Introduction Narrow band imaging (NBI) utilises optical filters to enhance the visibility of fine mucosal microvasculature. Wavelengths of light used in NBI are shorter (between 415–540 nm) corresponding to the wavelengths most intensely absorbed by haemoglobin. We aimed to quantitatively compare the effect of improvement in contrast enhancement using NBI among various series of Olympus endoscopes (240, 260 and 290 series) using serial dilutions of haemoglobin.
Method We compared the visibility of human blood diluted with increasing concentrations (from ½ to $1/2^{23}$) of distilled water in a 24 well transparent plastic plate. Still images of the wells (overview and individual) were captured using GIF Q240 and GIF H260 endoscopes with a LUCERA spectrum CV260 processor (Olympus, Keymed, UK) and GIF H290 endoscope with an ELITE CV 290 processor (Olympus, Keymed UK) with white light and NBI. Images were independently analysed by three groups of endoscopists for the presence of blood; endoscopists with experience in NBI use (NBI-experienced), endoscopists with no former NBI experience but who have obtained accreditation by Joint Advisory Group (JAG) for diagnostic endoscopies (NBI-Naive) and doctors with no prior endoscopy experience (novices). Inter-rater agreement was assessed using Kappa statistics. The median visible dilution was defined as the limit of visibility for the presence of haemoglobin in the overview image.
Results 45 participants (15 each of NBI-experienced, NBI-naïve and novices) completed the study. With conventional white light the median dilution at which all 3 groups noted the presence of haemoglobin was $1/2^{15}$ using all three generations of endoscopes. This improved using NBI to $1/2^{17}$ for GIF Q240, $1/2^{19}$ for GIF H260 and $1/2^{20}$ for GIF H290 series of endoscopes. The kappa values for inter-rater agreement was substantial for all 3 generations of endoscopes using conventional white light ($\kappa > 0.7$) while it was only moderate to fair for all 3 generations of NBI ($\kappa > 0.5$).
Conclusion NBI more effectively enhanced the contrast of diluted blood compared to conventional white light. These differences improved with successive generations of NBI but not with conventional white light. Inter-rater agreement was fair for NBI, but substantial for conventional white light. Effective training and more objective criteria for the presence of blood could help improve inter-observer agreement. Studies are needed to assess the clinical utility of newer generation NBI in the detection of early neoplasia and assessment of inflammation.
Disclosure of interest None Declared.

PWE-037 ROLE OF CT ANGIOGRAPHY IN THE MANAGEMENT OF ACUTE GI BLEEDING

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Introduction Gastrointestinal (GI) bleeding cannot always be controlled or identified at endoscopy (OGD), therefore guidelines recommend radiological intervention in an unstable patient. The options are fluoroscopic angiogram (FA) which is time consuming, requires significant expertise, and has significant radiation exposure. Alternatively a CT angiogram (CTA) may offer a sensitive, rapid diagnosis of the source of GI bleeding to allow definitive treatment. Data on the role and diagnostic yield of CTA are lacking. We present the largest international study to assess the impact of CTA in upper GI bleeding.
Method A retrospective analysis of endoscopy and radiology databases was used to identify patients who underwent radiological intervention for GI bleeding at Sheffield Teaching Hospitals between 2003 and 2013. A control group of 757 patients (who did not undergo FA or CTA) from the South Yorkshire GI bleed audit 2011 was used for comparison. Pre-endoscopy Rockall scores, routine haematology and biochemistry results taken prior to endoscopy and inpatient mortality rates were compared.
Results 59 patients (35 male, mean age 69.3) underwent imaging for upper GI bleeding during the study period.

In 49/59 (mean age=68.3, mean Rockall = 3.8, mean Hb = 84.7) a source was initially identified at OGD but with continued bleeding. CTA was performed in 31 with the other 18 having immediate FA. For patients having a CTA first a source was identified in 15 (48%) requiring embolization in 10. 4 patients who did not have an abnormality seen on CTA subsequently required FA and embolization and 2 of these patients died. For the other 10/59 (16.9%) (mean age 74.3 mean Rockall=4, mean Hb=84.2) no source was identified at OGD and they underwent CTA identifying 8 bleeds which proceeded to FA and then embolization in 6. Inpatient mortality in this group was 50% which was significantly higher than 14.3% for those patients with an identified source for upper GI bleed ($p = 0.02$).

Patients who underwent CTA were older ($p = 0.039$) and presented with higher median pre-endoscopy Rockall scores ($p = 0.003$) than controls. Both CTA and 'direct to FA patients' presented with lower Hb ($p < 0.0001$) than controls. There was no significant difference between CTA and FA patients.

Inpatient mortality rates were higher in those who underwent CTA prior to FA (22%) compared to those who went directly to FA (11%) but this was not significant ($p = 0.5$).
Conclusion Radiological imaging resulted in embolization in 55.9% of patients referred. Patients requiring radiological intervention for GI bleeds have more significant bleeding with lower haemoglobin and higher Rockall scores. Patients with no source of bleeding on OGD have higher inpatient mortality despite radiological intervention.
Disclosure of interest None Declared.

Inflammatory Bowel Disease II

PWE-038 UTILITY OF MEASURING INFLIXIMAB DRUG LEVELS AND ANTI-DRUG ANTIBODIES IN CLINICAL PRACTICE: A LARGE IBD REFERRAL CENTRE EXPERIENCE

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Introduction The development of infliximab (IFX) drug level and anti-drug antibody (ADA) testing has allowed a personalised approach to IFX use in inflammatory bowel disease (IBD). We present our 2-year experience at a tertiary IBD centre.
Method All IFX drug and ADA levels measured in patients managed at the Guy's and St. Thomas' IBD centre were reviewed. Indications for carrying out drug levels, subsequent changes in management and long-term outcomes were evaluated.
Results 330 levels were measured in 199 patients from May 2012 to October 2014. Median IFX levels were 4.1 (range

0- >8 μg/ml). 109 (33%) levels were sub therapeutic (≤2.0 μg/ml), of which 61 patients were symptomatic. This resulted in a change in management in 44 (72%) of those patients.

