Critical View of Safety Approach Vs. Infundibular Technique in Laparoscopic Cholecystectomy, Which One is Safer? A Systematic Review and Meta-Analysis

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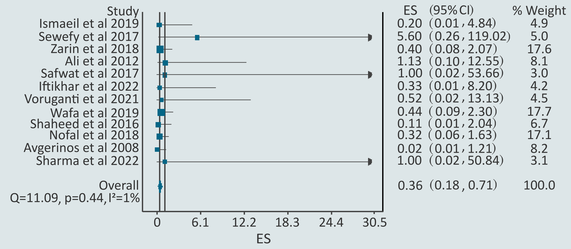
Introduction

- **Laparoscopic cholecystectomy (LC)** remains the gold standard procedure for the treatment of benign gallbladder disease, albeit with the potential for catastrophic complications such as **bile duct injury.**
- Recognizing the need to mitigate this complication, various **techniques for ductal identification** have emerged, including the **Critical View of Safety (CVS)** approach as well as the **infundibular technique (IT).**
- In this **systematic review and meta-analysis,** we assess the **outcomes of both techniques** in laparoscopic cholecystectomy.

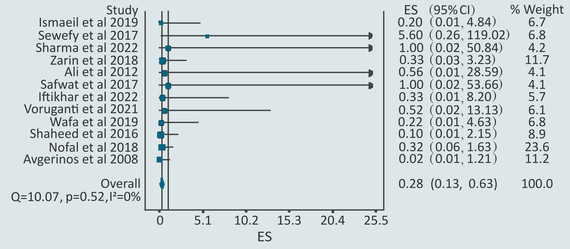
Methods

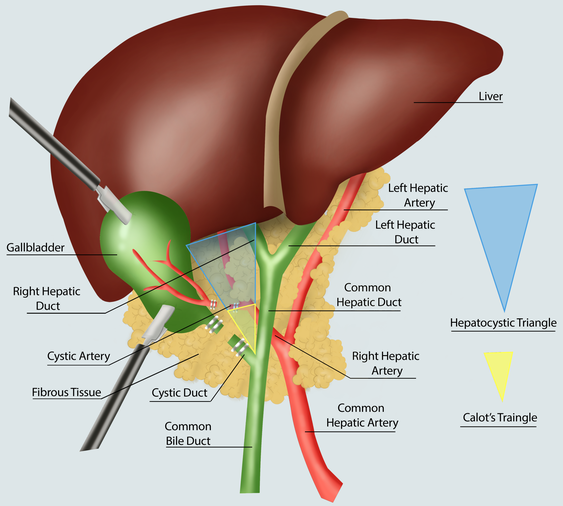
- We conducted a comprehensive search using **PubMed and Scopus databases,** adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).
- The study examined **laparoscopic cholecystectomy outcomes** in patients with **benign gallbladder disease** using the **Critical View of Safety (CVS)** approach and the **infundibular technique (IT).**
- Outcomes including minor and major **bile duct injuries, conversion rate, length of hospital stay, and operative time** were extracted and investigated.
- The quality of the included studies was assessed using the Newcastle–Ottawa Scale.

Difference between CVS and IT in Bile Duct Injury

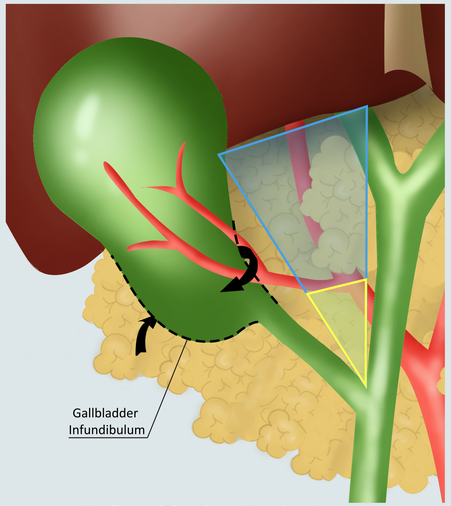


Difference between CVS and IT in Major Bile Duct Injury





Critical View of Safety (CVS)



Infundibular Technique

Results

- Approximately two-thirds underwent LC using the CVS technique (61.1%), and 66.3% were female with a mean age of 44.4 ± 11.2 years.
- The **CVS technique** was associated with a **significant reduction in total bile duct injuries** (RR= 0.36; 95% CI: 0.18 - 0.71) and **major bile duct injuries** (RR= 0.28; 95% CI: 0.13 - 0.63).
- However, there were **no significant differences** between the two approaches in terms of **minor bile duct injury, conversion rates, length of hospital stay, or operative time.**

Conclusion

- Our study demonstrated the **superiority of the CVS technique in reducing the risk of bile duct injuries compared to the IT approach.**
- However, **no significant differences were observed in the other outcomes.**
- Further research, including multicentric randomized controlled trials will be necessary to further evaluate the efficacy of these techniques.

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