tool for triaging for colonoscopy those without red-flag symptoms, or possibly for screening for advanced polyps and cancer. Prior studies have shown promising results of a breath test using exhaled propanal for detecting CRC (96% sensitivity/76% specificity). The Colorectal BReath Analysis (COBRA) study aims to determine the diagnostic accuracy of breath VOCs for detecting CRC and adenomatous polyps.

Methods COBRA is an ongoing prospective cohort study of 2000 patients attending for colonoscopies across 4 London BCSP centres. Exhaled breath (500 mls) is collected using the ReCIVA breath sampling device, onto 4 thermal desorption (TD) tubes. Analysis by gas chromatography mass spectrometry (GCMS) and proton transfer reaction mass spectrometry (PTRMS) identifies and quantifies breath compounds, at St Mary's Hospital VOC laboratory. Polyp risk classification is determined using the BSG 2010 polyp surveillance guidelines and latest evidence.

Results 406 patients were recruited from July to December 2017. 7 cancer and 126 polyp patients were BCSP colonoscopy diagnosed, giving an incidence of 4% and 65% respectively for London BCSP patients. Clinical data for the PTR-MS analysis using the H₃O⁺ and NO⁺ precursor ions are presented in table 1. PTR data analysis so far indicates that there are discriminatory breath compounds between pathology groups, but analysis of possible influences of the bowel preparation regimen is ongoing.

Abstract PTU-072 Table 1

	H3O ⁺ ionisation (PTR MS)	NO ⁺ ionisation (PTR MS)
Total samples excluded	62	87
Instrument fault, inadequate colonoscopy, missing clinical data	42	49
Failure to reach quality control standards	20	38
Total samples included	344	319
Male	199	178
BCSP patient	194	181
Median age	64	64
Colonoscopy findings:		
Normal	90	83
Diverticular disease or haemorrhoids	40	37
Inflammatory bowel disease	29	29
Low risk polyps	87	85
Intermediate risk polyps	21	18
High risk polyps	60	51
Colorectal cancer	10	10
Inherited polyposis (FAP, Lynch, Juvenile polyposis)	7	6

Conclusions Findings suggest that large scale breath testing is feasible within clinical practice. Whilst analysis of this preliminary dataset suggests the presence of discriminatory compounds between disease groups, analysis is ongoing. The true diagnostic accuracy of breath testing in this setting is expected to be revealed once all patients have been recruited to this study.

Neurogastroenterology & motility

OWE-026 CONDITIONED PAIN MODULATION IN FUNCTIONAL GASTROINTESTINAL DISORDERS: SYSTEMATIC REVIEW & META-ANALYSIS

¹Ahmed Albusoda*, ²Kathrine Friss, ³Max Gysan, ¹James Ruffle, ¹Qasim Aziz, ^{1,4,5}Adam Farmer. ¹Centre for Neuroscience and Trauma, Blizard Institute, Wingate Institute of Neurogastroenterology, Barts and the London School of Medicine and Dentistry, Queen Mary University of London, London, UK; ²Faculty of Health Sciences, Aarhus University, Aarhus, Denmark; ³School of Medicine, Heidelberg University, Heidelberg, Germany; ⁴Department of Gastroenterology, University Hospitals Midlands NHS Trust, Stoke on Trent, UK; ⁵Institute of Applied Clinical Science, University of Keele, Keele, UK

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Background Functional gastrointestinal disorders (FGID) are common and characterised by chronic unexplained visceral pain. Conditioned pain modulation (CPM), a bulbar reflex permitting "pain to inhibit pain" by descending inhibition, is a validated measure that interrogates the brain-gut axis. Previous studies variably implicate diminished CPM in the pathophysiology of FGID. We aimed to clarify this relationship by meta-analysis.

Methods Pubmed and Web of Science databases were searched until April 2017. Studies that were included comprised of randomised controlled studies investigating CPM in FGID patients with abdominal pain, defined according any iteration of the Rome criteria. We excluded studies if patients had a concomitant pain condition, other than FGIDs. The methodological quality of included studies was evaluated following an adapted scoring system for controlled trials.

Results We identified 645 studies, of which 14 were relevant and met the inclusion criteria; 12 included patients with irritable bowel syndrome (IBS), 1 with functional dyspepsia and 1 with functional abdominal pain. CPM was reduced in FGID patients versus healthy controls, odds ratio 3.95 (95% confidence interval 2.06–7.58) (Figure 1). There was significant heterogeneity in effect sizes (Q-test $\chi^2=59.4$, $p<0.001$, $I^2 \geq 78.1\%$) in the absence of publication bias. When including only studies with IBS, the odds ratio increased to 4.83 (Q-test $\chi^2=52$, $p<0.001$, $I^2 = 78.8\%$).

Conclusion CPM is significantly reduced in patients with FGID when compared to healthy controls. These data provide evidence that deficiencies in visceral pain bulbar-mediated descending inhibitory pathways is an important pathophysiological facet which could represent a novel treatment target.

Abstract OWE-026 Figure 1 Forest plot showing the overall Odds ratio and 95% confidence interval of all included studies