

INPLASY PROTOCOL

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None declared.

Regional vs General Anesthesia for Hip Fracture Surgery in Adults: a Systematic Review and Meta-analysis

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Review question / Objective: To compare the effects of different anesthesia techniques for the patients with hip fractures.

Condition being studied: The majority of hip fractures requires surgical treatment, which commonly undergoes regional neuraxial anesthesia or general anesthesia. Although researchers have discussed the option of anesthesia method over 40 years for the patients with hip fractures, there is still no definite conclusion. A population-based cohort study showed general anesthesia may be associated with higher risk of postoperative delirium, which could lead to a worse prognosis and increased mortality. However, a Cochrane review was published in 2014 suggesting no differences between the two anesthesia techniques for the majority of outcomes. The authors also concluded that the number of patients included is insufficient to draw a final conclusion between the two techniques.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 April 2022 and was last updated on 25 April 2022 (registration number INPLASY202240146).

INTRODUCTION

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which commonly undergoes regional neuraxial anesthesia or general anesthesia. Although researchers have discussed the option of anesthesia method over 40 years for the patients with hip fractures, there is still no definite conclusion. A population-based cohort study showed general anesthesia may be associated with higher risk of postoperative delirium, which could

lead to a worse prognosis and increased mortality. However, a Cochrane review was published in 2014 suggesting no differences between the two anesthesia techniques for the majority of outcomes. The authors also concluded that the number of patients included is insufficient to draw a final conclusion between the two techniques.

METHODS

Participant or population: Adults with hip fractures undergoing surgical treatment

Intervention: Regional neuraxial anesthesia.

Comparator: General anesthesia.

Study designs to be included: randomized controlled trials.

Eligibility criteria: (1) randomized controlled trials (RCTs) irrespective of publication date, sample size, or language; (2) RCTs enrolling adults with hip fracture undergoing surgical treatment; (3) trials comparing regional neuraxial anesthesia with general anesthesia; and (4) trials providing data regarding any of the prespecified primary and secondary outcomes.

Information sources: Cochrane library, Pubmed, and Embase databases.

Main outcome(s): Delirium and all-cause mortality.

Additional outcome(s): Secondary outcomes were other adverse events including cerebrovascular accident, myocardial infarction, congestive cardiac failure, acute kidney injury, pulmonary embolism, pneumonia, deep vein thrombosis, and urine retention.

Quality assessment / Risk of bias analysis: Cochrane risk of bias tool.

Strategy of data synthesis: We will perform meta-analyses using Review Manager 5.4 and pool data for each outcome in meta-

analyses. Random effect models will be used for all results. Both risk ratios (RRs) and absolute risk differences (ARDs) with their 95% CI are reported.

Subgroup analysis: We will perform predefined subgroup analyses for primary outcomes based on fracture type, surgical method, and trial quality.

Sensitivity analysis: We will do sensitivity analysis by excluding low quality trials, studies recruiting patients with particular conditions, or studies with different characteristics from other studies.

Language: No limitation.

Country(ies) involved: China.

Keywords: regional anesthesia; general anesthesia; hip fracture.

Contributions of each author:

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