

Long-term outcome of Gpi DBS for dystonias, a single-center study in Pecs, Hungary, experiences of 60 cases, and review of literature

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Introduction

Bilateral pallidal deep brain stimulation (DBS) is an established treatment option for primary generalized and segmental dystonia. In the present study we evaluated the results of our dystonia patients treated by bilateral globus pallidus DBS.

Aims

To objectively measure and compare the improvement of symptom relief, health-related quality of life (HQoL) in both primary and secondary dystonia.

Methods

The surgical results of sixty consecutive dystonia patients underwent DBS implantation were evaluated (age: 42.5 ± 18.3 years; sex: 33 male, 27 female; etiology: 36 primary and 24 secondary dystonia /etiology: JCP 6, tardive 7, post-stroke 2, NBIA 2, mioclonus 1, primary dystonic tremor 4, DOPA responsive 2; disease duration: 16.1 ± 9.3 years). Severity of dystonia measured by Burke-Fahn-Marsden Dystonia Rating Scale (BFMDRS) and disability BFMDdS scale, and the health related quality of life (HQoL) measured by EQ-5D, and EQ-VAS scale were obtained preoperatively and compared to the scores obtained at postoperative 6 months and subsequent yearly follow-ups. Sixty pts. had 1 year, 51 had 2 years, 39 had 3 years, 33 had 4 years, and 23 had 5 years follow-ups respectively.

In all cases the BFMDRS scores were re-evaluated by a rater blinded to the treatment.

Treatment responsiveness was defined as an at least 25% improvement on the BFMDRS scores. Non-parametric Mann-Whitney, McNemar and Kruskal-Wallis tests were applied to test statistical significance.

Results

Severity of dystonia improved on BFMDRS by median 41%, the BFMDdS by median 42%. The improvement was significant in primary, however was insignificant in secondary group. The HQoL significantly improved: EQ-VAS by median 55% (in primary from 0.378 points to 0.880 points, in secondary group from 0.110 to 0.515 points) and it remained constant during the 5 years follow-ups.

Conclusion

Our results are in accordance with previously published findings demonstrating that DBS is a highly effective and long-lasting treatment option for primary dystonia. DBS is considerably less efficient in secondary dystonia; however, it still has a high impact on the quality of life.