

EFFICACY OF RTMS TREATMENT IN TREATMENT-RESISTANT MAJOR DEPRESSIVE DISORDER: THE ROLE OF SOCIODEMOGRAPHIC CHARACTERISTICS AND DURATION OF ILLNESS ON TREATMENT RESPONSE

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BACKGROUND AND AIM: Major Depressive Disorder (MDD) is a chronic condition where full remission remains elusive for a significant portion of patients despite standard interventions. The objective of this study was to examine the efficacy of high-frequency Repetitive Transcranial Magnetic Stimulation (rTMS) applied to the left dorsolateral prefrontal cortex (DLPFC) on depressive symptoms in patients with treatment-resistant MDD, and to evaluate the impact of factors such as age, gender, and duration of illness on treatment response.

METHODS: Approved by the Ondokuz Mayıs University Clinical Research Ethics Committee (Decision No: 2026/29), this retrospective study included 24 patients (18 female, 5 male; mean age: 47.65 ± 11.29 years) diagnosed with treatment-resistant MDD. Patients underwent 20 rTMS sessions (5 days/week for 4 weeks). Treatment efficacy was analyzed by comparing Hamilton Depression Rating Scale (HAM-D) scores assessed immediately before the first and after the final session. All patients received concurrent psychopharmacological treatment. However, due to the retrospective design and heterogeneity/missing data

regarding medication usage, between-group comparisons based on dose equivalence were not performed.

RESULTS: The mean pre-treatment HAM-D score was 15.62 ± 5.59 , which significantly decreased to 7.75 ± 6.39 following rTMS treatment ($p < 0.001$), representing a mean improvement of 7.87 points. No statistically significant relationship was found between treatment response and age ($p = 0.41$), duration of illness ($p = 0.08$), gender ($p = 0.87$), or marital status ($p = 0.37$).

CONCLUSIONS: Our results confirm that high-frequency rTMS applied to the left DLPFC is highly effective in reducing symptom severity in treatment-resistant depression.

Crucially, treatment response was not influenced by age, gender, or illness duration. This suggests that rTMS remains a robust therapeutic option even for chronic, long-standing cases, supporting its use across a diverse patient demographic

Keywords: Major depressive disorder, treatment-resistant depression, Repetitive transcranial magnetic stimulation (rTMS), Sociodemographic factors, duration of illness, treatment efficacy