Upper GI bleeding for non-tertiary Care Centers

11TH ANNUAL
ENDOSCOPY SKILLS DAY FOR PRACTICING
ENDOSCOPISTS AND THEIR TEAMS
Education for Excellence in Endoscopy
JANUARY 20 - 22, 2023
The Rimrock Resort Hotel, Banff, Alberta

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No conflict of interest to declare

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- 70-year-old male, presented at peripheral Hospital with chest pain, refers intermittent black stools for 2 weeks.
- History of dyslipidemia, T2DM, hypertension, atrial fibrillation on anticoagulation, last dose of Xarelto yesterday evening.
- No abdominal pain, vitals signs stable.
- Hb 79 (164 nine months ago), normal platelets, MCV 71.
- Cardiology consulted: demand ischemia secondary to anemia NYD
- Plan?

Blood transfusion x 2, IV fluids, hold anticoagulation, IV PPI infusion.
EGD tomorrow at local hospital, if any changes please call back.

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Initial Management

- Does the patient needs high level of care?
- When to perform Endoscopy?

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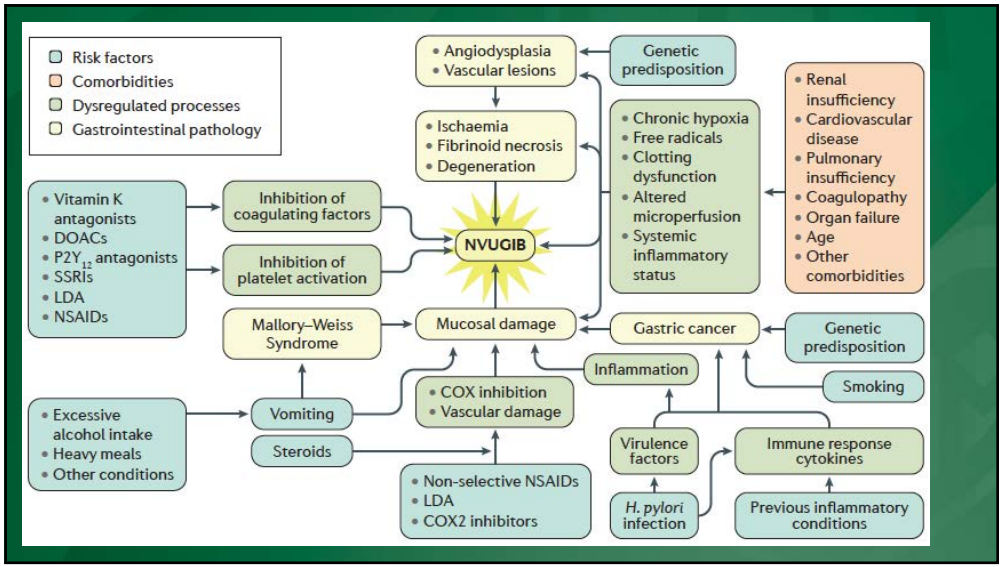

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Table 1. Causes of nonvariceal upper gastrointestinal bleeding

Cause	Frequency (%)
Peptic ulcer	26–59
Mallory–Weiss tear	7–12
Erosive gastritis/duodenitis	7–28
Esophagitis	4–12
Malignancy	4–6
Angiodysplasia	2–8
Other	2–11

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Initial evaluation and risk stratification

- Thorough history and physical examination
- Chronicity, onset
- Description and intensity of symptoms
- Previous episodes of GI bleed?
- Medications, comorbidities, alcohol?
- NSAIDs, anticoagulation, antiplatelets, SSRI inhibitors

