

Efficacy and Safety of EUS-directed Transgastric ERCP (EDGE) vs Laparoscopic-Assisted ERCP: A Systematic Review and Meta-Analysis

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Background: The altered anatomy in Roux-en-Y gastric bypass (RYGB) makes conventional Endoscopic retrograde cholangiopancreatography (ERCP) a technically challenging procedure. EUS-directed Transgastric ERCP (EDGE) and Laparoscopic-Assisted ERCP (LA-ERCP) are alternative modalities used with comparable efficacy and adverse events in such patients. We conducted a meta-analysis comparing EDGE and LA-ERCP to assess the efficacy and safety in patients with RYGB.

Methods: We conducted a comprehensive literature search from inception through July 7th, 2022 on MEDLINE, EMBASE, Cochrane Register of Controlled Trials, and Web of Science database using the core concepts of “EDGE” and “LA-ERCP”. We excluded case reports, case series (<10 patients) and review articles. Relative risk (RR) was calculated when comparing dichotomous variables while mean difference (MD) was calculated for continuous outcomes. A 95% confidence interval (CI) and p-values (<0.05 considered significant) were also generated.

Results: The search strategy yielded a total of 55 articles. We finalized 4 studies with total 192 patients (75 EDGE and 117 LA-ERCP). The rates of technical success were not significantly different for LA-ERCP and EDGE (RR= 0.994, CI: 0.939 – 1.051, P= 0.830, I²= 0%) Similarly, no difference in adverse events were noted between the two groups (RR= 1.216, CI: 0.561-2.634, P= 0.620, I²= 10.67%). Shorter procedure time was noted for EDGE compared to LA-ERCP group (MD= 91.53 mins, CI: 69.911 – 113.157, P<0.001 I²= 8.32%).

Conclusion: EDGE and LA-ERCP are comparable in terms of efficacy and safety. In addition, EDGE has overall lower procedural time. Our study suggests EDGE should be considered as a first-line therapy if expertise available.