University of Colorado **Anschutz Medical Campus** Movement Disorders Center

Caring for Patients with Parkinson's Disease in Post-Acute and Long-term Care Communities

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Disclosures

- None
- Current PGY-6 (2nd Year) Fellow at University of Colorado - Anschutz Medical Campus and Denver Health

Objectives

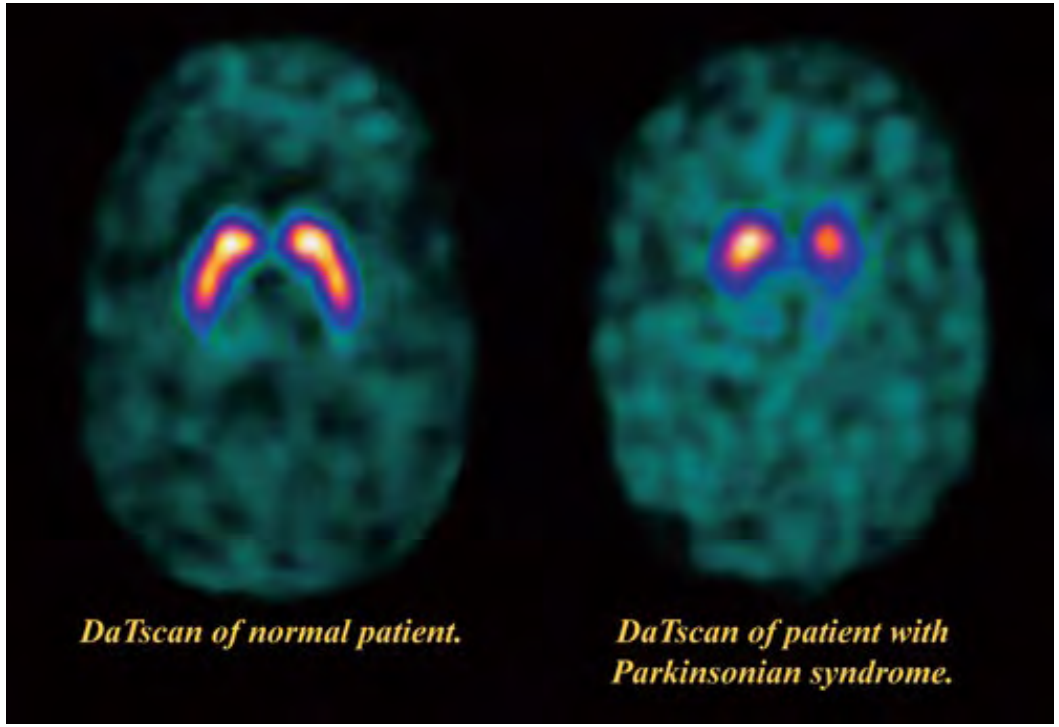
- Understand the diagnostic criteria and prognosis of Parkinson's Disease (PD)
- Discuss common safety, medication and management concerns in patients with PD residing in post-acute and long term care communities, in particular non-motor symptoms
- Discuss the approach to goals of care in patients with PD

Parkinson’s – A Clinical Diagnosis

- Presence of Bradykinesia and at least one of the following:
  - Rigidity
  - Rest Tremor
  - Postural instability
- Supportive features include
  - Decreased arm swing, micrographia, hypophonia, shortened stride length
  - Prodromal signs: RBD, anosmia, constipation, orthostatic hypotension
  - **DaT Scan – not necessary**
- Red flags for an atypical parkinsonism
  - Early, recurrent falls
  - Poor response to medication
  - Rapid progression
  - Severe early autonomic features
  - Cerebellar features
- **No concurrent exposure to neuroleptic drugs**

The “DaT”tails

- SPECT scan that measures the presynaptic dopamine transporter protein
- Reduced in PD
- FDA approval for differentiating PD from ET
- Clinically more useful in Idiopathic PD vs Drug-induced
- Certain drugs must be halted prior to scan (up to 1 week prior)



