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\*\*Duplicate\*\*2

**Long-term effects of pallidal deep brain stimulation in tardive dystonia.**

OBJECTIVE: High-frequency stimulation of the globus pallidus internus (GPi) is a

highly effective therapy in primary dystonia. Recent reports have also

demonstrated almost immediate improvement of motor symptoms in patients with

tardive dystonia after pallidal deep brain stimulation (DBS). Here, we show the

long-term effect of continuous bilateral GPi DBS in tardive dystonia on motor

function, quality of life (QoL), and mood.

METHODS: Nine consecutive patients undergoing DBS for tardive dystonia were

assessed during continuous DBS at 3 time points: 1 week, 3 to 6 months, and last

follow-up at the mean of 41 (range 18-80) months after surgery using established

and validated movement disorder and neuropsychological scales. Clinical

assessment was performed by a neurologist not blinded to the stimulation

settings.

RESULTS: One week and 3 to 6 months after pallidal DBS, Burke-Fahn-Marsden

Dystonia Rating Scale (BFMDRS) motor scores were ameliorated by 56.4 +/- 26.7%

and 74.1 +/- 15.8%, BFMDRS disability scores by 62.5 +/- 21.0% and 88.9 +/-

10.3%, and Abnormal Involuntary Movement Scale (AIMS) scores by 52.3 +/- 24.1%

and 69.5 +/- 27.6%, respectively. At last follow-up, this improvement compared

with the presurgical assessment was maintained as reflected by a reduction of

BFMDRS motor scores by 83.0 +/- 12.2%, BFMDRS disability scores by 67.7 +/-

28.0%, and AIMS scores by 78.7 +/- 19.9%. QoL improved significantly in physical

components, and there was a significant improvement in affective state.

Furthermore, cognitive functions remained unchanged compared with presurgical

status in the long-term follow-up. No permanent adverse effects were observed.

CONCLUSION: Pallidal deep brain stimulation is a safe and effective long-term

treatment in patients with medically refractory tardive dystonia.

DOI: 10.1212/WNL.0b013e3181aaea01

PMID: 19564584 [Indexed for MEDLINE]

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10.1016/j.parkreldis.2017.05.010. Epub 2017 May 19.

\*\*Duplicate\*\*

**Long-term follow-up of bilateral subthalamic deep brain stimulation for**

**refractory tardive dystonia.**

BACKGROUND: No effective treatment for tardive dystonia (TD) has been well

established. Deep brain stimulation (DBS) can ameliorate motor manifestations in

primary dystonia, and may also be an effective approach for TD.

OBJECTIVES: This study aimed to illuminate the long-term efficacy and safety of

subthalamic nucleus (STN)-DBS in treating TD.

METHODS: Ten patients with refractory TD underwent STN-DBS therapy and were

assessed by the Burke-Fahn-Marsden dystonia rating scale (BFMDRS), Abnormal

Involuntary Movement Scale (AIMS), Hamilton Depression Scale (HAMD), Hamilton

Anxiety Scale (HAMA), and the Short Form (36) Health Survey (SF-36) at four time

points: pre-operation, 1 week post-operation, 6 months post-operation, and at a

final long-term postsurgical follow-up time point.

RESULTS: The mean follow-up time was 65.6 ± 30.4 months (range, 12-105 months).

At the first follow-up, BFMDRS motor and disability scores had improved by

55.9± 28.3% and 62.6± 32.0%, respectively, while AIMS scores improved by

53.3± 26.7%. At the second follow-up, BFMDRS motor and disability scores

improved further, by 87.3± 17.0% and 84.3% ± 22.9%, respectively, while AIMS

scores improved by 88.4 ± 16.1%. At the last follow-up, this benefit was

sustained and had plateaued. Quality of life was improved significantly at the

long-term follow-up, and the HAMA and HAMD scores displayed a significant

reduction that persisted after the first follow-up.

CONCLUSION: STN-DBS may be an effective and acceptable procedure for TD, leading

to persistent and significant improvement in both movement and psychiatric

symptoms.

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PMID: 28552340 [Indexed for MEDLINE]

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Jun 24.

\*\*Duplicate\*\*3

**Long-term benefit sustained after bilateral pallidal deep brain stimulation in**

**patients with refractory tardive dystonia.**

BACKGROUND/AIMS: Tardive dystonia (TD) can be a highly disabling, permanent

condition related to the use of dopamine-receptor-blocking medications. Our aim

was to evaluate the long-term effect of bilateral pallidal deep brain

stimulation (DBS) for TD.

METHODS: Five consecutive patients with disabling TD who underwent stereotactic

placement of bilateral globus pallidus internus DBS leads were included. All

patients had a history of mood disorder or schizophrenia previously treated with

neuroleptic medication, with a mean duration of motor symptoms of 10.2 years.

Dystonia severity was measured using the Burke-Fahn-Marsden Dystonia Rating

Scale (BFMDRS) movement score by a blinded neurologist reviewing pre- and

postoperative videotaped examinations.

RESULTS: The mean baseline movement BFMDRS score was 49.7 (range 20-88).

Overall, we observed a mean reduction of 62% in the BFMDRS movement score within

the first year after surgery. Persistent improvement in dystonia (71%) was seen

at the last follow-up ranging from 2 to 8 years after surgery.

CONCLUSION: Our experience suggests that pallidal DBS can be an effective

therapy with long-term benefits for patients with TD.

2010 S. Karger AG, Basel.

DOI: 10.1159/000316763

PMID: 20588082 [Indexed for MEDLINE]

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10.1111/j.1600-0404.2008.01115.x. Epub 2008 Oct 25.

**A double-blind study on a patient with tardive dyskinesia treated with pallidal**

**deep brain stimulation.**

BACKGROUND: Tardive dyskinesia (TD) is a neurological disorder typically induced

by long-term exposure to neuroleptics. Deep brain stimulation (DBS) of the

globus pallidus internus (GPi) may represent a therapeutic alternative for TD,

which is often resistant to conservative treatment.

AIMS OF THE STUDY: This report's objective is to present a case of TD

successfully treated with DBS, as well as to indicate a putative role of brain

perfusion scintigraphy as a helpful tool correlating functional imaging findings

with clinical responsiveness to DBS.

METHODS/RESULTS: A 42-year-old male patient suffering from refractory TD

underwent bilateral GPi DBS surgery. Post-operative Burke-Fahn-Mardsen Dystonia

Rating Scale (BFMDRS) and Abnormal Involuntary Movement Scale (AIMS) total

scores have been reduced by 90.7% and 76.7% respectively on the 6-month

follow-up assessment. Brain perfusion scintigraphy, performed post-operatively

in the two stimulation states, revealed a decrease in cerebral blood flow,

during the 'on-DBS', compared with the 'off-DBS' state.

CONCLUSIONS: Clinical improvement of this patient, correspondent to previous

studies, suggests that continuous bilateral GPi DBS may provide a promising

treatment option for TD. Furthermore, this report could imply, as no previous

such comparison study exists, a possible correlation between brain functional

imaging findings and the movement disorder's response to DBS.

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PMID: 18976318 [Indexed for MEDLINE]