Team Medicine

Gastrointestinal bleeding

Writer: Fahd Alshuweishi
Reviser: Shatha Al-mweisheer
Leader: Alanood Asiri

431 Teams

■ Important notes ■ Doctor's notes. ▯ Other sources

Objectives

- To understand
  - Presentations (hematemesis , melena, hematochezia, occult bleeding)
  - Types; (variceal and non-variceal bleeding)
  - Causes of GI bleeding.
- To know how to recognize the severity and prognosis of patients presented with GI bleeding.
- To know a systematic clinical approach in managing patient with GI bleeding.

Defenetion

Gastrointestinal bleeding or gastrointestinal hemorrhage:

describes every form of hemorrhage (loss of blood) in the gastrointestinal tract, from the pharynx to the rectum. It has diverse causes, and a medical history, as well as physical examination, generally distinguishes between the main forms. The degree of bleeding can range from nearly undetectable to acute, massive, life-threatening bleeding.

Epidemiology

- 48 to 160 cases per 100 000 adults per year
- Mortality generally from 10% to 14%
- **The incidence is double in males than females**
- **The incidence increases with age**
- **Upper GI bleeding is 5 times more common than Lower GI bleeding**

ESSENTIALS OF DIAGNOSIS

- Symptoms: Coffee ground vomiting, hematemesis, melena, hematochezia, anemic symptoms
- Past medical history: Liver cirrhosis, use of non-steroidal anti-inflammatory drugs
- Signs: Hypotension, tachycardia, pallor, altered mental status, melena or blood per rectum, decreased urine output
- Bloods: Anemia, raised urea, high urea to creatinine ratio
- Endoscopy: Ulcers, varices, Mallory-Weiss tear, erosive disease, neoplasms, vascular ectasia, and vascular malformations

Types of bleeding

Only what's written in green in this table was mentioned by the doctor , Not in the slides

Hematemesis	"Coffee grounds" emesis	Melena	Hematochezia	Occult blood in stool
Is vomiting blood; suggests upper GI bleeding (bleeding proximal to ligament of Treitz). Indicates moderate to severe bleeding that may be ongoing.	**suggests upper GI bleeding as well as a lower rate of bleeding (enough time for vomitus to transform into "coffee grounds")**	**black, tarry, liquid, foul-smelling stool Caused by degradation of hemoglobin by bacteria in the colon; presence of melena indicates that blood has remained in GI tract for several hours Melena suggests upper GI bleeding 90% of the time. Occasionally, the jejunum or ileum is the source.**	**bright red blood per rectum ,This usually represents a lower GI source (typically left colon or rectum).**	**Source of bleeding may be anywhere along GI tract. Positive fecal occult blood test with or without iron deficiency anemia in absence of visible bleeding to patient and the physician.**

Common Causes of Upper Gastrointestinal Bleeding

(Listed according to the most common)

1- Peptic ulcers.
2- Variceal bleeding.
3- Mucosal erosive disease: esophagitis, gastritis and doudenitis.
4- Mallory- Weiss tear: **Classical in pregnancy because of repetitive vomiting which cause longitudinal tear in the gastro esophageal junction, it usually stops sponatnouasly**
5- Malignancy.
6- Arteriovenous malformation.
7- 7- Gastric antral vascular ectasia: **watermillon stomach , usually doesn't cause massive GI bleeding , but patients with it , have anemia.**

7- Dieulafoy: **A vessel under mucosa that opens and causes bleeding then disappear.**

Causes of lower GI bleeding: (Wasn't mentioned by the doctor & not in the slides)

a.Diverticulosis (40% of cases)—most common source of GI bleeding in patients over age 60; usually painless
b. Angiodysplasia (40% of cases)—second most common source in patients over age 60 c. IBD (UC, Crohn's disease)
d. Colorectal carcinoma e. Colorectal adenomatous polyps f. Ischemic colitis
g. Hemorrhoids, anal fissures
h. Small intestinal bleeding

Source : Step Up To Medicine , 3rd edition

History	Examination
Age Nature of bleeding Associated symptoms (Abd pain , Vomitting , change in bowel habit, wt loss. Fatigue, dizziness) Past GI history (GI bleeding, GI and liver diseases, abdominal surgery) Medications (e.g. aspirin, NSAIDS) Other co-morbidities	**Vital signs:** orthostatic hypotension and tachycardia **General:** Pallor Jaundice Stigmata of CLD Cachexia Lymphadenopathy Skin or mucus membrane lesions (pigmented, vascular etc) Extremities: cold clammy, thready pulse (if severe) Abdominal examination: (scar of previous surgery , dilated veins, tenderness, organomegaly, masses, hyperactive bowel sounds , etc) Rectal exam and color of stool

