TMS TRENDS

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How TMS Works in OCD

"Evidence suggests that TMS is an effective noninvasive therapy for obsessive-compulsive disorder refractory to first-line medications," Eric Hollander, MD, said at the annual conference of the Anxiety and Depression Association of America. A novel treatment for OCD would be most welcome. This is a disorder that is common- affecting 2%-3% of the population- debilitating, and notoriously tough to treat. Roughly half of patients with OCD do not respond to first-line therapy, which is selective serotonin reuptake inhibitors, cognitive-behavioral therapy, or both, according to Dr. Hollander, director of the autism and obsessive-compulsive spectrum program as well as the anxiety and depression program at Albert Einstein College of Medicine in New York. He has extensive experience with TMS and was a co-investigator in the pivotal, double-blind, randomized, 212-patient multicenter clinical trial that earned deep TMS (dTMS) U.S. Food and Drug Administration approval for treatment of major depressive disorder.

TMS for OCD is, at present, off-label therapy. Yet, there is now sufficient experience derived from formal clinical trials and off-label use in clinical practice to be able to state that the standard target area for rTMS is the supplementary motor area (SMA), according to Dr. Hollander. Dr. Hollander was senior author of a randomized open-label pilot study involving 50 consecutive OCD patients refractory to SSRIs. Half were assigned to a popular second-line strategy augmentation with antipsychotic agents. The other half received 5 20-minute long rTMS sessions per week for 2 weeks using low-frequency 1 Hz bilateral stimulation of the SMA.

At 3 weeks, the treatment response rate as defined by at least a 25% reduction from baseline on the Yale-Brown Obsessive-Compulsive Scale (YBOCS) was 68% in the rTMS group, compared with 24% in the control group. Thus, rTMS was better than treatment as usual.

TMS involves placing a coil on the scalp to create a magnetic pulse that passes through the skull and achieves predictable changes in neuronal activity in brain tissue, either exciting or deactivating target regions depending upon whether high- or low- frequency TMS is applied.

Brain imaging studies show that OCD is characterized by hyperactivation of the medial frontal cortex of the SMA. The dysfunctional circuitry of OCD has been worked out. It is striatally based, involving frontal-striatal-thalamic circuits. The SMA sits right above the anterior cingulate cortex and provides access to these key pathways. Basically, increased neuronal activity in the frontal lobes of OCD patients results in miscommunication with the striatal and thalamic regions, with resultant thalamic hyperactivity. This failure of cortical inhibition leads to persistent intrusive thoughts and behaviors, Dr. Hollander explained.

The neural act of OCD is distinct from that of other anxiety disorders, and it appears that TMS is not as effective in those disorders as in OCD, he added. The anterior cingulate is one step closer than the SMA to the frontal-striatal-thalamic circuits, which are of particular therapeutic interest in OCD, and it is accessible by dTMS. Of note, the anterior cingulate also is the target for cingulotomy, an established surgical treatment for refractory OCD.

If you are suffering from treatment resistant depression, please contact us or visit our website at www.psychfirst.com for more information about the possible benefits of TMS.