INPLASY

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To evaluate the effects of transcranial direct current stimulation in patients with aphasia after stroke by network Meta-analysis

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ADMINISTRATIVE INFORMATION

Support - 21377748D.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 28 May 2024 and was last updated on 28 May 2024.

INTRODUCTION

*R*eview question / Objective System evaluation of anode, cathode, bipolar three transcranial direct current stimulation on the language function of patients with aphasia after stroke, provide reference for patients to choose the best way to stimulate, choice of research methods for RCT experimentTo systematically evaluate the effects of anodal, cathodal and bipolar transcranial direct current stimulation on language function in patients with aphasia after stroke, so as to provide a reference for patients to choose the best stimulation method.

Condition being studied Stroke is a major chronic non-communicable disease that seriously endanges the health of Chinese people, and is the leading cause of adult death and disability in China. It has the five characteristics of high incidence, high disability rate, high mortality rate, high recurrence rate and high economic burden. Aphasia is very common in patients with cerebrovascular disease. Transcranial direct current stimulation (tDCS) is a non-invasive neuromodulation tool with anodal stimulation, cathodal stimulation, and bipolar stimulation, which can be used to affect cortical brain activity to induce measurable behavioral changes. Despite a growing body of evidence suggests that tDCS joint language therapy can promote language recovery of patients with aphasia after stroke, but what kind of stimulation on aphasia after stroke function recovery effect best, there is no unified conclusion.

METHODS

Participant or population Subjects had post-stroke aphasia without further severe disease diagnosed with WHO criteria using appropriate radiological methods.

Intervention Anode transcranial direct current stimulation, cathode transcranial direct current stimulation, bipolar transcranial direct current stimulation.

Comparator Placebo, sham stimulation, or no intervention.

Study designs to be included A study was included if was an RCT.

Eligibility criteria 1.Repeat published research; 2.Non-Chinese and English studies; 3.Randomized crossover trial; 4.studies without full text or incomplete data; 5.the study of transcranial direct current stimulation mode was not clearly reported; 6.Studies that could not be extracted or converted to mean/standard deviation even after contacting the authors.

Information sources PubMed, EMbase, The Cochrane Library, Web of Science, CNKI, CBM, WanFang Data and VIP databases were searched by computer to collect RCT studies on transcranial direct current stimulation in the treatment of aphasia after stroke. The search time limit was from the establishment of the database to April 9, 2024. Retrieve the word the way of combining subject and freedom and adjusting for the characteristic database.

Main outcome(s) 1.Picture naming training; 2.The Western aphasia battery (WAB) included spontaneous speech, naming, listening comprehension and repetition, and aphasia quotient (AQ).

Quality assessment / Risk of bias analysis The Cochrane risk of bias tool was used to assess bias in each study included by the two reviewers. Risk of bias domains included random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective reporting, and other bias. The risk of bias in each domain was rated as "low," "high," or "unclear." Disagreements were resolved via consultation with the third reviewer.

Strategy of data synthesis The relevant code was input through the gemtc package of R software, and the Bayesian Markov chain-Monte Carlo algorithm was called for network analysis and mapping. The outcome indicators were continuous variables, and the mean difference (MD) was used as the effect size indicator, and its 95% confidence interval (CI) was provided. Mean difference (MD) and 95% confidence interval (CI) were used to analyze the continuous variables in the outcome indicators. P 0.05, consistency model is adopted to analysis; Otherwise, the inconsistency model was used. The effects of three movement modes were ranked by the best probability ranking map.

Subgroup analysis Subgroup network meta-analyses, according to mean age, male ratio, duration of treatment and country, will be further analyzed for primary outcomes.

Sensitivity analysis Comparison-corrected funnel plots were used to test publication bias and small sample effects.

Country(ies) involved China.

Keywords Stroke;transcranial direct current stimulation ; Aphasia; Speech dysfunction; Network Meta-analysis.

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