

**Objectives:** The aim of our study was to investigate the safety and efficacy of DBS through a systematic review.

**Methods:** A systematic review was conducted. PubMed via Medline, Google Scholar and Semantic Scholar were used as search engines. The keywords used were ("Obsessive compulsive disorder" or "OCD") and ("Deep brain stimulation" or "DBS"). Clinical trials and observational studies assessing the efficacy of DBS for OCD, published from inception to December 2023 and written in English or French were analysed. The inclusion criteria were a main diagnosis of OCD, DBS conducted for therapeutic purposes and a response to DBS assessed by the Yale-Brown Obsessive-Compulsive scale (Y-BOCS).

**Results:** Thirty four studies were included in the final analysis with a reported total of 316 cases. In 58.2% of cases, patients were female. The average age at the time of surgery of implanting the stimulation device was  $40.9 \pm 7.8$  years. The mean time from onset of symptoms to surgery was  $22.4 \pm 4.6$  years. The mean initial Y-BOCS score was  $33 \pm 3.7$ . The mean response rate, defined as a reduction in Y-BOCS score of more than 35 % was  $70.7\% \pm 24.8$ . The maximum symptom reduction was reached between 12 to 14 months after implantation in most studies. Hypomania was the most frequent side effect reaching 45% in some studies. Intracranial hemorrhage secondary to surgery was the most serious complication and did not exceed 5 % in any study. No clear predictive factors for response to DBS were identified.

**Conclusions:** DBS appears to be a promising therapy for patients with resistant OCD. This innovative approach, combined with ongoing advancements in neurotechnology, offers hope for the future of OCD treatment. However, no predictors of response have yet been established.

**Disclosure of Interest:** None Declared

## EPV1644

### Safety and efficacy of electroconvulsive therapy during pregnancy: A systematic review

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**Introduction:** Pregnancy and the immediate postpartum period are at high risk of decompensating or developing psychiatric disorders. Electroconvulsive therapy (ECT) is an effective treatment for severe and resistant mental disorders and could be a therapeutic option for psychiatric disorders during pregnancy.

**Objectives:** The aim of our study was to investigate the safety and the efficacy of ECT in pregnant women through a systematic review.

**Methods:** A systematic review was conducted. PubMed via Medline, Google Scholar and Semantic Scholar were used as search engines. The keywords used were ("Electroconvulsive therapy" or "ECT") and ("pregnancy" or "pregnant"). Clinical trials, case reports and case series assessing the efficacy and safety of ECT during pregnancy, published

from inception to December 2023 and written in English or French were included.

**Results:** A total of 30 articles were included for the final analysis with a total of 96 cases. The mean age of patients was 30.1 years. ECT was mostly performed during the first trimester of pregnancy with 45.3% of patients. The main psychiatric diagnoses were major depressive disorder with 47.6% of patients, followed by bipolar disorder with 19.3%. The average number of sessions performed was 10.4 with a maximum of 22. A partial improvement or a total resolution of symptoms were noted in 78.6% of cases. Transient fetal arrhythmia (not requiring drug intervention) was the most common complication, occurring in 6.25% of cases (n=6). Fetal death or abortion were observed in 4.1% of cases (n=4).

**Conclusions:** ECT appears to be an effective treatment for severe psychiatric disorders in pregnant women. However, it needs to be performed as part of a multidisciplinary care team to reduce the risk of serious consequences for both the mother and the fetus.

**Disclosure of Interest:** None Declared

## EPV1645

### Comparison of the clinical efficacy of rhythmic transcranial magnetic stimulation protocols in patients with depression

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**Introduction:** Transcranial magnetic stimulation (TMS) is a method of non-invasive stimulation of the cerebral cortex with an alternating magnetic field, used in the therapy of patients with depression, including cases where drug therapy is ineffective. The currently widely used high-frequency stimulation protocols with the application of an inductor to the projection of the left dorsolateral prefrontal cortex (LDLPC) have confirmed their effectiveness, while protocols with a significantly shorter procedure time are appearing in clinical practice. In this study, a clinical comparison of two protocols was conducted.

