Is Hand-Assisted Laparoscopic Splenectomy better than Conventional Laparoscopic Splenectomy Hand-Assisted Laparoscopic Splenectomy: A Systematic review and Meta- Analysis.

Introduction

As we know from several studies, the rapid advancements of Laparoscopic techniques led to increased safety and effectiveness among splenectomies. Both Conventional Laparoscopic Splenectomy (CLS) and Hand-Assisted Laparoscopic Splenectomy (HALS) have long been employed by surgeons for spleen resection. This systematic review and meta-analysis aims to evaluate the effectiveness of HALS compared to Conventional Laparoscopic Splenectomy (CLS).

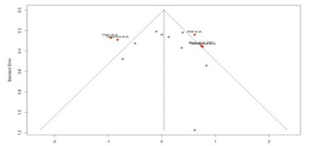
Methods

We conducted a systematic review of relevant studies dating from January 2000 to April 2024 via PubMed, Google Scholar, and Cochrane Library. The comparison focused on assessing clinical outcomes with respect to CLS vs. HALS: postoperative complications, conversion to open splenectomy, intraoperative time, estimated blood loss, and hospital stay. Data extraction was performed by two independent reviewers. R software was used to calculate odds ratio and weighted mean differences with a 95% confidence interval. Newcastle-Ottawa scale was used for assessing the quality of the study. Funnel plots were drawn to check for any publication bias.

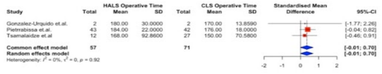
1-(A) Hospital Stay forest plot



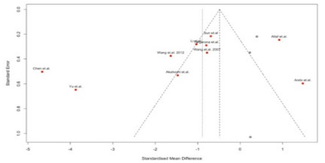
1-(B) Hospital Stay Funnel Plot



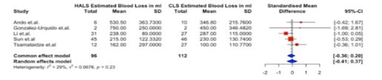
1-(C) Intraoperative time forest plot



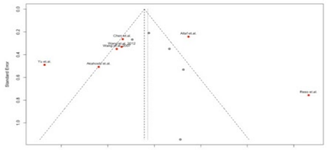
1-(D) Intraoperative time funnel plot



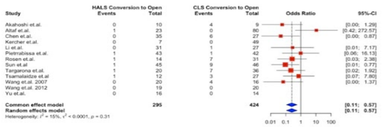
1-(E) Estimated Blood Loss in ml forest plot



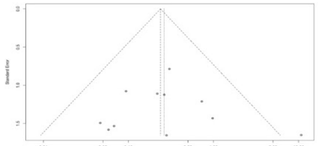
1-(F) Estimated Blood Loss funnel plot



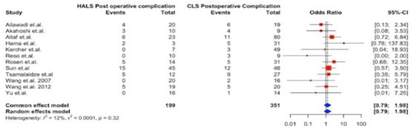
1-(G) Conversion events to Open Splenectomy forest plot



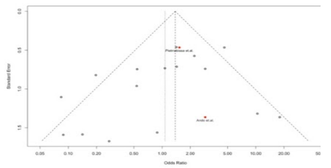
1-(H) Conversion to Open Splenectomy funnel plot



1-(I) Post operative Complications forest plot



1-(J) Post Operative Complication Funnel Plot



Results

Nineteen non-randomized controlled studies met the inclusion criteria, encompassing a total of 947 patients (HALS: 357 patients; CLS: 590 patients). The meta-analysis revealed no significant differences between the groups regarding intra-operative time, conversion events, hospital stay, post-operative complications, or estimated blood loss with $p>0.05$ at 95%CI. Thus, the null hypothesis is not rejected. Relevant data are illustrated in Figure 1-(A) through Figure 1-(J) with Figure 1-(A),(C),(E),(G) & (I) being Forest plots and Figure 1-(B),(D),(F),(H) & (J) being funnel plots. This shows that there is no statistical difference between two procedures.

Conclusion

We found that HALS and CLS demonstrate similar clinical outcomes with regard to Hospital Stays, Intraoperative time, blood loss, Post-op Complications and Conversion events to Open.

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