Sleep Disorders in Parkinson's Disease

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Parkinson's Disease

• Second most common neurodegenerative disorder after Alzheimer’s Disease
• Disorder of Aging
• Diagnosis depends on observation and being aware
  • Accuracy improves with observation over time
• Currently no lab or diagnostic study
Parkinson’s Disease
Non Motor Symptoms

• Depression
  • May precede motor signs by years
  • Common throughout illness
• Sleep Problems
• Cognitive Impairment
  • Frontal executive and visual spatial
• Olfactory Loss
• Autonomic Dysfunction
  • Constipation
  • Orthostatic hypotension
• Fatigue
Parkinson’s Disease
Motor Features

Primary- Bradykinesia
  Movements: delay initiation, reduced speed and amplitude

Additional
  Rigidity
    may present as pain e.g.: frozen shoulder
  Rest Tremor

Gait impairment/postural instability
Sleep Disturbances in Parkinson’s Disease

- **Nocturnal Sleep Problems**
  - At least twice as common in PD as in healthy controls
  - Excessive nocturnal sleep
  - Poor Nocturnal Sleep

- **Excessive Daytime Sleep**
  - Excessive Daytime Sleepiness
  - Sudden Onset Sleep
Nocturnal Sleep Disturbances in Parkinson’s Disease

- Obstructive Sleep Apnea
  - Up to 50% of PD
- Periodic Limb Movements of Sleep
- Restless Limb Syndrome
  - Up to 50% of PD
- REM Behavioral Disorder
  - 25-50% of PD
Nocturnal Sleep Disturbances in Parkinson’s Disease

• Sleep Initiation similar to those without PD
• Sleep maintenance and early awakening- 3-4 times more common than in non-PD
  • Depression
  • Disease related-more common late in disease
    • Wearing off, dystonia, tremor, akathisia

• Medications
  • Selegeline (?rasagiline), amantadine, high dose levodopa, high dose agonists
Nocturnal Sleep Disturbances in Parkinson’s Disease-Therapy

- Sleep Hygiene
- Nocturnal Motor Symptoms
  - Medication adjustments- long acting & transdermal formulations, adjuvants (entacapone, tolcapone), nocturnal dosing
- Hallucinations
  - Decrease dopaminergic medication, acetylcholine esterase inhibitors, low dose quetiapine
- Nocturia
  - Fluid management, desmopressin, avoid anticholinergics
Daytime Sleep Disturbances in Parkinson’s Disease

• Excessive Daytime Somnolence
  • More common in older patients, those with advanced disease, those with early onset
  • Correlated with higher dopamine agonist doses
  • Related to severity of nocturnal sleep disruption

• Sudden Onset Sleep
  • Commonly associated with dopamine agonists, probably class specific
  • May be associated with levodopa but less common
REM Behavioral Disturbance

• Dream enactment behavior
  • REM sleep without atony
• Injury to patient and bed partner
• Often awaken at the end, alert and recall dream content
• Typically occur early morning
• Most common in males and after 50 yo
REM Behavioral Disturbance - Causes

- Synucleinopathies - 35-50% will eventually develop one of them with mean latency 12-13 yrs
  - 70% of patients with Multisystem Atrophy
  - 40% of patients with Dementia with Lewy Bodies
  - 11-30% of patients with Parkinson’s Disease
- Drugs
  - SSRI, SNRI (especially venlafaxine), tricyclics
  - Beta blockers (less common)
  - Alcohol and barbiturate withdrawal
Polysomnography findings

Increased chin EMG tone in REM sleep
REM Behavioral Disturbance-Criteria

• REM Sleep without Atony
  • Persistent submental tone or excess phasic activity of limb EMG
• At least one of:
  • Sleep related injurious or potentially injurious disruptive behavior by history
  • Abnormal REM behavior on PSG
• Absence of epileptiform activity during REM unless RBD can be distinguished from concurrent sleep related epilepsy
• Requires Polysomnography for diagnosis
REM Behavioral Disturbance-Differential Dx

- Nocturnal Frontal Lobe Epilepsy
  - More likely in nonREM sleep
  - No recall
  - Confused if awakens
- Sleep Walking
  - More likely in nonREM sleep
  - Eyes open
  - Confused if awakens
- Obstructive Sleep Apnea
  - “pseudo RBD”
REM Behavioral Disturbance-Therapy

- **Sleep Environment**
  - Partner in different bed or room until controlled
  - Mattress on the floor
  - Pad nearby edges
  - Window protection
  - Remove weapons

- **Medication**
  - No RCTs
  - Clonazepam: 0.5-2 mg- potential adverse effects
  - Melatonin: 3-12