

Pharmacodynamic Enhancement of Repetitive rTMS Treatment Outcomes for Major Depressive Disorder

Authors : A. Mech

Abstract : Repetitive transcranial magnetic stimulation has proven to be a valuable treatment option for patients who have failed to respond to multiple courses of antidepressant medication. In fact, the American Psychiatric Association recommends TMS after one failed treatment course of antidepressant medication. Genetic testing has proven valuable for pharmacokinetic variables, which, if understood, could lead to more efficient dosing of psychotropic medications to improve outcomes. Pharmacodynamic testing can identify biomarkers, which, if addressed, can improve patients' outcomes in antidepressant therapy. Monotherapy treatment of major depressive disorder with methylated B vitamin treatment has been shown to be safe and effective in patients with MTHFR polymorphisms without waiting for multiple trials of failed medication treatment for depression. Such treatment has demonstrated remission rates similar to antidepressant clinical trials. Combining pharmacodynamics testing with repetitive TMS treatment with NeuroStar has shown promising potential for enhancing remission rates and durability of treatment. In this study, a retrospective chart review (ongoing) of patients who obtained repetitive TMS treatment enhanced by dietary supplementation guided by Pharmacodynamic testing, displayed a greater remission rate (90%) than patients treated with only NeuroStar TMS (62%).

Keywords : improved remission rate, major depressive disorder, pharmacodynamic testing, rTMS outcomes

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