Acute GI Bleeding

728-655

Mary S. Hayney, PharmD, MPH, BCPS
Professor of Pharmacy (CHS)

Learning Objectives

- Choose a strategy for proton pump inhibitor (PPI) use in upper GI bleed
- Identify key considerations with patients who require anticoagulation
- Initiate measures for effective stress ulcer and recurrent bleed prophylaxis

Reading Assignment

Pharmacotherapy. A Pathophysiologic Approach, 11th edition. Chapter 50. Peptic Ulcer Disease and Related Disorders Pages 500-2

Supplemental reading

Barkun AN, Almadi M, Kuipers EJ, et al. Management of nonvariceal upper gastrointestinal bleeding: Recommendations for the International Consensus Group. Ann Intern Med 2019;171:805-22

Reading guide for Chapter 50—two pages.

Probably not needed!

Use the learning objectives to guide your reading. The learning objectives have been chosen because of their relevance to immunology pharmacotherapy and are the source of the exam questions.

Study questions:

What is the difference between PUD -related bleeding and stress-related mucosal bleeding? How is each managed?

Awareness

- Indications for GI procedures
- Threshold for blood transfusions
- Inpatient vs. outpatient management

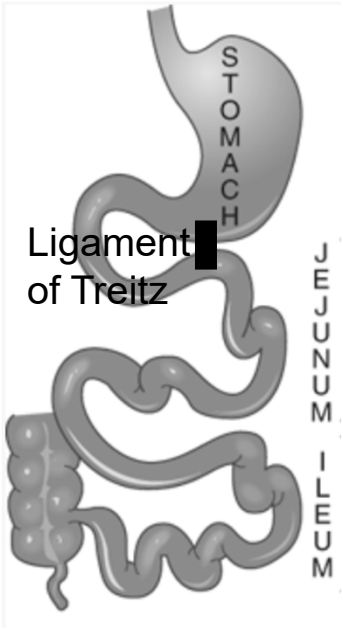
Expertise

- Medication related causes of GI bleeds
- First line drug therapy treatment
- Recommendations for reinitiating anticoagulation (when/what)

Collect

- Medication history
  - Important to include OTC, herbals, how much and last dose
- Labs
  - CBC, INR (if applicable)

