Initial patient evaluation and hemodynamic resuscitation

1 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 recommendation, moderate quality evidence).

2 ESGE recommends a restrictive red blood cell transfusion strategy that aims for a target hemoglobin between 7 g/dL and 9 g/dL. A higher target hemoglobin should be considered in patients with significant co-morbidity (e. g., ischemic cardiovascular disease) (strong recommendation, moderate quality evidence).

Risk stratification

3 ESGE recommends the use of a validated risk stratification tool to stratify patients into high and low risk groups. Risk stratification can aid clinical decision making regarding timing of endoscopy and hospital discharge (strong recommendation, moderate quality evidence).

4 ESGE recommends the use of the Glasgow-Blatchford Score (GBS) for pre-endoscopy risk stratification. Outpatients determined to be at very low risk, based upon a GBS score of 0 – 1, do not require early endoscopy nor hospital admission. Discharged patients should be informed of the risk of recurrent bleeding and be advised to maintain contact with the discharging hospital (strong recommendation, moderate quality evidence).

Pre-endoscopy management

5 For patients taking vitamin K antagonists (VKAs), ESGE recommends withholding the VKA and correcting coagulopathy while taking into account the patient's cardiovascular risk in consultation with a cardiologist. In patients with hemodynamic instability, administration of vitamin K, supplemented with intravenous prothrombin complex concentrate (PCC) or fresh frozen plasma (FFP) if PCC is unavailable, is recommended (strong recommendation, low quality evidence).

6 If the clinical situation allows, ESGE suggests an international normalized ratio (INR) value < 2.5 before performing endoscopy with or without endoscopic hemostasis (weak recommendation, moderate quality evidence).

7 ESGE recommends temporarily withholding new direct oral anticoagulants (DOACs) in patients with suspected acute NVUGIH in coordination/consultation with the local hematologist/cardiologist (strong recommendation, very low quality evidence).

8 For patients using antiplatelet agents, ESGE recommends the management algorithm detailed in?" Fig. 2 (strong recommendation, moderate quality evidence).

9 ESGE recommends initiating high dose intravenous proton pump inhibitors (PPI), intravenous bolus followed by continuous infusion (80mg then 8 mg/hour), in patients presenting with acute UGIH awaiting

upper endoscopy. However, PPI infusion should not delay the performance of early endoscopy (strong recommendation, high quality evidence).

10 ESGE does not recommend the use of tranexamic acid in patients with NVUGIH (strong recommendation, low quality evidence).

11 ESGE does not recommend the use of somatostatin, or its analogue octreotide, in patients with NVUGIH (strong recommendation, low quality evidence).

12 ESGE recommends intravenous erythromycin (single dose, 250mg given 30 – 120 minutes prior to upper GI endoscopy) in patients with clinically severe or ongoing active UGIH. In selected patients, pre-endoscopic infusion of erythromycin significantly improves endoscopic visualization, reduces the need for second-look endoscopy, decreases the number of units of blood transfused, and reduces duration of hospital stay (strong recommendation, high quality evidence).

13 ESGE does not recommend the routine use of nasogastric or orogastric aspiration/lavage in patients presenting with acute UGIH (strong recommendation, moderate quality evidence).

14 In an effort to protect the patient's airway frompotential aspiration of gastric contents, ESGE suggests endotracheal intubation prior to endoscopy in patients with ongoing active hematemesis, encephalopathy, or agitation (weak recommendation, low quality evidence).

15 ESGE recommends adopting the following definitions regarding the timing of upper GI endoscopy in acute overt UGIH relative to patient presentation: very early < 12 hours, early ? 24 hours, and delayed > 24 hours (strong recommendation, moderate quality evidence).

16 Following hemodynamic resuscitation, ESGE recommends early (? 24 hours) upper GI endoscopy. Very early (< 12 hours) upper GI endoscopy may be considered in patients with high risk clinical features, namely: hemodynamic instability (tachycardia, hypotension) that persists despite ongoing attempts at volume resuscitation; in-hospital bloody emesis/nasogastric aspirate; or contraindication to the interruption of anticoagulation (strong recommendation, moderate quality evidence).

17 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 recommendation, moderate quality evidence).

Endoscopic therapy (peptic ulcer bleeding)

18 ESGE recommends the Forrest (F) classification be used in all patients with peptic ulcer hemorrhage in order to differentiate low and high risk endoscopic stigmata (strong recommendation, high quality evidence).

19 ESGE recommends that peptic ulcerswith spurting or oozing bleeding (Forrest classification Ia and Ib respectively), or with a nonbleeding visible vessel (Forrest classification IIa) receive endoscopic hemostasis because these lesions are at high risk for persistent bleeding or rebleeding (strong recommendation, high quality evidence).

20 ESGE recommends that peptic ulcers with an adherent clot (Forrest classification IIb) be considered for endoscopic clot removal. Once the clot is removed, any identified underlying active bleeding (Forrest classification Ia or Ib) or nonbleeding visible vessel (Forrest classification IIa) should receive endoscopic hemostasis (weak recommendation, moderate quality evidence).

21 In patients with peptic ulcers having a flat pigmented spot (Forrest classification IIc) or clean base (Forrest classification III), ESGE does not recommend endoscopic hemostasis as these stigmata present a low risk of recurrent bleeding. In selected clinical settings, these patients may be discharged to home on standard PPI therapy, e. g., oral PPI once-daily (strong recommendation, moderate quality evidence).

22 ESGE does not recommend the routine use of Doppler ultrasound ormagnification endoscopy in the evaluation of endoscopic stigmata of peptic ulcer bleeding (strong recommendation, low quality evidence).

