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 yoa
Video Clip - RBD
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