Abstract PTH-138 Table 1

Angiogenic factor	Patient mean	Patient range	Control mean	Control range	P value
Ang-1	13071	615–43833	21169	2253–56010	<0.004
Ang-2	4600	842–11767	2973	792–7995	<0.001
TNF	6.7	1.97–16.94	12.2	1.73–42	<0.003
Mean ratio Ang-2/Ang-1	1.05	0.06–9.26	0.29	0.06–1.74	0.049

angiogenic cascade, although the exact mechanism remains elusive. Previous research we have undertaken has associated elevated serum angiopoietin-2 (Ang-2) levels with angiodysplasia. Ang-1 and Ang-2 are ligands of the endothelial receptor tyrosine kinase Tie-2. Ang-1 regulates endothelial cell survival and blood vessel maturation and plays a key role in maintaining vascular integrity. Ang-2 is a functional antagonist of Ang-1. Inflammation and angiogenesis are associated with several pathological disorders and previous data suggests a TNF-α dependent dual functional roles of Tie2 in inflammatory angiogenesis

Methods Following informed consent, serum samples were collected from patients with a definite diagnosis of sporadic small bowel angiodysplasia (P2) on capsule endoscopy, and from healthy controls in which GI bleeding had been out-ruled by a negative faecal immunochemical test. Serum levels of Ang-1, Ang-2 and TNF-α were measured using commercially available ELISA kits. All results were expressed as a mean and compared between patients and controls, and the mean of the ratio of ang2/ang1 levels for each group was calculated.

Results A total of 80 samples were analysed for each factor, including 40 patients (48% male, average age 71 years) and 40 controls (43% male, average age 70 years). As expected and in keeping with our previous work levels of Ang-2 were significantly higher in patients (mean 4600 pg/ml) than in controls (mean 2973 pg/ml) $p < 0.001$. In addition levels of Ang-1 were significantly lower in the patient group (mean 13071 pg/ml) vs. controls (mean 21169 pg/ml) $p < 0.004$ (Table 1). We also found that levels of TNF-α were significantly lower in the patient group (mean 6.7 pg/ml) vs. controls (mean 12.2 pg/ml) $p < 0.003$. The mean of the ratio of Ang2/Ang1 levels was found to be significantly higher in patients (1.05) vs. controls (0.29) $p < 0.05$.

Conclusion Ours is the first study to have identified a link between angiopoietin 1 and 2 ratios and gastrointestinal angiodysplasia. The TNF-α findings are also novel and would strongly suggest a role for inflammatory mediated angiogenesis in this condition.

Disclosure of Interest None Declared.

PTH-139 LONG ACTING OCTREOTIDE THERAPY HAS A BENEFICIAL EFFECT IN PATIENTS WITH SIGNIFICANT SMALL BOWEL ANGIODYSPLASIA

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Introduction Angiodysplasias account for up to 50% of causes of small bowel bleeding and due to their relative inaccessibility and the intermittent nature of their bleeding they present a particular therapeutic challenge. Endoscopic ablation with APC is the most efficacious at reducing re-bleeding rates, however; its effect is short-lived and not all small bowel lesions are amenable to treatment via DBE. It has been suggested by a recent small trial that long-acting Octreotide may be beneficial at reducing re-bleeding rates.

Abstract PTH-139 Table 1

	Hb pre-Rx	Most recent Hb	Re-bleeding episodes
Overall	8.7 g/dL	11.2 g/dL	5
Octreotide only	8.6 g/dL	11.1 g/dL	2
APC and Octreotide	9 g/dL	11.5 g/dL	3

Methods Following ethical approval patients with significant recurrent anaemia (≥6 months with RCC transfusions) and definite small bowel angiodysplasia (P2), on capsule endoscopy were invited to participate in an open label, uncontrolled pilot study of monthly 20 mg long acting Octreotide. Patients who had lesions amenable to APC via DBE were treated prior to commencing Octreotide. Baseline demographics, medications, endoscopy and capsule findings and Hb level were recorded. Patients were assessed at regular intervals and evaluated for side effects and episodes of bleeding (defined as either overt bleeding or a Hb drop of >1 g/dL). Patients who received fewer than three doses were excluded from analysis.

