

The GI Health and Chronic Liver Disease Foundations present

United GI & LIVER Conference

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Upper GI Ulcer Bleeding ACG Clinical Guideline Review

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Disclosures

I have no relevant financial disclosures for this presentation.

Case #1

- 64-year-old ♀ with melena x 24 hours. Takes statin for hyperlipidemia and ibuprofen for tennis elbow. Otherwise doing well. No abdominal pain, nausea, vomiting or syncope.
- BP 110/67, HR 88. Soft, nontender abdomen, melenic stool in vault.
- Hgb 12.8, BUN 16, Plt 234, ALT 14, Alb 4.1, TB 0.9, INR 1.0
- What would you recommend?
 - A. CT angiogram now
 - B. Arrange for EGD now
 - C. Arrange for EGD tomorrow
 - D. Discharge home with outpatient follow-up

CME

ACG Clinical Guideline: Upper Gastrointestinal and Ulcer Bleeding

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Glasgow-Blatchford Score: Range 0-23

Table 2. Glasgow-Blatchford score

Risk factors at admission	Factor score
Blood urea nitrogen (mg/dL)	
18.2 to <22.4	2
22.4 to <28.0	3
28.0 to <70.0	4
≥70.0	6
Hemoglobin (g/dL)	
12.0 to <13.0 (men); 10.0 to <12.0 (women)	1
10.0 to <12.0 (men)	3
<10.0	6
Systolic blood pressure (mm Hg)	
100–109	1
90–99	2
<90	3
Heart rate (beats per minute)	
≥100	1
Melena	1
Syncope	2
Hepatic disease ^a	2
Cardiac failure ^a	2

- BUN
- Hemoglobin
- Systolic BP
- HR
- **Melena**
- Syncope
- Hepatic Disease
- Cardiac Failure

Glasgow-Blatchford Score 0-1

GUIDELINE STATEMENTS

Risk stratification

1. We suggest that patients presenting to the emergency department with UGIB who are classified as very low risk, defined as a risk assessment score with $\leq 1\%$ false negative rate for the outcome of hospital-based intervention or death (e.g., Glasgow-Blatchford score = 0–1), be discharged with outpatient follow-up rather than admitted to hospital (conditional recommendation, very-low-quality evidence).

Glasgow-Blatchford Score 0-1

- Very low risk
- $\leq 1\%$ false negative rate for needing hospital-based intervention or death
- Can discharge her with outpatient follow-up
- Cost savings \$
- **Make your own decision**

Case #1 Revisited

What would you recommend?

