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AUGUST 25–27, 2023 | RADISSON BLU MALL OF AMERICA MINNEAPOLIS, MN
2023 ACG ENDOSCOPY SCHOOL & ACG/VGS/ODSGNA REGIONAL POSTGRADUATE COURSE
SEPTEMBER 8–10, 2023 WILLIAMSBURG LODGE WILLIAMSBURG, VA
Register online: meetings.gi.org

ACG 2023 VANCOUVER
OCTOBER 20–25, 2023 VANCOUVER, CANADA
Save the Date!

Be sure your passport is up to date!
Participating in the Webinar

All attendees will be muted and will remain in "Listen Only Mode"

Type your questions here so that the moderator can see them. Not all questions will be answered but we will get to as many as possible.

A handout with the slides and room to take notes can be downloaded from your control panel.
ACG Virtual Grand Rounds

Join us for upcoming Virtual Grand Rounds!

There will be no VGR on Thursday July 6th

Week 28 – Thursday, July 13, 2023
Going Green: Improving Your Endoscopy Unit’s Carbon Footprint
Faculty: Rabia A. de Latour, MD
Moderator: Swapna Gayam, MD, FACG
At Noon and 8pm Eastern

Week 29 – Thursday, July 20, 2023
American College of Gastroenterology Acute Liver Failure Guidelines
Faculty: Alexandra Shingina, MD, MSc
Moderator: Robert J. Wong, MD, MS, FACG
At Noon and 8pm Eastern

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UPPER GI BLEEDING

ACG Guideline

ACG Clinical Guideline: Upper Gastrointestinal and Ulcer Bleeding

Loren Laine, MD, FACG1,2, Alan N. Barkun, MD, FACG3, John R. Saltzman, MD, FACG4, Myriam Martel, MSc2, and Grigorios I. Leontiadis, MD, PhD5
OUTLINE

• Initial management of all patients with UGIB
  • Risk stratification
  • RBC transfusion
  • Pre-endoscopic medical therapy
  • Timing of endoscopy

• Management of bleeding ulcers
  • Treatment of acute bleeding episode
  • Prevention of recurrent bleeding
  • Treatment of further bleeding

RISK STRATIFICATION
PRE-ENDOSCOPIC RISK ASSESSMENT

- Stratify patients into low/high-risk categories
  - Level of care (ICU, ward, discharge)
- Primary utility of risk assessment scores is to identify very-low risk patients for discharge from ED with outpatient management
  - Goal: high sensitivity to avoid false negatives
    - Avoid sending patients home who will need hospital-based intervention or die


GLASGOW-BLATCHFORD SCORE (GBS): 0-23

- BUN
- Hemoglobin
- Systolic BP
- Pulse
- Melena
- Syncope
- Hepatic disease
- Cardiac failure

GLASGOW-BLATCHFORD SCORE (GBS): 0-23

- BUN

GBS = 0-1
- 99% sensitivity (1% false negatives) for transfusion, hemostatic therapy, or death
- Specificity only 27-40%
  - Most patients who won’t need intervention or die are still hospitalized


Cardiac failure


RISK STRATIFICATION
2021 ACG Guideline

- We suggest patients classified as very-low-risk, defined as risk assessment score with \( \leq 1\% \) false negative rate for the outcome of hospital-based intervention or death (e.g., GBS=0-1), be discharged with outpatient follow-up rather than admitted to hospital.
  - Conditional recommendation, very-low-quality evidence

Laine et al. AJG 2021;116:899
WILL MACHINE LEARNING MODELS REPLACE CLINICAL RISK SCORES

• Excellent performance for predicting hospital-based intervention or death
  - AUC ≥ 0.90 (better than GBS)
  - At 99 and 100% sensitivity for model and GBS, specificity better than GBS
    - Increase number who can be discharged from ER with outpatient management by more than 2-fold vs. GBS=0

Shung et al. Gastro 2020;158:160; Shung et al. DDW 2020

Goal is to have machine learning models embedded in electronic health record to automatically extract data, assess risk, and provide results in real time for decision making in ER

Increase number who can be discharged from ER with outpatient management by more than 2-fold vs. GBS=0

Shung et al. Gastro 2020;158:160; Shung et al. DDW 2020
RED BLOOD CELL TRANSFUSION

