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The Efficacy and Safety of Therapies for Consciousness Disorders in Patients with Traumatic Brain Injury：An Updated Umbrella Review

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 03 August 2024 and was last updated on 03 August 2024.

INTRODUCTION

Review question / Objective Our objective is to conduct an umbrella review to assess the efficacy and safety of therapies for consciousness disorders in patients with traumatic brain injury.

Condition being studied Traumatic brain injury (TBI) has a high incidence and mortality rate, imposing significant economic and societal burdens. Various effective interventions have been reported to promote recovery from post-TBI consciousness disorders, yet a comprehensive umbrella review of treatment approaches is lacking.

METHODS

Participant or population Consciousness disorders in patients with traumatic brain injury.

Intervention rTMS; tDCS; MNS; Multi-sensory stimulation; RMNS; TNS; Acupuncture; Family-centered sensory and affective stimulation.

Comparator Ordinary treatment and sham stimulation.

Study designs to be included (systematic review or meta-analysis) and clinical trial.

Eligibility criteria Inclusion Criteria：1.All of them are patients with impaired consciousness after brain injury；2.rTMS; tDCS; MNS; Multi-sensory stimulation; RMNS; TNS; Acupuncture; Family-centered sensory and affective stimulation；3.Ordinary treatment and sham stimulation 4.Glasgow Coma Scale (GCS); Coma Recovery Scale-Revised (CRS-R); Glasgow Outcome Scale (GOS) and Efficacy rate; 5.(systematic review or meta-analysis) and clinical trial 6. Language restrictions for Chinese and English；Exclusion

criteria：1.samples overlap with other studies；2. no necessary sample data；3. other Consciousness disorders.

Information sources PubMed, Web of Science, Embase and CNKI.

Main outcome(s) Glasgow Coma Scale (GCS); Coma Recovery Scale-Revised (CRS-R); Glasgow Outcome Scale (GOS) and Efficacy rate.

Quality assessment / Risk of bias analysis AMSTAR 2 tool was used to evaluate the quality of the included articles.

Strategy of data synthesis The sample size and mean difference were used to calculate the four clinical assessment scales. Mean difference or risk ratio with 95% CI and p values were used to assess the efficacy and safety of the study medications.

Subgroup analysis According to the different evaluation time, they were divided into two subgroups, which were evaluated after 4 weeks and 8 weeks of treatment, respectively.

Sensitivity analysis A sensitivity analysis was performed using a random-effects model.

Language restriction Chinese and English.

Country(ies) involved China.

Keywords Traumatic brain injury; Consciousness disorders; rTMS; tDCS; MNS; Multi-sensory stimulation; RMNS; TNS; Acupuncture; Family-centered sensory and affective stimulation; Umbrella review.

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