

Upper Gastrointestinal Bleeding

Definition

Bleeding from GIT proximal to the ligament of Treitz.

Causes

- Idiopathic (20%)
- Peptic ulcer disease (35-50%) made up of duodenal ulcer (25%) & gastric ulcer (20%)
- Mallory-Weiss tear (10-15%)
- Gastroduodenal erosions (8-15%)
- Oesophagitis (5-15%)
- Oesophageal varices (5-10%)
- Vascular malformations (5%)
- Upper gastrointestinal malignancy (<5%)
- Rare causes (<5%):
 - Dieulafoy lesion (a vascular malformation of the proximal stomach)
 - Angiodysplasia
 - Osler-Weber-Rendu syndrome
 - Aortoenteric fistula
 - Bleeding diathesis
 - Ehlers-Danlos syndrome
 - Haemobilia (bleeding from the gallbladder or biliary tree)
 - Pancreatic pseudocyst and pseudoaneurysm
 - Gastric antral vascular ectasia
 - Pseudoxanthoma elasticum

Epidemiology

Risk Factors

- RF for PUD: NSAID, EtOH, FamHx, steroids, stress, smoking, Zollinger-Ellison
- Helicobacter pylori infection assoc with duodenal (90%) & gastric (75%) ulcers
- Low socioeconomic status
- ↑Age
- CRF

Risk factors for rebleeding & ↑mortality:

- Age > 60
- Shocked at admission
- Coagulopathy
- Pulsatile haemorrhage
- Cardiovascular disease

Assessment

History

- Melaena: ~75%
- Haematemesis incl coffee-ground emesis: ~50-66%
- Abdominal Pain
 - Epigastric pain: ~40%
 - Dyspepsia: ~20%
 - Diffuse abdominal pain: 10%
- Haematochezia (red or maroon stool): 15 to 20%
- Syncope/Presyncope also common.
- Weight loss: ~10%
- Jaundice:5%
- Past history of bleeding, anaemia, PUD, liver disease.
- EtOH & Drugs (RF: NSAIDs, steroids; Melaena confounders: iron, bismuth, red wine)
- Retching/vomiting precedes haematemesis episode in only 50% of Mallory-Weiss tears.

Examination

- Haemodynamic stability (colour, HR, BP, perfusion, GCS, signs dehydration, urine output)
- Stigmata of liver disease (jaundice, gynaecomastia, ascites, spider naevi, flap etc)
- Signs of portal hypertension (HSM, ascites, caput medusa, etc)
- Signs of a tumour (nodular liver, abdominal mass, lymphadenopathy)
- Subcutaneous emphysema and vomiting suggests Boerhaave syndrome

Differential Diagnosis

- Lower GI Bleeding - 4x less common - melaena & haematochezia can occur with both
- Abdominal aortic aneurysm
- Boerhaave syndrome
- Cholecystitis
- Coeliac sprue
- Dengue fever
- Disseminated intravascular coagulation
- Zollinger-Ellison syndrome
- Von Willebrand disease

Investigations

ECG

Bloods: serial FBC, G&H/XM(2-6units), coags, UEC, Ur:Cr ratio>200, LFT, BSL. Rarely gastrin.

Stool: Faecal occult blood test (Antibody or guaic - positive)

CXR: if ?aspiration, ?perforation, or preop. AXR not usually helpful

CT/USS: May identify an underlying cause (liver disease etc)

NGT aspirate: May confirm UGI bleeding - variable sensitivity & specificity

Endoscopy: To diagnose the cause, estimate prognosis, perform therapeutic haemostasis

- CI: Unco-operative patient, AMI, perforated viscus
- Cx (~1%): Aspiration pneumonia, perforation, Cx from coagulation, injections etc

Nuclear medicine scan or Angiography: may identify areas of active haemorrhage.

