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Replacing Adjunctive Medications for Treatment-Resistant Depression Using Repetitive Transcranial Magnetic Stimulation: Case Report

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Repetitive transcranial magnetic stimulation (rTMS) is an effective treatment for depression. As the left prefrontal cortex activity is linked to depression, rTMS induces blood flow in the left dorsolateral prefrontal cortex (dlPFC). Long acting psychostimulants are sometimes prescribed as an adjunctive antidepressant treatment throughout rTMS therapy. We used rTMS to treat resistant depression in a middle-aged male patient over a twelve month period where a psychostimulant medication was also discontinued. He had been consistently taking duloxetine 60 mg BID, clonazepam 0.5 mg BID, and dextroamphetamine-amphetamine extended release 30 mg once daily prior to the onset of rTMS treatment. The patient achieved depression remission through the course of 39 high-frequency left dlPFC rTMS treatments. The treatment was repeated for a course of 11 treatments in 2020 and 17 treatments in 2021 for symptom recurrences while the stimulant was discontinued. We assessed progress using Quick Inventory of Depressive Symptomatology (QIDS) and we took blood pressure measurements before each session of rTMS. After tapering DX-AM XR from 30 mg to 10 mg and then discontinuing it, QIDS increased slightly to 7 and then dropped to 0 after re-treatment. A second recurrence was treated with rTMS and adjunctive liothyronine 25 mcg once daily. QIDS score dropped from 20 to 10. It is noteworthy that there appeared to be a gradual decline in the patient's blood pressures from the first day of treatment to the last. Results indicate that interval rTMS may be used to replace an adjunctive psychostimulant and lower blood pressure.