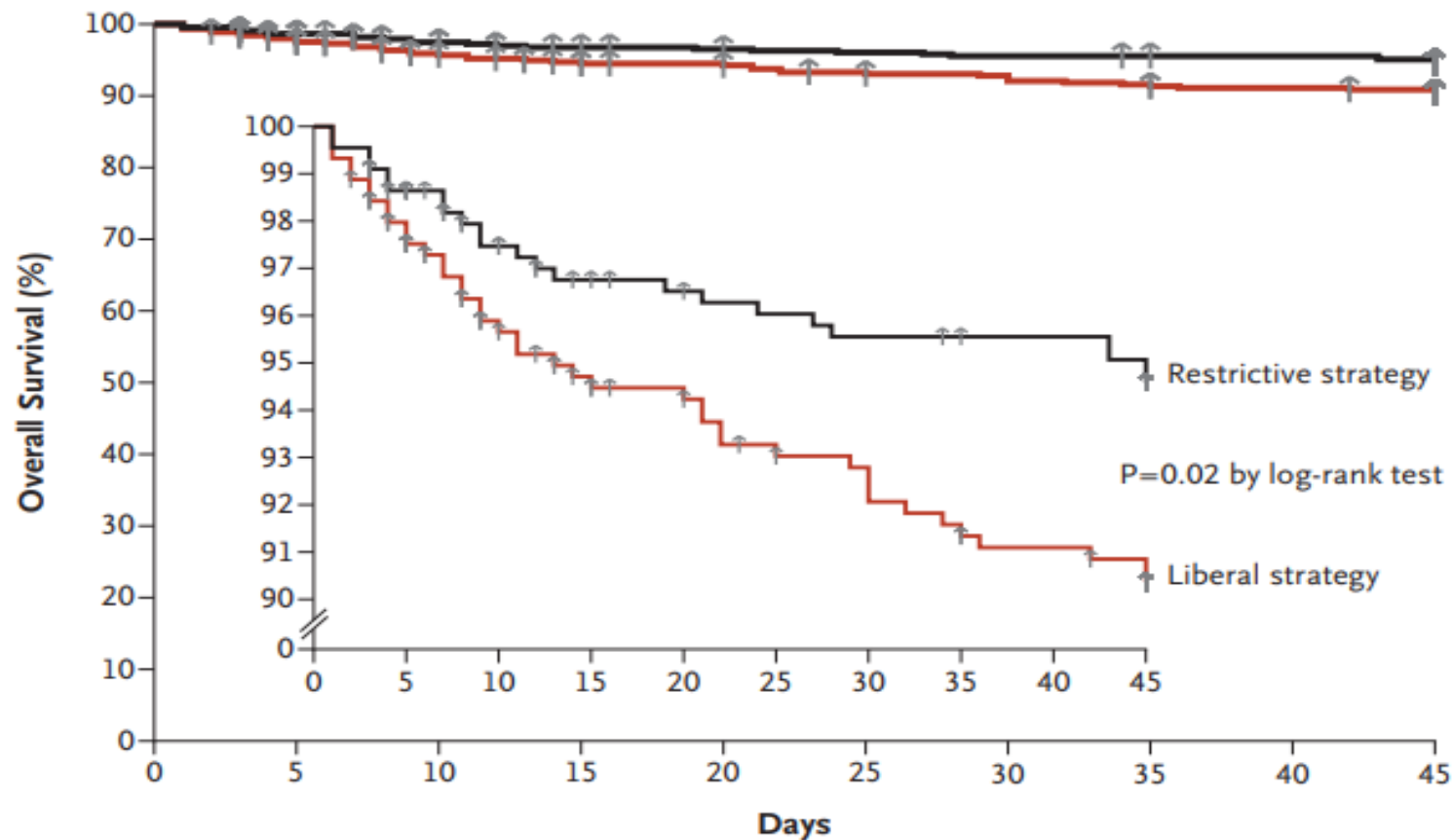
- A. CT angiogram now
- B. Arrange for EGD now
- C. Arrange for EGD tomorrow
- D. Discharge home with outpatient follow-up

GI Bleeding Case #2

- 71-year-old ♂ with melena and fatigue x 12 hours. Takes diclofenac for low back pain. No vomiting or abdominal pain.
- BP 88/56, HR 108, abdomen is soft, not tender, melenic stool.
- Hgb 7.3, BUN 33, Plt 234, ALT 14, TB 0.9, INR 1.0
- Which of the following would you recommend to the ED?
 - Transfuse prbc?
 - Request NG tube aspiration?
 - Prokinetic therapy before EGD?
 - Start PPI IV?
 - Arrange for EGD now?

Restrictive vs. Liberal Transfusion

A Survival, According to Transfusion Strategy



No. at Risk

Restrictive strategy	444	429	412	404	401	399	397	395	394	392
Liberal strategy	445	428	407	397	393	386	383	378	375	372

Restrictive blood transfusion

Red blood cell transfusion

2. We suggest a restrictive policy of red blood cell (RBC) transfusion with a threshold for transfusion at a hemoglobin of 7 g/dL for patients with UGIB (conditional recommendation, low-quality evidence).

Restrictive blood transfusion

- For vast majority, 7 g/dL threshold for transfusion
- Exceptions to consider 8 g/dL threshold:
 - Hypotensive → resuscitation, equilibration → hgb ↓
 - Pre-existing cardiovascular disease
 - Acute coronary syndrome

Nasogastric Lavage

- NGL did not improve outcomes
 - Often inaccurate; does not reliably predict high risk lesion requiring endoscopic therapy
 - No effect on mortality, length of stay, need for surgery
- Adverse events $\approx \frac{1}{3}$
 - Pain, nasal bleeding, failure of NGT placement

Gralnek IM, et al. Endoscopy. 2021;53(3):300

Karakonstantis S, et al. Expert Rev Gastroenterol Hepatol 2018;12(1):63

Rockey DC, et al. J Investig Med 2017;65:759

Prokinetic Therapy

- Push blood and clot distally to improve visualization
- Erythromycin 250mg infusion
- Infusion 20-90 minutes before EGD

Pre-endoscopic medical therapy

Prokinetic therapy with erythromycin.

