Depression and Anxiety in Parkinson’s disease

Greg Pontone, MD
Director, Movement Disorders Psychiatry Clinical Programs at Johns Hopkins
Morris K. Udall Parkinson's Disease Research Center
Johns Hopkins University School of Medicine
"Essay on the Shaking Palsy"
“…the senses and intellects being uninjured.”
James Parkinson, 1817
Psychiatric disorders are common in Parkinson’s

- 70%-85% of patients with Parkinson’s disease with suffer from anxiety, depression, hallucinations, delusions, or behavioral disorders

Marsh et al. 2010
Psychiatric disorders in Parkinson’s disease (PD)

Current Prevalence
Lifetime Prevalence

- Any Diagnosis: 80%
- Mood Disorders: 59.2%
- Anxiety Disorders: 66%
- Psychosis: 41.6%
- Delirium: 4.8%
- Impulse Control Disorders: 6.4%
- Personality Change: 12.8%
- Substance Use Disorders: 12.4%

- Any Diagnosis: 85.2%
- Mood Disorders: 48%
- Anxiety Disorders: 48%
- Psychosis: 34.4%
- Delirium: 0%
- Impulse Control Disorders: 13.2%
- Personality Change: 12.4%
- Substance Use Disorders: 1.6%
What causes psychiatric disorders in PD?

• Related to the disease process (loss of dopamine or other brain chemicals)
• A reaction to the diagnosis, altered interpersonal roles, disability, and other psychosocial features
• Interaction between the disease and dopaminergic treatments for the disease (e.g. psychosis and dopamine medications, impulse control disorders and dopamine agonists)
Psychiatric disorders can occur at any stage of PD

Ishihara and Brayne 2006
Symptoms known to affect quality of life in Parkinson’s disease

- Depressive symptoms
- Psychiatric complications
- Motor symptoms
- Autonomic dysfunction
- Motor complications
- Daytime sleepiness
- Pain

Diagram:
- Depressive symptoms: -0.27
- Psychiatric complications: 0.08
- Motor symptoms: 0.19
- Autonomic dysfunction: 0.19
- Motor complications: 0.23
- Daytime sleepiness: 0.11
- Pain: -0.13

Psychosocial wellbeing: 
- Motor symptoms: 0.51
- Autonomic dysfunction: 0.20
- Activities of Daily Living: R^2=0.57

Health related Quality of Life: 
- Psychosocial wellbeing: -0.30
- Activities of Daily Living: -0.16

R^2=0.58
R^2=0.43
Anxiety in Parkinson’s
Anxiety Disorders in PD

• Anxiety disorders are more common in PD than in the general population.
• Studies suggest that up to half of patients with PD suffer from an Anxiety Disorder at some point in their life.
• Certain types of anxiety may be associated with the neurodegenerative process and/or treatment of PD.
Anxiety Disorders

- Excessive worry, out of character compared to earlier in life
- Feelings of restlessness or unease
- Anxiety in anticipation of upcoming events
- Panic or panic-like fear that occurs episodically, sometimes just before the next dose of Parkinson’s medication
Common anxiety disorders in Parkinson’s disease

• **Generalized anxiety disorder** – persistent worry out of proportion to event, inability to relax, restlessness, feeling on edge, difficulty concentrating, irritability, muscle tension, trembling, easily startled, trouble sleeping, sweating, irritable bowel
Common anxiety disorders in Parkinson’s disease

• Panic disorder – episodes of intense worry that occur suddenly, often “out of the blue” accompanied by:

• Sweating, shortness of breath, heart palpitations, choking or smothering sensations, numbness or tingling, chills or hot flashes, a feeling of faintness, trembling or shaking, stomach cramps or discomfort, fear of losing control or dying, feeling as if you or the situation is unreal
Anxiety Disorder NOS – A PD specific anxiety subtype?

