EPP244

Risk of cognitive disorders and cardio-cerebrovascular diseases after electroconvulsive therapy in patients with affective and psychotic disorders

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Introduction: Although electroconvulsive therapy (ECT) is one of the most important treatments for major mental disorders, many patients are concerned about the risk of developing cognitive impairment or cardio-cerebrovascular disease after ECT.
Objectives: This study aimed to compare the incidence of cognitive disorders and cardio-cerebrovascular diseases in the ECT group and the control group at a university hospital.
Methods: The subjects of this study were the ECT group (n = 173 people) who received ECT in patients with major affective or psychotic disorders, and the control group (n = 11,444 people) who did not receive ECT. The ECT and control groups were matched for demographic and clinical characteristics in a 1:5 ratio. This study investigated the incidence of cognitive disorders and cardio-cerebrovascular diseases through retrospective follow-up for up to 5 years after ECT. Statistical analysis used a multivariate Cox proportional hazards model to obtain the hazard ratio (HR) and 95% confidence interval (CI).
Results: The incidence rates per 1,000 patient-years in the ECT vs. control groups were 17.56 vs. 6.25 for cognitive disorders, 4.41 vs. 4.35 for cardiovascular diseases, and 2.28 vs. 2.48 for cerebrovascular diseases. The ECT group tended to have a higher incidence of cognitive disorders compared to the control group, but this was not statistically significant (HR, 2.46; 95% CI, 0.89–6.36; p=0.07). There was no significant difference in the risk of cardiovascular disease (HR, 1.50; 95% CI, 0.21–7.09; p=0.65) or cerebrovascular disease (HR, 0.96; 95% CI, 0.05–6.56; p=0.97) between the two groups.
Conclusions: This study showed that there were no significant differences in the incidence of cognitive disorders and cardio-cerebrovascular diseases between patients with major affective or psychotic disorders who received ECT and those who did not. This study suggests that ECT is a safe treatment, but further prospective multicenter collaborative follow-up studies are required to confirm this.

Disclosure of Interest: None Declared

EPP244

Transdiagnostic Effectiveness of Repetitive Transcranial Magnetic Stimulation for Mood and Anxiety Disorders

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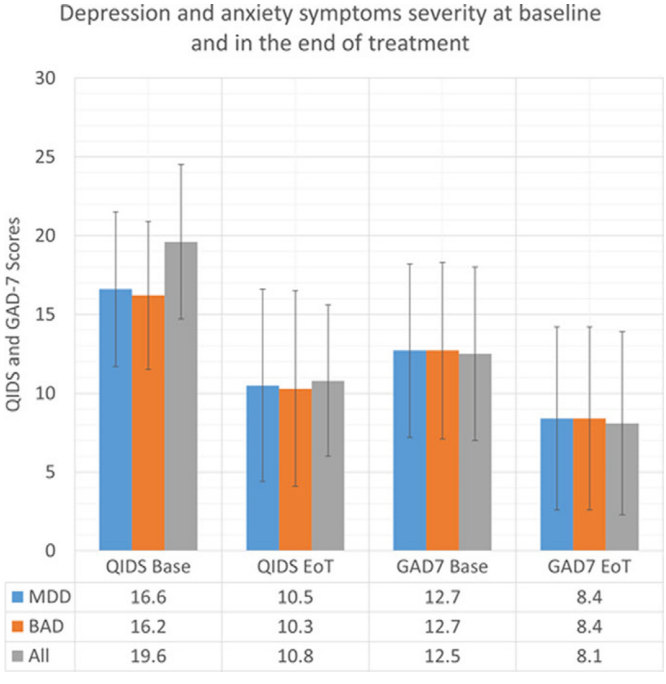
Introduction: Repetitive Transcranial Magnetic Stimulation (rTMS) is a novel neuromodulation treatment investigated for multiple psychiatric conditions and approved primarily for treatment-resistant depression (TRD) [1, 2]. There is a perceived potential for other clinical conditions, primarily other mood and anxiety disorders [2]. We have been using rTMS for treatment of patients with TRD of mixed etiology and multiple comorbidities.
Objectives: To evaluate the effectiveness and feasibility of rTMS in complex clinical populations.
Methods: Observational study. Quick Inventory of Depressive Symptomatology (QIDS). Generalized Anxiety Disorder Questionnaire (GAD-7). Descriptive statistics.
Results: We have treated 90 patients, 46 women (51.1%) and 44 men (48.9%), with average age of 42.5±16.9 years. Vast majority (88.9%) of patients had a primary diagnosis of major depressive disorder, 8.9% had bipolar depression, and two patients had primary anxiety disorders. The standard questionnaires were used to quantify the severity of depressive symptoms (QIDS) and anxiety (GAD-7). The average baseline scores for depression and anxiety were 16.6±4.9 and 12.7±5.5, respectively. The patients received an average of 24.0±7.0 treatments. Almost all patients received the full course of 20-30 treatments as planned. The average end-of-treatment (EoT) scores for severity of depressive symptoms and anxiety were 10.5±6.1 and 8.4±5.8, respectively. The rates of improvement and complete resolution of depressive symptoms were 64.4% and 28.7%, respectively. The rates of improvement and complete resolution of anxiety symptoms were 53.5% and 29.6%, respectively. There was a significant difference between the bipolar and major depression in terms of baseline depressive symptoms severity and improvement rates, but there was no difference in respect to anxiety symptoms (see Figure 1).

