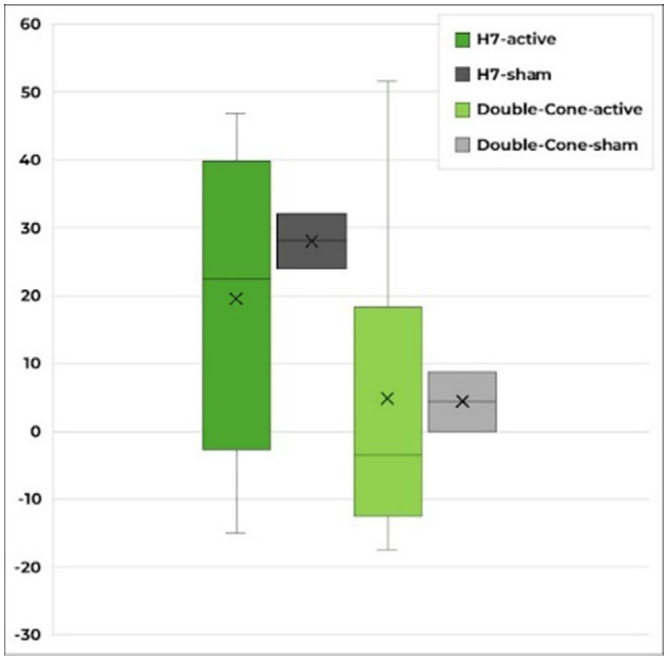
Image 3:



Conclusions: Although the difference between the coils didn't reach significance, owing to the small sample size, our data suggest that the **H7** coil **may be more effective** than the **Double-Cone** coil for **OCD**, and that **shorter illness duration** is associated with a **higher likelihood of response**.

Disclosure of Interest: M. Jakubec: None Declared, O. Laskov: None Declared, N.-A. Böhmová: None Declared, N. Biačková: None Declared, A. Čechová: None Declared, T. Novák: None Declared, M. Klírová Grant / Research support from: Received honoraria in the form of travel reimbursement from Brainsway Inc. (Israel) and consulting fees from BTL Industries JSC (Czechia) and Deymed (Czechia).

EPP369

Aperiodic Subthalamic Dynamics Distinguish Rest from Affective Processing: Implications for Adaptive DBS

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doi: 10.1192/j.eurpsy.2026.10714

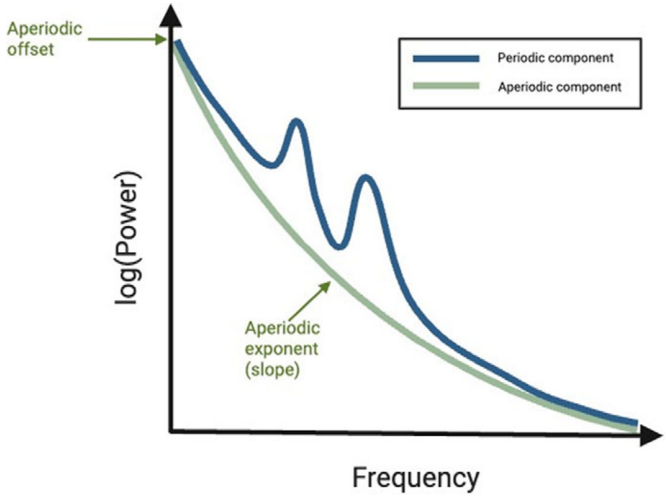
Introduction: The subthalamic nucleus (STN) is central to basal ganglia circuits, integrating motor, cognitive, and limbic functions. Its aberrant activity underlies core motor symptoms of Parkinson's disease (PD). While its motor role is well established, evidence implicates the STN in affective processing. Deep brain stimulation (DBS) alleviates PD motor symptoms and, perioperatively, allows intracranial recordings from implanted electrodes. These recordings provide a unique opportunity to study STN dynamics across brain states. Neural signals contain oscillatory components and a non-oscillatory aperiodic component in the background. This aperiodic component follows a **1/f** distribution, with two features: the **exponent**, the slope reflecting the level of local **excitation–inhibition balance**, and the **offset**, the overall broadband power (see Img. 1). Despite detailed STN oscillation studies, the aperiodic component remains under-investigated during emotion processing.

Objectives: We aimed to characterise STN aperiodic features—the exponent and offset—during rest and **emotional stimulus** engagement, and assess their potential as markers of state-dependent excitation–inhibition balance.

Methods: We analysed bilateral STN recordings from **19** PD patients (6 female; mean ± SD age = 59.7 ± 11.8 years) undergoing DBS. Recordings were obtained during rest and presentation of emotionally salient images from the International Affective Picture System (IAPS). Data were visually inspected and cleaned, then processed using the FOOOF algorithm to isolate the aperiodic exponent and offset. This yielded **114** electrode-level recordings across patients, which were analysed at the group level using paired t-tests ($\alpha = 0.05$) between resting and task conditions.

