Key Aspects of Care:

- The first priority is to ensure that the patient is hemodynamically stable.
- Peptic ulcers account for most cases of upper GI bleeding, but bleeding from varices has a much higher case fatality rate and demands aggressive treatment.
- Antithrombotic agents may pose challenges to managing GI bleeding and efforts toward hemostasis need to be balanced with risks of thrombosis.
- This is considered a guidance document only. Clinical decisions can lead to a determination to escalate therapy in a way that is dictated by patient response. Implementing the algorithm as outlined has the likelihood of successfully managing patients with upper GI bleeding.

### Algorithm 1. Patient Assessment and Risk Stratification

**Different Presentations of Upper GI Bleed**
- Hematemesis (vomiting of blood or coffee-ground-like material)
- Melena (black, tarry stools)
- Hematochezia (red or maroon blood in the stool)
- Bleeding could be associated with nonspecific symptoms of nausea, vomiting, epigastric pain, vasovagal phenomena and syncope.

**Assess for Complicating Comorbidities**
**Rapid Assessment**
- Positive history of cirrhosis, varices (known or suspected), AAA repair, gastric surgery, ETOH, VAD
- Age > 60 years
- Renal failure
- Liver failure
- Disseminated malignancy
- Cardiac failure
- Ischemic heart disease
- Chronic anticoagulation/Chronic Anti-Platelet Therapy
- NSAIDs Used

**Risk Stratification**
- Endoscopic, clinical, and laboratory features may be useful for risk stratification of patients who present with acute upper GI bleeding.
- Use of the Modified Glasgow-Blatchford Bleeding Score (GBS) (please see Table 1) may aid with triage of patients with UGIB.

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUN, mg/dL</td>
<td></td>
</tr>
<tr>
<td>≥ 18.2 to &lt; 22.4</td>
<td>2</td>
</tr>
<tr>
<td>22.4 to &lt; 28.0</td>
<td>3</td>
</tr>
<tr>
<td>28.0 to &lt; 70.0</td>
<td>4</td>
</tr>
<tr>
<td>≥ 70.0</td>
<td>6</td>
</tr>
<tr>
<td>Hemoglobin, men, g/dL</td>
<td></td>
</tr>
<tr>
<td>&gt; 12.0 to &lt; 13.0</td>
<td>1</td>
</tr>
<tr>
<td>≥ 10.0 to &lt; 12.0</td>
<td>3</td>
</tr>
<tr>
<td>&lt; 10.0</td>
<td>6</td>
</tr>
<tr>
<td>Hemoglobin, women, g/dL</td>
<td></td>
</tr>
<tr>
<td>≥ 10.0 to &lt; 12.0</td>
<td>1</td>
</tr>
<tr>
<td>&lt; 10.0</td>
<td>6</td>
</tr>
<tr>
<td>SBP, mmHg</td>
<td></td>
</tr>
<tr>
<td>100-109</td>
<td>1</td>
</tr>
<tr>
<td>90-99</td>
<td>2</td>
</tr>
<tr>
<td>&lt; 90</td>
<td>3</td>
</tr>
<tr>
<td>Other Markers</td>
<td></td>
</tr>
<tr>
<td>Heart Rate ≥100bpm</td>
<td>1</td>
</tr>
</tbody>
</table>

**Modified GBS Score**
- Consider outpatient management
- Admission
  - All patients with hemodynamic instability or active bleeding should be evaluated for the ICU.

*See page 4, Related Tools for additional recommendations on management of chronic anticoagulation and variceal bleeding.*
Algorithm 2. Management of Upper GI Bleed Patients

Monitoring and Laboratory Tests

- Supplemental oxygen by nasal cannula if hypoxic, and **airway assessment** - may need intubation for **airway protection**
- **NPO**
- Place large bore vascular access by using two (2) large bore (16 gauge or larger) peripheral IV catheters or a sheath introducer such as a Cordis.
- Check vital signs
- Order Lab Tests: CBC, PT/INR, PTT, electrolytes, BUN/Cr ratio
- Type & Cross

Resuscitation

- **Adequate resuscitation and stabilization** are essential prior to endoscopy to minimize treatment-associated complications.
- For patients with active bleeding, **provide IV fluids** (0.9 NS, 1-2 liters, based on vital signs)
- Routine placement of NG-tube is not recommended. Consider **NG-tube placement** in case of: hematochezia to exclude torrential upper GI bleeding, if requested to enhance endoscopic visibility, or if needed for airway management.
- If a **transfusion** is clinically indicated, please refer to the *Transfusion Therapy: Indications for Ordering* Guideline.

