capsule endoscopy (CE) and double balloon endoscopy (DBE), the role of IOE has been questioned. Our aim was identify the indications for IOE and associated morbidity and mortality. We also made comparisons between CE and IOE.

Methods All patients that underwent IOE between 2003 and 2011 were included. Data collected included demographics, clinical indications, co-morbidity, transfusion requirements, findings at IOE and subsequent follow-up.

Results There were 17 IOEs, 8 males, with a mean age of 57 years (range 34–93). The median follow-up period was 9 months (range 0–48 months). The indication was iron deficiency anaemia (IDA) in all patients (occult bleeding (n=10) and overt bleeding (n=7)). Ten patients were transfusion dependent. The median haemoglobin pre-IOE was 7.7 g/dl (SD 1.4). 71% (n=12) had significant co-morbidity which included ischaemic heart disease, diabetes and bronchiectasis. Small bowel investigations prior to IOE included DBE (n=9) and CE (n=16). Two patients had therapeutic intervention at DBE, both argon plasma coagulation (APC) to angiodysplasia. In seven patients the abnormality on CE was not reached at DBE. The diagnostic yield for IOE was 88% (15/17). In two patients, the IOE was normal. Findings at IOE included Meckels diverticulum (n=2), arteriovenous malformations (n=7), small bowel tumours (n=3; benign glomus tumour, leiomyoma and carcinoid), bleeding point at surgical anastamosis (n=2; post hepatectomy and at a transplanted pancreatic bed) and small bowel ulceration secondary to NSAIDs and nicorandil. Intervention at IOE occurred in 82% (n=14). These included 10 small bowel resections, two APC, one revision of anastamosis, one oversewing of angiomata. While the morbidity rate was 18% (n=3) with two post-operative bleeds requiring transfusion and a seizure secondary to hyponatraemia, there were no deaths within 30 days. Evidence of recurrent GI bleeding occurred in four patients all of whom have lower transfusion requirements than before, 1 being on tranexamic acid, and 1 on somatostatin analogue. In the two patients with a normal IOE; the patient with IDA remains well 6 months post IOE while the second patient with diarrhoea and pain remains symptomatic without a diagnosis. A comparison of CE against IOE as the gold standard provided CE with a sensitivity, specificity, positive predictive and negative predictive values of 87%, 100%, 100% and 33% respectively.

Conclusion IOE has a high diagnostic yield (88%) with a significant proportion having intervention at IOE. There remains an important role for IOE in a select group of patients with transfusion –dependent anaemia.

Competing interests None declared.

PTU-220 ARE MORE COLONIC POLYPS FOUND WITH BETTER BOWEL PREPARATION?

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Introduction Colonic adenoma detection is one of the quality indicators of endoscopy[1] and is measured as present or not, rather than an absolute number of adenomatous polyps per colonoscopy. Several factors are associated with higher polyp detection rate; adequate colonic distension, retroflexion in the rectum, position change, cleaning and suctioning, with slow and thorough examination of the mucosa.[2] The quality of bowel preparation is variable and assessed subjectively by the endoscopist. The purpose of this observational study was to determine whether more polyps are detected with good bowel preparation.

Methods All colonoscopies stored on the reporting system database (from 2004 to 2009) in a District General Hospital were identified. Completed examinations with data for both the absolute number of polyps per colonoscopy and preparation quality were included. Colonoscopies in which cancers were diagnosed, and those with missing data were excluded. Independent T-testing and χ^2 were used in the statistical analysis.

Results 4442 colonoscopies with complete data were identified for analysis. 3489 (78.5%) detected no polyps, and 953 (21.5%) found polyps. Polyp detection rate was not dependent on the quality of the bowel preparation (p=0.81). There was no significant difference between "good" and "poor" preparation in the mean number of polyps detected per colonoscopy (p=0.428), between "good" and "satisfactory" preparation (p=0.329), or between "satisfactory" and "poor" (p=0.936).

Conclusion The quality of bowel preparation appears to make no difference to the likelihood of detecting adenomas in the colon or to the absolute number detected per colonoscopy. These results suggest that either polyp detection rate/number is not a robust measure of quality or the subjective measure of bowel preparation is not discriminatory. Further prospective studies are required to establish a validated bowel preparation score, which, if carefully structured, would standardise preparation as a quality measure and augment the factors known to influence polyp detection rate.

