Nonvariceal Upper Gastrointestinal Bleeding

Timing of Endoscopy and Ways to Improve Endoscopic Visualization

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KEYWORDS

- Upper gastrointestinal bleeding • Endoscopy • Prokinetic agent
- Peptic ulcer bleeding

KEY POINTS

- The first priority in the management of upper gastrointestinal bleeding (UGIB) is correcting fluid losses and restoring hemodynamic stability.
- After hemodynamic stabilization, patients should undergo "early" upper endoscopy, now routinely defined as performance within 24 hours of patient presentation.
- The availability GI endoscopists proficient in endoscopic hemostasis and support staff with technical expertise enables performance of endoscopy on a 24/7 basis and is recommended.
- Routine use of a prokinetic in all UGIB patients is not recommended.
- Use of a prokinetic in patients with a suspected high probability of having blood or clots in the stomach may improve endoscopic visualization and diagnostic yield.

INTRODUCTION

Acute upper gastrointestinal bleeding (UGIB) refers to gross GI blood loss originating proximal to the ligament of Treitz that usually manifests as fresh blood hematemesis, "coffee ground'' emesis, and/or melena with or without hemodynamic compromise.[1–5] Hematochezia may be the presenting sign in patients with extremely brisk UGIB, yet this clinical presentation is uncommon.[6] Traditional negative patient

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outcomes include rebleeding and mortality, with patient mortality commonly associated with decompensation of preexisting comorbid medical conditions precipitated by the acute bleeding event.[1–3,7]

In most clinical settings, the great majority (80%–90%) of episodes of acute UGIB are secondary to nonvariceal causes, the foremost being peptic ulcer bleeding. Upper endoscopy is the most accurate and practical method for diagnosing the source of acute UGIB. Subsequently, appropriate endoscopic therapy significantly reduces mortality, rebleeding, requirement for transfusion, hospital stay, and health care costs. Even in the absence of specific endoscopic hemostasis therapy, the prognostic information obtained from upper endoscopy can significantly reduce the use of health care resources.[1–4]

TIMING OF ENDOSCOPY

The first priority in UGIB patient management is correcting fluid losses and restoring hemodynamic stability. Volume resuscitation should be initiated with crystalloid intravenous (IV) fluids with the use of large-bore IV catheters (eg, 2 peripheral catheters of 16–18 gauge or a central catheter if peripheral venous access is not attainable). To maintain adequate oxygen-carrying capacity, especially in older patients with coexisting cardiopulmonary comorbidities, the use of supplemental oxygen and transfusion of plasma expanders (eg, packed red blood cells) should be considered. When indicated, correction of coagulopathy should be undertaken but should not delay performance of upper endoscopy.[1–3] This can be achieved using fresh frozen plasma and in selected cases (if the platelet count is <50,000) transfusion of platelets.

Blood transfusions should be considered in patients with a hemoglobin level below 70 g/L. Early transfusions (given within 12 hours of patient presentation) have been shown to be associated with higher rates of rebleeding and a higher 30-day mortality.[8] Villanueva and colleagues recently reported on 921 patients with UGIB randomly assigned to either a restrictive (transfuse at a hemoglobin level of $\leq$70 g/L) or liberal (transfuse at a hemoglobin level of $\leq$90 g/L) transfusion strategy. Those who received the restrictive blood transfusion strategy had significantly lower mortality at 45 days (95% vs 91%; hazard ratio [HR], 0.55; 95% CI, 0.33–0.92), less rebleeding (10% vs 16%; HR, 0.68; 95% CI, 0.47–0.98), and fewer overall adverse events.[9] However, in the subset of nonvariceal UGIB patients, significantly improved outcomes were limited to a reduced need for surgery and only statistical trends suggesting less rebleeding and improved survival. These blood transfusion thresholds may not necessarily apply to patients with significant medical comorbidities (ie, acute coronary syndrome, symptomatic peripheral ischemia, stroke, or transient ischemic attack). Such patients may benefit from a more liberal transfusion policy in an attempt to avoid disease exacerbations induced by significant GI blood loss.

After hemodynamic stabilization, patients should undergo “early” upper endoscopy (now routinely defined as performance within 24 hours of patient presentation).[1–3] Some high-risk patients, such as those with acute coronary syndrome or a suspected bowel perforation, may benefit from deferring endoscopy until their clinical situation is more fully evaluated and stabilized. Low-risk patients, identified using a pre-endoscopy risk stratification score (eg, Glasgow-Blatchford) can be considered for outpatient management.[9] Very early or emergent upper endoscopy, performed within 2 to 12 hours of patient presentation, has not been shown to confer any additional benefit or alter patient outcomes compared with ’early’ endoscopy.[10] In patients who require endoscopic hemostasis therapy, early upper endoscopy results in improved patient outcome. Cooper and colleagues[11] reported that early endoscopy significantly