CCL20 production, with a sixfold increase after 24 h at MOI 1 (p=0.01). The Δ*cagE* (p<0.01) and Δ*slt* (p<0.01) but not Δ*cagA* (p=0.18) inactivations reduced CCL20 induction by multiple *Hp* strains, indicating CagA-independent, *cag*PAI-dependent signalling.

Conclusion *Hp* induces CCL20 production by gastric epithelial cells in a *cag*PAI-dependent manner. Higher gastric CCL20 levels in *Hp*+ patients correspond to increased gastric infiltration of $CCR6^+$ Tregs and to the proportions of these cells in the peripheral blood. We speculate that CCL20/CCR6 is the main homing system for Tregs to the stomach in *Hp* infection and thus central to pathogenesis. Migration assays are being performed in vitro prior to in vivo studies in mouse models.

Competing interests None declared.

PWE-174 PROTON PUMP INHIBITORS (PPI) USE AND *CLOSTRIDIUM DIFFICILE* INFECTION: GUILTY OR INNOCENT BYSTANDER?

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Introduction PPIs have been implicated in predisposing to *Clostridium difficile* infection by causing hypochlorhydria. A 5–10% asymptomatic toxin burden in the community is also reported. The previously voluntary reporting of *C difficile* infection in UK became mandatory for all age-groups in April 2007. Aim: To compare the pattern of PPI prescribing & *C difficile* rates in Rotherham (industrial town in Yorkshire; pop 250k) and England (50mill.) over a 7-year period to identify any association at a community level.

Methods Retrospective population study of seven consecutive years (2004/2005–2010/2011) on data of annual PPI prescriptions & *C difficile* incidence (both/100k pop.) in Rotherham primary care trust (PCT) and all England PCTs combined obtained from our microbiology department, Rotherham PCT, NHS Information Centre and UK Health Protection Agency. PPI prescribing trends and *C difficile* rates (irrespective of PPI use) in each year was compared between the two groups as % difference (Rotherham vs England: + =higher %, − =lower %).

Results (Abstract PWE-174 table 1) PPI prescription: Prescription rates have risen steadily in both cohorts over the study period. Rotherham had higher rate throughout study period but gap with England in % terms has steadily narrowed. *C difficile* rates: Rotherham rates were much higher till 2006/2007, reversed dramatically in 2007/2008, continuing to fall for next 2 years. England rates peaked in 2007/2008 and fell steadily from 2008/2009 with hardly any gap in 2010/2011.

Abstract PWE-174 Table 1 PPI prescribing and *C difficile* rates in Rotherham (R) vs all-England (E)

	Rates/year/100 k population						
	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011
R PPI	53 566.0	60 217.0	66 974.0	75 948.0	80 554.0	86 641.0	92 829.0
E PPI	39 715.6	45 501.1	51 505.0	59 543.6	66 800.4	73 876.3	80 377.4
R/E difference (%)	+26	+24	+23	+22	+17	+15	+13
R *C difficile*	120.0	150.4	144.4	88.0	54.0	38.0	40.4
E *C difficile*	80.8	94.0	102.6	111.0	72.2	51.2	43.4
R/E difference (%)	+33	+38	+29	−26	−34	−35	−1

Conclusion Strict hand hygiene in hospital and microbiologist-controlled prudent antibiotic use in hospital and community from 2002/2007 seem to have resulted in a marked fall in *C difficile* rates in Rotherham from 2007/2008. We presume that similar measures, gradually introduced in the rest of England during 2007, account for the more widespread but less steep fall in the England infection rates from 2008/2009.·The 7-year community level data suggests a mere association rather than true cause-effect relation between *C difficile* rates and PPI use in the past. Any potential risk from PPI use seems to be offset by rigorously applied hand hygiene (secondary care) and careful antibiotic prescribing (primary and secondary care) as evidenced by falling infection rates, despite rising PPI prescribing, since 2007/2008.

Competing interests None declared.