TRANSFUSION IN UGIB: HGB TARGET OF 7 VS. 9 G/DL

A Survival, According to Transfusion Strategy

No. at Risk
Restrictive strategy 444 429 412 404 401 399 397 395 394 392
Liberal strategy 445 428 407 397 395 386 383 378 375 372

P=0.02 by log-rank test

Villanueva et al. NEJM 2013;368:11
TRANSFUSION IN UGIB: HGB TARGET OF 7 VS. 9 G/DL

Further bleeding: 10 vs. 16%; HR = 0.62 (0.43-0.91)
Fatal further bleeding: 0.7 vs. 3.1% (p=0.01)
Adverse events: 40 vs. 48% HR = 0.73 (0.56-0.95)

RED BLOOD CELL TRANSFUSION
2021 ACG Guideline

• We suggest a restrictive policy of red blood cell transfusion with a threshold for transfusion at a hemoglobin of 7 g/dL.
  • Conditional recommendation, low-quality evidence
RBC TRANSFUSION
Exceptions to Transfusion Threshold of 7 g/dL

- Hypotensive patient
  - Hgb lower with equilibration after fluid resuscitation
- Pre-existing CV disease: 8 g/dL
  - Based on general anemia guidelines (RCTs used 8 g/dL)
- Acute coronary syndrome: 8 g/dL
  - Based on RCT in patients with acute MI and anemia
    - Non-inferior in CV events* for 8 vs. 10g/dL: 11% vs. 14%
      - RR, 1-sided 97.5% CI = 0.79 (0.00-1.19); non-inferiority <1.25

* Death, MI, CVA, revascularization

PRE-ENDOSCOPIC MEDICAL THERAPY
PRE-ENDOSCOPIC MEDICAL THERAPY
Evidence from RCTs

• Erythromycin (prokinetic to improve visibility)
  – Reduction in 2\textsuperscript{nd} EGD, hospital stay
    • Reduction in further bleeding not documented

• Proton pump inhibitor
  – Fewer high-risk stigmata, endoscopic treatments
  – No change in clinical outcomes
    • ??Potential benefit if endoscopy not done, delayed
      – Less rebleeding in ulcer bleeding RCTs without consistent pre-randomization endoscopic therapy
### PRE-ENDOSCOPIC PPI IN PATIENTS WITH UGIB*

**DB RCT of IV Omeprazole 80mg bolus followed by 8mg/hr Infusion**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>PPI (N=314)</th>
<th>Standard (N=317)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Further bleeding (30 d)</td>
<td>11 (3.5%)</td>
<td>8 (2.5%)</td>
</tr>
<tr>
<td>Hospital days</td>
<td>4.5 ± 5.3</td>
<td>4.9 ± 5.1</td>
</tr>
<tr>
<td>Units of blood</td>
<td>1.54 ± 2.41</td>
<td>1.88 ± 3.44</td>
</tr>
<tr>
<td>Death (30 d)</td>
<td>8 (2.5%)</td>
<td>7 (2.2%)</td>
</tr>
</tbody>
</table>

UGIB = hematemesis or melena; mean infusion: 15 hrs pre-endoscopy

*p=0.007

Lau et al. NEJM 2007;356:1631

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### Endoscopic Hemostatic Therapy with Pre-Endoscopic PPI:

**Meta-Analysis of 3 Placebo-Controlled RCTs**

- Difference, PPI vs. Placebo = -3%, -6% to -1%

<table>
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<tr>
<th>Outcome</th>
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</table>

UGIB = hematemesis or melena; mean infusion: 15 hrs pre-endoscopy

*p=0.007

Laine et al. AJG 2021;116:899

Lau et al. NEJM 2007;356:1631
PRE-ENDOSCOPIC MEDICAL THERAPY
2021 ACG Guideline

- We suggest an infusion of erythromycin [250mg infusion 20-90 minutes before EGD] in patients with UGIB.
  - Conditional recommendation, very-low-quality evidence
- We could not reach a recommendation for or against pre-endoscopic PPI therapy for patients with UGIB.
  - Might be given if EGD will be delayed or not done

Laine et al. AJG 2021;116:899

ESGE 2021 Guidelines

- ESGE recommends pre-endoscopy IV erythromycin in selected patients with clinically severe or ongoing active UGIH
- ESGE suggests that pre-endoscopy high-dose IV PPI be considered to downstage endoscopic stigmata and thereby reduce the need for endoscopic therapy

Gralnek et al. Endoscopy 2021;53:300
PRE-ENDOSCOPIC MEDICAL THERAPY
2021 ACG Guideline

• Consensus on appropriate manner of presenting guideline recommendations has evolved
  • Guidelines should provide a recommended action
  • Therefore, statements such as “may be considered”, which do not recommend for or against an action such as giving PPI therapy, are no longer used.


