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BACKGROUND

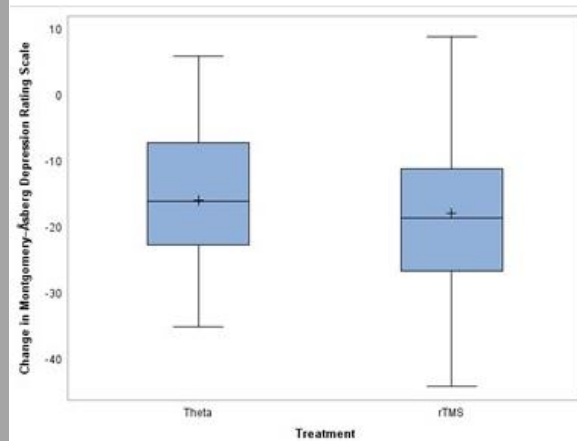
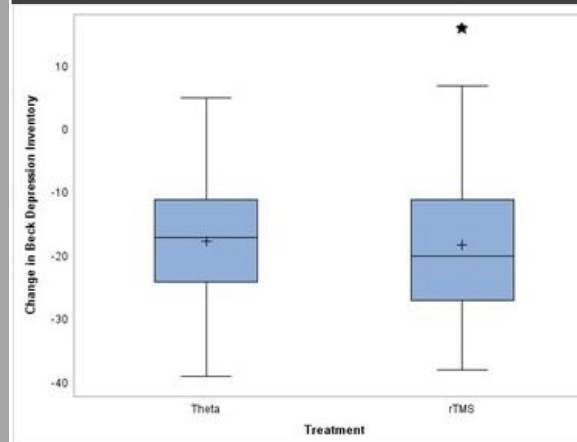
AwakeningsKC Clinical Neuroscience Institute (CNI) is a tertiary health care center for outpatient psychiatric treatment located in Prairie Village, Kansas that is Kansas State Certified. CNI outpatient services include medication-psychotherapy, magnetic stimulation and an intensive outpatient program. Repetitive transcranial magnetic stimulation (rTMS) is a neurostimulatory technique used to modulate prefrontal cortical activity involved in depression and clinical symptomatology for psychiatric disorders involving OFC dysfunction. Intermittent Theta Burst Stimulation (iTBS) is the most recent advancement in neurostimulatory technique which modifies the pattern of application of magnetic stimulation into “bursts” intended to mimic the natural firing patterns of neurons. CNI uses the MagPro30 unit by MagVenture which has dual function for rTMS and iTBS. This technique is applied according to standard protocols involving six weeks of daily treatment. We examined the effectiveness of iTBS and rTMS for the treatment of depression in our applied clinical setting on different psychometric domains.

MATERIALS AND METHODS

A retrospective review of medical records was carried out on patients with Major Depressive Disorder treated using Theta Burst or standard rTMS methodology at CNI. The study was conducted under the authority of the University of Kansas Medical Center Office of Research Compliance who reviewed the study protocol and monitored study activities to ensure that appropriate steps were taken to protect the rights and welfare of humans participating as research subjects. All patients received treatment according to usual care which included neurostimulation treatments for seven consecutive days over six weeks. Treatment assignment was not randomized or blinded. A detailed, de-identified data set was compiled containing limited demographic information and the results from the following instruments collected at week 1 and week 8 of treatment: Beck Depression Inventory (BDI), Montgomery-Åsberg Depression Rating Scale (MADRS), Hamilton Anxiety Rating Scale (HAMA), and the ADHD Part A and Part B.

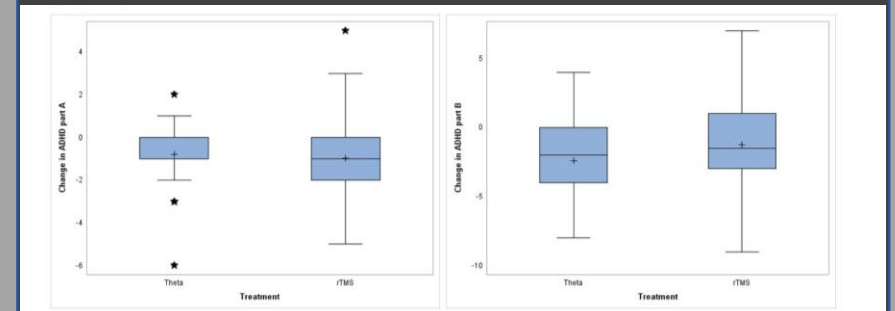
The data were compiled, and summary scores were generated. The t-test was applied to compare the change from baseline for rTMA and iTBS at week 6.

FIGURE 1: The Effect of Theta Burst and rTMS on Depression Ratings



Changes in scales scores after 6 weeks of treatment. Mean values are denoted by “+” with whiskers indicating range of responses. Theta N = 29, rTMS N = 49. The two treatment groups did not statistically differ for any of the comparisons.

FIGURE 1: The Effect of Theta Burst and rTMS on ADHD Scale Scores



Changes in scales scores after 6 weeks of treatment. Mean values are denoted by “+” with whiskers indicating range of responses. Theta N = 29, rTMS N = 49. The two treatment groups did not statistically differ for any of the comparisons.

Table: Baseline Psychometric Scores for Theta Burst and rTMS Treatment Groups

Instrument	Theta Burst, N=32	rTMS, N=71	t	p-value
Beck Depression Inventory	28.5±9.8 (9-49)	31.1±8.9 (11-49)	1.3	0.2
MADRS	29.2±7.9 (12-46)	32.1±8.7 (15-53)	1.6	0.1
HAM	26.0±8.6 (9-47)	26.3±10.2 (6-48)	0.2	0.9
Pain	2.6±2.3 (0-8)	2.7±2.5 (0-8)	0.2	0.9
ADHD part A	3.6±1.7 (0-6)	3.8±1.7 (0-6)	0.5	0.6
ADHD part B	6.1±3.6 (0-12)	5.3±3.5 (0-12)	0.9	0.3

CONCLUSIONS

- There was no difference in clinical response between Theta Burst vs rTMS methods after six weeks of treatment
- A significant reduction of in psychiatric symptomatology was observed for all measures
- Magnetic stimulation may have broader reaching effects on psychiatric outcomes than just MDD