Update On Management of Upper GI Bleeding

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Disclosures

- Nothing to disclose

- I disclosed that I didn’t received any fees for this presentation and I have no ownership, partnership interest in any company.
Peptic Ulcer bleeding

- Account for 28 to 59% of NVUGI Bleeding

- Peptic ulcer has become rarer owing to improved NSAIDS prescribing practice, eradicating H. pylori and widespread of PPI

- 75-80% stop spontaneously

- Ulcer appearance indicated risk of rebleeding and determines whether therapy required

- 2-11% mortality from bleeding peptic ulcers
Other Causes of UGI Bleeding

- Dieulafoy Lesions
- Anastomotic Ulcers
- GAVE Syndrome
  - Gastric Antral Vascular Ectasia (watermelon)
- Anastomosis
- Esophageal varices
- Bleeding gastric varix
Acute U.G.I. Bleeding

Initial assessment and triage:

• Bleeding severity
• Bleeding acuity
• Bleeding activity
• Bleeding location
• Associated Coagulopathy
Assess the Ulcer According to the Forrest classification

Predicting Rebleeding Based on Endoscopy
Streamlining the Forrest Classification

Patients with endoscopic or clinical re-bleeding (%)

Timing of Endoscopy

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:**
  - Hemodynamic instability (tachycardia, hypotension) that persists despite ongoing attempts at volume resuscitation.
  - Contraindication to the interruption of anticoagulation

- **Early ≤24 hours**

- **Delayed >24 hours**

Pre-Endoscopy Recommendations

High dose PPI for 72 hours is recommended

1. Patients who receive endoscopic hemostasis.
2. Patients with adherent clot not receiving endoscopic hemostasis

(strong recommendation, high quality evidence)

NG placement provided:
1. No improved prediction of high risk lesions 38% vs 39%
2. No improved clinical outcomes (rebleeding, mortality)
3. Adverse events 34% (pain, bleeding, placement failure).
Intra-Endoscopy recommendations

- Improve vision
- Vision is usually impaired by blood in the stomach
- If available use an instrument with a larger working channel.
- Maximize the suction buy using special device.
- Consider removing the suction valve and use your finger

Turn the patient into the right lateral position

In the left lateral position the greater curve and fundus can be filled with blood and difficult to assess
Types of Endotherapy

- Injection
- Ablative
- Mechanical
- Combination
- Novel Techniques

Optimal Endotherapy - What? When? How?
# Treatment Options

## Endoscopic Treatment Modalities

### Injection
- Adrenaline (1:10000)
- Sclerosants (ethanolamine, ethanol, polidocanol)
- Procoagulants (thrombin, fibrin)
- Cyanoacrylate glue

### Thermal Devices
- Heater probes
- Electrocautery probes
- Argon plasma coagulation
- Lasers

Most commonly used:
- more commonly used for variceal UGIB

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- Mechanical therapy
  - i.e. Hemoclips, rubber bands
  - Closes and tamponades vessel

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Meta-analyses have found that combination therapy (adrenaline + 2nd modality) is SUPERIOR to adrenaline alone in treating high risk stigmata lesions (reducing risk of re-bleeding, mortality and surgery)
Since the late 1980s, endoscopic hemostasis has been widely accepted as the first-line therapy for upper GI bleeding.

The focus turned to preventing re-bleeding, which is experienced by up to 20% of patients and is associated with a high risk of mortality.

Combination therapy does not reduce the rebleeding rate, whereas the preferred therapy for adherent clots on an ulcer is combination therapy- injection therapy followed by thermal coagulation.

Treatment Options ------ When?

- Actively bleeding lesions.
- Non bleeding visible vessels.
- Ulcers with an adherent blood clot
- Esophageal Variceal bleeding.

When oozing is seen from an ulcer site, injection with epinephrine, and or the argon plasma coagulator used, followed by ethanolamine.

When there is no active bleeding but a red protuberance is seen in the center of an ulcer, most would inject with epinephrine, and in addition, use APC, heat probe, or clips.

In case of an ulcer with visible clot you should:

A) Do nothing and schedule a second look endoscopy

B) Apply hemospray

C) Put the patient on high dose PPI and consider H. pylori eradication

D) Remove the clot and treat the underlying lesion
Clot Removal & Endoscopic Therapy vs Medical Therapy Alone

Should I remove the clot ???

- A pragmatic strategy is to wash the clot away for further characterization and treatment of high risk endoscopic stigmata.

- Be less aggressive at the posterior wall of the duodenum and the lesser curvature of the stomach

Still Controversial

One meta-analysis showed a significant benefit for clot removal and endoscopic therapy regarding rebleeding; while another one showed no difference compared to medical therapy alone
Treatment Options ------ How?
Injection Therapy

- Reduce blood flow by temporary local tamponade

- Vasoconstricting agents reduce blood flow
  Adrenaline: 1:10,000-1:100,000

- Sclerosants: Ethanolamine, Polidocanol

- Tissue adhesive: Histoacryl, Fibrin Glue

Easy to administer, slow or stop bleeding, during active bleeding it can produce a cleaner field permitting targeted treatment of the bleeding site.
Thermal Therapy

**Contact methods:**
- multipolar electrocoagulation and heater probe

**Non-contact methods:**
- argon plasma coagulation

APC is currently the first line treatment, its efficacy reach 90%
Impractical for diffuse disease
More difficult in case of active bleeding
Associated with high rate of recurrence

APC: controllable depth of coagulation (0.5-3 mm)
Pull-back technique (from the pylorus backwards) until all lesions are bleached.
Power settings are 40-50W with an 0.8l gas flow

Endoscopic Band Ligation…. How?

