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*Corresponding author:
Dr. Md. Saleem

Hematemesis and Acute Upper Gastrointestinal Bleeding: A Contemporary Evidence-Based Review

* Dr. Md. Saleem ¹

¹ Assistant Professor, Department of Surgery, College of Medicine, Al-Iraqia University, Baghdad, Iraq

Abstract

Background: Hematemesis is a major presentation of acute upper gastrointestinal bleeding (UGIB) and may reflect either nonvariceal or variceal disease. Recent evidence has refined risk stratification, transfusion practice, timing of endoscopy, endoscopic hemostasis, and escalation pathways.

Objective: To provide a current review of the causes, clinical assessment, endoscopic diagnosis, management, and outcomes of hematemesis using recent literature, with particular emphasis on evidence published in 2025-2026.

Methods: This narrative evidence update synthesizes recent prospective studies, multicentre data, systematic reviews, and contemporary endoscopy guidance. It is not presented as a new 2025-2026 patient cohort.

Results: Recent studies confirm substantial geographic variation in the causes and outcomes of UGIB. A 2026 publication from a 93-centre Indian task force reported 10,564 analyzable UGIB patients: 61.1% had nonvariceal and 38.9% variceal bleeding; 30-day mortality was 2.8% and 3.67%, respectively. A separate prospective cohort published in 2025 found varices (33.3%), erosive gastritis/duodenitis (27.7%), and peptic ulcers (21.5%) to be the leading endoscopic findings, with 17.4% six-week mortality in that low-resource setting.

Conclusion: Hematemesis remains a high-priority emergency. Modern care is based on early stabilization, validated risk assessment, appropriately timed endoscopy, etiology-specific hemostasis, and selective use of interventional radiology or surgery when endoscopic control fails.

Keywords: hematemesis, upper gastrointestinal bleeding, peptic ulcer bleeding, variceal hemorrhage, endoscopy, hemostasis

1. INTRODUCTION

Hematemesis, defined as vomiting of fresh or altered blood, is a cardinal manifestation of bleeding from the upper gastrointestinal tract. It may occur with melena and, when hemorrhage is brisk, with hematochezia. The immediate clinical priority is not simply to identify the lesion but to assess the severity of blood loss, stabilize the patient, and determine the need and timing of definitive intervention.

The supplied article was a prospective study of 100 patients treated at Al-Yarmouk Teaching Hospital between July 2018 and July 2019. Its reported results remain historical data from that cohort and should not be relabeled as 2025-2026 observations. This updated manuscript therefore uses the original topic as its foundation but converts the work into a contemporary evidence-based review using recently published research.

UGIB remains clinically important despite improvements in pharmacologic treatment, endoscopic technology, critical care, and interventional radiology. A 2026 comprehensive review emphasized that outcomes continue to depend strongly on etiology, comorbidity, and the timing and effectiveness of intervention.

2. Contemporary Etiology and Epidemiology

The relative contribution of peptic ulcer disease, erosive mucosal disease, portal-hypertensive bleeding, malignancy, and other lesions varies markedly by region and referral population. This variation is important: no single set of percentages should be presented as a universal 2025-2026 distribution of hematemesis.

Table 1. Recent evidence illustrating variation in UGIB etiology and outcomes

Recent evidence	Population	Key etiologic findings	Rebleeding / surgery	Mortality
Indian Society of Gastroenterology Task Force, published 2026	10,564 UGIB patients from 93 centres; data collected 2014-2018	61.1% nonvariceal; 38.9% variceal	Rebleeding 1.4% NV / 1.6% V; surgery 0.3% NV / 0.12% V	30-day: 2.8% NV / 3.67% V
Prospective cohort, published 2025	195 adults; single tertiary centre; May 2022-April 2023	Varices 33.3%; erosive gastritis/duodenitis 27.7%; peptic ulcers 21.5%	6-week rebleeding 7.2%	6-week: 17.4%
Prospective Indian study, published 2024/available in current evidence base	296 UGIB patients; 2022-2023	56.7% variceal; 43.2% nonvariceal	Outcome study focused on mortality prediction	30-day overall: 9.8%

These data demonstrate why a current review should report results with their original study population and dates rather than merge them into a fabricated new cohort. The large 2026 Indian multicentre publication is especially informative for contemporary regional context, although its underlying patient recruitment occurred between 2014 and 2018.

3. Clinical Assessment and Initial Stabilization

Initial assessment should identify hemodynamic instability, ongoing bleeding, altered mental status, major comorbidity, anticoagulant or antiplatelet exposure, chronic liver disease, and features suggesting portal hypertension. Two large-bore intravenous lines, appropriate laboratory testing, blood grouping and cross-matching, and targeted resuscitation are central to early care.

Modern practice favors structured pre-endoscopic risk assessment rather than relying on presentation alone. The Glasgow-Blatchford Score remains widely used to identify very-low-risk patients, while other scores may assist with prognostication. A recent prospective Indian study reported that the ABC score had better discrimination for 30-day mortality than several established pre-endoscopic scores in its cohort.

Transfusion decisions should be individualized, but contemporary evidence generally supports a restrictive red-cell transfusion strategy in most UGIB patients unless clinical circumstances such as cardiovascular disease or persistent hemodynamic compromise justify a different approach.

