Endoscopic Assessment and Management of Peptic Ulcer Disease

Endoscopy Skills Day 2025

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Objectives

At the end of this session, participants should be equipped to:

- evaluate and risk stratify the patient with upper GI bleeding
- identify and classify ulcers (including estimating the risk of rebleeding)
- understand which ulcers need endoscopic treatment
- discuss options for treatment of PUD
- have an overview of follow-up strategies for patients with PUD

CanMEDS Roles Fulfilled

X	**Medical Expert** (as *Medical Experts*, physicians integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional values in their provision of high-quality and safe patient-centered care. *Medical Expert* is the central physician Role in the CanMEDS Framework and defines the physician's clinical scope of practice.)
X	**Communicator** (as *Communicators*, physicians form relationships with patients and their families that facilitate the gathering and sharing of essential information for effective health care.)
X	**Collaborator** (as *Collaborators*, physicians work effectively with other health care professionals to provide safe, high-quality, patient-centred care.)
	Leader (as *Leaders*, physicians engage with others to contribute to a vision of a high-quality health care system and take responsibility for the delivery of excellent patient care through their activities as clinicians, administrators, scholars, or teachers.)
X	**Health Advocate** (as *Health Advocates*, physicians contribute their expertise and influence as they work with communities or patient populations to improve health. They work with those they serve to determine and understand needs, speak on behalf of others when required, and support the mobilization of resources to effect change.)
X	**Scholar** (as *Scholars*, physicians demonstrate a lifelong commitment to excellence in practice through continuous learning and by teaching others, evaluating evidence, and contributing to scholarship.)
	Professional (as *Professionals,* physicians are committed to the health and well-being of individual patients and society through ethical practice, high personal standards of behaviour, accountability to the profession and society, physician-led regulation, and maintenance of personal health.)

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Endo Skills 2025 – Disclosure of Commercial Support

- Endo Skills is presented by the Alberta Society for Endoscopic Practice (ASEP)
- ASEP: not for profit organization, whose goal is to provide education, resources and collaboration for endoscopists and their teams
- Endo Skills planning is independent from the exhibitors
- ASEP covers expenses of speakers and provides gift+/- small honorarium to speakers and planning committee

Endo Skills 2025 – Managing Sources of Potential Conflict

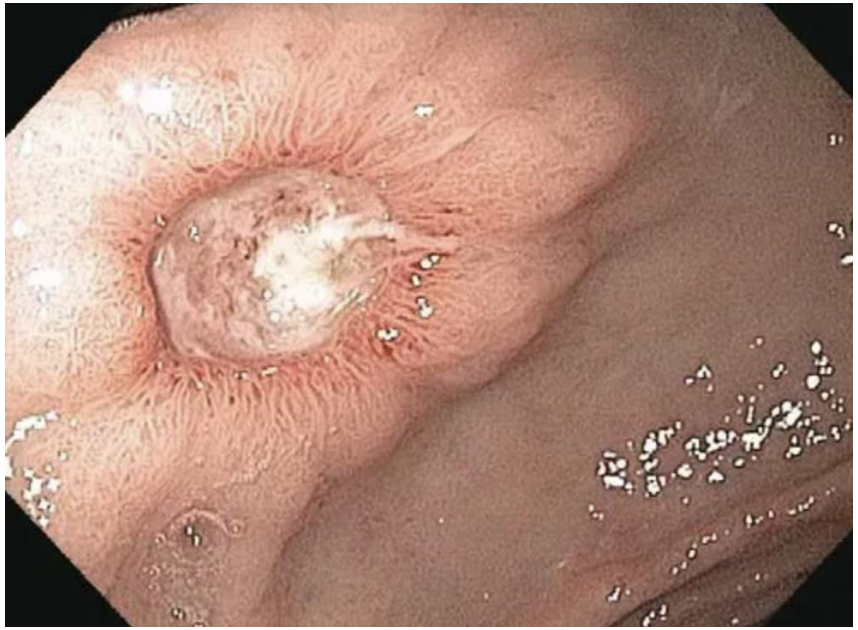
- Endo Skills Planning Committee: oversees the program's content development to ensure accuracy and balance.
- Information and recommendations are evidence and/or guidelines-based, and opinions of the independent speakers will be identified as such.
- Program developed in accordance to ethical standards meeting Cert+ guidelines.

Personal Disclosures (Past 36 Months)

- **Personal Fees:**
  - Pentax Medical (speaker's fees, consultancy fees)
  - Boston Scientific (speaker's fees, consultancy fees)
  - AstraZeneca (consultancy fees)
- **Research Funding:**
  - Canadian Institutes of Health Research (CIHR)
  - American Society for Gastrointestinal Endoscopy (ASGE)
  - AHS Digestive Health Strategic Clinical Network (DHSCN)

PUD - Epidemiology and Evolution

- Prevalence of roughly 100 per 100,000 population
  - Down about 1/3 over past 20-30 years
- Main risk factors:
  - *H pylori* infection
  - NSAIDs/ ASA (especially if DAPT)
  - “Stress” (i.e.: critical illness)
- GI bleeding occurs as part of presentation for about 30% of patients



https://mantasmd.com/conditions/gastritis-and-peptic-ulcers/endoscopy-gastric-ulcer/#iLightbox[postimages]/0

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Ren J *et al.* Int J Epidemiol 2022
Barkun A *et al.* Am J Med 2010

