

Protocol for the management for patients admitted with upper GI bleeding.

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Patients with GI bleeding should normally be admitted under the care of the RMO, unless they are already under the care of a surgical team, in which case they will continue to be managed by that team. Patients at NGH should be discussed with the duty endoscopist at the RVI. Patients with suspected oesophageal varices should be discussed with the duty gastroenterologist as soon as possible. All such patients are to be referred to the GI team the next working day. *Massive GI bleeding may require immediate surgical attention.*

1. Assessment of the patient includes:

- recording of pulse (patients taking B-blockers may not develop a tachycardia), BP and peripheral perfusion state and the findings at rectal examination - fresh blood, altered blood, melaena or normal stool (FOB testing is of no value acutely).
- Assessment of airway & breathing, record resp rate and O² saturation.
- Check FBC, PT, U&E, LFTs.
- *X-match 4 units of blood from the admission area*, unless the bleed is felt to be clinically minor, in which case group & save suffices. Those identified as low risk by the Blatchford score, see Appendix 1, do not require Group & save.
- All patients must have iv access with at least a 16G iv cannula.
- Monitor pulse and BP half-hourly unless otherwise indicated.

2. Patients at high risk: will have evidence of hypovolaemia (pulse >100/min, BP < 100 mmHg), often have comorbidity, be >60 years of age and have a haemoglobin <10g/dl. *The surgical registrar must be informed early in all such cases - by the duty endoscopist or RMO.* See the attached Rockall score for prognostic indicators.

- **The first priority is RESUSCITATION to restore circulating volume.**
- Insert at least a 16 g IV cannula x 2. Start urgent volume replacement with **crystalloid** Patients should be considered for management on a HDU/ITU. Patients on HDU/ITU should be managed jointly between gastroenterologists and anaesthetists. CVP monitoring may be advisable in this environment (*fluid resuscitation must not be delayed whilst waiting for CV line insertion*).
- Insert a urinary catheter to monitor urine output, aim for output >30ml/hr.
- If the patient can guard his/her airway, a naso-gastric tube is not usually necessary, and may be detrimental.
- All such patients must be discussed with the duty endoscopist
- Do not use artificial colloid eg Hespan, Gelfusin.

Indications for transfusion

Factors to be considered :Chronicity, Co-morbidity, Cardiovascular state

Blood Transfusion

Trigger Hb values for transfusion will vary dependant on careful clinical assesment and the above.

1)Haemodynamically stable patients with no evidence of on going bleeding and no cardiovascular disease trigger Hb of 8g/dl ie no need for transfusion unless Hb <8g/dl.

If clear evidence of chronic rather than acute blood loss consider IV iron therapy as a single dose rather than transfusion (Cosmofer 200mg per gram Hb below normal up to maximum of 1g, or equivalent. Avoid in those known to have iron overload or if ferritin >300ug/L).

2)Haemodynamically stable patients with no evidence of on going bleeding but significant cardiovascular co-morbidity trigger Hb 9-10g/dl.

3) In haemodynamically unstable patients with evidence of active bleeding the aim is to achieve a Hb of 9g/dl.

Platelets

Platelet transfusion should be considered in haemodynamically unstable patients actively bleeding and a platelet count less than 75.

Fresh Frozen Plasma

IF prothrombin time >18s and active bleeding give 4 units of FFP.

In a patient requiring large transfusion once 4 units of blood have been transfused then give 1 unit FFP for every unit of blood to prevent a dilutional coagulopathy.

Cryoprecipitate

Consider use if fibrinogen <1g in an unstable actively bleeding patient. 10 units should be given. Cryoprecipitate should always be given together with FFP (usually 1L).

3. Endoscopy - There is a 24 hour endoscopy service

Ideally all patients with a GI bleed should be endoscoped within 24 hours of admission; this allows therapeutic intervention, identification of patients at high risk of further bleeding and the identification of those at very low risk who safely may be discharged early (see Appendix 1).

Those admitted during "normal hours" should be endoscoped on that day if at all possible- the endoscopy unit should be contacted to arrange this and to contact the relevant endoscopist. Those admitted after 4pm should be endoscoped the following day unless they fulfill any criteria for needing urgent endoscopy (see below). The endoscopy unit should be contacted at 09.00 the next day to arrange the endoscopy. If an urgent endoscopy is required the duty endoscopist should be contacted via switch board. If the patient is stable it is best to perform endoscopy on a routine list. **If in doubt discuss with the endoscopist on call.**

4. Indications for Urgent endoscopy:

- All patients at high risk as detailed above.
- Haemodynamically unstable patients
- Known or suspected varices
- Previous history of a major GI bleed
- *If an endoscopy would alter your immediate management and is safe*
- Endoscopic treatment (eg adrenaline injection) requires intensive subsequent monitoring and the further management, including indications for surgery are as for any other patient.