Laboratory Tests (from last year slides)

1) **CBC:**
   Hematocrit: Several hours to fall.
   Normal or slightly depressed should not underestimate the severity of bleeding
   MCV normal in acute, low indicates iron deficiency and possibly chronic bleeding.
2) **Coagulation profile.**
   Blood group and cross-match blood. Packed PBCs 4-6 units (depends on the severity of bleeding and result of Haemoglobin)
3) **BUN**: may increase in upper GI bleeding (breakdown of blood proteins by intestinal bacteria and mild reduction in GFR).
4) **LFT**
5) **Upper endoscopy**
   Most accurate diagnostic test in evaluation of upper GI bleeding.

Approach to patient with GI bleeding

1) **IV Fluid Resuscitation**

2) **Blood Transfusion:-**

- Should be administered when hemoglobin level is 70 g/L or less.
- Rarely indicated when the level is > 100 g/L
- Almost always indicated when the level is < 60 g/L.Target level of 70 to 90 g/L. **(Transfusiong blood until HB level is > 90 is found to increase mortality in these situations)** * Kaplan GI bleeding video.
- Based on underlying condition hemodynamic status, and markers of tissue hypoxia
- Based on the patient's risk for complications from inadequate oxygenation.

What if a patient is receiving anticoagulants?
- Correction of coagulopathy is recommended
- Endoscopy should not be delayed for a high INR unless the INR is supratherapeutic

Pre-endoscopic pharmacological therapy : PPIs

acidity defect the coagulation process so we need to decrease the acidity to achive the couglation process

- HAS NOT been shown to affect rebleeding, surgery, or mortality
- HAS decreased the need for intervention
- HAS a supportive cost-effectiveness analyses
- HAS an excellent safety profile
- This suggest that these agents may be useful.
- May be even more beneficial in situations in which early endoscopy may be delayed or when available endoscopic expertise may be suboptimal

Endoscopic management

- Definition of early endoscopy:
  - Ranges from 2 to 24 hours AFTER INITIAL PRESENTATION
- May need to be delayed or deferred:
  - Active acute coronary syndromes
  - Suspected perforation

A VERY low Blatchford score -:

- Can identify very low-risk patients
  - Unlikely to have high-risk stigmata
  - Unlikely benefit from endoscopic therapy
  - Can be safely managed as outpatients without the need for early endoscopy
- HOWEVER, this remains controversial

Early endoscopy-:

- Reductions in length of hospital stay in patients at low risk, high risk, and combined patient groups
- Decreased need for surgery in elderly patients

Predictors of active bleeding-:

- Fresh blood in the NGT
- Hemodynamic instability
- Hemoglobin level < 80 g/L
- Leukocyte count >12 10^9 cells/L
- They need very early endoscopy (<12 hours)

Pharmacological therapy

PPIs:

Compared to placebo or H2RAs with or WITHOUT endoscopic therapy PPIs reduced : • Rebleeding • Surgery • NOT mortality	Compared to placebo or H2RAs WITH endoscopic therapy High dose PPIs reduced • Rebleeding • Surgery • Mortality

(PPI should be given pre endoscopy as it decrease the need for surgical intervention but not mortality
But it should be given post endoscopy therapy for 3 day as it decrease rebleeding , surgery and mortality)

Hospitalizaton	Admission to a monitored setting	After discharge
• It takes 72 hours for most high-risk lesions to become low-risk lesions AFTER endoscopic therapy • 60% - 76% of patients who had rebleeding within 30 days AFTER endoscopic hemostasis PLUS high-dose PPI therapy did so within the first 72 hours	• For at least the first 24 hours on the basis of risk or clinical condition – Hemodynamic instability – Increasing age – Severe comorbidity – Active bleeding at endoscopy – Large ulcer size (>2 cm)	Patients should be discharged with a prescription for a single daily-dose oral PPI for a duration as dictated by the underlying etiology.

Management of continued or recurrent bleeding

- Percutaneous or transcatheter arterial embolization
- Technical success range from 52% to 98%
- Recurrent bleeding in about 10% to 20%
- Complications include
  - Bowel ischemia
  - Secondary duodenal stenosis
  - Gastric, hepatic, and splenic infarction
- A second attempt at endoscopic therapy remains the preferred strategy

Angiography

Where available, percutaneous embolization can be considered as an alternative to surgery for patients **for whom endoscopic therapy has failed.**

H pylori

Patients with bleeding peptic ulcers should be tested for H. pylori
Receive eradication therapy if present
Confirmation of eradication
Negative H. pylori diagnostic tests obtained in the acute setting should be repeated

Is it ok to withdraw aspirin in a patient with acute peptic ulcer bleeding ?

