

Upper gastrointestinal bleeding

Upper gastrointestinal bleeding

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Definition

- UGIB: Bleeding into the lumen of the proximal GIT, proximal to the ligament of Treitz.

Epidemiology

- Upper gastrointestinal bleeding affects around 50-150 people per 100,000 annually.
- The overall mortality rate of UGIB is 10% (60-80; 15%, >80; 25%).
- 80-85% of patients spontaneously stop bleeding.
- 10% of patients require surgery.
- Bleeding from the upper GI tract is approximately 4 times more common than bleeding from the lower GI tract.
- Acute UGIB is the most common GI emergency.

Risk factors

- Alcohol
- Cigarettes
- Liver disease (patients with liver cirrhosis and portal hypertension develop esophageal varices which may rupture)
- Burn/Trauma
- Aspirin/NSAID/Steroids
- Vomiting
- Sepsis
- History of peptic ulcer disease

- Esophageal varices
- Portal hypertension
- Splenic vein thrombosis
- Abdominal Aortic Aneurism repair (aortoenteric fistula)

Risk factors for death following UGIB

- Age older than 60 years old
- Shock
- More than 5 units of PRBC
- Concomitant health problems

Acute & Chronic UGIB

- **Acute UGIB** is more recognizable than chronic GI bleeding, it happens suddenly and can have very serious consequences.
- **Chronic UGIB** is a slow, long term bleeding or occurs at an on/off pattern. It is more difficult to diagnose because the symptoms are not easily detected.

Signs & Symptoms

- Hematemesis
- Melena (>50cc of blood)
- Hematochezia (indicates a vigorous rate of bleeding)
- Guaiac positive stool
- Abdominal pain (epigastric or diffuse)
- RLQ pain (valentino's sign)

- Heartburn
- Syncope
- Dyspepsia
- Dysphagia
- Weight loss
- Jaundice

Management of Upper GI Bleeding

Management

- The management of upper gastrointestinal bleeding is divided into:
 - 1) Management of acute bleeding.
 - 2) Management of chronic bleeding.
- * Depending on the presentation of the patients.

Management of acute UGIB

1) Intravenous Access:

- The first step is to gain intravenous access using at least one large-bore cannula, preferably two.
- If there is venous collapse due to hypotension caused by severe bleeding, then central venous access is indicated (internal or external jugular veins).

IV Cannula



Gauge	14	16	18	20	22	24
Ext Dia (mm)	2.1	1.7	1.3	1.1	0.9	0.7
Length (mm)	45	45	45	32	25	19
Flow Rate (ml/min)	270	180	80	54	33	20



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Management of acute UGIB

Cont'd

2) Initial clinical assessment:

- Define circulatory status: Severe bleeding causes tachycardia, hypotension and oliguria. The patient is cold and sweating and maybe agitated.
- Seek evidence of liver disease: Jaundice, cutaneous stigmata, hepatosplenomegaly and ascites.
- Identify co-morbidities: The presence of cardiorespiratory, cerebrovascular or renal disease is important, because these maybe worsened by acute bleeding and because they increase the hazards of endoscopy and surgical operations.

Management of acute UGIB

Cont'd

3) Basic investigations:

- Collect blood samples.
- Full blood count: Chronic or subacute bleeding leads to anemia but the hemoglobin concentration may be normal after sudden, major bleeding until hemodilution occurs. Thrombocytopenia may be a clue to the presence of hypersplenism in chronic liver disease.
- Urea and electrolytes: This test may show evidence of renal failure. The blood urea (BUN) may rise. An elevated BUN with normal creatinine concentration implies severe bleeding.

Management of acute UGIB

Cont'd

- Liver Function Tests (LFTs): These include PT, INR and serum albumin concentration. They may show evidence of chronic liver disease or anti-coagulated patients.
- Cross-matching: At least two units of blood should be cross-matched.
- Nasogastric tube:
 - NG tube lavage that yeilds blood or coffe-ground like material confirms the UGIB and predict whether bleeding is caused by a high-risk lesion
 - it can also help clear the stomach content of blood allowing more effective endoscopy , and prevent aspiration.