Management Aims

Stabilise patient

Identify source of bleeding and then definitive treatment to stop bleeding

Management

Resuscitation:

- A - Ensure airway patent & protected from blood or if ↓GCS
- B - O₂
- C - 2 x large bore IVC or a CVC. Replace vol. (crystalloid, blood if >2L crystalloid req. or Hb<8 or <10 with IHD). Inotropes PRN

Monitoring: Vitals/ECG, urine output

Correct coagulation: FFP, cryoprecipitate, platelets (if <50) & consider Ca²⁺ if transfuse >3units.

Minnesota tube: balloon tamponade for torrential variceal bleeding. Intubation first advised.

- Modified Sengstaken-Blakemore tube: allows oesoph aspiration→↓risk of pulm aspiration.
- 4 lumens (gastric, gastric & oesophageal balloons, prox oesophagus). Apply traction.
- Temp use 48-72hrs. Sig. risk of Cx (perforation, pulm aspiration)

Drug therapy:

- **Terlipressin** (vasopressin analogue) ± GTN infusion: For varices. 1st line. CI in IHD.
- **Octreotide** (somatostatin analogue): Conflicting studies - may be of use in varices. Dose 50-100mcg bolus then 25-50mcg/hr infusion.
- PPIs: No significant proven benefit, but still used in high risk peptic ulcer disease at high dose (e.g. **omeprazole** 80mg iv then 8mg/h x 72hrs)
- H₂- receptor antagonists: not been shown to be effective in UGIB.
- **Tranexamic acid:** may help. Studies needed.

Diagnostic endoscopy: Not shown to change mortality, transfusions or hospital.

Therapeutic endoscopy: Reduces rebleeding, need for surgery, mortality. Options:

- Banding and injection sclerotherapy for varices.
- Injection of adrenaline solution
- Injection of fibrin glue or thrombin (not widely available)
- Application of heat (Heater probe, laser, or multipolar coagulation (BICAP)) or clips

Surgery: E.g. TIPS (Transjugular intrahepatic portosystemic shunt), partial gastrectomy, or oesophageal transection. Usually only if endoscopy Mx fails or CI

Embolisation.

Disposition: Consider d/c if **Glasgow-Blatchford Score** is 0 i.e. Hb≥13(M) / 12(F)g/dL, sBP≥110mmHg, HR<100bpm, Ur 6.5mmol/L, No melena or syncope, and No Hx liver disease or HF else admit. May also consider admission based on age, amount of bleeding, other co-morbidities, coagulation state, number of rebleeds, social support, appropriate F/U +endoscopy can be arranged.

Glasgow-Blatchford Score	Score value
Blood urea (mmol/L)	
6.5-7.9	2
8.0-9.9	3
10.0-25.0	4
>25.0	6
Haemoglobin for men (g/L)	
120-129	1
100-119	3
<100	6
Haemoglobin for women (g/L)	
100-119	1
<100	6
Systolic blood pressure (mm Hg)	
100-109	1
90-99	2
<90	3
Other markers	
Pulse ≥100/min	1
Presentation with melaena	1
Presentation with syncope	2
Hepatic disease*	2
Cardiac failure†	2

*Known history, or clinical and laboratory evidence, of chronic or acute liver disease.
†Known history, or clinical and echocardiographic evidence, of cardiac failure.

Table 1: Admission risk markers for GBS⁵

Prognosis

Mortality ~10% in patients admitted with an UGIB. 4% in PUD. 50% in varices.

Rockall scoring system for risk of re-bleeding/death after hospital admission:

Variable	Score: 0	Score: 1	Score: 2	Score: 3
Age (yr)	Less than 60	60 to 79	over 80	
BP & HR (Shock)	HR<100, sBP>100	HR>100, sBP>100	HR>100, sBP<100	
Co-morbidity	Nil major		Cardiac	CRF, liver failure, Ca
Diagnosis	Mallory-Weiss tear	All other diagnoses	GIT malignancy	
Endoscopic stigmata of recent bleed	None or dark spot		Blood in upper GIT, adherent clot, spurter	