We can only stop aspirin for 3-5 days (Not more)

Summary

- GI bleeding presentations:

1- **Hematemesis:** vomiting blood
2- **Melena:** black, tarry, liquid, stool that is caused by degradation of hemoglobin by bacteria, it usually indicates an UGIB.
3- Hematochezia: Bright red blood per rectum.
If a person presented with hematochezia + shock , think of GI bleeding
4- **occult bleeding:** blood in stool that cannot be seen with naked eyes, it usually indicate colon cancer.

- **Is a family history of gastric ulcer important?**

Yes, usually if parents have H.pylori , their children would also have it (Depends on socioeconomic status)

- **Three important things to know in a person presenting with GI bleeding:**
  1- Symptoms . 2- medications. 3- Past medical history.
- When a patient present with GI bleeding and you're suspecting a critical situation >inset foley catheter to see urine out put **(as it gives you an idea about the perfusion pressure of organs)**
- The most common cause of GI bleeding is **peptic ulcer** followed by **variceal bleeding.**
- Mallorey Weiss : is a classical presentation during pregnancy.
- There are two scores for assessing GI bleeding patients :
  1- Glasgow-Blatchford score: Urea,CBC,Physical examination & history.
  2- Rochall Score(need NO investigations) : ↑ age =↑ mortality
- **Approach to patient with GI bleeding :**
  1- IV fluid resuscitation : Crystilliods.
  2- Blood transfusion : target level from 70-90g/L (NOT more)
  3- In patients on anticoagulants, correct coagulopathy.
  4- Pre-endoscopic medications : PPIs, may be beneficial in case you have to delay endoscopy.However, it DOESN'T effect rebleeding , surgery, or mortality.
  5- Endoscopic management: early = 2-24 hrs (↓length of hospitalization, ↓need for surgery in ELDERLY) , it might be delayed in case of perforation or active ACS.
  6- Pts with predictors of active bleeding need VERY early endoscopy = less than 12 hrs.
  7- Pharmacological therapy: PPIs
  8- Pts are discharged with prescription of PPIs.
- **Recurrent Bleeding:** 2nd attempt endoscopic therapy, if fail percutaneous (Angiographic) emobilization

- (-)Ve H.Pylori diagnostic tests obtained in the acute setting (during bleeding) should be repeated , because blood is alkaline , & anyalkaline fluid can't pick H.pylori.

Question

Q1: The most frequent cause of UGI bleeding is:

A. Esophageal varices
B. Peptic ulcer disease
C. Angiomata
D. Mallory Weiss tear
E. Gastritis

Q2: After initial stabilization and resuscitation of the patient, each of the following options should be considered in the management of UGI bleeding except:
A. Determine the source of bleeding

B. Stop acute bleeding

C. Treat the underlying abnormality

D. Prevent rebleeding

E. Emergency surgery.

Q3: A 73 year old man presents with several episodes of hematemesis. Examination shows signs of orthostatic hypotension and melena. What is the first priority in caring for this patient?
A. Nasogastric tube placement and gastric lavage.
B. Resuscitation with adequate IV access and appropriate fluid and blood product fusion.
C. Intravenous infusion of H2-receptor antagonists to stop the bleeding.
D. Urgent upper panendoscopy.
E. Urgent surgical consultation.

Q4: Which of the following combinations of stigmata of ulcer hemorrhage should be treated with endoscopic hemostasis?
A. Non-bleeding visible vessel and black slough
B. Pulsatile bleeding and white based ulcer
C. Oozing from an ulcer and a flat red spot
D. Non-bleeding visible vessel and pulsatile bleeding
E. Black slough and white based ulcer

Answers:
1) B
2) E
3) B
4) D

Explain last question : The endoscopic finding of active hemorrhage from an ulcer, either pulsatile or spurting bleeding is an indication for treatment (Choice D). Finding a visible vessel, also called a sentinel clot or pigmented protuberance, is another indication for endoscopic coagulation since there is a 50% chance of rebleeding. Flat red spots and black slough are minor stigmata of hemorrhage and have about a 7% risk of rebleeding. Patients with a clean ulcer base have a 3% or less chance of rebleeding.