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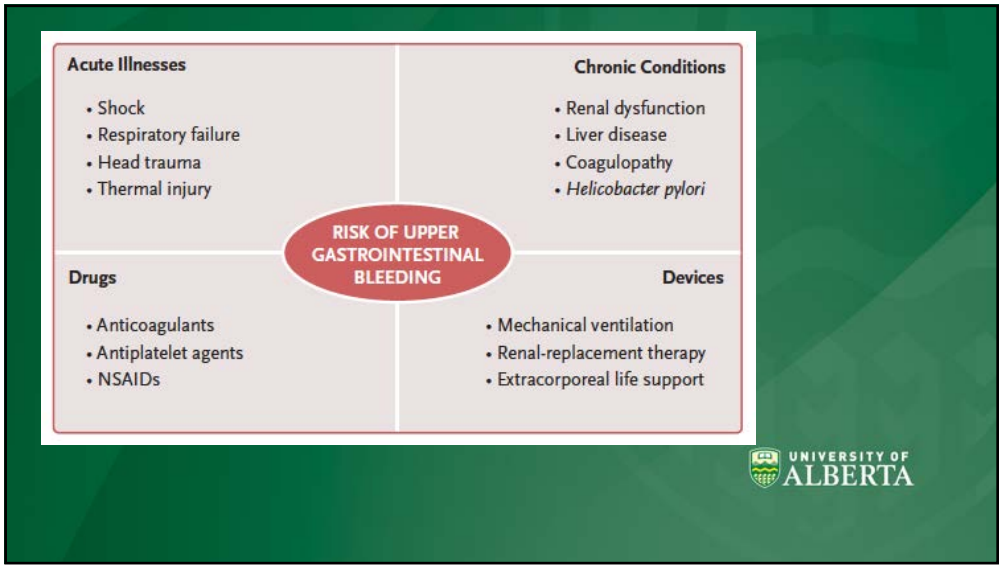

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Physical examination

- Patient appearance and vital signs.
- Resting tachycardia.
- Additional signs of blood loss: hypotension, tachypnea, oliguria, confusion, lethargy.
- Complete abdominal examination and DRE

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Severe upper GI bleeding

- Evidence of hemodynamic compromise:

- Aggressive volume resuscitation, decrease in hemoglobin level of at least 20 g/L or a hemoglobin level < than 80 g/L often requiring blood transfusion.
- CBC, electrolytes, creatinine, LFTs, INR
- Initial hemoglobin level may be falsely normal*

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- Acute GI bleeding: usually normocytic anemia
- Low platelets/ elevated INR
- Patients with signs of upper GI bleed should be stratified based on all factors on their clinical presentation.
- Several scoring systems may help guide risk stratification but are not to replace the clinical evaluation.

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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

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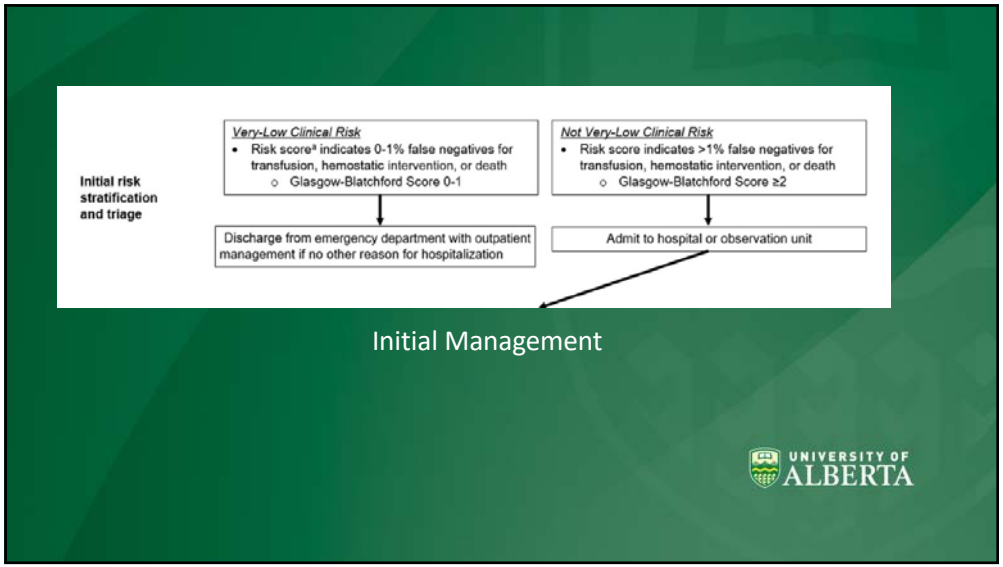

Initial Management

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Initial Management

- Two large IV peripheral catheters
- Endotracheal intubation: high-risk of aspiration
- Aggressive fluid resuscitation
- Correction of coagulopathy

- **Substantially decreases mortality** -

***Am J Gastroenterol* 2004**

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Initial Management

- Blood transfusion: Hemoglobin < 70 g/L
  Unstable coronary artery disease, active, ongoing bleeding
- Platelet transfusion? <50,000
- INR <2.5 for urgent endoscopy
- Continuous IV PPI infusion
- Erythromycin?
- Octreotide
- Ceftriaxone
- Antiplatelets, anticoagulants, NSAIDs

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Table 2
Current major guidelines on timing of endoscopy in AUGIB.

