Parkinsonism: A Geriatrician’s Perspective

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Handout
Disclosure Statement

I, Gerald Jogerst, MD do not have any financial interests or relationships with any manufacturers of products or providers of services I might be discussing in my presentation.

I have no financial relationships with any of the companies supporting this educational event.

I will not discuss any pharmaceuticals, medical procedures, or devices that are investigational or unapproved for use by the FDA.
Objectives

• Describe a multidisciplinary and functional approach to Parkinson’s disease.
• Discuss the diagnostic criteria for Parkinson’s disease.
• Compare conditions misdiagnosed as Parkinson’s disease.
• List drug and non-drug therapies.
• Provide recommendations for practice.
**Premotor Phase**

- Aspecific non-motor symptoms:
  - Hyposmia
  - Constipation
  - Depression
  - Articular pain
  - Fatigue
  - Orthostatic Hypotension

**Clinically Evident (PD)**

- Specific motor symptoms:
  - Bradykinesia (plus at least)
  - Rigidity
  - Tremor
  - Postural Instability

**With Complications (PD-D)**

- Aspecific non-motor symptoms, specific in the geriatric setting
  - Memory Impairment
  - Sleep Disorder
  - Acute Delirium
  - Nocturia
  - Dysphagia with pneumonia

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Frail “in situ”: mean 10 years

Frail: mean 10 years

ADL-Disability: mean 7 years

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F. Lauretani et al. / *Archives of Gerontology and Geriatrics* 54 (2012) 242-246
### Parkinson’s Disease: A New Multidisciplinary Approach for this Old Actor

<table>
<thead>
<tr>
<th>Braak’s Stage 1-2</th>
<th>Braak’s Stage 3-4</th>
<th>Braak’s Stage 5-6</th>
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<td>✓ locus coeruleus</td>
<td>✓ mesocortex</td>
<td>✓ neocortex (sec. &amp; prim.)</td>
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<td>✓ dorsal IX/X nucleus</td>
<td>✓ substantia nigra</td>
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Diagnosis

- No biologic marker to confirm the diagnosis
- Underdiagnosis and incorrect diagnosis are common
- Classic signs and symptoms - tremor, rigidity, bradykinesia and postural instability
- Best differentiate from other parkinsonisms by:
  - Asymmetry
  - Resting tremor
  - Good response to levodopa
Features suggestive of alternative diagnoses

- Dementia preceding motor symptoms
- In first 3 years: postural instability, freezing, hallucinations (not related to medication)
- Supranuclear gaze palsy (downward gaze)
- Severe symptomatic dysautonomia
- Documentation of plausible cause of parkinsonism (focal brain lesion, neuroleptic)
Conditions Misdiagnosed as Parkinson’s Disease

- Essential tremor
- Vascular parkinsonism
- Drug-induced parkinsonism
- Dementia with Lewy bodies
- Atypical parkinsonism (progressive supranuclear palsy, multisystem atrophy)
Tremor

- Resting tremor
- 4-6 Hz
- Prominent in hands
- Absent in 25%
Tremor

**Parkinson’s disease**
- Age at onset: 55-75 yrs
- Family Hx +/-
- Frequency (Hz): 4-6
- Characteristics: Sup-pronation - asymmetric
- Rest -> increase
- Writing dec. (micrographia)
- Face, jaw, lips, chin

**Essential tremor**
- 10-80 years
- Family Hx ++
- Hz: 5-10
- Flexion-extension - symmetric
- Rest -> decrease
- Increases (tremulous)
- Head, voice
Rigidity

- Increased tone throughout range of motion
- Increases when limbs are moving
- By itself, not disabling
- Spasticity versus rigidity
Bradykinesia

• One of the more disabling symptoms
• Delay in starting all movements
• Slowness and poverty of movement
• Arrest of ongoing movements
Postural Instability

- Inability to maintain equilibrium
- Inability to react to abrupt changes in position
Modified Hoehn & Yahr Staging

