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A meta-analysis of the effects of repeated transcranial magnetic stimulation on sleep quality and depressive symptoms in patients with depression

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ADMINISTRATIVE INFORMATION

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 October 2023 and was last updated on 17 October 2023.

INTRODUCTION

Review question / Objective Quantitative analysis of international randomized controlled studies on rTMS intervention for sleep quality and depressed mood in depressed patients, focusing on clarifying the effects of relevant stimulation parameters on efficacy and exploring the most effective stimulation parameters, with a view to providing guidance for improving clinical treatment of depressed patients. Depression patients with sleep disorders.

Condition being studied Depression is one of the common affective disorders, and patients are often accompanied by characteristic manifestations such as demoralization, depressed mood, and delayed cognitive functioning , and even self-harm and suicidal tendencies in severe cases. The incidence of depression has been increasing year by year , and it has become an increasingly prominent public health problem , according to the World Health Organization, as of 2018, there are more than 300 million patients with depression globally , depression has become the most common cause of disability, jumped up to the second most common disease after coronary heart disease globally, and it is expected that it will become the first disease in terms of healthcare burden worldwide by 2030.

Sleep disturbance is one of the core features of depressed patients . It has been found that patients with depression have disturbed sleep rhythms, characterized by difficulty in falling asleep, lack of deep sleep, early awakening, and daytime dysfunction, as well as a significant decrease in the expression of core biological clock genes in several brain regions.

METHODS

Participant or population Depression patients with sleep disorders.

Intervention Repeated transcranial magnetic stimulation.

Comparator Blank control or pseudo-stimulation or use of conventional treatment, including medication, rehabilitation, and nursing care.

Study designs to be included Randomized controlled trial.

Eligibility criteria (i) meet the diagnostic criteria for depression in any of the International Classification of Diseases (ICD) and the Diagnostic and Statistical Manual of Mental Disorders (DSM); and (ii) diagnose patients with symptoms of depression based on other validated clinical diagnostic criteria.

Information sources Search literatures in Pubmed,Web of Science, The Cochrance Library, Embase, CNKI, Wanfang medical database, VIP platform databases,Randomized controlled trials of rTMS intervention on sleep disorders and depressive symptoms in patients with depression were collected from the establishment of the database to the public publication on July 10, 2023.

Main outcome(s) Pittsburgh sleep quality index, PSQI.

Additional outcome(s) Hamilton Depression Rating Scale, HAMD.

Quality assessment / Risk of bias analysis Physiotherapy Evidence Database.

Strategy of data synthesis Stata17.

Subgroup analysis Stimulation site, stimulation frequency, stimulation intensity, single treatment time, total number of pulses in a single day, treatment period, condition, disease duration, assessment tools.

Sensitivity analysis In order to investigate whether the heterogeneity among studies was caused by individual studies, the present study conducted a sensitivity analysis on the highly heterogeneous studies of rTMS on sleep quality and depressive symptoms in depressed patients, and analyzed the combined effects by eliminating individual studies one by one.

Country(ies) involved China and America.

Keywords repeated transcranial magnetic stimulation; depression; sleep quality; depressive symptoms; meta-analysis.

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