TIMING OF ENDOSCOPY
EGD IN PATIENTS HOSPITALIZED WITH UGIB

• Overall population
  • ≤24 hrs reduces length of stay, surgery, ?mortality
  • RCT: No benefit ≤12 vs. >12 hrs after presentation

• High-risk patients
ENDOSCOPY TIMING: HIGH-RISK PATIENTS

• Previous guidelines suggest considering endoscopy within 12 hours for patients with high-risk features
  • Hemodynamic instability (ACG, ESGE, Asia-Pacific)
  • Comorbidities: e.g., cirrhosis (AASLD, Baveno)
  • Supporting evidence scant


EGD IN PATIENTS HOSPITALIZED WITH UGIB

• Overall population
  • ≤24 hrs reduces length of stay, surgery, ?mortality
  • RCT: No benefit ≤12 vs. >12 hrs after presentation

• High-risk patients
  • RCT (GBS ≥12): No benefit ≤6 vs. 6-24 hrs after GI consult
  • ≤6 hrs may increase mortality (observational studies)

EGD IN PATIENTS HOSPITALIZED WITH UGIB

- **Overall population**
  - ≤24 hrs reduces length of stay, surgery, mortality
  - RCT: No benefit ≤12 vs. >12 hrs after presentation

- **High-risk patients**
  - RCT (GBS ≥12): No benefit ≤6 vs. 6-24 hrs after GI consult
  - ≤6 hrs may increase mortality (observational studies)

- **Low-risk patients (normal VS, no severe comorbidity)**
  - 2 RCTs: low-risk endoscopic findings in ≥40%, allow discharge

TIMING OF ENDOSCOPY

- **2021 ACG Guideline**
  - We suggest that patients admitted to or under observation in hospital for UGIB undergo endoscopy within 24 hours of presentation
    - *Conditional recommendation, low-quality evidence*
TIMING OF ENDOSCOPY
2021 ACG Guideline

• We suggest that patients admitted to or under observation in hospital for UGIB undergo endoscopy within 24 hours of presentation
  • Conditional recommendation, low-quality evidence
  • Resuscitation, attention to comorbidities before EGD
  • Hemodynamically stable without severe comorbidities: EGD as soon as possible within routine hours

Laine et al. AJG 2021;116:899

TIMING OF ENDOSCOPY
2021 ESGE Guideline

• ESGE does not recommend urgent (≤ 12 hours) upper GI endoscopy since as compared to early endoscopy, patient outcomes are not improved.

• ESGE does not recommend emergent (≤ 6 hours) upper GI endoscopy since this may be associated with worse patient outcomes.

Gralnek et al. Gut 2021;53:300
MANAGEMENT OF ULCER BLEEDING

ENDOSCOPIC THERAPY FOR ULCER BLEEDING*
2021 ACG Guidelines

**Strong recommendation**
- Bipolar electrocoagulation
- Heater probe
- Absolute ethanol injection
- Epinephrine should not be used alone but rather in combination with a 2nd modality

**Conditional recommendation**
- Clips
- Argon plasma coagulation
- Soft monopolar electrocoagulation
- TC-325 hemostatic powder spray for *active* bleeding

*Active bleeding, non-bleeding visible vessel, ±adherent clot*  
Laine et al. AJG 2021;116:899
NEWER ENDOSCOPIC HEMOSTATIC MODALITIES

ENDOSCOPIC TOPICAL HEMOSTATIC THERAPIES

- TC-325 (Hemospray)
  - Inert mineral powder rapidly absorbs water on contact with blood—creating adhesive seal for mechanical tamponade, concentrating clotting factors.
- UI-EWD (Nexpowder)
  - Natural polymer converts to adhesive hydrogel on contact with moisture. Cross-links within itself and adjacent tissue to create mechanical barrier. Does not require active bleeding.
- TDM-621 (Purostat)
  - Topical hemostatic agent for surgical wounds applied to endoscopic therapy. Transparent gel of amino acids, which upon contact with fluid forms a hydrogel scaffold.
- Endoclot
  - Absorbable modified polymers from plant starch. On contact with blood absorbs water, forms protective gel matrix and concentrates coagulation factors.

