University Hospitals of Derby and Burton
NHS Foundation Trust

Gastro Intestinal Haemorrhage (Upper) in Adults- Full Clinical Guideline

CG-T/2024/043

Introduction

This Clinical Guideline relates to all adult patients with acute upper GI haemorrhage (AUGIB) at Royal Derby Hospital (RDH) or Queen's Hospital Burton (QHB), either presenting as new admission or occurring during an admission.

Initial Management (pre endoscopy)

Recognition: Patients with haematemesis, melaena or coffee ground vomiting in the absence of an alternative diagnosis (e.g. bowel obstruction) trigger the acute upper GI bleeding (AUGIB) care bundle. See appendix 1

Patients with suspected AUGIB should have urgent observations performed using the National early warning score (NEWS) the AUGIB care bundle sound be printed and completed for each episode (Koha for RDH or UGIB bundle on V6 for QHB) .

Initial Resuscitation:

First priority in management of patient with gastro-intestinal haemorrhage is resuscitation: IV crystalloid should be commenced in all patients with an AUGIB via a wide-bore cannula. In haemodynamically unstable patients, 500ml of intravenous crystalloid should be administered in < 15 minutes.

Assess severity:

Glasgow Blatchford scoring (GBS) should be calculated at presentation with AUGIB. This is available on the iCM/Lorenzo Endoscopy Request Form (RDH) or via online calculators e.g. https://www.mdcalc.com/glasgow-blatchford-bleeding-score-gbs . Patient presenting with an AUGIB with a GBS ≤ 1 should be managed as per the 'Low risk GI bleed pathway" and if appropriate referred to MSDEC pathway with safety-netting advice. See links on Koha (RDH) or V6 (QHB).

Patients with signs of **on-going haemodynamic instability** should be referred for critical care review.

AUGIB presenting to the QHB site who require urgent out-of-hour endoscopy, the QHB medical registrar should discuss with the QHB consultant in the first instance. If emergency transfer is required, the QHB registrar should then discuss with the on-call gastroenterologist at RDH regarding transfer. See CG-GASTRO/2017/015.

Blood transfusion in acute upper GI bleeding:

Clinical decisions on blood transfusion in AUGIB should be based on the full clinical picture taking into account: Age; co-morbidity (especially cardiac failure or ischaemic heart disease); presence of shock; poor tissue perfusion (capillary refill < 2 seconds and arterial lactate >2 mmol/L); and on-going brisk bleeding with haemodynamic instability.

Massive haemorrhage: If massive bleeding is suspected (defined by: blood loss greater than 1500 mL; a rate of blood loss >150 ml / min; shock not responsive to fluid resuscitation) activate the **massive haemorrhage pathway/protocol.**

Packed red cell (PRC) transfusion should be considered after assessment of loss of circulating blood volume. **PRC transfusion should be triggered if Haemoglobin <70 g/L or if on-going haemodynamic instability despite initial resuscitation with intravenous crystalloid**. The aim should be to achieve a haemoglobin level of 70-100 g/L. However, in the absence of shock or significant anaemia there is no indication for blood transfusion. 1 unit of packed red cells should be transfused and then haemoglobin repeated to guide further replacement (1 unit of blood should increase haemoglobin by 10-15 g/L)

A higher transfusion trigger of <80 g/L should be used in the presence of myocardial ischaemia, severe hypoxaemia and massive bleeding to achieve a haemoglobin level of 80-100 g/L. It should be noted that this higher transfusion trigger is not evidence-based and clinicians should be guided by clinical judgement with the aim of optimising global tissue oxygen delivery.

Platelets: Offer platelet transfusion, only if actively bleeding and platelet count < 50 x 10^9/L.

Fresh frozen plasma (FFP): Offer FFP to patients who are actively bleeding and have an INR > 1.5. In addition, correct with vitamin K (10 mg slow IV). For patients on warfarin see below. If a patient's fibrinogen level remains less than 1.0 g/L despite FFP use, offer 2 pools of cryoprecipitate as well.

Therapy for other concomitant medical conditions:

Aspirin: Continue low-dose aspirin for secondary prevention of vascular events.

NSAIDs (including COX2 inhibitors) should be discontinued at presentation in patients with an AUGIB.