3. We suggest an infusion of erythromycin before endoscopy in patients with UGIB (conditional recommendation, very-low-quality evidence).

Prokinetic therapy

- Erythromycin
 - Decreased need for 2nd EGD
 - Decreased hospital stay
 - No reduction in bleeding or mortality
- Metoclopramide
 - Not as much data
 - No benefit shown

Proton Pump Inhibitor (Pre-EGD)

- Does not improve clinical outcomes
 - i.e., mortality, rebleeding, need for surgery
- Modest reduction in endoscopic therapy
 - fewer high-risk endoscopic stigmata
- May benefit if EGD is delayed or not done

PPI therapy.

4. We could not reach a recommendation for or against pre-endoscopic PPI therapy for patients with UGIB.

Timing of Endoscopy

Timing of endoscopy.

5. We suggest that patients admitted to or under observation in hospital for UGIB undergo endoscopy within 24 hours of presentation (conditional recommendation, very-low-quality evidence).

- EGD \leq 24 hours of presentation
 - Reduces length of stay; economic benefit
 - Reduces need for surgery and possibly mortality

Is Earlier EGD Better?

Table 6. Randomized trial of endoscopy <6 hours vs 6–24 hours after gastroenterology consultation in patients with hematemesis or melena and Glasgow-Blatchford score ≥ 12 (53)

Outcome	Endoscopy <6 hr (N = 258)	Endoscopy 6–24 hr (N = 258)
Hours from presentation to endoscopy, mean \pm SD	9.9 \pm 6.1	24.7 \pm 9.0
Further bleeding (30 d), n (%)	28 (10.9)	20 (7.8)
Death (30 d), n (%)	23 (8.9)	17 (6.6)
Hospital days, median (range)	5 (4–9)	5 (3–8)
Units of blood transfused, mean \pm SD	2.4 \pm 2.3	2.4 \pm 2.1
Endoscopic therapy, n (%)	155 (60.1) ^a	125 (48.4)

^a $P = 0.01$ vs endoscopy 6–24 hours.

Is Earlier EGD Better?

- No benefit for very early EGD (may be harmful)
 - ≤ 6 hours after GI consult including high-risk
 - Hemodynamic instability
 - Significant comorbidities
- **Most important to resuscitate *before* EGD**

Lau JYW, et al. Timing of endoscopy for acute upper gastrointestinal bleeding. *NEJM* 2020; 382:1299-1308

Initial risk stratification and triage

Very-Low Clinical Risk

- Risk score^a indicates 0-1% false negatives for transfusion, hemostatic intervention, or death
 - Glasgow-Blatchford Score 0-1

Not Very-Low Clinical Risk

- Risk score indicates >1% false negatives for transfusion, hemostatic intervention, or death
 - Glasgow-Blatchford Score ≥ 2

Discharge from emergency department with outpatient management if no other reason for hospitalization

Admit to hospital or observation unit

Pre-endoscopic management

- Resuscitation, attention to active comorbidities
- RBC transfusion if hemoglobin <7 g/dL
- Suggest erythromycin 250mg infusion 30-90 minutes before upper endoscopy
- No recommendation for or against proton pump inhibitors

Upper endoscopy within 24 hours of presentation

Endoscopy

Low-risk endoscopic findings

- e.g., clean-based ulcer, nonbleeding Mallory-Weiss tear, erosions

Discharge patient if stable vital signs and hemoglobin, and no other reason for hospitalization

