Introduction Faecal immunochemical tests (FIT) are acceptable to a large part of the general population but used alone are poor at detecting adenomas. An ELISA which measures faecal M2-pyruvate kinase (M2-PK) has been shown to be useful for detecting colonic pathology.

Aims To prospectively compare M2-PK and FIT in screening for colonic polyps and cancer in the second round of our pilot FIT-based Colorectal cancer screening programme.

Methods The second round of our FIT pilot programme was conducted over a two year period. Patients were sent invites by post to return a FIT sample from each of two days. All participants were aged 50 – 74 and living locally to our hospital. As part of this round, over a six month period all invitations additionally included containers to collect a single M2-PK stool sample. All FIT's returned on time were measured locally. All M2-PK samples received within 48 hours of passing stool were frozen and analysed centrally by ScheBo Biotech AG (Germany).

All FIT positive (>100 ngHb/ml) or M2-PK positive (>4 U/ml) patients were contacted and assessed for colonoscopy. All colonoscopies were conducted in the same way between both groups.

Results Over the six month period 1,800 combined M2-PK and FIT invites have been sent.

879 samples were returned and analysed for faecal M2-PK and FIT; of these 245 were positive for either one or both of these markers. After being contacted 34 (13%) of this group were excluded as they had a colonoscopy within 3 years and were all in polyp surveillance programmes.

Of the remaining patients: 30 (3.4% of 879) were FIT positive M2-PK negative; 160 (18.2%) were positive for M2-PK (> 4U/ml) negative for FIT and 21 (2.3%) were positive for both markers.

In the FIT positive M2-PK negative group there were 10 patients with adenomas (adenoma detection rate 33%). In those who were M2-PK positive but FIT negative there were 34 people with adenomas (ADR 23%). Therefore these adenomas would not have been detected by relying on FIT alone. Of the remaining 21 positive for both, 6 (29%) had adenomas and another 4 (19%) had colitis/proctitis. There have not been any cancers in this group to date.

Interestingly sessile serrated adenomas were detected in 5 (4.4%) of people M2-PK positive but only two (less than 1%) in our entire FIT positive group.

Conclusion Studies have shown FIT has relatively low sensitivity for adenomas. The addition of another stool marker such as faecal M2-PK increases the detection of polyps in a screening population. A single M2-PK sample detects more adenomas than two day FIT alone. Also M2-PK appears to be more sensitive for serrated adenomas than FIT but further studies are needed to confirm this.

Disclosure of Interest None Declared

AYP symposium: surgery in adolescents

OC-072 THE MICROAEROPHILIC MICROBIOTA OF DE-NOVO PAEDIATRIC INFLAMMATORY BOWEL DISEASE: THE BISCUIT STUDY

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Introduction Children presenting for the first time with inflammatory bowel disease (IBD) offer a unique opportunity to study etiological agents before the confounders of treatment. Microaerophilic bacteria can exploit the ecological niche of the intestinal epithelium; *Helicobacter* and *Campylobacter* are previously implicated in IBD pathogenesis. The aim of the study was to assess these and other microaerophilic bacteria in de-novo paediatric IBD.

Methods 100 children undergoing colonoscopy were recruited including 44 treatment naïve de-novo IBD patients and 42 with normal colons. Colonic biopsies were subjected to microaerophilic culture with Gram-negative isolates then identified by sequencing. Biopsies were also PCR screened for the specific microaerophilic bacterial groups: Helicobacteraceae, Campylobacteraceae and *Sutterella wadsworthensis*.

Results 129 Gram-negative microaerophilic bacterial isolates were identified from 10 genera. The most frequently cultured was *S. wadsworthensis* (32 distinct isolates). Unusual *Campylobacter* were isolated from 8 subjects (including 3 *C. concisus*, 1 *C. curvus*, 1 *C. lari*, 1 *C. rectus*, 3 *C. showae*). No *Helicobacter* were cultured. When comparing IBD vs. normal colon control by PCR the prevalence figures were not significantly different (*Helicobacter* 11% vs. 12%, p = 1.00; *Campylobacter* 75% vs. 76%, p = 1.00; *S. wadsworthensis* 82% vs. 71%, p = 0.312).