Results A total of 22 patients, 50% (n = 11) female, mean age of 72 years (range 55–92) have been recruited to date, 16 (73%) with isolated small bowel angiodysplasias and 6 with small bowel and colonic lesions. Of these, 17 (77%) received at least 3 doses, 11 (65%) had DBE and APC prior to commencing Octreotide, and 11 (65%) were on anticoagulants (4 warfarin, 7 aspirin and 2 dual antiplatelet therapy with aspirin and clopidogrel). The mean duration of treatment was 8.1 months (range 3–15). There was a statistically significant difference in mean baseline and follow up Hb levels, 8.7 g/dL (5–11.1) and 11.2 g/dL (8–14.3) respectively, $p < 0.001$. Overall there were 8 re-bleeding episodes in 5 patients (29%). Prior APC treatment did not affect outcome (Table 1). Significant side effects occurred in 3 patients (13.6%), 1 allergic skin reaction, 1 thrombocytopenia and 1 choledocholithiasis.

Conclusion Our study has shown that long acting intramuscular Octreotide is effective at improving Hb levels in patients with refractory small bowel angiodysplasias. A longer follow up interval will be required to determine the beneficial effect of combination therapy. We have identified a relatively high rate of serious side effects, in contrast to previous reports, which need to be taken into consideration prior to commencing treatment.

Disclosure of Interest None Declared.

PTH-140 SOLUBLE PLANTAIN FIBRE INHIBITS THE EPITHELIAL ADHESION OF DIARRHOEAL PATHOGENS CLOSTRIDIUM DIFFICILE, SALMONELLA AND ENTEROTOXIGENIC E. COLI (ETEC) THROUGH INTERACTION WITH THE INTESTINAL EPITHELIUM

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Introduction Pathogen-related diarrhoea causes significant morbidity and mortality worldwide. Our studies have previously shown that soluble dietary fibre (non-starch polysaccharides, NSP), particularly from plantain bananas, can inhibit epithelial adherence of diarrhoeal pathogens *in vitro* and *ex vivo* (*J. Nutr. Biochem.*2013;24:97–103).
Methods Here we aimed to establish whether plantain NSP exerts its inhibitory effect on pathogen adhesion to intestinal epithelium through either interaction with bacterial carbohydrate-binding proteins (adhesins) or via action on the epithelium itself. Prior to infection (MOI 100) of Caco2 human intestinal epithelial cells with *C. difficile* (2 h), *Salmonella* Typhimurium LT2 (1.5 h) or ETEC (1.5 h), monolayers were either 1) pre-treated with plantain NSP (0–10 mg/mL – a concentration that is readily achievable *in vivo* with dietary supplementation) for 30 min followed by inoculation, 2) pre-treated for 30 min, plantain NSP removed by thorough sterile saline washes before infection, or 3) infected with bacteria that had been pre-treated with NSP for 30 min followed by washing to remove non-adherent soluble fibre. Following infection, non-adherent bacteria were removed by sterile washes and adherent bacteria enumerated by overnight culture colony counts.
Results Plantain NSP (5 mg/mL) significantly decreased bacterial adhesion to Caco2 (% inhibition of adhesion for LT2 89 ± 5%; *C.difficile* 92.9 ± 2%; ETEC 65.8 ± 1%; all $P < 0.001$) compared to untreated cells. When plantain NSP was added to epithelial monolayers followed by washing to remove non-adherent fibre prior to infection, bacterial adherence was still markedly reduced (LT2 59.2 ± 5% inhibition; *C.difficile* 59.2 ± 5%; ETEC 45.0 ± 2%, all $P < 0.01$). Pre-incubation of bacteria with plantain NSP followed by removal with sterile washes prior to infection resulted in no significant inhibition of adhesion compared to untreated controls. Thus inhibition of bacterial adherence to the epithelium by soluble NSP is mediated via an interaction between the NSP and the epithelium. This is supported by data from Ussing chamber experiments (PLoSOne;In press) showing that pre-treatment of human ileal tissue with plantain NSP results in a marked increase in transmucosal short circuit current (I_{sc}) implying Cl^- secretion (peak ΔI_{sc} 5.86 ± 1.89 $\mu A.cm^{-2}$ 50 min post-NSP addition; $P < 0.01$) without any effect on TEER.
Conclusion Soluble plantain NSP exerts its inhibitory effect on *C. difficile*, ETEC and *Salmonella* adhesion to the intestinal epithelium via action on the epithelium rather than through interaction with bacterial adhesins. This effect is probably mediated by increased epithelial Cl^- secretion.
Disclosure of Interest H. Simpson Grant/research support from: Provexis plc, Bo and Vera Axe:son Johnson Foundation for Nature Medicine Limited and Arcis Biotechnology, Å. Keita: None Declared, J. Söderholm: None Declared, J. Rhodes Consultant for: advisory boards of Atlantic, Procter and Gamble and Falk, Speaker bureau with: Has received speaking honoraria from Abbott, Falk, Ferring, Glaxo Smith Kline, Proctor and Gamble, Schering Plough, Conflict with: Holds a patent with the University of Liverpool and Provexis plc for use of a soluble fibre preparation as maintenance therapy for Crohn's disease, B. Campbell Grant/research support from: Provexis plc, Bo and Vera Axe:son Johnson Foundation for Nature Medicine Limited and Arcis Biotechnology, Speaker bureau with: Received a speaking honorarium from Amgen Inc.

