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

Competing interests None declared.

REFERENCE

Artificial Neural Network for the Risk Stratification of Acute Upper Gastrointestinal Bleeding: Multicentre Comparative Analysis vs the Glasgow Blatchford and Rockall Scores

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-endoscopic 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 perception 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 (87.2%, 95% CI 81.4 to 92.7) than the other scores (GBS: 11.1% 95% CI 7.1 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) than GBS (42.9% 95% CI 40.3 to 45.3), 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.

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

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.

Competing interests None declared.