Warfarin: In minor GI haemorrhage simply omit Warfarin. If active bleeding, reverse Warfarin with vitamin K 10mg IV and prothrombin complex concentrate (e.g. Octoplex 25-50 iu/kg). The risks of continuing Warfarin outweigh the risks of stopping it temporarily, even in patients with prosthetic cardiac valves. For management of patients taking newer direct-acting oral anticoagulants (DOACs) e.g. **Dabigatran**, **Rivaroxaban, Apixiban and Edoxoban** who present with a GI bleed see relevant guidelines on intranet or discuss with Haematologist.

Antiplatelet drugs: Patients presenting with AUGIB who take antiplatelet drugs / $P2Y_{12}$ inhibitors (e.g. Clopidogrel, prasugrel and ticagrelor) should have their treatment interrupted until haemostasis is achieved unless the patient has coronary artery stents, in which case, a decision should be undertaken after discussion with a cardiologist.

Pharmacological Therapy pre-endoscopy:

Proton Pump Inhibitors (PPI) should **NOT** be used before gastroscopy in patient presenting with AUGIB. It should only be commenced, if advised by a gastroenterologist.

Commented [SD1]: Thanks Nick. Agree a judgement call and does not apply to all.

Liver disease or known varices:

- Commence IV antibiotics – Co-amoxiclav 1.2g TDS. Mild penicillin allergy - ceftriaxone with oral switch to Ciprofloxacin, For severe Penicillin allergy IV/oral Ciprofloxacin
- Terlipressin 2mg QDS - 1st dose pre-endoscopy (review contraindications first).

- Terlipressin contraindicated in patients with ischaemic ECG, known ischaemic heart disease, ischaemic stroke or PVD. Particular consideration should be given to the risks vs. benefits in those with diabetes and the over 75 yrs. Instead use Octreotide 100mcg bolus followed by infusion 50mcg/hour for 48 hours

Tranexamic acid: There is little evidence to support the administration of Tranexamic acid in AUGIB's. It is recommended as part of the massive haemorrhage pathway but outside of that indication it should not be given unless advised by a gastroenterologist.

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Endoscopic Therapy:

Nil by Mouth: There is no need to place patients with GI bleed 'nil by mouth'. If they are likely to require endoscopy, they can drink clear fluids and take medication before gastroscopy. "Sip till send" applies to endoscopy patients. Allow clear fluids until reviewed by gastroenterologist.

Timing of endoscopy:

Upper GI endoscopy should be offered to patients admitted with suspected AUGIB within 24 hours of presentation. Patients with on-going haemodynamic instability will require more urgent endoscopy after resuscitation. At RDH Upper GI endoscopy should be requested using the electronic request form on Lorenzo. There is a daily inpatient endoscopy list 365 days per year at 13:30. Patients are allocated on a daily basis at 10am.

Commented [SD3]: Or patient being fed

At QHB request endoscopy as a V6 referral and discuss with the Service week Gastroenterology Consultant weekdays 09:00-16:30, outside of these hours or at weekends please discuss with Gastroenterologist at RDH.

If patient is actively bleeding and remains unstable despite adequate resuscitation, discuss with on-call gastroenterologist – at RDH available 24/7, who will make a decision on whether to proceed to emergency out-of-hours gastroscopy in theatre and will advise on other aspects of management.

Patients requiring emergency gastroscopy out of hours will undergo (or in some cases of massive GI bleed as an emergency in hours) this procedure in theatres with anaesthetic assistance. The anaesthetist will make a decision on the use of sedation or general anaesthesia with airway intubation, but the usual practice for these patients will be to undergo gastroscopy under general anaesthetic.

Subsequent management will be guided by the findings at gastroscopy. It is the responsibility of the ward team to review the results of the endoscopy and act on any treatment recommendations.

Consent: The requesting team is responsible for initiating consent and completing the consent form. This form will be counter signed by the endoscopist performing the procedure.

Although most trainees are not able to undertake endoscopic procedures they still have an integral role in the consent process.

Consent Process: All forms of GI endoscopy carry a small risk and so written consent is required. In addition, treatment options will generally be discussed in advance of the actual procedure being carried out. The consent process will therefore usually consist of 2 stages; the first being the provision of information, discussion of options and initial decision (verbal or written) and the second being confirmation that the patient still wants to go ahead.

For all GI endoscopy procedures an inpatient information leaflet will be sent to the ward for the patient to read. These are also available on the internet under “Guidelines”/ “Endoscopy”/ “Patient information Sheet”.