- Atypical anxiety disturbances (not meeting criteria for general pop. anxiety disorders)
- Motor fluctuation-associated anxiety
- Fear of falling anxiety
- Anticipatory anxiety
- 30% of lifetime anxiety disorders
- The majority (67%) of first-onset anxiety occurring in ‘peri-PD’ time period were anxiety NOS

Pontone et al 2009, Pontone et al 2011
First Anxiety Disorder Onset Relative to PD Onset

Bimodal distribution of anxiety disorder onset compared to PD onset
### PD-anxiety: Later onset in life compared to general population

<table>
<thead>
<tr>
<th>Anxiety Disorder Subtypes</th>
<th>Median Age Onset Anxiety Disorder (years): Parkinson’s Disease, n=127</th>
<th>Median Age Onset Anxiety Disorder (years): General Population, NCS n=9282</th>
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</thead>
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<tr>
<td>Any anxiety disorder</td>
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<td>11</td>
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<tr>
<td>Panic disorder</td>
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<td>Agoraphobia without panic</td>
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<td>Social phobia</td>
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<td>Specific phobia</td>
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<td>Obsessive-Compulsive disorder</td>
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<td>Generalized anxiety disorder</td>
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<td>Posttraumatic stress disorder</td>
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<tr>
<td>Anxiety disorder NOS</td>
<td>60</td>
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</tr>
</tbody>
</table>
Depression in PD
Depressive disorders can occur at any stage of PD

Ishihara and Brayne 2006
What is “Depression”?

• What do people mean when they say “clinical depression” or major depression?
• How is this different from the normal and appropriate low mood or sadness one experiences during the course of life events?
• Why are medications sometimes necessary, shouldn’t you just learn to ‘cope’ or deal with it, aren’t medications just a crutch?
Recognition: Depression is more than just feeling sad

- Diminished interest in usual activities
- Reduced enjoyment of usual activities
- Excessive guilt or worry about being a burden
- Lack of motivation and energy
- Difficulty concentrating or focusing
- Reduced libido
- Poor appetite
- Disrupted sleep
- Thoughts of death or dying
Prevalence of Depression in Parkinson’s disease

- Prevalence rates of major depression in PD range from 20-25%

- Up to 50% for any depression (dysthymia, minor, depression)
Depressive disturbances can be both episodic and persistent

- 47% remission within 6 months

- Mild depressive symptoms predicted
  - Development of more severe symptoms (RR=6.16 [95%CI 2.14.17.73])

- Symptom severity, older age, longer PD duration predicted failure to remit (HR0.83-0.92)

Ravina et al. 2009
“First Data from Largest, Ongoing Study of People with Parkinson’s Disease Reveals Depression Has Biggest Impact on Quality of Life” from press release November 2012

Part of the Parkinson’s Outcomes Project, a longitudinal look at which treatments produce the best health outcomes

The impact of depression on quality of life is almost twice that of the motor impairments
Depression has a negative impact on Parkinson’s disease

Depression is associated with increased
– Motor deficits
– Disability
– Caregiver burden and depression
– Economic Strain
– Cognitive impairment
– Severity of medical illness

Weintraub et al. 2004, Starkstein et al. 1992
Longitudinal Effect of Depression Remission Status on Physical ADLs in PD (n=136)

Subjects with PD (Baseline)
Age=67.1 (10.5) years
PD Duration=9.4 (6.9) years
Symptomatic Depression (SD), n=36
Remitted Depression (RD), n=12
Not Depressed (ND), n=88

Northwestern Disability Scale
(NWDS, max score=50)
* Walking
* Hygiene
* Eating/Feeding
* Dressing
* Speech

Note: Lower Scores $\propto$ Greater Disability

At any assessment point, subjects with a symptomatic depressive disorder have greater disability, averaging 3.8 points lower score in the NWDS.
(GEE Regression: SD vs ND, $B=-3.8$, $p<.001$)

Marsh et al, 2007
Good news!

- Most anxiety and depressive disorders in Parkinson’s disease can be treated to full remission with medications and behavioral therapies
Recent study by the National Parkinson Foundation showed that referral to specialty mental health services (e.g. psychiatrist, therapist/social worker) produced better outcomes for depression than taking medication alone.
Treatment of Depression in PD

- Staying active and exercising will help depression and improve motor function
- Talk therapy, e.g. cognitive behavioral therapy
- Antidepressant medication
- Psychiatrists should work closely with your neurologist during treatment as some psychiatric medications have special issues when used in PD
Types of antidepressant medications

• Selective Serotonin Reuptake Inhibitors (SSRIs) – Prozac, Paxil, Zoloft, Celexa, Lexapro
• Selective Serotonin and Norepinephrine Reuptake Inhibitors (SNRIs) – Effexor, Cymbalta, Pristiq
• Tricyclic antidepressants (TCAs) – Nortriptyline, Amytriptyline, Clomipramine
• Others – Wellbutrin, Remeron
• *All take 4-6 weeks to work, after therapeutic dose is achieved*
Questions?