Conclusion This study offers a comprehensive overview of the microaerophilic microbiota of the paediatric colon including at IBD onset. *Campylobacter* appear to be surprisingly common, are not more strongly associated with IBD and can be isolated from around 8% of paediatric colonic biopsies. *S. wadsworthensis* appears to be a common commensal. *Helicobacter* species are relatively rare in the paediatric colon.

Disclosure of Interest None Declared

OC-073 RISKS OF MAJOR CONGENITAL ANOMALIES IN CHILDREN BORN TO WOMEN WITH INFLAMMATORY BOWEL DISEASE: A UNITED KINGDOM POPULATION-BASED COHORT STUDY

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Introduction Inflammatory bowel disease (IBD) affects women during the most fertile period of life. Previous studies of pregnant women with IBD on the risk of major congenital anomalies have inconsistent results due to diverse study populations and small sample sizes.

Methods We identified all singleton live births to women aged 15–45 between 1990 and 2010 from a large UK primary care database. We grouped children according to whether their mothers had IBD before childbirth or not and whether if so this was Crohn's disease (CD) or ulcerative colitis (UC). For children born to women with IBD, we also extracted records of prescriptions of 5-aminosalicylic acid, steroids and azathioprine in the first trimester of pregnancy. We calculated absolute risks of any major congenital anomaly and system-specific anomalies, and used logistic regression with a generalised estimating equation to compare risks. In women with IBD, we repeated the analyses to estimate the risks in children exposed or not exposed to medication. We adjusted the results for maternal age, year of childbirth, socioeconomic deprivation and maternal smoking.

Results Of 1,703 children born to women with IBD and 384,811 children born to women without IBD, 2.7% and 2.8% had records of any major congenital anomaly respectively. The risks of major congenital anomaly for CD and UC were 3.7% and 1.9% respectively. The adjusted odds ratio (AOR) of IBD with any major congenital anomaly was 0.98 (95% confidence interval [95%CI] 0.73–1.31). In children of women with IBD, 32.4% were exposed to 5-aminosalicylic acid in the first trimester and 12.3% and 8.7% to steroids and azathioprine respectively. There was no statistically significant increase in the risk of major congenital anomaly in children exposed to 5-aminosalicylic acid (AOR = 0.82, 95%CI 0.42–1.61), steroids (AOR = 0.48, 95%CI 0.15–1.50) or azathioprine (AOR = 1.27, 95%CI 0.48–3.39) in the first trimester compared with those unexposed. For system-specific

anomalies, no increased risks in heart, limb or genital system were found.

Conclusion There are similar risks of major congenital anomalies in children born to women with and without IBD. No evidence of potential teratogenic effects of 5-aminosalicylic acid, steroids or azathioprine was found in this study. Previous guidance that women may be advised to continue these medications remains appropriate.

Disclosure of Interest None Declared

OC-074 THE ROLE OF THE FUNGAL MICROBIOTA IN THE PATHOGENESIS OF DE-NOVO PAEDIATRIC INFLAMMATORY BOWEL DISEASE USING NEXT GENERATION SEQUENCING

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Introduction Paediatric Inflammatory bowel disease (IBD) incidence is rising worldwide. Recently the role of the gut microbiota has been recognised as pivotal in disease pathogenesis. IBD microbial studies to date have focused on bacterial diversity assessment in established disease cohorts, with limited studies in treatment naive patients. In contrast to bacteria, the exact role of the colonising fungi and their pathogenic potential has not been fully explored. The aim of the study was to examine candidate fungal triggers at disease onset in children with IBD using pyrosequencing, utilising the Bacteria in Inflammatory bowel disease in Scottish Children Undergoing Investigation before Treatment (BISCUIT) study cohort.

Methods 128 children undergoing colonoscopy were approached from three Scottish paediatric centres (Aberdeen, Glasgow and Dundee) with 100 ultimately recruited and biopsied; 44 IBD (comprising Crohn's disease (CD; 29), ulcerative colitis (UC; 13) and IBD-type unspecified (2)), 42 normal colon controls (NCC) and 14 "others". All IBD patient samples were taken from inflamed tissue. Fungal DNA was amplified on a reduced cohort of 37 recruits (13 CD, 12 UC, 12 NCC) using 18S rDNA primers. Roche 454 Titanium sequencing was conducted by NewGene (Newcastle, UK). Data analysis was performed using QIIME version 1.3.0 workflow. Taxonomy assignment of operational taxonomic units (OTUs) was performed according to ribosomal database project taxonomy. OTU tables were rarefied at 3,000 reads.