1 22.16 Modified Blatchford score: risk stratification in acute upper GI bleeding	
Admission risk marker	Score component value
Blood urea	
≥ 25 mmol/L (≥ 70 mg/dL)	6
10–25 mmol/L (28–70 mg/dL)	4
8–10 mmol/L (22.4–28 mg/dL)	3
6.5–8 mmol/L (18.2–22.4 mg/dL)	2
< 6.5 mmol/L (18.2 mg/dL)	0
Haemoglobin for men	
< 100 g/L (10 g/dL)	6
100–119 g/L (10–11.9 g/dL)	3
120–129 g/L (12–12.9 g/dL)	1
≥ 130 g/L (13 g/dL)	0
Haemoglobin for women	
< 100 g/L (10 g/dL)	6
100–119 g/L (10–11.9 g/dL)	1
≥ 120 g/L (12 g/dL)	0
Systolic blood pressure	
< 90 mmHg	3
90–99 mmHg	2
100–109 mmHg	1
> 109 mmHg	0
Other markers	
Presentation with syncope	2
Hepatic disease	2
Cardiac failure	2
Pulse ≥ 100 beats/min	1
Presentation with melaena	1
None of the above	0

Management of acute UGIB

Cont'd

4) Resuscitation:

- Intravenous Crystalloid fluids should be given to raise the blood pressure and blood should be transfused when the patient is actively bleeding with low blood pressure and tachycardia.
- Co-morbidities:
 - a) Patients with suspected chronic liver disease → should receive broad spectrum antibiotics.
 - b) Patients with cardiac disease and/or severe bleeding → central venous pressure monitoring to assist in defining the volume of fluid replacement and identifying re-bleeding.

Management of acute UGIB

Cont'd

5) Oxygen:

This should be given to all patients in shock.

6) Endoscopy:

- This should be carried out after adequate resuscitation, ideally within 24 hours, and will yield a diagnosis in 80% of cases.
- In addition to its diagnostic role, it is also used therapeutically such as: A) Using a heater probe. B) Endoscopic clips.

*Injecting epinephrine endoscopically combined with intravenous PPI (72 hours IV infusion) prevents re-bleeding, thus avoiding the need for surgery.

* Variceal bleeding should be treated by band ligation.

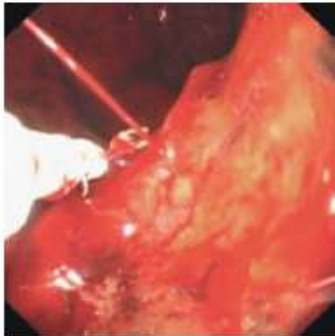
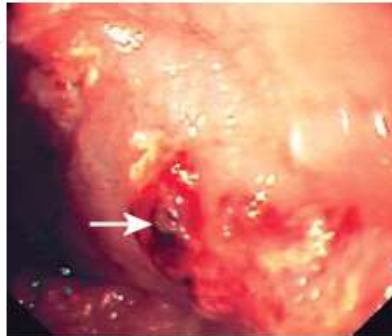
A**B****C**

Fig. 22.19 Major stigmata of recent haemorrhage and endoscopic treatment. **A** Active arterial spurting from a gastric ulcer. An endoscopic clip is about to be placed on the bleeding vessel. When associated with shock, 80% of cases will continue to bleed or rebleed. **B** 'Visible vessel' (arrow). In reality, this is a pseudoaneurysm of the feeding artery seen here in a pre-pyloric peptic ulcer. It carries a 50% chance of rebleeding. **C** Haemostasis is achieved after endoscopic clipping of the bleeding vessel in the duodenum.

Management of acute UGIB

Cont'd

7-Monitoring

- Patients should be closely observed with hourly measurements of pulse, blood pressure and urine output (via Foley catheter).

8- Surgery

- a. The patient's cardiovascular status, as well as the amount and duration of bleeding, is particularly important. For example, a patient with heart disease may tolerate continued bleeding poorly and thus may need early surgery.
- b. Only about 10% of patients will require surgery.

Management of acute UGIB Cont'd

c. Indications for surgery

- (1) Exsanguinating hemorrhage. A patient with uncontrollable hemorrhage who is losing blood faster than it can be replaced must be sent to the operating room immediately for control of the site of bleeding.
- (2) Profuse bleeding, especially in association with hypotension. Patients should be treated surgically:
 - (a) If more than 4 Units of blood are required for initial resuscitation.
 - (b) If bleeding continues at a rate of more than 1 Unit every 8 hours.
 - (c) If a brief hypotensive episode could have catastrophic results, as in patients with coronary artery disease or cerebrovascular disease or in patients older than 60 years of age.

