

Deep Brain Stimulation: It's Use in Treatment of Parkinson's Disease

Sophia Katherine*

Department of Neurology, University of Montreal, Montreal, Quebec, Canada

DESCRIPTION

Deep Brain Stimulation (DBS) is a neurosurgical procedure to treat variety of neurological symptoms mainly the debilitating symptoms of Parkinson's disease (PD) which include slowed movement, stiffness, tremor, rigidity and walking problems. It is also used to treat a common neurological movement disorder called tremor. For patients whose symptoms cannot be adequately controlled with medications, this neurosurgical procedure is used for them.

The way that brain disorders are treated and understood has been changed by the use of Deep Brain Stimulation (DBS) to intervene directly in pathological neural circuits. DBS is a neurosurgical procedure which involves the implantation of electrodes within the brain at specific targets and the delivery of constant or intermittent electricity from an implanted battery source. DBS have been used for a variety of neurological and non-neurological conditions for over 160,000 patients worldwide by increasing the number over the recent years.

Parkinson's disease is a complex disorder which is a result of the degeneration of the dopamine neurons and which then changes on how brain cells operate throughout the brain. The way to restore movements without causing side effects becomes complicated in this case. In this disease most of the brain systems get affected at the time when the treatment starts as the patients do not develop any motor symptoms until almost 70% of their dopamine has been lost. 1 million people in U.S. are affected by Parkinson's disease. After Alzheimer's disease, parkinson's disease is the second most common neurological disorder.

The STN structure is the most commonly used target for DBS over the past 10 years for which the dysfunction has been linked to PD symptoms.

The choice between the STN and GPi is most generally informed by discussion within a multidisciplinary team and mandated by the patient's clinical profile and needs. Adverse

cognitive and mood effects might be more common after STN stimulation although randomized studies have shown that STN stimulation might have a lesser effect on motor symptoms and dopaminergic drug reduction than GPi stimulation. Multitudinous studies have also shown that STN DBS provides persistent symptom enhancement indeed 5 or 10 years after surgery, albeit with deterioration of cognition and gait due to the determined progression of the underlying degenerative disease. Still, chronic DBS has also created a new phenotype of PD cases in whom bradykinesia, tremor, severity, on - off fluctuations and dyskinesias are enhanced but who continue to present with progressive gait, speech and cognition problems. Gait problems, in particular, become important and tough to manage at late stages of the disorder. DBS of the pedunculopontine nexus area has been proposed as a measure to ameliorate freezing and postural insecurity with the thing to reduce related cascade, but the selection of appropriate candidates and the difficulty of demonstrating objective benefit have come major obstacles to wide use of this approach.

CONCLUSION

DBS is a important tool that can be used to treat brain conditions and probe their underlying pathophysiology. Rapid advances in the once two decades have led to DBS getting a standard of care in motor circuit diseases, and several trials have also delved its efficacy in a number of arising, non-motor suggestions. To define the mechanisms and characterize its influence on neural circuitry, the important of the success of DBS has been driven by preclinical, neurophysiological and computational studies. Important openings and unmet requirements in the field include technological invention concentrated on enhancement of effectiveness and tolerability, better integration with imaging and other modalities and landing the global experience through enhanced study designs and registries. In numerous ways, the DBS field is still veritabily important evolving, but with an unwavering aim – to treat brain disorder as safely and effectively as possible.

Correspondence to: Sophia Katherine, Department of Neurology, University of Montreal, Montreal, Quebec, Canada, E-mail: kattiesoph43@umontreal.ca

Received: November 02, 2021; **Accepted:** November 16, 2021; **Published:** November 23, 2021

Citation: Katherine S (2021) Deep Brain Stimulation: It's Use in Treatment of Parkinson's disease. J Clin Res Bioeth. 12:387.

Copyright: © 2021 Katherine S. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.