• Stage 0 = No signs of disease
• Stage 1= Unilateral disease
• Stage 1.5= Unilateral plus axial involvement
• Stage 2= Bilateral disease, no imbalance
• Stage 2.5= Mild bilateral, recovery on pull test
• Stage 3= Postural instability but independent
• Stage 4= Severe disability; still able to walk
• Stage 5= Wheelchair or bed bound.
Decision to Start Medical Therapy (consider)

- Effect of disease on dominant hand
- Significant bradykinesia or gait disturbance
- Personal philosophy regarding drug use
- DEGREE TO WHICH DISEASE EFFECTS FUNCTION
Protective Therapy

• No proven treatment to slow progression
• Selegiline-ameliorated symptoms/question of increased mortality
• High dose Vitamin E ineffective
Symptomatic Therapy

- Levodopa remains the most effective treatment (Sinemet 25/100 TID)
  - Most patients benefit over the entire course of the illness
  - No evidence that it accelerates the neuro-degenerative process
  - Increases life expectancy
  - Survival reduced if drug is delayed until greater disability
Symptomatic Therapy

- Anticholinergics (Artane 0.5-1 mg BID)
- Amantadine (100 mg BID)
- Selegiline (5 mg BID - last dose mid-day)
  (rasagiline 1 mg daily)
  - All have mild to moderate benefit, but levodopa or dopamine agonists are required as disability progresses
- Tolcapone (COMT inhibitor) 100 mg TID
  monitor LFT’s
Symptomatic Therapy

Dopamine agonists

- May provide inadequate benefit (1/3 of patients have good responses)
- Always require supplementary levodopa but may be adequate alone for two to five years
- Infrequent fluctuations and dyskinesias

“I take three blues at half past eight to slow my exhalation rate.
On alternate nights at nine p.m.
I swallow pinkies. Four of them.”
Dopamine Agonists

Ergot-derived (lung and cardiac valve fibrosis)

Bromocriptine  20-40 mg/day

Non-Ergot-derived (as first-line and adjunctive therapy)

Ropinirole  up to 24 mg/day, divided TID or SR

Pramipexole  up to 4.5 mg/day, divided TID or SR

Rotigotine  up to 6 mg/24 hr patch
Late Stage Problems
(Treatment and Disease)

Motor fluctuations: (in 70% treated for 15 years)
  • Wearing off of drug effect
  • On-off phenomenon

Dyskinesia: (may respond to amantadine)
  • Peak-dose dyskinesia
  • Diphasic dyskinesia
  • Off-period dystonia

Psychiatric disturbances - vivid dreams, visual hallucinations, mania, hypersexuality, paranoid psychosis
Deep Brain Stimulation

• For intolerable dyskinesias or motor fluctuation while on levodopa
• Appropriate candidates have cognition relatively intact and are less than 70 yrs old.
• Benefit: reduction in levodopa dose, improvement in off-medication function and reduced dyskinesias when taking medication.
• Risks: depression, decreased verbal fluency, increased falls and impulsivity.
Support Services

• Usual Elder Services
• Physical therapy – disability improves
• Occupational therapy- in home interventions
• Speech therapy- intensive therapy for 2 week can improve voice problems and gain may last up to 3 months.
Assisted Devices
Recommendations for Practice

• Carbidopa/levodopa, nonergot dopamine agonists, or MAOB-I for initial treatment.
• Nonergot dopamine agonists, COMT-I or MAOB-I added to levodopa to treat motor complications.

• Consistent, good-quality patient-oriented evidence.
Recommendations for Practice

• Amantadine for dyskinesias in advanced disease.
• Deep brain stimulation for functional impairment despite optimal medical tx.
• PT to improve gait and speech therapy to improve speech volume.
• Inconsistent patient-oriented evidence.
Recommendations for Practice

• Physicians with limited experience should refer patients to confirm diagnosis.

• OT may help patients maintain family, social and work roles, continue ADLs and improve safety.

• Consensus, usual practice, expert opinion, case series.
References


References


