Care of Hospitalized Geriatric Patients with Parkinson's Disease: A Proactive, Multidisciplinary Approach

KATHRYN SINE, MD; JOSEPH H. FRIEDMAN, MD; IVA NEUPANE, MD

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INTRODUCTION

Parkinson's disease (PD) effects 1% of adults over 60 years old.[1] PD patients have more hospital admissions for medical and surgical needs compared with age-matched peers.[2,3] Common admission reasons can be directly disease-related (motor fluctuations, neuropsychiatric symptoms, and autonomic dysfunction) or indirectly disease-related complications (aspiration pneumonia, falls, and fracture).[2,4] The Age-Friendly-4M Model recommended by the American Geriatrics Society can guide optimal care for hospitalized geriatric PD patients. The listed points cover Mentation (3,4,7), Medication (1,2,5,6), Mobility (3,8,9), and What Matters (10).[5]

DEVELOPMENT

A proactive, multidisciplinary approach for the care of geriatric PD patients during a hospitalization is discussed here.

1. Resume Sinemet at home schedule, not per hospital standard

In geriatric PD patients Sinemet is well-tolerated and used to treat symptoms.[1] Patients have personalized PD medication schedules to best treat their symptoms and to limit a "wearing" off phenomenon.[1,6] These schedules often don't adhere to default hospital qid or tid schedules.[7] When patients are under anesthesia or critically ill, they may not exhibit symptoms. However, medication errors in the hospital can lead to long-term motor deteriorations and abrupt cessation can place PD patients at risk for life-threatening neuroleptic-like malignant syndrom.[4,6] There are no parenteral preparations of PD medications, other than apomorphine, which isn't a good substitute for L-Dopa.[2] For perioperative patients, allow sips with meds when NPO as there are no parenteral formulation available in the US.[2]

2. Review medications: avoid dopaminergic antagonists

In older adults with PD, comorbidities may lead to polypharmacy.[8] Simplifying medications is the best approach to PD treatment.[3] Conscious sedation and local anesthesia to replace general anesthesia might help avoid systemic side effects.[6] Commonly used dopaminergic antagonists in the hospital can exacerbate parkinsonism. This includes Haloperidol for agitation (see 5).[6] Dopamine agonists besides Sinemet are not well tolerated in PD patients with cognitive impairments as older patients are more prone to the undesired side effects of dopamine agonist including somnolence, hypotension, and visual hallucination. Antiemetic medications that block dopamine like metoclopramide and prochlorperazine should be avoided. Ondansetron and trimethobenzamide are acceptable alternative antiemetic medications.[2,6]

3. Ask about functional and cognitive status at baseline

PD is one of the common causes of disability in geriatric patients.[9] Understanding the functional and cognitive baseline for hospitalized PD patients is important to monitor for delirium and to plan for discharge.[6] PD symptoms like dyskinesias can affect wound healing for surgical patients.[2,6] Dopamine agonists are not well tolerated in PD patients with cognitive impairments.[1]

4. Ask about neuropsychiatric symptoms at baseline

Approximately 28% of PD patients have hallucinations.[9] It is important to differentiate known hallucinations from an acute change and/or delirium. Stress from medical and surgical insults, sleep deprivation, unfamiliar environment, and medications can cause confusion and may precipitate

Table 1. Checklist for Inpatient Providers Caring for Hospitalized Geriatric Patients with Parkinson's Disease

Checklist for Inpatient Providers
1. Resume Sinemet at home schedule, not per hospital standard
2. Review medications: avoid dopaminergic antagonists
3. Ask about functional and cognitive status at baseline
4. Ask about neuropsychiatric symptoms at baseline
5. Assess delirium: avoid psychoactive medications
6. Consider blood pressure fluctuations
7. Address constipation
8. Evaluate falls and prioritize early mobilization
9. Involve multidisciplinary therapy
10. Emphasize continuity of care and evaluate goals of care

Table 2. Medications better tolerated and best avoided in hospitalized geriatric patients with PD

	Better tolerated in PD patients	Best avoided in PD patients
Anesthetic	Conscious sedation or local anesthesia	General anesthesia
Antiemetic	Ondansetron Trimethobenzamide	Metoclopramide Prochlorperazine
Psychosis	Pimavanserin (takes weeks to effect) Quetiapine* Clozapine*	Haloperidol
Delirium that impairs safety and care	Quetiapine* (for psychotic symptoms) Consider a Benzodiazepine (for non-psychotic symptoms)**	Typical antipsychotics • Haloperidol Atypical antipsychotics • Olanzapine • Risperidone

*Monitor QTC when using antipsychotic medication.
**Avoid Benzodiazepine with opioid medications (Beer's list medication).

