Deep brain stimulation may help patients with treatment-resistant obsessive-compulsive disorder

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Using electrodes to stimulate areas deep within the brain may have therapeutic potential for patients with obsessive compulsive disorder that is refractory to treatment, according to a report in the October issue of *Archives of General Psychiatry*.

"Obsessive-compulsive disorder (OCD) is a psychiatric disorder characterized by persistent thoughts (obsessions) and repetitive ritualistic behaviors (compulsions)," the authors write as background information in the article. "It has an estimated lifetime prevalence of 2 percent and affects men and women equally. If left untreated, OCD can destroy a person's capacity to function at work, socially and even at home." Current treatments include cognitive behavioral therapy and medication; these therapies work for only half of patients and reduce symptoms by an average of 40 to 60 percent. An estimated 10 percent of patients remain severely affected by OCD despite receiving the best available treatments.

Damiaan Denys, M.D., Ph.D., of the Academic Medical Center, University of Amsterdam, the Netherlands, and colleagues assessed the safety and effectiveness of deep brain stimulation among a group of 16 patients whose OCD had not responded to previous rounds of treatment. The study consisted of three treatment phases. After having electrodes implanted in the nucleus accumbens, a brain area critical to the reward system, all participants underwent an open phase of eight months during

which they received active stimulation and were assessed for symptoms of OCD every two weeks.

After the open phase, patients entered a one-month, double-blind phase in which they were randomly assigned to have the electrodes turned on or off in two-week blocks. Their symptoms were assessed before this phase and after each two-week block. Then, all patients entered a 12-month maintenance phase, during which stimulation was resumed and they were evaluated at three-month intervals.

The researchers ranked obsessive-compulsive symptoms on a scale of zero to 40; patients were classified as responding to treatment if they had a score decrease of at least 35 percent. In the open phase of the study, the average score decreased from 33.7 to 18.0 (46 percent). Among the nine patients classified as responders, scores decreased by an average of 23.7, or 72 percent.

"Anxiety and depressive symptoms decreased by half," the authors write. "The surgical procedure and stimulation were well tolerated. Permanent adverse events were limited to mild forgetfulness and word-finding problems."

During the double-blind phase of the study, in which 14 patients participated, the average difference in score between those receiving active stimulation and those receiving false or "sham" stimulation was 8.3, or 25 percent. The improvements observed in the open phase were sustained over the 12-month maintenance phase.

"In summary, the results of this study indicate that bilateral stimulation of the nucleus accumbens may be an effective and safe treatment in patients with highly refractory OCD and support the therapeutic potential of deep brain stimulation in patients with incapacitating chronic psychiatric disorders," the authors write. "Further research is

necessary to optimize this therapy with respect to patient selection and management, target location and investigation of new potential indications."

More information: *Arch Gen Psychiatry*. 2010;67[10]:1061-1068