Cognition in Parkinson’s disease and Lewy body dementia

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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

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

Now, PD specialists independently assess both “Motor” and “Non-motor” symptoms

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

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

As is currently defined:

• The **Diagnosis of PD** with cognitive impairment or Dementia should be made when memory problems develop within the context of established PD

• The **Diagnosis of LBD** is appropriate when the diagnosis of Dementia precedes or coincides within 1 year of the development of motor symptoms

• The appropriate term will depend upon the clinical situation and generic terms such as **Lewy Body Disease** (which includes both PD and LBD) are often helpful
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

**Memory**
On your way out the door your spouse asks you: **“Can you pick up some milk while you are at the store?”**
- Encoding
- Maintenance
- Retrieval

**Language**
- Names of objects and people
- Problems can be simple
  - ‘Tip of the tongue’
- Problems can be more severe
  - You can’t remember the name of something you use regularly.

**Visuospatial Function**
- Problems with parking the car or clipping corners when driving
- Problems with directions somewhere that is not familiar
Attention and Working Memory

A friend tells you the date of an event
- You keep it in your mind for about 30 seconds while you unlock your phone and open the calendar.
- While unlocking your phone you are distracted by a reminder to pick up milk from the store.

Executive Function

The cognitive processes that dictate flexible and dynamic adjustment of performance in response to a changing environment.
- Planning/Organizing
- Novel Problem solving
- Shifting attention
- Multi-tasking

Attention/Working Memory and Executive Function

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