Management of acute non-variceal upper gastrointestinal bleed
Marc Bardou
Department of Gastroenterology CHU du Bocage, and Division of Clinical Pharmacology, LPPCE, Faculty of Medicine, University of Burgundy, France

Initial risk stratification followed by combined endoscopic therapy and high-dose intravenous proton pump inhibitor infusion, in patients exhibiting high-risk ulcer lesions, represents the optimal evidence-based therapeutic approach. [Indian J Gastroenterol 2006;25(Suppl 1):S22-S24]

Acute upper gastrointestinal hemorrhage (UGIH) is a prevalent, clinically significant, and expensive healthcare problem. Since its incidence increases with age, this problem is expected to increase particularly in countries with older demographics.

Etiology
Acute UGIH is categorized as non-variceal or variceal, depending on the etiology. The vast majority of acute UGIH is secondary to non-variceal causes, with peptic ulcers being the most prevalent cause, followed by gastroduodenal erosions, Mallory-Weiss tear, esophagitis and Dieulafoy’s lesions.1

Clinical presentation
Hematemesis and melena are the primary clinical symptoms indicative of UGIH. Although uncommon, up to 5% of acute UGIH patients may present with hematochezia.2

Risk stratification
The validated Blatchford risk score (BRS)3 predicts outcomes in non-variceal UGIH, before endoscopy; the Rockall score requires endoscopy.4 Available prognostic scales may be used to assist in decision making. Thus, the main goal of management is to identify patients at high risk for an adverse outcome on the basis of clinical, laboratory, and endoscopic variables. A modified BRS was recently suggested to identify approximately 10% of GI bleed patients with a low likelihood of having high-risk stigmata and low risk of adverse outcomes.5

Initial management
Patients with UGIH should be evaluated immediately on presentation. Resuscitation, including stabilization of blood pressure and restoration of intravascular volume, should precede further diagnostic and therapeutic measures.

Nasogastric tube
The presence of blood in the nasogastric aspirate confirms an upper GI source and predicts high-risk endoscopic lesions.6 If very early endoscopy is to be performed, nasogastric tube placement might not be considered for diagnosis but may be helpful for gastric lavage before endoscopy.7

Prokinetic agents
Erythromycin, a macrolide antibiotic, has potent gastrokinetic properties. The American Society of Gastrointestinal Endoscopy (ASGE) guidelines recommend the use of pre-procedural erythromycin to improve mucosal visibility.9

Endoscopic therapy
Endoscopic hemostasis is the standard of care for the acute management of bleeding from peptic ulcers with high-risk stigmata (active bleeding, non-bleeding visible vessel, and/or adherent clot).9 Endoscopic monotherapy, with injection or thermal coagulation, is an effective hemostatic technique for high-risk stigmata. However, the combination of these techniques is superior to either treatment alone10 and is recommended by international and ASGE guidelines.10,8 More recently, a new approach, hemoclips placement, has emerged and was suggested to be as efficient as combination therapy.11

Medical therapy
Medical therapy using intravenous proton pump inhibitors (PPI) is an attractive therapeutic option, adjuvant to endoscopic therapy, in UGIH. For patients with high-risk stigmata there exists strong evidence to suggest that IV PPI, used as a bolus followed by an hourly continuous drip for 72 hours, after endoscopic hemostasis not only decreases rebleeding and the need for surgery but also mortality.12,13 Modeling studies suggest, at least in the USA and Canada,14 that administering high-dose IV PPI for 3 days is both more effective and less costly than not doing so and than giving high-dose oral PPI15 for patients with bleeding ulcers after successful endoscopic haemostasis. ASGE guidelines recommended the use of PPI prior to endoscopy for patients with bleeding

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peptic ulcers or in those with suspected peptic ulcer bleeding in whom endoscopy is delayed or unavailable;\(^6\) nevertheless the routine use of PPI in patients with acute UGIH awaiting endoscopy is not clearly supported by available evidence.\(^6\) Oral PPI, even used at high dose, might not reliably sustain pH at a desired level of 6.\(^7\) The usefulness of other pharmacological therapies such as somatostatin and its analogue octreotide is still a matter of debate.\(^8\)

**Surgery**

Early consultation of surgical colleagues is part of a recommended multidisciplinary approach to patients with acute upper GI hemorrhage.\(^7\) Epidemiologic studies have demonstrated that despite major advances in endoscopic treatment, the incidence of emergency surgery has not significantly changed.\(^9\) Vagotomy and drainage procedures are technically simpler but are usually associated with higher ulcer recurrence rates. In contrast, vagotomy and resection approaches offer lower ulcer recurrences but represent much more challenging operations and are associated with considerable morbidity and mortality.\(^10\)

**Radiological approach**

Angiography with transcatheter embolization provides a non-operative option for patients whose acute bleeding has not been identified or controlled by endoscopy.\(^11\) Recent studies support the safety and effectiveness of this approach for selected patients with acute non-variceal GI hemorrhage,\(^12,13\) given the appropriate expertise.

**References**


**Correspondence to:** Dr Bardou, Department of Gastroenterology CHU du Bocage, and Division of Clinical Pharmacology, LPPCE, Faculty of Medicine, University of Burgundy, BP87900, 21079 Dijon Cedex, France. E-mail: marc.bardou@ubourgogne.fr

This summary was prepared with the help of Pr. Alan Barkun, Head, Gastroenterology Department, McGill University Health Center, Montreal (QC), Canada