Acute Upper GI Bleeding – Management

- Initial management:
  - assessment of hemodynamics
  - fluid resuscitation
  - transfusion as required (threshold 80)
- Risk stratification
- IV PPI(?) +/- ceftriaxone/octreotide
- If deemed to require inpatient endoscopy:
  - Aim for endoscopy **within 24 hours**
  - NO improvement (?potential harm) with earlier EGD

	Threshold	Score
History		
Melena	Present	1
Syncope	Present	2
Hepatic disease	Present	2
Cardiac failure	Present	2
Physical examination		
Heart rate (beats per min)	>100	1
Systolic blood pressure (mm Hg)	100–109	1
Systolic blood pressure (mm Hg)	90–99	2
Systolic blood pressure (mm Hg)	<90	3
Laboratory tests		
Haemoglobin (g/L)		
Male	120–130	1
Male	100–119	3
Male	<100	6
Female	100–120	1
Female	<100	6
Blood urea nitrogen (mmol/L)	6·5–7·9	2
Blood urea nitrogen (mmol/L)	8·0–9·9	3
Blood urea nitrogen (mmol/L)	10·0–24·9	4
Blood urea nitrogen (mmol/L)	≥25·0	6

GBS of 0 or 1* can be managed as outpatients

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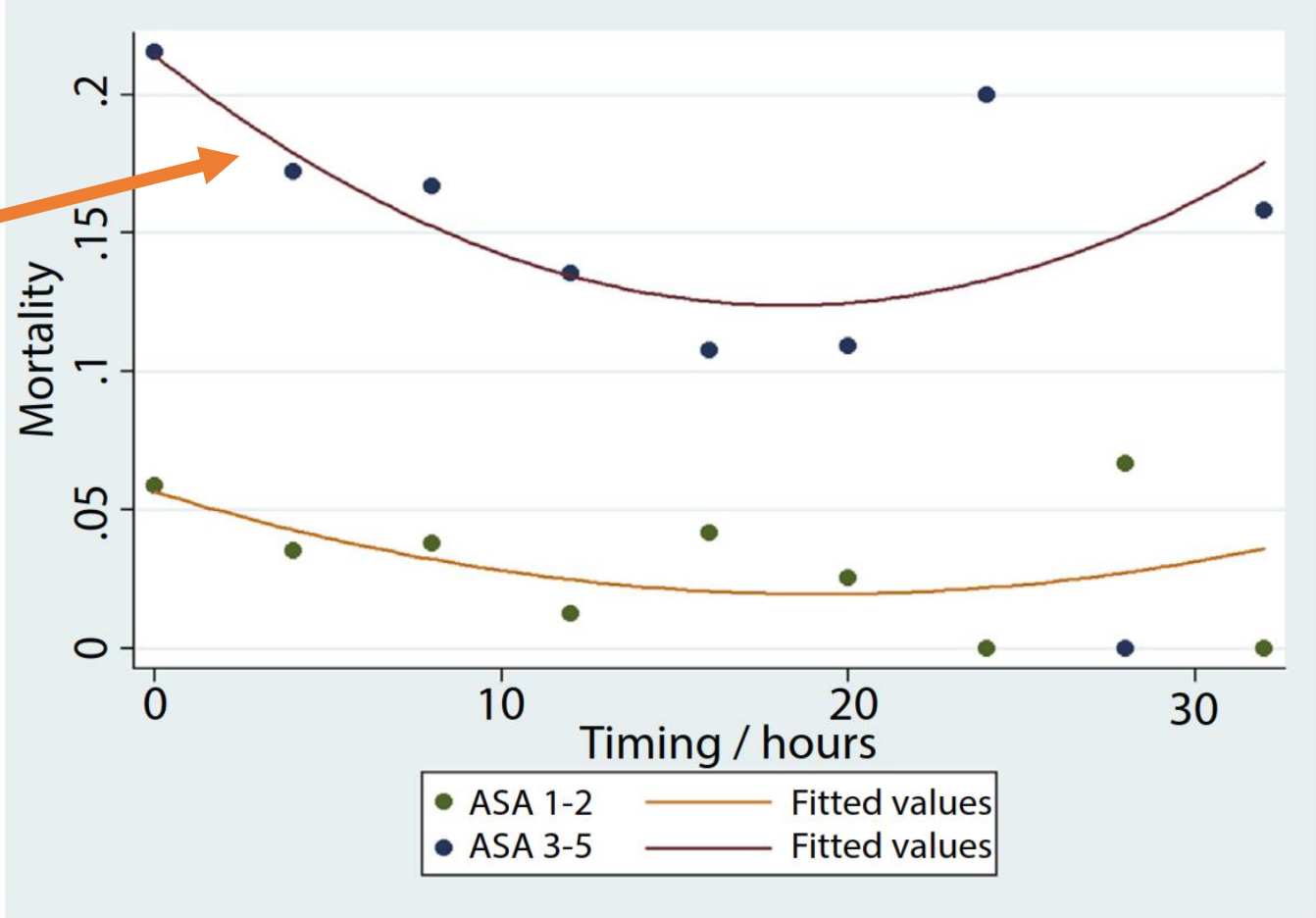
Blatchford O *et al.* Lancet 2000
Laine L *et al.* Am J Gastroenterol 2021
Aziz M *et al.* Eur J Gastro Hep 2021

Timing of Endoscopy in Acute UGIB

Greater early mortality if sick patients not adequately resuscitated *first*?



