What are the cognitive and behavioral problems?

J. Vincent Filoteo, Ph.D.
Professor, Department of Psychiatry
Adjunct Professor, Department of Neurosciences
University of California, San Diego

Neuropsychologist and Research Psychologist
VASDHS
Overview

Non-Motor Symptoms in Parkinson’s Disease

Prevalence of cognitive and mood symptoms in Parkinson’s Disease

Impact of cognitive and mood symptoms on quality of life in Parkinson’s Disease

Parkinson’s disease Normal Cognition, Mild Cognitive Impairment, and Dementia

Promising non-pharmacological interventions for cognitive improvement in Parkinson’s Disease

Mood issues in our cohort of Parkinson’s Disease patients
Non-Motor Symptoms of Parkinson’s disease

Cognitive deficits and mood symptoms are two of the most common non-motor symptoms observed in Parkinson’s disease (n=268)

<table>
<thead>
<tr>
<th>Non-motor symptoms</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive impairment</td>
<td>199</td>
<td>74.3%</td>
</tr>
<tr>
<td>Nighttime sleep problems</td>
<td>192</td>
<td>71.6%</td>
</tr>
<tr>
<td>Urinary problems</td>
<td>192</td>
<td>71.6%</td>
</tr>
<tr>
<td>Fatigue</td>
<td>184</td>
<td>68.7%</td>
</tr>
<tr>
<td>Pain</td>
<td>172</td>
<td>64.2%</td>
</tr>
<tr>
<td>Daytime sleepiness</td>
<td>166</td>
<td>61.9%</td>
</tr>
<tr>
<td>Depressed mood</td>
<td>163</td>
<td>60.8%</td>
</tr>
<tr>
<td>Constipation problems</td>
<td>156</td>
<td>58.2%</td>
</tr>
<tr>
<td>Anxious mood</td>
<td>151</td>
<td>56.3%</td>
</tr>
<tr>
<td>Lightheadedness on standing</td>
<td>140</td>
<td>52.2%</td>
</tr>
<tr>
<td>Apathy</td>
<td>122</td>
<td>45.7%</td>
</tr>
<tr>
<td>Hallucinations and psychosis</td>
<td>37</td>
<td>13.8%</td>
</tr>
<tr>
<td>ICDs</td>
<td>21</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

Abbreviations: ICDs, impulse control disorders

Kadastik-Eerme et al., Health and Quality of Life Outcomes, 2015
Motor vs. Non-Motor Symptom Correlations with Health Related Quality of Life

<table>
<thead>
<tr>
<th></th>
<th>PDQ-39 SI</th>
</tr>
</thead>
<tbody>
<tr>
<td>NMSS total score</td>
<td>0.70</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>0.26</td>
</tr>
<tr>
<td>Sleep/fatigue</td>
<td>0.58</td>
</tr>
<tr>
<td>Mood/apathy</td>
<td>0.57</td>
</tr>
<tr>
<td>Perceptual problems/hallucinations</td>
<td>0.36</td>
</tr>
<tr>
<td>Attention/memory</td>
<td>0.43</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>0.38</td>
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<tr>
<td>Urinary</td>
<td>0.41</td>
</tr>
<tr>
<td>Sexual dysfunction</td>
<td>0.14</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0.42</td>
</tr>
<tr>
<td>Number of non-motor symptoms</td>
<td>0.63</td>
</tr>
<tr>
<td>SCOPA-motor</td>
<td>0.58</td>
</tr>
<tr>
<td>Motor examination</td>
<td>0.43</td>
</tr>
<tr>
<td>Activities of daily living</td>
<td>0.58</td>
</tr>
<tr>
<td>Motor complications</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Health Related Quality of Life
Non-Motor Symptoms
Cognition and Mood
Motor Symptoms

Martinez-Martin et al., Movement Disorders, 2011
Cognition In Parkinson’s Disease
Understanding Cognition in PD: Why is it important?

