Neuropsychiatric Aspects of Parkinson Disease

Ankur Butala MD, Neuropsychiatrist
Clinical and Research Fellow of Movement Disorders
Johns Hopkins University School of Medicine
Ankur.Butala@jhmi.edu

Disclosures

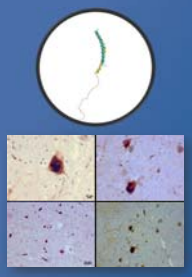
No relevant disclosures or conflicts of interest

Learning Objectives

After attending this group, you should be able to

- Recognize at least three Neuropsychiatric comorbidities of Parkinson Disease
- Understand how these symptoms impact daily life

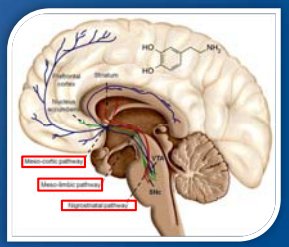
Idiopathic Parkinson Disease



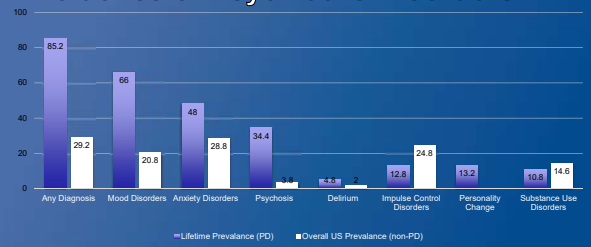
- Idiopathic Parkinson Disease (iPD) is an *chronic* and *progressive* neurodegenerative condition
- iPD is caused by the accumulation of *alpha-synuclein* causing loss of *dopamine* containing neurons
- Persons with iPD experience both motor and non-motor symptoms

Dopamine plays a critical role in the brain

- Motor control
- Memory, attention and executive function
- Emotional processing
- Pleasure, reward, "salience"



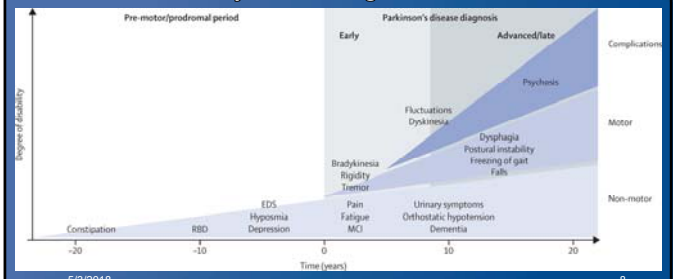
Patients with iPD have a higher incidence of Psychiatric Disorders



Neuropsychiatric symptoms may predate development of motor symptoms

PD symptoms	mean onset, y/prevalence, %
anxiety	47.9* / 13.3*
moodiness	52.8 / 33.3
depression	54 / 23.7
apathy	54.4 / 23.7
general bradykinesia	64.4 / 63.4*
reduced arm swing	65.7 / 77.4*

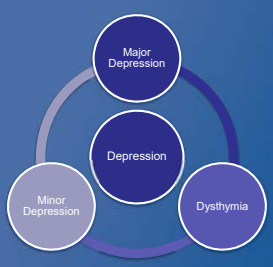
Neuropsychiatric symptoms are dominant causes disability in later stages



Consequences of untreated Neuropsychiatric Disorders

- Increased mortality and medical complications
- Reduced quality of life
- Reduced functional independence (for ADLs and iADLs) and cognition
- Reduced medication adherence
- Increased financial burden and cost
- Possibly increased disease progression

Recognizing Types of Depression



- There are many types of "depression"
- The majority of persons with iPD will have *some* depression
- Minor depression may not need antidepressants

Dysthymia v. Major Depression

Major Depressive Disorder

2+ weeks of 5+ symptoms including:

- Depressed mood
- Reduced interest or pleasure
- Weight loss or gain / appetite change
- Insomnia or excessive sleep
- Observed restlessness / slowness
- Decreased concentration, indecisiveness
- Thoughts of dying or death with or without suicidal ideation