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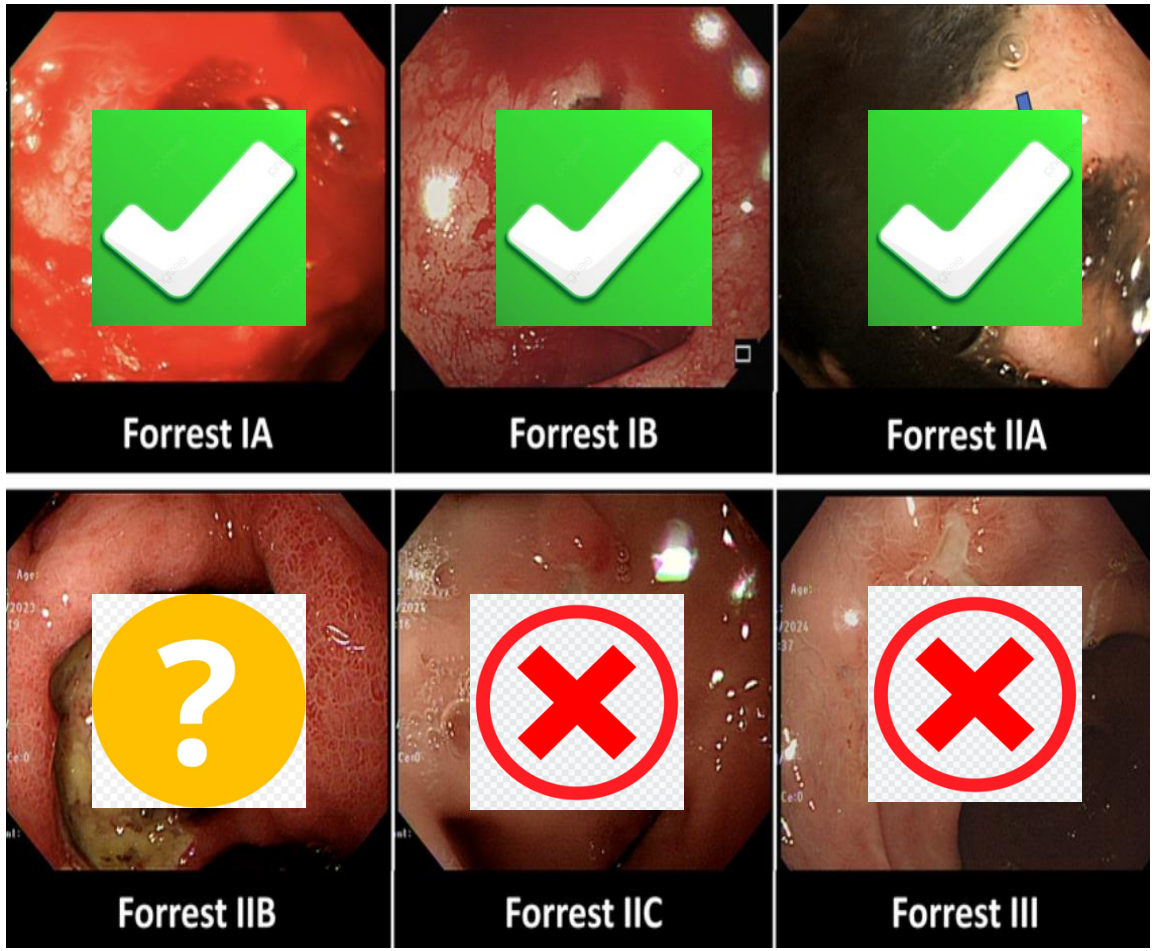
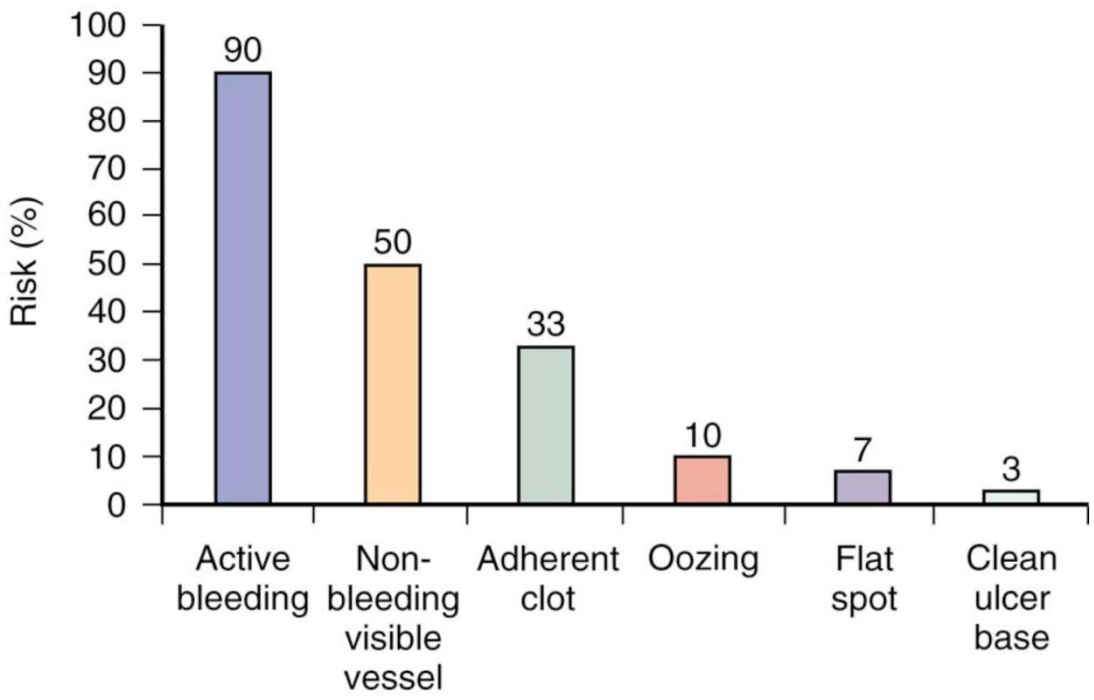
Laursen SB *et al.* Gastrointest Endosc 2017
Lau J *et al.* N Eng J Med 2020

