Conclusion CE in patients >80 years of age has high DY, but sinister pathology in this cohort is rare. Furthermore, small-bowel CE has limited impact on the final patient outcome in this patient group.

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PTU-018 AUTOMATIC DETECTION OF 'SUSPICIOUS' CAPSULE ENDOSCOPY VIDEO SEGMENTS

[1]A Koulaouzidis*, [2]S Tsevas, [2]DK Iakovidis. *[1]The Royal Infirmary of Edinburgh, Edinburgh, UK; [2]Technogical Educational Institute of Central Greece, Lamia, Greece*

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Introduction Manual review and annotation of a capsule endoscopy (CE) video requires a considerable amount of reviewing time. The diagnostic accuracy of this process may decrease over time due to reviewer tiredness. Recent studies showed an average detection rate – for the clinically significant findings – as low as 40%.[1] We present a generic computational framework for automatic detection of abnormalities in CE videos.
Methods A CE video (MiroCam®, InrtoMedic Co Ltd, Seoul, Korea), depicting inflammatory changes (aphthae, mucosal breaks, ulcers, erythema) was reviewed and manually annotated by experienced CE reviewer. A total of 1984 frames, containing any pathology, were thumbnailed. The proposed framework considers video frames as members of a vector space represented by their colour information. An unsupervised data reduction algorithm,[2] which does not require any prior knowledge about the data, was then applied on each segment. This algorithm clusters together frames that exhibit similar characteristics e.g., colour distributions. Its output is a subset of video frames extracted from each cluster by applying a threshold to the clustering result. The extracted frames are characteristic of the particular video segment and as a result representative of possible lesions.
Results The evaluation of the proposed framework aimed to determine its accuracy, in terms of the ratio of the neighbourhoods represented by at least one frame in the system's output and the neighbourhoods that were manually annotated as suspicious for containing lesions. The parameters considered include clustering from 2 to 6 clusters and thresholds[2] varying from 0.004 to 0.6. The obtained accuracy ranged between 76% to 98% depending on the desired sensitivity level of the algorithm, controlled by the threshold. Furthermore, the automatic selection of the representative CE video segments performed by the proposed approach, the number of video frames to be thoroughly examined can be reduced from 30% to 60% of the original video, depending on the clustering and threshold settings.
Conclusion The application of the proposed framework to the evaluation of CE videos may reduce the rate of false negative evaluations by attracting the attention of the reviewer to automatically identified video segments (or single frames) of interest which are likely to contain lesions.

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PTU-019 ANTITHROMBOTIC VS. ULCER EFFECTS IN NON-VARICEAL BLEEDING IN USERS OF ANTITHROMBOTIC DRUGS

[1,2]AS Taha*, [2]C McCloskey, [2]T Craigen, [1]WJ Angerson. *[1]School of Medicine, University of Glasgow, Glasgow, UK; [2]Gastroenterology, University Hospital Crosshouse, Kilmarnock, UK*

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Introduction The use of antithrombotic drugs (ATDs) remains a considerable challenge in the aetiology and management of non-variceal upper gastrointestinal bleeding (NVUGIB). In the upper gastrointestinal tract, ATD use may result in bleeding by mucosal damage (ulcer effect) or through its basic antithrombotic effect. The clinical significance of these effects is unclear.

In this controlled analysis, we AIMED to clarify the significance of the antithrombotic effect as compared with the ulcer effect in patients with NVUGIB using ATDs.
Methods We previously found that ATD users tended to be older and to have higher comorbidity and different endoscopy findings. To overcome these confounding factors, we compared 202 patients with NVUGIB using ATDs (ATD Group) with 202 patients with NVUGIB but not using ATDs (Controls), having matched both groups in a pairwise manner for age, Charlson comorbidity score and a composite endoscopic score covering the oesophagus, stomach, and duodenum. Antithrombotic drugs included low-dose aspirin, clopidogrel, dipyridamole, warfarin, and heparin. Patients using NSAIDs were excluded. Characteristics of the groups were compared using the Wilcoxon signed rank test and McNemar's test. Continuous variables are reported as median (IQR).
Results The characteristics of the two matched study groups are shown in Table 1.
Conclusion After matching for age, comorbidity, and composite endoscopy score, patients with NVUGIB and using ATDs had significantly lower haemoglobin level, higher Blatchford risk score, and were 1.5 times more likely to be transfused. These effects are most likely to be due to the antithrombotic activity of

Abstract PTU-019 Table 1 The characteristics of patients with NVUGIB using antithrombotic drugs as compared with matched controls not using these drugs

	ATD (n = 202)	Control (n = 202)	P-value
Age, years, median (IQR)	72 (60–79)	71 (60–79)	Equal by design
Charlson comorbidity score	1 (1–2)	1 (1–2)	Equal by design
Endoscopy score	1 (0–2)	1 (0–2)	Equal by design
Males	125/202 (62%)	105/202 (52%)	0.06
Smoking	53/200 (27%)	55/199 (28%)	1.00
Haemoglobin, g/dl	10.3 (8.0–12.8)	12.2 (9.4–13.8)	0.02
Urea, mmol/l	9.8 (6.1–14.2)	7.9 (5.5–12.5)	0.04
Blatchford score	8 (4–11)	5 (2–9)	<0.001
Transfusion	79/200 (40%)	52/198 (26%)	0.006

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ATDs rather than ulcers alone, and they need to be considered in the management of NVUGIB.

