

INPLASY PROTOCOL

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Corresponding author:
Yuan Le

leyuanxy@csu.edu.cn

Author Affiliation:
The third xiangya hospital of
central south university

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Conflicts of interest:
None.

Erector spinae plane block versus transversus abdominis plane block for postoperative analgesia in adult patients underwent abdominal surgery: A systematic review and meta-analysis

Wu, LP¹; Le, Y²; Li, YL³.

Review question / Objective: The aim of this study is to compare the analgesic efficacy of ESPB with transversus abdominis plane block in adult patients underwent abdominal surgery.

Condition being studied: Ultrasound-guided erector spinae plane (US-ESP) block is a novel technique targeting the ventral rami, dorsal rami, and rami communicantes of the spinal nerves. After injection, the local anesthetic agent was shown to extend cranially and caudally over several dermatomal levels. Some previous case studies and clinical randomized controlled studies reported that US-ESP block provided analgesia after different abdominal, thoracic, breast and spinal surgeries. TAP block has gained popularity as an effective analgesia technique in adult patients underwent abdominal surgery and works by blocking the anterior rami of the spinal nerves of the abdominal anterior wall after spreading of the local anaesthetic agent in the neurofascial plane between the internal oblique and transversus abdominis muscle, thereby relieving the pain. The aim of this study is to compare the analgesic efficacy of ESPB with transversus abdominis plane block in adult patients underwent abdominal surgery.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 December 2020 and was last updated on 30 December 2020 (registration number INPLASY2020120144).

INTRODUCTION

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METHODS

Participant or population: Adult patients underwent abdominal surgery will be included.

Intervention: Erector spinae plane block.

Comparator: Transversus abdominis plane block.

Study designs to be included: Randomized controlled trials will be included

Eligibility criteria: All published full-article RCTs comparing the analgesic efficacy of ESPB with transversus abdominis plane block in adult patients underwent abdominal surgery are eligible for inclusion.

Information sources: we will search articles in these electronic database including PubMed, Web of Science, Embase, the Cochrane Library, China National Knowledge Infrastructure (CNKI), and references related to this topic will be searched.

Main outcome(s): The visual analogue scale (VAS) scores after surgery.

Quality assessment / Risk of bias analysis: Two authors will independently extract data. Any disagreement will be resolved by discussion until consensus is reached or by consulting a third author.

Strategy of data synthesis: We will utilize Review Manager, version 5.3 for this meta-analysis. The mean difference (MD) with the corresponding 95% confidence intervals (CI) is calculated for continuous data with a random-effects model, whereas dichotomous data is analyzed as relative risk (RR) and 95% CI. We will calculate the I^2 statistic to evaluate for heterogeneity, and an I^2 value > 50% is considered as a cutoff for significant heterogeneity. A random effects model is applied in circumstances when significant heterogeneity is observed; otherwise, a fixed effects model is employed.

Subgroup analysis: If there is significant heterogeneity, we carry out subgroup analysis based on the type of surgery to seek possible sources of clinical heterogeneity.

Sensitivity analysis: Sensitivity analyses are performed via the leave-one-out approach to evaluate whether the results are changed significantly by a single study.

Country(ies) involved: China.

Keywords: Erector spinae plane block, transversus abdominis plane block, postoperative analgesia, abdominal surgery.

Contributions of each author:

Author 1 - Lanping Wu.

Author 2 - Yuan Le.

Author 3 - YL Li.