Non-low-risk endoscopic findings

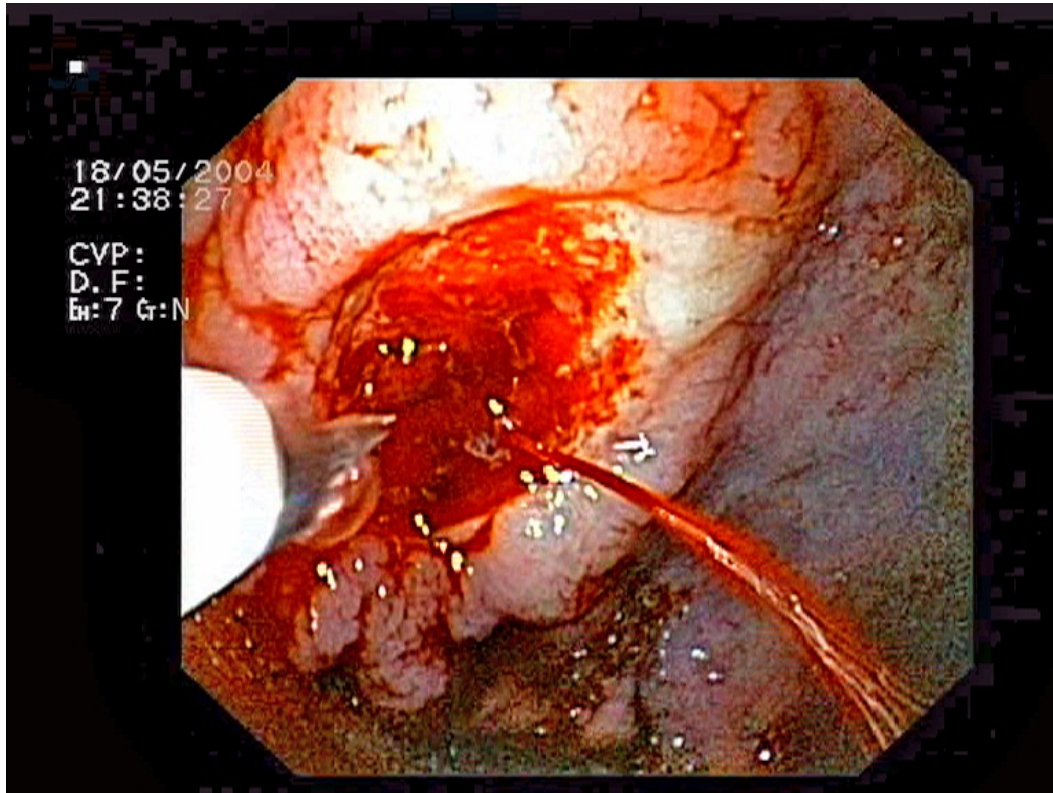
- e.g., ulcer with stigmata of hemorrhage, varices, neoplasm, Dieulafoy lesion

Patient remains in hospital

Case #2 Revisited

- Which would you recommend to the ED?
 - Transfuse prbc?
 - Request NG tube aspiration?
 - Prokinetic therapy before EGD?
 - Start PPI IV?
 - Arrange for EGD now?

Endoscopic Therapy Needed



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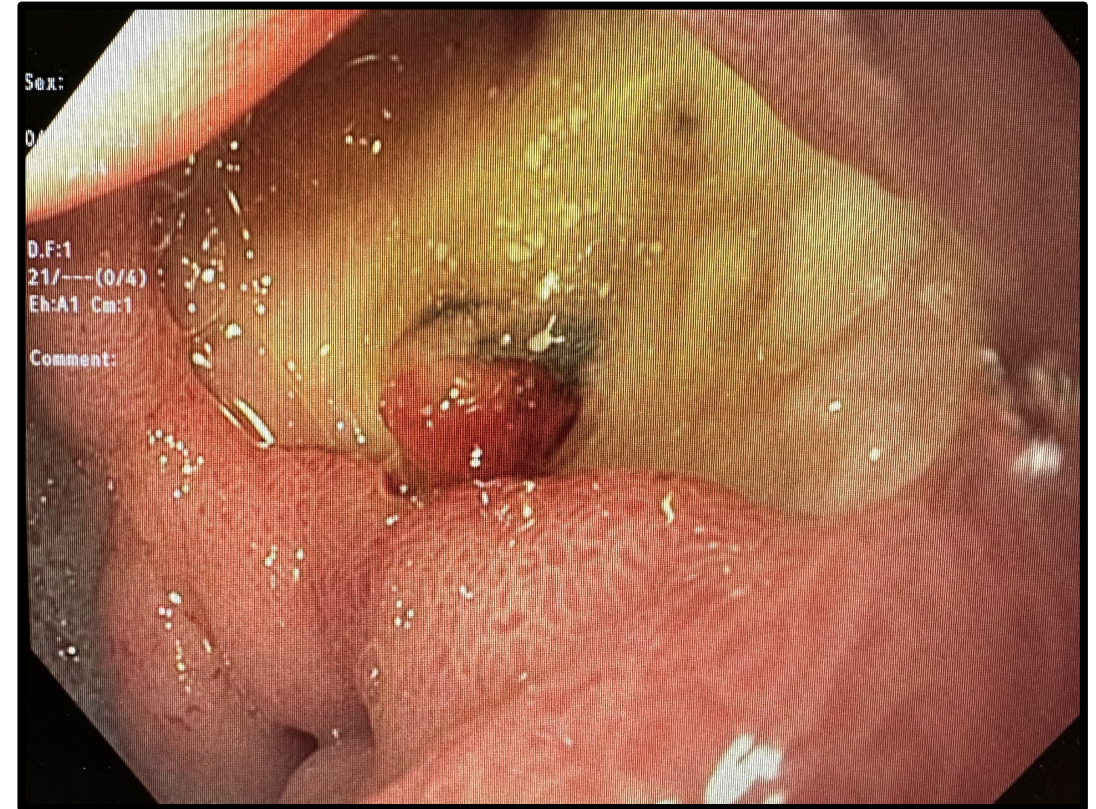


