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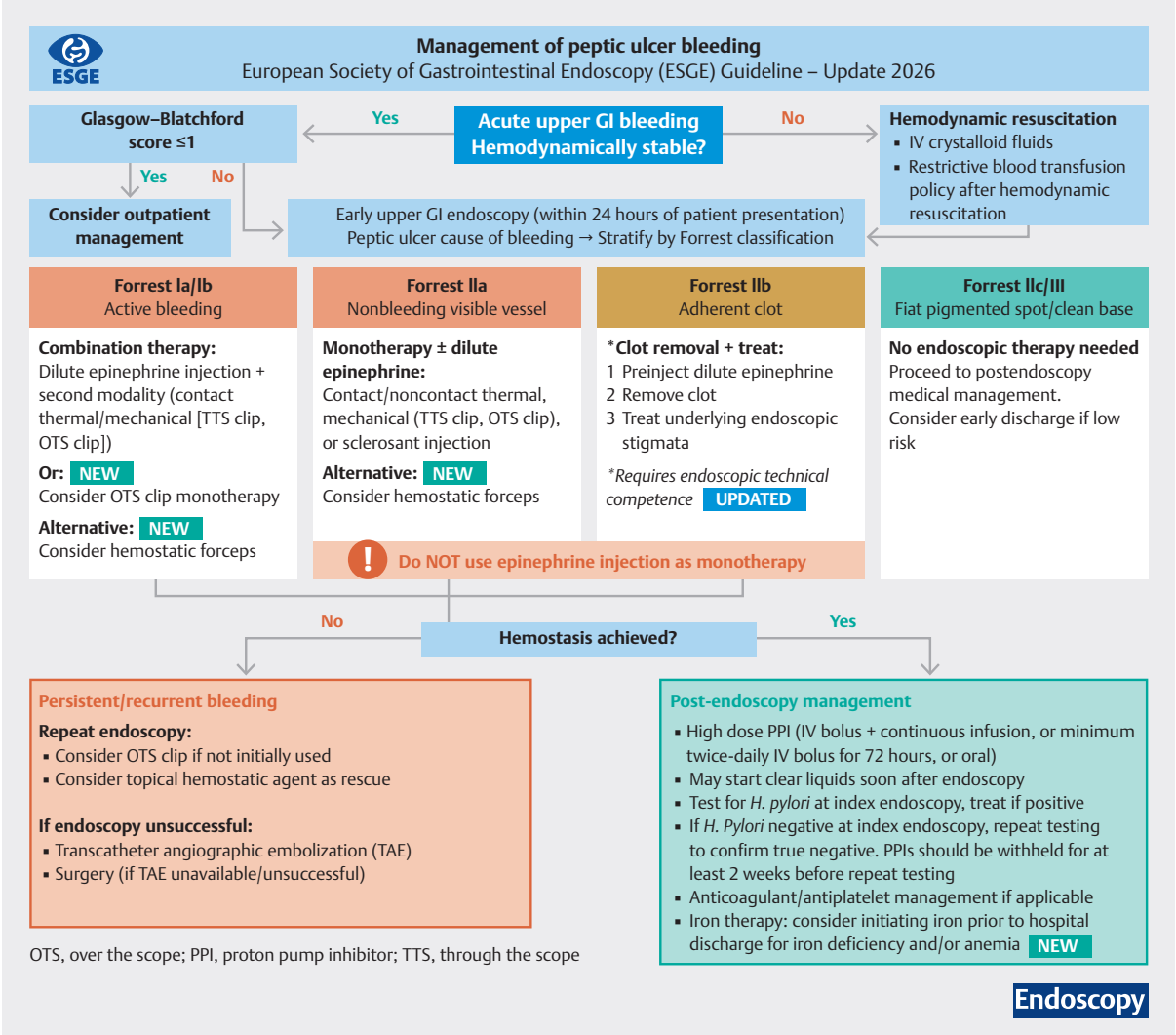
Endoscopic diagnosis and management of peptic ulcer bleeding: European Society of Gastrointestinal Endoscopy (ESGE) Guideline – Update 2026

GRAPHICAL ABSTRACT



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ABSTRACT

This guideline is an update of the 2021 ESGE Guideline on *Endoscopic diagnosis and management of nonvariceal upper gastrointestinal hemorrhage*. The following are the new and/or revised recommendations.

Pre-endoscopy management

1 ESGE does not recommend the routine use of video capsule endoscopy or telemetric blood-sensing capsules in the management of patients with suspected upper gastrointestinal hemorrhage (UGIH).

2 ESGE suggests, if intravenous erythromycin is unavailable, pre-endoscopy administration of intravenous metoclopramide in selected patients with clinically severe or ongoing active UGIH.

3 ESGE suggests that pre-endoscopy high dose intravenous proton pump inhibitor (PPI) therapy be considered in patients presenting with acute UGIH; however, this should not delay early endoscopy.

4 ESGE does not recommend emergent (≤6 hours) or urgent (≤12 hours) upper GI endoscopy unless the patient remains hemodynamically unstable despite adequate resuscitation.

Endoscopic management

5 ESGE suggests that patients with peptic ulcers presenting with an adherent clot (Forrest IIb) should undergo endoscopic therapy, with clot removal and subsequent endoscopic hemostasis if indicated, provided that the endoscopist has the technical competence to safely remove the clot and manage potential conversion to a higher risk bleeding lesion.

6 ESGE could not reach a consensus for or against the routine use of a Doppler endoscopic probe in treatment decisions of high risk endoscopic stigmata of peptic ulcer bleeding.

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7 ESGE suggests the use of over-the-scope (OTS) clips as monotherapy as an alternative to combination therapy as first-line therapy for peptic ulcer bleeding with high risk stigmata (FIa, FIb) owing to a lower risk of further bleeding compared with standard endoscopic hemostatic therapy.

8 ESGE recommends, for patients with an ulcer with a nonbleeding visible vessel (FIIa), contact or noncontact thermal therapy, mechanical therapy (e. g. through-the-scope or OTS clips), or injection of a sclerosing agent, each as monotherapy or in combination with epinephrine injection.

9 ESGE suggests, for patients with an ulcer with a nonbleeding visible vessel (FIIa), OTS clips may be used as alternative monotherapy.

10 ESGE suggests hemostatic forceps with soft coagulation may be used as monotherapy in the treatment of peptic ulcer bleeding with high risk stigmata (FIa, FIb, and FIIa).

11 ESGE suggests that hemostatic agents should not be used as monotherapy in the first-line treatment of patients with high risk stigmata of peptic ulcer bleeding.

12 ESGE suggests that, in patients with persistent bleeding refractory to standard hemostasis modalities, the use of a topical hemostatic agent or OTS clips should be considered.

13 ESGE recommends that, in patients with persistent bleeding refractory to all modalities of endoscopic hemostasis, including topical hemostatic agents and OTS clips, transcatheter angiographic embolization (TAE) should be considered. Surgery is indicated when TAE is not locally available or after unsuccessful TAE.

Postendoscopy management

14 ESGE suggests that prophylactic TAE be considered in selected high risk cases of peptic ulcer bleeding (e. g. patients with hemodynamic instability at presentation, posterior duodenal wall ulcer location, large ulcer size [>2 cm], or when durable endoscopic hemostasis is considered uncertain).

15 ESGE could not reach a consensus for or against the routine use of potassium-competitive acid blockers for patients who have undergone endoscopic hemostasis.

16 ESGE recommends that, for patients with clinical evidence of recurrent peptic ulcer bleeding, use of an OTS clip should be considered. Should this second attempt at endoscopic hemostasis also be unsuccessful, TAE should be considered. Surgery is indicated when TAE is either locally unavailable or after unsuccessful TAE.

17 ESGE recommends that, in patients with peptic ulcer hemorrhage who require ongoing anticoagulation therapy, anticoagulation should be resumed as soon as clinically indicated based on thromboembolic risk.

18 ESGE suggests that iron therapy be initiated prior to hospital discharge in patients with peptic ulcer bleeding and iron deficiency and/or anemia.

19 ESGE suggests that early oral nutrition, within 24 hours following endoscopic hemostasis, be initiated in patients with peptic ulcer bleeding in whom durable hemostasis has been achieved.

ABBREVIATIONS

DEP	Doppler endoscopic probe
DOAC	direct oral anticoagulant
ESGE	European Society of Gastrointestinal Endoscopy
GBS	Glasgow–Blatchford score
GI	gastrointestinal
GRADE	Grading of Recommendations Assessment, Development and Evaluation
Hb	hemoglobin
OR	odds ratio
OTS	over the scope
PICO	patient, intervention, control, outcome
PPI	proton pump inhibitor
RBC	red blood cell
RCT	randomized controlled trial
RR	risk ratio
TAE	transcatheter angiographic embolization
TTS	through the scope
UGIH	upper GI hemorrhage
VKA	vitamin K antagonist

SCOPE AND PURPOSE

This Guideline is an official statement of the European Society of Gastrointestinal Endoscopy (ESGE) and is an update of the previously published 2021 ESGE clinical guideline addressing the role of gastrointestinal (GI) endoscopy in the diagnosis and management of acute nonvariceal upper GI hemorrhage. The recommendations and evidence statements in this updated guideline pertain specifically to the pre-endoscopic, endoscopic, and post-endoscopic management of peptic ulcer hemorrhage.

Introduction

The most common causes of acute upper gastrointestinal hemorrhage (UGIH) are nonvariceal. These include gastric and duodenal peptic ulcers, Mallory–Weiss syndrome, Dieulafoy's lesion, malignancy, angioectasias, and mucosal erosive disease of the esophagus/stomach/duodenum. This ESGE clinical guideline focuses exclusively on the pre-endoscopic, endoscopic, and postendoscopic management of patients with pep-

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tic ulcer hemorrhage. It is an update of the 2021 ESGE Guideline on the endoscopic diagnosis and management of nonvariceal UGIH [1]. Endoscopic management recommendations for nonulcer, nonvariceal UGIH etiologies can be found in a recently published ESGE-endorsed guideline from the Canadian Association of Gastroenterology [2].

Methods

The ESGE commissioned this updated clinical guideline (ESGE Guideline Committee chair, T.C.T.) and appointed a guideline leader (I.M.G.), who established three task forces to review the evidence and provide updated statements/recommendations (taskforce #1, pre-endoscopy statements; taskforce #2, endoscopy statements; taskforce #3 postendoscopy statements), each with its own leader (M.C., J.M., S.B.L.). These three taskforces made up the "guideline group." PICO (patient, intervention, control, outcome) questions were prepared by the guideline leader (I.M.G.), the three taskforce leaders (M.C., J.M., S.B.L.), and the ESGE Guideline Committee chair (T.C.T.) and then assigned to the three taskforces (**Appendix 1s**, see online-only Supplementary material).

