The effect of deep brain stimulation randomized by site on balance in Parkinson's disease.


To determine how deep brain stimulation targets affect gait and balance a double-blind study using a range of balance assessments compared 28 STN and GPi DBS Parkinson’s Disease (PD) patients (N=14 in STN and N=14 in GPi) with a control group (N=9) of unimplanted PD patients. Patient’s balance, fear of falling and gait were assessed in the On and Off medication state, and six months post DBS implant in the on and off stimulation state to determine how these therapies interact and affect balance. Although previous meta-analysis have shown no significant differences between STN vs. Gpi on gait and balance, the tools used to measure these responses have been limited to a few questions in the UPDRS part III. This team instead used three detailed scales that provided a more thorough assessment of gait and balance disorders.

The tools used to assess balance were Activities-specific Balance Confidence (ABC) scale which correlates with postural stability, gait and falls. The Activities of Daily Living (ADL) and the UPDRS Part II relates to severity of disease and fear of falling. They also used the Balance and Gait scale (BaG) and the self-efficacy scales were used to better understand the lifestyle implications of DBS.

Results: In the best treated ON medication and ON stimulation states, there was no difference between GPi and STN as compared to their pre-op ON med state. The combined effect (ON/ON) improved balance more than either medication or DBS alone. **But in the ON DBS and OFF medication state, the GPi group showed improved performance and better balance confidence compared to the STN group (P=0.05).** The authors suggest there may be improved balance and gait in PD subjects in the wearing off medication state for those implanted with the GPi target and therefore GPi may be preferable over STN in PD patients with stability concerns.

The tools they used to assess gait and balance performance (BaG and ABC) may be more sensitive than the UPDRS part III.


PMID: 25831 [PubMed – as supplied by publisher]

Committee Activities

Clinical Care Committee

- **Rotation of Committee Chair:** Leadership for the clinical care committee rotates amongst the PADRECCs. The Philadelphia PADRECC leads the committee for May/June. Committee meets via conference call the first Tuesday of the month at 12pm (EST)

- **Standardize and Optimize Clinical Care:** Continues to discuss a variety of clinical issues to enhance patient care, the committee continues to provide clinical support to the Consortium network, and work on measures to standardize clinical care across the PADRECC network. Recent agenda items have included ongoing discussion on:
  - Use of Clinical Video Telehealth for movement disorders and home monitoring devices
  - Review of applications in clinical arena for subset of patients, and ways to expand access to CBOCs and remote areas where subspecialty expertise is not available. Research ideas pertaining to the use of home monitoring devices in movement disorders patients.
  - Palliative Care: Review of palliative care resources in the PADRECCs
  - Standardized consent process for botulinum toxin injections across PADRECCs
  - Quality improvement/assurance project looking at hospitalized PADRECC patients and use of dopamine-blocking medications
  - The use of DAT scans in clinical practice
    - Applications and pitfalls of use

- **PADRECC Transmitter:** PADRECC clinicians provide reviews of recent movement disorder publications that are included in the PADRECC Transmitter

Education Committee

- **PADRECC/EES Movement Disorder Series:** The FY14 series is underway. The 4th audio conference for this series was held on May 8, 2014, "Drug Induced Parkinsonism." The audio conferences are archived on the National website [www.parkinsons.va.gov](http://www.parkinsons.va.gov) under the Movement Disorder Series tab. All evaluations for CMEs are being done electronically via TMS and preregistration is required. Audio conferences are now held via Microsoft Lync, participants can use audio access through their computer or by calling a conference line (similar to VANTS). Please see the Dates to Remember section below for listing of upcoming audio conferences.

- **Patient Education Video Project:** The My Parkinson’s Story video series from FY 11, 12 & 13 are now available for viewing on the National PADRECC & VA Consortium Website: [http://www.parkinsons.va.gov/patients.asp](http://www.parkinsons.va.gov/patients.asp) and on YouTube. Taping of 2 videos for FY14 are scheduled for June.

- **Enduring Materials Project:** In collaboration with EES, the committee is developing an on-line TMS self study program that will offer CME credit for a 3 year period. The purpose of this training
is to provide VHA healthcare professionals with a broadened medical awareness of Mood Disorders in PD.

- **PADRECC Transmitter:** The committee continues to assemble and distribute this e-newsletter every other month.

### San Francisco PADRECC Service Area Updates

**San Francisco PADRECC**

**Director:** Caroline Tanner, M.D., Ph.D

Caroline Tanner, M.D., Ph.D. is the new Director, Parkinson’s Disease Research Education and Clinical Center (PADRECC), San Francisco Veterans Affairs Medical Center. She is also Adjunct Professor, Department of Neurology, University of California, San Francisco.

