monotherapy or as first line combination treatment as well as a rescue modality after failed conventional endoscopic treatment.

Competing interests None declared.

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OC-143 ARTIFICIAL NEURAL NETWORK FOR THE RISK STRATIFICATION OF ACUTE UPPER GASTROINTESTINAL BLEEDING: MULTICENTRE COMPARATIVE ANALYSIS VS THE GLASGOW BLATCHFORD AND ROCKALL SCORES

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Introduction Most patients presenting with acute upper GI bleeding (AUGIB) are at low risk of requiring clinical intervention or death. Nevertheless, risk assessment conventionally involves inpatient upper GI endoscopy which increases the cost of care. Non-endosopic risk scores, Glasgow Blatchford (GBS) and admission Rockall, are limited by poor specificity. The aim of this study was to develop an Artificial Neural Network (ANN) for the non-endoscopic triage of AUGIB.

Methods An internal cohort of patients with AUGIB (n=400) admitted to the emergency departments of two teaching hospitals, January 2008 to December 2009, was retrospectively identified. A separate group with AUGIB (n=200) admitted to a third teaching hospital made up the external validation cohort. The composite endpoint was clinical intervention (blood transfusion, endoscopic therapy or surgery) and/or death. A multi-layered perceptron ANN model was generated using back propagation and logistic activation function with hidden nodes to make a prediction from 30 input variables. Training and validation of the internal cohort was performed through a "leave one out" analysis. Optimisation was carried out by excluding statistically insignificant variables and the ANN validated in the external cohort. ROC curve analysis was used to compare the ANN, GBS and Rockall scores.

Results Demographics for patients in the internal cohort were: mean age 57 years, 70% male, 39.5% met the composite endpoint (22.3% endoscopic therapy, 25.3% transfusion, 1.5% surgery, 3.2% 30-day mortality). The external cohort was not significantly different apart from increased NSAID/anticoagulant use, smoking and prior history of AUGIB. In predicting the composite endpoint the ANN model performed well on external validation and had a significantly higher specificity (87.8%, 95% CI 81.4 to 92.7) than the other scores (GBS: 11.1% 95% CI 7.10 to 12.2, admission Rockall: 19.1% 95% CI 14.3 to 21.0, complete Rockall: 28.3% 95% CI 19.2 to 34.0). The ANN also had significantly higher PPV (77.1% 95% CI 65.1 to 86.4) (GBS: 42.9% 95% CI 40.3 to 43.5, admission Rockall: 45.0% 95% CI 41.8 to 46.3, complete Rockall: 60.2% 95% CI 55.2 to 63.4). In contrast the sensitivity (61.7%) and NPV (77.5% 95% CI 71.8 to 81.8) of the ANN model was inferior to the GBS score (100%) and (100% 95% CI 95.4 to 100). The ANN was significantly more accurate 0.83 (95% CI 0.77 to 0.90) than the GBS 0.56 (95% CI 0.46 to 0.65) or admission Rockall scores 0.60 (95% CI 0.51 to 0.69).

Conclusion An ANN model can accurately predict need for intervention and outcome in patients with acute upper gastrointestinal bleeding and compares favourably with established risk scores.

Competing interests None declared.

OC-144 THE MANAGEMENT OF LOW-RISK PRIMARY UPPER GASTROINTESTINAL HAEMORRHAGE IN THE COMMUNITY: A 5-YEAR OBSERVATIONAL STUDY

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Introduction Acute upper gastrointestinal haemorrhage is a common medical emergency, initially managed with in-patient care. Bleeding stops spontaneously in over 80% of cases indicating patients with low-risk upper gastrointestinal haemorrhage may be more optimally managed in the community, without the need for admission to hospital. We have previously shown that using the Glasgow Blatchford Score (GBS) is an accurate method of identifying low risk cases.[1 2]

Aims To assess the safety of managing patients with low risk upper gastrointestinal haemorrhage without admission to hospital.

Methods Prospective/retrospective study of all patients presenting to a UK teaching hospital with low risk upper gastrointestinal haemorrhage who were managed without admission to hospital over 5 years. Low risk was defined as: GBS ≤2, age <70 years, no other active medical problems, not taking warfarin, suspected non-variceal bleed. Outcome measures were the need for intervention (blood transfusion, endoscopic therapy or surgery) and death.

Results 142 patients fulfilled the inclusion criteria, and were managed without admission to hospital. Upper GI endoscopy was preformed at a median of 1 day (range 0–18 days). No patients required endoscopic intervention, blood transfusion or surgery. The 28-day mortality was nil. 41 patients had a normal endoscopy. 11 had significant endoscopic findings (peptic ulceration =10, oozing Mallory Weiss tear =1) but did not require intervention. Significant endoscopic findings were unrelated to age (p=0.547), and four patients <30 years had significant findings (peptic ulceration n=3, Mallory Weiss tear n=1).

Conclusion Patients presenting with a primary upper gastrointestinal haemorrhage aged <70 years with a GBS of ≤2 are at low risk, and can be safely managed in the community. All such patients should have an upper GI endoscopy. The findings in this paper were presented to the NHS Innovation Challenge Prize Final, London, 29th September 2011.

Competing interests None declared.

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OC-145 ENDOSCOPIC PROCEDURE RELATED TOLERABILITY: DISCOMFORT IS WORSE AT COLONOSCOPY BY COMPARISON TO DISTRESS AT GASTROSCOPY?

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Introduction Patients often find endoscopic procedures difficult to tolerate. This may reflect actual "discomfort" of the procedure (eg, due to abdominal bloating) or distress (eg, related to intubation). While previous studies have identified factors that may influence procedural tolerability, no study has tried to discriminate specifically between discomfort and distress. We sought to prospectively evaluate these outcomes in patients undergoing colonoscopy, flexible sigmoidoscopy and gastroscopy.