ADA were detected in 22 tests (7%) from 19 patients. 12 patients were switched to adalimumab of which 11 continue (median 11 months follow-up) and 1 was a primary non-responder. 4 patients continued on IFX but were optimised on thiopurines, only 1 of which had a subsequent improvement in disease activity. 1 patient stopped anti-TNF therapy due to demyelination, and 2 discontinued anti-TNF to take part in clinical trials.

121 levels (37%) were measured in patients with loss of response (LOR) of whom 50 (41%) had sub therapeutic levels (<2.0 μg/ml). 27 patients, all with no detectable antibodies, underwent dose escalation.

32 levels (10%) were measured at week 14 after standard induction of IFX resulting in 3 patients being switched to adalimumab (Ada) due to significant antibody detection (>200 U/ml) and 1 patient having their dose increased to 10 mg/kg due to borderline levels (2.0 μg/ml) along with poor clinical response.

97 levels (29%) were measured as part of annual reassessment resulting in only 8 changes in management. 1 patient with levels >8 μg/ml had a de-escalation from 10 to 5 mg/kg and 3 had their dose increased due to low levels. As a result of inactive disease, 4 out of the 81 patients with therapeutic IFX levels were able to be withdrawn.

The remaining levels were measured after a change in dose of IFX (17%) or for consideration of: withdrawal of concomitant immunosuppression (1%), dose reduction (3%) and withdrawal from IFX (3%).

Conclusion IFX drug and antibody level testing is being increasingly used in clinical practice. The benefits seem greatest in patients with LOR although our understanding of their utility in other circumstances is increasing.

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PWE-039 MALNUTRITION IN INFLAMMATORY BOWEL DISEASE: IS BODY MASS INDEX ENOUGH?

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Introduction Malnutrition in inflammatory bowel disease (IBD) can occur as a result of poor dietary intake, malabsorption, self-imposed dietary restrictions and treatment. High rates of malnutrition (80%) have previously been described in hospitalised patients with severe active disease.[1] In remission malnutrition is not frequently encountered and one third of patients with Crohn's Disease are reported to be overweight.[2] The aim of this audit was to assess the nutritional status of IBD patients attending an outpatient clinic in a tertiary referral centre.

Method This was a prospective audit completed from June–October 2014. All IBD patients were asked to complete a malnutrition screening tool based on national guidelines.[3] Height and weight were measured by nurses and patients were asked to recall any weight loss over the last 3–6 months. Patients were identified as malnourished if they had a body mass index (BMI) <18.5 kg/m^2, unintentional weight loss >10% within the last 3–6 months, or a BMI <20 kg/m^2 and weight loss >5% over the last 3–6 months.

Results One hundred patients completed the audit, 58 females and 42 males with a mean age of 47 ± 18 years. Fifty four patients (54%) had Crohn's Disease, 45 had Ulcerative Colitis (45%) and 1 had Indeterminate Colitis (1%). A third of patients (33%) had undergone surgical resection. Mean weight was 68.2 ± 14.1 kg and mean BMI was 24.4 ± 4.7 kg/m^2. Thirty eight patients (38%) experienced weight loss over the last 3–6 months. Only 7 patients (7%) were classified as malnourished whereas over a third of patients (37%) had a BMI >25 kg/m^2 similar to previous studies.[4] Of the malnourished patients, 3 had active disease, 2 had undergone a flare up in the last 3–6 months, 1 had short bowel and 1 had chronic fatigue.

Abstract PWE-039 Table 1

BMI: Underweight: <18.5	5 (5%)
Healthy BMI: 18.5 – 24.9	58 (58%)
Overweight: 25 – 29.9	23 (23%)
Obese: ≥ 30	14 (14%)
Weight loss over last 3–6 months 1–5%	24 (63%)
>5%	12 (32%)
≥10%	2 (5%)
Number of malnourished patients	n = 7
BMI <18.5kg/m^2	3
Weight loss >10% over last 3–6 months	0
BMI <20kg/m^2 and unintentional weight loss >5% over last 3–6 months	4

Conclusion A low prevalence of malnutrition was demonstrated in IBD patients based on national guidelines. BMI is a crude measure of nutritional status and does not necessarily exclude malnutrition or changes in body composition. More sensitive measures of nutritional status including skinfold thickness and muscle circumferences are required to identify changes in lean body mass in the context of the obesity epidemic.

Disclosure of interest None Declared.

REFERENCES

1 Harries and Heatley, *Postgrad Med J*. 1983;**59**:690–7
2 Vadan *et al*. *Clin Nutr*. 2011;**30**:86-91
3 NICE www.nice.org.uk/CG32
4 Bin *et al*. *Dig Dis Sci*. **2010**;55:137

PWE-040 PAEDIATRIC INFLAMMATORY BOWEL DISEASE IN SCOTLAND-INCIDENCE CONTINUES TO RISE

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Introduction The worldwide incidence of paediatric-onset inflammatory bowel disease (PIBD) is rising, with Scotland having the highest rate in the UK. Scottish PIBD data over the last 40 years has shown a consistent increase, including a 76% rise over 13 years around the millennium.[1] The aim of this study was to calculate current PIBD incidence rates in Scotland and to determine if the temporal trend of significant increase has been maintained.