



# Is Transduodenal Approach Better Than The Transgastric For EUS-GBD? - A Meta-Analysis

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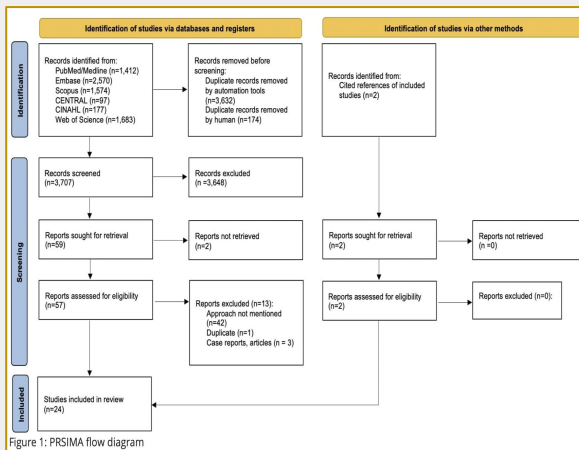
## LEARNING OBJECTIVES

Endoscopic ultrasound-guided gallbladder drainage is achieved by creating cholecysto-enteric stoma, via either transduodenal (TD)/transjejunal (TJ) or transgastric (TG) approach. In TD/TJ approach, retroperitoneal duodenum is immobile thus, provides a stable access point for the gallbladder (GB) neck. The inflamed GB can adhere to wall of duodenum/jejunum lending further stability. Other advantages are decreased risk of stent migration (due to reduced peristalsis) and stent occlusion (due to lower chances of food reflux) compared to TG approach.

Hence, TD/TJ approach can be expected to have lesser adverse events (AE) compared to TG approach. We aimed to compare the AE, technical success, and clinical success of two approaches

## METHODS

- Study was registered in PROSPERO and comprehensive literature search was done on PubMed, Embase, Scopus, CENTRAL, CINAHL, and Web of Science.
- In total, 3707 studies were screened and 24 met the inclusion criteria (Fig 1). Summary statistics from each study (both 1 arm and 2 arm studies) were extracted for clinical outcomes of AE, clinical success, and technical success.
- Random effects model was used for analysis using the software Comprehensive Meta-Analysis.



| METHOD 1- Including studies with patients in both arms |                            |                                  |                                |         |
|--|----------------------------|----------------------------------|--------------------------------|---------|
|  | N of studies               | Pooled odds ratio (TG vs. TD/TJ) | 95% CI                         | p-value |
| Adverse events   | 6                          | 1.58                             | 0.46-5.45                      | 0.47    |
| Clinical success                                       | 3                          | 0.30                             | 0.06-1.48                      | 0.14    |
| Technical success                                      | 3                          | 0.30                             | 0.05-1.89                      | 0.20    |
| METHOD 2- Including all the studies                    |                            |                                  |                                |         |
|  | N of Studies (TG vs TD/TJ) | AE(%)                            | 95% CI                         | p-value |
| Adverse events   | 9 vs 15                    | 27.5% vs 15.2%                   | 17.1%-41.1% vs (9.5%-23.6%)    | 0.07    |
| Clinical success                                       | 6 vs 13                    | 83.3% vs 91.7%                   | (71.0%-91.0%) vs (82.4%-96.3%) | 0.16    |
| Technical success                                      | 9 vs 15                    | 91.3% vs 95.6%                   | 83.6%-95.6% vs 90.7%-97.7%     | 0.22    |

Table 1: Results of comparison of technical success, clinical success, and rate of adverse events between the transgastric and transduodenal/transjejunal approach.

## RESULTS

- Analysis was done by 2 methods (Table 1).
- Method 1: Including studies with patients in both arms. TG vs. TD/TJ: Pooled OR (95% CI), p-value: AE (6 studies): 1.58 (0.46-5.45), p=0.47; Clinical success (3 studies): 0.30 (0.06-1.48), p=0.14; and Technical success (3 studies): 0.30 (0.05-1.89), p=0.20.
- Method 2: Including all studies (15 TD/TJ & 9 TG). TG vs. TD/TJ: AE (Studies: 9 vs 15): 27.5% (17.1%-41.1%) vs. 15.2% (9.5%-23.6%), p=0.07; Clinical success (Studies: 6 vs 13): 83.3% (71.0%-91.0%) vs. 91.7% (82.4%-96.3%), p=0.16; and Technical success (Studies: 9 vs. 15): 91.3% (83.6%-95.6%) vs. 95.3% (90.7%-97.7%), p=0.22.

## TAKE HOME POINTS

- Our meta-analysis showed no significant difference in clinical and technical success between the TD/TJ and TG approach.
- The rate of AE was similar when comparing two-arm studies only; however, the difference was almost statistically significant when all studies were included, the rate being higher in TG approach.
- Limitations include data sparsity and heterogeneity of studies analyzed. Sufficiently powered RCTs are needed to verify the above results. While approach to transluminal GB drainage depends on endoscopist preference and patient's anatomy (proximity of GB to lumen), it would be useful to know which approach has a favorable AE profile when both are feasible.

References: Choi JH, Lee SS, Choi JH, et al. Long-term outcomes after endoscopic ultrasonography-guided gallbladder drainage for acute cholecystitis. *Endoscopy*. 2014;46:656-661. For further questions, please contact grover@uchc.edu