Endoscopic Staging of Ulcers

- Keep a broad differential in mind. Not all ulcers are PUD!



https://www.researchgate.net/figure/Forrest-classification-of-peptic-ulcer_fig3_383873118



Almadi MA *et al.* Lancet 2024
Feldman M *et al.* Sleisenger and Fordtran's

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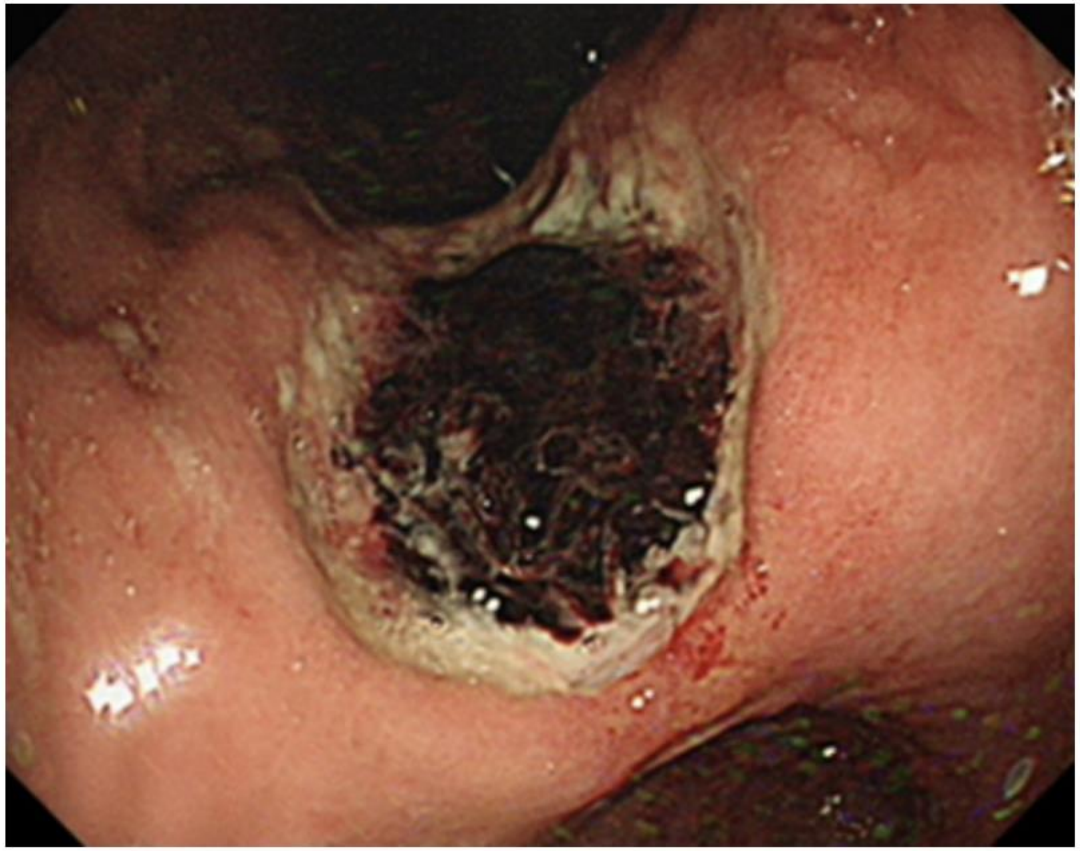
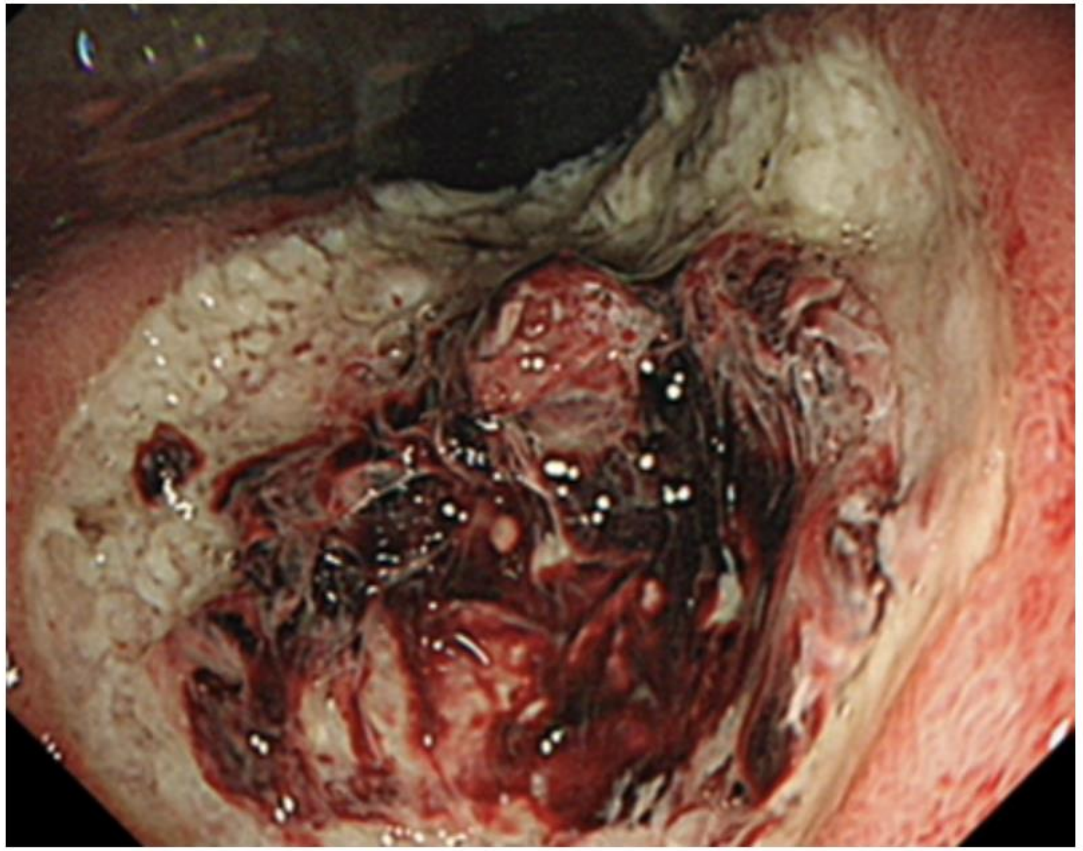
Endoscopic Management of PUD – Adherent Clots





