

5- Direct trocar insertion vs. Veress needle technique in laparoscopic surgeries. A systematic review and meta-analysis

Summary

Aim: To compare the safety and efficacy between Veress needle insertion and direct trocar insertion in laparoscopic surgeries.

Methods: Relevant clinical trials were retrieved from major databases; Web of Science, Cochrane CENTRAL, PubMed, and SCOPUS. The following outcomes were pooled for analysis: failed entry, extraperitoneal insufflation, vascular lesion, omental lesion and visceral lesion, site bleeding, reintervention, subcutaneous emphysema, solid organ lesion, and infection of the trocar site. A fixed-effects model was used to analyze homogeneous outcomes, whereas random-effects models were used to analyze heterogeneous outcomes. **Results:** We included a total of twelve clinical trials. The pooled analysis showed that the Veress needle was accompanied by a significant increase in the incidences of extraperitoneal insufflation (RR = 0.204; 95% CI [0.136, 0.307], $P = 0.001$), omental lesion (RR = 0.444 95% CI [0.239, 0.825], $P = 0.01$), and failed entry (RR = 0.169 95% CI [0.101, 0.284], $P = 0.001$). There is no significant difference between both cohort regarding the vascular lesion (RR = 0.847 95% CI [0.259, 2.777], $P = 0.7$), infection of the trocar site (RR = 0.583 95%CI [0.106, 3.216], $P = 0.5$, and visceral lesion (RR = 1.308 95% CI [0.314, 5.438], $P = 0.7$).

Conclusion: The DTI was accompanied by a significantly lower incidence of complications such as extraperitoneal insufflation, failed entry, omental lesion, and subcutaneous emphysema. On the other hand, both cohorts showed similar results regarding; vascular lesions, visceral lesions, reintervention, site bleeding, and solid organ lesion.