INPLASY PROTOCOL

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Review Stage at time of this submission: **Formal screening of search results against eligibility criteria.**

Conflicts of interest:
None declared.

Analgesic efficacy of transversus thoracis muscle plane block in cardiac surgery: A systematic review and meta-analysis

Cui, YY[1]; Xue, JJ[2].

Review question / Objective: **P (patients): Patients undergoing cardiac surgery; I (Intervention): transversus thoracis muscle plane block; C (Control): no block/sham block/other block; O (Outcome): perioperative opioid consumption, pain scores after surgery; the length of ICU stay; adverse effect; S: randomized controlled trial.**
Condition being studied: **Patients undergoing cardiac surgery usually experience severe perioperative pain, and median sternotomy always causes poor analgesic effects. At present, how to optimize pain management and provide adequate sedation have become a crucial issue concerned by clinical anesthesiologists. The transversus thoracis muscle plane block (TTMPB) is a newly developed technique, it has been proved to provide effective analgesia in cardiac surgery in some clinical cases. Therefore, a meta-analysis is needed to confirm the advantage of TTMPB.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 May 2022 and was last updated on 27 May 2022 (registration number INPLASY202250151).

INTRODUCTION

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METHODS

Participant or population: Patients undergoing cardiac surgery.

Intervention: Transversus thoracis muscle plane block.

Comparator: No block; sham block; other block.

Study designs to be included: Randomized controlled trial.

Eligibility criteria: (1) RCTs; (2) Patients undergoing cardiac surgery; (3) transversus thoracis muscle plane block as the intervention treatment; no block, shame block, or other block are the control treatment; and (4) Opioid consumption and pain scores are reported.

Information sources: Database: PubMed; Embase; Web of Science; Cochrane Database of Systematic Reviews and Cochrane Central Register of Controlled Trials

Main outcome(s): Intraoperative opioid consumption; postoperative opioid consumption; pain scores at rest or during movement after surgery.

Additional outcome(s): Secondary outcomes: the length of ICU stay and adverse effect.

Quality assessment / Risk of bias analysis: The assessment was evaluated according to the Cochrane Risk of Bias tool, The evaluation contents included selection bias (random sequence generation and allocation concealment), performance bias (blinding of participants and personnel), detection bias (blinding of outcome assessments), attrition bias (incomplete outcome reporting), and reporting bias (selective reporting) and other bias.

Strategy of data synthesis: By using Review Manager software (RevMan) version 5.4 and Stata version 17.0.

Subgroup analysis: Subgroup analysis according to the age of patients (pediatric surgery or adults surgery).

Sensitivity analysis: For continuous endpoints , the mean difference (MD) with 95%CI by the inverse variance method of random-effects model. For dichotomous variables, the risk radios (RR) with 95%CI. A P-value 50% and P value≤ 0.1, the random effect model was used for analysis.

Language: English.

Country(ies) involved: China.

Keywords: Transversus thoracis muscle plane block; TTMPB; TTP block; Nerve block; Cardiac surgery; Postoperative pain; Opioid analgesics; Meta-analysis.

Contributions of each author:

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