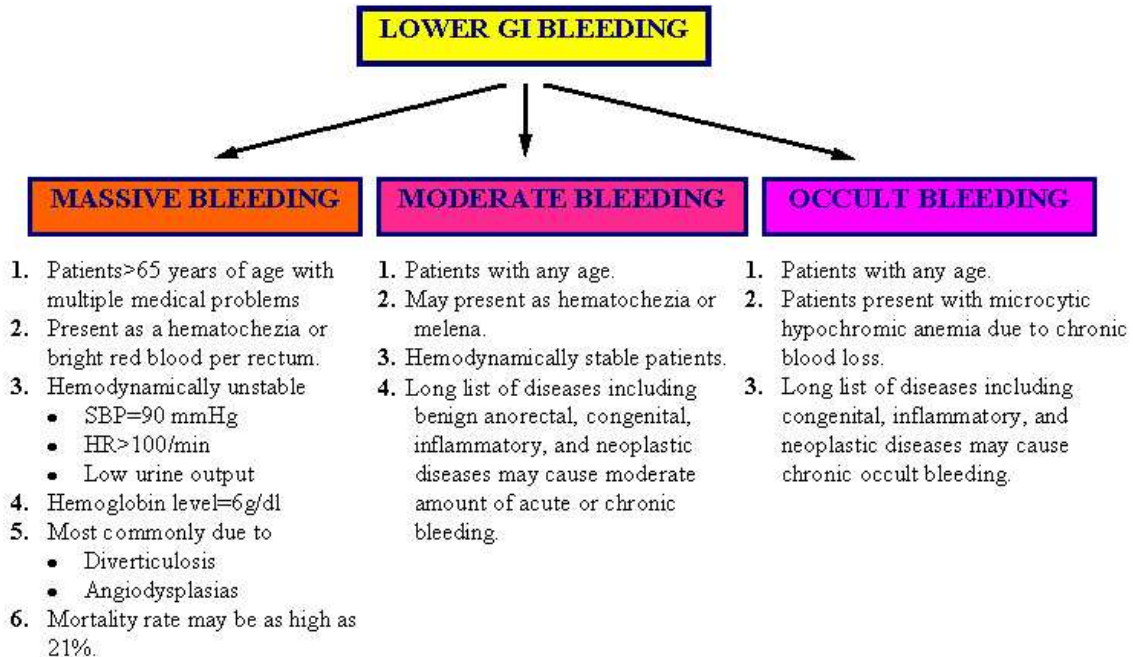
A score <3 = excellent prognosis, ≥8 = high mortality.

Lower Gastrointestinal Bleeding

Definition

Bleeding from GIT distal to the ligament of Treitz.

Figure 1: Types of lower GI bleeding



Causes

- Diverticular disease (60%)
- Colitis - Infective, IBD, ischaemic, radiation. (10-15%)
- Neoplasms (~10%)
- Fissure & haemorrhoids (~10%)
- Angiodysplasia of colon [*elderly, assoc aortic stenosis, most R sided, HRT may help*] (<5%)
- Coagulopathy (<5%)
- In children: Meckel's, HSP, Peutz-Jeger, polyposis, intussusception, IBD

Assessment

History: Abdo pain, diarrhoea, coagulopathy, severe arterial disease. PHHx: colonic disorders, warfarin, wt loss/COBH, type of blood (mixed with stool, fresh, melaena)

Examination: Perioral freckling, T, HR, BP, J, HSM, mass, PR - blood, mass. Proctosigmoidoscopy.

Investigation

Bloods: FBC, UEC, G&H/XM, Coags, LFT

Stool: Faecal occult blood test.

Radiology: CXR/AXR - perforation/obstruction. CT - diverticulae, neoplasm

Tc⁹⁹-RBC radionuclide scan or angiography: for ongoing bleeding.

Endoscopy: Colonoscopy ± gastroscopy if upper GI suspected. Can be therapeutic or diagnostic.

Management

Resuscitation & restore circulating volume

Therapeutic endoscopy

Drugs - Octreotide, vasopressin occasionally used for angiodysplasia or massive bleeding.

Treat underlying condition

Surgery - if unstable & massive bleeding

Embolisation