INPLASY PROTOCOL

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Corresponding author:
Duan Rongrong

drr13099502876@163.com

Author Affiliation:
DuanRongrong

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None declared.

Recovery quality of patients after laparoscopic surgery TIVA vs. IA

Duan, RR[1]; Zhang, Q[2]; Qin, XY[3]; Lu, XT[4]; Wang, CA[5].

Review question / Objective: **Can total intravenous or inhalation anesthesia provide better postoperative recovery quality for patients undergoing laparoscopic surgery?**
Condition being studied: **In patients undergoing laparoscopic surgery, hypercapnia caused by the establishment of CO 2 pneumoperitoneum and neuropathic pain, nausea and vomiting caused by visceral traction can all affect the recovery and prognosis of patients. In addition, poor postoperative recovery may lead to increased hospital costs and decreased patient satisfaction.2,3 In this regard, for patients undergoing laparoscopic surgery, it is particularly important to choose appropriate anesthesia methods to reduce the adverse effects of surgery and anaesthesia and to maintain the most stable anaesthetic effect, It is particularly important to choose the right method of anaesthesia to reduce the adverse effects of surgery and anaesthesia and to maintain the most stable anaesthetic effect.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 20 November 2022 and was last updated on 20 November 2022 (registration number INPLASY2022110096).

INTRODUCTION

Review question / Objective: **Can total intravenous or inhalation anesthesia provide better postoperative recovery quality for patients undergoing laparoscopic surgery?**

Rationale: **the research results of two anesthesia methods on the recovery quality of patients after laparoscopic surgery are inconsistent. Therefore, it is necessary to conduct meta-analysis of randomized controlled trials in the existing literature and provide the highest level of evidence on this topic, and ultimately help and guide clinical work.**

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METHODS

Search strategy: To ascertain all relevant studies regardless of publication status, we systematically search the electronic database PubMed, The Cochrane library, Web Of Science and Embase, and collect randomized controlled trials (RCT) until November 2022. The search strategy combined of medical subject heading (MeSH) and free-text terms. The key words used in our search process included: “total intravenous anesthesia”, “propofol”, “midazolam”, “etomidate”, “TIVA”, “anesthesia, Intravenous”, “inhalation anesthesia”, “anesthesia, Inhalation”, “sevoflurane”, “desflurane”, “Volatile anesthetics”, “IHVA”, “recovery quality”, “recovery”.

Participant or population: Adult patients (age ≥ 18 years) undergoing laparoscopic surgery, regardless of weight, race and gender.

Intervention: Propofol-based TIVA.

Comparator: Inhalational maintenance of anesthesia, and anesthesia induction drugs were not limited.

Study designs to be included: randomized controlled trial (RCT).

Eligibility criteria: The study exclusion criteria were as follows: (1) (1) clinical studies not published in English orChinese; (2) literature whose data cannot be extracted or utilized: such as letters, notesof meetings, reviews, study protocols, etc; (3) case reports; (4) duplicate literatures;and (5) original studies failed to provide relevant data required for this meta-analysis.

Information sources: To ascertain all relevant studies regardless of publication status, we systematically search the electronic database PubMed, The Cochrane library, Web Of Science and Embase, and collect randomized controlled trials (RCT) until November 2022.

Main outcome(s): Outcome measures: the primary outcome was the total QoR-40 scores; the secondary outcome was scores of QoR-40 scale, PACU stay time, hospitalization time and incidence of postoperative nausea and vomiting.

Quality assessment / Risk of bias analysis: The quality of studies was evaluated by using the Cochrane Collaboration's Risk of Bias Tool 2 (RoB2) for randomised controlled trials.

Strategy of data synthesis: We used RevMan software (Version 5.3; Cochrane, Oxford, UK) for the meta-analysis. was performed on the primary outcome to confirm whether firm evidence was reached or not (TSA software version 0.9.5.10 Beta; Copenhagen Trial Unit, Center for Clinical Intervention Research, Rigshospitalet, Copenhagen, Denmark).

Subgroup analysis: Sub-group analysis was done by the operation time.

Sensitivity analysis: The meta-analysis forest diagram of POD1 was observed, and the stability of the results was verified by elimination Meta one by one. The related studies of POD1 QoR-40 were eliminated one by one and analyzed. IF the combined

results had no obvious change, it can be considered that the results were stable.

Country(ies) involved: China.

Keywords: Laparoscopic surgery; intravenous anesthesia; Inhalation anesthesia; Propofol; recovery quality; Meta analysis.

Contributions of each author:
Author 1 - Duan Rongrong.
Email: drr13099502876@163.com
Author 2 - Zhang Qin.
Author 3 - Qin Xiaoyu.
Author 4 - Lu Xiaoting.
Author 5 - Wang Chunai.