Abstract PTU-220 Table 1

Quality of bowel preparation	Good	Satisfactory	Poor
No. colonoscopies (%)	2458 (77.8)	1361 (30.6)	623 (14.0)
Polyp detection (%)	536 (21.8)	285 (20.9)	132 (21.2)
Mean no. polyps (range)	0.48 (0–20)	0.44 (0–9)	0.44 (0–9)
Mean no. polyps detected (where present) [median]	2.21 [2]	2.11 [2]	2.06 [1]

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Competing interests None declared.

PTU-221 DYSPHAGIA IN A DGH: IS THERE HISTOLOGICAL CORRELATION OF THE VISUAL DIAGNOSIS?

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Introduction Dysphagia is a clinically important indication of malignancy; as well as a symptom of Oesophagitis, Barrett's oesophagus (BO), and peptic strictures; all of which should be easily recognised at biopsy. Dysphagia in younger patients' may indicate Eosinophilic Oesophagitis (EO), which may only be visible on histology. The aim of this study was to review the demographics of patients undergoing endoscopy and if there was histological and visual correlation to help guide our investigation of dysphagia.

Methods A retrospective study including dysphagic patients attending endoscopy at Singleton or Morriston hospital between 1 January 2010 and 31 October 2011. Patients were reviewed to identify demographics, endoscopic findings and correlation between visual and histological diagnosis. Where biopsies were indicated in the endoscopy report results were cross matched with the histology results. Hiatus hernia was considered normal and unspecified mass was considered to represent a visual diagnosis of malignancy unless otherwise stated. Patients undergoing more than one procedure had each procedure entered as a separate data set.

Results 694 patients (334 male, 340 female), median age 67 (range 21–99), 77% patients over 50. Endoscopy was visually normal in 45%, the commonest visual abnormalities were Oesophagitis (18%) and malignancy (13%). 23% of patients had biopsies. Suspected malignancy or BO were most likely to have biopsies taken (65% and 64% respectively), 9% visually normal endoscopies were biopsied. 83% (49 cases) with suspected malignancy had histological correlation, 17% (11 cases) had BO or Oesophagitis. Three patients were found to have malignancy where the visual diagnosis had been Oesophagitis or benign stricture. Both BO and Oesophagitis had >80% correlation visually and histologically. Six cases of EO were found, all were visually normal. One suspected case was seen at endoscopy, this was histologically normal.

Conclusion There was generally good correlation between visual and endoscopic diagnosis, particularly in malignancy, however biopsy number was lower than expected. Failure to biopsy may lead to missed diagnosis of cancer or dysplasia. All cases of EO in adults had normal endoscopy, few patients with dysphagia and normal endoscopy had biopsies taken. EO may be commoner than suspected, true rates are unknown and a high index of suspicion is needed. We should carry out more endoscopies on younger patients with symptoms in keeping with EO and biopsy normal oesophagus in cases where this diagnosis is suspected.

Competing interests None declared.

PTU-222 A COMPARISON OF PATIENT TOLERANCE OF BOWEL PREPARATION REGIMENS USED FOR CONVENTIONAL COLONOSCOPY, SMALL BOWEL AND COLON CAPSULE ENDOSCOPY

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Introduction That patients tolerate swallowing a capsule better than undergoing conventional colonoscopy (CC) is self evident, but without the ability to cleanse the bowel during the procedure capsule endoscopy is critically reliant on a clean bowel and preparation regimens tend to be more rigorous, which may affect the patients' acceptance of the procedure. In this study, patient tolerance of a standard regimen used for colon capsule endoscopy (CCE) was compared with that used for CC and a smaller volume regimen used for small bowel capsule endoscopy (SBCE) as a control.