PWE-175 DUODENAL EOSINOPHILIA AND EARLY SATIETY IN FUNCTIONAL DYSPEPSIA (FD): CONFIRMATION OF A POSITIVE BIOMARKER ASSOCIATION FOR FD IN AN AUSTRALIAN COHORT

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Introduction Functional dyspepsia (FD), defined by unexplained pain or discomfort centred in the upper abdomen, affects 15% of the population. Diagnosis and treatment of FD based on the symptom-based Rome III criteria remains challenging. Recently, subtle eosinophilic inflammation in the duodenum has been implicated in the pathophysiology of FD in adults based on a Swedish case-control study.[1] Specifically, increased eosinophils in early satiety and postprandial distress have been replicated in the UK,[2] in paediatric dyspepsia in the USA[3] and in post-infectious FD in Japan,[4] but the association remains controversial. The aim of this study was to characterise upper gastrointestinal tract pathology in an Australian cohort and correlate this with available clinical data in FD cases and controls.

Methods Patients prospectively referred for an upper gastrointestinal endoscopy (n=55; mean age, 49.6 years; 61.8% female) were entered to the study (with informed consent), stratified to FD cases (n=33) and controls (n=22) by Rome II criteria and completed a validated Bowel Symptom Questionnaire. Two blinded independent observers assessed the eosinophil count in five high power fields, in the duodenal bulb (D1) and second part (D2). *H pylori* status was assessed by gastric histology. Associations with clinical symptoms were assessed by Mann–Whitney U test.

Results Cases and controls were demographically similar. There was a significant increase in eosinophils in D1 vs D2 for both cases (p=0.0003) and controls (p=0.008). Abdominal pain was associated with eosinophilia in both D1 (p=0.03) and D2 (p=0.007). Duodenal eosinophilia was significantly increased in subjects experiencing early satiety, (p=0.015). This association remained after exclusion of coeliac disease (n=2) and *H pylori* (n=9, 16%) (p=0.04) in D2 but not in D1. Subjects who "felt food staying in their stomach" similarly had increased D2 eosinophilia (p=0.002); this remained significant on exclusion of coeliac disease and *H pylori* (p=0.004). Smoking was also associated with eosinophilia in D2 (p=0.008).

Conclusion Data supporting subtle duodenal eosinophilia in subsets of FD has become credible. The potential role of duodenal eosinophils as biomarkers has implications for diagnosis and therapeutic trials.

Competing interests None declared.

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PWE-176 THE MANAGEMENT OF PERFORATED GASTRIC ULCERS

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Introduction Perforated gastric ulcers are potentially complicated surgical emergencies. Appropriate early management is essential to avoid subsequent problems including the detection of underlying malignancy. Our aim was to examine the management and outcome of patients with gastric perforations undergoing emergency laparotomy for peritonitis.

Methods Patients undergoing laparotomy in the department of General Surgery for perforated gastric ulcers were identified from the prospectively maintained Lothian Surgical Audit (LSA) database over the 5-year period 2007—2011. Additional data were obtained by review of electronic records and the endoscopy reporting system (UNISOFT), in addition to reference with the South East Scotland oesophagogastric Cancer Network (SCAN) database and the histopathology laboratory Database (APEX).

Results 45 patients were identified. The procedures performed were: 41 omental patch repairs (91%), two simple closures (4%) and two distal gastrectomies (4%—both for large perforations). There were four perforated gastric tumours (4%), of which two were suspected intra-operatively and confirmed histologically, one had unexpected positive histology and one had negative histology, but follow-up endoscopy confirmed carcinoma; all four were managed without resection at initial laparotomy. One of these patients underwent subsequent resection for cancer after full staging and optimisation but subsequently developed tumour recurrence and died. Median length of stay was 8 days (range 4—68). The overall inpatient mortality was 15% and there were 20 morbidities (44%; including nine respiratory complications, four wound infections and two myocardial infarctions). 33 patients had biopsies taken during surgery. Two of the remaining 12 patients had biopsies taken during postoperative endoscopy. None of the remaining 10 patients were subsequently referred with cancer. Seventeen patients in total underwent a follow-up postoperative endoscopy and 11 of them had biopsies taken.

