Oral Communication

OC-87

Comparative Effectiveness of High-Frequency Repetitive Transcranial Magnetic Stimulation at ipsilateral Site *vs.* Low-Frequency Repetitive Transcranial Magnetic Stimulation at Contralateral Site at Cerebral Cortex on Motor Function Improvement in Stroke Patients – An Observational Study

Topic: Neurostimulation (rTMS, tDCS, etc.)

Mohit Kataruka, Puja Sannyashi, Souvik Bhattacharjee, Amala Sajeev

Physical Medicine and Rehabilitation, AIIMS Kalyani, Kalyani, India

BACKGROUND

Stroke is an acute neurovascular central nervous system injury and one of the causes of long-term disability and mortality. Relatively few stroke patients became able to use their paralyzed upper limb as a functional hand after rehabilitation. Transcranial magnetic stimulation (TMS) is used in neurological conditions as a non-invasive brain stimulation and can promote recovery of motor function. Some literature shows the improvement with high-frequency and low-frequency rTMS in CVA patients. Still, there is a paucity of literature that compares the efficacy of high-frequency *vs.* low-frequency rTMS in the rehabilitation of stroke patients. It is our humble attempt to determine the effect of high-frequency and low-frequency rTMS in post-stroke patients' rehabilitation and compare the efficacy of high-frequency rTMS *vs.* low-frequency rTMS.

The aims and objectives of my study were to observe the efficacy and persistence of the effects of high-frequency and low-frequency rTMS in stroke patients and to compare the efficacy.

METHODS

After institutional ethical approval, the study was conducted at PMR dept from January 2024 to December 2024. Patients aged more than 18 years with stroke duration 6-12 months, Burn strom staging 2 or 3 were included in the study, and patients with intracranial metal implants & pacemakers were excluded. We included 23 patients, of which three patients lost follow-up. After selecting the patients, they were randomly allocated into two groups: group A received high-frequency rTMS on the ipsilateral side, and Group B received low-frequency rTMS on the contralateral side for 10 days, along with a structured rehab protocol. The patients were assessed before initiating therapy, after completion of therapy, two weeks, and four weeks post-intervention by FIM FAM & FMA.

RESULTS

It was observed that there was a significant improvement in pre- and post-intervention as the p-value was less than .05 in both groups and better in the low-frequency rTMS group. It was also observed that the changes were persistent even up to two months post-therapy in both groups. No significant difference was observed between the groups. We observed no adverse effects during the therapy except a minor headache, which was treated with a tablet paracetamol 500 mg stat dose.

CONCLUSION

Though low-frequency rTMS has better results in treatment outcomes for stroke patients, both high and low-frequency rTMS therapies are effective in the treatment of stroke patients and more studies are recommended. Low-frequency rTMS may be better in the treatment of stroke patients as there is less chance of seizure episodes.

Statement of Disclosures

None

Corresponding Author:
Mohit Kataruka
Physical Medicine and Rehabilitation, AIIMS Kalyani, Kalyani, India
Email: mohit25582168@gmail.com

Doi: 10.5606/archisprm.2026.OC-87