Focused Ultrasound Shows Promise as a Noninvasive Deep Brain Treatment for Essential Tremor, a Condition That Affects Millions

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WASHINGTON, Oct. 3, 2011 /PRNewswire-USNewswire/ -- In a presentation at the Congress of Neurological Surgeons today, University of Virginia neurosurgeon W. Jeffrey Elias, MD reported that preliminary results of a pilot clinical trial indicate that MR-guided focused ultrasound has the potential to safely and effectively control essential tremor (ET), a common neurological condition that affects 10 million Americans.

Results from the study's first 10 patients showed a 78 percent improvement in contralateral tremor scores in the hand, as assessed with the Clinical Rating Scale for Tremor (CRST). Patients' functional activities scores improved by 92 percent, as measured in the ‘Disability' subsection of the CRST. Outcomes and complications were comparable to other procedures for tremor, including stereotactic thalamotomy and deep brain stimulation.

"So far, this noninvasive treatment has been life-changing for patients," said Elias, the study's principal investigator and Director of Stereotactic and Functional Neurosurgery at UVA. "All now have improved ability to use their dominant hand to perform tasks that they couldn't do before treatment, such as writing legibly, drinking and eating without spilling, and buttoning clothes. It has been exciting to see their immediate improvements."

The study is using magnetic resonance imaging to guide and monitor the delivery of focused ultrasound to tremor-causing nerve cells in the thalamus, a region deep within the brain known to be an effective target for ET and other movement disorders. The treatment goal is to reduce tremor in a patient's dominant hand.

Most study participants have had ET for decades, Elias reported. As part of the study's inclusion criteria, all had previously taken at least two medications that failed to control their tremor. Despite the severity of their disability, patients had opted to cope with symptoms rather than undergo invasive surgical procedures. < '/>"/>

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