Brain-stimulation method appears to help induce remission in some patients with depression

May 4 2010

an intervention that uses magnetic currents to activate certain brain areas—appears to help induce remission in patients with treatment-resistant depression, according to a report in the May issue of *Archives of General Psychiatry*.

Major depression is common, disabling and expensive, and more effective treatments are needed, according to background information in the article. Some patients experience little or no improvement after medication, psychotherapy or both. Transcranial magnetic stimulation has shown potential as a depression treatment, but there is concern regarding the quality of existing research.

Mark S. George, M.D., of the Medical University of South Carolina, Charleston, and colleagues conducted a randomized controlled trial of repetitive transcranial magnetic stimulation among 190 patients with depression who were not taking medication. Of these, 92 were randomly assigned to receive the intervention, which involved stimulating the left prefrontal cortex with an electromagnetic coil for 37.5 minutes daily for three weeks. The other 98 received a sham treatment that mimicked the sensory experience of stimulation using a similar coil and scalp electrodes but with the magnetic field blocked.

A total of 90 percent of patients in the sham group and 86 percent in the treatment group completed the study. Among these, depression remitted

in 14.1 percent in the transcranial magnetic stimulation group, compared with 5.1 percent in the sham group. The odds of achieving remission were 4.2 times greater in the active treatment group.

"One of the most important aspects of the study was ensuring that no one who knew the randomization status of the patient ever came in contact with the patient or interacted with the data," the authors write. "We developed a new active sham transcranial magnetic stimulation system that simulated the repetitive transcranial magnetic stimulation somatosensory experience and effectively masked the patients, the raters and, to a large extent, the treaters." At the end of the treatment phase, patients, treaters and clinical raters were asked to guess whether they were in the active or treatment group. Only treaters were able to guess at a rate more accurate than chance, and they were not very confident of their responses.

The researchers calculated that for every 12 patients treated with transcranial magnetic stimulation, one would remit from depression. Most remissions occurred among individuals with low antidepressant treatment resistance.

"The results of this study suggest that prefrontal repetitive transcranial magnetic stimulation is a monotherapy with few adverse effects and significant antidepressant effects for unipolar depressed patients who do not respond to medications or who cannot tolerate them," the authors conclude.

More information: Arch Gen Psychiatry. 2010;67[5]:507-516.

Provided by JAMA and Archives Journals