Cognition in Parkinson’s disease and Lewy body dementia

Kathleen Poston, MD, MS
Associate Professor of Neurology
Movement Disorders & Memory Disorders
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Why does a Movement Disorders Specialist care about ‘non-motor’ things like cognition?
An Essay on the Shaking Palsy

James Parkinson 1817

Involuntary tremulous motion, with lessened muscular power, in parts not in action and even when supported; with a propensity to bend the trunk forward, and to pass from a walking to a running pace; the senses and intellects being uninjured.

Initial description of PD stated that the “senses and intellects being uninjured”

Now, PD specialists independently assess both “Motor” and “Non-motor” symptoms
Non-Motor Symptoms Emerge at Different Times in the Course of PD

Loss of smell  Constipation  REM Behavior disorder  Insomnia  Sexual Problems  Pain Syndromes  Hypophonia

Mild to Moderate Memory Problems
- Depression & Apathy
- Anxiety
- Urinary Urgency, Excessive Sweating, Excessive Salivation
- Dysarthria, Dysphagia

Dementia
- Hallucinations
- Severe Orthostatic Hypotension
- Urinary Incontinence
- Severe Dysphagia and Choking

Can Precede Diagnosis  Later in Disease  Earlier in Disease
Why are Non-Motor Symptoms so difficult to understand and treat?

• The motor symptoms are more ‘obvious’

• Impact of non-motor symptoms on quality of life has only been recognized by physicians for the past 15 years

• There is much more variability in the type and severity of non-motor symptoms experienced by any single patient.

• Because of this variability non-motor symptoms are harder to study.
Why is it important to treat Non-Motor symptoms?

- They can impact quality of life just as much as the motor symptoms
- They can actually WORSEN your motor and other non-motor symptoms
  - Tremor can worsen when you are constipated
  - Memory can worsen when you do not sleep or when you are anxious
What is the difference between Parkinson’s disease and Lewy body Dementia?

Cognition

Motor

Memory

Bradykinesia

Rigidity

Hallucinations

Tremor

Time
What is the difference between Parkinson’s disease and Lewy body Dementia?

<table>
<thead>
<tr>
<th>Essential Features</th>
<th>Lewy Body Dementia</th>
<th>Parkinson’s Disease Dementia</th>
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</thead>
<tbody>
<tr>
<td>Dementia before or &lt; 1 year after motor symptoms of Parkinsonism started (attention, executive, visuospatial &gt; memory, language)</td>
<td>Dementia in setting of established PD (&gt;1 year after motor symptoms of Parkinsonism started) (attention, executive, visuospatial &gt; memory, language)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Core Features</th>
<th>Cognitive fluctuations</th>
<th>Visual hallucinations</th>
<th>Parkinsonism (at least one of slowness, stiffness, or tremor)</th>
<th>REM sleep behavior disorder</th>
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<tr>
<th>Associated/ Suggestive Features</th>
<th>Severe Neuroleptic sensitivity</th>
<th>Postural Instability</th>
<th>Repeated falls</th>
<th>Syncope/ Transient Loss of Consciousness</th>
<th>Autonomic Dysfunction</th>
<th>Depression</th>
<th>Hallucinations</th>
<th>Delusions</th>
<th>Apathy</th>
<th>Depression/anxiety</th>
<th>Hallucinations</th>
<th>Delusions</th>
<th>Excessive daytime sleepiness</th>
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<tbody>
<tr>
<td>Low Dopamine transporter uptake</td>
<td>MIBG myocardial scintigraphy</td>
<td>Sleep study confirmation REM Sleep Behavior Disorder</td>
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Adapted From McKeith et al Neurology 2017, Emre et al Movement Disorders 2007
What is the difference between Parkinson’s disease and Lewy body Dementia?

The appropriate term will depend upon the clinical situation and generic terms such as **Lewy Body Disease** (which includes both Parkinson’s disease and Lewy Body Dementia) are often helpful.
What is the difference between Parkinson’s disease and Lewy body Dementia?

Lewy-body Pathology in Both PD and LBD
What type of mind and memory changes can be seen in a person with Lewy Body diseases?

Cognitive Domains

- Executive function
- Attention and Working Memory
- Visuospatial function
- Language
- Memory
Thank You For Participating!