ACUTE UPPER GASTROINTESTINAL BLEEDING

HISTORY

Bleeding Manifestations
- ❑ Hematemesis
  - ❑ *Bright red bloody emesis, moderate to severe upper GI bleed*
- ❑ Coffee-ground emesis
  - ❑ *More limited upper GI bleed*
- ❑ Melena
  - ❑ *Black, tarry, foul-smelling stool, probable upper GI bleed, possible lower GI bleed*
- ❑ Hematochezia
  - ❑ *Bright red bloody stool, probable lower GI bleed, possible upper GI bleed*
- ❑ Maroon-colored stool
  - ❑ *Probable lower GI bleed, possible upper GI bleed*

Medical History
- ❑ Peptic ulcer disease
  - ❑ History of H. pylori infection
  - ❑ NSAID use
  - ❑ Antithrombotic use
  - ❑ Smoking
- ❑ Varices or portal hypertensive gastropathy
  - ❑ History of liver disease
  - ❑ Excess alcohol use
  - ❑ H. pylori infection
- ❑ Marginal ulcer (ulcer at anastomotic site)
  - ❑ Gastroenteric anastomosis
- ❑ Medications
  - ❑ Aspirin and NSAIDs (peptic ulcer formation)
  - ❑ Bisphosphonates, tetracyclines, iron, KCL (pill esophagitis)
  - ❑ Warfarin, DOACs, antiplatelet agents
  - ❑ SSRIs, Ca^{2+} channel blockers, aldosterone antagonists (associated with GI bleeding)
  - ❑ Bismuth, charcoal, licorice, iron (alter clinical presentation by turning stool black)

Symptom Assessment
- ❑ Severe bleeding
  - ❑ Orthostatic lightheadedness
  - ❑ Confusion
  - ❑ Angina
  - ❑ Severe palpitations
  - ❑ Cold/clammy extremities
- ❑ Peptic ulcer
  - ❑ Upper abdominal pain
- ❑ Esophageal ulcer
  - ❑ Odynophagia
  - ❑ Gastroesophageal reflux
  - ❑ Dysphagia
- ❑ Variceal hemorrhage or portal hypertensive gastropathy
  - ❑ Jaundice
  - ❑ Ascites
- ❑ Mallory-Weiss tear
  - ❑ Emesis
  - ❑ Retching
  - ❑ Coughing prior to hematemesis
- ❑ Malignancy
  - ❑ Dysphagia
  - ❑ Early satiety
  - ❑ Unintentional weight loss
  - ❑ Cachexia

PHYSICAL EXAM

Signs of Hypovolemia/Hemodynamic Instability
- ❑ Resting tachycardia → <15% of blood volume loss
- ❑ Orthostatic hypotension → >15% of blood volume loss
- ❑ Supine hypotension → >40% of blood volume loss

Initial Signs of Significant Blood Loss
- ❑ Tachycardia
- ❑ Low urine output
- ❑ Narrowed pulse pressure (pulse pressure <25% of systolic pressure)

Abdominal Exam
Inspection
- ❑ The patient should lie flat, knees bent
- ❑ Inspect for scars, rashes, lesions, or striae

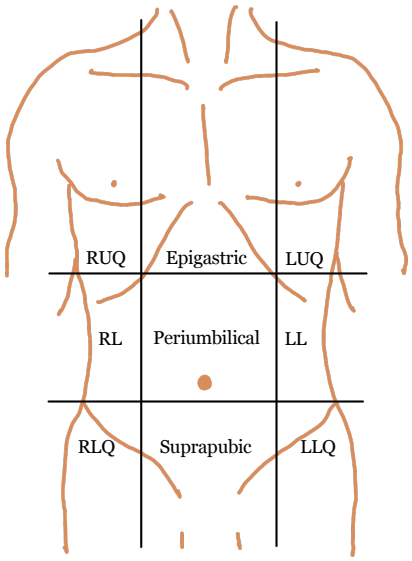
Auscultation
- ❑ Use the diaphragm to auscultate for bowel sounds prior to percussion or palpation
  - ❑ **Hyperactive, high-pitched bowel sounds** may be heard in early small bowel obstruction