Presenting symptoms

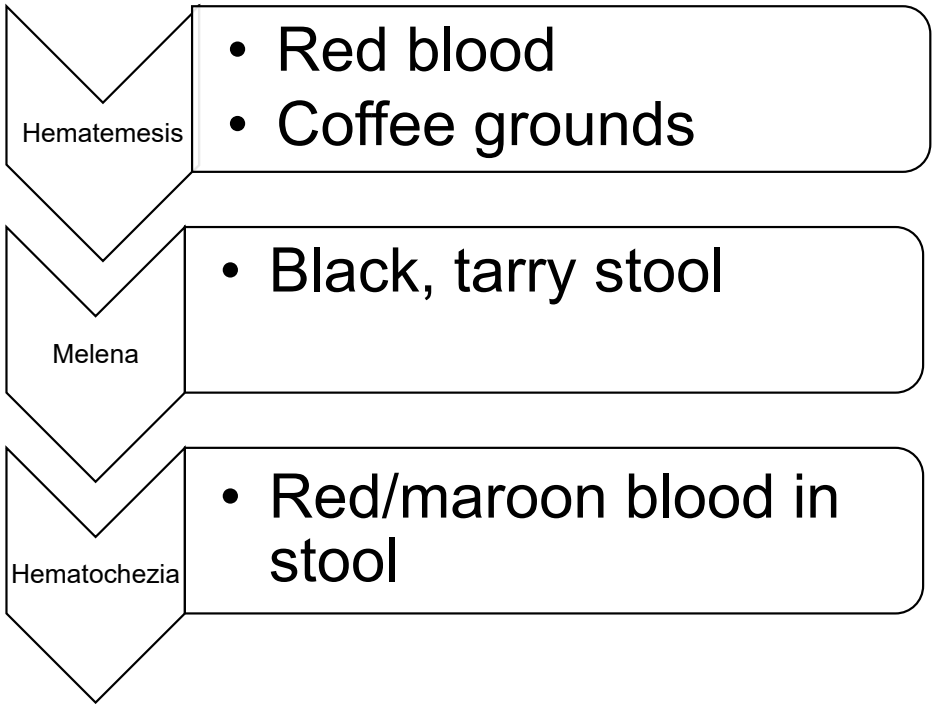


Hematemesis
- Red blood in vomit
- "Coffee grounds" vomit

Melena
- Black, tarry stool

Hematochezia
- Red/maroon blood in stool

Presenting symptoms



Medication affects stool color:
Iron and bismuth=black
Food can change stool color:
Black licorice, blueberries, black cherries, spinach

Foods affect stool color:
Food coloring (jello, drink mix), beets, cranberries, tomato soup/juice=red

Causes of GI bleed

- Ulcer
- Esophagitis
- Varices
- Vascular lesions
- Neoplasm
- Diverticula
- Hemorrhoids
- Fissures
- Inflammatory bowel disease
- Infectious colitis

Medication-related causes

- Anticoagulants
- Antiplatelet agents
- NSAIDs

Anticoagulation reversal considerations

- Severity of blood losses (hemoglobin/hemocrit)
- Urgency of intervention
- Causative agents and their half-lives
- Product availability
- Patient beliefs (blood-products)

See PT2 for agent specific recommendations

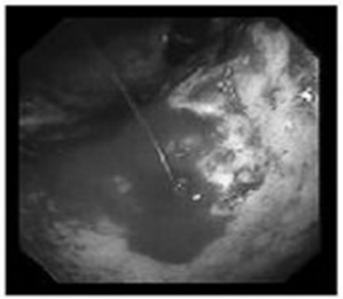
Individual drug therapy-PPI

- Used as adjunct to endoscopic intervention
  - Endoscopy + PPI better than either alone
- Prior to endoscopy, no consensus though intervention can be delayed so generally started
- Acute
  - IV push 40-80 mg every 12H for 72 hours
  - May see continuous infusions but no benefit demonstrated
- Switch to oral PPI after 72 hours
- PPI's available IV: esomeprazole, pantoprazole

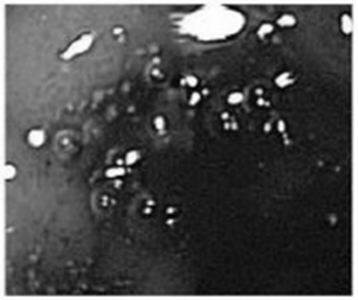
- Post endoscopy with ulcer and high risk stigmata (active bleed, visible vessel, adherent clot)
  - PPI loading dose plus continuous infusion x72 hours to reduce rebleeding and mortality
  - Meta-analysis non inferior bolus plus intermittent IV/PO vs. continuous infusion