Prognosis

- Meta-analysis found that people typically live 6.9 to 14.3 years after diagnosis but there was significant heterogeneity (some reporting at least 20 years post-diagnosis)
- Cause of death on death certificates are similar to causes of non-PD patients
  - Death occurs often before the advanced stages of PD for other reasons
  - If patients do pass from PD-related symptoms, most commonly it is aspiration pneumonia

Parkinson Disease Subtype and Estimated Frequency	Disease Presentation	Response of Motor Symptoms to Dopaminergic Medication	Disease Progression
Mild motor predominant 49%-53%	• Young at onset • Mild motor symptoms	Good	Slow
Intermediate 35%-39%	• Intermediate age at onset • Moderate motor symptoms • Moderate nonmotor symptoms	Moderate to good	Moderate
Diffuse malignant 9%-16%	• Variable age at onset • Rapid eye movement sleep behavior disorder • Mild cognitive impairment • Orthostatic hypotension • Severe motor symptoms • Early gait problems	Resistant	Rapid

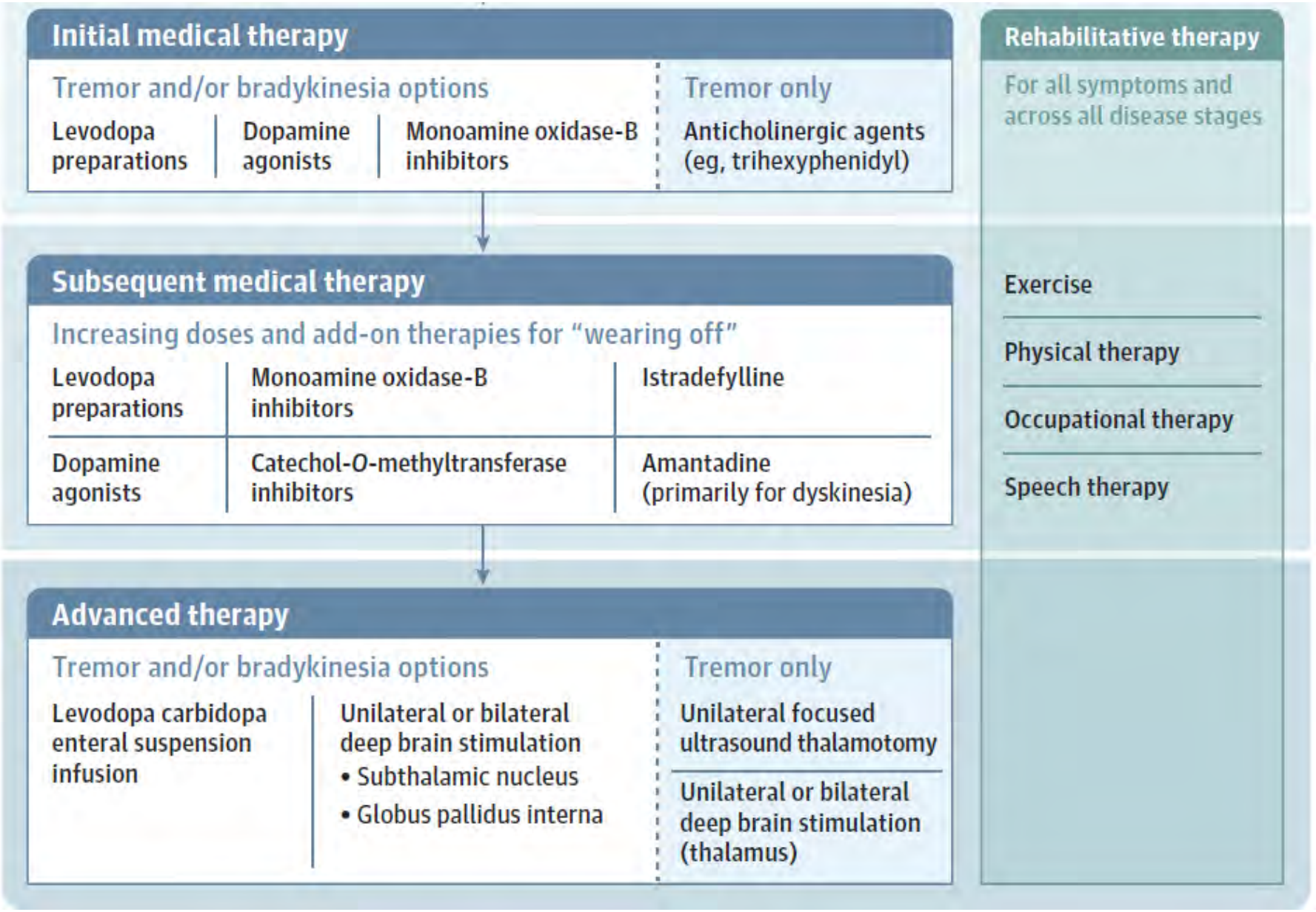
Long-Term Care – Literature Review

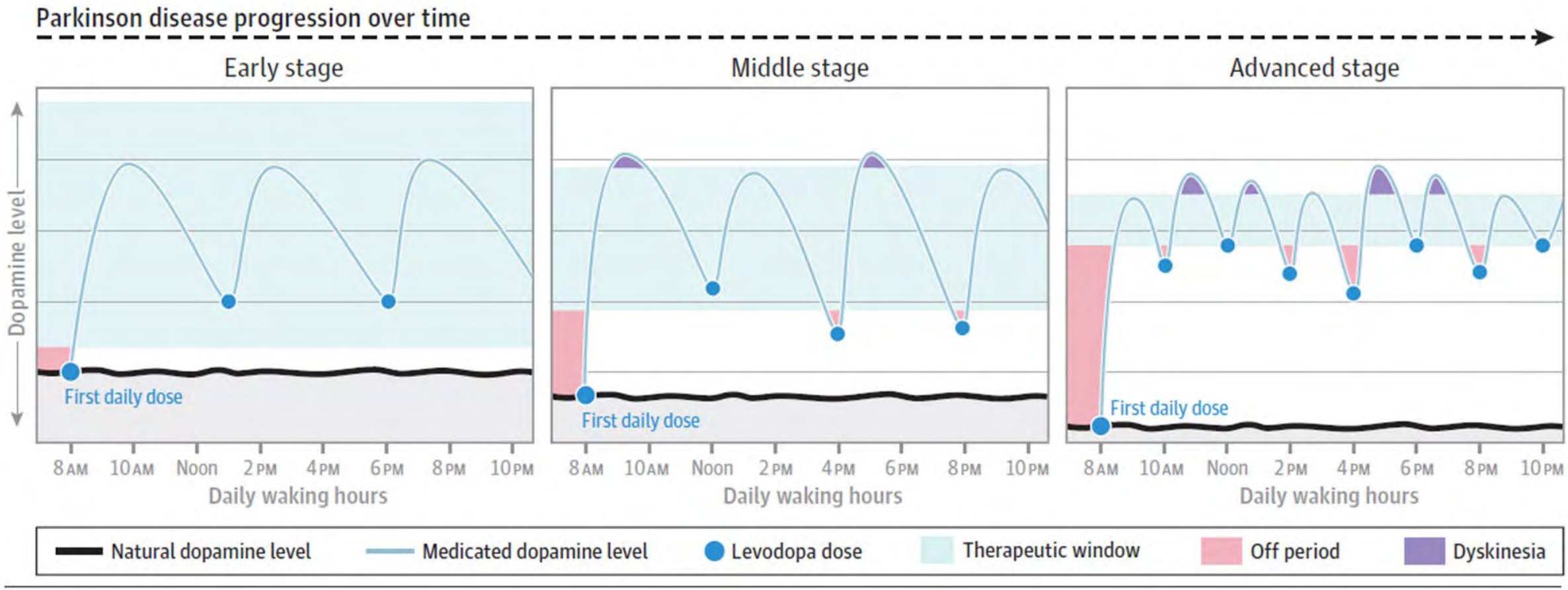
- 20% to 48% of patients with PD will spend time in long-term care
- Age typically 70-80 years old
- Mean stay of 2-3 years
- 50% wheelchair bound
- Reports of more off time, less dyskinesias

