Methods Retrospective analysis of all North East Paediatric SBS patients who have been cared for by the HPN team during the past 11 years, using anonymised routinely collected data. Comparative statistical analyses were performed, using parametric or non-parametric tests as appropriate, to evaluate the significance of differences in predictive factors between children who achieved intestinal autonomy and those who have not yet done so.

Results 70 children who had received HPN were identified. 35 had SBS, 35 had non-SBS diagnoses. 33 had neonatal onset, 2 had childhood onset. 2 died (from illnesses not relating to SBS). Of the remaining 31 in the neonatal onset group, 15 have achieved successful IR to date. The underlying causes of SBS were similar between the two groups. Mean bowel length was significantly longer in the successful IR group (48.3 cm vs 24.5 cm, $p<0.01$), the mode number of central lines was significantly lower in the successful IR group (3 vs 6, $p<0.01$), and the number of line infections post-discharge was significantly lower in the successful IR group (>2 treated line infections post-discharge 2 vs 8, $p<0.05$).

Conclusions We confirmed that the initial length of bowel is important in determining outcome amongst children with early onset intestinal failure. We further show that the number of central lines and the number of courses of antibiotics given for line infections may be even more important in predicting outcome, which suggests that intestinal microbiota play a key role in intestinal rehabilitation.

P262 DIAGNOSIS AND MANAGEMENT OF SMALL INTESTINAL BACTERIAL OVERGROWTH (SIBO): CURRENT PRACTICE ACROSS ENGLAND

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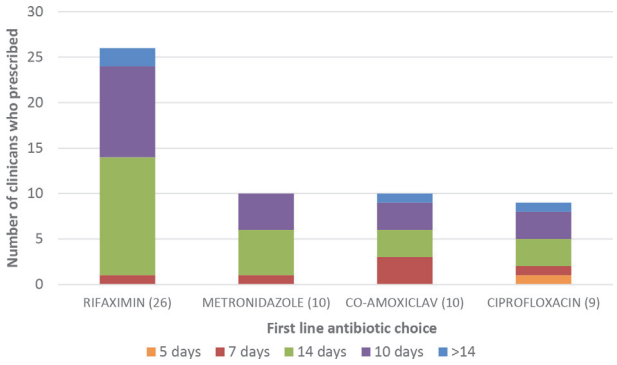
Introduction Despite causing multiple gastrointestinal symptoms, a diagnosis of small intestinal bacterial overgrowth (SIBO) can be difficult to establish due to the lack of a standardised diagnostic test. Current BSG guidelines advise empirical antibiotic treatment in high probability cases,[1] although evidence for which antibiotic to use first line and duration of treatment is lacking.[2] As a result of these factors, we suspect that current practice in the diagnosis and management of SIBO may vary considerably between gastroenterologists across the country and aimed to assess this.

Methods A brief survey was created to collect data on the diagnosis and treatment of SIBO, as well as the methodology used for hydrogen/methane breath testing (HMBT) in comparison with recent UK guidelines.[3] The survey was emailed to 607 gastroenterologists (consultants/registrars) who's email addresses were obtained through an existing database or via the nhs.net email server.

Results There were 57 (9%) respondents from 31 different hospitals. Recent UK guidelines[3] advise that best practice for HMBT should measure methane excretion in addition to hydrogen and have both lactulose and glucose substrates available for testing, but this was only done in 7/31 (22%) and 11/31 (35%) hospitals respectively. Rifaximin (26), followed by metronidazole (10), co-amoxiclav (10) and ciprofloxacin (9) were the most commonly used antibiotics for SIBO treatment,



Abstract P262 Figure 1 First line antibiotic choice and duration of therapy prescribed

with antibiotics usually given between 10 – 14 days (44/57, 77%), although length of treatment prescribed varied from 5 – 21 days (see figure 1). Most gastroenterologists (61%) would initially give antibiotic treatment for a suspected high probability case of SIBO but request a breath test first (65%) if the patient was only felt to have a moderate probability of SIBO.

Conclusion Best practice guidelines on HMBT are not followed in many hospitals in England and there is considerable variation among gastroenterologists between first-line antibiotic choice and duration of treatment. Improving standards of HMBT would increase accuracy of testing, while greater evidence for choice and duration of antibiotic therapy in SIBO would improve consistency of treatment among clinicians, resulting in cost-savings and fewer side effects to patients from unnecessarily long or repeated courses of antibiotics.

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P263 IRINOTECAN INDUCES A RAPID INCREASE IN ENTEROID PERMEABILITY

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Introduction Chemotherapy-induced diarrhoea is a common side effect for patients given irinotecan and can result in the cessation/interruption of treatment affecting clinical efficacy. The clinical approach is to treat diarrhoea symptomatically as there are currently no preventative therapies. Recent *in vivo* studies suggest that irinotecan initiates two phases of diarrhoea with the first attributed to changes in intestinal permeability through tight junction (TJ) disruption. We have now investigated whether small intestinal (SI) organoids (enteroids) can be used to model SI permeability changes induced by irinotecan to dissect the mechanisms responsible for irinotecan-induced diarrhoea. Understanding

these mechanisms may enable novel approaches to reduce intestinal toxicity.

