

复旦大学附属中山医院  
Zhongshan Hospital, Fudan University

## Gastrointestinal Bleeding



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## HISTORY TAKING-SYMPOMS

- Hematemesis
- Coffee ground vomiting
- Melena
- Hematochezia
- *GI blood loss frequently is occult. Sometimes, patients may present with symptoms of blood loss, such as lightheadedness, syncope, angina, or even shock.*

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## Hematemesis

- Hematemesis is vomiting of fresh blood.
- Hematemesis indicates that bleeding originates from a site proximal to the ligament of Treiz.
- A history of fresh hematemesis usually implies a significant bleed

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## Coffee ground vomiting

- indicates that active bleeding may have ceased.

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## Melena

- Melena is the passage of black tarry stool.
- It occurs when hemoglobin is converted to hematin by bacterial degradation.
- Ingestion of as little as 200ml of blood can produce melenic stool.
- Although melena generally connotes bleeding proximal to the ligament of Treiz, bleeding from small bowel or proximal colon may also cause melena, especially when colonic transit is slow.

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## Hematochezia

- Passage of pure red blood or blood admixed with stool.
- It usually occurs when bleeding comes from the lower gastrointestinal tract.
- It can also present in a massive upper GI bleeding.


Physical examination

- When GI bleeding is suspected, rapid assessment of the patient is carried out gauge the urgency of the situation.
  - Is bleeding acute or chronic?
  - Is the patient hemodynamically stable or unstable?
- Carefully assessment of the vital signs is the best way to judge a patient's stability.
  - The blood pressure and heart rate reflect the amount and rapidity of blood loss, as well as the extent of cardiac and vascular compensation.
  - Postural hypotension: the blood pressure is maintained on recumbency but falls more than 15 to 20 mmHg when the patient sits up.
- Bowel sounds are also very important for judging whether the bleeding has ceased or not.

Lab Exam

- Blood is sent to the laboratory for complete blood count, routine chemistries, and clotting studies.
- Blood for typing and crossmatching is sent to the blood bank so that the transfusions can be given without delay if needed.
- A rise in the BUN after major upper GI bleeding episodes results from volume depletion and absorbed blood proteins.
- Fecal occult blood is useful for the diagnosis of occult bleeding.

Endoscopy



- Endoscopic examination is the best tool to triage patient for hospital stay or home.
- Functions
  - Give the most accurate diagnosis of the source of bleeding.
  - Assess the risk of recurrent bleeding.
  - Offer endoscopic therapy when a source of bleeding is found (endoscopic hemostasis).
- Endoscopic examination should be made available to the patient within 24 hours or when the patient is stabilized from his hemodynamic instability.

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Angiography

- Angiography is an important tool in the diagnosis of GI bleeding when endoscopy fails to identify the source.
- Advantages
  - Accurate localization of rapidly bleeding lesions
  - The potential to achieve immediate control with several treatment modalities.

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GI bleeding of obscure origin

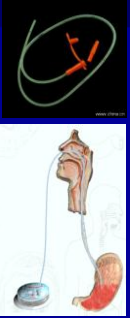
- The source of bleeding remains unidentified after gastroscopy and colonoscopy in about 5% of patients.
- The most common causes include angiodysplasia, small bowel neoplasms, Meckel's diverticulum, ectopic varices and conditions causing hemobilia.
- Capsule endoscopy is better tolerated.
- Double balloon enteroscopy offers control the bleeding when a source is identified.



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DIAGNOSIS APPROACH

- Recognition of hemorrhage
  - In most cases, the doctors recognize hemorrhage through history taking and physical examination.
  - Occult bleeding is manifested either by a positive finding of a test for fecal occult blood or by the presence of iron-deficiency anemia.
- Assessment of severity
- Differentiation of upper from lower GI hemorrhage
  - The approximate site of bleeding can usually be predicted by the manner of presentation.
  - When the location of bleeding is in question, a nasogastric tube may be placed.
- Etiology -through endoscopy or other diagnostic tests.



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## Etiology

	Upper GI bleeding	Lower GI bleeding
Common	Gastric/duodenal ulcer Esophageal/gastric varices	Angiodysplasia Hemorrhoids
Less common	Gastrointestinal erosions Esophagitis Mallory Weiss tear	Colonic neoplasms IBD Ischemic colitis Radiation colitis Diverticular disease
Rare	Upper GI malignancy Vascular malformation	Colonic ulcers Rectal varices

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## High risk patients

- Significant GI bleeding
  - Syncope
  - Haematemesis
  - Systolic blood pressure below 100mmHg
  - Postural hypotension
  - 4 units of blood have to be transfused in 12 hours to maintain blood pressure
- Patients over 60 years old and with multiple underlying diseases
- Admitted for other medical problems and developed GI bleeding during hospitalization

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## High risk peptic ulcers

- High risk peptic ulcers and those actively bleeding or have bled recently may show stigmata of haemorrhage on endoscopy.
  - Localized active bleeding
    - Pulsatile
    - Arterial spurting
    - Simple oozing
  - Have bled recently
    - Adherent blood clot
    - Protuberant vessel
    - Flat pigmented spot on the ulcer base
- Stigmata of haemorrhage are important predictors of recurrent bleeding.