https://www.endoscopy-campus.com/en/classifications/forrest-classification/

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Endoscopic Management of PUD – Adherent Clots

Need for endoscopic hemostatic therapy for ulcers with adherent clot.

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.

- Numerous factors to consider:
  - Personal and/or local endoscopic skill/ comfort/ expertise/ experience level(s)
  - Anatomic location/ accessibility of hemostatic intervention
  - Local backup (interventional radiology, surgery)

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Laine L *et al.* Am J Gastroenterol 2021
Laine L *et al.* Clin Gastroenterol Hepatol 2009

Endoscopic Management – 'Traditional' Modalities

Combo vs epi injection alone

Thermal + Epi *vs.* Epi alone (2*)

Clips + Epi *vs.* Epi alone (3*)

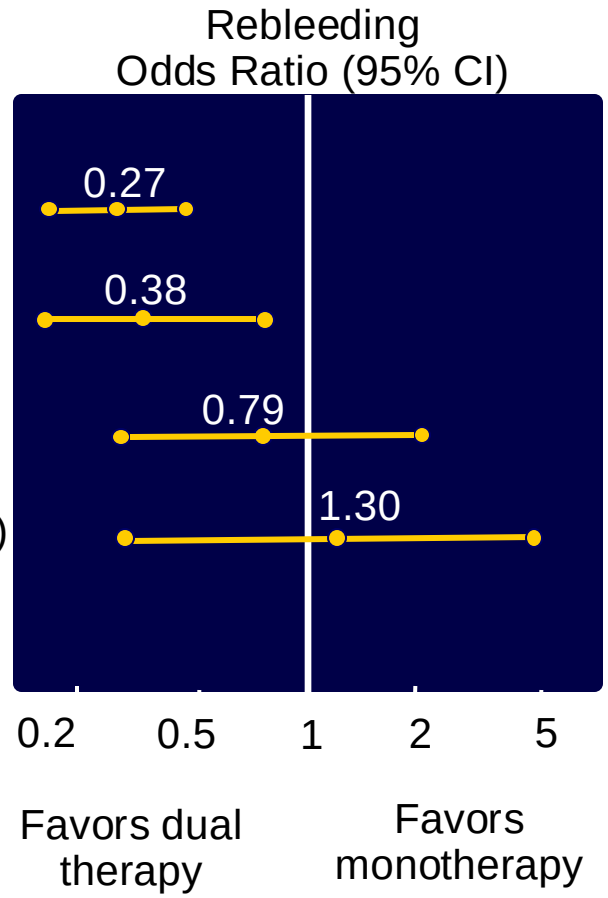
Thermal alone or clips alone as good as combination with epi

Thermal + Epi *vs.* Thermal alone (4*)

Clips+ Epi *vs.* Clips alone (2*)

*Number of trials

N=28, n=2988



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Calvet *et al*, Gastroenterol 2004, Marmo *et al*, Am J Gastroenterol 2007, Sung *et al*, Gut 2007
Barkun *et al,* GIE 2009, Barakat *et al,* Surg Endosc 2017, El Ouali *et* al, GIE 2012, Laine *et al,* CGH 2008

Endoscopic Management – Hemostatic Powder

- Non-inferiority RCT at 3 Asian centers
- Over 200 patients
- Compared hemostatic powder to standard treatment
- Mix of etiologies but >60% PUD in each group (almost all Forrest Ib)
- Ongoing bleeding at 30 days under 20% in both groups (powder NI to traditional)
- Need for additional interventions, LOS, and death were similar
- Other prospective (observational) studies have mirrored results

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Lau JYW *et al.* Ann Int Med 2022
Papaefthymiou A *et al.* Ann Gastroenterol 2024

Endoscopic Management – Cap-mounted Clips

- Asian RCT of 100 patients of cap-mounted clips versus standard therapy
- Forrest IIa or higher lesions
- Similar primary hemostasis of >90% in both groups
- 4% versus 19% rebleeding at 30 days with intervention
- However, in ITT analysis, similar rebleeding rates

