UK Comparative Audit of Acute Upper Gastrointestinal Bleeding: clinical management and the use of blood

Need for the audit

Acute upper gastrointestinal bleeding (AUGIB) is a common medical emergency, with approximately one presentation reported every 6 minutes in the UK and an annual incidence rate of 134 per 100,000. It has a 10% mortality and accounts for approximately 11% of packed red cells used in hospitals across England.

Since the results of the 2007 UK AUGIB audit involving data on 6750 patients from 212 hospitals were published, there have been several initiatives to improve management of AUGIB. These range from improvements in service delivery including provision of 24/7 access to emergency endoscopy and ready access to interventional radiology, to development of international guidelines on management of variceal & non-variceal AUGIB. Furthermore, this audit helped inform several subsequent publications including the 2012 NICE guidelines on AUGIB, the CHROME statement on services for AUGIB and the 2015 NCEPOD report on gastrointestinal bleeding.

In addition, there have been changes in clinical practice with regard to pre-endoscopic, endoscopic and post-endoscopic management of AUGIB. These include development of new risk assessment scores, changes to the threshold for blood transfusion, guidance on optimal timing of endoscopy, and improvement of medical and endoscopic therapies. Furthermore, given the influence of concurrent medications and comorbid conditions on outcomes it has become increasingly important to take decisions and plan appropriate management for patients with multiple medical comorbidities.

Therefore, it seems an appropriate time to repeat a UK audit of AUGIB, to assess improvements that have been made regarding resource availability, clinical assessment, management, transfusion practice and patient outcomes. We will also aim to explore the role GI trainees can play in improving care, given the changes expected to shape of training, so that a well-trained future workforce is available to deliver high quality standardised care to all patients. Similar to 2007 audit, participating sites will receive data specific to their hospital so that they can compare their practice with the UK wide results.

Objectives of the audit

- To collect data from all acute admitting hospitals in UK regarding numbers, demographics and outcomes of patients presenting with AUGIB
To audit resource availability, both within normal working hours and out-of-hours including at weekends, regarding access and use of
- Emergency endoscopy
- Transfusion
- Interventional radiology and
- Surgery.

To audit time taken from presentation to undertake above mentioned procedures and measure practice against UK/NICE standards/AUGIB care bundle recommendations, and 2007 audits results.

To audit use of endoscopic therapies for patients with AUGIB against UK / NICE standards and 2007 audit results, and measure variation in practice

To audit use of specific drug therapies (e.g. PPIs, terlipressin, antibiotics, tranexamic acid) against UK / NICE standards/AUGIB care bundle, compare with 2007 audit results, and measure variation in practice.

To audit transfusion practices for these patients including thresholds for red cell transfusion and use of FFP, platelets and other products against NICE guidelines for blood transfusion (2015)/AUGIB care bundle and 2007 audit results, and to measure variation in practice.

To quantify the use of antiplatelet and anticoagulant medications in patients presenting with AUGIB, and to audit the management of these specific patients against UK / NICE standards/ UGIB care bundle and compare with 2007 audit results

To measure the use and impact of risk scoring systems for patients presenting with AUGIB and comparing the utility of commonly used risk scores i.e. Glasgow-Blatchford score, Rockall score, other risk scores and the recently developed ABC score.

To make recommendations based on findings with respect to out of hours care, blood use, endoscopy and any other factors that are highlighted as having a clinically significant impact on patient outcomes

To explore the use of machine learning to develop tools for risk assessment.

To review practices for the management of major haemorrhage including notification to the blood transfusion laboratory when there is no further requirement for blood products.

To review the involvement of trainees in the management of GI hemorrhage.

Highlights of this audit

Comparative audit involves collection of organisational and individual patient data from hospitals, with feedback of the results so sites can compare their practice with others. This is linked with strategies for improvement in practice involving education and the development of achievable benchmarks. In other areas of medicine, clinicians and hospital managers have found the comparative data presented in this way to be sufficiently persuasive to justify introducing change locally. Previous audits headed by the Royal College of Physicians have been successful in demonstrating improvements in practice using comparative audit in areas such as myocardial
infarction and stroke. There is every reason to believe that this audit of gastrointestinal bleeding, as a collaboration between UK hospitals, NHS Blood and Transplant (NHSBT), Royal College of Physicians (RCP), British Society of Gastroenterology (BSG), British Association for Study of Liver diseases (BASL), Scottish Society of Gastroenterology (SSG), Association of Upper Gastrointestinal Surgeons (AUGIS) and British Society of Interventional Radiology (BSIR) can have similar positive effects upon performance.

**Mechanism of data collection**

Previous national blood transfusion audits have been very successful with a high uptake by hospitals and important recommendations have followed. Their success is in part due to the identification of suitable audit leads to manage and run the audit locally. The success of this audit depends upon participating hospitals identifying an audit lead (and assistant staff) who will spend a few hours collecting and returning data. Participating hospitals will contribute data for the audit via internet-based audit tools.

