

# Deep Brain Stimulation Surgery and Clinical Characteristics of Essential Tremor in a Cohort of Veterans

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## Background

To review clinical characteristics of essential tremor (ET) in patients who underwent deep brain stimulation (DBS) surgery.

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DBS surgery is an effective treatment for patients with refractory ET. There has been an improvement in the surgical and programming technique over time. However, only a minority of patients with ET undergo DBS.

We conducted a retrospective review of clinical characteristics of ET in patients who underwent DBS, to develop a better understanding of factors that may play an important role in the selection for this procedure.

## Methods

The Movement Disorders Clinical Case Registry (MD-CCR) is an application that works within a specific US Veterans Health Administration medical center's electronic medical record (EMR) to query and export information.

The MD-CCR in Houston was queried for all patients with ICD-9/10 codes of ET seen in a movement disorder specialty center's outpatient clinics during the time period September 1, 2001 – March 31, 2018.

Each patient's EMR was reviewed to verify the diagnosis of ET and surgery for DBS.

**Table 1: Demographic and Clinical Characteristics of ET Patients Who Underwent DBS Surgery**

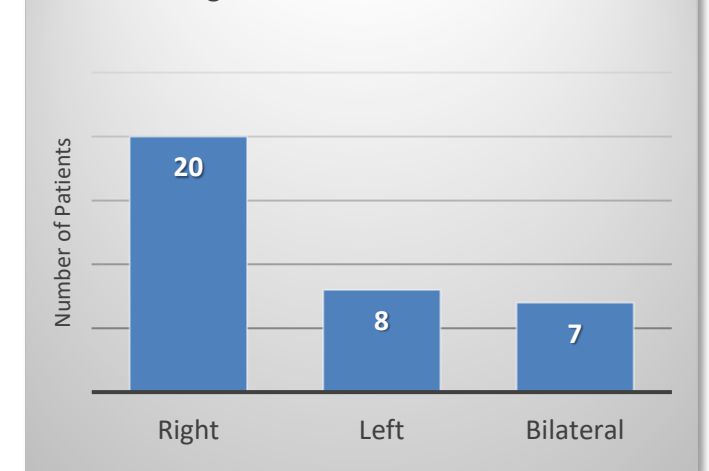
	n	(%)
Number of ET patients getting DBS	42	(4.0)
Gender, male	42	(100)
Mean age at onset of tremor, years	38.7 ± 17.9	
Mean age at the time of surgery, years	68.4 ± 7.8	
Duration of symptoms at the time of surgery, years	30.7 ± 16.1	
Family history	25	(64.1)
Alcohol responsiveness	8	(28.6)
Head tremor	24	(68.6)
Gait impairment	23	(67.6)
Number of tremor medications tried before surgery	2.9 ± 1.5	
Botulinum toxin injections before surgery	11	(30.0)

## Results

Of the 1051 patients identified with ET, 42 (4.0%) were treated with DBS for medically refractory tremor.

The mean age at onset of symptoms was 38.7 ± 17.9, diagnosis occurring at mean age of 59.9 ± 12.6, and patients undergoing DBS at 68.4 ± 7.8 years.

**Figure 1: Most Affected Side**



## Conclusions

This data identifies some of the key features of a cohort of military veterans with ET who underwent DBS surgery.

The clinical significance of these features with respect to patient selection for DBS surgery remains to be defined.