Source	Year updated	Recommendation on timing of endoscopy in non variceal upper gastrointestinal bleeding
Asia-Pacific Working Group [42]	2018	Urgent endoscopy (within 12 h) after resuscitation and stabilisation of patients with haemodynamic shock and signs of upper GI bleeding Endoscopy within 24 h for other patients admitted with UGIB
European Society of Gastrointestinal Endoscopy (ESGE) [3]	2015	Very early (<12 h) upper GI endoscopy may be considered in patients with high risk clinical features Early (≤24 h) upper GI endoscopy following haemodynamic resuscitation
UK NICE (adopted by British Society of Gastroenterology) [1]	2012	Urgent endoscopy in unstable patients with severe acute upper gastrointestinal bleeding. Offer endoscopy within 24 h of admission to patients with upper gastrointestinal bleeding.
American Society of Gastrointestinal Endoscopy (ASGE) [4]	2012	Urgent endoscopy (<24 h) is recommended for patients with history of malignancy, or cirrhosis, presentation with haematemesis and signs of hypovolaemia and Hb < 8 d/dL
American College of Gastroenterology [5]	2012	9. Endoscopy within 24 h of admission, following resuscitative efforts to optimise haemodynamic parameters and other medical problems In patients with higher risk clinical features (e.g., tachycardia, hypotension, bloody emesis or nasogastric aspirate in hospital) endoscopy within 12 h may be considered.

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- Within 24 hrs?
- Within 12 hours?
- What about unstable patients with comorbidities?
  Within 6 hours?

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3 Randomized controlled trials (RCTs) on timing of endoscopy in UGIB :1996,1999, 2004

Table 1 Early randomized trials that compared urgent to early endoscopy in patients with acute gastrointestinal bleeding (GIB)

Author, year	Inclusion criteria	30 days outcomes					
		Rebleeding (*n*/*N*)		Bleeding related death (*n*/*N*)		Death from all causes (*n*/*N*)	
		EGD ≤12 h	EGD >12 h	Urgent	Elective	EGD <6 h	EGD <48 h
Lin 1996	Patients who had hematemesis and/or melena. Risk stratified by nasogastric aspirate (clear, coffee grounds, or bloody)	6/162	8/163	1/162	1/163	2/162	1/163
Lee 1999	Stable hospitalized patients with upper GIB	2/56	3/54	Not reported	Not reported	0/56	2/54
Bjorkman 2004	Patients with acute upper GIB who were hemodynamically stable and without severe comorbid illnesses (Rockall score of 5 or less)	Not reported	Not reported	0/47	0/46	0/47	0/46

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Relationship between timing of endoscopy and mortality in patients with peptic ulcer bleeding: a nationwide cohort study (CME)

- Nationwide cohort study of prospective patients admitted with UGIB from peptic ulcer

- Patients stratified according to hemodynamic instability and ASA score
- Logistic regression: identification of optimal timing for endoscopy and association with mortality.
- 12,601 patients included

Results

- ASA score 1-2, stable patients: no association with mortality
- Unstable, ASA score 3-5: Endoscopy 12-36 hours after admission = lower mortality

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GASTROINTESTINAL ENDOSCOPY Volume 85, No. 5 : 2017

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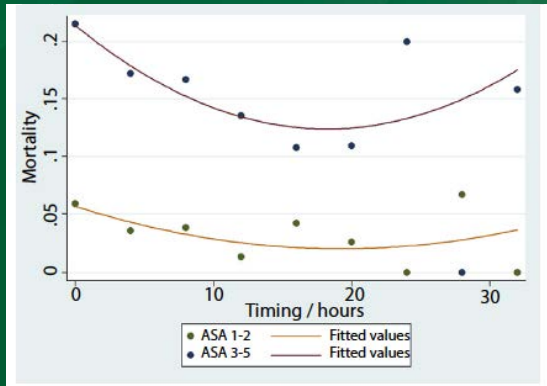

Figure 2. Association between timing of endoscopy and in-hospital mortality in patients with hemodynamic instability.

