FR8- Parkinson’s Disease: A Video is Worth 1.8 Million Words

Friday, March 23
11:00 AM- 12:00 PM

Session Description

If a picture is worth 1,000 words and video shoots at 30 frames per second, every second of video is worth 30,000 words and a whole minute of video could be worth 1.8 million words. Regardless of the metrics, videos are an excellent tool for showing some of the many highly variable presentations of common issues associated with Parkinson’s, especially motor manifestations such as tremor, bradykinesia and freezing of gait. During this session, the presenters will make extensive use of video to highlight presentations of common phenomena associated with Parkinson’s over the course of the disease. When available, videos will demonstrate similar phenomena at early and later stages to help illuminate how common symptoms such as tremor and gait deficits change over time. Additional video will demonstrate possible compensatory approaches for difficult to treat issues such as freezing of gait and swallowing issues as well as the significant gains that can be achieved by the simple speech and physical therapy approaches to many issues. All topics, however, will be accompanied by a discussion of both pharmacological and nonpharmacological treatment approaches.

Learning Objectives

Recognize key components of primary motor symptoms of Parkinson’s, tremor, rigidity, akinesia/bradykinesia and postural instability.
Highlight potential complications of dopaminergic therapy, including dyskinesias, motor fluctuations and off-period symptomatology.
Implement strategies to address freezing of gait.
Identify manifestations of voice and swallowing issues associated with Parkinson’s and possible treatment approaches.

Presenter(s): John Dean, MA, CCC-SLP; Nora Reznickova, MD

Presenter(s) Disclosures: All speakers have reported they have no relevant financial relationships to disclose.
**Parkinson’s - A video is worth 1.8 million words**

If “a picture is worth a thousand words” & video shoots 30 images a second…

Nora Reznickova MD  
Colorado Permanente Medical Group  
John M Dean MA CCC-SLP  
Private Practice

**Speaker Disclosures**

Dr. Reznickova has disclosed that she has no relevant financial relationship(s).

Mr. Dean has disclosed that he has no relevant financial relationship(s).

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**Learning Objectives**

By the end of the session, participants will be able to:

- Recognize key components of primary motor symptoms of Parkinson’s, tremor, rigidity, akinesia/bradykinesia and postural instability
- Identify potential complications of dopaminergic therapy, including dyskinesias, motor fluctuations and off-period symptomology
- Recognize the multiple phenotypes of drug-induced parkinsonisms and potential treatments
- Implement strategies to address freezing of gait
- Identify manifestations of voice and swallowing issues associated with Parkinson’s

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**Cardinal Symptoms - Motor Symptoms (TRAP)**

- **Tremor**
- **Rigidity**
- **Akinesia/bradykinesia**
- **Postural Instability**

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**Tremor**

- Unilateral, typically beginning in an extremity
- Occurs at rest (or with distraction)
  - 3-5 Hertz (cycles per sec), slower than essential tremor

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**When You See One Person with Parkinson’s…**

- **Secondary Parkinsonism**
- **Idiopathic Parkinson’s Disease**
- **Atypical PD Or PD+**
- **Genetic PD**
- **Tremor**
- **Rigidity**
- **Akinesia/bradykinesia**
- **Postural Instability**

**You’ve seen one person with Parkinson’s…**
Rigidity

• May initially report as muscle stiffness
  • Typically in the extremities initially
  • Or related joints such as the shoulder, elbow or knee
• Usually dopamine responsive
  • Meaning it will often temporarily resolve with administration of carbidopa/levodopa

Akinesia/bradykinesia

• “paucity of movement” - slower and smaller
• May appear clinically as just slower moving, especially later in disease progression
• Note the reduced blinking
  • Potential for dry eyes and related visual complications

Akinesia/bradykinesia cont.

Note that patient performance (R) begins relatively intact before becoming slower and smaller

Earlier in disease progression

• Bradykinesia may appear “normal” at the outset of the task
  • With amplitude diminishing over the course of the activity
• Adding a “distractor” can enhance this effect
  • i.e. making simple conversation or incorporating simple cognitive tasks to see if performance changes emerge*

*This can also be beneficial for identifying functional movement disorders

Postural instability

• Often late appearing in the disease
• A movement disorder specialist might use something a pull test to assess
• Patient (or clinician) reports of balance issues or hx of falls may be more clinically relevant in post acute/LTC

Contrast this with dyskinesias

Dyskinesias are not a symptom of Parkinson’s - They are a side effect of medications
Subtle Dyskinesia

Subtle dyskinesias may emerge during stress or periods of activity.

