



rTMS efficacy as a treatment of Alzheimer's

NEUROSCIENCE GRAND ROUNDS

DATE

Friday, January 19th, 2024

9:00 AM - 10:00 AM

LOCATION

Psychiatry Bldg. 2nd Floor Rm PX236/238

SPEAKER

Zahra Moussavi , PhD

Professor, Canada Research Chair Tier I, University of Manitoba, Biomedical Engineering

BIO

Zahra Moussavi is a professor, a Canada Research Chair Tier I, and the founder and former director of Biomedical Engineering Graduate Program at University of Manitoba. Her current research focuses are on medical devices instrumentation and signal analysis for sleep apnea management and Alzheimer's diagnosis and treatment using virtual reality, rTMS and EVestG technologies. She is the recipient of several awards including the "2018 Technical Excellence Award," Engineers Geoscientists Manitoba, "Canada's Most Powerful Women (Top 100)", "Manitoba Distinguished Women" and IEEE EMBS Distinguished Lecturer. She has published more than 325 peer-reviewed papers in journals and conferences, and has given >132 invited talks/seminars including 2 Tedx Talks and 19 keynote speaker seminars at national and international conferences. Aside from academic work, on her spare time, she writes science articles for public; also, has developed and offered memory fitness programs for aging population.

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ABSTRACT

Recent trials of repetitive transcranial stimulation (rTMS) have reported encouraging results for improving or stabilizing cognition in patients diagnosed with Alzheimer's disease (AD). However, conclusions about the clinical utility of rTMS treatment have been hampered by small samples, lack of dose investigation, and the wide variation in treatment protocols studied to date. Here I report on a large multi-site double-blind randomized controlled trial investigating the short and long-term efficacy of active rTMS in two doses of 2-weeks vs 4-weeks of treatment (5 days/week) compared to sham TMS. Participants had a primary diagnosis of AD and a Clinical Dementia Rating (CDR) of 1 or 2. Randomization to treatment group was stratified on age, sex and CDR. Neuro-navigation was used to target rTMS (20 Hz, 30 pulses/train, 25 trains, 10-s intertrain interval) over the left and then the right dorsolateral prefrontal cortex. The primary outcome measure was the Alzheimer Disease Assessment Scale-Cognitive Subscale (ADAS-Cog); we compared its score changes from pre- to post-treatment., with assessments at baseline, after 2 and 4 weeks of intervention, and at 8, 16 and 24 weeks post-treatment. With an initial target sample size of 208 participants, 156 patients over 5 years (including the two COVID19 pandemic-years) were enrolled at three sites of the study (Winnipeg, Montreal and Melbourne). with an 18% withdrawal rate, data of 135 who have completed the study were analyzed and will be presented in this talk.

OBJECTIVES

1. Review of most common rTMS protocols for treatment of Alzheimer's
2. Efficacy of the rTMS as a treatment for Alzheimer's
3. Pros and Cons of rTMS as a treatment tool.

Zoom Link: <https://us06web.zoom.us/j/83267302150>

Meeting ID: 832 6730 2150

Passcode: 748222