Image courtesy of Kamil Obideen, MD

Endoscopic Therapy **Not** Needed

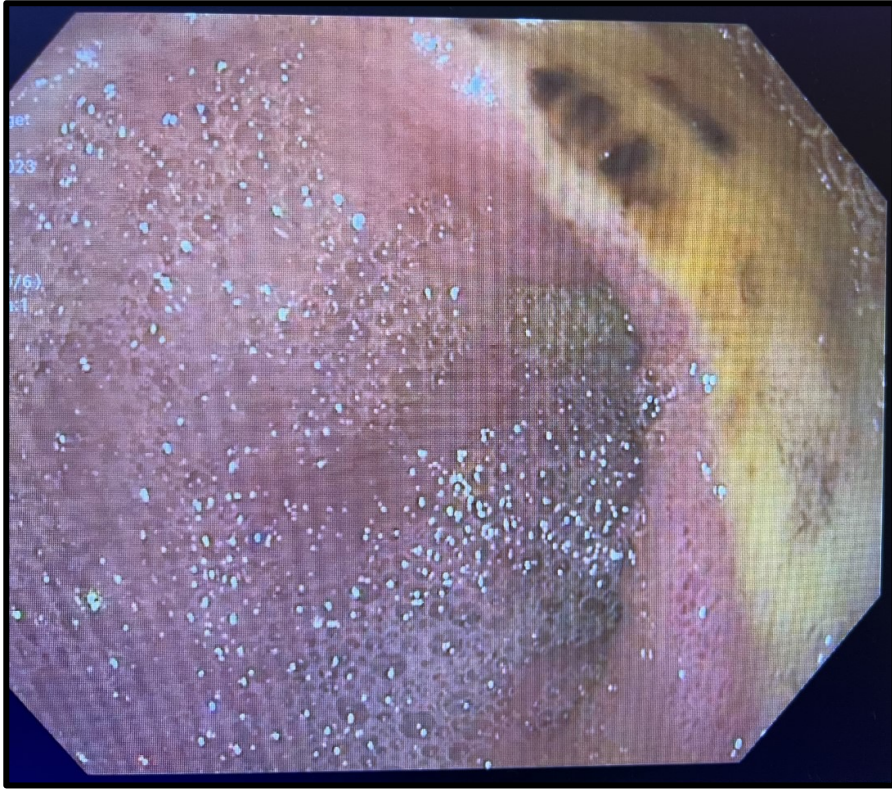


Image provided by Kamil Obideen, MD

Endoscopic Therapy ±



Image by Samir https://commons.wikimedia.org/wiki/File:MALT_4.jpg#globalusage

7. We could not reach a recommendation for or against endoscopic therapy in patients with UGIB due to ulcers with adherent clot resistant to vigorous irrigation.

Laine L, et al. *Am J Gastroenterol*. 2021 May 1;116(5):899-917

Proton Pump Inhibitor Therapy

- **Pre-EGD:** PPIs downgrade PUD stigmata but do not alter clinical outcomes such as recurrent bleeding or mortality
- **Post-EGD:** PPIs reduce further bleeding and mortality
 - Need $\geq 80\text{mg}$ daily PPI for ≥ 3 days
 - Continuous dosing (IV): 80mg bolus, then 8 mg/hr infusion
 - Intermittent dosing (IV or PO): 80mg bolus, then 40mg 2-4x per day
 - Then twice daily PPI for 14 days (days 4-14)
 - Flat pigmented spot, clean ulcer base \rightarrow once daily PPI

Ulcer Treatment Algorithm