- Not recommended- H2 antagonists, somatostatin, octreotide

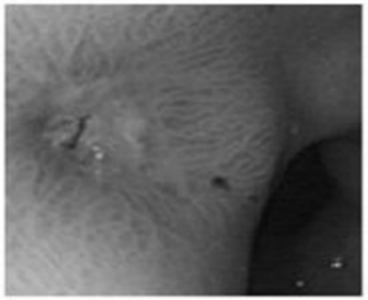
Endoscopy findings



Forrest Ia
Arterial spurting

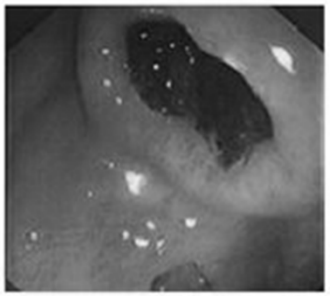


Forrest Ib
Oozing from ulcer base



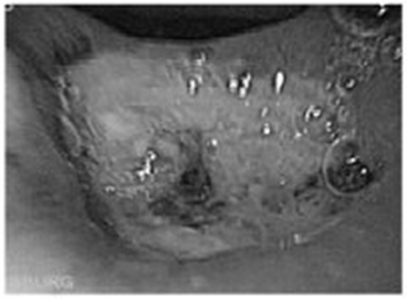
Forrest IIa
Visible vessel

Top row: high risk



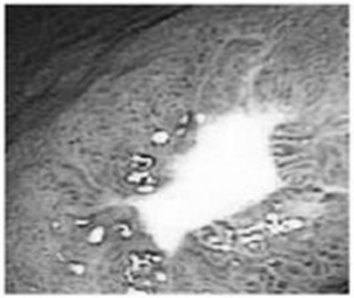
Forrest IIb
Adherent clot

Intermediate rebleed risk



Forrest IIc
Black spots

Intermediate rebleed risk



Forrest III
Clean ulcer base

Lower rebleed risk;
managed outpatient

Van Rensburg, Christoffel & Marais, Monique. (2011). Management of Acute Gastric Ulcer Bleeding. 10.5772/20181.

PPI with upper vs lower bleeds

- If source unconfirmed may use initially
- Once confirmed no indication with lower bleeds

Assess/Plan

- Ensure known contributors are held while workup underway
  - If continued be sure documentation is clear as to why
- Have timeline and threshold for resuming therapies established

Managing antithrombotics

- In general, resume antithrombotics as soon as possible
- Use PPI
- Aspirin resumes immediately or within 7 days.
- If requiring dual antiplatelet (within 30 days of stent or 90 days of ACS), hold second agent for up to 5 days
- Warfarin resume 7 days later
    - Heparin bridging with high-risk thrombosis (mechanical mitral valve, AF with $CHADS_2$ 5 or 6; AF with valve disease, VTE within 3 months) may used until therapeutic INR
- DOAC resume by 3 days later
- Collaborate with colleagues (cardiology, neurology, hematology, gastroenterology) for decision making

Monitor

- Be aware of changes to CBC
  - Dilution from fluid resuscitation can cause false concern
  - After transfusion for each 1 unit anticipate 1 G/dL increase in hemoglobin

Nonpharmacologic issues GI bleeds

- Endoscopy for upper bleed/colonoscopy for lower bleed within 24 hours
  - Generally goal INR 1.5-2.5
- Volume resuscitation
- Transfusion
  - Whole blood threshold (Hgb)
    - Without active bleed less than 8 G/dL, for higher risk cardiac patients less than 9 G/dL
    - With bleed <7 G/dL
  - Platelets or fresh frozen plasma may also be used
- Inpatient vs outpatient treatment

