Disease and 10% had an alternative form of IBD (e.g. Proctitis, Lymphocytic Colitis or Collagenous Colitis). The ethnic mix in the responding cohort was 91% Caucasian, 6% Asian, 2% Mixed and 1% was not stated. The sample had a mean score of 7.8 (CI = 7 – 8.6). 98 (40%) of patients' scores reflected "no depression"; 64 (26%) reflected "mild depression"; 33 (14%) reflected "moderate depression"; 36 (15%) reflected "moderately severe depression"; 12 (5%) of scores reflected "severe depression".

Conclusion 20% of our responding IBD patients were shown to have clinically significant levels of depression (moderately severe + severe), with 5% demonstrating scores suggestive of severe depression (1% expressing suicidal ideation). Relapse rates are known to be closely correlated with the severity of depression, and yet very few are on active treatment or review for this. The prevalence and severity of depression in our cohort of responding IBD patients supports the argument for screening all new IBD patients in order to optimise clinical well-being and treatment efficacy.

Disclosure of Interest None Declared.

PTH-081 UNEARTHING THE TRUE PREVALENCE OF ANXIETY WITHIN A TYPICAL DISTRICT GENERAL COHORT OF INFLAMMATORY BOWEL DISEASE PATIENTS: IS IT TIME WE CONSIDERED ROUTINELY SCREENING FOR ANXIETY?

doi:10.1136/gutjnl-2013-304907.568

[1,*]N Swart, [1]D Wellsted, [2]K Lithgo, [2]T Price, [2]M W Johnson. *[1]Centre for Lifespan and Chronic Illness Research, University of Hertfordshire, Hatfield; [2]Gastroenterology, Luton & Dunstable University Hospital, Luton, UK*

Introduction Previous studies have suggested that 15 to 30% of inflammatory bowel disease (IBD) patients also suffer from anxiety. Whilst most gastroenterologists would feel confident in recognising and diagnosing florid steroid induced psychosis, much of the associated anxiety experienced by IBD patients goes undiagnosed and untreated. Disease severity, recurrent flares, poor treatment adherence, disability, unemployment status, and socio-economic deprivation are all believed to be associated with anxiety in these patients. The severity of anxiety also appears to be directly correlated to the physical morbidity and malnutrition risk.

Objectives To assess the true prevalence of anxiety within our IBD patients.

Methods 2400 patients with IBD in the Luton & Dunstable catchment were invited to participate in a web-based quality of life assessment, with the option to request a paper copy. Eligibility criteria required patients to be between 18 and 90 years of age, with no serious learning difficulties or pre-existing serious mental disorders. The well validated 7-item self-report "Generalised Anxiety Disorder (GAD) Questionnaire" was used. The GAD-7 has a minimum possible score of 0 and a maximum possible score of 21. Scores of 5, 10, and 15 represent cut-off scores for mild, moderate, and severe anxiety.

Results 245 patients completed the assessment (43% male; mean age = 53, SD = 17). 45% had Ulcerative Colitis, 45% had Crohn's Disease and 10% had an alternative form of IBD (e.g. Proctitis, Lymphocytic Colitis, or Collagenous Colitis). The ethnic mix in the responding cohort was 91% Caucasian, 6% Asian, 2% Mixed and 1% was not stated. The sample had a mean score of 6.6 (CI = 5.9 – 7.4). 72% of patients' scores reflected no anxiety or "mild anxiety"; 15% reflected "moderate anxiety"; and 13% reflected "severe anxiety".

Conclusion 29% of our responding IBD patients were shown to have significant anxiety scores (moderate + severe), with 14% demonstrating severe anxiety levels. Despite the severity, few of these patients were receiving treatment or therapy for their condition. The GAD score is a simple and quick tool that can be used in clinic. Given that anxiety is believed to directly affect the clinical course of IBD, both the screening and treatment of this condition should be considered part of standard IBD medical care.

Disclosure of Interest None Declared.

PTH-082 SERUM CALPROTECTIN: A NOVEL BIOMARKER TO PREDICT OUTCOME IN ACUTE SEVERE ULCERATIVE COLITIS?

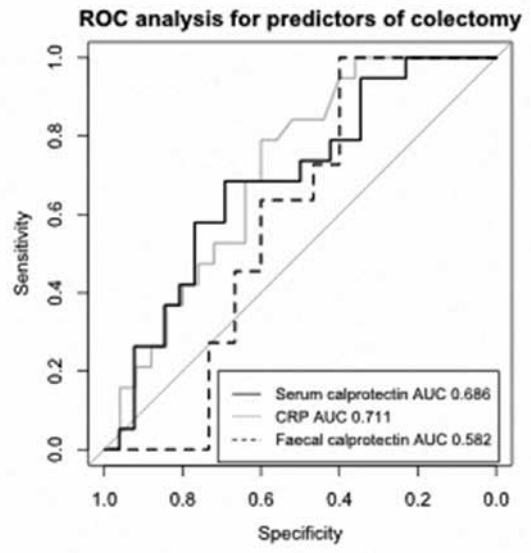
doi:10.1136/gutjnl-2013-304907.569

[1,*]N C Hare, [1]N A Kennedy, [1]K Kingstone, [1]I D Arnott, [1]A G Shand, [1]K R Palmer, [1]I D Penman, [1]C W Lees, [1]J Satsangi. *[1]Gastrointestinal Unit, University of Edinburgh, Western General Hospital, Edinburgh, UK*