The standard consent form provides space for a health professional to provide information to patients and to sign confirming that they have done so. If the health professional providing the information is not competent to undertake the procedure then a health professional that is capable of undertaking the procedure must complete the confirmation of consent section of the form. The health professional carrying out the procedure is ultimately responsible for ensuring that the patient is genuinely consenting to what is being done.

It is Trust policy that for endoscopic procedures the consent form should be signed by a member of the requesting team and that confirmation of consent should be signed by the endoscopist performing the procedure. This applies to elective and emergency procedures.

In an emergency, full compliance with written consent may not be possible and in these circumstances verbal consent can be used but must be fully documented in the medical notes.

NON VARICEAL HAEMORRHAGE

AT ENDOSCOPY

Low risk ulcers:

Patients whose endoscopy shows a clean ulcer base, black or red spots within the ulcer have a low risk of re-bleeding and should not be treated endoscopically.

Ulcers with major stigmata of recent haemorrhage:

Any ulcer with active bleeding, a non-bleeding visible vessel, or adherent blood clot should receive dual modality endoscopic therapy wherever visualization/scope position allows. Blood clots should be removed to allow inspection of underlying lesion.

Injection therapy: inject 16ml 1:10 000 adrenaline solution in normal saline in quadrants around the bleeding point, then into the bleeding vessel. Smaller volume of adrenaline may be used in oesophagus.

In addition to injection, an additional modality of one of heater probe, APC or clips must be used unless visualization/scope position precludes.

Haemospray – this is reserved for failure of any of the above haemostatic techniques

Urease Test / Biopsy:

All patients with peptic ulcer bleeding should be tested for *Helicobacter pylori* (with biopsy methods) at the initial endoscopy prior to commencing proton pump therapy. If endoscopic determination of *helicobacter pylori* status has not been undertaken then the ward team will need to arrange faecal antigen testing for *helicobacter pylori*. A one week course of eradication therapy should be prescribed for those who test positive. A further 3 weeks of ulcer treatment should be given or until follow-up endoscopy undertaken. See Clinical Guideline on Treatment of Helicobacter Pylori for current recommendation.

Commented [SD4]: Is there any evidence for duration of PPI course. I usually give for longer and continue until they have had a repeat scope to check for healing of GU or on anitiplatelets or antocoagulants

Continued Uncontrolled Haemorrhage:

If endoscopic therapy or 2nd look endoscopy has been unsuccessful and the patient remains unstable or with signs of on-going bleeding, then CT angiography +/- catheter embolisation should be considered.

Discuss with On Call general surgical team before referring to radiology, in view of potential complications of endovascular treatment (e.g. bowel ischaemia).

All referrals must come from consultant or specialist trainee (registrar) and be accompanied by an Lorenzo request. Usual practice is to proceed to CT angiogram first (in-hours - contact Hot CT radiologist on ext. 89462, “Out-of-hours” contact Call Cross Sectional radiologist via switchboard). If bleeding confirmed and intervention indicated, then contact interventional radiologist in angio suite or on–call)

If angiography is not successful proceed to surgery.

Second look endoscopy:

Consider a repeat endoscopy, with treatment as appropriate, for all patients at high risk of re-bleeding (e.g. where endoscopic therapy administered), particularly if there is doubt about adequate haemostasis at the first endoscopy. Also consider where visualisation of bleeding site was incomplete. The endoscopist performing initial procedure will make this decision and should book the procedure if required.

MANAGEMENT FOLLOWING ENDOSCOPY

Proton Pump Inhibitors (PPI):

See endoscopy report for guidance as to whether oral or IV PPI are required. If therapeutic endoscopic procedure performed, or if advised by endoscopist, commence IV Omeprazole 40mg QDS for 72hours (do not use 80mg IV bolus followed by continuous infusion). Alternatively high dose oral PPI has been shown to be equivalent at a minimum dose of omeprazole 40mg BD or equivalent for the first 7 days.

In non-NSAID users, maintenance anti-secretory therapy should not be continued after successful healing of the ulcer and *Helicobacter pylori* eradication.

Patients with healed bleeding ulcers who test negative for Helicobacter pylori require concomitant PPI therapy at the usual daily dose if NSAID's, aspirin and COX-2 inhibitors are indicated.