Based on the PICO questions, a professional librarian performed a structured, systematic literature search of English-language articles from 1946 to August 2025 using keywords in Ovid MEDLINE, EMBASE, and the Cochrane Database of Systematic Reviews. The results of the literature search were distributed to each taskforce for review, inclusion of relevant studies, synthesis of the evidence, and development of statements. A methodologist (G.T.) assisted the taskforces in performing the evidence synthesis, assessed the certainty of evidence, developed evidence profiles, and facilitated guideline group discussions. Evidence on each PICO question was summarized in tables using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system [3] (**Appendix 1s)**. Further details on ESGE guideline development have been previously reported [4].

During two online face-to-face meetings of the entire guideline group on 11 December 2025 and 7 January 2026 proposed guideline statements were presented and discussed. In February 2026, I.M.G. prepared the initial manuscript, containing the new and updated recommendations, along with those that were carried forward from the previous 2021 guideline (▶ **Table 1**). This was then distributed for review and revision to the entire guideline group. After agreement of all guideline group members had been obtained, the manuscript was reviewed by the chair of the ESGE Publications Working Group (M.B.) and two independent external reviewers. The manuscript was then sent for further comments to the 49 ESGE member societies and 5500+ ESGE individual members, after

▶ **Table 1** Summary of Guideline statements and recommendations.

Previous ESGE Guideline 2021		Updated ESGE Guideline 2026	
Recommendation	**Strength of recommendation/quality of evidence**	**Recommendation**	**Strength of recommendation/quality of evidence**
Pre-endoscopy management			
Initial patient evaluation and hemodynamic resuscitation			
ESGE recommends immediate assessment of hemodynamic status in patients who present with acute upper gastrointestinal hemorrhage (UGIH), with prompt intravascular volume replacement, initially using crystalloid fluids, if hemodynamic instability exists	Strong/low	No change	No change
Red blood cell (RBC) transfusion strategy			
ESGE recommends, in hemodynamically stable patients with acute UGIH and no history of cardiovascular disease, a restrictive RBC transfusion strategy, with a hemoglobin (Hb) threshold of <7 g/dL prompting RBC transfusion. A post-transfusion target Hb concentration of 7–9 g/dL is desirable	Strong / moderate	No change	No change
ESGE recommends, in hemodynamically stable patients with acute UGIH and a history of acute or chronic cardiovascular disease, a more liberal RBC transfusion strategy, with a Hb threshold of ≤8 g/dL prompting RBC transfusion. A post-transfusion target Hb concentration of ≥10 g/dL is desirable	Strong/low	No change	No change

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▶ **Table 1** (Continuation)

Previous ESGE Guideline 2021		Updated ESGE Guideline 2026	
Recommendation	**Strength of recommendation/quality of evidence**	**Recommendation**	**Strength of recommendation/quality of evidence**
Patient risk stratification			
ESGE recommends, in patients with acute UGIH, the use of the Glasgow–Blatchford Score (GBS) for pre-endoscopy risk stratification. Patients with GBS ≤1 are at very low risk of rebleeding, mortality within 30 days, or needing hospital-based intervention and can be safely managed as outpatients with outpatient endoscopy	Strong/moderate	ESGE recommends the use of the Glasgow–Blatchford Score (GBS) for pre-endoscopy risk stratification in patients with acute UGIH. Patients with a GBS ≤1 can be safely managed as outpatients with outpatient endoscopy	Strong/moderate
		ESGE does not recommend the routine use of video capsule endoscopy or telemetric blood-sensing capsules in the management of patients with suspected UGIH	Strong/very low
Antithrombotic medications (antiplatelet agents and anticoagulants)			
ESGE recommends in patients with acute UGIH taking low dose aspirin as monotherapy for primary cardiovascular prophylaxis, aspirin be temporarily interrupted. Aspirin can be restarted after careful re-evaluation of its clinical indication	Strong/low	No change, previous guideline recommendations were not re-evaluated	N/A
ESGE recommends in patients with acute UGIH taking low dose aspirin as monotherapy for secondary cardiovascular prophylaxis, aspirin not be interrupted. If for any reason it is interrupted, aspirin should be restarted as soon as possible, preferably within 3–5 days	Strong/moderate		
ESGE recommends in patients with acute UGIH taking dual antiplatelet therapy for secondary cardiovascular prophylaxis, aspirin not be interrupted. The second antiplatelet agent should be interrupted, but restarted as soon as possible, preferably within 5 days. Cardiology consultation is suggested	Strong/low		
ESGE does not recommend routine platelet transfusion for patients with acute non-variceal UGIH taking antiplatelet agents	Strong/low		
ESGE does not recommend the use of tranexamic acid in patients with acute non-variceal UGIH	Strong/high		
ESGE recommends in patients with acute UGIH taking a vitamin K antagonists (VKA), that the anticoagulant be withheld	Strong/low		
ESGE recommends in patients with acute UGIH taking VKAs who have hemodynamic instability, low dose vitamin K supplemented with intravenous prothrombin complex concentrate (PCC), or fresh frozen plasma (FFP) if PCC is not available, be administered. However, this should not delay endoscopy or if required, endoscopic hemostasis	Strong/low		

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▶ **Table 1** (Continuation)

Previous ESGE Guideline 2021		Updated ESGE Guideline 2026	
Recommendation	**Strength of recommendation/quality of evidence**	**Recommendation**	**Strength of recommendation/quality of evidence**
ESGE recommends in patients with acute UGIH taking direct oral anticoagulants (DOACs), that the anticoagulant be withheld and endoscopy not delayed. In patients with severe ongoing bleeding, use of a DOAC reversal agent or intravenous PCC should be considered	Strong/low	No change, previous guideline recommendations were not re-evaluated	N/A
Prokinetic medications			
ESGE recommends pre-endoscopy administration of intravenous erythromycin in selected patients with clinically severe and/or ongoing active UGIH	Strong/high	No change	No change
No previous recommendation in 2021	N/A	ESGE suggests, if intravenous erythromycin is unavailable, pre-endoscopy administration of intravenous metoclopramide in selected patients with clinically severe or ongoing active UGIH	Conditional/low
Proton pump inhibitors (PPIs)			
ESGE suggests that pre-endoscopy high dose intravenous PPI be considered in patients presenting with acute UGIH to downstage endoscopic stigmata and thereby reduce the need for endoscopic therapy; however, this should not delay early endoscopy	Weak/high	ESGE suggests that pre-endoscopy high dose intravenous PPI therapy be considered in patients presenting with acute UGIH; however, this should not delay early endoscopy	Conditional/low
Somatostatin and somatostatin analogues			
ESGE does not recommend the use of somatostatin, or its analogue octreotide, in patients with nonvariceal UGIH	Strong/low	No change, previous guideline recommendation was not re-evaluated	N/A
Nasogastric/orogastric tube aspiration and lavage			
ESGE does not recommend the routine use of nasogastric or orogastric aspiration/lavage in patients presenting with acute UGIH	Strong/moderate	No change, previous guideline recommendation was not re-evaluated	N/A
Endotracheal intubation			
ESGE does not recommend routine prophylactic endotracheal intubation for airway protection prior to upper GI endoscopy in patients with acute UGIH	Strong/high	No change	No change
ESGE recommends prophylactic endotracheal intubation for airway protection prior to upper GI endoscopy only in selected patients with acute UGIH (i. e. those with ongoing active hematemesis, agitation, or encephalopathy with inability to adequately control the airway)	Strong/low	No change	No change

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▶ **Table 1** (Continuation)

Previous ESGE Guideline 2021		Updated ESGE Guideline 2026	
Recommendation	**Strength of recommendation/quality of evidence**	**Recommendation**	**Strength of recommendation/quality of evidence**
Endoscopic management			
Timing of upper GI endoscopy			
ESGE recommends adopting the following definitions regarding the timing of upper GI endoscopy in acute UGIH relative to the time of patient presentation: urgent ≤12 hours, early ≤24 hours, and delayed >24 hours	Strong/moderate	No change	No change
ESGE recommends that, following hemodynamic resuscitation, early (≤24 hours) upper GI endoscopy be performed	Strong/high	No change	Strong/low
No previous recommendation in 2021	N/A	ESGE does not recommend emergent (≤6 hours) or urgent (≤12 hours) upper GI endoscopy unless the patient remains hemodynamically unstable despite adequate resuscitation	Strong/moderate
ESGE recommends that the use of antiplatelet agents, anticoagulants, or a predetermined INR cutoff level should not be used to define or guide the timing of upper GI endoscopy in patients with acute UGIH	Strong/low	No change, previous guideline recommendation was not re-evaluated	N/A
ESGE recommends the availability of both an on-call GI endoscopist proficient in endoscopic hemostasis and on-call nursing staff with technical expertise in the use of endoscopic devices to allow performance of endoscopy on a 24/7 basis	Strong/low	No change, previous guideline recommendation was not re-evaluated	N/A
Endoscopic diagnosis			
ESGE recommends the Forrest (F) classification be used in all patients with peptic ulcer hemorrhage to differentiate low and high risk endoscopic stigmata	Strong/high	No change	No change
ESGE recommends that peptic ulcers with spurting or oozing bleeding (FIa and FIb respectively) or with a nonbleeding visible vessel (FIIa) receive endoscopic hemostasis because these lesions are at high risk for persistent bleeding or recurrent bleeding	Strong/high	No change	No change
ESGE suggests that peptic ulcers with an adherent clot (FIIb) be considered for endoscopic clot removal. Once the clot is removed, any identified underlying active bleeding (FIa or FIb) or nonbleeding visible vessel (FIIa) should receive endoscopic hemostasis.	Weak/moderate	ESGE suggests that patients with peptic ulcers presenting with an adherent clot (FIIb) should undergo endoscopic therapy, with clot removal and subsequent endoscopic hemostasis if indicated, provided that the endoscopist has the technical competence to safely remove the clot and manage potential conversion to a higher risk bleeding lesion	Conditional/very low

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▶ **Table 1** (Continuation)