Methods Proximal SI derived enteroids from C57BL/6 wild-type mice were treated with 0–100 μM irinotecan and imaged daily for 96 hrs. Enteroid circularity (4π(area)/perimeter^2) was measured as a marker of enteroid health and active caspase-3 IHC was used to assess apoptosis. Enteroids were microinjected with 1 mg/ml Texas Red and treated 30 mins post injection with 100μM irinotecan or 5 mM EGTA. Fluorescent images were taken hourly for 4 hrs. Mean pixel intensity was measured after injection. The minimum threshold was set by mean intensities of untreated, none injected enteroids. Subsequent time point mean pixel intensity was expressed as a percentage of immediate post injection intensity. Images were manually quantified to validate the method.

Results Healthy enteroids maintained circularity values of 0.38±0.06. Irinotecan caused dose and time dependant increases in enteroid circularity with maximal rounding at 100 μM by 48 hrs (0.75±0.05). Dose and time-dependent increases in active caspase-3 were observed. Microinjection assays were optimised to assess very early effects of irinotecan on SI permeability. Control enteroids stabilised to 71.33 ±8.5% starting intensity at 1 hr, EGTA (positive control) dropped to 31.31±1.97% and 100 μM irinotecan reduced mean intensity to 46.04±3.71% after 30 mins. Area under the curve (AUC) for 0–4 hrs post-treatment showed statistically significant increased SI permeability for irinotecan ($p<0.005$) and EGTA ($p<0.001$). Automated and manual scoring was congruent.

Conclusion Irinotecan caused a rapid onset of SI barrier dysfunction in enteroids suggesting that this precedes irinotecan-induced apoptosis and may be in part due to the disruption of TJs. Further investigation is now needed to determine whether pre-treatment with TJ stabilising drugs may ameliorate irinotecan-induced permeability and diarrhoea.

P264 VARIATION IN SPECIALIST GASTROENTEROLOGY SERVICES FOR PATIENTS WITH CYSTIC FIBROSIS IN THE UK

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Introduction Cystic fibrosis (CF) is a common genetic disorder affecting 10,500 people in the UK. While pulmonary manifestations are often most severe, CF also affects the liver, intestine, and pancreatobiliary system, leading to a considerable burden of gastrointestinal (GI) disease. However the provision of GI services within UK CF centres has not been extensively studied.

Methods This work examined the models of GI care delivered to adults and children with CF in the UK. An online survey was distributed to CF clinicians and centres in December 2019.

Results Forty-nine responses were received from 42 UK CF centres (20 adult; 22 paediatric) caring for over 8,000 patients. Adult centres were larger with a mean of 263 patients (range 90–600), compared to 140 patients (range 6–365) in paediatric centres. GI symptoms requiring investigation or treatment were common, affecting 60% of patients in adult centres, and 30% of patients in paediatric centres.

Twenty-eight centres (57%) made CF-GI referrals to the general gastroenterology service, 13 (26%) had a named gastroenterologist to which they referred, and three centres had a gastroenterologist within the CF team. For inpatient GI review, 30 centres (61%) referred to the general GI service, with only eight centres having access to a named gastroenterologist with CF interest. Eleven centres (22%) reported no access to face-to-face inpatient review. Only 9% of respondents had a dedicated CF-GI clinic, and formal joint working with the CF team only occurred in two centres. Two-thirds of units lacked specific CF bowel cancer surveillance guidelines.

While 47% of respondents said that their service provided good/excellent GI care, 23% reported that they were unable to provide adequate GI care for patients. Respondents stated that increased gastroenterologist interest and expertise in CF would help improve GI services, as would more coordinated working practices, including joint CF-GI clinics, MDTs, and teaching. Respondents identified barriers to service improvement including limited clinician time, a lack of specific funding, and the challenges of clinic capacity and infection control.

Conclusions Patients living with CF have a substantial need for specialist GI care. There is considerable unwarranted variation in GI provision between UK CF centres. We propose the development of inter-specialty service standards that highlight successful models of care, and identifying ring-fenced funding for CF-GI services via specialist commissioning budgets could improve patient care. In addition, we plan a tandem survey this Spring of gastroenterologist confidence in CF-GI management.

P265 HIGH INCIDENCE OF POSITIVE HYDROGEN BREATH TESTS FOR SMALL INTESTINAL BACTERIAL OVERGROWTH USING LACTULOSE: FOLLOW-UP

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Introduction A small audit previously conducted within our department and presented at the BSG 2019[1] questioned the 'North American Consensus' recommendation of using a rise in hydrogen of ≥20 ppm within 90 minutes as the positive threshold for Small Intestinal Bacterial Overgrowth (SIBO)[2]. We previously reported a high positive result rate using lactulose compared to glucose if the rise in hydrogen of ≥20 ppm within 90 minutes was adhered to when lactulose was administered. A follow on audit has been undertaken.

Methods Adult patients attending the GI Physiology department for a glucose hydrogen breath test between April 2019-February 2020 were audited. All patients included in the audit had received a 'positive' SIBO test using lactulose (rise within 90 minutes) ≤6 weeks prior. The new AGIP 2019 guidelines were adhered for both tests[3]. After a baseline sample was taken, 75 g of glucose in 300 mL of water