1. Parkinson’s Disease Normal Cognition (PD-NC)
2. Parkinson’s Disease-Mild Cognitive Impairment (PD-MCI)
3. Parkinson’s Disease Dementia (PDD)
Understanding Cognition in PD: Why is it important?

Better Cognition

PD-MCI

Normal Cognition

PDD

Time
What is Parkinson’s Disease- Mild Cognitive Impairment (PD-MCI)?

• Thought to be a transition state from normal cognition to dementia

• Deficits in at least one area of cognitive functioning (e.g., memory, problem solving, attention)

• Represents a decline from previous level of function

• Does not result in significant problems performing activities of daily living
How Frequent is Parkinson’s Disease- Mild Cognitive Impairment (PD-MCI)?

- Prevalence ranges from 18.9 - 38.2% with an average of 26.7% (Litvan et al., 2011)

- Frequency increases with age, disease duration, and disease severity.

- Even in newly diagnosed de novo PD patients, 25% can display mild deficits in two or more domains.
What is Parkinson’s Disease Dementia (PDD)

- It is not Alzheimer’s Disease
- Deficits in at least two areas of cognitive functioning (e.g., memory, problem solving, attention)
- Represents a decline from previous level of functioning
- Result in significant problems in performing complex activities of daily living above and beyond what is due to other symptoms associated with Parkinson’s disease
How Frequent is Parkinson’s Disease Dementia (PDD)?

- Point prevalence has been shown to range from 22%-48%.
- Accounts for 3-4% of dementias in the general population.
- Incidence studies indicate that approximately 10% of a PD population will develop PDD per year.
- Cumulative epidemiological prevalence studies have shown that PD patients will more likely than not develop PDD with time.
Approximately 50% of PD patients who, at the start of the study had normal cognition, developed PD-MCI after 6 years.

All PD patients with a diagnosis of PD-MCI developed PDD within 5 years.
Flattening That Line

Better Cognition

Time

PD-MCI

Normal Cognition

PDD
Promising Non-Pharmacological Interventions for Improving Cognition in Parkinson’s Disease

Cognitive Rehabilitation
- Restorative (e.g., video games, cognitive practice)
- Compensatory (e.g., mnemonics, smart-phones, pill boxes)

Physical Activity
- Aerobic (e.g., stationary bike, swimming)
- Skill-based (e.g., boxing, Tango)
- Balance (e.g., Tai Chi, yoga)

Emotional
- Mood treatment (psychotherapy, medications, support group)
- Socialization (e.g., spending time with family and friends)
- Meditation
- Mindfulness Training
Mood In Parkinson’s Disease
Mood Issues in Our Cohort of Patients with Parkinson’s Disease (n=121)

Depression
• 19.4%

Anxiety
• 29.8%

Apathy
• 41.8%
Comorbid Mood Issues in Our Cohort of Patients with Parkinson’s Disease (n=121)

No Significant Mood Symptoms: 46.3%
Depression: 1.7%
Anxiety: 7.4%
Apathy: 18.2%
Depression & Anxiety: 2.5%
Depression & Apathy: 4.1%
Anxiety & Apathy: 8.3%
Depression, Anxiety, & Apathy: 11.6%
Correlates of Mood Issues in Our Cohort of Patients with Parkinson’s Disease (n=121)

- Depression
- Anxiety
- Apathy
Correlates of Mood Issues in Our Cohort of Patients with Parkinson’s Disease (n=121)

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Summary

Cognitive deficits are highly prevalent in Parkinson’s disease.

There are emerging approaches to treat and perhaps delay cognitive decline.

Mood issues are also highly prevalent in Parkinson’s disease.

Mood issues not only contribute to patients’ quality of life but also caregivers’ mood and burden.

Much work needs to be done in this area of research and clinical treatment.
Thank You!

Interested in receiving slides or asking questions:

vfiloteo@ucsd.edu

Interested in research:

858-552-8585 ext. 5593