Previous ESGE Guideline 2021		Updated ESGE Guideline 2026	
Recommendation	**Strength of recommendation/quality of evidence**	**Recommendation**	**Strength of recommendation/quality of evidence**
ESGE does not recommend endoscopic hemostasis in patients with peptic ulcers that have a flat pigmented spot (FIIc) or clean base (FIII), as these stigmata have a low risk of adverse outcomes. In selected clinical settings, these patients may have an expedited hospital discharge	Strong/moderate	No change	No change
ESGE does not recommend the routine use of Doppler endoscopic probe in the evaluation of endoscopic stigmata of peptic ulcer bleeding	Strong/low	ESGE could not reach a consensus for or against the routine use of a Doppler endoscopic probe in treatment decisions of high risk endoscopic stigmata of peptic ulcer bleeding	No recommendation/very low
Endoscopic hemostasis			
ESGE recommends, for patients with actively bleeding ulcers (FIa, FIb), combination therapy using epinephrine injection plus a second hemostasis modality (contact thermal or mechanical therapy)	Strong/high	No change	No change
ESGE suggests that, in selected actively bleeding ulcers (FIa, FIb), specifically those >2 cm in size, with a large visible vessel >2 mm, or located in a high risk vascular area (e. g. gastroduodenal, left gastric arteries), or in excavated/fibrotic ulcers, endoscopic hemostasis using a cap-mounted clip should be considered as first-line therapy	Weak/low	ESGE suggests the use of over-the-scope (OTS) clips as monotherapy as an alternative to combination therapy as first-line therapy for peptic ulcer bleeding with high risk stigmata (FIa, FIb) owing to a lower risk of further bleeding compared with standard endoscopic hemostatic therapy	Conditional/very low
ESGE recommends, for patients with an ulcer with a nonbleeding visible vessel (FIIa), contact or noncontact thermal therapy, mechanical therapy, or injection of a sclerosing agent, each as monotherapy or in combination with epinephrine injection	Strong/high	ESGE recommends, for patients with an ulcer with a nonbleeding visible vessel (FIIa), contact or noncontact thermal therapy, mechanical therapy (e. g. through-the-scope or OTS clips), or injection of a sclerosing agent, each as monotherapy or in combination with epinephrine injection	Strong/moderate
No previous recommendation in 2021	N/A	ESGE suggests, for patients with an ulcer with a nonbleeding visible vessel (FIIa), OTS clips may be used as alternative monotherapy	Conditional/very low
ESGE suggests considering the use of hemostatic forceps as an alternative endoscopic hemostasis option in peptic ulcer hemorrhage	Weak/moderate	ESGE suggests hemostatic forceps with soft coagulation may be used as monotherapy in the treatment of peptic ulcer bleeding with high risk stigmata (FIa, FIb, and FIIa)	Conditional/very low
ESGE does not recommend that epinephrine injection be used as endoscopic monotherapy. If used, it should be combined with a second endoscopic hemostasis modality	Strong/high	No change	No change
No previous recommendation in 2021	N/A	ESGE suggests that topical hemostatic agents should not be used as monotherapy in the first-line treatment of patients with high risk endoscopic stigmata of peptic ulcer bleeding	Conditional/very low

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▶ **Table 1** (Continuation)

Previous ESGE Guideline 2021		Updated ESGE Guideline 2026	
Recommendation	**Strength of recommendation/quality of evidence**	**Recommendation**	**Strength of recommendation/quality of evidence**
ESGE recommends that persistent bleeding be defined as ongoing active bleeding refractory to standard hemostasis modalities	Strong/high	No change	No change
ESGE suggests that, in patients with persistent bleeding refractory to standard hemostasis modalities, the use of a topical hemostatic spray/powder or cap-mounted clip should be considered	Weak/low	ESGE suggests that, in patients with persistent bleeding refractory to standard hemostasis modalities, the use of a topical hemostatic agent or OTS clips should be considered	Conditional/very low
ESGE recommends that in patients with persistent bleeding refractory to **all** modalities of endoscopic hemostasis, transcatheter angiographic embolization (TAE) should be considered. Surgery is indicated when TAE is not locally available or after failed TAE	Strong/moderate	ESGE recommends that, in patients with persistent bleeding refractory to all modalities of endoscopic hemostasis, including topical hemostatic agents and OTS clips, TAE should be considered. Surgery is indicated when TAE is not locally available or after unsuccessful TAE	Strong/moderate
Postendoscopy management			
Prophylactic TAE			
No previous recommendation in 2021	N/A	ESGE suggests that prophylactic TAE be considered in selected high risk cases of peptic ulcer bleeding (e. g. patients with hemodynamic instability at presentation, posterior duodenal wall ulcer location, large ulcer size [>2 cm], or when durable endoscopic hemostasis is considered uncertain)	Conditional/very low quality
Antisecretory therapy			
ESGE recommends high dose PPI therapy for patients who have undergone endoscopic hemostasis and for patients with FIIb ulcer stigmata (adherent clot) not treated endoscopically PPI therapy should be administered as an intravenous bolus followed by continuous infusion (e. g. 80 mg then 8 mg/hour) for 72 hours postendoscopy or high dose PPI therapy given as intravenous bolus dosing (twice daily) or in oral formulation (twice daily) can be considered as alternative regimens	Strong/high	No change	No change
No previous recommendation in 2021	N/A	ESGE could not reach a consensus for or against the routine use of potassium-competitive acid blockers for patients who have undergone endoscopic hemostasis	No recommendation/very low
Second-look endoscopy			
ESGE does not recommend routine second-look endoscopy as part of the management of nonvariceal UGIH	Strong/high	No change, previous guideline recommendation was not re-evaluated	N/A
Management of recurrent bleeding			
ESGE recommends that recurrent bleeding be defined as bleeding following initial successful endoscopic hemostasis	Strong/high	No change	No change

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▶ **Table 1** (Continuation)

Previous ESGE Guideline 2021		Updated ESGE Guideline 2026	
Recommendation	**Strength of recommendation/quality of evidence**	**Recommendation**	**Strength of recommendation/quality of evidence**
ESGE recommends, for patients with clinical evidence of recurrent bleeding, repeat upper GI endoscopy with hemostasis if indicated	Strong/high	No change	No change
ESGE recommends, in the case of failure of this second attempt at endoscopic hemostasis, TAE should be considered. Surgery is indicated when TAE is not locally available or after failed TAE	Strong/high	ESGE recommends that, for patients with clinical evidence of recurrent peptic ulcer bleeding, use of an OTS clip should be considered. Should this second attempt at endoscopic hemostasis also be unsuccessful, TAE should be considered. Surgery is indicated when TAE is either locally unavailable or after unsuccessful TAE	Strong/moderate
Restarting antithrombotic medications (antiplatelet agents, anticoagulants)			
ESGE recommends in patients who have had acute nonvariceal UGIH and require ongoing dual antiplatelet therapy, PPI be given as co-therapy	Strong/moderate	No change, previous guideline recommendation was not re-evaluated	N/A
ESGE recommends PPI for gastroduodenal prophylaxis in patients requiring ongoing anticoagulation and a history of nonvariceal UGIH	Strong/low	No change, previous guideline recommendation was not re-evaluated	N/A
No previous recommendation in 2021	N/A	ESGE recommends that, in patients with peptic ulcer hemorrhage who require ongoing anticoagulation therapy, anticoagulation should be resumed as soon as clinically indicated based on thromboembolic risk	Strong/low
Helicobacter pylori			
ESGE recommends, in patients with peptic ulcer bleeding, investigating for the presence of *H. pylori* in the acute setting (at first endoscopy), with initiation of appropriate antibiotic therapy if *H. pylori* is detected	Strong/high	No change	No change
ESGE recommends retesting for *H. pylori* in those patients with a negative test at first endoscopy	Strong/high	No change	No change
ESGE recommends documentation of successful *H. pylori* eradication	Strong/high	No change	No change
Iron therapy			
No previous recommendation in 2021	N/A	ESGE suggests that iron therapy be initiated prior to hospital discharge in patients with peptic ulcer bleeding and iron deficiency and/or anemia	Conditional/low
Restarting oral nutrition			
No previous recommendation in 2021	N/A	ESGE suggests that early oral nutrition, within 24 hours following endoscopic hemostasis, be initiated in patients with peptic ulcer bleeding in whom durable hemostasis has been achieved	Conditional/low

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which the guideline was submitted to the journal *Endoscopy* for publication. This ESGE Guideline was published in 2026, and will be considered for update in 2031 or when new, potentially practice-changing evidence becomes available.

1 Pre-endoscopy management

1.1 Initial patient evaluation and hemodynamic resuscitation

RECOMMENDATION

ESGE recommends immediate assessment of hemodynamic status in patients who present with acute UGIH, with prompt intravascular volume replacement, initially using crystalloid fluids, if hemodynamic instability exists.

Strong recommendation, low quality evidence.

Early intensive hemodynamic resuscitation of patients with acute UGIH has been shown to significantly decrease mortality [5]. Two recent meta-analyses [6, 7] reported that hemodynamic instability is a common problem affecting 1 in 4 patients presenting with acute nonvariceal UGIH [6] and that it is associated with an increased risk of in-hospital mortality (odds ratio [OR] 4.79, 95%CI 2.62 to 8.97) and in-hospital rebleeding (OR 4.95, 95%CI 1.70 to 14.44) [7]. The definition of "hemodynamic instability" in acute UGIH varies among published studies [7]; however, the most common definitions are systolic blood pressure (SBP) <100 mmHg alone, SBP <90 mmHg alone, and SBP <100 mmHg with pulse >100 beats per minute [7]. Both meta-analyses underscore the importance of evaluating patients presenting with signs and/or symptoms of acute UGIH for hemodynamic instability and initiating immediate hemodynamic resuscitation. Moreover, any underlying patient co-morbidities should be addressed prior to upper GI endoscopy.

1.2 Red blood cell transfusion strategy

RECOMMENDATION

ESGE recommends, in hemodynamically stable patients with acute UGIH and no history of cardiovascular disease, a restrictive red blood cell (RBC) transfusion strategy, with a hemoglobin (Hb) threshold of <7 g/dL prompting RBC transfusion. A post-transfusion target Hb concentration of 7–9 g/dL is desirable.

Strong recommendation, moderate quality evidence.

RECOMMENDATION

ESGE recommends, in hemodynamically stable patients with acute UGIH and a history of acute or chronic cardiovascular disease, a more liberal RBC transfusion strategy, with a Hb threshold of ≤8 g/dL prompting RBC transfusion. A post-transfusion target Hb concentration of ≥10 g/dL is desirable.

Strong recommendation, low quality evidence.

A restrictive red blood cell (RBC) transfusion strategy is standard clinical practice in non-massive acute UGIH. This recommendation is based on several randomized controlled trials (RCTs) and meta-analyses reporting comparable, and sometimes improved, outcomes versus a liberal RBC transfusion strategy [1].

We identified one new RCT since the last guideline update and one meta-analysis of RCTs specifically addressing RBC transfusion thresholds in acute UGIH [8, 9]. Kola et al. randomized 224 UGIH patients to a restrictive (hemoglobin [Hb] <7 g/dL, post-transfusion target Hb 9 g/dL) versus a liberal transfusion strategy (Hb <8 g/dL, post-transfusion target Hb 10 g/dL) [9]. They reported that 45-day mortality (10/112 vs. 12/112; $P = 0.65$), in-hospital bleeding episodes, 45-day rebleeding, need for endoscopic band ligation, and hospital length of stay were similar between the groups, confirming the noninferiority of the RBC restrictive transfusion strategy. A meta-analysis by Teutsch et al., including seven RCTs of UGIH, found no signal of harm with the use of a lower Hb transfusion threshold. A restrictive RBC transfusion strategy did not increase in-hospital or 30-day mortality, nor in-hospital or 28–45-day rebleeding rates [8]. A restrictive transfusion strategy reduced the number of RBC units transfused, with individual studies suggesting there were fewer transfusion reactions and post-transfusion interventions, while Hb thresholds >8 g/dL were associated with more adverse outcomes.