Management of acute UGIB

Cont'd

(3) Continued hemorrhage despite resuscitation and other treatment:

*The rate increases dramatically with requirements above 7 Units. Thus, surgery should be undertaken before the blood loss reaches that point.

(4) Recurrent bleeding after its initial cessation.

(5) Pathologic features of the bleeding site that increase the risk of recurrent bleeding include:

a- A posterior duodenal ulcer with the gastroduodenal artery visible in its base

b- A giant gastric ulcer

Management of acute UGIB

Cont'd

3. Special situations may call for a modification of the usual routines of management:
 - a. A patient with a rare or hard-to-find blood type should be operated on while blood is still available.
 - b. A patient who refuses blood transfusion for any reason should undergo surgical exploration early.
 - c. A patient with a coagulopathy should have the disorder corrected, if possible, prior to surgical exploration.

Management of chronic UGIB

- Chronic UGIB usually does not present as an emergency. It is usually discovered due to signs and symptoms of anemia.
- Management includes resuscitation and identifying the underlying cause, and hence treatment depends on the cause itself.

Causes of Upper GI bleeding

○ The most common causes of Upper GI Bleeding (UGIB) include:

1- Peptic ulcer bleeding

2- Acute erosive gastritis

3- Esophageal varices rupturing

4- Mallory-Weiss tear

5- Esophagitis

Peptic ulcer

- It's the most common cause of UGIB with Duodenal Ulcer (DU) being more likely than Gastric Ulcer (GU) to cause large bleeding.
- Although it can only be diagnosed after endoscopic exploration or sometimes angiography, a previous history of peptic ulcer bleeding, H. pylori infection, NSAID and aspirin use or abdominal pain that is related to food intake all favour peptic ulcer as the cause of the bleeding.

- Therapeutic endoscopy coupled with adrenaline injections achieves hemostasis in 70% of cases. Proton Pump Inhibitors can be given afterwards to prevent re-bleeding.
- Surgery is only indicated if:
 - a) Bleeding continues after therapeutic endoscopy or a significant re-bleed occurs.
 - b) A vessel is visible in the ulcer or clot in the base.
 - c) The patient had required more than 6 units of blood.

Acute Gastritis

- Although acute gastritis is usually erosive and hemorrhagic, it doesn't usually erode into a major vessel, but when it does, the bleeding would become problematic to treat.
- NSAID intake is a common cause.
- It's preferable to treat it through endoscopy, although sometimes, surgery is needed.

Mallory-Weiss tear

- A history of alcoholism, repetitive retching and strenuous vomiting is almost always present.
- These tears may be missed in endoscopy due to their location being just below the gastro-esophageal junction.

Ruptured esophageal varices

- The bleeding is often profuse and life threatening and is challenging to manage.
- A history of liver cirrhosis or portal hypertension may indicate ruptured varices.
- Sclerotherapy, banding and balloon tamponade are usually effective treating modalities for esophageal varices, while gastric varices are more difficult to treat.

Esophagitis

- Bleeding from the esophagus may be a complication of esophagitis due to any cause, but more commonly in reflux esophagitis.
- A history of gastro-esophageal reflux disease (GERD), drug or chemical intake (in erosive esophagitis) may help identify esophagitis as the cause of bleeding.

Dieulafoy's disease

- A gastric arteriovenous malformation that causes a bleeding that's considered one of the hardest to treat.
- The lesion is covered by a normal mucosa, effectively making it invisible when not bleeding.
- If it was identified endoscopically, sclerosant injections or clips can be performed. While in an operation, a local excision is usually enough.

Gastrointestinal tumors

- Nearly all GIT tumors have the ability to induce bleeding, especially Gastric Stromal Tumors.
- The bleeding isn't usually profuse but can be unyielding. Weight loss and anemia may favour such diagnosis.

Aortic enteric fistula

- This diagnosis should only be considered if there's no other explanation for the bleeding.
- Almost all patients will have had an aortic graft.
- A well-performed CT scan will commonly detect the malformation with certainty.

Thank you