Title: Optimizing RUL rTMS Protocols – Is More Treatment Better?

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Background
Repetitive Transcranial Magnetic Stimulation (rTMS) has been proven to be a safe and effective treatment for Major Depressive Disorder (MDD). While there is similar antidepressant efficacy reported between bilateral, right unilateral and left unilateral treatments, studies have demonstrated advantages to right unilateral treatment (RUL) with regards to safety and tolerability. However, the RUL rTMS protocol is not yet defined.

Objectives
To define the optimal RUL rTMS treatment protocol by exploring the effects of extended rTMS sessions on response rate in treating treatment-resistant depression (TRD).

Methods
The study was conducted in a naturalistic setting comparing two first-time patient groups treated with low frequency (1Hz) RUL rTMS for TRD 3 days/week over 6 weeks. All participants received rTMS 3 days/week for 6 weeks (18 treatments in total). 78 patients received standard 15 minute low frequency RUL rTMS treatment sessions (total rTMS time 270 minutes) and 71 patients received extended low frequency RUL rTMS 30 minute treatment sessions (total rTMS time 540 minutes). All groups were assessed at baseline, mid-treatment and end of treatment. Response and remission rates were compared at mid-treatment (3 weeks [9 sessions]) and end of treatment (6 weeks [18 sessions]) for participants receiving 30 minutes of rTMS treatment. At mid-point these participants would have received a total of 270 minutes of rTMS treatment, and at the end of treatment 540 minutes in total.

Findings
No significant differences in remission or response rates were demonstrated between the patient group receiving standard RUL rTMS and those receiving extended RUL rTMS over 6 weeks. Mid-treatment assessment of patients receiving extended RUL rTMS (total rTMS time 270minutes) showed significantly lower remission and response rates in comparison to the currently accepted RUL rTMS protocol of 270 minutes administered in 18 x 15 minute sessions over 6 weeks.

Conclusions
The findings suggest the standard RUL rTMS protocol of 18 x 15 minute sessions is sufficient for the management of TRD. Condensing the standard total rTMS treatment of 270 minutes into 9 x 30 sessions over 3 weeks in comparison with the currently accepted protocol of 18 x 15 sessions over 6 weeks showed significantly lower rates of response and remission, suggesting spacing of rTMS sessions is needed for optimal treatment.

Biography



Dr. Hannah Ford completed her Doctor of Medicine/Bachelor of Clinical Sciences at the age of 24 years from Flinders University in 2017. She completed her internship at Lyell McEwin Hospital, South Australia in 2018 and commenced her role as a Resident Medical Officer at Alfred Health, Victoria in early 2019. She will be commencing Basic Physician Training at Alfred Health in February 2020. Hannah has published research in Journal of Personality and Mental Health in 2018 investigating the link between alcohol disorder outcomes and personality disorder. She is currently working on research into the optimum rTMS protocols for treatment of major depression. Once completing her physicians training she hopes to get into Neurology Advanced Training.

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