Introduction Acute severe ulcerative colitis (ASUC) remains an important clinical problem and is associated with significant morbidity and requirement for colectomy. Faecal calprotectin and C-reactive protein (CRP) have previously been shown to predict the need for colectomy but there is an unmet need for further biomarkers. Serum calprotectin has not previously been analysed for this purpose and may provide a novel way of determining disease activity and outcome. The aim of this study was to assess how serum calprotectin relates to faecal calprotectin and other blood markers of inflammation, and to determine whether serum calprotectin on admission predicts colectomy.

Methods Blood samples were collected prospectively from patients who presented with ASUC as defined by the Truelove and Witts criteria. Blood samples were taken within the first 24 hours of admission. Faecal samples were pre-processed using PhiCal™ extraction buffer. Samples were stored at –80°C and analysed in duplicate using the PhiCal™ calprotectin ELISA according to manufacturer's instructions. Samples with a calprotectin result of > 2500 µg/g were diluted and retested. Statistical comparisons were made between serum calprotectin and other markers of inflammation using Spearman's correlation coefficient, and ROC curve analysis was performed to determine how well each test performed in predicting colectomy.

Results There were 45 patients recruited to the study with ASUC, of which 22 (49%) were female. Median age on admission was 40 years (interquartile range [IQR] 26–62). Median disease duration was 12 years (IQR 0–59). 26 of the 45 patients had a paired faecal sample for calprotectin analysis. There was no difference in sex, age or disease extent between those with or without faecal calprotectin. Serum calprotectin correlated significantly with CRP (R^2 = 0.46, $p < 0.0001$) and with albumin (R^2 = 0.12, p = 0.023) but not with faecal calprotectin (R^2 = 0.02, p = 0.450). ROC analysis gave an AUC of 0.69 for serum calprotectin compared with 0.71 for CRP and 0.58 for faecal calprotectin. A cut off for serum calprotectin of 400 µg/g gave a sensitivity of 0.68 and a specificity of 0.69.



Abstract PTH-082 Figure 1

Conclusion In the setting of acute severe ulcerative colitis, serum calprotectin is comparable with serum CRP in predicting outcome. Further work is needed to establish if it may be a useful predictor of outcome in patients with ulcerative colitis who fail to mount a high CRP response despite endoscopic assessment confirming severe active inflammation. Work is also ongoing to establish its utility in the outpatient setting both in Crohn's disease and ulcerative colitis.
Disclosure of Interest None Declared.

PTH-083 METHYLATION SIGNATURES OF NON-EXPRESSED GENES REVEAL INSIGHTS INTO THE EFFECTS OF INFLAMMATION ON STEM CELL DYNAMICS AND CRYPT FISSION IN INFLAMMATORY BOWEL DISEASE

doi:10.1136/gutjnl-2013-304907.570

[1,*]N Jawad, [2]T Graham, [3]M Novelli, [3]M Rodriguez-Justo, [1]N Wright, [1]S McDonald. *[1]Centre for Tumour Biology, Barts Cancer Institute, Barts and The London School of Medicine and Dentistry, Queen Mary University of London, London, UK; [2]Centre for Evolution and Cancer, University of California at San Francisco, San Francisco, United States; [3]Histopathology Department, University College Hospital, London, UK*

Introduction Inflammatory bowel disease (IBD) confers a high risk of development of colitis-associated colorectal cancer (CACRC) in patients with extensive colitis. Crypt fission (a crypt bifurcating into two) has been shown to be a mechanism of clonal expansion in the intestinal epithelium. Although fission is rare in normal colon, many crypts in patients with colitis appear to be in the process of fission. A recent study from the host laboratory demonstrated that protumourigenic mutations can spread through the entire inflamed colon suggesting that this occurs at a considerable rate indicating stem cell dynamics are altered in IBD[1].
Methods Somatic mitochondrial DNA (mtDNA) mutations are a reliable marker of clonal expansion in human colon. Combining mtDNA mutations with additional markers of clonal expansion that change over time, such as methylation patterns of non-expressed genes, reveals whether populations of cells show a recent ancestry. This is measured by evaluating methylation pattern diversity between samples. Methylation patterns of *CSX* and *MYOD1* genes were examined in clonally related and unrelated crypts from multiple areas in IBD patients by laser capture microdissection bisulphite sequencing. Clonality was demonstrated by cytochrome *c* oxidase deficient (CCO-) cells sharing an identical somatic mtDNA mutation.
Results In active inflammation, both adjacent clonally related CCO- crypts and adjacent unrelated crypts had similar methylation patterns, indicating recent crypt fission. In contrast, adjacent unrelated crypts in quiescent disease had dissimilar methylation patterns, indicating that crypt fission rates are slow and resemble that of normal colon. The number of unique methylation patterns in crypts from active IBD were significantly less than those obtained from normal patients suggesting that niche succession (a stem cell populating the niche) is elevated in IBD.
Conclusion Elevated crypt fission in active IBD may explain the extensive dispersion of protumourigenic clones previously observed in IBD. Subsequent cycles of crypt atrophy and mucosal healing by crypt fission, may provide a key growth stimulus in the inflamed colon. Furthermore, there appears to be an increased rate at which a single stem cell populates the niche within IBD crypts. Such expansion facilitates the establishment of protumourgenic mutations within crypts.
Disclosure of Interest None Declared.