5. Indications for therapeutic endoscopy

- Oesophageal varices
- Peptic ulcer with active bleeding, visible vessel or adherent clot

6. Relative indications for surgery/ interventional radiology

- Continued uncontrolled bleeding or massive bleeding
- Active bleeding at endoscopy that does not immediately respond to endoscopic treatment.
- In-hospital re-bleed:
 - If patient has haemodynamically significant bleed (suggested by tachycardia, peripheral vasoconstriction and decreased urine output) then patient should *either* have repeat OGD in theatre with the possibility of continuing to laparotomy *or* proceed to laparotomy. Dependant on the site of bleeding identified at the index endoscopy an interventional radiological procedure may be an option. All patients with a re-bleed must be discussed with the duty endoscopist and the duty surgeon. Any repeat endoscopy must be performed with a consultant in attendance.
 - If patient has a small, haemodynamically insignificant re-bleed consider urgent repeat endoscopy.

All patients with evidence of rebleeding must be discussed with the duty surgeon and anaesthetist. Interventional radiology may be an alternative in unfit patients and such patients should be discussed with the duty radiologist.

7. Medical treatment

- Patients with clinically significant G-I bleed (including all those in section 2 above) and any patient undergoing therapeutic endoscopy should receive high dose proton pump inhibitor for 3 days, Omeprazole 80mg bolus dose and then 8mg/hr (drug should be made up with 100ml of normal saline). All other patients should receive standard dose PPI.
- Patients with portal hypertension should receive Glypressin 2mg iv bolus dose qds
- Patients should be nil by mouth for at least 4 hours before endoscopy but if stable should be fed afterwards as food acts as a good buffer of acid!

- Close ward supervision with twice daily Hb estimates for 48 hrs is essential.
- Patients who are Helicobacter positive should receive eradication therapy and have this confirmed by subsequent urea breath testing.
- Patients with a gastric ulcer should have a repeat endoscopy organised 6 weeks after discharge.
- Elderly patients with significant co-morbidity should be considered for life-long PPI therapy in addition to Helicobacter eradication.

Prognosis in Upper Gastrointestinal Bleeding

The following prognostic scoring system has been previously validated and was used in the National Audit of Acute Upper Gastrointestinal Haemorrhage (*Lancet 1996;347:1138-40*). The prognosis for re-bleeding and mortality are from that audit.

Risk Factor	Score 0	Score 1	Score 2	Score 3
Age (years)	<60	60-79	>80	-
Shock Pulse rate (bts/min) Systolic BP (mmHg)	No Shock <100 ≥100	Tachycardic >100 ≥100	Hypotension >100 <100	- - -
Comorbidity	None	-	IHD, Cardiac failure, any other major comorbidity	Renal or Liver failure, or disseminated malignant disease
Diagnosis	Mallory-Weiss lesion or no lesion observed & no stigmata of recent haemorrhage	All other diagnoses	Malignant lesions of UGIT	-
Stigmata of recent haemorrhage	No stigmata or dark spot in ulcer base	-	Blood in UGIT, adherent clot, visible or spurting vessel	-

Rebleeding and mortality rates according to risk score based on 2531 patients:

Score	Total number of patients	Rebleeding rate (%)	Total mortality (%)
0	143	4.9	0
1	278	3.2	0
2	323	5.0	0.3
3	402	12.2	2.0
4	450	13.8	4.2
5	367	16.9	7.9
6	238	29.4	15.1
7	202	39.6	19.8
≥ 8	128	47.7	39.1
<i>Overall</i>	<i>2531</i>	<i>16.4</i>	<i>7.2</i>

Patients with a score of 2 or less should be considered for early discharge.

Appendix 1: Identification of low risk patients - Blatchford Score

The Rockall score is the most widely used prognostic scoring system to identify re-bleeding or mortality and is recommended by the BSG however it requires an endoscopy to be performed. A large number of patients with upper GI bleeding will not require any intervention. Identification of those at lowest risk of needing intervention would allow their early discharge with out-patient investigation as appropriate.

The Blatchford score (Lancet 2000;356:1318-21) identified those with low risk of needing intervention (defined as needing blood transfusion, therapeutic endoscopy, surgery or having a substantial fall in Hb, re-bleed or death in hospital). The score was developed in 1748 patients and then validated against another 197 patients. Over 20% of patients were identified as low risk and had a 0.3% risk of requiring intervention. Overall the scoring system identified 99% of those requiring intervention and 32% of those not requiring intervention i.e. it seems to have a high degree of safety.

Low risk patients are identified as:

1. Blood urea **< 6.5 mmol/l**
2. Haemoglobin **>13.0 g/dl** for men or **>12.0 g/dl** for women
3. Systolic blood pressure **>110 mmHg**
4. Pulse **<100 beats per minute**
5. **No** history of syncope or melaena
6. **No** history of cardiac or liver disease

Therefore, patients identified at low risk can be considered for immediate discharge. All patients should be prescribed acid suppressant therapy at normal dose and an urgent out-patient endoscopy requested. If there is doubt over whether an endoscopy is appropriate then this can be discussed with one of the gastroenterologists.