INPLASY PROTOCOL

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The authors declare no conflicts of interest.

Effects of motor imagery training for upper extremity motor function in patients with stroke of the middle recovery period : A protocol for systematic review and meta-analysis

Jiang, L[1]; Zhao, L[2]; Qi, R[3]; Wang, T[4]; Cong, W[5].

Review question / Objective: **The aim of this review is to evaluate the effect of motor imagery training for upper extremity motor function in patients with stroke of the middle recovery period.**
Condition being studied: **Stroke often leaves behind different types of dysfunction, of which motor dysfunction has the most prominent influence, which restricts the daily activities of patients with stroke.Motor imagery training can positively improve the motor function of the upper limbs after stroke and help them to rejoin the society.**
Information sources: **We will search articles in nine electronic databases including: CNKI, Wanfang, VIP, CBM, PubMed, Embase and Cochrane Library, Web of Science, ClinicalTrials databases. We will also check reference lists of all identified relevant studies and reviews carefully. These articles also include the studies on the effect of motor imagery training for upper extremity motor function in patients with stroke. These additional researches obtained from references may help us to capture eligible studies as comprehensively as possible.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 October 2020 and was last updated on 21 October 2020 (registration number INPLASY2020100078).

INTRODUCTION

Review question / Objective: **The aim of this review is to evaluate the effect of motor imagery training for upper extremity motor function in patients with stroke of the middle recovery period.**

Condition being studied: **Stroke often leaves behind different types of dysfunction, of which motor dysfunction has the most prominent influence, which restricts the daily activities of patients with stroke.Motor imagery training can positively improve the motor function of the**

upper limbs after stroke and help them to rejoin the society.

METHODS

Participant or population: Patients with stroke of the middle recovery period.

Intervention: Motor imagery training combined with conventional rehabilitation therapy.

Comparator: Conventional rehabilitation therapy.

Study designs to be included: RCTs.

Eligibility criteria: We will include adults (over 18 years old) suffering from physical dysfunction after a first or recurrent stroke, and its course in the middle stage of stroke recovery .We also consider RCTs in which a prior history of motor dysfunction before the stroke diagnosis is not investigated but excluded trials reporting on patients with a history of constipation before the stroke diagnosis. Stroke is defined as 'rapidly developed signs of focal or global disturbance of cerebral function, lasting more than 24 hours or leading to death with no apparent cause other than that of vascular origin, according to WHO criteria. We will include patients with stroke irrespective of any type (ischaemic or haemorrhagic) or phase (acute, subacute or chronic). Acute and subacute stroke is defined as less than 6 months since onset, and chronic stroke lasts more than 6 months since onset.

Information sources: We will search articles in nine electronic databases including: CNKI, Wanfang, VIP, CBM, PubMed, Embase and Cochrane Library, Web of Science, ClinicalTrials databases. We will also check reference lists of all identified relevant studies and reviews carefully. These articles also include the studies on the effect of motor imagery training for upper extremity motor function in patients with stroke. These additional researches obtained from references may help us to capture eligible studies as comprehensively as possible.

Main outcome(s): The primary outcome is FMA-UE (Fugl-Meyer assessment scale-Upper extremity)

Additional outcome(s): Secondary outcome measures include MBI (modified Barthel index), ARAT (action research arm test).

Data management: (1) EndNote X9 and Excel software will be used to extract data. At the same time, the data will be synthesized and stored in Excel chart. (2)Two researchers (Linhong Jiang, Lijuan Zhao) will independently assess abstracts and titles of studies identified by literature search from the electronic databases. Full texts screening and data extraction will be conducted afterwards independently. Any disagreement will be resolved by discussion until consensus is reached or by consulting a third author (Rui Qi). In this step, we will use EndNote.(3) The following data will be extracted: author, year of publication, interventions of experimental groups and control groups, time point, outcome measures, age of patients, total number of people included in the study, patients' basic information, etc. Two researchers (Linhong Jiang, Lijuan Zhao) will separately extract data. Any disagreement regarding data extraction will be will be resolved by discussion until consensus is reached or by consulting a third author (Rui Qi). In this step, we will use Excel.

Quality assessment / Risk of bias analysis: The Cochrane risk of bias tool will be used to evaluate the risk of bias of the included RCTs by two independent reviewers (Tingting Wang and Weiqin Cong. According to the performance of the included literature in the above evaluation items, two researchers will give judgments like low risk, unclear or high-risk judgments one by one, and cross-check after completion, respectively. In case of any disagreement, a discussion will be carried out. If no agreement can be reached between the two researchers, a discussion will be made with the researchers in the third researcher (Rui Qi).

Strategy of data synthesis: In this study, statistical analysis will be conducted using RevMan 5.3 software. The continuous data will use mean difference (MD) as the effect indicator with 95% confidence interval, and dichotomous data will be calculated as risk ratio (RR) or odds ratio (OR) as the effect index with 95% confidence interval. We will assess the statistical heterogeneity. In addition, We will use the fixed-effect model to consolidate evidence when statistical heterogeneity is low. On the contrary, the random-effect model will be used to provide a more conservative estimate of effect. Potential clinical heterogeneity will be assessed by prespecified subgroup analyses.

Subgroup analysis: In this study, we will consider subgroups analysis according to the size of heterogeneity of each outcome measure. 18.Sensibility analysis: We will also check the robustness of pooled results through excluding eligible studies with high risk of bias.

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Language: English and Chinese.

Country(ies) involved: China.

Keywords: Motor imagery training, lower extremity motor function, stroke, systematic review, meta-analysis.

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Author 4 - Tingting Wang.
Author 5 - Weiqin Cong.