Symptoms impair social, occupational, ADL / iADL functioning

Dysthymia

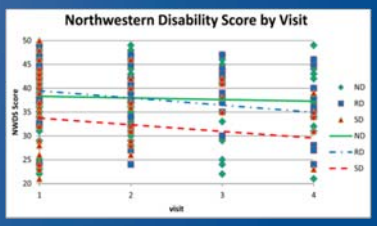
2+ years of 2+ symptoms lasting most/all of the day including:

- Poor appetite or overeating.
- Insomnia or hypersomnia.
- Low energy or fatigue.
- Low self-esteem.
- Poor concentration or difficulty making decisions.
- Feelings of hopelessness.

Symptoms impair social, occupational, ADL / iADL functioning

Depression worsens physical disability

- 137 patients with iPD over 6 years (43 depressed, 94 not depressed)
- Persons with untreated, symptomatic depression had more disability than non-depressed persons (or treated depression)



5/3/2018 13

Key Points about Depression

- Depressed individuals are less likely to perform ADLs, iADLs or participate in rehabilitation
- Ideally, depression should be treated concurrently or prior to rehabilitation to maximize benefit
- Persons with depression may feel in appropriately / excessively bleak about their future

5/3/2018 14

Key Points about Depression

- Exercise and physical activity directly have antidepressant effects
- Depression **can** be completely improved which may improve iPD symptoms

5/3/2018 15

5/3/2018 16

Generalized Anxiety

- Pervasive and excessive daily worrying (apprehension) about many events and activities
- Generalized anxiety may predate motor symptoms
- Anxiety may be difficult to control and look like physical symptoms
  - Restlessness or feeling on edge
  - Fatigue
  - Distractibility and poor concentration
  - Irritability
  - Muscle Tension
  - Difficulty falling or staying asleep

5/3/2018 17

Panic Disorder

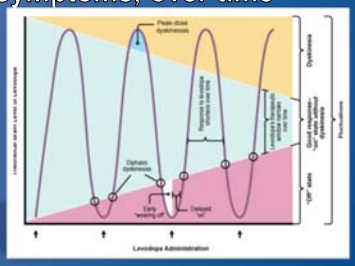
- Recurrent, unexpected panic attacks with a surge of intense fear or discomfort within minutes
- Ongoing concern about panic attacks and attempts to avoid them
- In iPD, may occur while wearing off

Panic Attack Symptoms

- Palpitations, pounding heart, or accelerated heart rate.
- Sweating.
- Trembling or shaking.
- Sensations of shortness of breath or smothering.
- Feelings of choking.
- Chest pain or discomfort.
- Nausea or abdominal distress.
- Feeling dizzy, unsteady, light-headed, or faint.
- Chills or heat sensations.
- Paresthesias (numbness or tingling sensations).
- Derealization (feelings of unreality) or depersonalization (being detached from oneself).
- Fear of losing control or "going crazy."
- Fear of dying.

