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Favorable Response to Repetitive Transcranial Magnetic Stimulation in a Refractory Fibromyalgia Case: Decrease in Pain Threshold After 20 Sessions

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Introduction: Fibromyalgia is a chronic widespread pain syndrome often associated with central sensitization, and many patients remain refractory to conventional pharmacologic and non-pharmacologic therapies. Repetitive transcranial magnetic stimulation (rTMS) has been explored as a neuromodulation approach to modulate pain networks, especially via stimulation of the primary motor cortex (M1) or dorsolateral prefrontal cortex (DLPFC).
Some randomized controlled trials and long-term observational studies have reported sustained analgesic effects of rTMS in fibromyalgia and other chronic pain conditions. The mechanisms are thought to involve modulation of cortical excitability, enhancement of intracortical inhibition, and downstream effects on thalamic and subcortical pain pathways.
However, heterogeneity in stimulation parameters, target sites, and patient phenotypes has limited consensus on optimal protocols and predictors of response.
Objectives: To present a clinical case illustrating a meaningful analgesic response—with reduction in pain threshold—after a full cycle of 20 rTMS sessions in a patient with refractory fibromyalgia, and to situate it in the context of existing evidence.
Methods: Patient Profile: 57-year-old woman with long-standing fibromyalgia refractory to analgesics (including duloxetine 120 mg/d, gabapentin 900 mg/d, and conventional therapies), comorbid mood disorder (in partial remission), and functional impairment with gait difficulty and fatigue.
Intervention: rTMS delivered per standard depression protocol over left dorsolateral prefrontal cortex (20 sessions total) starting 11 June 2025. The treatment was well tolerated without significant adverse events.
Outcome Measures: Pain assessed by Visual Analog Scale (VAS/EVA) at baseline, mid-treatment, and end of treatment. Patient also reported subjective changes in mood, quality of life, and functional capacity.
Results: Baseline VAS: 7-8/10
Midpoint (≈ session 10): VAS ~6/10
End of 20 sessions: further subjective improvement in pain (patient report) and mood
The patient described a perceptible increase in her pain threshold (i.e. lesser sensitivity to painful stimuli), enabling modest functional gains.
No serious side effects or dropouts occurred.
Based on this favorable response, a maintenance cycle was scheduled for September 2025.
Conclusions: In this refractory fibromyalgia patient, a 20-session course of rTMS was associated with a clinically meaningful decrease in pain, increase in pain threshold, and subjective improvements in mood and function. This favorable response adds to the accumulating evidence supporting rTMS as a potential neuromodulatory tool in pain syndromes. Controlled trials with standardized protocols and long-term follow-up are needed to confirm efficacy, refine stimulation parameters, and identify predictors of response.

Disclosure of Interest: None Declared

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The Evolution of Deep Brain Stimulation in Psychiatry: Historical Targets and Network Expansion

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Introduction: Deep Brain Stimulation (DBS) has transformed the management of treatment-resistant psychiatric disorders, originating as a therapeutic approach for movement disorders before expanding into psychiatry. Initially developed to alleviate motor symptoms in Parkinson's disease, DBS has since been adapted for psychiatric conditions, particularly obsessive-compulsive disorder (OCD), major depressive disorder (MDD), and Tourette's syndrome. This poster traces the historical evolution of DBS in psychiatry, emphasizing the transition from focal targeting to network-centric modulation.
Objectives: To trace the historical evolution of psychiatric DBS, highlighting the transition from early focal targets to network-centric approaches and identifying future directions in precision neuromodulation.
Methods: A review of historical milestones, target development, and network models was conducted. Key stages in the evolution of DBS were examined, including early lesion-based approaches, adoption of new anatomical targets, and the integration of functional neuroimaging and electrophysiological insights into circuit-level modulation.
Results: Initial psychiatric DBS applications targeted the anterior limb of the internal capsule (ALIC) based on lesion studies in OCD. Refinements included the ventral capsule/ventral striatum (VC/VS) to optimize reward and motivational circuitry, the nucleus accumbens (NAc) for compulsive and anhedonic states, and the subthalamic nucleus (STN) adapted from movement disorder treatments. Advances in functional imaging revealed the importance of the cortico-striato-thalamo-cortical (CSTC) loop and broader network dysfunction, shifting DBS strategies toward modulation of large-scale circuits. Milestones include: (1) introduction of DBS for OCD in 1999; (2) adoption of VC/VS targeting in 2004; (3) expansion to STN for depression and OCD in 2008; (4) growing prominence of network-centric models after 2010; and (5) development of closed-loop DBS systems guided by spectral biomarkers since 2022. Emerging targets include the amygdala for PTSD, nucleus accumbens for substance use disorders, and hypothalamus/insula for anorexia nervosa.
Conclusions: The evolution of DBS in psychiatry illustrates a shift from static, focal intervention to dynamic, network-level modulation. Understanding this historical trajectory provides essential context for future developments in precision neuromodulation, where therapeutic efficacy will depend not only on target selection

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