Results Fungal DNA was amplifiable from 7 patient samples, 6 children with a diagnosis of IBD – 4 with CD (BISCUIT1, 31, 62 and 89), 2 children with UC (BISCUIT33 and 104) and 1 NCC (BISCUIT 27). Fungal diversity was assessed in all paediatric samples alongside three adult samples to act as comparison. The adult samples comprised 1 patient with UC (2UC21Aa) and 2 NCC (GH4 and GH9). Phylum level analysis indicated that all fungal sequences belonged to the Ascomycota and Basidiomycota phyla. Control patients contained predominantly Ascomycota sequences (> 80% of sequences in all patients) whilst 6/7 IBD patients contained exclusively Basidiomycota species. Genus level analysis was undertaken and there was no similarity between fungal profiles from the paediatric and adult samples.

Conclusion By using robust methodology we have characterised the IBD "fungal microbiota" at diagnosis in children. Based on the current study, it would appear that a distinctly altered fungal species profile is present at IBD disease presentation. Further work should now focus on expanding this study and identifying how to beneficially modify the microbiota using established and novel IBD treatments.

Disclosure of Interest None Declared

Endoscopy symposium: how I do it - ERCP

OC-075 ANALYSIS OF LONG-TERM OUTCOMES AFTER ENDOSCOPIC RADIOFREQUENCY ABLATION FOR BILE DUCT STRICTURES IN PANCREATIC MALIGNANCY SUGGESTS POTENTIAL SURVIVAL BENEFIT

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Introduction Pancreatic carcinoma carries a poor prognosis with only 10–20% of patients amenable to attempts at curative surgery at presentation. Biliary obstruction is a common complication and many patients will require self-expanding metal stent (SEMS) insertion for definitive decompression. A recent pioneering phase I/II study in our tertiary referral centre demonstrated excellent safety and 90d stent patency with endobiliary radiofrequency ablation (RFA) as an adjunct to SEMS insertion. The longer-term impact of this novel endoscopic treatment modality on biliary drainage and patient survival in advanced pancreatic carcinoma is unknown.

Objective To investigate the longer-term efficacy of endobiliary RFA in the management of malignant bile duct obstruction associated with inoperable pancreatic carcinoma.

Methods Retrospective cohort analysis of 23 patients with unresectable pancreatic carcinoma undergoing RFA + SEMS insertion, and 46 matched controls undergoing SEMS insertion alone, for malignant biliary obstruction in a single tertiary referral centre. Patients were stringently matched for age, sex, metastases, ASA/co-morbidities, and intention to treat with palliative chemotherapy. Survival, maintenance of stent patency, and procedure-related complications were assessed.

Results RFA and control groups were closely matched- age 68.9 +/- 9.0y vs. 69.8 +/- 9.9y, p = 0.791; ASA 2.35 +/- 0.65 vs. 2.54 +/- 0.50, p = 0.086; metastases at treatment 9/23 (39.1%) vs. 18/46 (39.1%), p = 0.800; chemotherapy 16/23 (69.6%) vs. 24/46 (52.2%), p = 0.203. Median survival was 227d after RFA vs. 123.5d in controls (HR 0.633 CI 0.378–1.060, p = 0.011). RFA was independently predictive of survival at 90d (OR 16.14, CI 1.35–193.18, p = 0.028) and 180d (OR 4.25, CI 1.00–18.01, p = 0.049). Overall SEMS patency rates were the same across both groups, though more patients were alive with a patent index SEMS after RFA within the first few months (73.9% vs. 41.3% at 4.5 m, p = 0.012). Complications of RFA were few (1 pancreatitis, 1 cholangitis), with a median post-procedure inpatient stay of 1d (1–8).

Conclusion In the single largest case series to date, endobiliary RFA was found to be a safe and efficacious adjunctive treatment in the management of patients with advanced pancreatic malignancy and biliary obstruction, and demonstrated potential early survival benefit. These data suggest that endobiliary RFA could be an additional treatment option in advanced pancreatic carcinoma, and form the basis from which future prospective clinical trials of this novel treatment modality can be designed.

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OC-076 SYRINGE SIZE INFLUENCES THE AMOUNT OF MIDAZOLAM ADMINISTERED DURING SEDATED ENDOSCOPY

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