- Only 23% of PD patients were on levodopa
- 37% were on dopamine-blocking agents
- 40-50% reported with dementia
- 2-3% with hallucinations and delusions*

Improving Outcomes

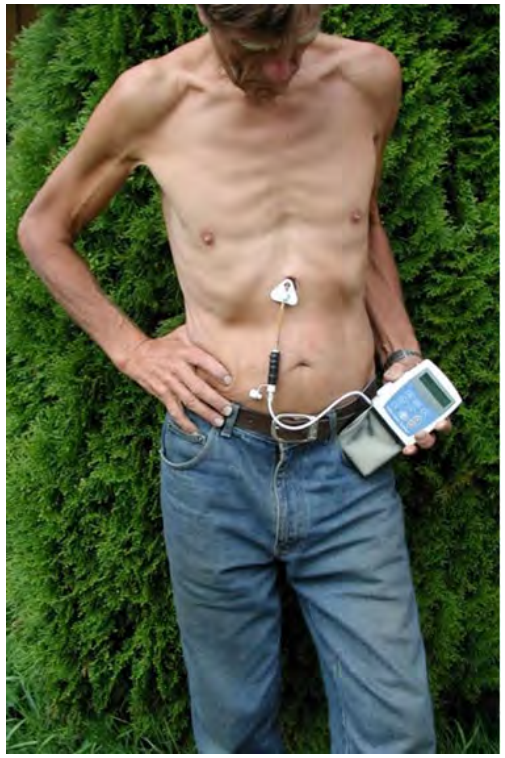
- Continued neurologic follow-up
  - Lower risk of hip fracture
  - Lower adjusted likelihood of death
- Small study of 49 patients where LTC staff underwent PD-specific curriculum, then measured 1 year outcomes:
  - Improved motor function and quality of life
  - Decreased falls, depression and fatigue

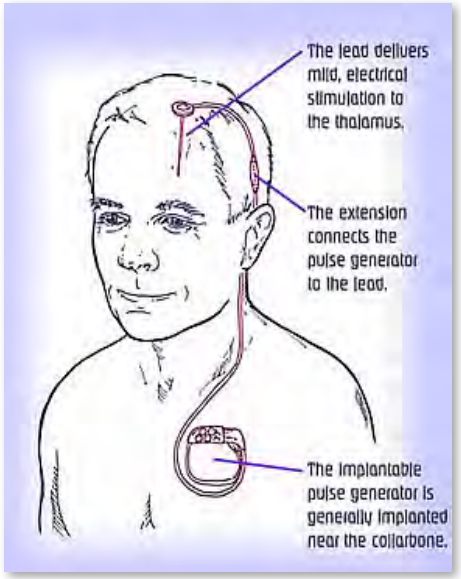

Initial medical therapy
Tremor and/or bradykinesia options
Levodopa preparations
Dopamine agonists
Monoamine oxidase-B inhibitors
Tremor only
Anticholinergic agents (eg, trihexyphenidyl)
Subsequent medical therapy
Increasing doses and add-on therapies for "wearing off"
Levodopa preparations
Monoamine oxidase-B inhibitors
Istradefylline
Dopamine agonists
Catechol-O-methyltransferase inhibitors
Amantadine (primarily for dyskinesia)
Advanced therapy
Tremor and/or bradykinesia options
Levodopa carbidopa enteral suspension infusion
Unilateral or bilateral deep brain stimulation
• Subthalamic nucleus
• Globus pallidus interna
Tremor only
Unilateral focused ultrasound thalamotomy
Unilateral or bilateral deep brain stimulation (thalamus)
Rehabilitative therapy
For all symptoms and across all disease stages
Exercise
Physical therapy
Occupational therapy
Speech therapy

