2nd International Conference on

Psychiatry and Psychiatric Disorders

May 02-04, 2016 Chicago, Illinois, USA

Repititive Transcranial Magnetic Stimulation(rtms); An advanced Treatment for Depression

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rTMS, a painless and non-invasive procedure, causes cerebral cortex stimulation by superficial neurons depolarization. Its designed to allow focused electrical stimulation with the help of hand-held magnet. Magnetic stimulators used in rTMS, have multiple capacitators that have the ability to generate rapid pulses as high as 60 Hz. Lower frequency causes inhibition, on contrary, excitation is associated with higher frequency. No pain is associated with TMS, whereas, percutaneous magnetic stimulation is painful. Initial uses comprised of locating hemisphere dominance, however, current research is exploring its potential for the treatment of psychiatric and neurological disorders. A literature review of various articles relevant to the role of TMS in depression intervention is performed on MEDLINE, PSYCH Info, and PUBMED. According to a research in Russia, 10 sessions of TMS augmented the antidepressant effects leading to improvement in depressive symptoms. In 2015, a cost evaluation research was conducted at a hospital in France, using TMS as an intervention for depression, which may point towards its widespread international use in future. In older population with treatment resistant depression, its beneficial to use a slightly higher dose of TMS. Interestingly, patients with neuropathic pain of chronic nature, can also benefit from TMS. In a pilot study, conducted at an outpatient setting in 2015 at Texas, revealed alleviating effects of bilateral rTMS in depressed patients with co-existing GAD. According to that pilot study, patients showed reduction in symptoms associated with both MDD and GAD. Other than depression, literature review revealed that rTMS also helped patients with Parkinson's Disease in alleviating symptoms such as bradykinesia. TMS, approved by FDA in 2008, is recommended for 6 weeks for treatment resistant depression. Review of research done in the past, revealed beneficial effects of rTMS in depression, anxiety disorder, and Parkinson's disease. Although, geriatric population require a higher dose as compared to young patients. We recommend rTMS application in treatment resistant depression. However, more research is required to further explore its clinical uses.

Biography

Dr. Samreen Ahmed has completed her MBBS at the age of 24 years from Dow Medical College, Pakistan, and currently volunteering as a Research Assistant at University of Illinois at chicago. Dr. Ahmed has written 3 case reports as a first author that were published in the IJBCP.

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