Initial Assessment and Resuscitation in Nonvariceal Upper Gastrointestinal Bleeding

Tracey G. Simon, MD[a], Anne C. Travis, MD[b], John R. Saltzman, MD[b,*]

KEYWORDS

• Gastrointestinal bleeding • Nonvariceal hemorrhage • Risk stratification • AIMS65 • Glasgow-Blatchford score

KEY POINTS

- In-hospital mortality ranges from 2% to 14% in patients with upper gastrointestinal bleeding and is most often related to multiorgan failure or advanced metastatic disease.
- Initial rapid evaluation includes a thorough history and assessment of vital signs including orthostatics and blood tests. Effective intravenous access and volume infusion is critical.
- Early evaluation and stratification for mortality and rebleeding risk should be performed using validated prognostic scoring systems, such as the Glasgow-Blatchford, AIMS65, or Rockall score.
- Blood transfusions should target a restrictive transfusion threshold in most patients, as restrictive strategies have been associated with improved patient outcomes.

INTRODUCTION

Acute nonvariceal upper gastrointestinal bleeding (UGIB) remains a common and potentially life-threatening medical condition requiring a prompt, accurate assessment and timely medical and endoscopic management. It has a reported annual incidence of 50 to 150 cases per 100,000 adults and results in considerable patient morbidity as well as utilization of hospital resources.[1–3] Despite improvements in medical therapy with proton pump inhibitors and endoscopic interventions, there is a 2% to 14% mortality rate, with some reports noting up to 27% mortality rates in elderly patients or in those with significant comorbid conditions.[4–6] The most recent reports have found that current

[a] Department of Medicine, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02215, USA; [b] Division of Gastroenterology, Hepatology and Endoscopy, Department of Medicine, Brigham and Women's Hospital, Harvard Medical School, 75 Francis Street, Boston, MA 02115, USA
* Corresponding author.
E-mail address: jsaltzman@partners.org

Gastrointest Endoscopy Clin N Am 25 (2015) 429–442
http://dx.doi.org/10.1016/j.giec.2015.02.006 giendo.theclinics.com
1052-5157/15/$ – see front matter

in-hospital mortality in the United States is about 2%.[6] Death among patients admitted with acute nonvariceal UGIB is less often a direct result of the bleeding event. Rather, cardiopulmonary collapse, sepsis, and/or metastatic cancer account for most in-hospital mortality.[7] This finding was demonstrated in a prospective cohort study of patients admitted to a Hong Kong hospital with acute nonvariceal UGIB; of the patients who died, 80% died of non–bleeding-related causes.[8] In addition to appropriate management of the acute bleed, patients with UGIB also require global, supportive management.

The principal components of early management in acute, nonvariceal UGIB include resuscitation, risk stratification, acid suppression, and endoscopy for diagnosis and appropriate intervention. Accurate patient evaluation and assessment of risk is of critical importance, both to improve patient outcomes and minimize health care costs.

DEFINITIONS

An acute GI bleeding event should be clearly characterized with respect to the suspected source of bleeding, bleeding rate, and estimated volume of blood loss. UGIB is defined as bleeding proximal to the ligament of Treitz and may manifest as hematemesis or passage of blood from the rectum (**Table 1**). Hematemesis can contain either fresh blood or clots, consistent with a more acute and active bleed. Specks of dark, granular blood, often described as *coffee grounds* suggest a less active bleed. Blood from the rectum that originates proximal to the ligament of Treitz may appear as black, tarry-appearing stool with a distinct odor, called *melena*. Notably, a middle (small bowel) GI bleed or a slow colonic bleed might also manifest as melena. Finally, maroon-colored stool and/or bright red blood per the rectum may be seen in a brisk upper GI hemorrhage.

The most common cause of nonvariceal UGIB is peptic ulcer disease, which accounts for 31% to 67% of cases.[2,9] This cause is followed by erosive upper GI disease (7%–31%), including esophagitis (3%–12%), malignancy (2%–8%), and Mallory-Weiss tears (4%–8%).[10–12] In 2% to 8% of patients, uncommon causes, including hemobilia, angiodysplasia, aortoenteric fistula, Dieulafoy lesion, or gastric antral vascular ectasia, are found.

HISTORY AND PHYSICAL EXAMINATION

A thorough history detailing symptoms and past medical history may provide insight into the cause of the bleeding (see **Table 1**). Symptoms of acute UGIB may include epigastric pain, dyspepsia, lightheadedness, dizziness, and/or syncope.[5,13]

Table 1
Clinical manifestations of UGIB

	Sources of GI Bleeding					
	Esophagus	Stomach	Duodenum	Small Intestine[a]	Right Colon	Left Colon
Hematemesis	X	X	X	—	—	—
Coffee-ground emesis	X	X	X	—	—	—
Melena	X	X	X	X	X	—
Guaiac-positive stool	X	X	X	X	X	X
BRBPR	(If severe)	(If severe)	(If severe)	(If severe)	X	X

Abbreviation: BRBPR, bright red blood per rectum.
[a] Small bowel distal to the ligament of Treitz.