These new data reinforce a restrictive RBC transfusion strategy. Evidence remains limited however in patients with acute or chronic cardiovascular disease, for whom a slightly more liberal blood transfusion threshold (Hb ≤8 g/dL) continues to be recommended by extrapolation from broader cardiovascular blood transfusion trials [1].

1.3 Patient risk stratification

RECOMMENDATION

ESGE recommends the use of the Glasgow–Blatchford score (GBS) for pre-endoscopy risk stratification in patients with acute UGIH. Patients with a GBS ≤1 can be safely managed as outpatients with outpatient endoscopy.

Strong recommendation, moderate quality evidence.

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RECOMMENDATION
ESGE does not recommend the routine use of video capsule endoscopy or telemetric blood-sensing capsules in the management of patients with suspected UGIH.
Strong recommendation, very low quality evidence.

Given the lack of new evidence directly comparing outcomes between patients admitted to hospital and those discharged from the emergency department based on pre-endoscopic risk stratification scores, we did not change the recommendation from the previous guideline [10]. To ensure safe and feasible outpatient management, the patient must receive prompt outpatient GI/endoscopy follow-up, have the ability to return to the emergency department if needed, be instructed to be aware of any recurrent signs/symptoms of bleeding, and have an understanding of the follow-up clinical plan. The guideline group also wished to reiterate that no risk stratification tool should replace clinicians' judgement.

Across recently published studies, capsule-based strategies for acute UGIH have shown signals of benefit, although these have been primarily in patient triage, rather than in hard outcomes. Randomized and cohort data suggest that video capsule endoscopy performed in the emergency department safely increases same-day discharge and reduces the need for urgent inpatient upper GI endoscopy in hemodynamically stable patients, without evidence of rebleeding or mortality at 7–30 days [11]. Telemetric blood-sensing capsules may aid in patient triage and guide clinical decision-making for individuals presenting with suspected UGIH [12, 13]. These blood-sensing capsules demonstrate high technical success and diagnostic accuracy for detecting blood in the upper GI tract. Negative tests are associated with the absence of rebleeding and may allow for downgrading of the need for urgent upper GI endoscopy or the avoidance of endoscopy altogether [12, 13].

Systematic reviews/meta-analyses also appear to support these findings: as compared with standard risk stratification scores alone, capsule-based triage pathways reduce hospital admissions and the need for early upper GI endoscopy in suspected UGIH [14, 15]. A meta-analysis of artificial intelligence-assisted wireless capsule endoscopy further suggests that automated analyses could enhance the speed and consistency of capsule interpretation, although this did not translate into patient-level outcome data [16]. Most datasets are however small, often observational, heterogeneous in inclusion criteria and end points, and are powered for process outcomes (need for hospital admission and/or upper GI endoscopy) rather than mortality, which results in overall low certainty and restriction of recommendations to selected, hemodynamically stable patients in experienced centers. Moreover, cost-effectiveness, availability, and training have been incompletely addressed.

1.4 Prokinetic medications

RECOMMENDATION
ESGE recommends pre-endoscopy administration of intravenous erythromycin in selected patients with clinically severe and/or ongoing active UGIH.
Strong recommendation, high quality evidence.

RECOMMENDATION
ESGE suggests, if intravenous erythromycin is unavailable, pre-endoscopy administration of intravenous metoclopramide in selected patients with clinically severe or ongoing active UGIH.
Conditional recommendation, low quality evidence.

Since the publication of ESGE's guideline on peptic ulcer bleeding in 2021 [1], there have been several published studies, including six RCTs, examining the efficacy of prokinetics (erythromycin, metoclopramide, azithromycin) for improving endoscopic visualization of the upper GI tract in patients with acute UGIH [17, 18, 19, 20, 21, 22].

We performed a meta-analysis using data from the four RCTs (two fully published original articles and two published conference abstracts) that evaluated intravenous metoclopramide versus placebo in patients presenting with UGIH, both non-variceal and variceal in etiology. We found that, compared with placebo, intravenous metoclopramide administered prior to upper GI endoscopy significantly improved mucosal exposure and endoscopic visualization (▶ **Fig. 1**). There were however no significant differences in units of blood transfused or hospital length of stay, although there was a possible trend toward a reduced need for second-look endoscopy (▶ **Fig. 2**).

Our risk of bias assessment found the quality of the included studies to be of moderate quality. The lack of imprecision, indirectness, and inconsistency led to uprating the level of evidence and strength of recommendation according to GRADE. A meta-analysis by Waseem et al., published after our initial search strategy was performed, reported similar results [23].

The widespread availability, feasibility, and low costs associated with metoclopramide are factors that support its use; however, the potential for serious adverse events with its use, including anaphylaxis, serotonin syndrome, extrapyramidal reaction, and cardiac arrhythmia must be acknowledged. Only a single RCT among those included in our meta-analysis provided insights regarding adverse events following metoclopramide use, with the investigators reporting no adverse events [20]. Intravenous metoclopramide could be considered for use as part of the pre-endoscopy management of patients presenting with acute UGIH but, given the potential for adverse events, caution should be exercised. Therefore, the use of intravenous erythromycin is preferred as per ESGE's prior strong recommendation, but the use of intravenous metoclopramide is a

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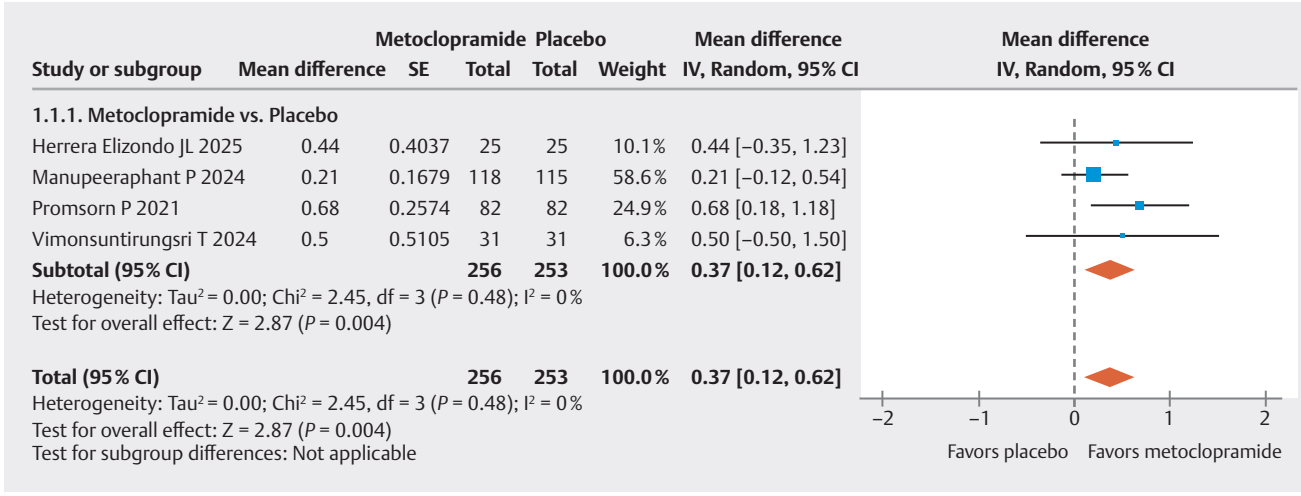
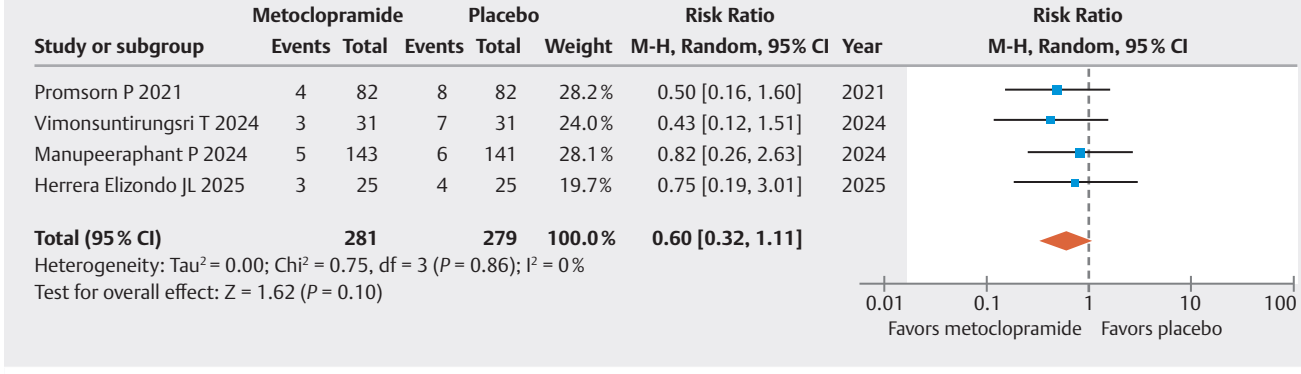


▶ **Fig. 1** Effect of metoclopramide vs. placebo regarding adequate mucosal exposure.



▶ **Fig. 2** Effect of metoclopramide vs. placebo regarding requirements for second-look endoscopy.

reasonable alternative when intravenous erythromycin is unavailable.

CRITERIA FOR "SELECTED" PATIENTS TO RECEIVE INTRAVENOUS ERYTHROMYCIN PRIOR TO UPPER GI ENDOSCOPY IN ACUTE UGIH

Criteria

- Presentation with acute UGIH (fresh blood hematemesis, coffee ground emesis, melena)
- Persisting hematemesis
- Clinical suspicion for residual blood / clots in upper GI tract
- No known macrolide allergy
- No known QT interval prolongation
- No concomitant use of a medication with possible interaction with macrolide antibiotics

1.5 Proton pump inhibitors

RECOMMENDATION

ESGE suggests that pre-endoscopy high dose intravenous proton pump inhibitor (PPI) therapy be considered in patients presenting with acute UGIH; however, this should not delay early endoscopy.

Conditional recommendation, low quality evidence.

In 2019, the International Consensus Group on nonvariceal UGIH recommended that "pre-endoscopic PPI therapy may be considered to downstage the endoscopic lesion and decrease the need for endoscopic intervention but should not delay endoscopy" [24]. In 2021, The American College of Gastroenterology could not reach a recommendation for or against pre-endoscopic PPI therapy in patients presenting with acute UGIH [25]. In our 2021 guideline, we have previously suggested that "pre-endoscopy high dose intravenous PPI be considered in patients presenting with acute UGIH to downstage endoscopic

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stigmata and thereby reduce the need for endoscopic therapy; however, this should not delay early endoscopy" [1]. In a recent multicenter retrospective cohort study from Italy, including 2566 patients, there was no difference in the prevalence of high risk endoscopic stigmata, in peptic ulcer and nonulcer lesions, between those receiving a pre-endoscopic PPI and those not receiving PPI (51.8% vs. 53.4%; $P=0.58$) [26]. In multivariate analyses, PPI therapy was not an independent predictor of endoscopic high risk stigmata prevalence (OR 1.16, 95%CI 0.82 to 1.64; $P=0.40$).

