Brain Stimulation Induces Remission in Treatment-Resistant Depression

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Daily use of a device that stimulates the brain with magnetic waves was nearly three times as effective as a sham device against treatment-resistant depression, according to a study published in the May issue of the *Archives of General Psychiatry*.

Less than half of people with major depression who try an antidepressant regimen will achieve remission, which is defined as the near elimination of depressive symptoms. While many do benefit from a second or third regimen, a significant number fail to benefit at all, or they have such debilitating side effects that they can't remain on treatment. For these individuals, repetitive transcranial magnetic stimulation (rTMS) has been a promising alternative, but there have been no well-controlled studies of the device.

To rigorously test the procedure, Mark George, MD, of the Medical University of South Carolina in Charleston, and his colleagues report that they devised a sham rTMS device and compared it with a real machine in 190 people with treatment-resistant depression. The sham device looked the same as the real one. It had electrodes that attached to the brain and accurately mimicked the sensory experience of receiving the procedure. The magnetic charge, however, was blocked in the sham device, and none of the researchers who interacted with the patients or analyzed the data knew whether a participant had received the sham device or the real thing.

Though success rates were not particularly high, the real device performed much better than the sham device. In all, 14.1 percent of those who used the real device for 37.5 minutes per day for three weeks experienced remission of their depression, compared with 5.1 percent of those who used the sham device. People with lower levels of treatment-resistance were more likely to benefit from rTMS than those with higher levels.