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PTU-020 ANTITHROMBOTIC DRUGS AND NON-VARICEAL BLEEDING OUTCOMES AND RISK SCORING SYSTEMS – COMPARISON OF BLATCHFORD, ROCKALL, AND CHARLSON SCORES

[1,2]AS Taha*, [2]C McCloskey, [2]T Craigen, [1]WJ Angerson. [1]*School of Medicine, University of Glasgow, Glasgow, UK;* [2]*Gastroenterology, University Hospital Crosshouse, Kilmarnock, UK*

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Introduction Antithrombotic drugs (ATDs) commonly cause non-variceal upper gastrointestinal bleeding (NVUGIB). Established risk scoring systems have not been validated in users of these drugs. We aimed to compare Blatchford, Rockall, and Charlson scores in predicting the outcomes of NVUGIB in ATD users and controls.

Methods A total of 2071 patients with NVUGIB, 2005–2011, were grouped into ATD users (n = 851) and controls (n = 1220). ATDs included low-dose aspirin, clopidogrel, dipyridamole, warfarin, and low-molecular weight heparin. Outcomes included length of hospital admission, the need for blood transfusion, re-bleeding requiring surgery, and 30-day mortality. Results were expressed as Spearman rank correlation coefficients (Rs) for length of admission and area-under-the-curve (AUC) values for the receiver opating characteristic curves (ROC) for binary outcomes, and were compared using z-tests, after Fisher's transformation in the case of Rs values.

Results (1) The LENGTH OF ADMISSION correlated with all three scores in non-ATD patients (controls), but these correlations were significantly weaker in ATD users. Rs in control vs. ATD: 0.45 vs. 0.20 for Blatchford; 0.48 vs. 0.32 for Rockall; and 0.42 vs. 0.26 for Charlson, all $P < 0.001$. Rockall had the strongest correlation with duration of admission and Blatchford the weakest ($P < 0.01$ vs. Rockall in ATD users). (2) The NEED FOR TRANSFUSION was best predicted by Blatchford ($P < 0.001$ vs. Rockall and Charlson in both ATD users and controls) followed by Rockall ($P < 0.001$ vs. Charlson in controls). All scores performed less well in ATD users than controls. AUC in control vs. ATD: 0.90 vs. 0.85 for Blatchford; 0.74 vs. 0.59 for Rockall; and 0.64 vs. 0.54 for Charlson, all $P < 0.005$. (3) In predicting the NEED FOR SURGERY, only Rockall performed significantly better than by chance. AUC in control vs. ATD: 0.62 vs. 0.59 for Blatchford; 0.73 vs. 0.74 for Rockall; and 0.53 vs. 0.50 for Charlson. (4) In predicting MORTALITY, the Charlson score performed best by a small margin, and there was a trend towards weaker relationships in ATD users. AUC in control vs. ATD: 0.71 vs. 0.61 for Blatchford; 0.74 vs. 0.71 for Rockall; and 0.81 vs. 0.72 for Charlson.

Conclusion (1) In both ATD users and controls, the Blatchford score was the strongest predictor of the need for blood transfusion, Rockall had the strongest correlation with duration of admission and with re-bleeding requiring surgery, and Charlson was best in predicting 30-day mortality. (2) There was a consistent tendency for all scoring systems to be less effective in predicting outcomes in ATD users than in controls. (3) Modifications of risk scoring systems should be explored to improve their efficiency in users of antithrombotic drugs.

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PTU-021 EOSINOPHILIC OESOPHAGITIS: DIAGNOSTIC RATES CAN BE IMPROVED BY EDUCATION

A Davies*, O Burdall, C Streets. *Upper Gastrointestinal Surgery, Bristol Royal Infirmary, Bristol, UK*

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Introduction Eosinophilic oesophagitis (EoE) is a chronic immune-mediated disease associated with oesophageal dysfunction, most commonly dysphagia. Recent consensus guidelines recommend obtaining biopsies from both the proximal and distal oesophagus in patients with dysphagia who have normal endoscopies.[1] This study aims to investigate the adherence to these guidelines and familiarise clinicians with this pathology.

Methods The study included 2 cycles, each of 6 months. Cycle 1 was from 1/5/12 until 6/11/12. Cycle 2 extended from 1/1/13 until 6/7/13. For each cycle the hospital database was used to review the records of all patients that underwent endoscopies for dysphagia as the primary symptom. All normal endoscopies were included. The number of biopsies and histology results were recorded. Following the first cycle recommendations and information was displayed in all endoscopy rooms and the results fed back to the lead clinicians before cycle 2 was carried out.

Results In Cycle 1, 258 patients underwent endoscopies for dysphagia with 75 considered endoscopically normal. In cycle 2, 263 endoscopies were carried out, of which 74 appeared normal. Biopsies were taken from 27% (n = 20) of the normal endoscopies in Cycle 1, with 5% (n = 1) of those biopsied proving histologically positive for EoE. This increased in Cycle 2 to 45% (n = 33) biopsied and EoE present in 12% (n = 4).

Conclusion Eosinophilic oesophagitis is an important diagnosis that may result in complications if missed and not specifically treated. Oesophageal biopsies are underperformed in patients with normal endoscopies. An improvement in biopsy rates through education has increased the number of successful diagnoses at this Trust. However, continued improvement is required as clinicians need to be vigilant regarding this this pathology when developing a differential diagnosis for dysphagia.

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PTU-022 A NOVEL PHOTOMETRIC STEREO IMAGING SENSOR FOR ENDOSCOPY IMAGING: PROOF OF CONCEPT STUDIES ON A PORCINE MODEL

[1]A Poullis*, [1]C Groves, [2]G Slabaugh, [3]K Emrith, [3]M Smith. [1]*Gastroenterology, St George's Hospital;* [2]*Department of Computer Science, City University, London, UK;* [3]*Bristol Robotics Laboratory, University of the West of England, Bristol, UK*

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Introduction The American Society of Gastroenterology Endoscopy led Preservation and Incorporation of Valuable Endoscopic

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