

Real-world Practice of Repetitive Transcranial Magnetic Stimulation (rTMS) Efficacy in Patients with Major Depressive Disorder

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Introduction:

Repetitive transcranial magnetic stimulation (rTMS) is an evidenced-based treatment for patients with major depressive disorder (MDD) who fail to respond to standard first-line therapies or who cannot tolerate the side effect of drugs. In addition, depressive patients are often comorbid with anxiety. Here we reported a real-world data of rTMS treatment in patients with major depressive disorder in Taoyuan Psychiatric Center.

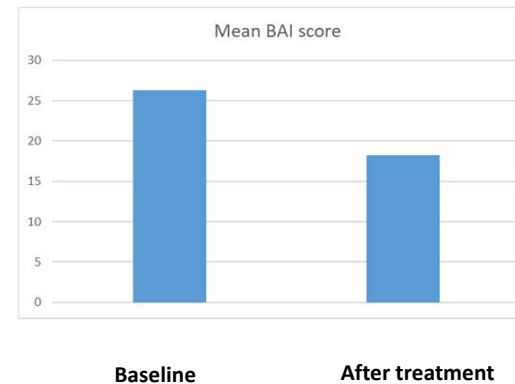
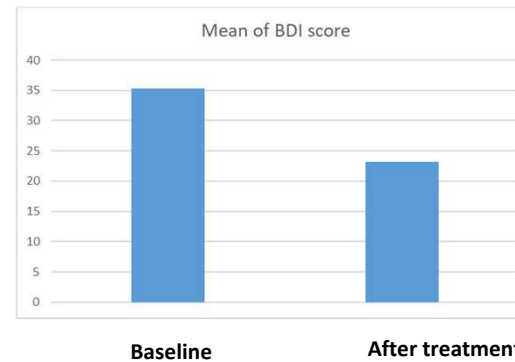
Method:

From 2020.11.01 till 2022.05.31, we enrolled 57 patients fulfilling the DSM-5 criteria for unipolar major depressive disorder, with the baseline Beck's Depression Inventory (BDI) score > 13, without contra-indications for rTMS. We applied rTMS treatment and evaluated the BDI score and baseline Beck's Anxiety Inventory (BAI) score regularly during the treatment period for each patient.

Then we performed the BDI and BAI scoring after the last section of treatment. We compared the pre-treatment and post-treatment BDI score to determine the rTMS efficacy.

Result:

Of the included 57 patients, 39 (68%) patients were female and 18(32%) were male. The mean age was 37.2 years old (standard deviation (SD)= 15.5), and the mean total treatment times was 22.7 (SD= 15.8). The mean pre-treatment BDI score was 35.3 (SD= 12.5), post-treatment BDI score was 23.1 (SD= 14.2). Twenty-three percent of patients (13/57) got remission by the cutoff value of BDI score ≤ 12 . And 37% of patients (21/57) got response to the rTMS treatment, defined as BDI score reduce $\geq 50\%$. We also found a reduction of BAI score (from mean baseline score of 26.3 to 18.2 after treatment). All of the patients tolerated the treatment well, without significant adverse effect.



Conclusion:

Repetitive transcranial magnetic stimulation is a rising non-pharmacologic treatment for major depressive disorder. In our cohort, 37% of patients were responders, and 23% of patients reached remission after the rTMS treatment. In addition, the anxiety score in such patients also improved. Further large-scale research will be needed to define the efficacy of rTMS treatment in Taiwan.