Palpation
- ❑ Palpate with palmar finger surfaces
- ❑ Superficial palpation is done first to assess for tenderness, superficial masses, and muscular resistance
- ❑ Deep palpation is done second to assess for liver edge, kidneys, and abdominal masses

Liver Examination
- ❑ Place left hand behind patient's right 11th and 12th ribs and press upward
- ❑ Place right hand on right abdomen lateral to rectus muscle with fingertips well below the lower border of liver dullness
- ❑ Have patient exhale, then inhale, and feel liver edge as it descends

Guarding and Rebound Tenderness
- ❑ Guarding refers to contraction of abdominal muscles by patient
  - ❑ Involuntary guarding (rigidity) is a sign of an **acute abdomen**
  - ❑ Significant abdominal tenderness accompanied by signs of peritoneal irritation (e.g., involuntary guarding) suggests **perforation**
- ❑ Check for rebound tenderness by very slowly pressing deeply into patient's abdomen then rapidly withdrawing pressure
  - ❑ If withdrawal is more painful for patient, then rebound tenderness is present and is a sign of an **acute abdomen**

Rectal Exam
- ❑ Have patient lie on their side with knees bent towards their chest
- ❑ Insert a lubricated, gloved finger into rectum
  - ❑ Stool color on glove can help determine source of bleed (melena vs. hematochezia vs. brown)



MANAGEMENT

Risk Stratification and Triage

- High-Risk Features: hypotension, tachycardia, coagulopathy (INR > 1.5), AMS, syncope, age > 65, liver dx, CHF
- Risk Scores: Glasgow-Blatchford Score and ABC score recommended over AIMS65
- Triage: likely need for MICU if either BP < 90 and HR > 100 x2 30 min apart, Hgb < 7 regardless of vital signs with evidence of active significant bleed in past 12 hrs, >2L IVF or 2u pRBCs to prevent instability, or ATLS hemorrhagic shock class III (blood loss of 1.5-2L or 30-40% of blood volume)

Initial Workup

- ❑ CBC (q2-q8hr)
- ❑ CMP
- ❑ Coags
- ❑ Type & screen
- ❑ Rectal exam

Stabilization

- ❑ NPO
- ❑ Supplemental O_2 as needed (≥94% for patients w/o COPD)
- ❑ Intubation if large volume hematemesis or AMS (aspiration risks)
- ❑ ≥2 large bore peripheral IVs (16/18 gauge or larger)

Resuscitation

- ❑ Treat hypotension initially with **rapid, bolus infusions** of **isotonic crystalloid** (e.g., 500 – 1000mL NS or LR per bolus; use smaller boluses and lower total volumes for patients with compromised cardiac function)

Transfusion

- For severe, ongoing bleeding, immediately transfuse blood products in 1:1:1 ratio of pRBCs, plasma, and platelets, as for trauma patients
- For hemodynamic instability despite crystalloid resuscitation, transfuse 1-2u pRBCs
- For hemoglobin < 8 g/dL in high-risk patients (e.g. older adult, coronary artery disease), transfuse 1u pRBCs and reassess patient's clinical condition
- ❑ For **hemoglobin < 7 g/dL in low-risk patients**, transfuse 1u pRBCs and reassess the patient's clinical condition
  - Avoid over transfusion if possible esophageal varices (can increase portal pressures and worsen bleeding)
  - Hct drop lags 24-72hr from onset of bleeding
- Give PCC (lower volume, faster onset than FFP) for **coagulopathy** or **after transfusing 4u pRBCs**
- Give platelets for **thrombocytopenia** (platelets < 50,000) or platelet dysfunction (e.g., chronic aspirin therapy) or after transfusing 4u pRBCs
  - If uremic, consider ddAVP (0.3mcg/kg)
  - If ESLD, INR inaccurate so avoid FFP volume (can increase portal pressure)