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## RESUSCITATION

- Irrespective of the underlying cause of gastrointestinal bleeding, a patient should be resuscitated.
- Vital signs and urine output should be carefully monitored.
- A large bore peripheral drip should be inserted for fluid replacement.
- A central line would be useful for patients in shock.
- Evidence of substantial volume loss- blood transfusion.
- A joint team of gastroenterologists, GI surgeons and intervention radiologists should manage a patient with GI bleeding.

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## THERAPY

- Pharmacological therapy
- Endoscopic hemostasis
- Radiological therapy
- Surgery

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## PHARMACOLOGICAL THERAPY

- Acid-suppressing drugs -effective drugs to promote ulcer healing
  - H2-receptor antagonists
  - Proton pump inhibitors (PPI) : omeprazole, esomeprazole and pantoprazole
- Vasoactive agents
  - vasopressin (cardiac ischaemia, worsening coagulopathy)
  - Terlipressin (used in combination with glyceryl trinitrate)
  - Somatostatin (octreotide, vapreotide) reduces portal blood pressure and azygous blood flow
- Antifibrinolytic agents (recombinant activated factor VII)
- Antibiotics- variceal bleeding
  - Cephalosporin
  - quinolone

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## Endoscopic hemostasis

- For peptic ulcers (either actively bleeding or showing protruberant vessel or fresh clot)
  - injection therapy using epinephrine or other sclerosants
  - thermocoagulation using heater probe or electrocoagulation
  - Hemostatic clips
- For gastric or esophageal varices
  - Injection of sclerosant (ethanolamine, STD)
  - Banding ligation using single or multiple band ligators
  - Injection of cyanoacrylate for gastric varices
- For vascular malformation
  - Argon plasma coagulation
  - Hemostatic clips

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## Radiological therapy

- Highly-selective coil embolization for bleeding ulcer and vascular malformation using:
  - Gelatin sponge pledgets
  - Microrcoils
  - Polyvinyl alcohol particles
- Trans-jugular Intrahepatic Portal-Systemic Shunts (TIPSS) for gastric or esophageal varices

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## Surgery

- Surgery remains the most definitive method of stopping hemorrhage.
- Indications
  - Arterial bleeding that cannot be controlled by endoscopic haemostasis.
  - Massive transfusion (i.e. total of 6-8 units of blood) required to maintain blood pressure.
  - Recurrent clinical bleeding after initial success in endoscopic and/or angiographic hemostasis
  - Evidence suggestive of GI perforation

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## Algorithm in the management of common causes of acute GI bleeding

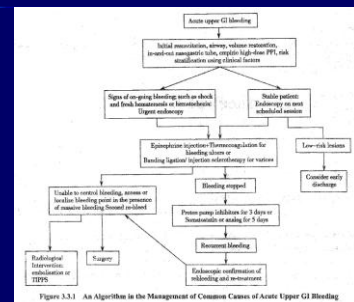


Figure 3.3.1 An Algorithm in the Management of Common Causes of Acute Upper GI Bleeding

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## G.I. Bleeding Case

- 58-year-old man
- Black unformed stools, nausea, epigastric pain.
- 10 years ago he had an ulcer.
- He has a daily alcohol intake of two bears.
- He has been taking one enteric-coated aspirin each day.

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## G.I. Bleeding Case

- Vital signs
  - Supine BP 130/80mmHg, HR 100 beats/min
  - Seated BP 100/80mmHg, HR 120 beats/min
- HEENT: fundoscopic examination shows arterial narrowing
- Chest: clear
- Abdomen: active bowel sounds, no masses or tenderness, spleen is not palpables.
- Extremities: no cyanosis or edema.
- Stool: melanic, fecal occult blood test positive.

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## Questions

- Whether GI bleeding exists?
- Severity of the hemorrhage?
- The amount of GI tract blood loss?
- Source of hemorrhage? Upper or lower GI bleeding?
- Etiology? Diagnosis?
- Ceased or not?
- How to treat?

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## Vignette follow-up

- VA is admitted to the hospital and receives a three-unit transfusion.
- Endoscopy reveals a duodenal ulcer.
- No rebleeding occurs with medical management.
- He has not had recurrent symptoms or evidence of bleeding during one year of follow-up.

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# 谢谢!



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