psychosis.[1] Pimavanserin is the only FDA-approved medication for PD psychosis, but the effect takes weeks and therefore is ineffective acutely.[2] Instead, consider Quetiapine or Clozapine. Although Quetiapine and Clozapine block D2 dopamine receptors, they do not cause parkinsonism or worsen motor symptoms.[2,6] Quetiapine requires less monitoring than Clozapine. Screening for neuropsychiatric symptoms includes anxiety and depression. Studies show a regular PD medication schedule reduces anxiety for hospitalized PD patients.[4] If medication is required for anxiety, short-term benzodiazepines can be considered with caution.[2,6]

5. Assess delirium: avoid psychoactive medication

As discussed above, stressors associated with hospitalization may provoke delirium. With correction of the stressor(s) delirium usually improves or resolves. Non-pharmacological intervention is recommended for management of delirium which includes pain and constipation management, sleep hygiene, ensuring adequate hydration, mobilization, resuming eyewear/hearing aids, and family interaction. Reserve short-term pharmacological intervention for patients who are a threat to themselves or others. For PD patients, avoid anti-dopamine medications especially typical antipsychotics (e.g., Haloperidol) and atypical antipsychotics (e.g., Olanzapine, Risperidone) due to the extrapyramidal side effects that further complicate parkinsonian symptoms.[8] Additional medication review involves appropriate withdrawal or tapering of centrally acting medications like narcotics and anxiolytics. If necessary, next steps can focus on withdrawal or tapering of common medications in PD patients including anticholinergics (e.g., diphenhydramine, oxybutynin), amantadine, selegiline, and dopamine agonists other than Sinemet.[1,2,8] Quetiapine is the most appropriate medical treatment for delirium if required.[8]

6. Consider blood pressure fluctuations

Due to autonomic dysfunction, polypharmacy, and age-related hemodynamic changes, geriatric PD patients may be more susceptible to orthostatic hypotension.[1,6] Treatment includes non-pharmacological measures such as optimizing hydration status and adjustments to anti-hypertensives.[1,2] Orthostatic hypotension is commonly associated with supine hypertension; treat by adjusting anti-hypertensives accordingly and using compression stockings.[6]

7. Address constipation

Due to autonomic dysfunction, constipation is a common problem for PD patients and is not responsive to PD medications.[6] Pain medication and non-ambulatory status in hospitals increases constipation risk.[2] For proactive care, encourage dietary fiber, be cautious with pain control, and use early medication to facilitate bowel movements. Polyethylene glycol and Senna are well-tolerated by older adults.[6]

8. Evaluate falls and prioritize early mobilization

PD motor symptoms and orthostatic hypotension increase fall risk. PD patients are overrepresented among older adults hospitalized for falls.[2] Evaluate fall risk for all admitted PD patients. During hospitalization, 20% of PD patients experience worsening motor symptoms and 44% never return to their pre-hospitalization functional status.[3] In focus groups, PD patients advocate for early mobilization and rehabilitation to prevent worsening PD motor symptoms due to deconditioning.[4]

9. Involve multidisciplinary therapy

PD patients can have difficulty swallowing due to poor coordination of muscles in the pharynx, which can be exacerbated by deconditioning while hospitalized.[6] To avoid aspiration pneumonia, consider a formal swallow study and pulmonary toileting.[2] In all PD patients minimize aspiration risk with education by speech therapy.[2,6] Occupational therapy can support self-care practices for PD patients with an appropriate recognition of motor fluctuations.[10] This multidisciplinary approach can also mitigate caregiver burden.[3]

10. Emphasize continuity of care and evaluate goals of care

A comprehensive geriatric assessment and patient-centered multidisciplinary care is the cornerstone of management for geriatric PD patients.[1,3] Data suggests anesthesia can impact dementia.[6] Hospitalizations for directly disease-related or indirectly disease-related complications are an opportune time to evaluate goals of care.[2] Upon discharge, update the primary care physician and neurologist with any changes to medications or goals of care.[3]

CONCLUSION

Age-related physiological changes and comorbidities in geriatric population can further complicate management of PD. With awareness of the unique considerations, providers can better care for hospitalized geriatric PD patients using this proactive, multidisciplinary approach.

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Authors

Kathryn Sine, MD, Alpert Medical School, Brown University, Providence, RI.

Joseph H. Friedman, MD, Department of Neurology, Alpert Medical School, Brown University, Providence, RI.

Iva Neupane, MD, Division of Geriatrics & Palliative Care, Alpert Medical School, Brown University, Providence, RI.

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Correspondence

Kathryn Sine, MD
222 Richmond St.
Providence, RI 02903
kathryn_sine@brown.edu