Oral intake after endoscopy: Patients can eat and drink after endoscopy, unless advised not to by endoscopist (e.g. high risk of re-bleed). If booked for second look endoscopy can have breakfast, then clear fluids only up to 2 hours before second look endoscopy.

Anti-thrombotics: Patients where antithrombotic therapy is interrupted should have a clear plan to resume treatment once haemostasis is achieved. In most cases this can be started 1 or 2 days after successful endoscopy but a review of the indications and risk / benefit of antithrombotic therapy should be undertaken.

Follow up: All patients admitted to RDH who require follow up after admission with non-variceal GI haemorrhage should be given an appointment to see Upper GI Clinical Nurse Specialist Ann Stokes in the outpatient department. Patients admitted to QHB will need discussion with the gastroenterologist.

Post *helicobacter pylori* eradication therapy will need Faecal Antigen Test for *helicobacter pylori*, 2 weeks after oral PPI therapy stopped.

Patients who have bled from gastric ulcers should undergo repeat endoscopy approximately six weeks after discharge from hospital to confirm ulcer healing and exclusion of malignancy. PPI therapy should be continued until that point.

Endoscopic confirmation of duodenal ulcer healing following *H pylori* eradication is not necessary, although if need to continue NSAIDs should be re-endoscoped on PPI.

VARICEAL HAEMORRHAGE

AT ENDOSCOPY:

Oesophageal Varices: Use band ligation in patients with upper gastrointestinal bleeding from oesophageal varices.

Trans-jugular Intrahepatic Porto-systemic Shunt (TIPSS) if bleeding from oesophageal varices is not controlled by band ligation. Failure of endoscopic therapy should be treated with Sengstaken Tube or Denis Stent as a bridge to TIPSS.

Gastric Varices:

Endoscopic injection of *N*-butyl-2-cyanoacrylate to patients with bleeding gastric varices is recommended therapy. Thrombin is an acceptable alternative to *N*-butyl-2-cyanoacrylate when endoscopy is being performed out of hours in general theatre. Patients in whom thrombin is ineffective require transfer to ICU for initial control of bleeding with a Sengstaken tube, with a view to *N*-butyl-2-cyanoacrylate injection or TIPS the next day.

Band ligation is not recommended as a treatment for gastric varices. The exception is at or just below the GOJ in type-1 gastric varices (constitute an extension of the oesophageal varices down the lesser curve). For other gastric varices (i.e. not type 1), if bleeding continues in an out-of-hours situation, despite thrombin injection, the preferred management is placement of Sengstaken tube with repeat gastroscopy the next day.

TIPSS if bleeding from gastric varices is not controlled by endoscopic injection.

If bleeding gastric varices present, banding of oesophageal varices should be avoided.

POST ENDOSCOPIC MANAGEMENT

1. Commence IV Co-amoxiclav 1.2g TDS if not already commenced. Continue for 5 days (typically switch to oral after 48hrs).
2. Terlipressin 2mg QDS if not already commenced (Review contraindications first). Stop at 72hrs if no signs of further bleeding.
3. Terlipressin contraindicated in patients with ischaemic ECG, known ischaemic heart disease, ischaemic stroke or PVD. Particular consideration should be given to the risks v's benefits in those with diabetes and the over 75 yrs. Instead use Octreotide 100mcg bolus followed by infusion 50mcg/hour for 48 hours
4. Prescribe Sucralfate 1g QDS for 14 days to reduce post band ligation ulceration
5. Do not prescribe Omeprazole. This is no longer recommended in variceal bleeding.
6. Transfuse to Haemoglobin>70g/L
7. Lactulose 20ml TDS in patients with cirrhosis– aim for bowels open twice daily

Oral intake after endoscopy: Allow clear fluids and medication post endoscopy. Can eat and drink if conscious level allows next day. Avoid NG tube insertion for the first 24 hours.

Second look inpatient endoscopy: For variceal bleeding this is only required when there are concerns about successful therapy. This will need to be organised by ward doctors only if required.

SECONDARY PREVENTION: At discontinuation of Terlipiressin, commence Carvedilol 6.25mg OD, increasing to 12.5mg OD after 1 week if tolerated.

A repeat OGD with a view to further band ligation therapy should be arranged for 4-6 week.

BALLOON TAMPONADE:

A Sengstaken tube should be passed by a person experienced in its use. This will usually be a consultant gastroenterologist after endoscopy has failed to stop bleeding, or if access to endoscopy is delayed.