Consults

- ❑ **GI**
  - ❑ For EGD and/or colonoscopy
  - ❑ EGD within 24hrs (no change in outcomes if between 0-6hrs vs. 6-24hrs for non-variceal or non-HDUS bleeds)
- ❑ **Surgery/IR**
  - ❑ If hemodynamic instability or if endoscopy not preferred

Pre-EGD Pharmacotherapy & Management for Cirrhosis and Known/Suspected Esophageal Varices

- ❑ **IV octreotide** (somatostatin analog, decreases blood flow to GI/portal system) **50mcg bolus** (may repeat bolus in first hour if bleeding uncontrolled) followed by **octreotide gtt at 50mcg/hr for 3-5 days**
- ❑ **IV ceftriaxone (CTX) 1g q24hr x7 days** for ppx against bacterial infections and mortality benefit
- ❑ **Stop beta-blockers**

Pre-EGD Pharmacotherapy & Management for All Patients

- ❑ **IV PPI: pantoprazole 40mg BID** (neutralizing acid stabilizes clots); decreases high-risk lesions requiring endoscopic therapy but unclear clinical impact pre-EGD; if EGD delayed beyond 12 hours, give second doze 40mg IV
- ❑ **IV prokinetics: erythromycin 250mg** 30min prior to EGD to increase gut motility and visualization
- Other measures:
  - **NG lavage** may be helpful to clear clots, blood, and debris from stomach prior to EGD to improve visualization
  - **Balloon tamponade** may be performed as a temporizing measure for patients with uncontrollable hemorrhage likely due to varices using any of several devices (e.g., Sengstaken-Blakemore tube, Minnesota tube); tracheal intubation is necessary if such device is to be placed; ensure proper device placement prior to inflation to avoid esophageal rupture

Post-EGD Pharmacotherapy & Management

- Review GI procedure note for specific diet, PPI, and recommendations
- For high-risk PUD:
  - ❑ **IV pantoprazole 40mg BID x 72hrs**, decreases re-bleeds and need for repeat EGD. Switch to **PO PPI after 72hrs, discharge with BID dosing x2-8 weeks**
  - ❑ **Treat *H.pylori*** if positive
- For variceal bleed:
  - ❑ Consider **octreotide x2-5 days**
  - ❑ Continue **IV CTX 1g q24hr x7 days**
- For angiodysplasia: consider long-term **octreotide**, **bevacizumab,** or **thalidone** w/GI help
- If re-bleed: consider repeat EGD, angiography, surgical/IR consult. If variceal bleeding, consider balloon tamponade, TIPS, or BRTO

Anticoagulation/Antiplatelet Management

- **Warfarin: Hold** during bleed. For reversal, can consider PCC, but FFP or vit K NOT recommended. Resume after hemostasis (w/unfractionated heparin aka UFH bridge for ~48hrs if indicated). Decreases risk of thrombosis/death in AF if resumed within 7 days)
- **DOAC: Hold** during bleed. Reversal with idarucizumab, Andexanet alfa, or PCC NOT recommended. Resume within 72hrs in high thrombotic risk patients or within 7 days for low thrombotic risk patients
- **ASA: Continue** during bleed if low-moderate risk, hold if high risk (unless recent PCI/ACS). Resume ASA for secondary prevention after hemostasis endoscopically confirmed. Increased risk of 30d mortality if not resumed; if PUD, add PPI to decrease risk of re-bleeding
- **DAPT for PCI/ACS: Discuss with cardiologist.** Generally, if very recent (<30d PCI, <90d ACS), continue both unless life-threatening; if more distant, continue ASA but less risk with holding P2Y12i. Resume within 1-5 days pending course

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