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Outcomes of endoscopic ultrasound-guided biliary drainage: an updated meta-analysis

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Introduction: Success and event rates of EUS-guided biliary drainage (EUBD) vary with techniques and results from different studies remain inconsistent. We conducted a proportion meta-analysis to evaluate efficacy and safety of EUBD and compare outcomes of current procedures and biliary access routes.

Methods: We searched MEDLINE, EMBASE, COCHRANE and SCOPUS to identify studies reporting technical success, clinical success and complication rate of EUBD techniques with a sample size greater than 10 patients. Weighted pooled rate and 95 % confident interval were calculated to estimate clinical effectiveness and safety of EUBD procedures.

Results: We identified 39 studies including a total of 1640 patients. The overall technical success, per-protocol clinical success and complications rates with 95 % confidence interval were 89% [86 %-92 %], 92% [90 %-94 %] and 20 % (16-24%), respectively. When comparing choledochoduodenostomy with hepaticogastrostomy the pooled 95% CI OR for was 0.78 [0.41; 1.50] (p = 0.462) for technical success and 0.85 [0.51-1.42] (p-val = 0.536) for clinical success. However, pooled OR was 0.65 IC 95% [0.42-0.99] (p-val = 0.047) for complication rate suggesting that EUS-guided choledochoduodenostomy is safer than hepaticogastrostomy. The pooled OR when using the extra-hepatic approach was 1.03 [0.65-1.61] and 0.94 [0.56-1.57] (p-val = 0.804) for technical and clinical success rate respectively. Pooled odds-ratio for adverse events was 0.81 [0.58-1.14] (p-val = 0.221) when using the extra-hepatic approach. Regarding transpapillary technique including Rendezvous and anterograde stenting, technical success, clinical success and adverse event rate were 77% IC 95[71-82], 92% IC95% [83-96%] and 19% IC95%[15%-25%] respectively.

Conclusion: EUS-guided biliary drainage appears to be an effective treatment when ERCP fails with a high success rate and an acceptable adverse event rate. The available literature suggests choledochoduodenosomy to be a safer approach compared to hepaticogastrostomy. Transluminal approaches demonstrate a higher efficacy than transpapillary technique with a similar safety. Randomized controlled trials with sufficiently large cohorts are needed to compare techniques and confirm these findings.

Biography

Abdellah Hedjoudje is a French Resident in Gastroenterology at the University Hospital of Besancon. He holds degrees in Bioinformatics, Data Science and Statistics, his research focuses on methodological evaluation, critical appraisal, and qualitative and quantitative synthesis of medical literature using cutting edges big data and meta-analysis techniques.

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