- Separate European RCT with superiority when comparing cap-mounted versus through-the scope clips in terms of initial hemostasis and clinical success

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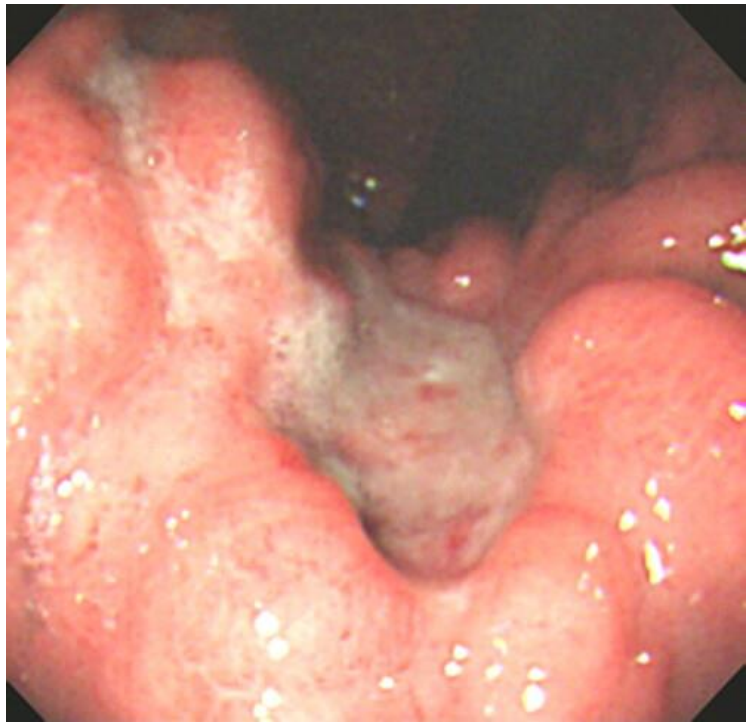
Chan S *et al.* Gut 2022
Soriani P *et al.* Endoscopy 2024

When to Biopsy an Ulcer?

- Essentially, when suspecting a malignant or viral cause
- Features suspicious for CA:
  - Overt mass
  - Irregular or angular shape
  - Uneven base
  - Asymmetric/elevated edges/borders (‘heaped up’)
  - Abnormal surrounding folds/mucosa
    - i.e.: ‘clubbed’, ‘fused’, ‘disrupted’, ‘moth-eaten’
- History suggestive of infectious ulcer



https://pubs.rsna.org/doi/abs/10.1148/radiol.2522081249?journalCode=radiology

Banerjee S *et al.* Gastrointest Endosc 2010
Chen C-Y *et al.* Radiology 2009

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Medical Management and Follow-up

- High-dose PPI for 72 hours following any endoscopic therapy
- BID PPI for at least 2 weeks afterward
- Then either OD or BID PPI for 8 weeks
- Consider empiric HP eradication if tested positive or high suspicion without a positive test
- Start PPI for patients requiring ASA/DAPT for cardiovascular indication
- Start PPI for patients requiring DOAC or VKA for cardiovascular indication
- Role for potassium-competitive acid blockers (i.e.: vonoprazan) evolving

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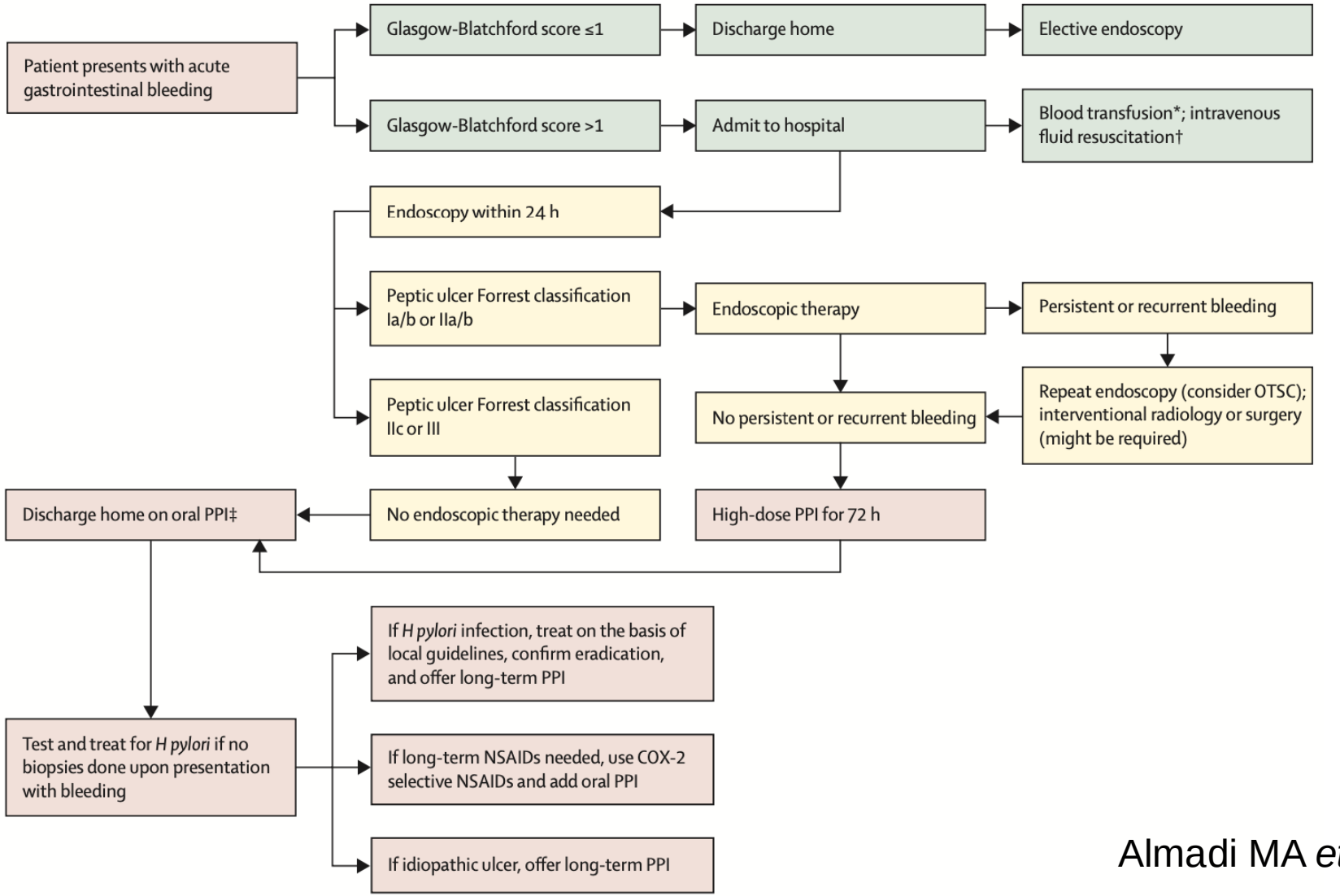
Laine L *et al.* Am J Gastroenterol 2021
Barkun AN *et al.* Ann Int Med 2019
Patel A *et al.* Gastroenterology 2024