A meta-analysis by the Cochrane Gut Group [27], referenced in the ESGE 2021 guideline, was updated in 2022 [28]. This updated meta-analysis did not identify new evidence between 2010 and 2020 and thus included the same six original RCTs. The updated meta-analysis found that pre-endoscopic PPI use may reduce rebleeding (OR 0.81, 95%CI 0.62 to 1.06) and likely reduces the need for endoscopic hemostasis at index endoscopy (OR 0.68, 95%CI 0.50 to 0.93). Pre-endoscopic PPI may not however reduce mortality (OR 1.14, 95%CI 0.76 to 1.70), the need for surgery (OR 0.91, 95%CI 0.65 to 1.26), or the proportion of UGIH patients with high risk endoscopic stigmata of recent hemorrhage at index endoscopy (OR 0.80, 95%CI 0.52 to 1.21) [28]. The authors pointed out that the certainty of evidence for mortality was downrated owing to study limitations. Moreover, some of the included RCTs were at high risk of bias owing to lack of blinding and unclear random sequence generation and allocation concealment.

1.6 Endotracheal intubation

RECOMMENDATION
ESGE does not recommend routine prophylactic endotracheal intubation for airway protection prior to upper GI endoscopy in patients with acute UGIH.
Strong recommendation, high quality evidence.

RECOMMENDATION
ESGE recommends prophylactic endotracheal intubation for airway protection prior to upper GI endoscopy only in selected patients with acute UGIH (i.e. those with ongoing active hematemesis, agitation, or encephalopathy with inability to adequately control the airway).
Strong recommendation, low quality evidence.

Since publication of the 2021 ESGE guideline on nonvariceal UGIH, only additional observational retrospective data on prophylactic endotracheal intubation have emerged. These data confirm earlier concerns regarding increased pulmonary adverse events (e.g. aspiration, pneumonia) and longer hospital stays without a consistent mortality benefit. These new studies remain at high risk of confounding and fail to resolve key uncertainties regarding clear indications, patient selection, or cost-effectiveness [29]. Consequently, the 2021 recommendations against routine prophylactic intubation and for selective use only in high risk patients remain unchanged.

2 Endoscopic management

2.1 Timing of upper GI endoscopy

RECOMMENDATION
ESGE recommends adopting the following definitions regarding the timing of upper GI endoscopy in acute UGIH relative to the time of patient presentation: urgent ≤12 hours, early ≤24 hours, and delayed >24 hours.
Strong recommendation, moderate quality evidence.

RECOMMENDATION
ESGE recommends that, following hemodynamic resuscitation, early (≤24 hours) upper GI endoscopy be performed.
Strong recommendation, low quality evidence.

RECOMMENDATION
ESGE does not recommend emergent (≤6 hours) or urgent (≤12 hours) upper GI endoscopy unless the patient remains hemodynamically unstable despite adequate resuscitation.
Strong recommendation, moderate quality evidence.

Evidence on the timing of upper GI endoscopy in acute UGIH is derived from four contemporary systematic reviews and meta-analyses [30, 31, 32, 33], incorporating randomized and observational studies, and one recent RCT [34]. Importantly, the available evidence is based mainly on nonrandomized observational studies with high inconsistency due to high heterogeneity. In addition, owing to high variability of the definitions of "high risk" bleeding, timing of upper GI endoscopy, the endoscopic modalities applied, and the mix of older and contemporary endoscopic practices, the guideline group has downgraded the quality of the evidence. However, across this body of evidence, early endoscopy, performed within 24 hours of hospital presentation following adequate hemodynamic resuscitation, is associated with a higher likelihood of the use of endoscopic hemostasis therapy and a modest reduction in hospital length of stay. There is however no observed reduction in mortality or rebleeding compared with delayed endoscopy, with reported mortality (3%–6%) and rebleeding rates (7%–11%) remaining similar between the groups [30, 31, 32, 33].

In contrast, very early or urgent endoscopy (≤12 hours), and in particular emergent endoscopy (≤6 hours), has not shown clinical benefit over early endoscopy in randomized trials [34] or in observational studies, and is frequently associated with higher rates of rebleeding and, in some cohorts, increased rates

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of mortality, surgery, or repeat endoscopy, findings likely influenced by confounding by indication and incomplete hemodynamic resuscitation [33]. A pivotal RCT by Lau et al. [34] similarly demonstrated no improvement in 30-day mortality, rebleeding, transfusion requirements, or length of hospital stay with endoscopy performed within 6 hours of GI consultation, compared with that performed at 6–24 hours, despite the greater use of endoscopic hemostasis. Overall, these data support performing upper GI endoscopy within 24 hours of patient presentation following hemodynamic stabilization to optimize diagnostic and therapeutic efficiency. Unless there is ongoing active bleeding or persistent hemodynamic instability, routine urgent or emergent endoscopy in hemodynamically stable patients should be avoided.

2.2 Endoscopic diagnosis

RECOMMENDATION

ESGE recommends the Forrest (F) classification be used in all patients with peptic ulcer hemorrhage to differentiate low and high risk endoscopic stigmata.

Strong recommendation, high quality evidence.

RECOMMENDATION

ESGE recommends that peptic ulcers with spurting or oozing bleeding (FIa and FIb respectively) or with a nonbleeding visible vessel (FIIa) receive endoscopic hemostasis because these lesions are at high risk for persistent bleeding or recurrent bleeding.

Strong recommendation, high quality evidence.

RECOMMENDATION

ESGE suggests that patients with peptic ulcers presenting with an adherent clot (FIIb) should undergo endoscopic therapy, with clot removal and subsequent endoscopic hemostasis if indicated, provided that the endoscopist has the technical competence to safely remove the clot and manage potential conversion to a higher risk bleeding lesion.

Conditional recommendation, very low quality evidence.

RECOMMENDATION

ESGE does not recommend endoscopic hemostasis in patients with peptic ulcers that have a flat pigmented spot (FIIc) or clean base (FIII), as these stigmata have a low risk of adverse outcomes. In selected clinical settings, these patients may have an expedited hospital discharge.

Strong recommendation, moderate quality evidence.

RECOMMENDATION

ESGE could not reach a consensus for or against the routine use of a Doppler endoscopic probe in treatment decisions of high risk endoscopic stigmata of peptic ulcer bleeding.

No recommendation, very low quality evidence.

The Forrest (F) classification was developed more than 50 years ago to standardize the endoscopic characterization of peptic ulcers [35]. It is defined as follows: FIa, spurting hemorrhage; FIb, oozing hemorrhage; FIIa, nonbleeding visible vessel; FIIb, adherent clot; FIIc, flat pigmented spot; and FIII, clean base ulcer. This classification has been used in numerous studies to identify patients at risk of persistent ulcer bleeding, recurrent ulcer bleeding, and mortality (▶ **Fig. 3**). Most of these studies have shown that the presence of an ulcer endoscopically classified as FIa or FIb is an independent risk factor for persistent bleeding or recurrent bleeding [36]. A potential limitation of the Forrest classification is that endoscopic stigmata recognition and identification, as well as interobserver agreement, may be less than optimal [37]. Artificial intelligence is being evaluated for improving endoscopic recognition of stigmata of recent hemorrhage in peptic ulcer bleeding, but as yet data remain limited [38].

Two contemporary systematic reviews and meta-analyses demonstrate that, in patients with peptic ulcers presenting with an adherent clot (FIIb), endoscopic therapy in addition to medical therapy significantly reduces rebleeding compared with medical therapy alone [39, 40]. In the larger meta-analysis by Beran et al., which included 11 studies (9 RCTs) comprising 833 patients (431 endoscopic vs. 402 conservative therapy), endoscopic therapy was associated with significantly lower odds of overall rebleeding (OR 0.41, 95%CI 0.22 to 0.79; $P = 0.007$) and 30-day rebleeding (OR 0.43, 95%CI 0.21 to 0.89; $P = 0.002$) compared with conservative treatment [40]. Endoscopic management was also associated with significantly lower odds of overall mortality (OR 0.47, 95%CI 0.23 to 0.95; $P = 0.04$), as well as a reduced need for surgery (OR 0.44, 95%CI 0.21 to 0.95; $P = 0.04$) and a mean shortening of hospital stay by 3.17 days (mean difference −3.17, 95%CI −4.14 to −2.19; $P<0.001$). However, in a subgroup analysis restricted to the nine RCTs, the mortality difference was not significant (OR 0.78, 95%CI 0.24 to 2.52; $P = 0.68$), but endoscopic therapy was associated with a trend toward a reduced overall rebleeding rate (7.2% vs. 18.5%; OR 0.42, 95%CI 0.17 to 1.05; $P = 0.06$) and a statistically significant reduction in the need for surgery (OR 0.28, 95%CI 0.08 to 0.96; $P = 0.04$).

A second meta-analysis by Tassone et al., restricted to seven RCTs with 268 patients, confirmed a significant reduction in recurrent bleeding with endoscopic hemostatic treatment (risk ratio [RR] 0.40, 95%CI 0.16 to 0.95) compared with medical therapy alone [40]. In this pooled cohort, there were no statistically significant differences in mortality (RR 0.90, 95%CI 0.23 to 3.59) or need for surgery (RR 0.48, 95%CI 0.10 to 2.28)

