Brain stimulation shows early promise against Alzheimer's

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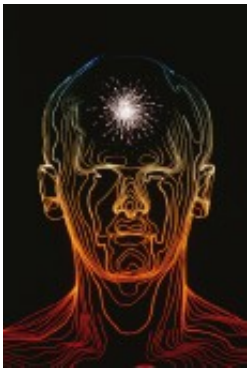

German pilot study found four of six patients kept, improved their memories one year later.

(HealthDay)—Four of six Alzheimer's patients responded to deep brain stimulation in a pilot study, German researchers report.

Meanwhile, 42 Alzheimer's patients in the United States and Canada have been enrolled in the largest study to date to examine the use of deep brain stimulation to treat the disease.

There are caveats about the research, even though deep brain stimulation is already used as a treatment for Parkinson's disease.

"The research is very preliminary. We have good intentions, but there has to be rigorous testing with a 'control' group," said Dr. Stephen

Salloway, director of neurology and the Memory and Aging Program at Brown University, in Rhode Island.

Still, "we're opening a new era of exploration for Alzheimer's treatment," said Salloway, who studies brain stimulation. His hospital, Butler Hospital in Providence, R.I., is taking part in the new, larger study that's enrolled patients.

There's no cure for Alzheimer's disease, and physicians have no way to stop it from getting worse and robbing patients of their memory and ability to function.

"Medications may help patients have a better quality of life, but probably don't have any long-term effect in terms of slowing down the disease or improving their life expectancy," said Dr. Ricardo Osorio, a research assistant professor at the New York University School of Medicine.

Enter deep brain stimulation. It's best known as a treatment that helps patients with advanced Parkinson's disease regain control of their movements. The treatment uses electrodes to continuously zap the brain with pulses of electricity.

In the German study, researchers tested brain stimulation on six patients with mild to moderate Alzheimer's disease. They targeted a part of the brain known as the nucleus basalis of Meynert. This region has been linked to a neurotransmitter called acetylcholine, which helps the brain think properly.

The brains of the patients were stimulated for 11 months after they went through a month of two weeks on and two weeks off treatment. Over the year, the memory skills of four patients stayed stable or improved while memory declined in two others.

The German study didn't compare the treated patients to a "control" group of other patients with Alzheimer's who didn't undergo deep brain stimulation, making it difficult to know if the treatment actually had any effect.

The researchers reported there were no severe side effects from the brain stimulation itself, although the devices malfunctioned in two patients, requiring them to undergo surgeries to implant the electrodes again.

The German researchers report that they've received funding from various drug and medical device companies, and one co-author reports co-holding patents on a type of brain stimulation and being a shareholder of a company that plans to develop new stimulators.

Last week, the Functional Neuromodulation group announced that their new research project has enrolled its 42 patients. Some of the patients will undergo stimulation of a part of the brain linked to memory; the others will have a device implanted but it will not be turned on.

The idea is to help a brain "circuit" work properly again, Brown University's Salloway explained. The treatment may even coax the creation of new neurons and connections in the brain.

As for cost, Salloway said Medicare covers brain stimulation for Parkinson's patients. "The biggest cost is the surgery for the implantation," he said. "Then there would be ongoing care, but hopefully the person doesn't need a lot of care and maintenance."

Osorio pointed out that deep brain stimulation is "not the therapy of choice" for Parkinson's disease, and is only used in select cases. He predicted that brain stimulation will be a second or third "therapy of choice" for Alzheimer's if it's even shown to work since it requires

surgery to implant the electrodes.

The new German study appears in the May 6 online edition of the journal *Molecular Psychiatry*.

More information: For more about Alzheimer's disease, visit the Alzheimer's Association.