INPLASY PROTOCOL

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The authors have no conflicts of interest to disclose.

Efficacy and safety of Mechanical Thrombectomy for Cardioembolic Stroke: A protocol for systematic review and meta-analysis

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Review question / Objective: **To evaluate the efficacy and safety of Mechanical Thrombectomy for Cardioembolic Stroke.**
Condition being studied: **Several randomized clinical trials have demonstrated the safety and efficiency of mechanical thrombectomy(MT) in the management of acute ischaemic stroke(AIS) caused by larger vessel occlusion. According to the trial of Org 10172 in Acute Stroke Treatment(TOAST) classification, AIS can be divided into cardioembolic(CE) and non-cardioembolic(NCE). Previous studies have shown that MT in CE stroke with intracranial large artery occlusion has a poor prognosis. The reason may be that the old emboli are hard, making it difficult to remove. However, recent evidence shows that MT is also effective and safe in patients with CE stroke. Therefore, our goal is to conduct a meta-analysis of published studies to evaluate the efficacy and safety of Mechanical Thrombectomy for Cardioembolic Stroke.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 06 December 2020 and was last updated on 06 December 2020 (registration number INPLASY2020120035).

INTRODUCTION

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METHODS

Search strategy: The electronic database, including PubMed, Cochrane Library, EMBASE, the China National Knowledge Infrastructure(CNKI), China Biology Medicine disc(CBM), VIP database and Wangfang database, were thoroughly retrieved from inception to December 1st, 2021, without language restrictions.

Participant or population: Patients include those diagnosed with cardiogenic stroke, regardless of gender, age, nationality or race.

Intervention: Mechanical thrombectomy, or mechanical thrombectomy combine with other conventional treatments.

Comparator: The control group were patients with cardiogenic stroke who were treated with intravenous thrombolysis or intravascular interventional therapy other than mechanical thrombectomy. The control group were patients with cardiogenic stroke who were treated with intravenous thrombolysis or intravascular interventional therapy other than mechanical thrombectomy.

Study designs to be included: All randomized controlled trials (RCTs) that evaluated the efficacy and safety of MT in the treatment of CE stroke will be included.

Eligibility criteria: Mechanical thrombectomy, or mechanical thrombectomy combine with other conventional treatments.while other therapy was used as the intervention measures in the control group. Outcome measures: the vascular recanalization rate, the rate of incidence of adverse events, the rate of mortality within 90 days, preoperative and postoperative 7 days NIHSS score, postoperative 90 days mRS score.Mechanical thrombectomy, or mechanical thrombectomy combine with other conventional treatments.while other therapy was used as the intervention measures in the control group. Outcome measures: the vascular recanalization rate, the rate of incidence of adverse events, the rate of mortality within 90 days, preoperative and postoperative 7 days NIHSS score, postoperative 90 days mRS score.

Information sources: We will use computers to retrieve all RCTs of MT on PubMed, Cochrane Library, EMBASE, CNKI, Wanfang, CBM and VIP databases. At the same time, we will supplement it by searching relevant literature manually.

Main outcome(s): The vascular recanalization rate, the rate of incidence of adverse events, the rate of mortality within 90 days, preoperative and postoperative 7 days NIHSS score, postoperative 90 days mRS score.

Quality assessment / Risk of bias analysis: To assess the risk of bias for all included studies, Cochrane Collaboration's bias risk tool will be used by two independent review authors to assess the following areas: random sequence generation, allocation concealment, blindness to participants, people, and results, incomplete outcome data, optional reporting, and other biases. Any discrepancies in the deviation risk assessment will be resolved through discussion. Ultimately, the quality of the studies will be divided into three levels: low risk of bias, high risk of bias, and unclear risk of bias.

Strategy of data synthesis: Strategy of data synthesis: All analyses will be conducted by using RevMan software(V5.4), We will select fixed effects model or random effects model to merge the outcome indicators in accordance with the results of heterogeneity test. The fixed effects model will be applied for data synthesis of low heterogeneity (I2＜50%) while the random effects model will be conducted if the heterogeneity is significant (I2≥50%). It is considered that differences are statistically significant if the results of Z test show that P value is less than 0.05, and the 95% CI does not contain 0 (for continuous variables) or the 95% CI does not contain 1 (for dichotomous variables).

Subgroup analysis: We will perform the following subgroup analyses if included data are highly heterogeneous: by age, sex, sample size, type of interventional stents, highly heterogeneous.

Sensibility analysis: If the heterogeneity of the included literature is significant, in order to ensure the credibility of there search results, we will conduct sensitivity analysis by excluding each included study separately, so as to improve the research quality.

Language: Chinese and English.

Country(ies) involved: China.

Keywords: Mechanical Thrombectomy, Cardioembolic Stroke, meta analysis, systematic review, protocol.

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