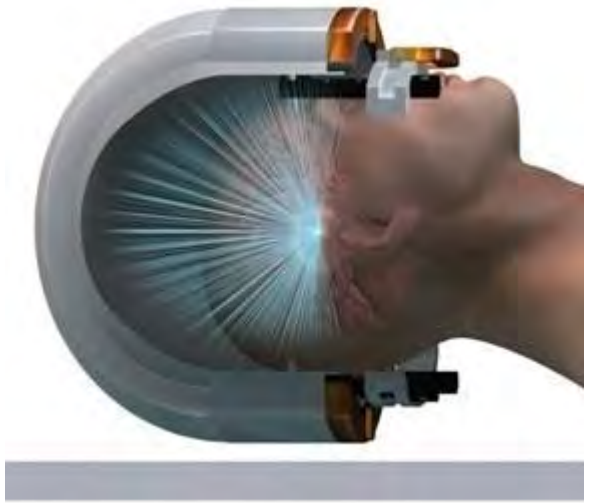


***Dyskinesias are not inherently problematic – ask the patient!

Advanced Therapeutics







March 22, 2023

AbbVie Provides Regulatory Update on ABBV-951 (Foscarbidopa/Foslevodopa) New Drug Application

Non-motor symptoms of Parkinson's

Photo from APDA

Parkinson’s Disease Dementia

- Over 75% of PWP for 15 years or more have MCI or dementia
- Characterized by decline in executive function and visuospatial domains more so than working memory and language
- Hallucinations are common – well formed, complex, animals or people
- Acetylcholinesterase (AChE) inhibitors do help!

  Rivastigmine approved for PDD and DLB

Photo from Vice.com

PDD and Psychosis: MDS Recommendations

+ Haloperidone, risperidone, aripiprazole

TABLE 6. Interventions to treat psychosis in PD

Drug	Efficacy	Safety[a]	Practice implications
Clozapine	Efficacious	Acceptable risk with specialized monitoring	Clinically useful
Olanzapine	*Not efficacious*	Unacceptable risk	*Not useful*
Quetiapine	Insufficient evidence	Acceptable risk without specialized monitoring	*Possibly useful*[b]
Pimavanserin	*Efficacious*	*Acceptable risk without specialized monitoring*[c]	*Clinically useful*

Constipation and Urination

Constipation

- Very common, prodromal symptom
- Slow motility
- Probiotics likely efficacious
- Some caution on bulking agents if patient does not hydrate

Urination

- Typically overactive bladder: nocturia, frequency, urgency
- Strong caution in using antimuscarinics
- Beta-3-adrenergics have less CNS effect
  - Mirabegron only one studied in PD
- Botulinum toxin injections

Dysphagia

- Evaluation indicated at first visit!
- Ask about post-swallowing cough or gurgle, choking, unintentional weight loss, food retention sensation, **pneumonia**
- Any of the above -> SLP evaluation and swallow study
- Patients often unaware!