4. Role and Timing of Upper Gastrointestinal Endoscopy

Upper gastrointestinal endoscopy remains the key diagnostic and therapeutic procedure for hematemesis. It identifies the source, characterizes high-risk stigmata, permits endoscopic hemostasis, and helps guide post-procedure management.

The 2026 ESGE update on peptic ulcer bleeding advises against routine emergent endoscopy within 6 hours or urgent endoscopy within 12 hours for nonvariceal UGIB unless the patient remains hemodynamically unstable despite adequate resuscitation. This reinforces an important principle:

resuscitation and stabilization should not be sacrificed merely to achieve the earliest possible endoscopy.

Selected patients with clinically severe or ongoing bleeding may benefit from a pre-endoscopy prokinetic. The 2026 ESGE update also states that high-dose intravenous proton pump inhibitor therapy may be considered before endoscopy, but it should not delay early endoscopy.

5. Current Endoscopic Hemostasis

Endoscopic treatment is determined by the bleeding lesion. For high-risk peptic ulcer bleeding, contemporary therapy may include clips, thermal coagulation, combination approaches, over-the-scope clips, and topical hemostatic agents. A 2025 systematic review and meta-analysis involving 7,211 patients found that over-the-scope clips were associated with lower 30-day rebleeding and lower 30-day mortality than standard endoscopic treatment, although the authors noted that further large, randomized trials are needed.

Recent reviews also describe expanding use of cap-assisted clips, noncontact thermal techniques, and topical hemostatic agents. These technologies have shifted the treatment pathway away from the older model in which persistent bleeding frequently led directly to laparotomy.

For suspected variceal hemorrhage, management differs from nonvariceal bleeding and typically combines resuscitation, vasoactive therapy, antibiotic prophylaxis in appropriate cirrhotic patients, and endoscopic treatment. High-risk or refractory cases may require advanced portal decompressive strategies such as transjugular intrahepatic portosystemic shunt.

6. Failure of Endoscopic Therapy and the Role of Surgery

In the historical study supplied for rewriting, five patients underwent emergency surgery, including vagotomy-based procedures. Those observations should remain part of the original 2018-2019 cohort rather than be presented as a current standard. In modern nonvariceal UGIB pathways, persistent or recurrent hemorrhage is usually approached with repeat or advanced endoscopic hemostasis. When endoscopic control fails, transcatheter angiographic embolization is an important escalation option; surgery is generally reserved for selected patients when endoscopic and radiologic approaches fail or are unavailable.

7. Outcomes and Prognostic Factors

Mortality after UGIB is highly dependent on patient selection and underlying disease. The 2026 nationwide Indian task-force publication reported 30-day mortality of 2.8% in nonvariceal UGIB and 3.67% in variceal UGIB. In contrast, the prospective low-resource cohort published in 2025 reported six-week mortality of 17.4%. Such differences reflect case mix, referral severity, comorbidities, resource availability, follow-up interval, and the relative burden of variceal disease.

A 2025 retrospective study also found hematemesis itself to be associated with greater transfusion requirements and longer hospital and intensive-care stays compared with UGIB patients without hematemesis, supporting the clinical impression that visible upper gastrointestinal blood loss may identify a more resource-intensive subgroup.

Important adverse prognostic factors across the literature include hemodynamic instability, advanced age, comorbidity, cirrhosis, ongoing or recurrent bleeding, high-risk endoscopic findings, and failure of initial hemostasis.

8. Comparison With the Supplied Historical Study

Table 2. Historical study versus contemporary evidence

Domain	Supplied 2018-2019 study	Contemporary interpretation
Study design	Prospective, 100 patients, single centre	Useful local historical cohort; insufficient to represent current epidemiology
Leading causes	Peptic ulcer 45%; erosions 25%; reflux/hiatus hernia 20%	Recent cohorts show major geographic variation, including settings where variceal bleeding predominates
Endoscopy	Within 48 hours	Current pathways emphasize stabilization and appropriately timed early endoscopy
Persistent bleeding	Five patients underwent surgery	Modern escalation commonly includes repeat/advanced endoscopy and angiographic embolization before surgery where available
Mortality	3%	Recent studies report widely varying mortality depending on population and follow-up

9. Limitations of the Current Review

This article is a narrative update rather than a new prospective 2025-2026 clinical study. The recent studies summarized here differ in geography, recruitment period, disease severity, definitions, follow-up, and access to endoscopic and radiologic treatment. The 2026 nationwide Indian study is a recent publication but its patient data were collected from 2014 to 2018; it must therefore not be described as a cohort recruited in 2025-2026. Percentages from separate studies should not be pooled without a formal systematic-review methodology.

10. Conclusion

Hematemesis remains a clinically important manifestation of acute UGIB. Current evidence indicates substantial geographic variation in etiology, with both nonvariceal and variceal sources contributing meaningfully to disease burden. Contemporary management prioritizes early stabilization, risk stratification, appropriately timed endoscopy, and lesion-specific endoscopic hemostasis. Advances in clips, topical agents, thermal techniques, and interventional radiology have reduced the need for immediate surgery in many patients with persistent nonvariceal bleeding. For publication in 2025-2026, historical patient data should be clearly identified as historical; current epidemiology and management should be supported by recent, verifiable literature rather than by altering the dates or outcomes of an older cohort.

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