**Objectives:** To conduct a comparative assessment of the clinical effect of TMS using theta-burst stimulation and high-frequency (10 Hz) stimulation.

**Methods:** The study included 34 patients (mean age  $27.2 \pm 2.1$  years) with a diagnosis F31-F34 and clinical depression confirmed by psychometric assessment data (HDRS= $21.7 \pm 5.6$ ). Patients received stimulation in the projection of the left dorsolateral prefrontal cortex for 3 weeks: 17 patients (group 1) received high-frequency stimulation (10 Hz) and 17 patients (group 2) intermittent theta burst stimulation. Symptom reduction, according to psychometric assessment, corresponding to 50% or more, was chosen as the criterion for response to treatment.

**Results:** By the end of the study, the number of patients in the total sample who responded to treatment corresponded to 55.9% (n=19).

Comparison of the effectiveness of the protocols showed that the group statistically significantly differed in the number of responders ( $p < 0.05$ ; 0.01): in group 1 47.06% ( $n=8$ ), in group 2 64.71% ( $n=11$ ). Patients who received theta-burst stimulation had a faster rate of symptom reduction and demonstrated higher adherence to treatment.

**Conclusions:** Thus, a comparative study of the effectiveness of two TMS protocols demonstrated a higher effectiveness of theta-burst stimulation, however, it is worth noting the overall effectiveness of this method regardless of the stimulation parameters, as well as a fairly rapid development of the clinical effect.

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## EPV1647

### High-Dose Accelerated Bilateral Theta Burst Stimulation for Depression and Anxiety: The Seville Protocol

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**Introduction:** Treatment resistance affects 20-60% of patients, leading to substantial personal and economic impact. Repetitive transcranial magnetic stimulation (rTMS) is effective, with theta burst stimulation (TBS) providing similar benefits more efficiently. **Objectives:** To assess high-dose TBS effectiveness and to explore how demographic and clinical factors influence treatment outcomes.

**Methods:** Accelerated high-dose (30 sessions) cTBS and iTBS was administered targeting the right and left dorsolateral prefrontal cortex (DLPFC) respectively (3600 pulses per session), with MRI-guided neuronavigation. Pre- and post-treatment HAM-D and HAM-A scores were analyzed with mixed-effects models. Response and remission rates were further examined using generalized linear models (GLM). All analyses were conducted using the R Studio.

**Results:** The study included a total of 101 participants, of whom 89 had data available for HAM-D (56 [38.8–65] years; 69.7% females), and 82 had data available for HAM-A (56 [39–65] years; 70.7% females). 29.2% achieved HAM-D remission, 22% achieved HAM-A remission, with response rates of 46.1% for depression and 50% for anxiety.

Mixed-effects models showed a highly significant reduction in both HAM-D and HAM-A scores after TMS treatment (HAM-D:  $\beta = -12$ ,  $p = 2.2e-15$ ; HAM-A:  $\beta = -14.484$ ,  $p = 1.1 \times 10^{-14}$ ) (Fig. 1). For HAM-D, family history was associated with reduced treatment effectiveness ( $\beta = 5.302$ ,  $p = 0.011$ ). Sex also influenced HAM-D scores, with males showing a greater response than females ( $p = 0.018$ ), although this trend was only marginally significant for HAM-A ( $p = 0.073$ ).

**Fig. 1.** Pre- and post-treatment scores on the HAM-D and HAM-A showing significant reductions following rTMS.

The GLM analysis for HAM-D and HAM-A remission did not reveal statistically significant overall results. However, specific predictors were significantly associated with treatment response. A family history of mental health conditions was linked to a lower likelihood of response, based on HAM-D (OR = 0.058,  $p = 0.016$ ) and HAM-A (OR = 0.074,  $p = 0.049$ ). Age was a significant predictor for response on both HAM-D (OR = 1.1,  $p = 0.048$ ) and HAM-A (OR = 1.115,  $p = 0.032$ ) (Fig. 2). Additionally, regarding employment status individuals identified as “Housekeeper” or “Retired” had reduced likelihood of positive response ( $p < 0.05$ ).

**Figure 2.** Influence of age on HAMA and HAM-D response outcomes in patients undergoing TMS treatment.

**Image:**