Image 1:



Conclusions: rTMS provides significant improvement and recovery rates in complex clinical populations and is well-tolerated. We recommend wider implementation of rTMS for treatment of mood and anxiety disorders.

References:
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EPP245

Neuronavigated Transcranial Pulse Stimulation (TPS) with shock waves as a novel tool of noninvasive brainstimulation (NIB) for a long-term treatment of Alzheimer's disease

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Introduction: Alzheimer's disease (AD) is a very common cause of dementia and a common cause of death in elderly humans. No effective long-term treatment has been found so far. Recently developed treatments with antibodies have shown severe side effects of edema or intracerebral hemorrhage in a larger number of cases.
Objectives: Neuronavigated transcranial pulse stimulation (TPS) as a new non-invasive therapy method could represent a current alternative to standard treatments. In contrast to ultrasound stimulation (tFUS) TPS uses shock waves with a mechanical transduction. These shock waves allow an application to superficial brain structures as well as into areas deep in the brain without the induction of any unwanted thermal side effects. The stimulation of the target areas can be MRI-navigated with nearly a similar precision as in stereotactical procedures.
Methods: 85 out-patients with Alzheimer's disease with light to moderate symptoms received TPS-treatments with 6.000 pulses each session bilaterally in 6 sessions over 2 weeks into the frontal, parietal and temporal cortex (0.2 mJ/mm^2 4 Hz - Neurolith by Storz Medical). The treatment was repeated with a single booster session every 6 weeks. Pulses were inividually neuronavigated by current MRI-images. Executive functions were tested using the Stroop-Test (colour-word-interference-test). Patients with Alzheimer's Disease normaly present only poor results in the Stroop-Test. We tested with a pre – post design (t_0 pre stimulation : t_1 after 6 sessions, two weeks later as well as t_2 6 months later). The mood of the patients was measured using the BDI on t_0, t_1 and t_2.
Results: TPS-stimulation showed strong ameliorating effects on performance in the Stroop-Test. The mean-score of the Stroop-test was diminished significantly (pre vs. post ; $p < 0.05$ – paired T-test) in a comparison of t_0 to t_1. This effect was preserved during an interval of 6 months (t_2). Single patients showed extraordinary improvements by shortening completer times in the Stroop-Test by half.
Depressive symptoms of the patients were also diminished by the treatment. The BDI score decreased from 20.1 (t_0) to 9.7 (t_1), and 9,1 (t_2) respectively.
No significant side-effects occured during all the sessions in any of the patients.
Conclusions: The results of this trial show that cognitive impairments of executive functions and depressive symptoms in Alzheimer's disease may be ameliorated using TPS as a noninvasive neuronavigated brain stimulation method. No severe side-effects were observed. In the meantime beneficial effects of shockwaves with low intensitiy have also been shown in the fields of dermatology, orthopedics and cardial surgery.
Different mechanisms of action of TPS are still under investigation.

Disclosure of Interest: None Declared

Rehabilitation and Psychoeducation

EPP248

The Relationship Between Sensory Processing and Executive Functions in Adults with and without Neurodevelopmental Disorders

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Introduction: Existing literature highlights unique sensory processing patterns and decreased executive functions (EF) in adults with neurodevelopmental disorders (NDD). However, most studies have focused on specific diagnoses, such as Attention-Deficit Hyperactivity Disorder or Specific Learning Disabilities, and have used smaller sample sizes, indicating a need for broader and more comprehensive research.
Objectives: Based on prior research conducted in the same laboratory, the current study aimed to comprehensively evaluate sensory processing patterns and EF in adults with NDD compared to controls, as well as to explore the relationships between these characteristics within each group.
Methods: The study sample included 290 adults (aged 20–50 years), comprising 149 individuals with NDD and 141 matched controls. Participants completed the Adolescent/Adult Sensory Profile (AASP) and the Adult Behavior Rating Inventory of Executive Function (BRIEF).
Results: Significant group differences were found in the AASP scores ($F(4,285) = 42.05$, $p < .001$, $\eta p^2 = 0.37$), with variations in three sensory processing subscales: low registration ($F(1,288) = 149.92$, $p < .001$, $\eta p^2 = 0.34$), sensitivity ($F(1,288) = 103.97$, $p < .001$, $\eta p^2 = 0.26$), and avoidance ($F(1,288) = 50.06$, $p < .001$, $\eta p^2 = 0.48$), though not in sensory seeking. Additionally, significant differences were observed in the BRIEF ($F(5,284) = 67.58$, $p < .001$) across all nine subscales and indexes. Notably, significant correlations were identified between BRIEF scores and three AASP subscales in both groups: low registration (control: $r = .50$, $p < .001$;