the parietal cell, blocking gastric acid secretion. Adult studies have shown both faster symptom relief and healing rates of duodenal and peptic ulcers, and ulcerative oesophagitis compared to H2 blockers. There is however hardly any published data on its use in children. We report on eleven children with severe reflux oesophagitis who have been treated with omeprazole after standard medical treatment had failed. All eleven children had had symptoms for over one year, and all had been treated with gaviscon, cimetidine/ ranitidine and/or cisapride. Their age range was one to fifteen years (mean 9.3 years). Most common symptoms were pain (91%), dysphagia (45%), persistent vomiting (90%) and haematemesis (36%). All showed severe gastro oesophageal reflux (GOR) on oesophageal pH monitoring. (pH<4.0 for 25-80% of the time). Eight children had endoscopy confirming moderate to severe oesophagitis.

Treatment with omeprazole (20mg daily) resulted in significant symptom relief in all patients and resolution of oesophagitis in those who have had repeat endoscopy. Two patients had recurrence of symptoms on stopping omeprazole and are therefore continuing treatment and longterm effects of omeprazole particularly on gastrin levels will be monitored.

The findings of this study suggest that omeprazole has a valuable place in the treatment of children who develop oesophagitis in association with severe GOR.

F243

ACCURATE POSITIONING OF THE pH PROBE IS VITAL IN THE CORRECT DIAGNOSIS OF GASTRO-OESOPHAGEAL REFLUX.

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Ambulatory pH monitoring of the oesophagus is assessed by a pH probe being position 5 cm above the Gastro-oesophageal junction. There are many different ways of finding this point so that the exact accuracy of placement may be in question. This work utilised dual pH probes to assess the different reflux patterns at 2 points, 5 cm and 10 cm above the lower oesophageal sphincter (LOS) to establish the possible magnitude of error that could arise from faulty placement of a pH probe.

Twenty patients with clinical gastro-oesophageal reflux(GOR) proven on 24-h pH monitoring were studied with 2 sensors being placed at 5cm and 10 cm above the LOS[determined by oesophageal manometry (Gaeltec)].

The pattern of reflux at different levels (median) was as follows:

	5 cm	10 cm
Total percentage of Reflux time pH<4	9	1.45**
Reflux episodes	48.5	32**
No.reflux episodes>5mins	5.5	4.0*
Longest reflux episode(mins)	32	13.5**

* p<0.01; ** p<0.001

Despite the fact that the median acid exposure was greatest at 5 cm site, however, in two patients a greater acid exposure was found at the 10 cm site. Total number of reflux episodes at proximal level (10cm) were preceded by those at distal level (5cm) in 807 of 817 episodes (98.77%).

Conclusion: 1. Exact positioning of pH probe is vital in the correct diagnosis of GOR.
2. Proximal reflux episodes were preceded by distal episodes in 98.77% of cases testifying to the accuracy of detection of reflux episodes by pH probes.

F244

NO SIGNIFICANT GASTRO-OESOPHAGEAL REFLUX (GOR) INDUCED DURING TREADMILL EXERCISE IN PATIENTS WITH NON-CARDIAC CHEST PAIN (NCCP).

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It is known that several mechanisms including defective lower oesophageal sphincter (LOS) pressure, exercise and gastric distention promote GOR.

The aim of this study was to examine the effect of treadmill exercise testing (TET) on the induction of GOR.

Thirty seven patients presented with chest pain to the Coronary Care Unit were studied. Normal coronary angiography was found after cardiological assessment. Following oesophageal manometry (Gaeltec), 24-hour (including the TET period) ambulatory distal oesophageal pH (Synectics) was monitored. TET was performed in fasting state in 14 patients and 1 to 2 hours postprandially in 23 patients.

Results: Mean LOS pressure 8.5 mmHg, range (2-18) mmHg. There was no statistical difference (p=0.58) in the LOS pressure between groups of patients with no significant GOR (N=18), upright GOR alone (N=4), supine GOR alone (N=7) and in a group of patients had both upright and supine GOR (N=8).

Mean TET time=9.13 mins, range (3.83-18.67) mins. During TET no GOR observed in patients with no significant GOR (N=18).

Patient group	pathological GOR	GOR during TET	GOR time during TET
Fasting (N=14)	N=6 (6/14)	N=1 (1/6)	0.7 mins
Postprandial (N=23)	N=13 (13/23)	N=1 (1/13)	6 mins

Conclusion: This study demonstrated that GOR was very rare during TET when it was performed in the fasting state or after 1 hour postprandially. LOS pressure did not show a consistent pattern in these NCCP patients with pathological or no significant GOR.

F245

SHORT SEGMENT BARRETT'S OESOPHAGUS AN UNDIAGNOSED CONDITION.

