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Standardizing EUS-guided Gastroenterostomy: a Delphi consensus on technical steps and adverse events management

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INTRODUCTION

EUS-guided gastroenterostomy (EUS-GE) is increasingly used in the management of Gastric Outlet Obstruction. However, **significant variability exists in technical choices** which might account for **heterogeneous clinical outcomes.**

AIM

The aim of this **Delphi methodology** was to address open questions and establish a consensus on best practices to gather expert opinions on key aspects of EUS-GE.

METHODS

A panel of **25 international leading experts** in EUS-GE was invited to revise literature around the technique. A Delphi process was conducted over **3 rounds**, with each round involving anonymous voting on **35 predefined statements**, using a 5-point Likert scale (1: strongly disagree – 5: totally agree).

Responses were analysed through Medians [Interquartile Ranges], with pre-defined thresholds for approval, revision or discard of the statement.

Statements reaching final consensus were graded based on the strength of agreement, defined as the proportion of responses rated 4 or 5.

RESULTS

Response rate was 88% in Round 1 and 100% in Round 2 and 3.

Among 29 statements, 9 were approved at Round 1, 18 at Round 2 and 4 at Round 3, while 4 were ultimately rejected.

STRONG AGREEMENT

- **Large-volume ascites** → **periprocedural drainage** + **prolonged antibiotics**
- **General anesthesia** preferred (OR Additional precautions e.g. preprocedural evacuations of gastric contents)
- **Fluoroscopy** must be available
- **Saline solution** recommended for jejunal injection
- **Electrocautery-enhanced Lumen Apposing Metal Stents**, **favoring 20 mm** over 15 mm
- **Free-hand LAMS** release with pure cutting current with high effect and power.
- Use of **finder needle** is not recommended routinely
- **Incremental deployment** for distal flange
- **Intrachannel release** for proximal flange
- **Boiling water sign**
- Endoscopists familiar with **bleedings** → standard hemostatic techniques
- Endoscopists familiar with **perforations**
- **Type 2, 3 and 4 perforations → decision-making with a surgeon**

20mm

MODERATE AGREEMENT

- The use of **blue dye** is discretional
- "**Assisted**" EUS-GE favored over endoscope- or needle-assisted jejunal instillation
- The **oro-jejunal tube** should typically target the first jejunal loops
- EUS-GE typically deployed between the gastric lumen and **the first jejunal loop beyond the Treitz ligament**
- Optimal window
  - The **shortest interluminal distance** (< 5-10 mm)
  - The **longest jejunal operative space** (> 30-35 mm)
- «**Contrast bypass confirmation**» as a sign of correct deployment
- **Liquid Diet** the **same day** / **Soft-solid diet** the **following day**

REMOVED STATEMENTS

- **Mixing contrast agents within the distending solution** is not advisable
- «Fishbowl sign»
- WEST or EPASS as the most standardized techniques
- **LAMS dilation** left to the endoscopist's discretion

CONCLUSIONS

- EUS-Gastroenterostomy is a **relatively new technique**, and significant worldwide heterogeneity exists on technical steps
- **Despite technical differences** (such as the preference of a jejunal catheter or a double-balloon catheter) **most EUS-GE experts agree on key technical principles**, providing valuable guidance on the **standardization** of EUS-GE in clinical practice.
- Conversely, certain topics showed limited or no agreement, identifying **future research priorities** in the field of EUS-GE.

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