Repetitive transcranial magnetic stimulation for tinnitus

The role of neural modulation in nonauditory cortices via repetitive transcranial magnetic stimulation (rTMS) for tinnitus control has been emphasized. It is now more compelling to consider these nonauditory cortices and the whole “tinnitus network” as targets for a tinnitus treatment to achieve a better outcome.

Nohet al. aimed to investigate the effects of active dual-site rTMS treatment in tinnitus reduction using a double-blind randomized controlled trial.

In study 1, the dual-site rTMS treatment group (n = 17) was treated daily for 4 consecutive days. The sham group (n = 13) also visited the clinic for 4 days; they received sham treatment for the same duration as the dual-site rTMS treatment group. In study 2, the rTMS treatment protocol was exactly the same as in study 1. Magnetoencephalography recordings were performed before and 1 week after the last rTMS treatment. The outcome measure was the Tinnitus Handicap Inventory (THI) score and the visual analog scale score. The effects of treatment were assessed 1, 2, 4, and 8 weeks after rTMS treatment in study 1. Then the mean band power and network changes were compared between pre- and post-treatment values after rTMS in study 2.

Patients in the dual-site rTMS treatment group exhibited significantly improved THI scores at 2, 4, and 8 weeks after rTMS treatment compared with the pretreatment scores. However, the sham group did not show any significant reduction in THI scores. When the mean band power changes were compared between pre- and post-treatment assessments, an increased oscillation power was observed in the alpha band after rTMS.

A beneficial effect of rTMS on tinnitus suppression was found in the dual-site active rTMS group, but not in the sham rTMS group [1)].

Unclassified

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