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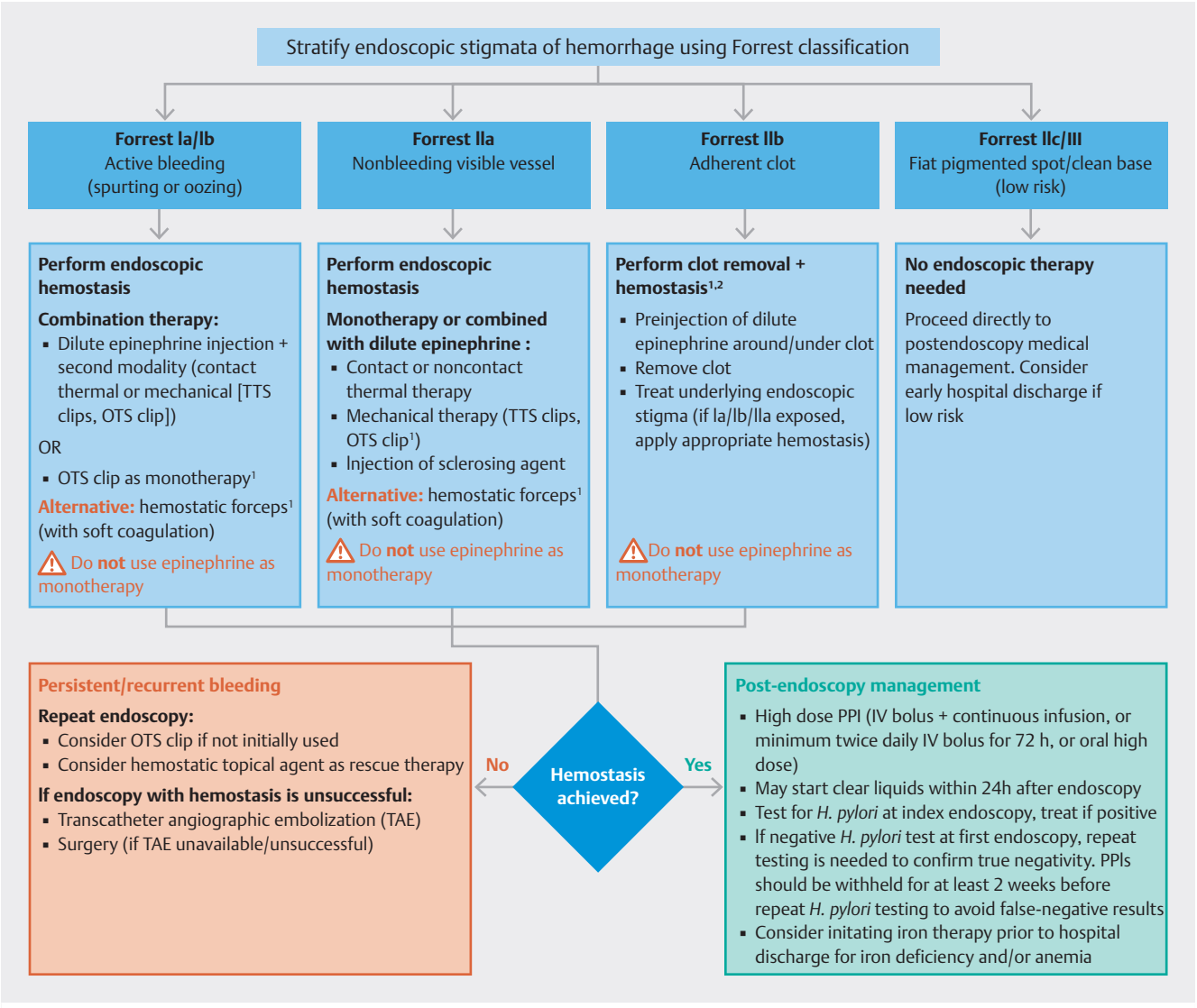

▶ **Fig. 3** Flowchart for the management of peptic ulcer bleeding identified on upper gastrointestinal endoscopy.
IV, intravenous; OTS, over the scope; PPI, proton pump inhibitor; TTS, through the scope.
[1] Conditional recommendation, very low quality evidence.
[2] Endoscopist should have technical competence to safely remove clot and manage potential conversion to a higher risk bleeding lesion.

between endoscopic and medical treatment groups, likely reflecting the limited number of events and low statistical power for these outcomes [39].

Importantly, clot removal in FIIb lesions frequently exposes an underlying higher risk stigma (FIa, FIb, or FIIa), necessitating immediate recognition and confident endoscopic hemostasis. As a practical consideration, preinjection of diluted epinephrine around and/or under the clot should be performed before attempting clot removal to mitigate the risk of inducing brisk bleeding; however, this practice is not supported by direct comparative evidence and should not replace definitive endoscopic hemostatic techniques. Therefore, the clinical benefit of treating FIIb ulcers is closely linked to endoscopist competence in clot removal, recognition of underlying stigmata, and management of spurting hemorrhage (FIa) should this occur, as well as access to appropriate endoscopic devices and endoscopy nurse support. These skills are explicitly addressed within the forthcoming ESGE endoscopy curriculum on competence in UGIH, which emphasizes structured training, supervised experience, and readiness to manage escalation in bleeding severity.

Whilst the guideline group could only make a conditional recommendation based on the current evidence, we believe clot removal in FIIb ulcer bleeds, to allow definitive endoscopic therapy of any underlying major stigma, should be attempted by endoscopists with the competence to deal with the potential consequence of clot removal.

The persistence of a positive Doppler endoscopic probe (DEP) signal following endoscopic hemostasis has been shown to have a significantly higher rate of recurrent bleeding: 100% vs. 11% ($P=0.003$) [41]. Moreover, others have reported that the use of a DEP to guide hemostatic therapy was associated

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with a significant reduction in recurrence of bleeding, surgical intervention, and bleeding-associated mortality [42, 43].

Although stigmata of recent hemorrhage, based upon the Forrest classification, have been used to guide endoscopic hemostasis of peptic ulcer bleeding for more than 50 years, when most visually guided treatments are applied to lesions with major stigmata of recent hemorrhage, arterial blood flow underneath the stigma is not obliterated in 25%–30% of patients, resulting in rebleeding. The use of a DEP for the detection of arterial blood underneath stigmata of recent hemorrhage could serve a role in endoscopic risk stratification and as a guide to achieving definitive hemostasis. A recent RCT, two meta-analyses, and a narrative review of RCTs and prospective cohort studies reported that a DEP may be a beneficial tool in the management of bleeding ulcers and adds valuable information to visual evaluation of the stigmata of recent hemorrhage.

Nielsen et al. reported the results of a single-center RCT in which patients (n = 62) with FI–FIIb peptic ulcer bleeding were randomly assigned to second-look endoscopy with DEP <24 hours following successful endoscopic hemostasis or continued standard treatment [44]. The authors reported that 91% of patients had a positive Doppler signal in the ulcer base at follow-up endoscopy and all were retreated with repeat endotherapy. No statistically significant difference in rebleeding rates (3% vs. 13%; $P = 0.20$), transfusion rates, length of hospital stay, or mortality were observed. There were no reported adverse events associated with DEP evaluation.

In a meta-analysis published by Bhurwal et al., the authors reported that the use of DEP decreased rebleeding, mortality, and surgical intervention compared with visual observation of the stigmata. The risk of rebleeding was significantly higher if the Doppler signal persisted despite endoscopic therapy (48.5%, 95%CI 29.5% to 67.9%) [45]. Another meta-analysis published by Chapelle et al. confirmed that the use of a DEP during upper GI endoscopy significantly reduced overall rebleeding rates (OR 0.27, 95%CI 0.14 to 0.54), bleeding-related mortality, and the need for surgery [46]. Finally, in a review of RCTs and prospective cohort studies, definitive hemostasis achieved with the use of a DEP, significantly lowered rebleeding rates, and an improvement in other clinical outcomes (need for surgery, mortality) resulted when a DEP was used for risk stratification and as a guide to obliteration of arterial blood flow underneath the stigmata of recent hemorrhage [47].

ESGE could not reach a recommendation for or against the routine use of a DEP in treatment decisions for high risk endoscopic stigmata of peptic ulcer bleeding. This was due to a concern by the guideline group regarding the generalizability of this technique in clinical practice, the lack of data evaluating its cost-effectiveness, and the associated costs for the additional equipment and training needed.

2.3 Endoscopic hemostasis

RECOMMENDATION

ESGE recommends, for patients with actively bleeding ulcers (FIa, FIb), combination therapy using epinephrine injection plus a second hemostasis modality (contact thermal or mechanical therapy).

Strong recommendation, high quality evidence.

RECOMMENDATION

ESGE suggests the use of over-the-scope (OTS) clips as monotherapy as an alternative to combination therapy as first-line therapy for peptic ulcer bleeding with high risk stigmata (FIa, FIb) owing to a lower risk of further bleeding compared with standard endoscopic hemostatic therapy.

Conditional recommendation, very low quality evidence.

RECOMMENDATION

ESGE recommends, for patients with an ulcer with a nonbleeding visible vessel (FIIa), contact or noncontact thermal therapy, mechanical therapy (e. g. through-the-scope [TTS] or OTS clips), or injection of a sclerosing agent, each as monotherapy or in combination with epinephrine injection.

Strong recommendation, moderate quality evidence.

RECOMMENDATION

ESGE suggests, for patients with an ulcer with a nonbleeding visible vessel (FIIa), OTS clips may be used as alternative monotherapy.

Conditional recommendation, very low quality evidence.

RECOMMENDATION

ESGE suggests hemostatic forceps with soft coagulation may be used as monotherapy in the treatment of peptic ulcer bleeding with high risk stigmata (FIa, FIb, and FIIa).

Conditional recommendation, very low quality evidence.

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RECOMMENDATION
ESGE does not recommend that epinephrine injection be used as endoscopic monotherapy. If used, it should be combined with a second endoscopic hemostasis modality.
Strong recommendation, high quality evidence.

RECOMMENDATION
ESGE suggests that topical hemostatic agents should not be used as monotherapy in the first-line treatment of patients with high risk endoscopic stigmata of peptic ulcer bleeding.
Conditional recommendation, very low quality evidence.

RECOMMENDATION
ESGE recommends that persistent bleeding be defined as ongoing active bleeding refractory to standard hemostasis modalities.
Strong recommendation, high quality evidence.

RECOMMENDATION
ESGE suggests that, in patients with persistent bleeding refractory to standard hemostasis modalities, the use of a topical hemostatic agent or OTS clips should be considered.
Conditional recommendation, very low quality evidence.

RECOMMENDATION
ESGE recommends that, in patients with persistent bleeding refractory to all modalities of endoscopic hemostasis, including topical hemostatic agents and OTS clips, transcatheter angiographic embolization (TAE) should be considered. Surgery is indicated when TAE is not locally available or after unsuccessful TAE.
Strong recommendation, moderate quality evidence.

In patients with peptic ulcer bleeding and high risk endoscopic stigmata (FIa, FIb, or FIIa), high quality evidence consistently supports combination endoscopic therapy over injection monotherapy, with epinephrine plus a second hemostasis modality (mechanical or thermal) achieving superior durable hemostasis and reduced rebleeding [1]. Epinephrine injection alone is inferior and should not be used as definitive therapy [1]. Multiple recent RCTs and meta-analyses of these studies evaluating cap-mounted OTS clips as first-line monotherapy in high risk nonvariceal UGIH demonstrate a significant reduction in the composite outcome of further bleeding at 30 days, driven primarily by lower rates of recurrent bleeding, compared with standard endoscopic therapy (through-the-scope [TTS] clips and/or thermal therapy ± injection) [48, 49, 50, 51, 52, 53, 54]. A benefit in 30-day rebleeding has been shown, while no clear advantage has been demonstrated for immediate hemostasis, mortality, or need for surgery.

However, despite being derived from RCTs, the overall certainty of evidence ranges from very low to low, owing to important methodological limitations. These include lack of blinding, heterogeneity in patient selection, ulcer characteristics, comparator therapies, variable use of epinephrine injection, and differences in operator expertise and technical success. Imprecision for key outcomes, such as mortality, surgery, and persistent bleeding, further limits the certainty of evidence, and external validity remains a concern as these RCTs were conducted in expert centers. Despite these methodological limitations in the available evidence, thereby leading to downgrading to a conditional recommendation, there was strong support from the guideline group for OTS clips to be considered as an alternative first-line therapy to treat FIa, FIb, and FIIa ulcer bleeding, assuming the endoscopist is competent in OTS clip application.

The available randomized evidence exclusively evaluates the OTS clip system made by Ovesco Endoscopy (Tübingen, Germany), and data on other cap-mounted devices are limited to case reports and small case series [55, 56].