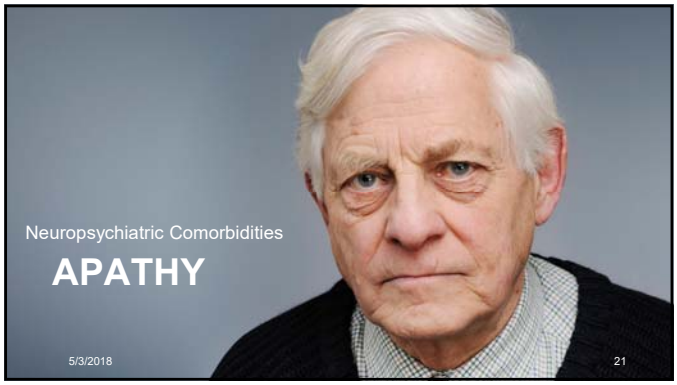
5/3/2018 18

Anxiety in iPD may fluctuate, with motor symptoms, over time



Management of Anxiety in iPD

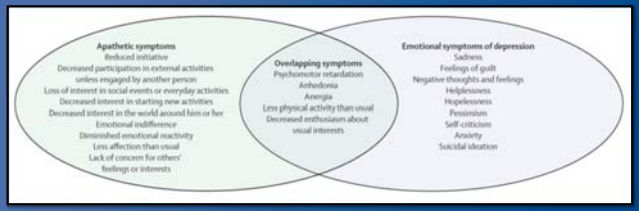
- Anxiety is harder to treat than depression and often chronic without medication
  - The same medication used to treat depression can improve anxiety. Benzodiazepines should be avoided due to risk of falls
  - Pay attention to triggers and OFF / ON state
- Non-pharmacological treatment including psychotherapy, cognitive behavioral therapy and relaxation techniques



Apathy – Prevalence and Relevance

- Apathy may be seen in 20-36% of patients with iPD
- Dopamine agonists may improve apathy in early stages of iPD but it may re-emerge later
- Associated with more motor symptoms, cognitive problems, reduced treatment response / activities of daily living and quality of life

Apathy may be difficult to distinguish from depression



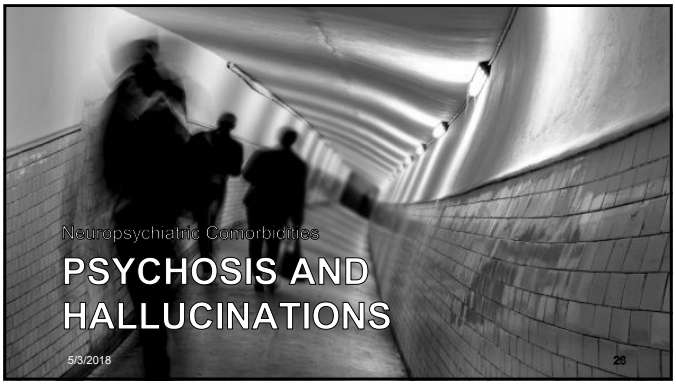
Recognizing Apathy in PD

3+ symptoms lasting for more than one month and impacting functioning

- Reduced initiative and decreased self-driven ideas
- Decreased curiosity or spontaneity
- Difficulty finishing activities
- Avoidance of cognitively complex activities
- Flat affect or indifference (like masked facies)
- Lack of affectionate behavior
- Lack of concern about personal problems

Management of Apathy

- Dopamine agonists, stimulants and certain antidepressants have been used for apathy
- Nonpharmacological interventions
  - Scheduled activities (social and physical)
  - Establish clear and achievable goals
  - Conditional rewards when goal completed
  - Recruit social supports



Psychosis is not uncommon in iPD

- Psychosis in iPD occurs <10% untreated patients
- Dopamine replacement therapy seems to increase lifetime risk up to 60%
- Psychotic symptoms may be variable and subtle
  - Non-distressing "complex" visual hallucinations are most common
  - But also simple visual hallucinations, auditory, olfactory or tactile hallucinations

Types of psychosis and related symptoms in iPD

- Hallucinations – perceptions or experiences without external stimuli
- Illusions – a transformation or misperception of reality
- Delusions – fixed, unchanging beliefs despite evidence to the contrary
- Thought disorganization – change in pattern of thoughts or speech
- Parasomnias – RBD, hypnogogic, hypnopompic

How to help someone experiencing psychosis

Do

- Listen nonjudgmentally
- Unconditional positive regard
- Speak slowly and simply
- Positive & Encourage
- Contact Physician

Do NOT

- Panic or overreact
- Buy into or use the hallucinations
- Focus on medication, treatment or diagnosis
- Threaten

Management of Psychotic Symptoms

- If sudden, consider acute delirium
- Supportive Therapies
  - Address vision and hearing impairment
  - Correct Sleep-Wake Cycle
- Re-evaluate medication causes and simplify regimen
- Consider reducing dopamine replacement therapy
- Trial of an antipsychotic medication

