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CLINICAL RESPONSE OF NEURONAVIGATED rTMS IN THE TREATMENT OF AUDITORY HALLUCINATIONS

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Aim: To prove the clinical effect rTMS neuronavigation vs. standard coil positioning vs. controls in the therapy of medication-resistant auditory hallucinations.

Materials and methods: 10 patients with medication-resistant auditory hallucinations on stable antipsychotic medication, examined by MRI, PET, then treated by 1) neuronavigated, 2) standard positioning and 3) sham rTMS (controls).

Double-blind randomized sham-controlled parallel design was used in the study.

rTMS parameters: 0.9Hz, 100%MT, 1080 pulses/session, 10 rTMS sessions within 2 weeks:

1. Neuronavigated rTMS: coil focused over the highest contrast of metabolic activity in the left temporo-parietal (T-P) area (according to the SPM analyse 18FDG PET data).
2. Standard rTMS: coil administered over the left T-P region defined as the midway between the T3 and P3 sites according to the international 10/20 EEG electrode system.
3. Sham: coil angled 90° away from the skullPsychometric measurement: PANSS, Hallucination Change Scale (HCS) and the Auditory Hallucination rating scale (AHRS).

Results and conclusion: Confirmation of a significant decrease in the Hallucination item as well as in the total of the positive score of PANSS, HCS and AHRS. Sham rTMS did not show a trend for improvement over time. Between-group comparisons of AHRS scores revealed significant differences, which confirmed efficiency of using neuronavigated rTMS.

Compared to standard positioning in future studies, we believe to find rTMS neuronavigation more precise and effective. Studies monitoring a continuing effect of rTMS over long time periods are needed.

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