Jiang et al. Endosc Int Open 2022;10:E1136-46
TC-325 HEMOSTATIC POWDER SPRAY

International Consensus (2019)

- Suggest as temporizing therapy to stop active bleeding when conventional endoscopic therapies are not available or fail
- Suggest against use as monotherapy

Barkun et al. AIM 2019; 171:805
**TC-325 HEMOSTATIC POWDER SPRAY VS. STANDARD THERAPY IN ACTIVE NONVARICEAL UGIB**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>TC-325 (N=111)</th>
<th>Standard (N=113)</th>
<th>Difference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Further bleeding 30-d</td>
<td>11 (10%)</td>
<td>21 (19%)</td>
<td>-9% (-17, 0.5%)</td>
</tr>
<tr>
<td>Ulcer</td>
<td>8/68 (12%)</td>
<td>11/68 (16%)</td>
<td>-4% (-16, 7%)</td>
</tr>
<tr>
<td>Spurting</td>
<td>1/9 (11%)</td>
<td>5/12 (42%)</td>
<td>-31% (-70, 8%)</td>
</tr>
<tr>
<td>Oozing</td>
<td>10/102 (10%)</td>
<td>16/101 (16%)</td>
<td>-6% (-15, 3%)</td>
</tr>
<tr>
<td>Death</td>
<td>14 (13%)</td>
<td>14 (12%)</td>
<td>0.2% (-8, 9%)</td>
</tr>
</tbody>
</table>

Met non-inferiority margin (-10%) for control of bleeding
90 vs. 81%: 1-sided 95% CI of difference = 1%

Lau et al. AIM 2022;175:171

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**TIMING OF ENDOCOPY**

2021 ACG Guideline

- We suggest endoscopic hemostatic therapy with hemostatic powder spray TC-325 for patients with actively bleeding ulcers
  - Conditional recommendation, very-low-quality evidence

Laine et al. AJG 2021;116:899
TIMING OF ENDOSCOPY
2021 ACG Guideline

• We suggest endoscopic hemostatic therapy with hemostatic powder spray TC-325 for patients with actively bleeding ulcers
  • Conditional recommendation, very-low-quality evidence

• Further research to confirm can be used as monotherapy, especially in spurting bleeding
• Due to high cost in U.S., should not be initial modality if other therapies can be readily applied

Laine et al. AJG 2021;116:899

CONVENTIONAL THERAPY ± UI-EWD FOR NVUGIB
RCT in Active Bleeding or Non-Bleeding Visible Vessel (N=340)

Active Bleeding in 67%

Lee et al. DDW 2023
OVER-THE-SCOPE CLIP APPLICATION

Approach lesion enface
Cap over/around target lesion
Lesion sucked into cap, hand wheel turned to release clip
Clip in place

OVER-THE SCOPE CLIPS FOR ULCER REBLEEDING
RCT in Patients with Rebleeding after Initial Hemostasis

<table>
<thead>
<tr>
<th></th>
<th>Standard* (N=33)</th>
<th>OTSC (N=33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Further bleeding</td>
<td>19 (58%)</td>
<td>5 (15%)**</td>
</tr>
<tr>
<td>IR or surgery</td>
<td>2 (6%)</td>
<td>0</td>
</tr>
<tr>
<td>Hospital days</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Death</td>
<td>1 (3%)</td>
<td>3 (9%)</td>
</tr>
</tbody>
</table>

*through-the-scope clips in 31/33; **p=0.001

Schmidt et al. Gastro 2018;155:674
• We suggest over-the-scope clips as a hemostatic therapy for patients who develop recurrent bleeding due to ulcers after prior successful endoscopic hemostasis.

