

Gastrointestinal Hemorrhage

Author: Salim Rezaie

• Etiology

- ✓ 350K hospital admissions annually in US for GIB
- ✓ Estimated mortality of 2 – 15%
- ✓ Acute, massive UGIB incidence of 40 to 150 episodes per 100,000 persons annually
- ✓ Acute, massive LGIB incidence of 20 to 27 episodes per 1000,000 persons annually

Causes of Acute UGIB	
Cause	Prevalence (%)
PUD	40-79
Gastritis/duodenitis	5-30
Esophageal varices	6-21

Causes of Acute LGIB	
Cause	Prevalence (%)
Diverticular Disease	17-40
Colonic Neoplasm	11-14
AV Malformation	2-30
Colitis	9-21

• Presentation

- ✓ Microscopic blood loss → hemocult positive stool or iron def anemia
- ✓ Hematemesis → vomiting fresh blood
- ✓ “Coffee-ground” emesis → black (digested) blood
- ✓ Melena → Black, tarry stool
- ✓ Hemochezia → bright red blood via rectum (usually LGIB, but brisk UGIB can also cause)

• Initial Evaluation

1. Lab evaluation: CBC, Coags, Type and Cross. Also consider LFTs, Troponins/ECG (in hemodynamic compromise)
2. History: Use of NSAIDs and other anticoagulants, use of EtOH, Prior GI bleed (60% of repeat GI bleeds are from the same source); Prior GI/thoracic surgery
3. Physical Exam: Findings suggestive of cirrhosis

• Diagnosis

✓ UGIB (Above Ligament of Treitz)

1. Esophagogastroduodenoscopy (EGD) → diagnostic tool of choice
2. NGL → Does not improve outcomes in GIB; 1/6th of pts with active bleed will have a neg NGL; Huang et al Gastrointest Endosc nov 2011: 193 pts received NGL & 193 did not: in retrospective analysis, bloody aspirate was associated with high risk lesion at

endoscopy (OR 2.69) and therefore more likely to have endoscopy & receive it sooner, but no affect on mortality, LOS, need for transfusion or surgery

✓ LGIB

1. Colonoscopy → diagnostic tool of choice
2. Arteriography → contrast study that can identify brisk bleeding; second line diagnostic tool
3. Technetium-99m-tagged RBC Scan → can identify slow bleeding (0.1 to 0.4 cc/min)
4. Double-contrast barium enema with sigmoidoscopy → if contraindication to colonoscopy

✓ Small Bowel

1. Push enteroscopy → extension of EGD of 15 to 160cm of small bowel distal to ligament of Treitz
2. Barium-contrast upper GI series with SBFT → low sens (0 to 5.6%)
3. Enteroclysis → endoscopic placement of contrast material directly into the prox small bowel
4. Technetium-99m-tagged RBC Scan
5. Meckel’s scan → high sens 75 – 100% for identifying gastric mucosa in small bowel
6. Capsule endoscopy → pill-shaped camera that patient swallows; diagnostic yield 66 – 69%

✓ Last Ditch Effort

1. Laparotomy with intraoperative enteroscopy -> only after all diagnostic tools have failed; very invasive & associated with high rates of morbidity and mortality

• Prognosis

- ✓ Rockall Score → best predictor of mortality in GIB (Score <3 good prognosis with <12% death; Score >8 high mortality with 75% death)

Variable	Score 0	Score 1	Score 2	Score 3
Age	<60	60 - 79	>80	
Shock	SBO >100 Pulse <100	Pulse >100 SBP >100	SBP <100	
Co-morbidity	None		CHF, IHD, Major Co-Morbidity	Renal failure, liver failure, metastatic CA
Diagnosis	Mallory-weiss	All other dx	GI Malignancy	
Evidence of Bleeding	None		Blood, adherent clot, spurting vessel	

- ✓ Blatchford Score → best predictor of need for endoscopy (high risk lesion) (Score 0 low risk; any score greater than 0 is high risk)

Risk Factor	1	2	3	4	5	6
BUN (mmol/L)		6.5 - 8	8 - 10	10 - 25		> 25
Hb for men (g/L)	120 - 130		100 - 120			<100
Hb for women (g/L)	100 - 120					<100
SBP (mmHg)	100 - 109	90 - 99	<90			
Pulse > 100bpm	+					
Presentation with melena	+					
Presentation with syncope		+				
Hepatic disease		+				
Cardiac Failure		+				

• Treatment

- ✓ Stability of the patient and rate of bleeding dictate the order of treatment
- ✓ Hemodynamically unstable patient → 2 large bore IV, IV Crystalloid, Crash emergency release PRBCs
- ✓ Benefit of conservative over liberal transfusion threshold in upper GI bleed (transfuse for Hb > 7) ¹⁹
- ✓ With endoscopy, erythromycin (125mg over 5min) is as good as NGL for visualization ²
- ✓ Management of coagulopathy and thrombocytopenia → no guidelines exist on management in UGIB. Correction to <1.5 is sine qua non. Elevated INR at initial presentation does not predict rebleeding in non-variceal UGIB, but INR >1.5 is associated with increased patient mortality
- ✓ Octreotide → a somatostatin analog, causes splanchnic vasoconstriction. Improved control of variceal hemorrhage when combined with endoscopic treatment within 24 hours
- ✓ Prophylactic Antibiotics in acute variceal bleed → Chavez-Tapia et al. Cochrane Database of Syst Rev: IV ceftriaxone 1gm/d for 5 days has beneficial effect on mortality, mortality from bacterial infections, bacterial infections, rebleeding events, and LOS; If PCN allergic, quinolone is just as good and supported by American and British guidelines
- ✓ PPI therapy → Sreedharan et al Cochrane Database 2010: no significant differences in mortality,

rebleeding or need for surgery, but does reduce active bleeding

- ✓ Timing of Endoscopy → patients with UGIB who are unstable should generally undergo EGD within 24 hours of admission after resuscitation; patients who are stable and without comorbidities should undergo EGD in a non-emergent setting to identify lesions

• Pearls

- ✓ NGL not proven to improve mortality, but bloody aspirate does require EGD ASAP
- ✓ Erythromycin just as good as NGL for visualization on EGD
- ✓ No evidence to support FFP and platelets to get INR <1.5 and platelets above 50k
- ✓ Prophylactic abx in variceal bleed reduce mortality and bacteremia
- ✓ PPI therapy stops acute bleeding, but has no benefit on mortality
- ✓ Rockall Score is the best predictor of mortality in GIB
- ✓ Blatchford Score is the best predictor of need for endoscopy (high risk lesion)

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