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Barrett's oesophagus is normally defined as ≥ 3cm of circumferential columnar mucosa proximal to gastro-oesophageal junction. However, adenocarcinoma in association with Barrett's oesophagus can arise in columnar segments ≤ 3cm in length. Specialised columnar epithelium (intestinal metaplasia) confers cancer risk and is uniformly present in association with high grade dysplasia or adenocarcinoma in Barrett's oesophagus. A short segment of Barrett's oesophagus (SSB) has recently been defined as a columnar lined segment of distal oesophagus shorter than 3cm with associated intestinal metaplasia. The optimal number of biopsies to detect this abnormality is not known but is likely to be multiple as intestinal metaplasia shows a marked variation in extent and location. The purpose of this study was to determine the diagnostic sensitivity of multiple closely spaced biopsies in patients with suspected SSB. Thirty two patients were detected with probable short segment of columnar lined oesophagus (CLO). Twenty two (69%) patients had symptoms of gastro-oesophageal reflux. Fifteen patients (47%) had macroscopic oesophagitis. Eight quadrantic biopsies were taken from each cm of CLO. CLO was correctly identified in 31 patients. These patients had a median of 8 biopsies (range 8-24) taken from CLO. The median length of CLO was 1.5cm (1-3cm). Intestinal metaplasia was identified in 26 patients in 40% of biopsies from CLO. Thirteen patients had both complete (Type I) and incomplete (Type IIa or b), and 13 incomplete (9 Type IIb, 3 Type IIa, 1 Type IIa and b) metaplasia. It is estimated that 6 biopsies (95% confidence limits 5 to 7) are necessary per cm of CLO to be 95% certain of detecting intestinal metaplasia if it is present.

F247

INCREASED PREVALENCE OF ASYMPTOMATIC ULCERATIVE COLITIS IDENTIFIED BY A SCREENING STUDY FOR COLORECTAL CANCER

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Ulcerative colitis (UC) may be diagnosed in asymptomatic individuals. However, once diagnosed the need for surveillance is unclear. Our aim was to determine prevalence and assess the progression of disease in a group of asymptomatic colitics in the 50-75 age group.

Of 123,000 recruited into a randomised controlled trial of faecal occult blood screening study for colo-rectal cancer (CRC) (test Haemoccult), 60,521 received the test, 32,197 completed it and 697 (2%) were positive.

Forty three (6%) were found to have procto colitis at investigation and of these 30 were asymptomatic. Thirteen had asymptomatic UC (two of whom had coincident rectal cancer) were followed up by colonoscopy for a total of 30 patient years range 1-7 median 3 years. There has been no detectable progression in disease in those followed up.

We have found a prevalence of asymptomatic UC of 40/100000 suggesting that published estimates of the true disease prevalence may be an under estimate, particularly since Haemoccult is a relatively insensitive measure of faecal blood loss.

Given short follow-up it is unclear whether these observations represent a lead time bias or an increase in the true prevalence of UC.

Inflammatory bowel disease F246–F254

F246

NMR SPECTROSCOPY OF RECTAL DIALYSATE – A NOVEL APPROACH TO INVESTIGATING ULCERATIVE COLITIS.

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NMR spectroscopy is an established technique now offering high resolution chemical analysis of complex biological systems. We report preliminary investigations in ulcerative colitis (UC).

METHOD Six normals aged 20 – 32, 7 patients with active UC aged 35 – 78 and 1 with Crohn's colitis age 26 were studied. Of the colitis patients, 4 had moderate – severe (grade 2 – 3) and 3 mild disease (grade 1). The Crohn's colitis patient had severe disease. Patients and controls were studied by 2 hour rectal dialysis using saline filled Visking tubing (molecular weight cut off 12000). Samples were freeze dried, reconstituted in 0.8mls of deuterium oxide (internal spin standard 5×10^{-7}M trisialylpropionic acid), and run on an Oxford GSS500 MHZ NMR spectrometer.

RESULTS NMR easily detected short chain fatty and amino acids in reconstituted dialysate by reference to external standards. All normal subjects had low lactate levels (1.5 μmol/dialysate ± 95% confidence interval (CI) 1.1μmol) compared to 22.6 ± 30.8 μmol in moderate/severe colitis (difference 21 ± 17.6 CI, $p < 0.05$). Grade 1 colitics had intermediate levels of 4.6 ± 12.3μmol (not significantly different from controls). The lactate level in severe Crohn's colitis, 1.3μmol was within the normal range. Amino acids were detectable in all ulcerative and Crohn's colitics but not in most normal dialysates.

CONCLUSION This new method has confirmed previous reports of high luminal lactate levels and identified a new finding of increased amino acid release with active UC. NMR spectroscopy of rectal dialysate is a promising approach for inflammatory bowel disease research.

F248

FAMILIAL RISK OF INFLAMMATORY BOWEL DISEASE.

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Family history studies of patients with inflammatory bowel disease have suggested relatives are at increased risk of developing these disorders. Epidemiological studies can assess the role of genetic factors in disease aetiology and measure the magnitude of the risk.

1254 patients aged 15 to 80 years from an epidemiological register in Leicestershire were sent a questionnaire about family history. All cases with a positive history were reviewed and confirmed cases included in the study.

The relative risk of developing ulcerative colitis in first degree relatives of European patients with ulcerative colitis was increased by up to 12, but the risk of Crohn' disease was not. The risk of developing Crohn's disease amongst first degree relatives of patients with Crohn's disease was increased by up to 30, the risk of ulcerative colitis was 3. The risk amongst relatives of South Asians with Crohn's disease was not increased but the risk to relatives of patients with ulcerative colitis was 3.

This supports the view that Crohn's disease and ulcerative colitis are separate conditions arising in people with a genetic predisposition and exposed to an apparent environmental factor.