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Evaluation of Transcranial Magnetic Stimulation (rTMS) on depression and craving in patients with methamphetamine dependence

Mohammad Ghadirivasfi, Atefe Ghanbari Jolfaee & Mahtab Motovaselian
Iran University of Medical Sciences, Iran

rTMS, a non-invasive technique for stimulation of neuronal cells, is one of the most promising tools for brain stimulation and modulation and reversibly affect brain cortical activity and plasticity. Although rTMS has been used to treat a variety of neuropsychiatric disorders, several lines of evidence suggest that rTMS has a potential efficacy to reduce cue-induced craving in drug addiction. In this study, we employed real and sham rTMS of the Orbitofrontal cortex (OFC) and the left dorsolateral prefrontal cortex (DLPFC) to compare and test if it could reduce cue-induced craving for methamphetamine (MA) after the end of intervention and six month follow up. Thirty eligible MA-addicted patients were recruited to receive 10 sessions of 20min sham or 10Hz rTMS to the left OFC and DLPFC. Subjects rated their craving at baseline, after exposed to MA-associated cues and after rTMS sessions. They were followed after six months for the rate of relapse and adherence. Relative decrease in severity of depression was greater in OFC group, however Kruskal-Walis test showed non-significant differences among groups (p=0.097). Also, relative changes in psychopathology severity according to the Brief Psychiatric Rating Scale, and relative changes in craving were not statistically different among groups (p=0.350 and p=0.905, respectively) This study failed to show any efficacy of dorsolateral or orbitofrontal rTMS in comparison with sham rTMS in reducing psychopathology or craving of the methamphetamine dependent patients.

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Biography

Mohammad Ghadirivasfi was graduated in psychiatry from Iran University of Medical Sciences (IUMS), Iran. He was the head of Iran Mental Hospital for 13 years and achieved years of experience in research, teaching and administration in hospital and during this period, his effort was highly effective to establish Iranian DNA Bank for Genetic and Epigenetic Studies in Psychiatric Disorders. He is interested in improving education of medical student and residency in psychiatry. He has academic publications and is one of the authors of the Iranian curriculum of general psychiatry, addiction and risky behavior fellowship and the sleep textbook (in Persian) sponsored by IUMS (Iran University of Medical Sciences). He was the secretary of 5th Basic and clinical Neuroscience Congress in 2016 Tehran, Iran. Currently, he is the head of neurocognitive center in Iran Mental Hospital.

gadirivasfi.m@iums.ac.ir