PUD Bleeding – Summary of Management



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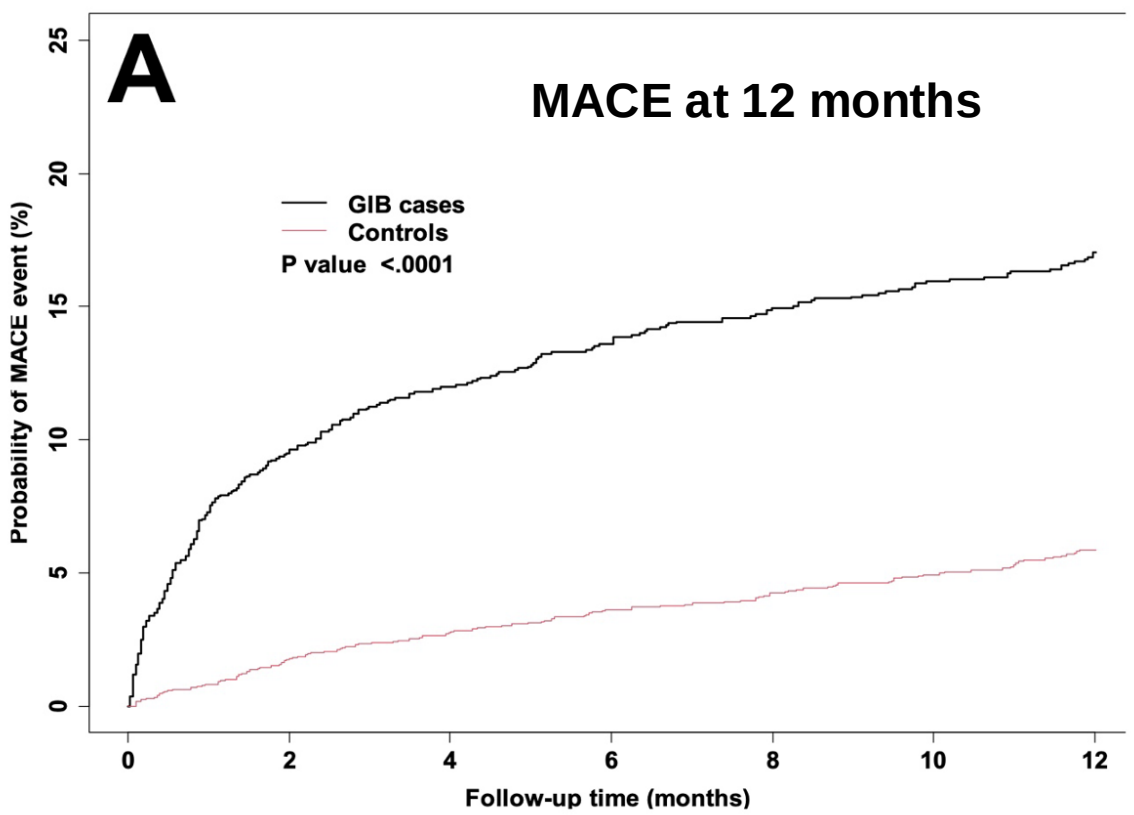
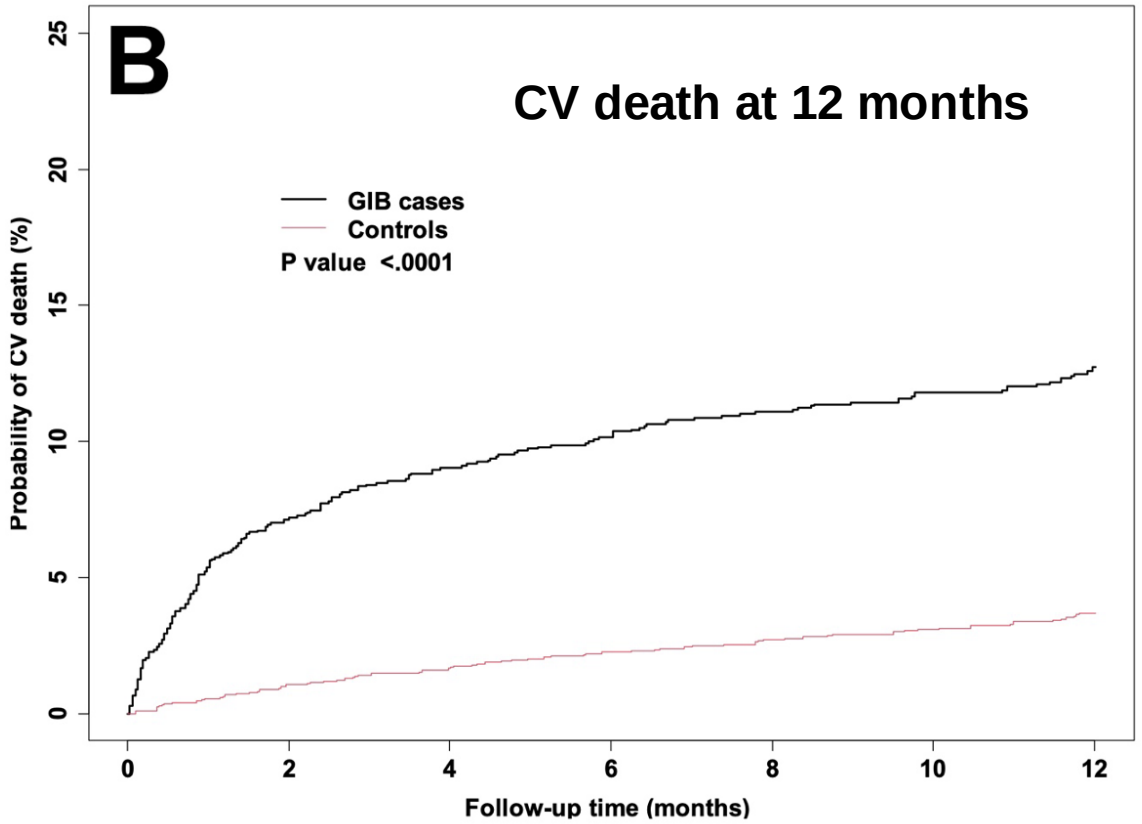
Almadi MA *et al.* Lancet 2024

