



Non-Motor Symptoms in Parkinson's Disease – Part One

Dr. Sheila Baez- Torres

The description of Parkinson's Disease (PD) is based on its classic motor symptoms: tremor at rest, slowness of movement, stiffness and imbalance. However, PD often includes non-motor symptoms as well, which in many occasions are underrecognized and undertreated. In this article, which is the first part of our discussion, we describe the most common non-motor PD symptoms and how to evaluate them.

Non-motor PD symptoms may affect different areas in the body: cardiovascular, sleep, mood and cognition, perception, gastrointestinal, urinary tract, sexual function, and others. These symptoms are the result of neurodegeneration of non-dopaminergic neurons.¹ Non-motor symptoms may manifest even before the motor PD symptoms emerge. Clinically, the non-motor symptoms may or may not fluctuate, and it may respond to dopaminergic medications and other modalities of symptomatic treatment. The broad manifestation of PD non-motor symptoms confirms that PD is indeed a multisystemic process. Multidisciplinary management of PD symptoms is needed to achieve optimal symptom control.

The Non-Motor Symptoms Assessment Scale was developed (and validated) by the International Parkinson's Disease Non-Motor Group for the evaluation of non-motor symptoms. This is a 30-item scale that includes nine different domains: cardiovascular, sleep/fatigue, mood/cognition, perception/hallucinations, attention/memory, gastrointestinal tract, urinary symptoms, sexual function, and miscellaneous. Symptoms are rated based on severity and frequency, over monthly intervals. Total score ranges from 0 to 71 or more, based on level of burden.

The following are nonmotor symptoms commonly seen in PD

- **Cardiovascular:** Orthostatic hypotension is commonly seen. Patients commonly complain of light-headedness and weakness after standing from sitting or lying position, increasing risk of syncope.
- **Sleep:** Insomnia, excessive daytime drowsiness, and REM behavior disorder are common. Dopamine agonists (ropinirole, pramipexole, rotigotine and apomorphine) are known to cause daytime sleepiness. Fatigue may also be seen, often limiting the level of physical activity.
- **Cognition & Mood:** Changes in both areas are commonly seen as in PD patients as well. The cognitive decline in PD involve changes in memory and concentration. Loss of motivation and interest in surroundings, apathy, depression, and anxiety can be reported.
- **Psychosis & Perception:** Visual hallucinations, delusions, and diplopia are common complaints. While diplopia is a less common complaint, in the absence of an ophthalmological primary process, it may be associated with PD.
- **Gastrointestinal:** Dysphagia, constipation, excessive salivation.
- **Genitourinary:** Urinary urgency, increased frequency and nocturia.
- **Sexual dysfunction:** Decreased libido, or physical challenges having sex.
- **Miscellaneous:** Pain, decreased sense of smell and taste, changes in weight (not related to dieting) and excessive sweating.

In summary, our understanding of PD has evolved over the last few years. We understand it is not only manifested as having motor symptoms but is a complex syndrome, with involvement of multiple systems. Multidisciplinary approach is needed to successfully recognize and treat the non-motor symptoms as well. In our next newsletter, we will discuss how to treat non-motor symptoms.

¹Halliday GM, Blumbergs PC, Cotton RGH, et al. Loss of brainstem serotonin-and substance P-containing neurons in Parkinson's Disease. Brain Res 1990; 510:104-7.

COMMUNITY CORNER

Lewy Body Support Group

2nd Monday of the Month at 4:30pm
Bioclinica Conference Room, 5th Floor
100 W Gore St, 5th Floor, Orlando, FL 32806
Contact for More Info: Sue Boudier 914-589-2004

Brain Fitness Club- www.BrainFitnessClub.net

BrainFlex Wellness Club – www.brainflexwellness.com

Current Trial Count

Alzheimer's Disease:

Disease modifying, symptomatic and agitation trials: 5

Parkinson's Disease:

Disease modifying and symptomatic trials: 3

Dementia with Lewy Bodies:

Symptomatic Trial – 2

ALS: 2



Alzheimer's & Dementia Resource Center www.adrccares.org, 407-436-7750

- Offers classes, support groups, and online tips for caregivers, along with a calendar of events.
- Affiliated with Brain Bank – see website for more information.

Alzheimer's Association

www.alz.org

Alzheimer's Disease and Related Dementias (ADEAR) National Institute on Aging

www.nia.nih.gov/health/alzheimers

- Extensive Resources for Healthcare Professionals

A message from Dr. Goodman

Up to this point, no clear-cut disease modifying treatments have been discovered for the neurodegenerative diseases such as Parkinson's Disease, Alzheimer's Disease and ALS. This, however, may soon be changing targeting molecular genetics. Treatments which favorably alter the expression of genes have proven successful in the laboratory and now have progressed to human clinical trials with encouraging results thus far. Gene expression regulates virtually every function in our body (both positively and negatively). Negatively speaking, some proteins have abnormal structures which blocks normal functioning. Abnormal proteins can demonstrate too much function (gain of function) which we see in some neurodegenerative diseases. Clinical trials are currently ongoing, including here at Bioclinica Research, utilizing an "ASO" (antisense oligonucleotide) which prevents the coding of a mutated gene, such as in hereditary ALS. These ASOs, as well as other strategies to counteract genetic mutations, are being looked at in many other neurodegenerative diseases. Other encouraging therapies include the introduction of a normal gene via a viral vector (similar to a "trojan horse" approach), also currently in human trials. We are in a new phase of treatments for these previously untreatable diseases.