  20% of PD patients will have swallowing abnormalities without complaint of difficulty subjectively

Image from: https://www.uofmhealth.org/health-library/tf7235

Orthostatic Hypotension

- Experience by over a third of PD patients
- Neurogenic, but beware concomitant BP meds and hypovolemia confounding
- Includes notable post-prandial hypotension
- Patient may have difficulty describing – consider profound fatigue/sleepiness after meals, unexplained falls/syncope
- Diagnosis:
  - Measure BP and HR while lying, sit up then wait 3 min then repeat, stand up then wait 3 min then repeat
  - Argument between 20 pt or 30 pt systolic drop without HR increase response.
- Treatment
  - Non-pharmacologic: hydration, behavioral changes, small meals, compression stockings and abdominal binders, review dopaminergic therapy
  - Medication
    - Midodrine
    - Fludrocortisone (must be taking in enough water and salt)
  - If supine HTN occurs, consider short acting anti-HTN medications

Palliative Care

- Provide early and often – consider at time of diagnosis
- Improves QOL, decreases symptom burden and reduces hospital deaths
- Non-motor symptom burden increases
  - Pain
  - Depression, anxiety
- Discuss ACP yearly (though avoid immediately after diagnosis)
- Provides caregiver support
- Consider the surprise question

- "PD challenges personhood"
  - Independence
  - Appearance
  - Social relationships
  - Identity
- Socializing is critical – isolation affects QOL and mortality
- Consider spiritualism and religion

REFERENCES

- Bloem BR, Okun MS, Klein C. Parkinson's disease. Lancet. 2021 Jun 12;397(10291):2284–303.
- Armstrong MJ, Okun MS. Diagnosis and treatment of parkinson disease: a review. JAMA. 2020 Feb 11;323(6):548
- Weerkamp NJ, Tissingh G, Poels PJE, Zuidema SU, Munneke M, Koopmans RTCM, et al. Parkinson disease in long term care facilities: a review of the literature. Journal of the American Medical Directors Association. 2014 Feb;15(2):90–4.
- Manson A, Stirpe P, Schrag A. Levodopa-induced-dyskinesias clinical features, incidence, risk factors, management and impact on quality of life. Journal of Parkinson's Disease. 2012;2(3):189–98.
- Palermo, Ceravolo. Molecular imaging of the dopamine transporter. Cells. 2019 Aug 10;8(8):872.
- Bond AE, Shah BB, Huss DS, Dallapiazza RF, Warren A, Harrison MB, et al. Safety and efficacy of focused ultrasound thalamotomy for patients with medication-refractory, tremor-dominant parkinson disease: a randomized clinical trial. JAMA Neurol. 2017 Dec 1;74(12):1412.
- Tsunemi T, Oyama G, Saiki S, Hatano T, Fukae J, Shimo Y, et al. Intrajejunal infusion of levodopa/carbidopa for advanced parkinson's disease: a systematic review. Mov Disord. 2021 Aug;36(8):1759–71.
- Lim SY, Lang AE. The nonmotor symptoms of Parkinson's disease--an overview. Mov Disord. 2010;25 Suppl 1:S123-130.
- Reingold JL, Morgan JC, Sethi KD. Rivastigmine for the treatment of dementia associated with Parkinson's disease. Neuropsychiatr Dis Treat. 2007 Dec;3(6):775–83.
- Caballol N, Martí MJ, Tolosa E. Cognitive dysfunction and dementia in Parkinson disease. Mov Disord. 2007 Sep;22 Suppl 17:S358-366.
- Cosentino G, Avenali M, Schindler A, Pizzorni N, Montomoli C, Abbruzzese G, et al. A multinational consensus on dysphagia in Parkinson's disease: screening, diagnosis and prognostic value. J Neurol. 2022 Mar 1;269(3):1335–52.
- Fanciulli A, Leys F, Falup-Pecurariu C, Thijs R, Wenning GK. Management of orthostatic hypotension in parkinson's disease. Bloem BR, Brundin P, editors. JPD. 2020 Sep 1;10(s1):S57–64.
- Shulman LM. Understanding disability in parkinson's disease: understanding disability in pd. Mov Disord. 2010;25(S1):S131–5.
- Lum HD, Kluger BM. Palliative care for parkinson disease. Clinics in Geriatric Medicine. 2020 Feb;36(1):149–57.


THANK YOU