Dr. Tanner completed a residency in Neurology and fellowship in Clinical Neuropharmacology and Movement Disorders at Rush University and a doctorate in Environmental Health Sciences at the University of California, Berkeley. Her clinical practice specializes in movement disorders, particularly Parkinson’s disease (PD), atypical Parkinsonism and dystonia. Her research interests include investigations of descriptive epidemiology, environmental and genetic determinants, biomarkers, early detection, non-motor disease features and interventions for the secondary prevention, disease modification and symptomatic treatment of movement disorders and neurodegenerative diseases. Dr. Tanner serves as advisor to many scientific, governmental and voluntary groups and has received many honors, most recently the American Academy of Neurology Movement Disorders Research Award (2012) and the Spanish Neurological Society Cotzias Award (2013).

At the 2014 National VA Parkinson’s Disease Consortium Conference-East Coast, Dr. Tanner spoke on *Military service and neurodegenerative disorders*. At the VA Research & Development Seminar Series (SFVAMC) she spoke on *Seeking the Causes of Parkinson’s Disease: an Epidemiologist’s Perspective*. And, at the SFVAMC-NCIRE 6th annual The Brain at War conference she presented: *Relationships between Environmental Exposures, Neurotoxins, Genetic Marks and Traumatic Brain Injury in Veterans*.

We welcome Caroline Tanner as a leader in the care of Veterans with Parkinson’s disease and other movement disorders.

**Interventional MRI (iMRI) guided Deep Brain Stimulation (DBS) implantation at San Francisco PADRECC** is an exciting addition to our program. SFVAMC is the first VA in the nation to perform MRI DBS surgery. “For many years, if you were a Parkinson’s patient and you wanted to have DBS, there was only one option, the ‘awake’ surgery,” says SFVAMC’s Chief of Neurosurgery (and SF PADRECC’s Director of Surgery), Paul Larson, MD.

Traditional surgical methods for DBS implantation require an awake patient and involve extensive physiologic mapping of the brain, which results in multiple penetrations of the brain. This process increases accuracy but results in longer procedures times, increased patient discomfort and increased risk.
With Interventional MRI, the entire procedure is performed within the bore of a 3T MRI scanner using non-magnetic, titanium instruments and has several advantages over traditional DBS implantation. No physiologic mapping is required, so implantation may be performed under general anesthesia with a single penetration of the brain. The procedure time is cut in half, and imaging throughout the surgery allows for immediate detection of complications.

“For many years, if you were a Parkinson’s patient and you wanted to have DBS, there was only one option, the awake-surgery,” says Larson. “Now patients have a choice: They can have the longer, traditional procedure, or they can have the asleep-MRI technique. At the end of the day these are both reasonable ways to implant electrodes. It comes down to patient preference”. We’re happy that Veterans have a choice.

**Outreach through Telehealth**  San Francisco PADRECC has telehealth clinic with each of their CBOCs, each VAMC in their VISN (21), and many remote stations as well. LSVT-Loud speech therapy has been offering at-home telehealth encounters for our Parkinson’s patients, and now SF PADRECC has practitioner to patient-at-home telehealth visits for those who have an Internet connection and laptop with camera.

**DBS Scan-Echo practitioner-to-practitioner Vtel clinics** are held monthly, reviewing basic to advanced DBS programming using case studies and specific consults. SCAN-ECHO is not considered a form of Telehealth, as patients are not involved in the video-teleconferencing component. Instead, the Specialty Care Access Network-Extension for Community (Scan-Echo) uses case-based training for practitioners beyond our specialty center. The goal is to develop mentor-mentee relationships between teams through didactic sessions, case presentations, and treatment plan recommendations. The increased provider knowledge and inter-team communication brings quality specialty care to more of our Veterans. Contact Susan Heath at susan.heath@va.gov if you are interested in joining these sessions

**Parkinson's Disease & Caregivers Support Group – SFVAMC 3rd Tuesdays**

All persons with Parkinson’s disease and their Caregivers are welcome! No need to be a VA patient to attend.

Next meeting is June 17, 4:00 – 5:30 p.m. in the Teak Room: Bldg. 200, First Floor, Room 1A-122. For more information call (415) 379-5530.

Join us at our Parkinson's Disease and Caregiver Support Group: Learn about common medical and social issues in living with Parkinson's Disease; we meet the 3rd Tuesday of each month. Hosted by the Parkinson’s Disease Research, Education, and Clinical Center (PADRECC).
Dates to Remember

June 8-12, 2014

18th International Congress of Parkinson’s Disease and Movement Disorders

Movement Disorder Society

Stockholm, Sweden

http://www.mdscongress2014.org/

September 11, 2014

EES/PADRECC Movement Disorder Series

Topic: Sleep Disorders in PD

http://www.parkinsons.va.gov/

November 13, 2014

EES/PADRECC Movement Disorder Series

Topic: Exercise and PD

http://www.parkinsons.va.gov/