PTH-141 WIRELESS CAPSULE ENDOSCOPY – DIAGNOSTIC YIELD AND CLINICAL UTILITY VARIES WIDELY ACCORDING TO INDICATION

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Introduction Wireless capsule endoscopy (WCE) is a well established technique for imaging the small bowel, with an increasing clinical uptake and range of indications. We aimed to evaluate the utility of WCE, comparing the diagnostic yield of procedures by indication.
Methods We performed a retrospective analysis of all WCE procedures performed at our centre, January 2007 to March 2013.
Results A total of 293 procedures were performed in 279 patients, male 47%. Median age at time of procedure was 59 (IQR 45–71). The indications were: iron deficiency anaemia (IDA)/occult GI bleeding 154 (53%), known Crohn's disease requiring assessment 58 (20%), abdominal pain (+/- other symptoms) 33 (11%), overt GI bleeding 20 (7%), isolated diarrhoea 10 (3%), coeliac disease 6 (2%), isolated weight loss 4 (1%), other 8 (3%). Of those undergoing WCE for symptoms (47; 16%), Crohn's disease was excluded (an aim of performing the study) in 34 (72%).
The median gastric transit time was 27 min (IQR 14–55), small bowel transit time 243 min (IQR 181–300). Unplanned endoscopy for failure of capsule progression was required in 8 cases (3%). 5 procedures (2%) failed to image the small bowel (failed to leave stomach (3), battery failure (1), poor views (1)). A prokinetic was used in 9% (n = 27) of procedures.
Overall the diagnostic yield was 50%. Separating by indication, the diagnostic yield was highest for overt GI bleeding, 70% overall (n = 14), identifying both 9/20 small bowel causes and 5/20 in colon/upper GI tract. Yield for Crohn's disease assessment was 63%, IDA/occult GI bleeding 46%, abdominal pain (+/- other GI symptoms) 47%. The diagnostic yield of WCE for abdominal pain in the absence of other symptoms or abnormal radiology/ileoscopy was only 14%. 23 out of 27 patients evaluated for symptoms (in the absence of anaemia/known Crohn's) were discharged requiring no further investigation following a negative result.
Conclusion Wireless capsule endoscopy has a good diagnostic yield, especially for evaluating GI blood loss (overt or occult) and assessing small bowel Crohn's disease. Among highly symptomatic patients, WCE can facilitate completion of investigatory pathways and enable discharge to primary care. The utility of WCE in investigating isolated abdominal pain appears limited.
Disclosure of Interest None Declared.

PTH-142 DOES DOUBLE BALLOON ENTEROSCOPY AFFECT MANAGEMENT IN PATIENTS WITH SUSPECTED SMALL BOWEL TUMOURS? EXPERIENCE FROM A SINGLE TERTIARY CENTRE

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Introduction The advent of small bowel capsule endoscopy (CE) has greatly improved the diagnosis of small bowel tumours. Double balloon enteroscopy (DBE) is the interventional counterpart to CE and has the advantage of direct visualisation of small bowel pathology, biopsy and therapeutic capability. There is however a paucity of data on the use of DBE for small bowel tumours. The aim of this study was to assess the utility of DBE for small bowel tumours and to assess its impact on the diagnostic pathway in this cohort.
Methods Data was collected prospectively on all DBE procedures performed routinely between July 2006 and December 2013 particularly for the indication of small bowel tumours.