Methods All patients undergoing CC, SBCE and CCE on the Clinical Investigation Unit were asked to score symptoms of nausea, vomiting, bloating, abdominal pain and headache as none, mild, moderate, severe or extreme and provide an overall tolerance score on a visual analogue scale (0: intolerable; 10: no symptoms). Laxatives administered were 4L (CC) and 2L (SBCE) Klean prep (Norgine Ltd., UK). 2L Klean prep was given the day before aswell as the day of CCE when two further "booster" doses of Fleet phospho-soda (Fleet Labs., Lynchburg, USA; 30 and 25 ml) were also administered. χ^2 test was used to compare patients suffering none-mild and moderate-extreme symptoms with different regimens and one-tailed t test to compare overall tolerance.

Results 104 patients had bowel preparation for CC (n=28), SBCE (n=54) and CCE (n=22) and suffered moderate-extreme nausea (4, 21 and 18% respectively), vomiting (4, 8, 0%), bloating (21,17, 36%), abdominal pain (14, 25, 23%) and headache (11, 21, 32%). Moderate to extreme nausea was more common in those taking bowel preparation for SBCE than CC (p=0.04), but there were no differences in the distribution of any of the other symptoms between the different regimens. Overall tolerance score was (median (range)) 7.2 (1–9) with no difference between regimens. CCE and SBCE groups were similar in terms of sex (64 and 58% female respectively) and age (mean 39 and 49 years, p=0.1).

Conclusion Bowel preparation for endoscopic procedures is commonly associated with a wide range of symptoms. However patient tolerance of regimens used for CCE and CC were equivalent and indeed not demonstrably worse than the low volume preparation used for SBCE. This study suggests that the bowel preparation regimen is unlikely to influence patients' choice of CCE or CC as an investigative modality.

Competing interests None declared.

PTU-223 CARDON DIOXIDE INSUFFLATION DURING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY MAY REDUCE ABDOMINAL PAIN BUT IT DOES NOT ALTER THE SEDATION AND ANALGESIA REQUIREMENTS

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Introduction Compared to air, carbon dioxide (CO2) insufflation during endoscopic retrograde cholagiopancreatography (ERCP) may reduce bowel distension and resulting pain. However, its effect on sedation is unknown. Our objective was to investigate the effect of CO2 insufflation on the amount of sedation, analgesia and antispasmodic needed during ERCP. Secondarily, the perceived patient discomfort and complications were also examined.

Methods Using a database, we retrospectively identified 60 patients (pts) each, before and after introduction of CO2 insufflation for ERCP. All procedures were performed using titrating doses of intravenous fentanyl and midazolam combination aiming for a Bispectral Index (BIS) value of 85, which indicates an adequate level of deep sedation. Post ERCP abdominal pain and conscious level was assessed by experienced recovery nurses using a visual analogue scale (VAS) of 0 to 10 and AVPU (Alert, Verbal, Pain, Unresponsive) scale respectively. The statistical analysis for drug doses was carried out using Mann–Whitney U test.

Results Patient demographics such as age, sex, co-morbidities, indications and ASA grades were similar in both groups. The same median dose of intravenous hyoscine butylbromide (20 mg, p=0.89) and fentanyl (75 μg, p=0.70) was used in both groups while the median dose of midazolam was 4.5 vs 4 mg (p=0.25) for the air and CO2 group respectively. The duration of procedure was 33 vs 29 min (p=0.63) for the air and CO2 group respectively. During the first hour post procedure, the AVPU score for air group was A-45, V-12, P-2, U-1 and for CO2 group it was A-47, V-13, P-0, U-0 respectively. The incidence of abdominal pain during the first hour post procedure for air and CO2 groups was 10% and 0% (p=0.027) respectively, while the mean score for pain on VAS in the air group was 2 (range 1–6; p=0.012, Mann–Whitney U test). Complications included pancreatitis (0% vs 1.3%) and post-sphincterotomy haemorrhage (2.6% vs 0%; p=0.5, Fisher's Exact test) in the air and CO2 groups respectively. All complications settled with conservative management. No serious cardio-pulmonary complication was noted in either group.

Conclusion Carbon dioxide insufflation during ERCP reduces the incidence and severity of post procedure abdominal pain based on VAS but it does not influence the amount of sedation or analgesia required to achieve sufficient palliation of pain during the procedure. The use of CO2 in unselected well sedated, prone patients appears to be safe.

Competing interests None declared.