



Original Investigation | Neurology

What is the impact of Deep Brain Stimulation on Quality of Life in patients with Refractory Essential Tremor?

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Key Points

Question:

How does deep brain stimulation (DBS) affect the quality of life in patients with refractory essential tremor (ET)?

Findings:

Physical Symptoms:

Patients experienced an average 60.4% improvement in physical symptoms. Thalamic DBS significantly improved daily activities such as **eating, drinking, writing, home maintenance, and hobbies**, though bimanual tasks showed less improvement.

Emotional Well-being:

DBS led to a **positive emotional impact**, reducing the disease's negative effects on overall life and social interactions.

Tremor Reduction:

Kinetic tremor reduction with Vim nucleus DBS ranged between **53% and 63%**.

Head and voice tremors showed improvement postoperatively in bilaterally stimulated patients.

Meaning:

Deep brain stimulation provides significant benefits for patients with refractory essential tremor, improving both physical function and emotional well-being

Abstract

Importance:

Essential tremor is believed to affect 5% of the population. At least 50% of patients have medication resistant tremor which some of the first line treatments generally being beta-blockers. (Rissardo J.P,et al.2023, Sobstyl M, et al 2007). Many patients experience significant limitations in their ability to perform daily tasks, making routine activities increasingly challenging.

Objective:

Does deep brain stimulation have a positive impact on quality of life in patients with essential tremor.

Evidence Review

To conduct this literature review, a systematic search strategy was applied across two databases, Medline and Embase to identify relevant peer-reviewed articles and reviews published between 2000 and 2024. The search terms were tailored to capture the scope of the topic, combining keywords with Boolean operators (“and” and “or”). The key words used were “essential tremor”, “deep brain stimulation”, “quality of life” along with related terms such as “daily functioning”. The inclusion criteria involved studies with adult populations and focusing on quality of life such as performing daily tasks, emotional impact and other symptoms such as speech. Opinion pieces were excluded. Data from selected articles was thematically organized to identify key findings and patterns.

Findings

Patients with ET had an improvement of about 60.4% in physical symptoms. (Ellis, et al. 2008) Thalamic DBS improved the ability of the patients in eating, drinking, writing, home maintenance, hobbies and participation in society. Activities of daily life requiring bimanual skills were less improved. (Hariz, et al. 2002) The emotional wellbeing of the patients were positively affected and the negative impact of the disease on the life as a whole and on social life was decreased. These findings were found to be similar in HRQoL studies. (Huss, 2015)

Conclusion and Relevance

Treating refractory essential tremor by deep brain stimulation have overall shown a positive impact on patient quality of life.

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