Although OTS clip devices are associated with higher upfront costs, recent cost-effectiveness analyses indicate that reductions in rebleeding, fewer repeat endoscopies, and decreased need for rescue therapies render OTS clips a cost-effective strategy in high risk peptic ulcer bleeding, particularly when used upfront, rather than as rescue therapy [57, 58].

Topical hemostatic agents reliably achieve immediate hemostasis, but do not improve definitive clinical outcomes when used as first-line monotherapy, with rebleeding rates comparable to or higher than standard therapy. The evidence base for topical hemostatic agents comprises a mix of RCTs and prospective observational studies [59, 60, 61, 62]. As with all endoscopic hemostasis trials, blinding of the endoscopist to the allocated treatment is not feasible, which may influence lesion detection and characterization, as well as outcome assessment, particularly for subjective end points such as initial hemostasis.

Across the available meta-analyses there was high heterogeneity among studies with respect to bleeding etiology, rebleeding definition, and applied endoscopic therapies in the comparator arms. Moreover, observational studies within these meta-analyses lacked adequate control groups and did not adjust for potential confounders such as study site, endoscopist level of expertise, or lesion-related characteristics, thereby further limiting the certainty of evidence. Therefore, the guideline group did not recommend topical hemostatic agents as first-line therapy for high risk peptic ulcer bleeding. However, topical hemostatic agents do retain a role as rescue therapy in refractory ulcer bleeding or as a temporizing measure to allow for subsequent definitive therapy [59, 60, 61, 62].

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It should be noted that a very recent RCT of 348 nonvariceal UGIH patients (317 with high risk stigmata peptic ulcer bleeding: FIa, FIb, FIIa, and FIIb) reported the efficacy of the adjuvant use of a topical hemostatic agent following successful initial hemostasis with standard endoscopic hemostasis modalities [63]. As compared with no adjuvant topical hemostatic agent, those patients with peptic ulcer bleeding who were randomized to receive adjuvant therapy had significantly lower rebleeding rates at 72 hours (5/167 [3.0%] vs. 18/150 [12.0%]; $P=0.004$) and at 30 days (12/167 [7.2%] vs. 29/150 [19.3%]; $P=0.004$). No adverse events were reported with the use of the adjuvant topical hemostatic agent [63].

Cap-mounted clips similarly provide effective rescue options in selected cases. Hemostatic forceps (bipolar and monopolar) with soft coagulation may be an alternative monotherapy, with very low quality evidence showing high rates of initial hemostasis, reduced rebleeding, and shorter procedure times compared with conventional modalities [64]. Overall, selection of the optimal endoscopic hemostasis modality should consider the ulcer characteristics, bleeding severity, endoscopist competence, and local availability of advanced devices.

Persistent or refractory ulcer bleeding is defined as ongoing active bleeding (spurting, arterial pulsatile bleeding, or oozing) that is present at the end of the first endoscopy and refractory to standard hemostasis modalities. This is also referred to as unsuccessful primary endoscopic hemostasis [65]. Six cohort studies have evaluated the usefulness of TAE or surgery in the context of persistent ulcer bleeding [66, 67, 68, 69, 70, 71]. One study directly compared these two strategies, showing no significant differences in mortality, rebleeding, length of hospital stay, adverse events, or transfusion requirements. Another multicenter retrospective study compared OTS clip treatment to TAE in refractory peptic ulcer bleeding. Clinical success was comparable between the groups (74.2% vs. 59.7%; $P=0.09$), but the mean intensive care unit stay was significantly longer in the TAE group (8.0 vs. 4.7 days; $P=0.002$) and serious adverse events (12.9% vs. 1.5%; $P=0.04$) and in-hospital mortality were significantly higher in the TAE group (9.1% vs. 22.6%; OR 2.92 [95%CI 1.04 to 8.16]; $P=0.05$) [72] (▶ **Fig. 3**).

3 Postendoscopy management

3.1 Prophylactic transcatheter angiographic embolization

RECOMMENDATION

ESGE suggests that prophylactic TAE be considered in selected high risk cases of peptic ulcer bleeding (e. g. patients with hemodynamic instability at presentation, posterior duodenal wall ulcer location, large ulcer size [>2 cm], or when durable endoscopic hemostasis is considered uncertain).

Conditional recommendation, very low quality evidence.

In patients with bleeding from an FI–FIIb ulcer where initial endoscopic hemostasis has been achieved, but who are considered at high risk for recurrent bleeding (e. g. hemodynamic instability at presentation, large ulcer size, large size visible vessel, difficult anatomic location of ulcer [36, 73, 74]), prophylactic TAE may be considered. We identified four meta-analyses and three retrospective cohort studies published from 2020 to 2025 evaluating the usefulness of prophylactic TAE [75, 76, 77, 78, 79, 80, 81]. We also included two previously published RCTs in our calculations [82, 83]. The available evidence on prophylactic TAE following endoscopic hemostasis for high risk peptic ulcers suggests a reduction in rebleeding rates compared with conservative management. The two RCTs suggest lower rebleeding rates with prophylactic TAE – although not always statistically significant – but no clear difference in mortality. In a post-hoc analysis, prophylactic TAE significantly reduced recurrent bleeding only in patients with ulcers ≥15 mm in size (2 [4.5%] vs. 12 [23.1%]; $P=0.03$) [82].

Observational data [77] and meta-analyses [78, 79, 80] reinforce this trend, reporting significant reductions in rebleeding and, in some cases, the need for surgery or reintervention. Overall, mortality does not appear to differ consistently between groups and hospital length of stay varies only minimally. Studies exclusively evaluating patients treated with prophylactic TAE [75, 76] report rebleeding rates ranging from 12% to 25% and mortality of 15% to 20%, likely reflecting very high risk populations. Taken together, the evidence suggests a potential benefit of prophylactic TAE, primarily in preventing rebleeding, while its impact on mortality and other secondary outcomes remains uncertain.

3.2 Antisecretory therapy

RECOMMENDATION

ESGE recommends high dose PPI therapy for patients who have undergone endoscopic hemostasis and for patients with FIIb ulcer stigmata (adherent clot) not treated endoscopically.

PPI therapy should be administered as an intravenous bolus followed by continuous infusion (e. g. 80 mg then 8 mg/hour) for 72 hours postendoscopy

or

high dose PPI therapy given as intravenous bolus dosing (twice daily) or in oral formulation (twice daily) can be considered as alternative regimens.

Strong recommendation, high quality evidence.

RECOMMENDATION

ESGE could not reach a consensus for or against the routine use of potassium-competitive acid blockers for patients who have undergone endoscopic hemostasis.

No recommendation, very low quality evidence.

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ESGE's previous guideline on peptic ulcer bleeding recommended PPI therapy be given as an 80 mg intravenous bolus followed by an 8 mg/hour continuous infusion for 72 hours, to decrease rebleeding and mortality in patients with high risk endoscopic stigmata who had undergone successful endoscopic hemostasis [1]. Moreover, the guideline suggested that high dose PPI therapy could be given as intravenous bolus dosing (twice daily) or in oral formulation (twice daily) as alternative regimens.

Since then, two meta-analyses [84, 85], one combined RCT and cohort study [86], one prospective observational cohort study [87], and three retrospective single-center studies have been published [88, 89, 90]. None of the identified studies compared high dose PPI treatment to no treatment/placebo or H_2 antagonists; all compared patient outcome following different PPI regimens. None of the identified meta-analyses [84, 85], nor the RCT [86], found any significant differences in patient outcomes when comparing oral versus intravenous PPI, or high dose versus low dose PPI. Two retrospective single-center studies reported conflicting results regarding rebleeding rates [88, 90], but both studies were at high risk of bias.

Two recent RCTs demonstrate comparable efficacy between the potassium-competitive acid blocker vonoprazan and PPI in preventing recurrent bleeding in high risk peptic ulcer patients following successful endoscopic hemostasis [91, 92]. In a double-blind, double-dummy pilot RCT, patients (n = 44) with peptic ulcer bleeding (FI–FIIb) who underwent endoscopic hemostasis were randomly assigned to either PPI (pantoprazole infusion 8 mg/hour for 72 hours, followed by oral omeprazole 20 mg every 12 hours from day 3 to 14, followed by omeprazole 20 mg once daily) or vonoprazan (oral vonoprazan 20 mg every 12 hours from day 0 to 14, followed by 20 mg daily) [92]. There was no significant difference in rebleeding rates within 3, 7, or 30 days (18.2% vs. 11.1%; $P > 0.99$). In a multicenter noninferiority RCT from Thailand, 194 patients with FI–FIIb peptic ulcer bleeding were randomized to oral vonoprazan (20 mg twice daily for 3 days followed by 20 mg once daily) or high dose PPI bolus + infusion for 3 days, followed by oral omeprazole 20 mg twice daily for 28 days [91]. All patients were treated with high dose PPIs prior to endoscopy. There was no difference in 30-day rebleeding rates between the treatment groups (7.1% vs. 10.4%; $P < 0.001$ for noninferiority).

3.3 Recurrent bleeding

RECOMMENDATION

ESGE recommends that recurrent bleeding be defined as bleeding following initial successful endoscopic hemostasis.

Strong recommendation, high quality evidence.

RECOMMENDATION

ESGE recommends, for patients with clinical evidence of recurrent bleeding, repeat upper GI endoscopy with hemostasis if indicated.

Strong recommendation, high quality evidence.

RECOMMENDATION

ESGE recommends that, for patients with clinical evidence of recurrent peptic ulcer bleeding, use of an OTS clip should be considered. Should this second attempt at endoscopic hemostasis also be unsuccessful, TAE should be considered. Surgery is indicated when TAE is either locally unavailable or after unsuccessful TAE.

Strong recommendation, moderate quality evidence.

Recurrent bleeding is defined as bleeding following initial successful endoscopic hemostasis [93]. Clinical evidence of recurrent bleeding is defined as recurrent hematemesis or bloody nasogastric aspirate after the first endoscopy, recurrent tachycardia or hypotension after achieving hemodynamic stability, melena and/or hematochezia following normalization of stool color, or a reduction in Hb ≥2 g/dL after a stable Hb value has been attained [1]. We were unable to identify any recent studies that directly addressed the PICO question regarding the role of repeat endoscopy for recurrent bleeding after endoscopic therapy for peptic ulcers with high risk endoscopic stigmata.

3.4 Restarting anticoagulation

RECOMMENDATION

ESGE recommends that, in patients with peptic ulcer hemorrhage who require ongoing anticoagulation therapy, anticoagulation should be resumed as soon as clinically indicated based on thromboembolic risk.

Strong recommendation, low quality evidence.