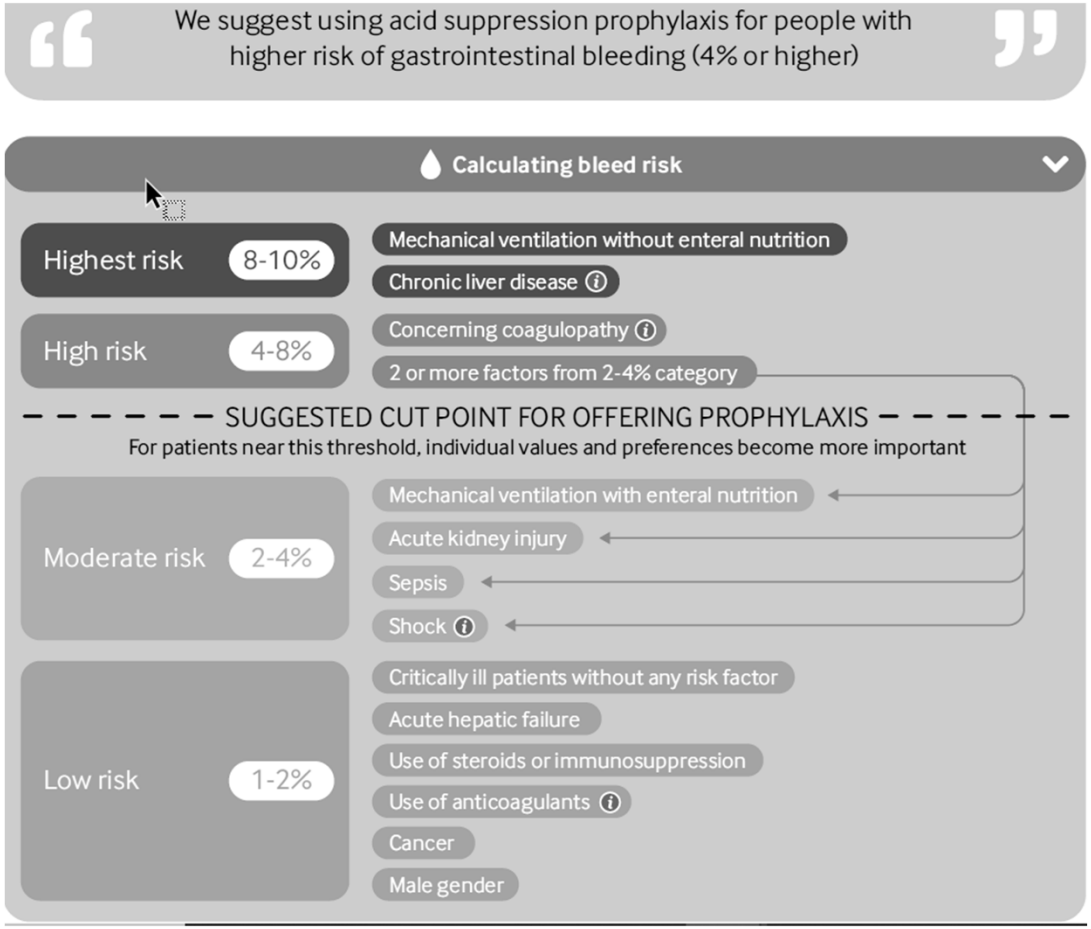
Order/prescription verification

- Bowel preparation before colonoscopy
  - Polyethylene glycol (Miralax or Golytely) administered over 4-6 hours
  - Fleets enema
  - Goal of therapy- rectal output clear without blood or stool to aid visualization and localization of source of bleed
- Procedural orders
  - Epinephrine- local vasoconstriction, Goal- improved visualization of lesion and/or minimize future bleeds caused by intervention
- Bolus doses
  - Full or partial bolus may be administered in emergency room or procedural area

Stress Ulcer

- Stress ulcer: Clinically important bleeding from GI mucosa in critically ill
    - Probably due to reduced gastric bloodflow, increased acid production, impaired mucous production
    - Bleeding from multiple superficial mucosal capillaries
    - Mortality 50%

Stress ulcer prophylaxis



GI bleeding prophylaxis for critically ill patients. Ye et al. *BMJ*. 2020;368:l6722.

Stress ulcer prophylaxis therapy

- Suggest PPI,
  - Maybe superior to H2RAs
  - Risk of enteric infection, C diff
  - Nosocomial pneumonia
- Reasonable choice H2 antagonist
- Sucralfate: evidence-based benefit but impractical
    - Multiple daily doses
    - Constipation
    - Medication interactions
    - Potential for aluminum toxicity in chronic renal dysfunction

Duration of therapy

- Treatment-high risk of rebleed PPI BID x 14 days then daily with duration based on underlying cause
- Prophylaxis-acid suppression medications are stopped when the patient is no longer critically ill or the risk factor triggering prophylaxis is no longer present
- Secondary prophylaxis if prior ulcer while on antiplatelet/anticoagulation

Cost considerations

- IV therapy tends to be more expensive than enteral (PO/NG)
  - Medication cost
  - Staff time (pharmacy, nursing)
  - Equipment (lines, IV pumps)
- Formulary preferences will help you select agent

Summary

- PPIs are the mainstay of therapy for acute bleed treatment
- Pharmacists are key to managing acute and long term antiplatelet and/or anticoagulants for those who experience a bleed
- Stress ulcer prophylaxis while risk factors are present can optimize the benefit to risk of this therapy