" Our findings suggest that in these patients, a period of time to optimize resuscitation and manage comorbidities before endoscopy may improve the outcomes"

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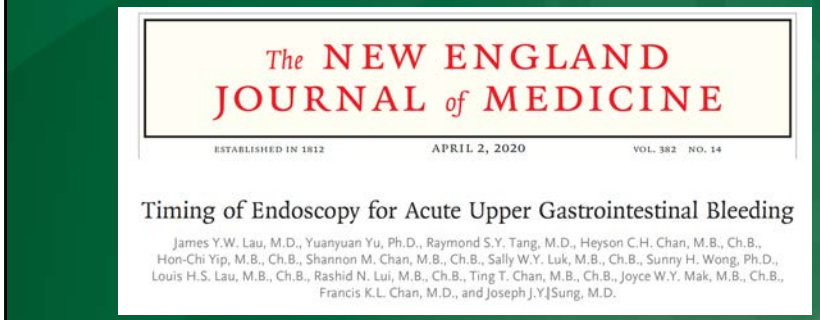

Urgent endoscopy group: endoscopy within 6 hours of GI consultation
Early endoscopy group: endoscopy between 6 and 24 hours

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Timing of Endoscopy for Acute Upper Gastrointestinal Bleeding

- 598 patients with overt signs of upper GI bleeds (those with melena, hematemesis or both) and with an admission GBS 12 or higher.
- Score of 12 or more constituted to about 20% of patients in this cohort. The need for endoscopic therapy in this subgroup was 48%.
- Mortality was around 16%. Patients who remained hypotensive despite initial resuscitation were excluded. These patients required urgent intervention.
- The primary endpoint to this RCT was mortality from all causes within 30 days
- PUD: 60 % Varices: 10%

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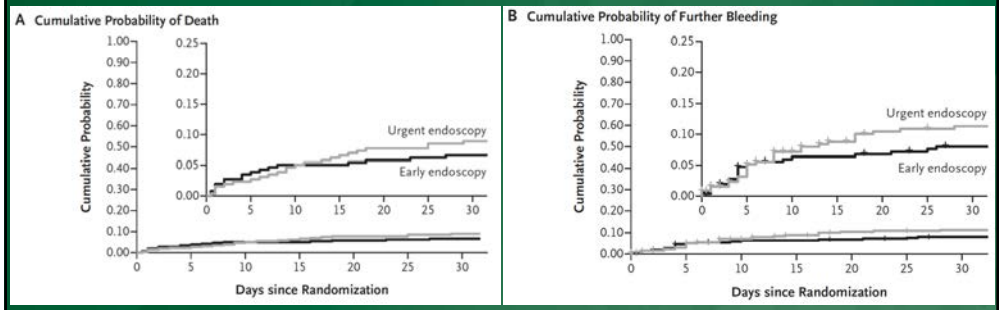
Urgent endoscopy: <6h from consult
Early endoscopy: 6-24 hours from consult



No statistically significant difference between the two groups in 30 day mortality or re-bleeding risk.

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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 ± SD	9.9 ± 6.1	24.7 ± 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 ± SD	2.4 ± 2.3	2.4 ± 2.1
Endoscopic therapy, n (%)	155 (60.1)[a]	125 (48.4)

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

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Limitations

- These interventions were performed under ideal conditions in a highly selected population.
- The study was performed in a single university hospital.
- A risk score with high accuracy to predict the need for urgent endoscopy (earlier than 24 h) is required. Such a score will likely include hypotension and other signs of ongoing hemorrhage.

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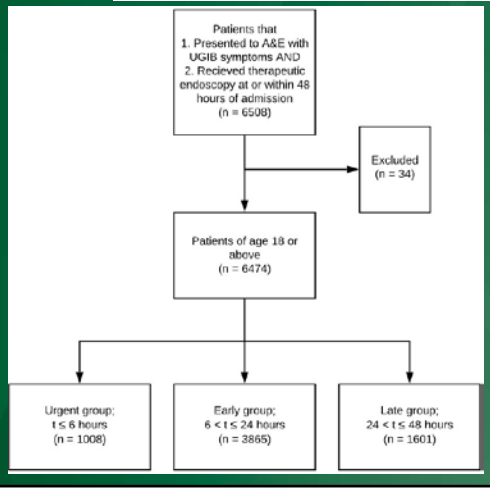
Timing of endoscopy for acute upper gastrointestinal bleeding: a territory-wide cohort study



