Project Title

The impact of the number of sessions on response to Repetitive Transcranial Magnetic Stimulation (rTMS) therapy in Major Depressive Disorder (MDD): a naturalistic study in a tertiary psychiatric hospital, Singapore.

Project Lead and Members

Project lead: Ye Si Jia

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Organisation(s) Involved

Institute of Mental Health

Healthcare Family Group(s) Involved in this Project

Allied Health, Medical

Applicable Specialty or Discipline

Clinical Research, Psychiatry, Neurology

Project Period

Start date: June 2018

Completed date: April 2023

Aims

The aim of this paper is to attempt to answer what is the optimal dosage for effective rTMS treatment. A standard course of rTMS in USA is 30 sessions but it is unclear if this applies in Asia. 2 We aimed to compare rTMS response for patients $\leqslant$ 30 versus > 30 sessions in an Asian tertiary psychiatric hospital.

Background

See poster appended/ below

Methods

A naturalistic retrospective study of patients who received rTMS treatment between June 2018 and April 2023 of 53 inpatient and outpatient was conducted. Clinical outcomes were assessed using the clinician-rated Montgomery–Åsberg Depression Rating Scale (MADRS), Clinical Global Impression-Severity (CGI-S), and Self-rated Depression Anxiety and Stress Scale 21 (DASS-21). Patients who achieved a "≥25% MADRS improvement at session 30" were offered additional treatment. The number of rTMS treatment sessions was stratified into "(≤30 sessions)" and "(>30 sessions)" for analysis.

Results

See poster appended/ below

Conclusion

This study demonstrated that rTMS treatment was a rapid-acting, effective, safe, and well-tolerated alternative treatment option for treatment-resistant MDD. Consistent with our hypothesis, rTMS efficacy was dose - dependent. Patients who received an rTMS course of more than 30 sessions are probably more likely to have depressive symptom improvement than those having less than 30 sessions. In comparing our depression clinician reported outcome with similar naturalist studies, the remission rate of 17% was encouraging, comparable to three studies:25.5% (HAM-D) 3 and 28% (HAMD-17), 4 lower than 37.1% (CGI-S). 5 However, the response rate of 20.8% was less robust than most studies that reported response rates of 40% (HAM-D), 3 54% (HAMD-17), 4 and 58.0% (CGI). 5 Our treatment population displayed greater treatment resistance as evidenced by a higher proportion of failing at least 2 antidepressant trials when compared to (Carpenter et al., 2012), (66.2% vs 54%). Higher baseline symptom severity and treatment refractories had been identified as a poor response to rTMS. Further in our study, the proportion of patients receiving

prior ECT was higher than in the Carpenter's sample, (18.6% Vs 5.2%). Galletly etal. (2015) found prior ECT exposure was a significant nonresponse to rTMS. The difference in outcome measurements and varying definitions of treatment response used highlight the need to have a standardized definition of treatment response to facilitate fair comparisons of treatment outcomes across clinics.

Additional Information

See poster appended/ below

Project Category

Applied/ Translational Research

Quantitative Research

Care & Process Redesign

Quality Improvement, Clinical Practice Improvement, Value Based Care, Safe Care

Keywords

Major depressive Disorder, Stimulation therapy, Mental Health, Neuromodulation

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