By Carole Lewis, PT, DPT, GCS, GTC, MSG, MPA, PhD, FAPTA, and Keiba Shaw, EdD, MPT, MA

Parkinson's Disease: The First Step is Evidence

Half of a million people in the United States have Parkinson's disease (PD).[1] Therefore, therapists must have both the skills and evidence to treat this burgeoning segment of our population. There are so many approaches to PD cited in the literature that we will divide these intervention articles into four categories: general, resistance training, gait and balance and axial mobility.

This article will discuss some general evidence-based treatment ideas.

One of the first published treatment interventions was the Flewitt Hanford exercises.[2] Below is a quick description. Keep in mind that these techniques are not evidence-based but were the first to be used and do have a good philosophical basis. Flewitt Hanford exercises for Parkinson's disease include:

- Long-sitting, alternate flexion/extension of toes, feet and knees;
- Crooklying, rocking knees side to side;
- Lying, alternate hip and knee flexion/extension;
- Standing, high-stepping, alternate foot dorsiflexion, standing still grapevine.

Breathing is an important aspect of rehabilitation for patients with PD. Haas showed in patients with mild to moderate PD that there is a significant weakness of the respiratory muscles.[3]

Comella demonstrated that physical disability in moderately advanced PD objectively improves with a regular physical rehabilitation program. This program was a 12-week intervention that consisted of a warm-up (5 minutes); stretching (15 minutes); strengthening (15 minutes); functional training (15 minutes); gait training on treadmill (15 minutes); balance training (15 minutes); relaxation (10 minutes).[4]

Another important area is the trunk. Bridgewater showed that people with PD exhibit less axial range of motion and isometric torque. This study suggests the importance of initiating a strengthening program early to delay decline in function.[5] Villani also looked at an evidence-based program to help patients with PD straighten up; they showed significant improvement in just five weeks with a twice-a-week program in supine-to-sit, sit-to-supine, supine rolling and sit-to-stand.[6]

Giladi looked at the common problem of freezing and described it as start hesitation and blocks in the middle of motion, in turns, in approaching obstacles and in narrow spaces. He found it was associated with progression of disease and vascular Parkinsonism and normal pressure hydrocelphalus. He also suggested additional Parkinson's treatment ideas as follows:

> **[Breathing is an important aspect of rehabilitation for patients with PD.]**

- Tremor: Press affected elbow against the body to stabilize the upper arm to assist in doing ADLs. This makes a smaller lever arm and results in less tremor.
- Freezing: Place heels on floor. Straighten trunk, hips and knees. Rock side to side. March in place. Step forward leading with the heels, keep feet 8 inches apart. Don't lean backward.[7]

Two alternative treatment techniques with evidence for patients with PD are Trager and the Alexander Technique. A study by Duval showed the level of evoked stretch response was reduced by 36 percent immediately after a Trager session and remained 32-percent lower than pretest values 11 minutes after when retested.

The Trager technique can be described as a gentle rhythmic rocking 1-4cm in amplitude done to one or two joints at a time.[8] This can help patients who have severe tone, tightness and rigidity. Stallibass explored 24 lessons of the Alexander Technique and found that it led to sustained benefits in patients with PD. This technique uses skilled hand contact to observe and assess changes in muscle activity, balance and coordination resulting from mental activity and provides immediate feedback. Participants learn to recognize and adopt better strategies for control of movement.[9]

Morris published a review article that had some components for treatment of patients with PD, including alternative motor strategies, improving use of sensory information, tai chi and using variability of practice.[10]

Finally, Ellis recently described an inpatient program consisting of PT, OT and SLP for a total of three hours for five to seven days a week.[11] This program showed significant improvement in FIM scores.

Beginning our quest to "step it up," we hope this article gave some good evidence-based information for treating some common problems in patients with PD.

References are available online at www.advanceweb.com/pt.

Dr. Lewis is a private practice and consulting clinical specialist for ProfessionalSportsCare and Rehab. She lectures exclusively for GREAT Seminars and Books, Inc. Dr. Lewis is also the author of numerous textbooks. Her Website address is www.greatseminarsandbooks.com. Dr. Shaw is an assistant professor in the physical therapy program at the University of South Florida dedicated to the area of geriatric rehabilitation. She lectures exclusively for GREAT Seminars and Books in the area of geriatric function.

Printed with permission.