Conclusion The majority of perforated gastric ulcers can be effectively managed by laparotomy and omental patch repair. Initial biopsy and follow-up endoscopy with repeat biopsy is essential to avoid missing an underlying malignancy.

Competing interests None declared.

PWE-177 ACUTE BLEEDING FROM UPPER GI TRACT ANGIODYSPLASIA

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Introduction Angiodysplasia is a relatively uncommon cause of acute upper GI bleeding (AUGIB). The aim of this study was to characterise the presentation, management and outcome of this condition.

Methods Retrospective audit of upper GI endoscopies (UGIE) performed at our institution between 1 January 2007 and 30 June 2010. Data were extracted from the endoscopy reporting software (Unisoft) database using search terms "angiodysplasia," "angioma" and "telangiectasia" for oesophageal, gastric and duodenal diagnoses. These three terms were grouped together as "angiodysplasia" for analysis. The casenotes for all patients presenting with haematemesis and/or melaena were reviewed.

Results During the 42-month period of the audit, a total of 15 482 UGIEs were performed. A diagnosis of upper GI tract angiodysplasia was recorded in 199 procedures, representing 132 patients. Of these, 38 were excluded as they had presented with chronic anaemia and 55 patients had undergone UGIE for other indications. 39 patients had presented with haemetemesis and/or melaena. Of these six were excluded from further analysis as the diagnosis of angiodysplasia was not confirmed at subsequent endoscopy; a further seven patients had co-existing lesions which were thought to have accounted for the bleeding. Therefore, the results are presented for 26 patients; the mean age was 70 yrs (range 34—91) and 15 (59%) were males. Twelve (44%) were taking aspirin/NSAIDs, and five (19%) were on anticoagulant therapy. Mean haemoglobin level at presentation was 9.4 g/dl (range 4.0—14.9). Three (11%) of patients had a past history of AUGIB of unknown source; two (7.4%) of patients had a history of previous bleeding from known angiodysplasia. Von Willebrand's disease was noted in three (11%) of patents; four (14.8%) of patients had documented aortic stenosis, with a further two (7.4%) having had an aortic valve replacement. The 26 patients experienced 42 separate admissions (single admission—18 patients, eight patients >1 admission) with AUGIB during the study period. In 39 (93%) of these episodes the presentation was with melaena, and three (7%) with haematemesis plus melaena. Active bleeding was seen in 13 (30%) of these episodes, with luminal blood present in a further four (9%) cases. Endoscopic therapy with argon plasma coagulation or heater probe was undertaken in 35 (81%) of these episodes. Seven (26%) of the patients required additional therapy with either Octreotide, Thalidomide or Tranexamic Acid for uncontrolled or recurrent bleeding. There were no deaths observed due to GI bleeding.

Conclusion Acute bleeding from upper GI tract angiodysplasia can be managed successfully by endoscopic therapy in the majority of patients, but approximately a third of patients will experience recurrent bleeding requiring additional medical therapy.

Competing interests None declared.

PWE-178 FEASIBILITY, SAFETY AND EFFICACY OF ENDOSCOPIC RESECTION OF UPPER GASTROINTESTINAL SUBMUCOSAL LESIONS IN A WESTERN SETTING

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Introduction Submucosal lesions are a relatively common finding at upper gastrointestinal endoscopy. Endoscopic resection (ER) may be warranted in larger lesions, those causing symptoms or those with malignant potential. However submucosal origin makes these lesions difficult to resect by an endoscopic approach. Advances in resection techniques have made this feasible.

Methods Portsmouth Hospitals is a tertiary referral centre for advanced ER. All ER procedures between 2005 and 2011 were recorded in a prospective database. We analysed our database to identify all submucosal lesions removed by ER in the past 7 years. All procedures were carried out by a single skilled endoscopist.