**Identifying an audit lead**

We anticipate the audit leads will predominantly be gastroenterology Specialist Registrars, supported by a Consultant Gastroenterologist, although they may be from any discipline (such as Haematology and blood transfusion, general medicine, or a member of the hospital audit department). The task is for 2 months: 3rd May – 2nd July 2022. The audit lead will be given a unique code which he or she will use to enter individual patient data, but that can be shared with other staff in the hospital, such as ward, endoscopy or A&E staff, to assist with data entry. The audit lead will be the point of contact for the NCA project team and will be responsible for ensuring complete and accurate data collection. Each site also needs to identify one or more members of clerical staff to be responsible for case identification. This is a key role and will involve daily searching of admissions books in admitting wards, as well as liaising with gastroenterology and medical registrars and endoscopy units to identify every patient with a suspected (or confirmed) upper gastrointestinal bleed. (Full guidance will be given as to how to identify cases). The case identifiers in each site will enter on to the web tool the admission details of the potential cases and will give every case a unique identifier. The audit lead will then be given the details of the identified cases and will be responsible for deciding whether full case data needs entering. Reasons for not entering the full data will be required (e.g. haemoptysis not haematemesis at presentation), and must be entered on the web tool. The audit lead will then enter the full data for all appropriate cases. We expect each case to take around 30 to 40 minutes to complete using the online web-tool. Help boxes will be supplied for every audit question, and support will be available throughout the data collection period by e-mail and telephone, for both the case identifiers and the audit lead.
We recommend that the clinical lead for endoscopy in each participating hospital works closely with and provides support to the nominated audit lead.

The clinical lead for endoscopy and the audit lead will be listed as contributors in the audit report. The audit lead will also be able to cite this study on their curriculum vitae as a recognised participation in UK audit.

Operating the audit

All patients with a suspected upper gastrointestinal bleed will be identified for a period of two months from 3rd May until 2nd July 2022. Each hospital will collect and enter data on those identified until patient death in hospital, hospital discharge or until the patient has been in hospital more than 28 days following their upper GI bleed. (This means some patient data will be collected and entered after the recruitment periods if the patient is still in hospital). Data must be entered in full by 2nd August 2022.

The clinical lead for endoscopy will be asked to complete a short organisational audit tool and a trainee questionnaire which will also be accessed via the NHSBT website.

After the audit

The audit will report its findings by December 2022, and each hospital will receive a written report that will allow it to compare its own practice with that of other participating hospitals.

Hospitals will be able to access their raw data during and after the audit data collection period, enabling them to conduct their own local analysis should they wish. Participating hospitals will be offered a Microsoft PowerPoint slide show that will illustrate the main findings of the audit and will allow comparison of the practice of individual hospitals against their regional peers, as well as against the national picture. The audit leads are encouraged to present their individual audit results locally.

It is anticipated that the National Comparative Audit of Blood Transfusion will make presentations on the audit findings in several venues and take every opportunity to stimulate discussion on the use of blood in this clinical area.

Data to be collected from patient’s case notes & hospital IT systems:

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Age, gender, ethnicity.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical history</td>
<td>Admission date, time, clinical area, and admitting team. Referral patterns (e.g. to Gastroenterology / Surgery/ critical care), past</td>
</tr>
<tr>
<td>Laboratory tests</td>
<td>medical history, signs and symptoms at presentation, observations at time of presentation for the clinical episode.</td>
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<td>--------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>Medications</td>
<td>Results of blood tests performed for the clinical episode.</td>
</tr>
<tr>
<td>Interventions</td>
<td>Details of specific medications administered with dose and duration.</td>
</tr>
<tr>
<td>Clinical outcomes</td>
<td>Details of interventions (endoscopy, transfusion, surgery, interventional radiology) with information on the time of intervention and outcomes.</td>
</tr>
<tr>
<td></td>
<td>Details on clinical outcomes including final diagnosis, safe discharge, in-patient deaths and cause of death, need for a repeat procedure etc.</td>
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</tbody>
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**Organisational audit**

This will include a questionnaire to assess organisational factors such as the presence or absence of protocols on AUGIB, and their content, including use of risk assessment tools and guidance on blood transfusion. We will also ask whether consultants have additional on call GIM commitments as well as participating in a GI bleed rota. Other questions will measure availability of emergency endoscopy, interventional radiology (including transfer of patients and repatriation policies), surgery and endoscopy nurse cover. Data on all the above will be requested separately for in and out of hours including at weekends.

**Training resources audit**

There will be an additional section exploring current involvement and training opportunities for GI trainees in management of AUGIB. This will be completed by the clinical lead for gastroenterology or endoscopy. We will also seek information from individual trainees on their competence levels for management of AUGIB.
Members of UK Wide Acute Upper GI Bleeding Audit Steering Committee

**Clinical**
Dr. Gaurav Nigam – Clinical Audit Lead
Dr Andrew Douds – Chair, British Society of Gastroenterology Clinical Services and Standards Committee
Dr Lise Estcourt - Clinical Lead for the National Comparative Audit of Blood Transfusion
Dr Sarah Hearnshaw – Newcastle upon Tyne NHS Foundation Trust
Professor Vipul Jairath – University of Western Ontario, Canada
Dr Jo Leithead – NHS Forth Valley, BASL Rep
Mr Bhaskar Kumar- Norfolk & Norwich University Hospitals NHS Foundation Trust, AUGIS Rep
Professor Richard Logan – University of Nottingham
Professor Mike Murphy - Oxford University Hospitals NHS Foundation Trust, NHSBT Rep
Dr Kate Oakland – Director of Medical Services, HCA Healthcare
Dr Elizabeth Ratcliffe – Wigan NHS Foundation Trust, BSG Trainee Rep
Professor Adrian Stanley – NHS Greater Glasgow & Clyde, BSG Rep
Professor Simon Travis – Oxford University Hospitals NHS Foundation Trust
Dr Raman Uberoi - Oxford University Hospitals NHS Foundation Trust, BSIR Rep

**Audit & Statistics**
Mr John Grant-Casey – Programme Manager, National Comparative Audit of Blood Transfusion
Mr Paul Davies – Senior Clinical Audit Facilitator, National Comparative Audit of Blood Transfusion
Ms Paula Dhiman – Statistician, Oxford University