INPLASY PROTOCOL

To cite: Xu et al. Risk factors of postoperative delirium in elderly patients following hip replacement：a Meta analysis. Inplasy protocol 202340106. doi: 10.37766/inplasy2023.4.0106

Received: 28 April 2023

Published: 28 April 2023

Corresponding author:
Donge Xu

xu6510@163.com

Author Affiliation:
Zhejiang Chinese Medical University.

Support: **Without.**

Review Stage at time of this submission: **Preliminary searches.**

Conflicts of interest:
None declared.

Risk factors of postoperative delirium in elderly patients following hip replacement：a Meta analysis

Xu, JL[1]; Xu, JY[2]; Xu, DE[3].

Review question / Objective: **The purpose of this study is to confirm the risk factors for postoperative delirium in elderly patients undergoing hip replacement surgery through meta-analysis.**
Condition being studied: **Due to weakened physical functions, osteoporosis, and increased bone fragility in the elderly, the incidence of hip diseases such as hip fractures, osteoarthritis, and osteonecrosis has increased; With the increasing aging population, the number of elderly patients with hip diseases will sharply increase in the future, bringing a great burden to the country and society. Hip replacement surgery is currently one of the main methods for treating hip diseases in clinical practice, which can effectively alleviate pain and reconstruct the patient's hip joint mobility function. Postoperative delirium is a common acute central nervous system syndrome in elderly postoperative patients, often occurring within one week after surgery. It is an acute, fluctuating, and reversible change in mental state, and patients may experience symptoms such as cognitive dysfunction, disturbance of consciousness level, lack of concentration, and sleep awakening cycle disorders. Once it occurs, it can lead to a series of problems such as prolonged postoperative recovery time, increased risk of complications, and increased mortality rate.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 28 April 2023 and was last updated on 28 April 2023 (registration number INPLASY202340106).

INTRODUCTION

Review question / Objective: **The purpose of this study is to confirm the risk factors for postoperative delirium in elderly patients undergoing hip replacement surgery through meta-analysis.**

Condition being studied: **Due to weakened physical functions, osteoporosis, and increased bone fragility in the elderly, the incidence of hip diseases such as hip fractures, osteoarthritis, and osteonecrosis has increased; With the increasing aging population, the number of elderly patients with hip diseases will sharply increase in the future, bringing a great burden to the**

country and society. Hip replacement surgery is currently one of the main methods for treating hip diseases in clinical practice, which can effectively alleviate pain and reconstruct the patient's hip joint mobility function. Postoperative delirium is a common acute central nervous system syndrome in elderly postoperative patients, often occurring within one week after surgery. It is an acute, fluctuating, and reversible change in mental state, and patients may experience symptoms such as cognitive dysfunction, disturbance of consciousness level, lack of concentration, and sleep awakening cycle disorders. Once it occurs, it can lead to a series of problems such as prolonged postoperative recovery time, increased risk of complications, and increased mortality rate.

METHODS

Participant or population: Elderly patients over 60 years old who experience postoperative delirium after hip replacement surgery.

Intervention: No intervention.

Comparator: No comparator.

Study designs to be included: Case control study or cohort study or cross-sectional study.

Eligibility criteria: There are clear delirium assessment tools included in the included studies.

Information sources: CNKI, Wan fang, VIP, Sinomed, PubMed, Web of Science, Cochrane Library, Embase.

Main outcome(s): Using review manager software to conduct a meta-analysis of the same risk factors included in the study, identify the risk factors for postoperative delirium in elderly patients undergoing hip replacement surgery, and analyze the causes of postoperative delirium.

Quality assessment / Risk of bias analysis: The cohort study and case control study used the Newcastle Ottawa Scale. The cross-sectional study used evaluation criteria recommended by Agency for Healthcare Research and Quality.

Strategy of data synthesis: Meta analysis was conducted using Revman software. The heterogeneity test was conducted by combining the effects. If the heterogeneity is less than 50% and $P \geq 0.05$, it indicates that there is no significant heterogeneity between the studies. A fixed effects model was used for meta-analysis; If heterogeneity is ≥ 50%, $P<0.05$, it indicates significant heterogeneity between studies, and a random effects model is used for meta-analysis.

Subgroup analysis: Group the included original studies according to a certain factor, and then calculate the combined effects within each group. Observe whether there is a statistically significant difference in the combined effects between each subgroup.

Sensitivity analysis: Conduct sensitivity analysis on risk factors with high heterogeneity, identify the sources of heterogeneity, and eliminate them. After exclusion, merge analysis will be conducted to compare the merged effect before exclusion and explore the impact of the research on the merged effect.

Country(ies) involved: China.

Keywords: Aged; Hip Arthroplasty; Postoperative Delirium; Risk Factos; Meta analysis.

Contributions of each author:

Author 1 - Jia ling Xu.
Email: xjl1339327@163.com
Author 2 - Jia yuan Xu.
Author 3 - Dong e Xu.