A recent UK audit of 5141 patients with acute UGIH found that 30.6% were receiving an anticoagulant (direct oral anticoagulant [DOAC], vitamin K antagonist [VKA]) at the time of their bleeding episode [94], this being an increase from the 13% level of reported anticoagulant use in a similar UK audit in 2007 [95]. However, the evidence to guide the resumption of anticoagulation therapy (e. g. VKA, DOAC) following a peptic ulcer bleed remains limited. The decision to restart anticoagulation therapy must balance the risk of recurrent bleeding with the risk of thromboembolic events and/or the sequelae of these events, including death. As compared with patients with peptic ulcer bleeding who were not restarted on anticoagulation, patients who were restarted on anticoagulation after their peptic ulcer bleed (57% restarted; median 15 days) had a lower risk of

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thrombosis and death at 1 year (hazard ratio [HR] 0.14 [95%CI 0.05 to 0.43]), with no significantly increased risk of recurrent bleeding (HR 1.42 [95%CI 0.10 to 19.8]) [96].

However, the precise timing for restarting anticoagulation in patients with peptic ulcer hemorrhage remains undefined. Those patients at the highest thrombotic risk should restart anticoagulant therapy as soon as possible and the use of subcutaneous low molecular weight heparin as a bridge to oral anticoagulation may be a good option. Early consultation with a cardiologist and/or hematologist is desirable. It should be remembered that VKAs should be restarted earlier because the time required to achieve adequate anticoagulation is longer (up to 5 days) compared with DOACs, which take hours. The use of validated clinical prediction scores that estimate thrombotic risk (CHA_2DS_2-VASc) and bleeding risk (HAS-BLED) can help guide clinical decision-making [97, 98].

3.5 *Helicobacter pylori*

RECOMMENDATION

ESGE recommends, in patients with peptic ulcer bleeding, investigating for the presence of *H. pylori* in the acute setting (at first endoscopy), with initiation of appropriate antibiotic therapy if *H. pylori* is detected.

Strong recommendation, high quality evidence.

RECOMMENDATION

ESGE recommends retesting for *H. pylori* in those patients with a negative test at first endoscopy.

Strong recommendation, high quality evidence.

RECOMMENDATION

ESGE recommends documentation of successful *H. pylori* eradication.

Strong recommendation, high quality evidence.

The value and cost-effectiveness of *H. pylori* eradication in patients with peptic ulcer bleeding is well established. We did not identify any new published studies on this topic. Therefore, ESGE's recommendations from 2021 remain.

3.6 Iron therapy

RECOMMENDATION

ESGE suggests that iron therapy be initiated prior to hospital discharge in patients with peptic ulcer bleeding and iron deficiency and/or anemia.

Conditional recommendation, low quality evidence.

Many patients who experience an acute GI bleed, including from a peptic ulcer, require iron supplementation to treat the iron deficiency anemia or iron deficiency that can result from the acute blood loss [99]. There are however no evidence-based guidelines relating to the provision and management of iron therapy in patients with acute peptic ulcer bleeding.

A single-center open-label RCT reported that, as compared with patients receiving no iron treatment, daily treatment with 600 mg oral ferrous fumarate was associated with a higher rate of normalized Hb or an increase in beta-Hb value ≥2 g/dL (72.7% vs. 45.9%; adjusted RR 2.98; $P=0.004$) 6 weeks after hospital discharge for nonvariceal UGIH (89% due to peptic ulcer bleeding). Moreover, 53% of patients not treated with oral iron following their nonvariceal UGIH had ongoing iron deficiency (ferritin <30 µg/L and transferrin saturation <16%; $P<0.05$) [100]. In a double-blind placebo-controlled RCT, Bager et al. randomly assigned patients with UGIH (70% peptic ulcer bleeding) with anemia to either single-dose intravenous administration of 1000 mg of iron, oral iron treatment 200 mg daily for 3 months, or placebo [101]. After 3 months, patients treated with iron had significantly higher levels of Hb (13.9 g/dL, 13.5 g/dL, and 11.5 g/dL, respectively; $P<0.01$). The frequency of full iron stores at 3 months (ferritin >100 µg/L) was 41%, 24%, and 10%, respectively ($P=0.11$). Patients with normalized Hb at the end of iron therapy reported higher quality of life at 6 months follow-up. Another RCT showed that a significantly higher proportion of patients receiving intravenous iron had normalization of Hb (100% vs. 61%; $P<0.001$) and better subjective state of health ($P=0.002$), as compared with those receiving oral ferrous sulfate 325 mg twice daily for 6 weeks [102]. We performed a meta-analysis of these two RCTs and found that oral iron therapy is associated with significantly higher values of Hb from week 4 onwards (mean Hb difference 0.78, 95%CI 0.27 to 1.28; $P=0.002$) (▶ **Fig. 4**).

3.7 Restarting oral nutrition

RECOMMENDATION

ESGE suggests that early oral nutrition, within 24 hours following endoscopic hemostasis, be initiated in patients with peptic ulcer bleeding in whom durable hemostasis has been achieved.

Conditional recommendation, low quality evidence.

A recent meta-analysis of 10 RCTs, including 1051 patients with UGIH, compared the outcomes of early versus delayed oral nutrition following endoscopic hemostasis. The definitions for early and delayed nutrition were accepted as specified by the included studies. In the subgroup of peptic ulcer bleeding patients (n = 560) who received either early or delayed oral nutrition, there was no significant difference in early rebleeding (within 7 days; RR 0.95, 95%CI 0.54 to 1.68) or late rebleeding (within 30 days; RR 1.14, 95%CI 0.16 to 7.98). Moreover, there was no statistically significant difference in early (RR 0.98, 95%CI 0.85 to 1.14) or late mortality (RR 0.51, 95%CI 0.03 to

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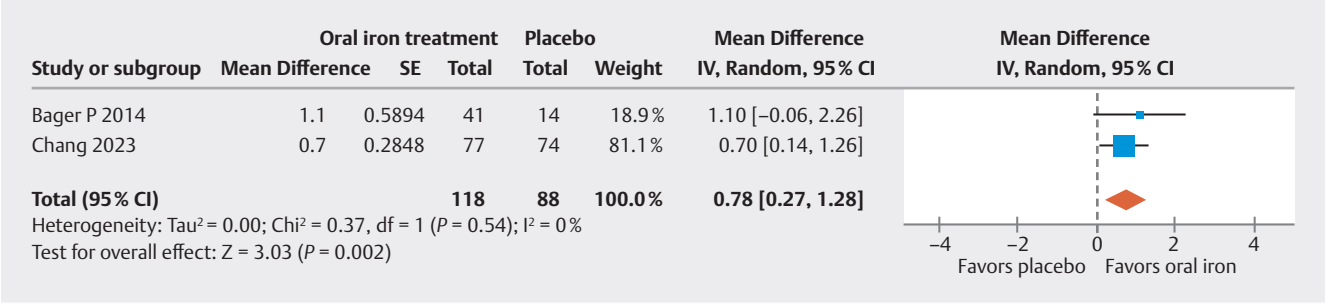

▶ **Fig. 4** Effect of oral iron therapy on mean hemoglobin value.

7.83), nor in the length of hospital stay between the two nutrition groups (mean difference −1.34 days, 95%CI −5.01 to 2.33) [103].

4 Future research directions

4.1 Pre-endoscopy management

Current evidence for pre-endoscopic management in acute UGIH is limited and provides little high quality data to define optimal hemodynamic resuscitation, transfusion thresholds, airway protection, PPI or prokinetic strategies, or their impact on mortality, need for surgery, need for repeat endoscopy, and hospital length of stay. In contrast, a rapidly growing body of machine-learning and artificial intelligence work is evaluating risk prediction compared with traditional scoring tools (e. g. GBS, Rockall, AIMS65) for predicting the need for intervention or mortality [104, 105]. Moreover, emerging image-based artificial intelligence data have been shown to perform satisfactorily in evaluating endoscopic stigmata (Forrest classification) in bleeding peptic ulcers [38]. As yet, these models remain mostly early stage, single-center, and insufficiently validated to support routine clinical adoption or robust cost-effectiveness conclusions. External validation, prospective impact studies, and head-to-head comparisons with simple clinical algorithms are largely lacking. Future studies should focus on integrated, patient-level randomized and pragmatic trials addressing the optimal sequence and intensity of pre-endoscopy management strategies.

4.2 Endoscopic management

Additional high quality studies are needed regarding: the timing of endoscopy in patients who are hemodynamically unstable despite ongoing efforts at volume resuscitation; the role of the DEP in guiding hemostasis therapy; a definition of peptic ulcer characteristics (e. g. anatomic location, size, Forrest class) that optimize hemostasis using OTS clips and learning curves for the acquisition of competence in using OTS clips; randomized trials of topical hemostatic agents versus standard endoscopic hemostasis modalities (e. g. mechanical, thermal); and evaluation of emerging/innovative hemostasis therapies (e. g. tissue suturing, tissue adhesives, hemostatic forceps).

4.3 Postendoscopy management

Although some data exist, there is plenty of room for additional studies in several areas in the postendoscopy management of patients with peptic ulcer bleeding. For example: evaluating the acid suppressive efficacy of potassium-competitive acid blockers after endoscopic hemostasis; better understanding the impacts of blood in the upper GI tract and PPI use at the time of initial endoscopy on the result of *H. pylori* testing during acute peptic ulcer bleeding; standardization of endoscopy reports in peptic ulcer bleeding; and establishing/evaluating “key performance indicators” in managing peptic ulcer bleeding.

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thauer: Formal analysis, Methodology, Writing - review & editing. Tony Tham: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Writing - original draft, Writing - review & editing.

Conflict of Interest

I.M. Gralnek has been on the advisory board and provided consultancy to Olympus (2025 to present) and Magentiq Eye (2026), and provided consultancy to Medtronic and Viatris (both 2024 to present), Micro-Tech (2025 to present), and GistMD (2026); he has also received research support from Medtronic (2024 to present). J. Morris has received lecture fees from Falk, Astra Zeneca, and Olympus, and is on the advisory boards of Cook and Astra Zeneca (2024 to present); he is treasurer of the British Society of Gastroenterology (2024 to present). S.B. Laursen has received fees from Medtronic for participation in a data monitoring committee (2024) and for study involvement (2025 to present). M. Camus is receiving fees from Medtronic for study involvement (2025 to present). N. Forbes received consultancy fees from Boston Scientific (2021 to 2025). M. Bretthauer is Associate Editor of *Annals of Internal Medicine* (2017 to present) and is chair of an ESGE publication working group. G. Tziatzios, L.K. Debels, G.B. Nigam, B. Eross, M. Götz, T. Cúrdia Gonçalves, K. Kurek, and T.C. Tham declare that they have no conflict of interest.

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CORRECTION

Correction: Endoscopic diagnosis and management of peptic ulcer bleeding: European Society of Gastrointestinal Endoscopy (ESGE) Guideline – Update 2026

Ian M. Gralnek, John Morris, Stig Borbjerg Laursen et al. Endoscopic diagnosis and management of peptic ulcer bleeding: European Society of Gastrointestinal Endoscopy (ESGE) Guideline – Update 2026
Endoscopy 2025; doi: 10.1055/a-2863-8314.

In the above-mentioned article the Graphical abstract has been corrected. This was corrected in the online version on May 22, 2026.

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