In a study involving 73 individuals with Parkinson’s in SNF environments in the Netherlands, Dutch researcher Niko Weerkamp and colleagues noted:

- 44% were in motor “off state” (slow and stiff) most of the time
- Dyskinesias were infrequent
- 8% received no Carbidopa/Leydopa at all
- Disagrees with current practice of maintaining medications as long as possible
- Frustratingly, 6.8% pt with questionable Dx of IPD received C/L


Diphasic dyskinesia (aka Biphasic dyskinesia)

- In addition to typical dyskinesias
- i.e. when the medications are at the top of the cycle
- Some individuals experience this phenomenon when they are near the end of their cycle as well
- Potentially leading to unnecessary and perhaps ill-advised medication changes

On time, every time” - Medication timing is CRITICAL

- Particularly in the later stages of the disease/longer time since diagnosis because delayed or missing doses could lead to
  - “Off period” and wearing off
  - Significant anxiety as a result
  - Painful dystonias or muscle cramping, known as “off period focal dystonia”
  - Typically in extremities

“On time, every time” - Medication timing is CRITICAL

Consider hosting an “Aware in Care” in-service for staff using the free kit and materials from the Parkinson Foundation

Aware in Care

According to one study of acute admissions

75% of PwP did not receive meds on time in the hospital, resulting in serious and avoidable complications

Magdalou, et al. 2007

www.awareincare.org

Other motor fluctuations

- Wearing off/Sudden off
Gait / posture

- Smaller stride length, absence of arm swing
- Initially unilateral

Gait / posture

- Festination
- Small, shuffling step
- Leads to freezing of gait* and falls

* Freezing of gait (FOG) will be discussed momentarily

Drug-Induced Parkinsonism (DIP)

2nd most common etiology of parkinsonism in elderly after idiopathic PD

- Most important medication-induced movement disorder

Classical clinical definition:

- Bradykinesia
- Rigidity (akinetic rigid type)
- Bilateral and symmetric without tremor at rest
- 50% shows asymmetric parkinsonism with tremor at rest and some clinical features can be indistinguishable from IPD

Pathophysiology and Causality

**Dopaminergic Receptor Blockade**

D/T drug exposure

- Minimal exposure should be 3 months
- Except patients older than 60 who can develop DIP and other extrapyramidal symptoms (EPS) after one month
- Movements should be present for at least one month

Primary treatment is discontinuation of the offending drug

<table>
<thead>
<tr>
<th>If there is resolution of the symptoms</th>
<th>Reversible receptor blockade - pure DIP</th>
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<tbody>
<tr>
<td>If there is persistence of symptoms</td>
<td>Continues to worsen - IPD</td>
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If there remains stable - neuronal toxicity
**DatScan® Dopamine Activation Transport Imaging**

**ID's DA loss at presynaptic terminals**

Differentiating between:
- Parkinson's and essential tremor
- Parkinson's disease and psychogenic parkinsonism
- Parkinson's disease and drug-induced parkinsonism

**Limitations**

Cannot distinguish between Parkinson's and atypical Parkinson's diagnoses

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**Drug Culprits - Any medication that blocks DA**

**Typical:**
- Haloperidol
- Chlorpromazine, prochlorperazine, perphenazine, promethazine
- Pimozide
- Sulpiride

**Atypical:**
- Risperidone, olanzapine, ziprasidone, aripiprazole
- Antiemetics – metoclopramide, levosulpiride, clebopride
- Ca channel blockers - flunarizine, cinnarizine
- Metamphetamine (added to haldol)

*A aware in core has a list of these medications as well*

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**Uncommon Drug Culprits**

- Atypical antipsychotics – clozapine, quetiapine
- Mood stabilizer - lithium
- Antidepressants – citalopram, fluoxetine, sertraline, paroxetine
- Antiepileptic drugs – valproic acid, phenytoin
- Antiemetics – domperidone, itopride

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**Epidemiology**

**Prevalence:**
- 1st generation antipsychotics (FGA) - 32.4%
- 2nd generation antipsychotics (SGA) – 15.6%

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**Speech and swallowing issues in PD**

- More common than general awareness would suggest -
  - AND earlier appearing
  - Swedish study/ Moreau
- Not particularly responsive to meds
  - Less so to DBS
- Rehab interventions are the first line
  - TX
  - Compensatory approaches
  - Occasionally – tech such as voice amplifiers and other tools

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**Voice dysfunction in Parkinson’s**

- Quiet voicing is a hallmark of the disease
- And an analog for the bradykinesia
  - And to a lesser extent, rigidity
- It’s OK to ask them to speak up
- Reinforces clinical interventions and carryover from speech therapy
- They may be unaware
LSVT LOUD® and SPEAK OUT® voice tx

- High amplitude, high intensity approaches
- Train loud speaking
  - With a focus on carryover to connected speech
- Large body of peer-reviewed evidence
  - Particularly for LSVT LOUD
  - Requires training and certification

How common are swallowing problems?