Significance of UGIB and Timing of Resumption of ATs





On multivariable modelling, significant reduction in both outcomes when ATs resumed @ 72 hours - 7 days

Unpublished data, 2025

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Role of Endoscopic Surveillance (8-12 Weeks)

- Limited role for duodenal ulcers unless really large or ongoing symptoms
- For gastric ulcers, decision should be individualized
- Factors to consider:
  - Suspicious initial appearance but negative biopsy (false negative up to 5%)
  - Ongoing symptoms despite therapy
  - Unclear etiology (i.e.: no NSAIDs, negative for *H pylori*)
  - Large size

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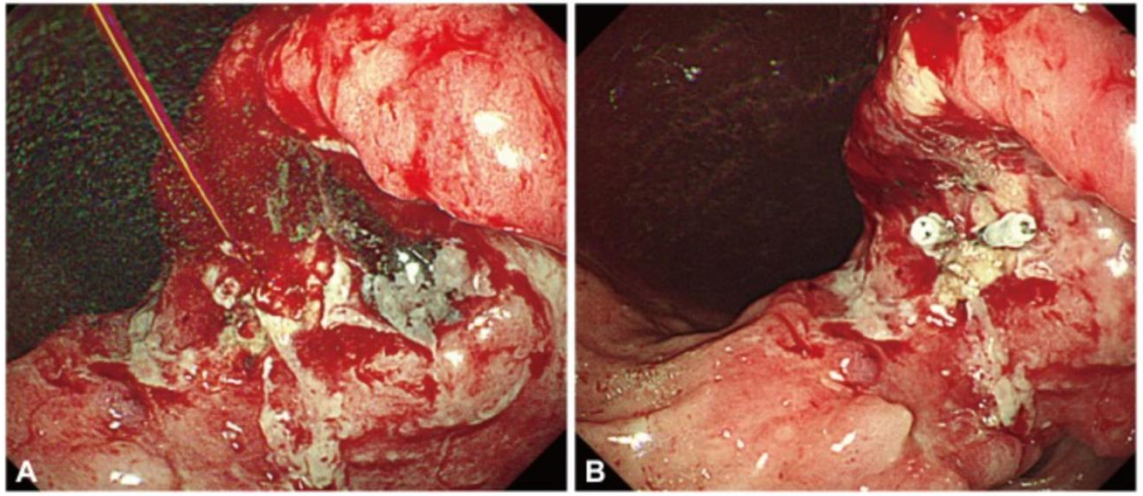
Banerjee S *et al.* Gastrointest Endosc 2010

Summary of Concepts

- Risk stratification is key!
  - Inpatient vs. outpatient scope (GBS)
  - High-risk vs. low-risk (Forrest)
- Most important role for PPI is *after* endoscopy
- Evolving uses for relatively novel therapies (endoscopic and medical)
- No role for epinephrine monotherapy
- Know one's limitations



https://www.e-ce.org/journal/Figure.php?xn=ce-48-121.xml&id=

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Thank You!

- Questions?

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