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Guo CLT, et al. *Gut*, 2022

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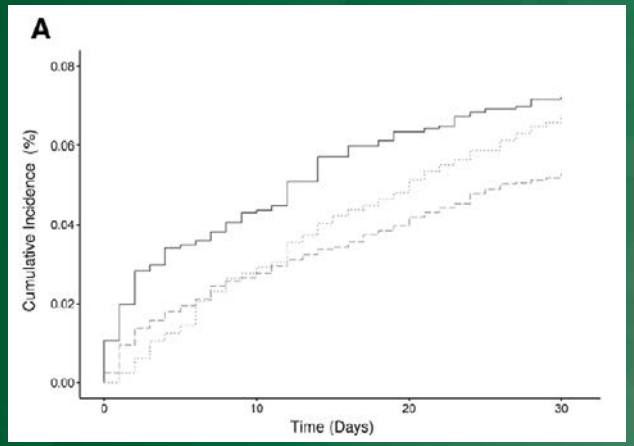

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Pre-endoscopic management

- 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

Endoscopy

Upper endoscopy within 24 hours of presentation

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

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- History of dyslipidemia, T2DM, hypertension, atrial fibrillation on anticoagulation, last dose of Xarelto yesterday evening.
- No abdominal pain, vitals signs stable.
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EGD tomorrow at local hospital, if any changes please call back.

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- GI at peripheral hospital:

- 78M with AF (on rivaroxaban) presenting earlier today with CP + SOB + two week history of intermittent melena stools, However, on reviewing symptoms with the patient, he **denies black stools** and tells me that they have been formed and dark.
- Hgb 79 on arrival (last checked in April 2022 - 164), MCV 71, ferritin 3
- GI History:
- Colonoscopy in 2010: four polyps removed (one TA, 3 HP)
- Plan:
- - Continue IV PPI
- - NPO at midnight for EGD tomorrow

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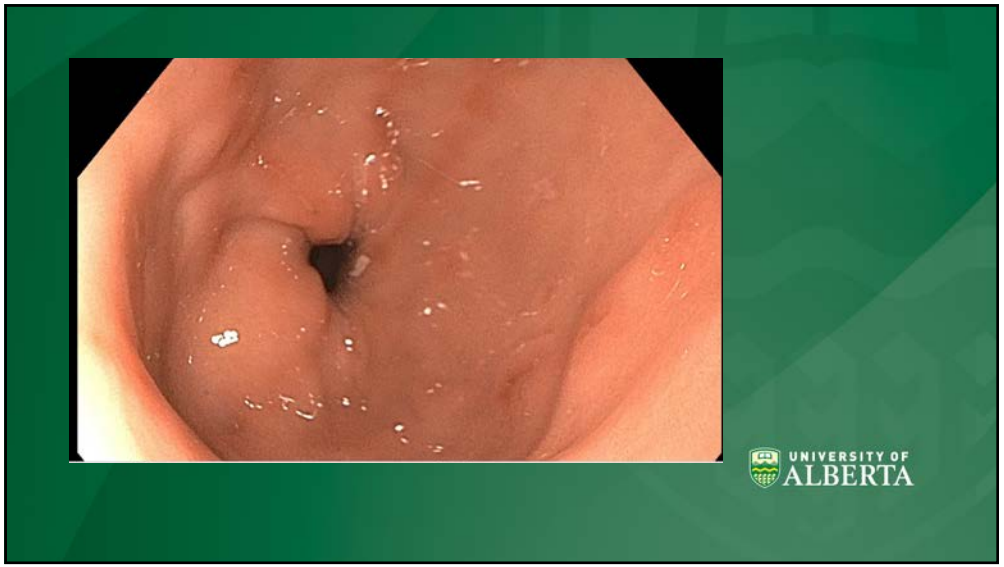