Results: The aperiodic exponent was lower during emotional processing **(1.44 ± 0.04)** than at rest **(1.49 ± 0.04**; $t(113) = 1.68$, **$p = 0.03$**). The offset was also lower during the task **(0.159 ± 0.059)** than at rest **(0.211 ± 0.053)**, but this was not significant ($t(113) = 2.18$, **$p = 0.09$**).

Image 1:



Conclusions: We provide novel evidence that STN aperiodic dynamics are state-dependent and sensitive to emotional engagement. The decrease in the aperiodic exponent, corresponding to a **reduced 1/f slope**, reflects **increased excitatory activity** relative to inhibition, likely driven via hyperdirect cortical or indirect striatal projections. Further studies should examine differences between positive and negative emotional valence and associations with mood symptoms in PD. Though preliminary, these findings suggest the aperiodic exponent could serve as a biomarker of STN

excitation–inhibition balance for adaptive DBS and a quantifiable metric to track disease progression and treatment response.

Disclosure of Interest: None Declared

EPP370

Case series of patients treated with Transcranial Magnetic Stimulation (TMS) in the psychiatry department of the Ciudad Real General University Hospital during the period 2024-2025

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doi: 10.1192/j.eurpsy.2026.10713

Introduction: This abstract presents a comprehensive overview of a case series examining the clinical application and outcomes of Transcranial Magnetic Stimulation (TMS) as a therapeutic intervention for patients with treatment-resistant depression (TRD), obsessive-compulsive disorder (OCD), and eating desorders (ED). The study, conducted at the Psychiatry Department of the Ciudad Real University General Hospital from 2024 to 2025.
Objectives: The primary objective of this case series was to evaluate the clinical application and outcomes of TMS in a cohort of patients with TRD, OCD, and ED who had not responded to traditional pharmacological treatments.
Methods: The methodology involved a retrospective analysis of patient data from individuals who underwent TMS treatment during the specified period. A total of 44 patients were included in the series, with a gender distribution showing a higher proportion of females. The age range of the patients was from 26 to 66 years, with the highest concentration of cases in the 40-50 age bracket. Protocols for depression, OCD and ED were distinctly applied, with specific parameters for frequency, pulses per train, number of trains, and inter-train intervals tailored to each condition, highlighting the personalized nature of the treatment. Patient outcomes were assessed through a validated questionary administered upon completion of the sessions. The results were categorized into three groups: remission, partial improvement, and no improvement.
Results: The findings were promising, with a significant proportion of patients achieving full remission. Specifically, 58.2% of the patients experienced remission, 31.6% showed partial improvement, and only 10.2% reported no improvement. These results are particularly notable given that the cohort consisted of patients who had not responded to previous pharmacological interventions, underscoring TMS's potential as a powerful alternative or adjunct therapy. The data on the average number of sessions per outcome category revealed a trend toward better results with a higher number of sessions, with high improvement correlating with a higher average session count compared to partial or no improvement. This suggests a dose-response relationship.
Conclusions: Furthermore, the study confirmed that TMS is a well-tolerated technique with few side effects, reinforcing its status as a safe and non-invasive treatment modality. The consistency of these findings with those of previous, larger-scale international studies demonstrates the reproducibility and generalizability of TMS's therapeutic benefits. However, as a case series, the study is limited by its small sample size. This limitation prevents rigorous statistical analysis and the drawing of definitive conclusions.

Disclosure of Interest: None Declared

EPP371

Repetitive Transcranial Magnetic Stimulation for Mood and Anxiety Symptoms in Complex Clinical Population

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doi: 10.1192/j.eurpsy.2026.10712

Introduction: Repetitive Transcranial Magnetic Stimulation (rTMS) is an effective neuromodulation treatment with proven effectiveness in multiple clinical trials aimed primarily at treatment-resistant depression (TRD) [1, 2]. Its effectiveness in complex clinical populations needs further evaluation. This study examined the effectiveness of rTMS in 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 151 patients, 86 women (57%) and 65 men (43%), average age 42.9±16.4 years. Vast majority (90.7%) of patients had a primary diagnosis of major depressive disorder, 6.6% - bipolar depression, and four patients had other disorders. The standard scales were used to quantify the severity of depressive symptoms (QIDS) and anxiety (GAD-7). The average baseline scores for depression and anxiety were 17.0 ±4.9 and 12.9±5.3, respectively. The patients received an average of 22.4±7.5 treatments. Three quarters (74.2%) of 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 11.2±6.2 and 8.7±5.7, respectively. The rates of improvement (>25% score reduction) and complete resolution of depressive symptoms were 62.0% and 16.0%, respectively. The rates of improvement and complete resolution of anxiety symptoms were 49.6% and 16.8%, respectively. There was significant difference between the bipolar and major depression subgroups symptomatology changes and minimal differences between the subgroups of patients with depression and with or without comorbidities. Patients with MDD and comorbidities had more pronounced anxiety severity than the rest (see Figure 1).

https://doi.org/10.1192/j.eurpsy.2026.10714 Published online by Cambridge University Press