Chapter 28
Gastrointestinal Bleeding

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Upper Gastrointestinal Bleed

Acute upper gastrointestinal bleeding (UGI bleed) is a common life-threatening emergency with a 10 % mortality rate [1]. Traditionally it is described as bleeding occurring from the GI tract proximal to the ligament of Treitz.

Presentations

Patients commonly present with melaena or haematemesis.

- In about 15 % of patients with haematochezia, the cause could be a large UGI bleed [2].
- Presyncope, collapse, dyspeptic symptoms and diffuse abdominal pain are some of the other presenting symptoms in patients with UGI bleed.

Aetiology

The commonest causes of GI bleed include peptic ulcer bleed and gastro oesophageal varices [3].

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Other important causes include:

- Gastroduodenal erosions
- Oesophagitis
- Mallory-Weiss tear
- Upper GI malignancy
- Angiodysplasia
- Miscellaneous (Crohn's disease, Meckel's diverticula)

History and Physical Examination

- History of alcohol intake, presence of dyspeptic symptoms, ingestion of NSAIDs, aspirin, other antiplatelet agents and anticoagulants.
- Prior history of UGI bleed – a significant proportion of patients tend to re-bleed from the same lesion.
- History of co-morbid conditions like coronary artery disease, congestive heart failure, renal disease, hypertension and COPD would influence the management and have prognostic implications.
- Risk assessment using validated tools such as Blatchford score or Rockall score is widely advocated by several guidelines, to provide appropriate level of care [4].

Management

The objectives of initial management include:

(a) Appropriate resuscitation.
(b) Rectify clotting abnormalities.
(c) Facilitate definitive management.

- Patients should be assessed for potential airway threats especially in those with ongoing massive haematemesis or altered mental status to facilitate a safe endoscopy reducing the risk of aspiration.
- Appropriate fluid resuscitation should be carried out initially with crystalloids using wide bore cannulae.
- In patients with massive bleed, blood products including packed cells, fresh frozen plasma and platelets where appropriate should be utilised. Fresh frozen plasma should be transfused in patients with international normalised ratio or activated partial thromboplastin time 1.5 times greater than normal [5].
- *Caveat*: *Blood should be used cautiously*, *avoiding overtransfusion particularly in patients with variceal bleeding*.
- Patients with variceal bleeding are at risk of renal failure. They also develop infections due to transmigration of organisms to the peritoneum which may

induce hepatorenal failure. Prophylactic antibiotics have been proven to reduce the incidence of hepatorenal failure and hence reduced mortality by several trials [6]. Inj. Ceftriaxone 1 g intravenously is the preferred antibiotic.

- The use of terlipressin and somatostatin as adjunct therapies prior to endoscopy is recommended in suspected variceal bleeding to reduce portal pressure [7]. Terlipressin is administered as an IV bolus in a dose of 2 mg in the emergency department.
- Proton pump inhibitors although widely used in non-variceal bleeding are only proven to help in post endoscopy patients to prevent rebleeding [8]. It is to be continued for a period of 72 h.
- Balloon tamponade using a Sengstaken-Blakemore tube could be used in those with massive bleeding from oesophageal varices as a temporary measure.

Endoscopy

Endoscopy is the key investigation which provides a diagnosis and enables effective treatment to stop the bleeding to be carried out in cases of both variceal and non-variceal bleeding. It should be offered to all patients presenting with a significant UGI bleed [9].

- Patients with signs of haemodynamic instability need to undergo UGI endoscopy immediately post resuscitation and the rest of the patients ideally within 24 h of arrival.
- Endoscopic treatment of a bleeding ulcer would entail using a mechanical device like a clip or thermos-coagulation or injecting thrombin. These treatments are often used in conjunction with local injection of adrenaline. Patients continuing to bleed post endoscopy may be referred for interventional radiology or surgical treatment.
- In a patient with variceal bleeding, endoscopic band ligation is preferred to sclerotherapy for obvious mortality benefits [10]. If endoscopic methods fail to stop the bleeding from the varices, the patient could be referred for transjugular intrahepatic portosystemic shunts (TIPS).

Patients presenting with a massive bleed or haemodynamic instability should be managed in the high dependency care areas post endoscopy.

Lower Gastrointestinal Bleed

Lower gastrointestinal bleeding (LGIB) is a frequent cause of hospital admission amounting to 10–20 % mortality of the hospital admissions [1]. LGIB is distinct from upper GI bleeding in its causes and management.

Acute lower gastrointestinal bleeding (LGIB) is defined as bleeding that is of recent duration, originating beyond the ligament of Treitz.

Its presentation can vary with the source of bleeding, such as:

- Bloody diarrhoea might be suggestive of inflammatory or infective colitis.
- Maroon stools, with LGIB from the right side of the colon.
- Bright red blood per rectum with LGIB from the left side of the colon.
- Melaena with caecal bleeding.

Aetiology

The most common causes of LGIB are [11]:

- Diverticular disease
- Benign anorectal diseases – haemorrhoids, anal fissure and fistula-in-ano
- Inflammatory bowel disease
  - Crohn's disease of small bowel, colon or both
  - Ulcerative colitis
  - Non-infectious gastroenteritis and colitis
- Neoplasia

Presentation

History and physical examination are essential parts of an initial evaluation of lower gastrointestinal bleeding. They can give clues into the aetiology and anatomical source of bleeding.

History should include:

- The nature and duration of bleeding, including stool colour and frequency.
- Associated symptoms, including abdominal pain, recent change in bowel habits and fever.
- Weight loss.
- Whether this is a first or recurrent episode of gastrointestinal bleeding.
- Significant past medical history (including peptic ulcer disease, liver disease, cirrhosis, coagulopathy, inflammatory bowel disease).
- Previous medication use (NSAIDs and/or warfarin).
- In patients with cancer, the history of radiation, chemotherapy or both should be considered.
- Presence or absence of chest pain/palpitations, dyspnoea or postural symptoms.

The physical examination should be thorough and include the skin, oropharynx, nasopharynx, abdomen, perineum and anorectum to evaluate for sources of bleeding.

A nasogastric (NG) tube may be necessary to confirm the presence or absence of blood in the stomach, because brisk UGIB can present as LGIB in 15 % of the patients [3]. In case of high suspicion obtain an oesophago-gastro-duodenoscopy.

Treatment

- Initial resuscitation involves establishing large-bore IV access and administration of normal saline.
- Bloods should be sent for full blood count (FBC), electrolyte levels, urea and creatinine and coagulation studies including type and cross-match. The patient's blood loss and haemodynamic status should be ascertained, and in cases of severe bleeding, the patient may require invasive haemodynamic monitoring to direct therapy.
- Red cell transfusion should be considered after loss of 30 % of the circulating volume.
- Colonoscopy – In haemodynamically stable patients with mild to moderate bleeding or in patients who have had a massive bleed that has stabilised, colonoscopy should be performed initially.
- Angiography – In patients in whom the bleeding site cannot be determined on colonoscopy and in those with active brisk LGIB, angiography scan should be performed to locate the bleeding site as well as to intervene therapeutically.
- Emergency surgery – The indications for surgery include the following:

  (a) Persistent haemodynamic instability with active bleeding
  (b) Persistent, recurrent bleeding
  (c) Transfusion of more than four units packed red bloods cells in a 24-h period

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