INPLASY PROTOCOL

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None declared.

Efficacy and safety of mirror neuron rehabilitation therapy for post-stroke aphasia: a systematic review and meta-analysis

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Review question / Objective: **Systematic evaluation of the effectiveness and safety of mirror neuron rehabilitation therapy compared with conventional rehabilitation and western medicine in the treatment of post-stroke aphasia.**
Condition being studied: **Motor aphasia is a common type of aphasia in which patients have difficulty naming, spontaneously producing fluent speech, and repeating information, even though their auditory comprehension is largely intact. This motor aphasia is usually caused by damage to the anterior language area of the left hemisphere of the brain. Between one-third and one-half of these patients continue to have language dysfunction 6 months after the stroke. Motor aphasia can adversely affect quality of life, quality of work, communication skills, and lead to a higher incidence of depression in patients.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 April 2023 and was last updated on 17 April 2023 (registration number INPLASY202340054).

INTRODUCTION

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METHODS

Participant or population: Patients with post-stroke aphasia.

Intervention: Mirror neuron rehabilitation therapy.

Comparator: Routine rehabilitation training , Western medicine.

Study designs to be included: Randomized controlled trials (RCTS) evaluating the efficacy and safety of mirror therapy will be included.

Eligibility criteria: Subjects: Patients with post-stroke aphasia, age and sex were not restricted.Intervention measures: Mirror neuron rehabilitation therapy, such as mirror therapy, motion observation, motor imagination.The control group was treated with conventional language rehabilitation, and western medicine.Outcome measures: Western Aphasia Battery (WAB), the Boston Diagnostic Aphasia Examination(BDAE), Aphasia Quotient（AQ）, China rehabilitation research center aphasia examination（CRRCAE）.

Information sources: Pubmed, Embase, Cochrane Library, Chinese Biomedical Literatures Database(CBM), China National Knowledge Infrastructure (CNKI) , WangFang Database (WF), Chinese Scientific Journal Database (VIP).

Main outcome(s): Western Aphasia Battery (WAB), Aphasia Quotient (AQ).

Additional outcome(s): The Boston Diagnostic Aphasia Examination (BDAE), China rehabilitation research center aphasia examination (CRRCAE).

Quality assessment / Risk of bias analysis: According to the improved Jadad scoring scale, the quality of the included literature was evaluated. 1-3 were classified as low quality and 4-7 as high quality. Risk of bias(quality) assessment - Included randomised studies will be assessed for risk of bias by two independent raters(LK/ZXH) using the Cochrane Collaboration's tool for assessing risk of bias in randomised trials. Any disagreements will be resolved through discussion or consultation with a third reviewer(XJ).

Strategy of data synthesis: RevMan 5.4 software (Cochrane Collaboration) was used for the meta-analysis. Dichotomous data were reported as risk ratio (RR) with 95% confidence intervals (CI), while continuous data were reported as standardized mean difference (SMD) with 95% CIs. The Higgins I^2 test was used to test heterogeneity with a significance level set at 50%. If heterogeneity was not significant ($I^2 \leq 50\%$), the fixed effects model was used for meta-analysis. Otherwise, the random effects model was used ($I^2 \geq 50\%$). If possible, we investigated the potential explanations for heterogeneity and conducted subgroup analysis.

Subgroup analysis: If the necessary data are available, subgroup analysis will be carried out according to different factors as follows: 1. Control interventions (eg, sham mirror neuron rehabilitation therapy, Speech Rehabilitation Training, 2.Outcome indicators (eg, Western Aphasia Battery (WAB), Aphasia Quotient（AQ）, the Boston Diagnostic Aphasia Examination (BDAE), China rehabilitation research center aphasia examination, (CRRCAE). We will perform subgroup analysis based on vario) us study characteristics and sample size, such as study type, study quality, adjustment (or not) for confounders.

Sensitivity analysis: Sensibility analysis: To assess the influence of each individual study, leave-one-out sensitivity analysis was performed iteratively by removing one study at a time to confirm that the findings were not influenced by any single study.

Country(ies) involved: China.

Keywords: stroke, mirror neuron , meta-analysis , aphasia.

Contributions of each author:

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