

Deep-Brain Stimulation Aids Quality of Life in PD

BY JOHN R. BELL
Associate Editor

Patients with Parkinson's disease who received continuous electrical stimulation to the subthalamic nucleus experienced significantly greater improvements in various measures of quality of life and motor function after 6 months than did patients who received medication alone, according to a report by Dr. Günther Deuschl of Christian Albrechts University in Kiel, Germany, and his colleagues.

Conducted by the German Parkinson Study Group, this randomized controlled trial included 78 patient pairs (156 patients) recruited from centers in Germany and Austria. One patient in each pair continued to receive an individualized medication regimen alone, while the other received pulsed electrostimulation to the subthalamic nucleus via a surgically implanted device in addition to the medication regimen; stimulation was ongoing and adjusted for each patient (*N. Engl. J. Med.* 2006;355:896-908).

In 50 of the 78 pairs, the patient who had received neurostimulation showed greater improvements in Parkinson Disease Questionnaire 39 (PDQ-39) summary score than the patient treated with medication alone. The mean PDQ-39 summary score went from 42 at baseline in the neurostimulation group to 32 at 6 months—an improvement of 24%. In the medication-only group, the mean score was 40 at baseline and 40 after 6 months.

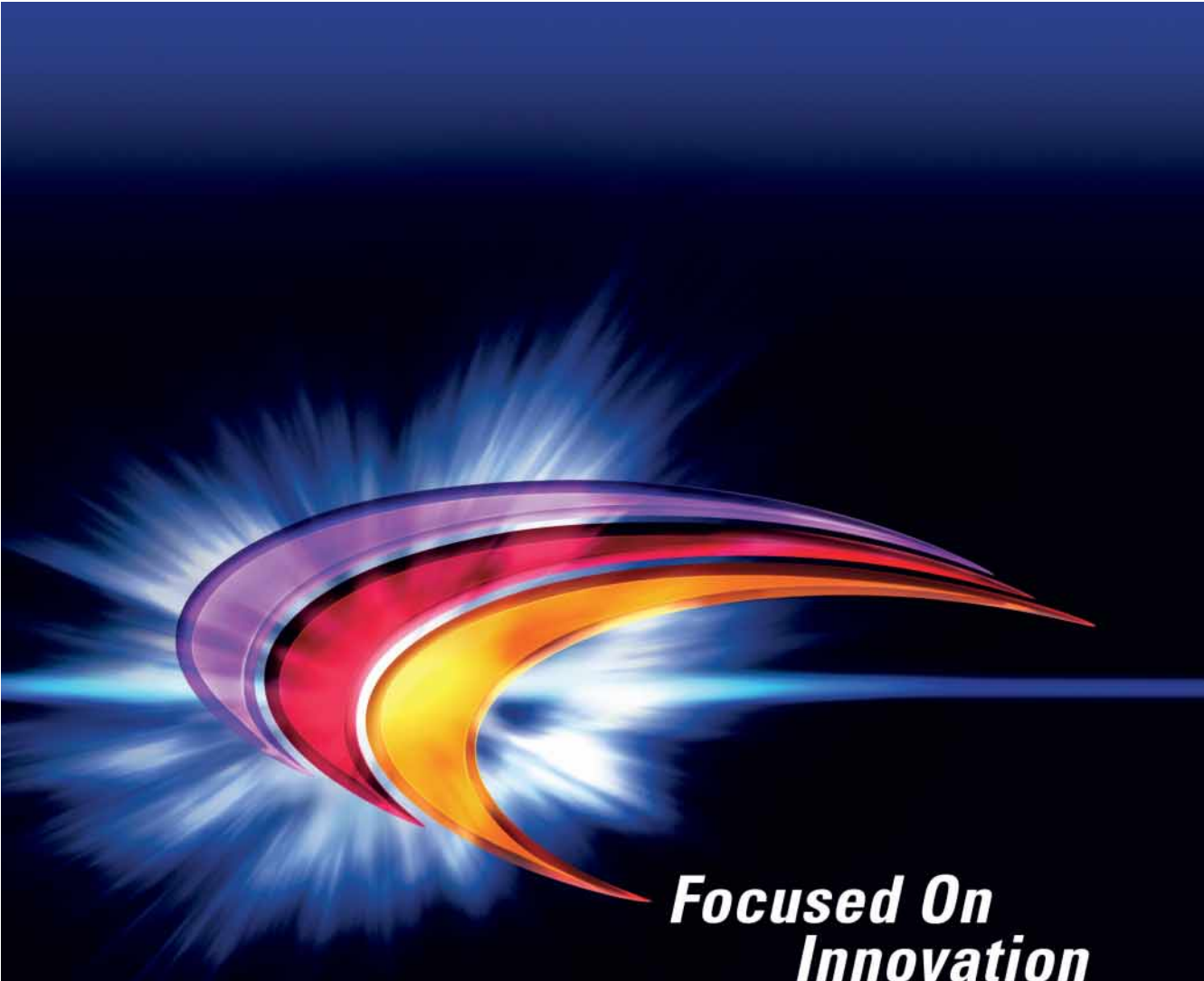
Motor function (level of symptom severity) in each patient was assessed via the Unified Parkinson's Disease Rating Scale, Part III (UPDRS-III), after a 12-hour withdrawal of antiparkinsonian medications at baseline and at 6 months. In 55 pairs, the patient treated with neurostimulation had a better UPDRS-III score than the nonstimulated patient without medication, the investigators reported. The neurostimulation group's mean score was 48 without medication at baseline, improving to 28 at 6 months. For the nonstimulation group, the mean score barely changed, going from 47 at baseline to 46 at 6 months.

A dyskinesia assessment was collected

via patient diaries, and different medications and dosages were converted to equivalents for comparison. Also administered were the Schwab and England scale for activities of daily living, the Montgomery and Asberg Depression Rating Scale, the Brief Psychiatric Rating Scale, and the Medical Outcomes Study 36-item Short-Form Health Survey. Most measures showed significant mean improvements for the neurostimulation group versus slight declines for the medication-only

group. Notably, the neurostimulation patients saw a 39% improvement in activities of daily living, versus a 5% decline in the medication-only patients. Psychiatric measures did not differ significantly between the two treatment groups. The investigators reported 13 adverse events—10 in the neurostimulation group, including three deaths, one of which was suicide, and 3 in the medication-only group. A patient in the medication group died after driving during a psychotic episode.

The results demonstrate “superior efficacy” of neurostimulation, the investigators concluded, with “significant and clinically meaningful improvement in quality of life ... [and] longer periods and better quality of mobility with less dyskinesia. These changes ... led to improvement in measurements of activities of daily living, emotional well-being, stigma, and body discomfort.” However, these benefits should “be weighed against the risk of complications related to surgery,” they said. ■



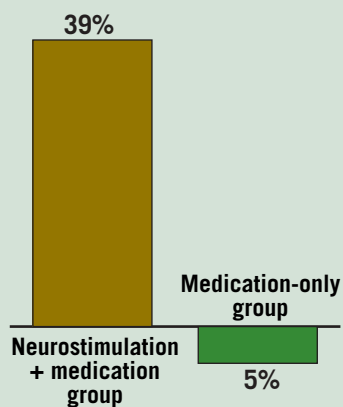
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Note: Based on 78 patient pairs.
Source: Dr. Deuschl