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Theta burst stimulation effectively improves post-stroke aphasia: a systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

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 February 2025 and was last updated on 28 February 2025.

INTRODUCTION

Review question / Objective P:Stroke patient I: theta burst stimulation (TBS); C: Control group received sham treatment or no TBS; O: Measurement of aphasia; S: RCT. The aim is to summarize the current effectiveness of TBS in the treatment of post-stroke aphasia dysfunction.

Condition being studied Post-stroke aphasia (PSA) is a common disabling sequela of stroke, and existing speech therapies have limitations, such as inefficiency and high cost. Theta burst stimulation (TBS), a novel non-invasive brain stimulation technique, previous studies have also found its potential in the treatment of aphasia.

METHODS

Participant or population Post-stroke aphasia patients.

Intervention Theta burst stimulation.

Comparator Comparator: Control group received sham treatment or no TBS.

Study designs to be included Randomized controlled trials.

Eligibility criteria Exclusion criteria. (1) Non-randomized controlled trials (non-RCTs), including observational studies, case reports, or studies that did not strictly meet the inclusion criteria; (2) Incomplete study reports, such as conference abstracts, study protocols, unpublished data, or duplicate publications.

Information sources PubMed, Web of Science, Embase, China National Knowledge Infrastructure (CNKI), Chinese scientific journals full-text database (VIP), and Wanfang database.

Main outcome(s) Efficacy of TBS for post-stroke aphasia.

Quality assessment / Risk of bias analysis PEDro Scale; GRADE.

Strategy of data synthesis Stimulation method, Stimulation site, Stage of stroke, Treatment sessions.

Subgroup analysis Stimulation method, Stimulation site, Stage of stroke, Treatment sessions.

Sensitivity analysis Sensitivity analysis was performed using Stata MP 14.0 software.

Country(ies) involved China; Korea.

Keywords Meta-analysis; post-stroke aphasia; theta burst stimulation; language rehabilitation.

Contributions of each author
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