INPLASY PROTOCOL

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Review Stage at time of this submission: **The review has not yet started.**

Conflicts of interest:
None.

Efficacy and Safety of Acupuncture for Posterior Circulation Ischemic Vertigo: A protocol for systematic review and meta-analysis

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Review question / Objective: **The aim of this meta-analysis of randomized controlled trials is to evaluate the efficacy and safety of acupuncture for Posterior Circulation Ischemic Vertigo.**
Condition being studied: **Stroke is the leading cause of death allover the world, and posterior circulation infarct takes account of 20% in ischemic stroke, leaving plenty of disabled stroke survivors that increases the burden of society. Vertigo is the most complaint symptom of posterior circulation ischemic and is also a sign of posterior circulation condition. Posterior circulation ischemic vertigo (PCIV) with high recurrence and will deteriorate. Acupuncture has been practiced for more than 2000 years and is experienced in treating vertigo. Several studies have showed that acupuncture is safe and has therapeutic effect for PCIV. Through improving cerebral blood flow and enhancing cerebral blood perfusion, acupuncture can release vertigo and reduce recurrence.In 1979, the World Health Organization (WHO) recommended it as an alternative and complementary strategy for stroke treatment and rehabilitation, providing an opportunity for stroke patients.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 26 July 2020 and was last updated on 26 July 2020 (registration number INPLASY202070116).

INTRODUCTION

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METHODS

Search strategy: We will search articles in the following electronic databases: PubMed, EMBASE, Cochrane Library, Web of Science, the Chinese Biomedical Literature Database (CBM), the Chinese National Knowledge Infrastructure (CNKI), and the Wan-fang databases for inclusion on 29 August 2020 with MeSH terms and key words, and without language restrictions. Search strategy terms will be (acupuncture OR electroacupuncture) AND (Posterior Circulation Ischemic OR posterior circulation stroke OR Posterior circulation infarct) AND (vertigo) AND (randomized controlled trial OR controlled clinical trial OR randomized OR clinical trials).

Participant or population: Patients that clinically diagnosed with PCIV will be included. According to the diagnostic criteria for PCIV of WHO, patients must experience dizziness or vertigo that may be accompanied with neurological deficiency. The imaging evidence of POCI or Transcranial Doppler (TCD) that indicates vertebrobasilar insufficiency is needed. There will be no restrictions based on gender, age, race, and the course of the disease.

Intervention: For experimental group, trials that use acupuncture therapy with or without conventional treatment or pharmacotherapy will be included; and acupuncture therapy involves: Manual acupuncture (MA), electroacupuncture (EA), fire acupuncture (FA), warm acupuncture (WA) and scalp acupuncture(SA).

Comparator: For the corresponding control group, interventions could be placebo or waiting list control, sham-acupuncture, conventional treatment or pharmacotherapy that consists with experimental group. Control group that uses acupuncture therapy will be excluded.

Study designs to be included: Randomized controlled trials (RCTs) that related to PCIV will be included irrespective of blinding, publication status or language.

Eligibility criteria: Patients that clinically diagnosed with PCIV; Randomized controlled trials (RCTs) that use acupuncture therapy with or without conventional treatment or pharmacotherapy.

Information sources: We will search articles in the following electronic databases: PubMed, EMBASE, Cochrane Library, Web of Science, the Chinese Biomedical Literature Database (CBM), the Chinese National Knowledge Infrastructure (CNKI), and the Wan-fang databases and Chinese Scientific Journal Database (VIP) from inception to August 2020 with MeSH terms and key words, and without language restrictions. References and conference literature will be searched manually to identify potential relevant studies. ClinicalTrials.gov and the International Clinical Trial Registry Platform will also be searched for completed and ongoing trials.

Main outcome(s): The primary outcome will include: (1) Change of PCIV symptoms as well as the associated symptoms evaluated by different instrument including Dizziness Handicap Inventory (DHI), Vertigo Symptom Scale (VSS), University of California at Los Angeles dizziness questionnaire (UCLA-DQ) and Vertigo Symptom Scale of TCM; (2) Change of mean blood flow velocity (Vm),

resistance index (RI) and pulsatility index (PI) of bilateral vertebral arteries (VA) and basilar artery (BA) tested by TCD. Measurement times are before the first intervention and after the last intervention.

Additional outcome(s): Barthel Index (BI), National Institute of Health stroke scale (NIHSS), clinical effectiveness and adverse reactions.

Data management: Noteexpress software will be used for data management.

Quality assessment / Risk of bias analysis: Two reviewers will use the updated Cochrane Risk of Bias Tool to assess the bias risk of the included trials. Any disagreement will be resolved by discussion or by consulting a third reviewers until consensus is reached. Each trial will be scored as high, low, or unclear risk for the following 7 domains: (1) random sequence generation (selection bias); (2) allocation concealment (selection bias); (3) blinding of participants and personnel (performance bias); (4) blinding of outcome assessment (detection bias); (5) incomplete outcome data (attrition bias); (6) selective reporting (reporting bias); and (7) any other bias. And we will use Grading of Recommendations Assessment, Development and Evaluation (GRADE) guidelines to assess the included evidence quality for primary outcomes.

Strategy of data synthesis: We will conduct heterogeneity analysis between trials using Revman software, with χ^2 test and I^2. For dichotomous variables, For continuous variables, if significant heterogeneity is found ($P<0.05$, $I^2>50\%$), random-effects model will be conducted for data synthesis, otherwise fixed-effects model will be used. For dichotomous variables, we will use random-effects model if the P value is less than 0.05.

Subgroup analysis: Subgroup analysis will be conducted for heterogeneity arising from interventions (MA, EA, FA, WA and SA), control type (placebo or waiting list control, sham-acupuncture, conventional treatment or pharmacotherapy), treatment duration, acupoints and outcome indicators.

Sensibility analysis: Sensitivity analysis will be conducted in primary outcomes to test the result homogeneity. We will perform meta-analysis again after eliminate studies in low quality and use different statistical methods.

Language: No restriction.

Country(ies) involved: China.

Keywords: Acupuncture; Posterior circulation ischemia; Vertigo; Blood flow velocity; Meta-analysis; systematic review.

Dissemination plans: We will publish the results in a peer-reviewed journal.

Contributions of each author:
Author 1 - Boxuan Li - Boxuan Li drafted the manuscript and did statistical work.
Author 2 - Yuzheng Du - Yuzheng Du gave the conception and reviewed the manuscript.
Author 3 - Chen Li - Chen Li provided feedback for the manuscript and do the supervision work.
Author 4 - Xianggang Meng - Xianggang Meng contributed to the development of the selection criteria, and the risk of bias assessment strategy.