

Transcranial Magnetic Stimulation: Is it an Answer to Difficult Questions Posed to Psychiatrists and Neurologists in Pakistan?

Sir,

The prevalence of psychiatric diseases is on a rise in our part of the world and same is the case for treatment-resistant psychiatric diseases.¹ Conventional biological treatments include medications of various groups and electroconvulsive therapy, which are unable to bridge the gap in the management of various conditions, especially anxiety-related disorders. Similar pattern exists in a lot of neurological diseases in which rehabilitation remains the only option for the patients, which is a slow process with limited availability.¹ Transcranial magnetic stimulation (TMS) is now in use for the treatment of a number of psychiatric and neurological conditions for some time and is FDA approved for depression, anxiety, obsessive compulsive disorder (OCD), migraine with aura and smoking cessation.² The conditions for which it is not FDA approved but has shown promising results include post-stroke speech and motor problems, substance use disorder, movement disorders and autism-related issues.²

A small number of TMS machines were catering for a population of >22 million in Pakistan till 2021. To bridge this gap, a TMS machine was installed in Rawalpindi, Pakistan in March 2022. Since then, patients of various psychiatric, neurological and substance use disorders who had treatment-resistant diseases and were willing for TMS had undergone this novel treatment in non-probability, consecutive order. They were evaluated for response and remission after two and four weeks of treatment and also for any adverse events during the course of treatment. A total of 64 patients have been studied so far (in the study duration of six months). At the end of two weeks, 50% of depression patients had good responses while 50% had remission, and 40% of anxiety patients had good responses while 40% had remission. Nearly 100% of addiction patients were successfully out of the withdrawal phase in two weeks. Around 50% of autism patients had speech and behavioural improvement at the end of two weeks. At the end of four weeks, 80% of depression patients had remission or good response while 10% did not improve, 70% of anxiety patients had remission or good response while 30% did not improve. Almost 100% of addiction patients were in remission at the end of four weeks. Around 70% of autism patients had marked behavioural or speech improvement while 30% did

not show improvement. The best results were seen in OCD patients, and more than 90% improved significantly after 8 weeks.

A very limited local data is available on the use of TMS in various neurological and psychiatric disorders in Pakistan but the existing international literature has comparable results as that of ours.³ The remarkable results found in patients with treatment-resistant OCD were also in line with the results found in the existing literature.⁴ We mostly used theta bursts (iTBS and cTBS) to stimulate or inhibit activity in different areas of the brain. They were found equally effective and very less time consuming as compared to routine rTMS protocols. Research is going on this feature across the globe.⁵ In the view of marked efficacy of TMS in different treatment-resistant psychiatric and neurological diseases in local set up, it is recommended that more machines should be arranged and more professionals should be trained in both public and private sectors. This would fill the huge existing gap in the model of care for these patients.

COMPETING INTEREST:

The author declared no competing interest.

AUTHOR'S CONTRIBUTION:

UBZ: Conception, drafting, and final approval of the version to be published.

REFERENCES

1. Khan T, Hussain S, Ikram A, Mahmood S, Riaz H, Jamil A, et al. Prevalence and treatment of neurological and psychiatric disorders among tertiary hospitals in Pakistan; findings and implications. *Hosp Pract* 2020; **48(3)**:145-60. doi.org/10.1080/21548331.2020.1762366.
2. Chail A, Saini RK, Bhat PS, Srivastava K, Chauhan V. Transcranial magnetic stimulation: A review of its evolution and current applications. *Ind Psychiatry J* 2018; **27(2)**: 172-80. doi: 10.4103/ipj.ipj_88_18.
3. Iglesias AH. Transcranial Magnetic Stimulation as Treatment in Multiple Neurologic Conditions. *Curr Neurol Neurosci Rep* 2020; **20(1)**:1. doi:10.1007/s11910-020-1021-0.
4. Berlim MT, Neufeld NH, Van den Eynde F. Repetitive transcranial magnetic stimulation (rTMS) for obsessive-compulsive disorder (OCD): An exploratory meta-analysis of randomized and sham-controlled trials. *J Psychiatr Res* 2013; **47(8)**:999-1006. doi:10.1016/j.jpsychires.2013.03.022.
5. Mi Y, Ji Y, Lou Z, Hou Y, Ruan L. Left intermittent theta burst stimulation combined with right low-frequency rTMS as an additional treatment for major depression: A retrospective study. *Indian J Psychiatry* 2022; **64(4)**: 364-9. doi: 10.4103/indianjpsychiatry.indianjpsychiatry_905_21.

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