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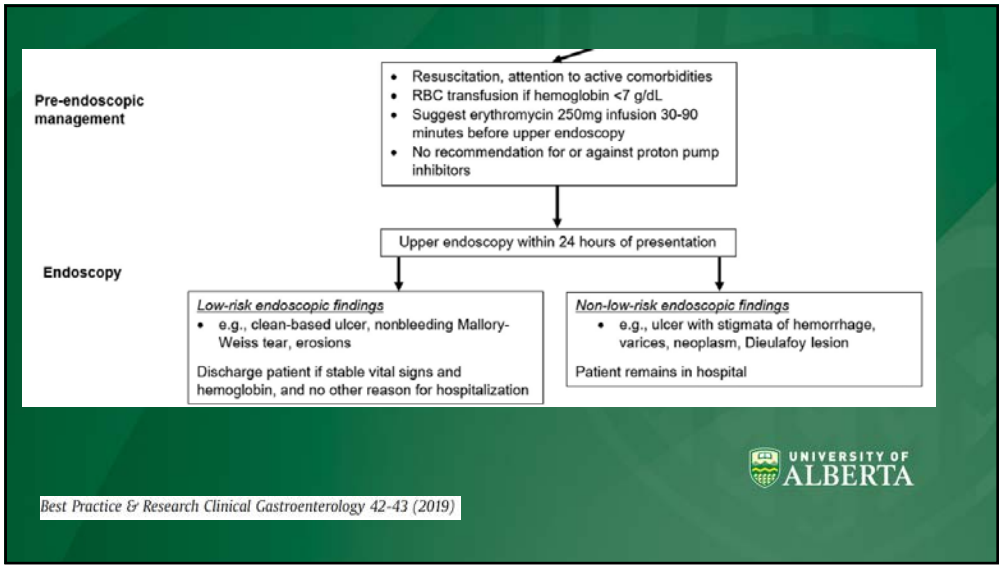
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Patient remains in hospital
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- Inpatient consult @ 3 pm (new melena, started 24 hours ago):
- Mr. O. is a 95 y/o male with a history of hypertension, T2DM, dyslipidemia, cognitive impairment, remote CVA on **ASA**, admitted to GIM on Dec 30 for severe AKI (Cr 422 from baseline 100), hyperkalemia, and COVID.

- Hb 125 ⟶ 109 ⟶ 102

- Vital signs stable

- Plan:
- Start IV PPI infusion
- EGD tomorrow am
- Next day: Hb 85 @ 7 am

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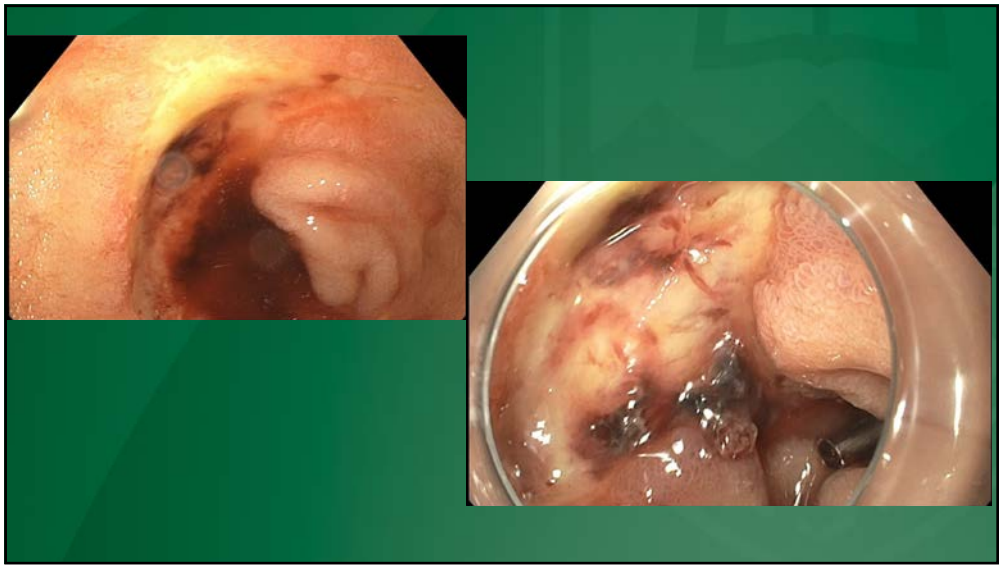

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Table 3
Current society guidelines on timing of endoscopy in suspected variceal haemorrhage.