• Conditional recommendation, low-quality evidence

---

**OVER-THE-SCOPE CLIPS FOR INITIAL THERAPY?**

Meta-Analysis of RCTs for NVUGIB

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>OTSC Events Total</th>
<th>Standard Therapy Events Total</th>
<th>Risk Ratio M.H. Fixed, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chen</td>
<td>6 50</td>
<td>11 50</td>
<td>0.55 [0.22, 1.38]</td>
</tr>
<tr>
<td>Jensen</td>
<td>1 25</td>
<td>8 28</td>
<td>0.14 [0.02, 0.84]</td>
</tr>
<tr>
<td>Lau</td>
<td>3 93</td>
<td>14 97</td>
<td>0.22 [0.01, 0.75]</td>
</tr>
<tr>
<td>Meier</td>
<td>6 46</td>
<td>14 52</td>
<td>0.46 [0.19, 1.11]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>216</td>
<td>227</td>
<td>0.36 [0.21, 0.61]</td>
</tr>
</tbody>
</table>

Total events: 16447
Heterogeneity: Chi² = 2.57, df = 3.00 = 0.49, I² = 0%
Test for overall effect: Z = 3.77 (p = 0.0002)

• Methodologic limitations in the 3 positive studies
  • Change in original sample sizes without mention or justification in 2 RCTs
  • Very high further bleeding rates in standard arm (22-29% in 3 studies)
  • Inequality in important prognostic factors
    • Spurting (Jensen), ulcer >2cm (Meier): 25% vs. 8%
  • Lau did not randomize 10 patients due to unfavorable lesion position for OTSC, 5 other OTSCs didn’t have successful placement

OVER-THE-SCOPE CLIPS FOR INITIAL THERAPY?
Meta-Analysis of RCTs for NVUGIB

Methodologic limitations in the 3 positive studies
Change in original sample sizes without mention or justification in 2 RCTs
Very high further bleeding rates in standard arm (22-29% in 3 studies)
Inequality in important prognostic factors
  Spurting (Jensen), ulcer >2cm (Meier): 25% vs. 8%
Lau did not randomize 10 patients due to unfavorable lesion position for OTSC, 5 other OTSCs didn’t have successful placement


ESGE 2021 Guidelines
- ESGE suggests in selected actively bleeding ulcers (>2 cm, visible vessel >2mm, in a high-risk vascular area (e.g., gastroduodenal, left gastric arteries), or in excavated/fibrotic ulcers), a cap-mounted clip should be considered as first-line therapy

Gralnek et al. Endoscopy 2021;53:300

ANTISECRETORY THERAPY FOR TREATMENT OF BLEEDING ULCER

- Reduced acid enhances clot formation and stability
- Continuous vs. intermittent PPI therapy?
  - Target intragastric pH based on experimental data
    - pH 6-7: studies of platelet aggregation, PT/PTT
    - pH 4-5: studies of pepsin-induced clot lysis, platelet disaggregation

### HIGH-DOSE PPI AFTER SUCCESSFUL ENDOSCOPIC THERAPY

**Meta-Analysis of RCTs of PPI vs. Placebo/No Treatment: Further Bleeding**

<table>
<thead>
<tr>
<th></th>
<th>Risk Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All RCTs (N=8)</td>
<td>0.43 (0.33-0.56)</td>
</tr>
<tr>
<td><strong>GRADE: high quality of evidence</strong></td>
<td></td>
</tr>
<tr>
<td>Subgroup Analysis (subgroup difference p=0.94)</td>
<td></td>
</tr>
<tr>
<td>Continuous PPI (N=4 RCTs)</td>
<td>0.43 (0.31-0.61)</td>
</tr>
<tr>
<td>Intermittent PPI (N=4 RCTs)</td>
<td>0.42 (0.27-0.67)</td>
</tr>
</tbody>
</table>

High-dose = ≥80mg daily x 3 days  
Laine et al. AJG 2021;107:345

**Mortality (PPI vs. Placebo/No Treatment)**

- **RR = 0.41 (0.22-0.79)**
  - Continuous, intermittent subgroup RRs = 0.41, 0.42

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>All RCTs (N=8)</td>
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</tr>
<tr>
<td>Mortality (PPI vs. Placebo/No Treatment)</td>
<td></td>
</tr>
<tr>
<td>Continuous PPI (N=4 RCTs)</td>
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<td>Intermittent PPI (N=4 RCTs)</td>
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</table>

High-dose = ≥80mg daily x 3 days  
Laine et al. AJG 2021;107:345
POST-ENDOSCOPIC MEDICAL THERAPY
2021 ACG Guideline

• We recommend high-dose PPI therapy given continuously or intermittently for 3 days after successful endoscopic hemostatic therapy of a bleeding ulcer.
  • *Strong recommendation, moderate to high-quality evidence*