REFERENCE

1. Galandiuk S, Rodriguez-Justo M, Jeffery R, Nicholson AM, Cheng Y, Oukrif D, Elia G, Leedham SJ, McDonald SA, Wright NA *et al.* 2012. Field cancerization in the intestinal epithelium of patients with Crohn's ileocolitis. *Gastroenterology* **14**2: 855–864 e858

PTH-084 ENDOSCOPIC AND HISTOLOGICAL ACTIVITY AS PREDICTORS OF RELAPSE IN PATIENTS UNDERGOING SURVEILLANCE COLONOSCOPY FOR ULCERATIVE COLITIS

doi:10.1136/gutjnl-2013-304907.571

[1,2,*]N Mohammed, [1]C F Donnellan, [1]S M Everett, [1,2]A C Ford, [1,2]P J Hamlin, [1]J S Jennings, [1]B J Rembacken, [1]A Sainsbury, [1,2]V Subramanian. *[1]Department of Gastroenterology, Leeds teaching hospitals NHS Trust; [2]Department of Gastroenterology, Leeds Institute of Molecular Medicine, Leeds, UK*

Introduction Mucosal healing has shown to correlate with improved long term outcomes in patients with inflammatory bowel disease. Histological inflammation is often noted in endoscopically normal mucosa. We aimed to investigate the predictive role of endoscopic and histological inflammation on disease relapse in UC patients in clinical remission
Methods We conducted a retrospective review of adult patients in clinical remission who underwent surveillance colonoscopies in our institution from January 2008 to December 2011. Electronic records were reviewed for endoscopy reports and subsequent clinical care. Data was recorded on age, gender, duration and extent of the disease, medications, steroid use in the last 6 months, Mayo endoscopic score, Geboes histological activity index and follow up data for any flares till date. Patients were deemed to have a relapse if they required steroids or an increase in their medication dose fro symptom control in the subsequent 12 months following their index colonoscopy.

Statistical analysis: Rate of clinical relapse and the predictive value of the variables of interest were assessed using SPSS version 17. All variable analysed in univariate fashion and included in multivariate analysis if p was less than ≤0.3. Multivariate analysis was based on an automated backward logistic selection process. P values < 0.05 were considered significant.
Results 406 patients underwent surveillance colonoscopy during the study period of which 317 (Male: 172 Females: 145) met the inclusion criteria. 57 patients (Males 29, females 28) relapsed within 12 months (Table 1 provides the baseline characteristics). On univariate analysis age (OR 0.96 95%CI 0.94–0.98), Geboes score ≥2 (4.53, 2.40–8.52) and Mayo score ≥1 (3.72, 2.05–6.73) were significantly associated with relapse. Duration of disease (p = 0.09), use of immunomodulators (p = 0.29) and recent steroid use (p = 0.3) were included in the multivariate analysis. On multivariate analysis Geboes score of ≥2 (5.11, 2.73–9.59) and age (0.97, 0.97–0.99) were predictive of clinical relapse.

Abstract PTH-084 Table 1

Variables	Flare up	No flare
Age (mean ± SD)	51.2 ± 14.6	57.9 ± 12.5
Endoscopic score ≤1	22	182
Endoscopic score ≥2	35	78
Geboes score < 2	33	224
Geboes score > 2	24	36

Conclusion Histological activity and younger age are significant predictors of disease relapse in patients undergoing surveillance endoscopy. Endoscopic activity with standard white light endoscopy did not predict clinical relapse. Better non-invasive markers of disease relapse are required for patients with ulcerative colitis
Disclosure of Interest None Declared.

PTH-085 MONOCLONAL ANTIBODY THERAPY IN CROHN'S DISEASE: DOES SERIAL FAECAL CALPROTECTIN PLAY A ROLE?

doi:10.1136/gutjnl-2013-304907.572

[1]A A Thi, [1,*]P BASUMANI, [2]M Walsh, [1]M Jerrison, [1]K D Bardhan. *[1]Gastroenterology, Rotherham General Hospital NHS TRUST, Rotherham; [2]Gastroenterology, Rotherham General Hospital NHS TRUST, Rrotherham, UK*