Pharmacotherapy

- IV proton pump inhibition*
- Consider octreotide and prophylactic antibiotics if varices suspected.
- NSAIDs can be held
- Consider anticoagulation reversal based on risk/benefit profile. See OSUWMC guidelines for **recommendations on anticoagulation reversal**.
- For Antiplatelet holding guidance, please refer to *Management of Antiplatelet Therapy in Patients with Arterial Stents Around the Time of Surgeries and Procedures* clinical practice guideline.
- Consider a prokinetic agent, such as erythromycin 250 mg IV or Reglan 10 mg IV ~30-60 minutes before planned EGD, to enhance endoscopic visibility in suspected upper GI bleeding

Consults

- Obtain GI Consult
- Consult Cardiology and/or Pharmacy if patient on antithrombotic therapies (and high thrombotic risk)

What is the patient's response to fluid resuscitation?

See Algorithm 3, on page 3.

*Current evidence does not provide evidence of a significant clinical difference between intermittent and continuous infusion PPIs in acute GI bleeds prior to endoscopy.
Algorithm 3. Management Based on Patient Response to Fluid Resuscitation

Evaluate patient response to fluid resuscitation

**Full Positive Response**
- Improved HR and BP without vasopressor support
- Hgb stable and/or appropriate response if transfused
- Admit to Med/Surg

**Partial Positive Response**
- HR still > 100 bpm
- SBP still < 100 mmHg
- Fresh blood on NG lavage/inability to clear after 900-100 cc water
- Admit/Transfer to ICU

**No Response**
- Continued bleeding
- Significant Hgb decline/inappropriate response if transfused
- No improvement in HR or BP
- Admit/Transfer to ICU

**Consult GI to evaluate for endoscopy within 12-24 hours**

- Page GI fellow on call to evaluate for emergent endoscopy within 6 hours

- **LIFE-THREATENING EMERGENCY**
  - Page GI Fellow and Acute Care Surgery Service on call – LIFE THREAT
  - Immediate evaluation by Surgery and GI
  - Endoscopy as needed
  - Antithrombotic addressed/reversed (see page 4, Related Tools)
  - If peripheral IV cannot be obtained, placement of introducer is recommended
  - Transfuse as indicated
  - Massive transfusion if needed; see page 6 of the Blood and Blood Products Policy in the Perioperative Department for **Massive Transfusion Protocol**

- **Await further recommendations from GI**

- Clinical deterioration or ≥ 4 units PRBCs in 6 hours or ≥ 6 units in 24 hours?
  - YES
  - **Await further recommendations from GI**
  - NO
Related Tools

OSUWMC Guidelines
- Dabigatran (Pradaxa®) Reversal Treatment for Bleeding Events
- Management of Antiplatelet Therapy in Patients with Arterial Stents Around the Time of Surgeries and Procedures
- Rivaroxaban, Apixaban: Factor Xa Inhibitors - Reversal Treatment for Bleeding
- Variceal Bleeding: Diagnosis and Management
- Warfarin - Management of Elevated INR and Reversal

Protocols
- IHIS Massive Transfusion Protocol (MTP) Documentation

Ordersets
- OSU IP ED: GI BLEED
- OSU IP ED: ACUTE ABDOMINAL PAIN
- OSU IP GE: ADMISSION ACTIVE GI BLEED
- OSU IP MIC: ADMISSION MICU

Calculators
- International consensus statements and ACG practice guidelines emphasize use of prognostic scales in the care of patients with UGIB to help guide management.

Quality Measures
- Length of stay
- Endoscopy within 24 hours of admission
- Mortality rate

References

- Feagins LA, et al. The Rate of Post-Polypectomy Bleeding for Patients on Uninterrupted Clopidogrel Therapy During Elective Colonoscopy Is Acceptably Low. Digestive Diseases and Sciences, 2011; 2631–2638
- Segal JB, et.al. Paucity of studies to support that abnormal coagulation test results predict bleeding in the setting of invasive procedures: an evidence-based review. Transfusion, 2005; 1413-1425.
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Guideline Approved


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