Laine et al. AJG 2021;116:899

PPI THERAPY FOR BLEEDING ULCER

• Active bleeding, visible vessel, clot
  • High-dose PPI therapy for 3 days
    • IV bolus (80mg), continuous infusion (8mg/hr)
    • Intermittent IV or oral
      • e.g., 80mg bolus and 40mg 2-4x daily
  • Twice-daily PPI days 4 to 14

• Flat spot, clean base
  • Standard oral PPI once-daily

### PCAB VS. PPI AFTER ENDOSCOPIC HEMOSTASIS FOR ULCER BLEEDING

Vonoprazan 20mg PO bid x 3d, then 20mg qd x 28d vs. Pantoprazole 80mg IV bolus, 8mg/hr infusion x 3d, then 20mg bid x 28d

<table>
<thead>
<tr>
<th>Outcome</th>
<th>PCAB (N=88)</th>
<th>PPI (N=86)</th>
<th>Difference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Further bleeding (30-day)*</td>
<td>4 (4.6%)</td>
<td>8 (9.3%)</td>
<td>-4.8 (-12.3 to 2.8)</td>
</tr>
<tr>
<td>Units blood transfused after endoscopic therapy</td>
<td>0.9</td>
<td>1.4</td>
<td>-0.6 (-1.1 to -0.04)</td>
</tr>
<tr>
<td>Hospital days</td>
<td>6.9</td>
<td>9.4</td>
<td>-2.5 (-5.3 to 0.2)</td>
</tr>
<tr>
<td>Death</td>
<td>5 (5.7%)</td>
<td>8 (9.3%)</td>
<td>-3.6 (-11.4 to 4.2)</td>
</tr>
</tbody>
</table>

* Met non-inferiority margin (10%) for 30-day further bleeding  

Geeratragool et al. DDW 2023

### REBLEEDING AFTER ENDOSCOPIC AND MEDICAL THERAPY

2021 ACG Guideline

- RCT of repeat endoscopic therapy vs. surgery
  - Avoids surgery ~75% cases, fewer complications

- We suggest that patients with recurrent bleeding after endoscopic therapy for a bleeding ulcer undergo repeat endoscopy and endoscopic therapy.
  - *Conditional recommendation, low-quality evidence*

Laine et al. AJG 2021;116:899
FAILURE OF ENDOSCOPIC THERAPY
2021 ACG Guideline

• Interventional radiology vs. surgery
  • Transcatheter arterial embolization has more rebleeding (OR=2.4, 1.8-3.4) but fewer complications (OR=0.5, 0.3-0.7) and shorter hospital stay—without an increase in mortality

• We suggest patients with bleeding ulcers who have failed endoscopic therapy next be treated with transcatheter arterial embolization.
  • Conditional recommendation, very-low-quality evidence

SUMMARY

• Risk stratify: if very-low risk, may discharge from ED
SUMMARY

• Risk stratify: if very-low risk, may discharge from ED
• Transfuse RBCs at Hgb 7 g/dL (8 g/dL if CV disease)

SUMMARY

• Risk stratify: if very-low risk, may discharge from ED
• Transfuse RBCs at Hgb 7 g/dL (8 g/dL if CV disease)
• Pre-endoscopic medications: erythromycin, ±PPI
SUMMARY

• Risk stratify: if very-low risk, may discharge from ED
• Transfuse RBCs at Hgb 7 g/dL (8 g/dL if CV disease)
• Pre-endoscopic medications: erythromycin, ±PPI
• EGD within 24 hrs (resuscitate, address co-morbidities first)

SUMMARY

• Risk stratify: if very-low risk, may discharge from ED
• Transfuse RBCs at Hgb 7 g/dL (8 g/dL if CV disease)
• Pre-endoscopic medications: erythromycin, ±PPI
• EGD within 24 hrs (resuscitate, address co-morbidities first)

• Ulcer bleeding
  • High-risk ulcer
    • Endoscopic hemostatic therapy
    • High-dose PPI (continuous or intermittent) x 3 days
  • If rebleeding, repeat EGD
  • If failure of endoscopic therapy → interventional radiology
Questions

Loren A. Laine, MD, FACG

Roberto de Franchis, MD

Gianluca Esposito, MD, PhD

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ACG Hepatology Circle
ACG GI Circle
ACG Functional GI Health and Nutrition Circle
ACG Women in GI Circle

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