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### Evidence-Based Approach In Evaluation Of Laparoscopic Suture Repair For Perforated Peptic Ulcer

#### Aim of the Research

is to summarise evidence from systematic reviews of randomized controlled trials and re-analyse outcome data on laparoscopic suture repair of perforated peptic ulcer by trial sequential analysis.

#### Materials and Methods

Cochrane Library, PubMed, Embase, CINAHL, eLibrary, and ClinicalTrials.gov. were searched before 1 June 2024. Meta-epidemiological approach and Trial Sequential Analysis (TSA) were used.

#### Results

Sixteen relevant Cochrane and non-Cochrane SRs that address laparoscopic repair of perforated peptic ulcer (PPU) were identified and critically appraised. Three overlapping reviews of RCTs met the inclusion criteria. Their pooled results showed a lower postoperative pain score after laparoscopic repair compared with open closure on postoperative day 1 as the only significant outcome. There were no significant differences in other clinical outcomes. The re-analyses of meta-analytic findings and adjustments of sample size by TSA confirmed that laparoscopic repair was associated with less postoperative pain (100% of the Diversity-Adjusted Required Information Size (DARIS) has been reached). The calculated DARIS for operative time and hospital stay were 40.1% and 14.6% respectively and TSA showed neither significant benefit nor harm of laparoscopic surgery in the attained information size in the meta-analysis. Further trials with regard to mortality, surgical site infection, intra-abdominal abscess are not very promising because of DARIS has not exceed 5% after combined results of eight RCTs.

#### Conclusion

Summarization of evidence from systematic reviews and reanalysis using TSA confirmed sufficient evidence for only one outcome, that laparoscopic suture repair of PPU is accompanied by lower pain scores at 24-72 hours. On the issue of postoperative complications and mortality, achieving DARIS through additional studies seems unpromising.

#### Keywords

Perforated Peptic Ulcer, Overview of Reviews, Meta-epidemiology, Trial Sequential Analysis