Patients who require a Sengstaken tube to control bleeding are at great risk of aspiration and should be intubated to secure the airway and prevent aspiration prior to insertion of the Sengstaken tube.

Most patients will have a Sengstaken tube inserted following a gastroscopy that has failed to achieve adequate control bleeding when endotracheal intubation has already been undertaken for general anaesthesia.

Occasionally a patient will require insertion of a Sengstaken tube prior to endoscopy in a clinical area due to life threatening variceal haemorrhage. This should only be done as a bridge to emergency endoscopy in general theatres or transfer to ICU and will require airway protection as above.

- Note distance to GOJ if following endoscopy
- Lubricate Sengstaken tube
- Pass into the stomach via the mouth
- If being inserted following endoscopy, the endoscopist should if able, re-pass the endoscope to confirm the gastric balloon is in the stomach before inflation step.
- Inflate the gastric balloon with 300ml air and clamp
- The tube should be withdrawn gently until the balloon is opposed to the gastric cardia and then weighted with 500ml bag of IV fluids and a note made of the tube's position relative to the incisors/gums.
- Inflation of the oesophageal balloon should not be undertaken unless directed to by a consultant gastroenterologist
- Confirm tube position with chest x-ray
- The position of the tube should be recorded hourly.
- The gastric and oesophageal aspirate ports should be left on free drainage and aspirated hourly.

Within 24 hours arrangements should be made for a repeat gastroscopy and the balloon deflated immediately prior to the endoscopy.

References

1. British Society of Gastroenterology (BSG)-led multi-society consensus care bundle for the early clinical management for acute upper gastrointestinal bleeding. Siau K, Hearnshaw S, Stanley AJ, et al. *Frontline Gastroenterology* 2020; 11:311-323.
2. Gastro Intestinal Bleeding (Upper) – Low risk – Clinical Guideline – Derby Site Only. CG-GASTRO/2020/3527. https://derby.koha-ptfs.co.uk/cgi-bin/koha/opac-retrieve-file.pl?id=0a4b040cf9ef72ebe743683dfb632593
3. Acute upper gastrointestinal bleeding in over 16s: management. Clinical guideline CG141 2012. https://www.nice.org.uk/guidance/cg141
4. UK Guidelines for the Management of Variceal Haemorrhage in Cirrhotic Patients. Tripathi D, Stanley AJ, Hayes PC, et al. Gut Published online first: doi:10.1136/gutjnl-2015-309262. https://www.bsg.org.uk/clinical-resource/uk-guidelines-for-the-management-of-variceal-haemorrhage-in-cirrhotic-patients/
5. Guidelines for Obtaining valid consent gastrointestinal endoscopy procedures. Everett SM, Griffiths H, Nandosoma U, et al. Gut Pulished online first: doi:10.1136/gutjni-2016-311904.
6. Early use of TIPS in Patients with Cirrhosis and Varcieal Bleeding. Garcia-Pagan JC, Caca K, Bureau C, et al. NEJM 2010; 362:2370-2379.
7. Transfusion strategies for Gastrointestinal Bleeding. Villanueva C, Colomo A, Bosch A, et al. NEJM 2013; 368:11-21.
8. Massive Haemorrhage-Clinical Guideline-Derby Site. CG-HAEM/2017/005. https://derby.koha-ptfs.co.uk/cgi-bin/koha/opac-retrieve-file.pl?id=823ba75afcc2ac2f327d4a84a9bd5a44
9. Tranexamic acid for upper gastrointestinal bleeding. Bennett C, Klingenberg SL, Langholz E, et al. Cochrane Systemic Review – Intervention. Published 21 November 2014. https://doi.org/10.1002/14651858.CD006640.pub3
10. Comparison of different regimens of proton pump inhibitors for managing acute peptic ulcer bleeding. Neuman I, Letelier LM, Rada G, et al. Cochrane Systemic review 12th June 2013. https://doi.org/10.1002/14651858.CD007999.pub2
11. Proton pump inhibitor treatment initiated prior to endoscopic diagnosis in upper gastrointestinal bleeding. Sreedharan A, Martin J, Leontiadis GI, et al. Cochrane Systemic review 7th July 2010. https://doi.org/10.1002/14651858.CD005415.pub3

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