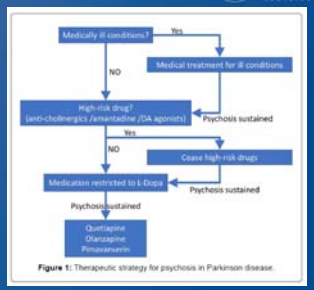


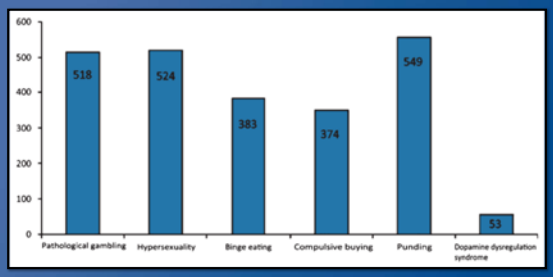
Figure 1: Therapeutic strategy for psychosis in Parkinson disease.

Clinical Presentation of Impulse Control Disorders (ICD)

- ICDs are behaviors that are performed repetitively, excessively and compulsively which *interfere* with functioning
- ICDs have been associated with dopamine agonists and levodopa
- iPD specific disorders include: punding, hobbyism, walk-abouts and hoarding
- Rates of ICDs vary from 3-20%

5/3/2018 32

ICD may take many forms



5/3/2018 33

Dopamine Dysregulation Syndrome (DDS) and ICD Management Implications

- DDS is a disorder with an addictive pattern of taking extra dopamine than necessary to control symptoms
- Essential to *recognize and identify* symptoms
- Ongoing monitoring and consider reduction of dopamine replacement therapy
- CBT and relaxation techniques may also be effective in these disorders

5/3/2018 34

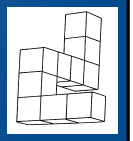
iPD leads to frontal and subcortical cognitive problems

- Dysexecutive symptoms include difficulties with:
  - Planning tasks or preparing for future problems
  - Recognizing mistakes and how to fix them
  - Efficient short-term memory and remembering quickly
  - Shifting or sustaining attention especially multitasking
  - Verbal fluency and vocabulary (word-finding, pauses)
  - Motivation and initiative

5/3/2018 36

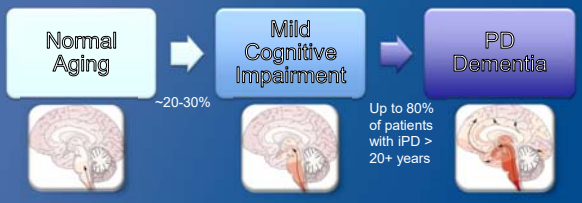
iPD leads to frontal and subcortical cognitive problems

- Additional cognitive symptoms can include:
  - Learning new skills (physical and mental)
  - Adapting and coping to new situations or problems
  - Regulating mood and excessive emotionality
  - Mimicking gestures or using tools (praxis)
  - Visuospatial navigation and depth perception (especially while driving)



5/3/2018 37

Cognitive Symptoms in PD Exist on a spectrum of severity



5/3/2018 38

Tips to manage cognitive issues

- Environmental modifications
  - Reduce clutter and distractions
  - Well lit, quiet environments
- Task modification
  - Breakdown complex tasks into approachable pieces
  - Utilize lists and visual cues
  - Timers and reminders

5/3/2018 39

Tips to manage cognitive issues

- Some deficits may improve during ON states
- Reduce complexity of verbal language and instructions
- Pay attention to nonverbal language
- Utilize automation when possible

5/3/2018 40

CONCLUSION & KEY POINTS

5/3/2018 41

Take Home Points

- Depression, anxiety, apathy, impulse control disorders and psychosis are common comorbidities of Parkinson Disease
- Neuropsychiatric comorbidities may be seen earlier and cause more disability than motor symptoms of PD
- Support “executive” abilities to improve cognitive dysfunction

5/3/2018 42


JOHNS HOPKINS
MEDICINE
Thank you!
Ankur.Butala@jhmi.edu
5/3/2018
43