23 For patients with actively bleeding ulcers (FIa, FIb), ESGE recommends combining epinephrine injection with a second hemostasis modality (contact thermal, mechanical therapy, or injection of a sclerosing agent). ESGE recommends that epinephrine injection therapy not be used as endoscopic monotherapy (strong recommendation, high quality evidence).

24 For patients with nonbleeding visible vessel (FIIa), ESGE recommends mechanical therapy, thermal therapy, or injection of a sclerosing agent as monotherapy or in combination with epinephrine injection. ESGE recommends that epinephrine injection therapy not be used as endoscopicmonotherapy (strong recommendation, high quality evidence).

25 For patients with active NVUGIH bleeding not controlled by standard endoscopic hemostasis therapies, ESGE suggests the use of a topical hemostatic spray or over-the-scope clip as salvage endoscopic therapy (weak recommendation, low quality evidence).

Endoscopic therapy (other causes of NVUGIH)

26 For patients with acid-related causes of NVUGIH different from peptic ulcers (e. g., erosive esophagitis, gastritis, duodenitis), ESGE recommends treatment with high dose PPI. Endoscopic hemostasis is usually not required and selected patients may be discharged early (strong recommendation, low quality evidence).

27 ESGE recommends that patients with a Mallory –Weiss lesion that is actively bleeding receive endoscopic hemostasis. There is currently inadequate evidence to recommend a specific endoscopic hemostasis modality. Patients with a Mallory –Weiss lesion and no active bleeding can receive high dose PPI therapy alone (strong recommendation, moderate quality evidence).

28 ESGE recommends that a Dieulafoy lesion receive endoscopic hemostasis using thermal, mechanical (hemoclip or band ligation), or combination therapy (dilute epinephrine injection combined with contact thermal or mechanical therapy) (strong recommendation, moderate quality evidence). Transcatheter angiographic embolization (TAE) or surgery should be considered if endoscopic treatment fails or is not technically feasible (strong recommendation, low quality evidence).

29 In patients bleeding from upper GI angioectasias, ESGE recommends endoscopic hemostasis therapy. However, there is currently inadequate evidence to recommend a specific endoscopic hemostasis modality (strong recommendation, low quality evidence).

30 In patients bleeding fromupper GI neoplasia, ESGE recommends considering endoscopic hemostasis in order to avert urgent surgery and reduce blood transfusion requirements. However, no currently available endoscopic treatment appears to have long-term efficacy (weak recommendation, low quality evidence).

Post endoscopy/endoscopic hemostasis management

31 ESGE recommends PPI therapy for patients who receive endoscopic hemostasis and for patients with adherent clot not receiving endoscopic hemostasis. PPI therapy should be high dose and administered as an intravenous bolus followed by continuous infusion (80mg then 8mg /hour) for 72 hours post endoscopy (strong recommendation, high quality evidence).

32 ESGE suggests considering PPI therapy as intermittent intravenous bolus dosing (at least twice-daily) for 72 hours post endoscopy for patients who receive endoscopic hemostasis and for patients with adherent clot not receiving endoscopic hemostasis. If the patient’s condition permits, high dose oral PPI may also be an option in those able to tolerate oral medications (weak recommendation, moderate quality evidence).

33 In patients with clinical evidence of rebleeding following successful initial endoscopic hemostasis, ESGE recommends repeat upper endoscopy with hemostasis if indicated. In the case of failure of this second attempt at hemostasis, transcatheter angiographic embolization (TAE) or surgery should be considered (strong recommendation, high quality evidence).

34 ESGE does not recommend routine second-look endoscopy as part of the management of NVUGIH. However, second-look endoscopy may be considered in selected patients at high risk for rebleeding (strong recommendation, high quality evidence).

35 In patients with NVUGIH secondary to peptic ulcer, ESGE recommends investigating for the presence of Helicobacter pylori in the acute setting with initiation of appropriate antibiotic therapy when H. pylori is detected. Re-testing for H. pylori should be performed in those patients with a negative test in the acute setting. Documentation of successful H. pylori eradication is recommended (strong recommendation, high quality evidence).

36 ESGE recommends restarting anticoagulant therapy following NVUGIH in patients with an indication for long-term anticoagulation. The timing for resumption of anticoagulation should be assessed on a patient by patient basis. Resuming warfarin between 7 and 15 days following the bleeding event appears safe and effective in preventing thromboembolic complications formost patients. Earlier resumption, within the first 7 days, may be indicated for patients at high thrombotic risk (strong recommendation, moderate quality evidence).

37 In patients receiving low dose aspirin for primary cardiovascular prophylaxis who develop peptic ulcer bleeding, ESGE recommends withholding aspirin, re-evaluating the risks/benefits of ongoing aspirin use

in consultation with a cardiologist, and resuming low dose aspirin following ulcer healing or earlier if clinically indicated (strong recommendation, low quality evidence).

38 In patients receiving low dose aspirin for secondary cardiovascular prophylaxis who develop peptic ulcer bleeding, ESGE recommends aspirin be resumed immediately following index endoscopy if the risk of rebleeding is low (e. g., FIIc, FIII). In patients with high risk peptic ulcer (FIa, FIb, FIIa, FIIb), early reintroduction of aspirin by day 3 after index endoscopy is recommended, provided that adequate hemostasis has been established (strong recommendation, moderate quality evidence).

39 In patients receiving dual antiplatelet therapy (DAPT) who develop peptic ulcer bleeding, ESGE recommends continuing low dose aspirin therapy. Early cardiology consultation should be obtained regarding the timing of resuming the second antiplatelet agent (strong recommendation, low quality evidence).

40 In patients requiring dual antiplatelet therapy (DAPT) and who have had NVUGIH, ESGE recommends the use of a PPI as co-therapy (strong recommendation, moderate quality evidence).