Source	Year updated	Recommendations on timing of endoscopy in variceal bleeding
European Association for the Study of the Liver (EASL) [22]	2018	Gastroscopy should be performed within the first 12 h after admission once haemodynamic stability has been achieved.
American Association for the study of liver diseases AASLD) [23]	2016	Endoscopy should be performed within 12 h of admission and once the patient is haemodynamically stable
Baveno VI Consensus [21]	2015	Following haemodynamic resuscitation, patients with UGIB and features suggesting cirrhosis should undergo gastroscopy within 12 h of presentation
British Society of Gastroenterology Variceal bleeding guidelines (BSG) [26]	2015	Offer endoscopy to unstable patients with severe acute upper gastrointestinal bleeding immediately after resuscitation. Offer endoscopy within 24 h of admission to all other patients with upper gastrointestinal bleeding
American Society for Gastrointestinal Endoscopy (ASGE) [24]	2014	Recommend performing endoscopy urgently (within 12 h of admission) in patients with suspected acute variceal haemorrhage
Asia-Pacific Association for Study of the Liver (APASL) [25]	2011	Endotherapy should be done as soon as possible under resuscitation preferably within 6 h of admission

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Independent of portal hypertension	Related to portal hypertension
Peptic ulcer disease	Esophageal varices
Mallory-Weiss syndrome	Gastric varices
Esophagitis	Ectopic varices[a]
Gastric antral vascular ectasia (GAVE)	Portal hypertensive gastropathy
Vascular lesions	Portal hypertensive enteropathy (PHE)[a]
Malignancy	Portal hypertensive colopathy
Meckel's diverticulum	Vascular lesions in small bowel?[a]

Sergio Zepeda-Gómez [1] · Brendan Halloran [1]

Curr Hepatology Rep (2019) 18:81–86

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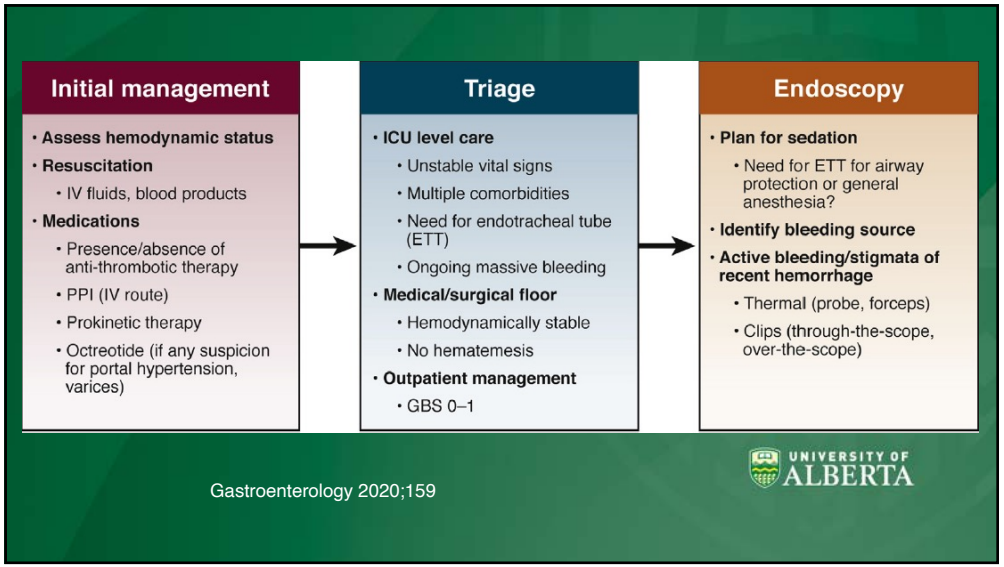

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Key Points

- Upper GI Bleeding (UGIB) continues to be a common reason for inpatient hospital admission.
- Patients with UGIB should be risk-stratified and urgency of intervention should be based on likelihood of decompensation and mortality. The optimal timing for endoscopy appears to be between 6-24 hours of presentation.
- 30-day mortality has decreased because of advancement in risk stratification and treatment of UGIB.

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Tertiary Centre Referral

- Complex patients with multiple co-morbidities and evidence of ongoing bleeding.
- High suspicion of variceal bleeding.
- Unstable patients with evidence of ongoing bleeding.
- Unable to find the source on initial endoscopy and evidence of ongoing bleed.

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