- Ligating device consists of a friction-fit adapter affixed to the tip of the endoscope with a preloaded elastic band and release mechanism.

- The trigger mechanism releases an elastic band or O-ring, ligating the target tissue.

- This ligation results in hemostasis with necrosis and sloughing.

- Effective in treating esophageal varices but can be used on other bleeding lesions as well.
Clips types

Quick Clip
Pre-loaded
Opens to 9.5mm between prongs
Rotating control mechanism for easy targeting
Once the clip is opened – cannot be reopened and repositioned

Resolution® Clip
Pre-Loaded
11 mm-wide Jaw Opening
155 and 235 cm lengths
Once the clip is opened – can be opened up to 5 times before deployment

TriClip
Pre-loaded
3 pronged clip
Integrated port for flushing the field of view
Opens to 12mm between prongs
Once the clip is opened – cannot be reopened and repositioned
The Ideal Conditions

Ideal for clips:

- Lesion accessible
- Less than 2 mm vessel
- Less than 2 mm ulcer defect

Difficult hemoclip:

- Indurated or fibrotic base
- Challenged tic location (lesser curve, posterior wall, posterior duodenum)

Ideal clip:

- Simultaneous rotation
- Large jaw opening
- Opening size memory
Contraindications to Clipping

- When hemostasis cannot be verified visually within endoscopic field of view
- If MRI procedures are anticipated/necessary
  Consider x-ray if clip placed within 2-4 weeks
- Bleeding ulcers and arteries greater than 2 mm
- Polyps greater than 1.5 cm in diameter
- Mucosal/submucosal defects greater than 3 cm
Tissue Glues

Synthetic Glue

Cyano: link
Acrylate: polymerisation

*N-Butyl-2-cyanoacrylate: Histo-acryl®
Methacryloxyxsulfolane: Glubran 2®*

- Good contrast with lipiodol
- Low viscosity
- Catheter be flushed with dextrose before injection
- Occlusion by polymerisation
- Allergy like a external particle
- Need practice ++
Gastric Varices

- Data on the management of gastric variceal bleeding are limited due to lack of RCTs.

- Endoscopic variceal obturation (EVO) with tissue adhesives such as N-butyl-2-cyanoacrylate (Histoacryl) has emerged as the treatment of choice for acute gastric variceal bleeding.

- A large number of case series have established that Histoacryl is effective in achieving hemostasis in >90% of patients with bleeding from gastric varices.
How Does Hemospray Work?

When hemospray comes in contact with blood:
1) The powder absorb water
2) Acts both cohesively and adhesively forming mechanical barrier over the bleeding site.
A scheduled second look endoscopy with 24hrs

A. Is always indicated in active bleeding

B. Should be considered in case of insufficient hemostasis and/or Patient with SBP<100mmhg and tachycardia

C. Has been proven to be of no benefit

D. Depends on the doctor’s gut feeling
Second Look Endoscopy

Routine second-look endoscopy is defined as a scheduled repeat endoscopic assessment of the previously diagnosed bleeding lesion usually performed within 24 hours following the index endoscopy.

ESGE does not recommend routine second-look endoscopy as part of the management of NVUGIH.

Second-look endoscopy may be considered in selected patients at high risk for rebleeding.
Novel Techniques

OTSC clip for uncontrolled GI bleeding.
Novel Techniques

FCSEMS for post-sphincterotomy bleeding

Ella Variceal Stent

TIPS
Novel Techniques

(A) Large, type 1 isolated gastric variceal conglomerate in a patient with history of bleeding.

(B) Transesophageal deployment of coil through a 19-gauge needle.

(C) EUS showing variceal conglomerate at 1-month follow-up. Absent flow on color Doppler.

(D) 3 month follow-up endoscopy showing markedly smaller variceal complex with cracked earth pattern suggesting obliteration.
Indication For Surgery

- Spurting vessel at endoscopy not controlled by endoscopic therapy.

- Continued bleeding.

- Patient requiring > 8 units of blood in 24 hrs. if age under 60 and > 6 units if age over 60.

- Rebleed in the same admission.

- Bleeding in Patient with aortic grafts
Always do what you are expert in, OR ask for 2\textsuperscript{nd} opinion

LEARNING OVER TIME

Skills

plateau

Don’t give up here

Time
Take Home Messages

- Epinephrine therapy should not be used as monotherapy, always combine with thermal or mechanical hemostasis.

- In case of good access clips are usually the treatment of choice.

- In case of reduced visibility consider using endoscope with a larger working channel or a suction device.

- Changing the patient's position may help identify the source of bleeding.

- In case of massive bleeding consider involving the surgeon or the radiologist early.

- Always Have a Plan B… Consider using alternative technique in case of difficult hemostasis.
Always make the right choice

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Q & A time