Studies range from 50%-95%

Why is there such a wide disparity in these numbers?
1. Differences in the definition of abnormal swallowing
2. Difficulty identifying swallowing difficulties without an instrumental exam
3. Some studies rely upon self-reported findings
4. Swallowing difficulties often occur later in the disease

Indicators of a swallowing problem

- Drooling
  - Associated with a higher risk of swallowing issues
- Weight loss
  - Could be an indication of difficulties at mealtimes
- Coughing
  - Your body’s protective/early warning system at work
- Unexplained fever
  - Could be the result of “aspiration”

Observable manifestations of swallowing dysfunction

- Throat clearing behavior
  - Particularly at mealtimes
  - Esp. with liquids
- Frequent alternation between solids and liquids
  - Also a good “compensatory maneuver”
- Other pot. signs of aspiration*
  - Watery eyes, runny nose
    - CAVEAT: Not always a clear indicator
- Avoiding certain consistencies*
  - Could point to a number of underlying causes

*patient/care partner may report this during a visit

Treatment approaches

- Starting with a referral to speech language pathology
  - And perhaps occupational therapy
- Improve performance
  - Strengthening exercises
  - Optimizing posture and position
  - Adaptive equipment
  - Compensatory techniques
  - Modifying diet
  - Adapting environment

Advice for Pills

- Pills with water can be challenging
- “Mixed consistency” – solid + liquid
- Consider using a “puree” like applesauce instead
- Watch protein-rich purees like cottage cheese and yogurt
Sialorrhea – aka “Drooling”

- Often begins with reports of wetness on the pillow when waking up in the morning
- No more saliva than healthy age matched peers
  - Issue of attention
    - Analog to reduced blinking
- Often presents in individuals with more axial symptoms
  - Higher risk of aspiration
  - Cog issues?

Treatment Options for Drooling

**Behavioral approaches**
- Improve self-monitoring
- Postural enhancement
- Increase swallowing freq.
  - Ice chips
  - Hard candies
  - Chewing gum and mints
    - Cinnamon-flavor
    - **NOT** peppermint/spearmint etc

**Medications?**
- Anticholinergics?
  - Contraindicated d/t side effects
- A couple of exceptions…
  - Atropine drops
  - Administered sublingually
  - Glycopyrrolate
  - Doesn’t cross blood brain barrier...

Advanced Treatment Options for Drooling

- Botulinum toxin can be very effective
  - Administered to the parotid glands, and often submandibular concurrently
  - Results can last for three months
- Caveats about dry mouth
- Swallowing problems
- Dental issues
  - Surgical transposition of salivary gland ducts or irradiation of the salivary glands

Freezing (FOG-Freezing of Gait)

“**Brief, episodic absence or marked reduction of forward progression of the feet despite the intention to walk**”

- Significantly increases risk of falls
  - Often (not always) becomes more prominent in later stages of the disease
  - 53% of PwP >5 years of disease duration
- Tends to occur in doorways or other tightening spaces
  - Also common when turning

Freezing of gait

Rehab may help but results are inconsistent

- Requires a particularly individualized approach
- There are some “tricks” for coping with FOG
  - Visual cues (tape on the floor, laser pointers on walkers and canes)
  - Changing directions helps on occasion
  - Rocking side-to-side to initiate motion helps on occasion
  - Rocking front to back is also possible but higher risk for falling
- Tactile cues
CME Questions

1/ What are the primary motor symptoms of Parkinson’s disease
   A. Tremor
   B. Tremor and rigidity
   C. Tremor, rigidity, bradykinesia
   D. Tremor, rigidity, akinesia, bradykinesia and postural instability
   Correct answer is D

2/ How many patients in the recent Netherland study of Parkinson’s in nursing homes were in the “off” state (i.e., indicative of potentially being undertreated)?
   A. 11%
   B. 22%
   C. 33%
   D. 44%
   Correct answer is D

3/ Speech difficulties associated with Parkinson’s are (select the correct answer):
   A. Uncommon in this population
   B. Best addressed with pharmacological intervention
   C. Generally amenable to speech therapy interventions, particularly those using speech-production techniques such as LSVT LOUD and SPEAK OUT
   D. Always improved with deep brain stimulation surgery
   Correct answer is C

4/ Recommended strategies for freezing include all of the following except:
   A. Rhythmic Auditory Stimulation
   B. Laser-assisted visual cues
   C. Pulling or pushing the patient in the direction of movement
   D. Tactile cues such as tapping or otherwise mildly stimulating patient to interrupt the freezing cycle
   Correct answer is D

5/ Which of these medications can cause drug-induced parkinsonism?
   A. Haloperidol
   B. Haloperidol and risperidol
   C. Haloperidol, risperidol, seroquel
   D. All the above and citalopram
   Correct answer is D