patients studied off PPI (p=0.97 figure 1). There was no difference in MNBI between the 10 patients with persistent (>3 cm) Barrett’s who had attempts at therapy (ablation, mucosal resection) compared to the 27 who had not received therapy (p=0.96).

There was a moderately inverse correlation between Barrett’s segment length (median 5 cm (3 cm, 9 cm) and MNBI (r = -0.436; p=0.038).

Conclusion This study suggests that the impact of reflux disease on mucosal permeability (MNBI) may have an influence on symptom perception. Both MNBI and symptom perception were significantly reduced in Barrett’s compared to NERD. Furthermore, neither MNBI nor symptom perception are affected by use of acid reducing medication despite the difference in AET. This study provides further validation to the Lyon consensus definition of MNBI as a measure of reflux disease severity.

Abstract P324 Figure 1 MNBI is reduced in Barrett’s (regardless of PPI use) compared to NERD and FH Median and IQR for the MNBI of: patients with Barrett’s off PPIs 4066Ω (368Ω, 1111.5Ω); Barrett’s on PPIs 453Ω (261.5Ω, 1000Ω); NERD 1160Ω (964.5Ω, 2764Ω) and FH 3355Ω (2866.5Ω, 3809.25Ω).

P325 AN EXPANDED INTESTINAL INTRAEPITHELIAL LYMPHOCYTE COMPARTMENT IS LINKED TO SHIFTS IN COMPOSITION OF MUCOSAL MICROBIOTA

1JL Alexander*, 2,3,4AA n d r e a s s o n , 5LW Hugerth, 5L Engstrand, 6,7MM Walker, 7NJ Talley, 1N Powell. 1Div. of Digestive Diseases, Imperial College, London, UK; 2Dept. of Psychology, Marquise University, North Ryde, Australia; 3Stress Research Institute, Stockholm University, Stockholm, Sweden; 4Dept. of Medicine Solna, Karolinska Institute, Solna, Sweden; 5Center for Translational Microbiome Research, Karolinska Institute, Solna, Sweden; 6Dept. of Anatomical Pathology, University of Newcastle, Newcastle, Australia; 7Faculty of Health and Medicine, University of Newcastle, Newcastle, Australia

Introduction The composition of bacteria colonising the gastrointestinal tract shapes mucosal and systemic immune responses and impacts susceptibility to different diseases. However, a consistent microbiome signature of Irritable Bowel Syndrome (IBS) has yet to be established, and the microbiome was not altered in a large, population-based study of IBS.

Since it has been proposed that immune activation and subtle intestinal inflammation may be present in a subset of IBS, we hypothesised that alterations in the gut microbiome may underpin changes in gut immune phenotype.

Methods The study population comprised IBS cases and controls (defined by modified Rome III criteria) from the PopCol study. All participants had a normal colonoscopy. Biopsies were taken from the terminal ileum (TI), caecum, transverse colon (TC), sigmoid and rectum (Re). Assessment of histology was blinded and dual read, and disagreement was resolved by consensus. Intraepithelial lymphocyte (IEL) counts were dichotomised: high IEL count was defined as >15 per 100 enterocytes in TI and >8 per 100 colonocytes in the colon. Colonic mucosa-associated microbiota (MaM) and faecal microbiota (FM) were characterised by 16S RNA sequencing on Illumina MiSeq. Data were processed and analysed in R, Graphpad & STAMP, with p value correction for multiple testing.

Results 76 participants (including 30 with IBS) were analysed, in whom IEL and microbiome data were available. The median age was 50 years (range 23–69) and 40 (53%) were women. 55% of TI samples and between 39% (Re) and 51% (TC) of samples from colonic sites had a high IEL count. No difference was observed in alpha diversity of MaM or FM based on IEL count. There were trends towards differences in beta diversity of the MaM according to IEL count in the TI and TC (p=0.079 & 0.072). No difference in FM beta diversity was observed. In the MaM, the genus Blautia and unclassified Clostridiales were associated with high IEL count in the TI (p=0.024 & 0.036). Alloprevotella was associated with low IEL count in the sigmoid (p=0.035).

Conclusions In this nested analysis of participants in the PopCol study, modest but discernible differences in the mucosa-associated microbiota were seen according to IEL count.

REFERENCES

P326 IDENTIFICATION OF NOVEL SUBGROUPS IN IRritable BOWEL SYNDROME USING LATENT CLASS ANALYSIS: BEYOND STOOL FORM

1Christopher J Black*, 2Yan Yiannakou, 3Lesley A Houghton, 4Elspeth Guthrie, 5Robert West, 6Alexander C Ford. 1Leeds Gastroenterology Institute, Leeds Teaching Hospitals NHS Trust, Leeds, UK; 2County Durham and Darlington NHS Trust, Durham, UK; 3Leeds Institute of Medical Research at St James’s, University of Leeds, Leeds, UK; 4Leeds Institute of Health Sciences, University of Leeds, Leeds, UK

Introduction Conventionally, patients with irritable bowel syndrome (IBS) are divided into subgroups based on their predominant stool pattern, either diarrhoea, constipation, or mixed stool form. However, factors other than gastrointestinal symptoms, such as psychological co-morbidities, are also highly relevant to IBS symptomatology. We explored alternative approaches to subgrouping people with IBS by incorporating factors beyond stool form alone.

Methods We collected demographic, symptom, mood, and psychological health data from 1375 adult subjects in the UK community who self-identified as having IBS, and identified two cohorts meeting either the Rome III or the Rome IV diagnostic criteria. In each cohort, we performed latent class analysis, a method of cluster modelling, to identify specific subgroups (clusters) within the data. We used the Bayesian information criterion (BIC) to determine the preferred model.
the lowest value indicates the solution which best fits the data. We validated the model using 10-fold cross-validation. Finally, for each cluster, we drew a radar plot by plotting z-values for each variable, calculated by adjusting the cluster mean value to the cohort mean value. We compared the radar plots by visual inspection to describe the particular characteristics of each cluster.

Results In total, 1080 (78.9%) of 1368 individuals met the Rome III criteria for IBS, and 811 (59.1%) of 1373 individuals met the Rome IV criteria for IBS. In both the Rome III and Rome IV cohorts, latent class analysis selected a 7-cluster model as the optimum solution, having the lowest BIC value. The clusters were defined by a mixture of gastrointestinal symptoms, non-gastrointestinal symptoms (somatisation),
anxiety, and low mood. Visual inspection of the radar plots showed that the characteristics of these clusters were identical between the Rome III and Rome IV analyses. The Rome IV cluster results and their descriptions are shown in figure 1. Further analysis, showed that the proportion of patients with severe IBS symptom scores, high levels of perceived stress, and high levels of gastrointestinal-specific symptom anxiety was significantly higher in clusters with high psychological comorbidity (p < 0.001).

Conclusions Latent class analysis identifies seven distinct IBS subgroups characterised by a mixture of gastrointestinal symptoms, somatoform symptoms, and psychological co-morbidity. Further research is needed to assess the durability and stability of these subgroups over time, and whether they might be used to direct treatment.

Abstract 327 Figure 1  A. Changes in swallowing accuracy after preconditioned 5Hz rTMS compared to sham-preconditioned rTMS. B. Changes in swallowing accuracy after preconditioned 1Hz rTMS compared to sham-preconditioned rTMS.