

# INPLASY PROTOCOL

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Authors have no conflict of interest to declare.

## Different acupuncture therapies for spastic paralysis after stroke: A protocol for systematic review and network meta-analysis

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**Review question / Objective:** To perform a network meta-analysis of four commonly used acupuncture therapies (electroacupuncture, fire acupuncture, warm acupuncture and filiform needle acupuncture) for the treatment of spastic paralysis after stroke.

**Condition being studied:** A number of randomized controlled trials have reported that acupuncture has a curative effect on spasticity after stroke, but due to the variety of acupuncture and the advantages of various acupuncture treatments, the choice of clinical operators has bothered.

**Information sources:** A computer-based retrieval was conducted at CNKI, WANFANG, VIP, SinoMed, PubMed, Embase, Web of science and the Cochrane library. The search period limit is from the time the date of database establishment to April 17, 2020.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 May 2020 and was last updated on 14 May 2020 (registration number INPLASY202050058).

### INTRODUCTION

**Review question / Objective:** To perform a network meta-analysis of four commonly used acupuncture therapies (electroacupuncture, fire acupuncture,

warm acupuncture and filiform needle acupuncture) for the treatment of spastic paralysis after stroke.

**Condition being studied:** A number of randomized controlled trials have reported

that acupuncture has a curative effect on spasticity after stroke, but due to the variety of acupuncture and the advantages of various acupuncture treatments, the choice of clinical operators has bothered.

## METHODS

**Participant or population:** All patients were diagnosed as spastic paralysis.

**Intervention:** The experimental group only use electroacupuncture, fire acupuncture, warm acupuncture, or filiform needle acupuncture, and the control group is rehabilitation or a comparison of the above four acupuncture methods. Patients in both groups could receive conventional medical treatment.

**Comparator:** Rehabilitation, or comparison of 4 acupuncture methods.

**Study designs to be included:** Randomized controlled trials will be included and no restrictions on language.

**Eligibility criteria:** Non-RCT such as systematic reviews, reviews, etc., interventions do not meet the inclusion requirements, repeated publication of the literature, literature and animal experiments where data or full text cannot be obtained.

**Information sources:** A computer-based retrieval was conducted at CNKI, WANFANG, VIP, SinoMed, PubMed, Embase, Web of science and the Cochrane library. The search period limit is from the time the date of database establishment to April 17, 2020.

**Main outcome(s):** The primary outcomes include the Fugl-Meyer Assessment score, the modified Ashworth scale for the assessment of spasticity, and Barthel Index.

**Additional outcome(s):** Clinical effectiveness and adverse reactions.

**Quality assessment / Risk of bias analysis:** The risk of bias in the final included studies

will be evaluated based on the guidelines of the Cochrane Handbook for Systematic Reviews of Interventions. This work will also be done independently by 2 reviewers. When included in study  $\geq 10$ , funnel plots should be drawn to test publication bias and small sample effects.

**Strategy of data synthesis:** Revman 5.3 software is used for bias evaluation and traditional Meta-analysis, ratio data (OR) is used for data count, and continuous data using mean difference (MD). The heterogeneity between trials is quantified with the I<sup>2</sup> and P values. For studies with obvious heterogeneity, the source of heterogeneity should be analyzed. If no clear source of heterogeneity can be found, only descriptive analysis can be performed. WinBUGS 1.4.3 and Stata 14.2 are used for network meta-analysis. In the WinBUGS software, Bayesian grid element analysis is performed by the Markov Chain Monte Carlo (MCMC) method, which is simulated by 4 chains, the number of iterations is set to 50,000, and the step size is set to 10. At the same time, the potential scale-down parameters (potential scale-down factor, PSRF) are used to evaluate the convergence of the results. When  $1.00 \leq \text{PSRF} \leq 1.05$ , it indicates that the results converge well and the results obtained are highly reliable. Because of the large number of interventions involved in this study, the Loop inconsistency test of studies with direct and indirect evidence is needed in the evidence network for each outcome indicator. Calculate the inconsistency factor (IF), and judge whether there is inconsistency according to the size of IF value and P-value. If close to 0, the 95% confidence interval (CI) starts at 0, and  $P > 0.05$ , the results of direct comparison and indirect comparison are considered consistent. At the same time, the node split model is used to judge whether each node has local inconsistency. If  $P > 0.05$ , there is no significant inconsistency. If there is no significant inconsistency, a consistency model is used. As for the results obtained from the consistency model analysis, the stability of the results can be tested by the

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inconsistent model. At the same time, the SUCRA (the surface under the cumulative ranking curve) value and the area under the SUCRA curve are calculated to rank the effectiveness of various interventions. The SUCRA values range from 0 to 100. The larger the value and area under the curve, the intervention is considered to have better efficacy.

**Subgroup analysis:** We will explore whether treatment effects for our primary outcomes are robust in subgroup analyses using the following characteristics: sex, age, race, nationality etc.

**Sensibility analysis:** We will conduct a sensitivity analysis to determine the relative weight of constituent studies on the overall point estimate of our review outcome.

**Country(ies) involved:** China.

**Keywords:** stroke; spastic paralysis; acupuncture; network meta-analysis.

**Contributions of each author:**

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