Welcome!

Video will be archived on the APDA Northwest YouTube channel. Visit our website www.apdaparkinson.org/Northwest for information about future programs and services offered.

APDA Virtual Optimism Walk
Walking Together, but separately. To raise awareness & funds in the fight against PD.

APDA Take Control

What a Pain! Understanding and Treating Pain in Parkinson's disease (PD)
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Movement Disorders Specialist
Swedish Neuroscience Institute, Cherry Hill, Seattle

Learning Objectives

Causes of pain in PD
Treating pain by optimizing treatment of PD
Treatment Strategies for pain in PD from other causes

What is Pain?

• “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage,” (IASP, 1979/2011)
Pain in Parkinson disease (PD)

- Experience of pain is contextual
  - Context for this discussion is PD
- Chronic, recurrent, intermittent pain in PD
  - [Not discuss acute or sudden pain: headaches, chest pain, abdominal pain, eye pain, throat pain etc]

**PD Non-motor symptoms**
- Sleep disorders
  - REM sleep behavioral disorder (RBD)
- RLS
- Cognitive deficits
  - MCI
- Dementia
- Psychosis
- Mood disorders
- Autonomic dysfunction
  - Orthostatic hypotension
- GI sx
- GU sx
- Sexual sx
- Sensory symptoms
  - Pain!

- How common is chronic recurrent pain in PD?
  - 60-70%
- Why?
  - Dysfunction of dopamine circuits, AND
  - Dysfunction of pain pathways/circuits
  - Higher incidence of musculoskeletal problems in PD
  - Undertreatment
- Is pain felt differently in PD?
  - Yes!
  - Reduced threshold for pain perception
  - Altered pain sensation

Simuni, 2008

Defazio, 2008

Rukavina, 2019
PQRST assessment of Pain in PD

- **Precipitating (& relieving factors):** What makes the pain worse? What makes it better?
- **Quality:** How would you describe the pain? What does it feel like? (dull, sharp, achy, throbbing, knife like, electric shock like, burning, tingling, icy)
- **Radiation:** Is the pain in one place or does it move around the body?
- **Site & Severity:** Where is the pain? On a scale of 0-10, how do you rate the pain?
- **Timing & Treatment:** Any relation to timing of PD medication (on-state or off-state)? When did pain start? How often does it occur - constant or intermittent? Are you getting treated for this pain? What works? What doesn’t work?

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### Pain (& discomfort) from PD & its treatment

- **Undertreatment or Undermedication**
  - Most common treatable cause of pain
  - Pain can be the first sign of PD
  - Underrecognized because pain is so common
  - Low dopamine state

- **Description of pain from PD**
  - Very variable in perception and location
  - Usually more severe on the side of body affected
  - "Electrical Discharge" "Throbbing" "hot and cold" "generalized" body pain
Pain (& discomfort) from PD

- Correct Undertreatment or Undermedication
- Maximize dopaminergic treatment to improve motor symptoms
  - Pain improves in about 48% of patients
- Standard analgesics pain improves in 78% of patients

Motor Fluctuations and Dyskinesias

Painful Dyskinesias/dystonia during on/off states

Pain (& discomfort) Fluctuation with motor fluctuations
Treatment of Motor and Pain Fluctuations by Optimization of PD medications

Optimization of PD Treatment

- Spending more time in the on state without dyskinesia and less time in the off state
  - Multi-medication treatment
  - Surgical treatment
  - Customized to each person

Optimization of PD Medications

- Fractionation of PD medications
  - Smaller doses more frequently
  - Increases pill burden
  - Reduces compliance
  - Use medications that increase on state without dyskinesia

Optimization of PD Medications

- Rytary®
  - Extended release carbidopa/levodopa
  - Replaces short acting carbidopa/levodopa
    - Long-acting
    - Fewer doses
    - Decreases pill burden
Optimization of PD Medications

- Inbrija Inhaler ®
- Levodopa Inhaler
- Occasional Wearing off
- “On demand:” on in 10-30 minutes
- Bypasses the gut (not affected by constipation!)

Painful Dystonia

- Refractory to PD medications
- Botox®
- Trihexyphenidyl
- Clonazepam
- Combination drugs

Optimization of PD Medications

- Medication Combinations
  - Carbidopa/levodopa formulations
  - Dopaminergic agonists (<60 years of age)
  - COMT inhibitors
  - Monoamine Oxidase Inhibitors
  - Amantadine formulations for dyskinesias
  - Others

Surgical Options for motor fluctuations that persist despite PD medication optimization

- Deep Brain Stimulation
  - Boston Scientific™:
    - Fine-tuning
    - Rechargeable battery
  - Abbott™
  - Medtronic™
Deep Brain Stimulation of the Subthalamic Nucleus
Taking the Ouch Out of Parkinson Disease

- Beneficial for pain
- ?Durability
- Not recommended solely for pain!

Surgical options for PD motor fluctuations

- Levodopa-Carbipoda Intestinal Gel (LCIG) Duopa®
- Cassette containing levodopa suspension
- Infusion pump
- Inserted via PEG-J tube into jejunum through stomach
  - Not recommended solely for Pain!

Other causes of Pain & discomfort from PD

<table>
<thead>
<tr>
<th>Pain Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Pain</td>
<td>- Variable description (electric, achy, generalized body discomfort)</td>
</tr>
<tr>
<td></td>
<td>- Analgesics, muscle relaxants, gabapentin, tricyclic antidepressants, Duloxetine, Pregabalin</td>
</tr>
<tr>
<td>Akathisia</td>
<td>- State of inner restlessness</td>
</tr>
<tr>
<td></td>
<td>- Optimize dopaminergic medications</td>
</tr>
<tr>
<td>RLS</td>
<td>- ‘creepy-crawly’ ‘tingly’ ‘burning’ ‘achy’ ‘throbbing’</td>
</tr>
<tr>
<td></td>
<td>- Sleep disturbance</td>
</tr>
<tr>
<td></td>
<td>- Pregabalin, gabapentin, Pramipexole, ropinirole, Rotigotone patch, opiates, others</td>
</tr>
</tbody>
</table>

Pain In PD

- Pain from PD & its treatment
- Pain in PD from other causes

Rukavina 2019
Musculoskeletal (MSK) Disorders

Most common cause of Pain in PD
- Neck, Low back, Joints, Limb pain
- Dull, deep ache, sharp pain with movement, throbbing, crampy, ‘Charlie horses
- Injury, wear and tear, inflammation of muscles, ligaments, & connective tissue; osteopenia & osteoporosis; Fractures
- “Frozen shoulder, Arthritis, “Bent-spine,” scoliosis, joint deformities, stooped neck, foot problems

Team:
- General Practitioner
- Rehabilitation specialist
- Rheumatologist
- Pain specialist
- Orthopedist
- Neurosurgeon

Pain & discomfort in PD from other causes
Pain in PD from other causes

Musculoskeletal (MSK) Disorders

May be the first sign of PD

- Under treatment, Lack of movement, shortening of muscles, Aging, deconditioning, Metabolic changes, Drugs, Injuries...

Diagnosis and Treatment

- Team based approach
- GP & others
- MRIs, Xrays
- Analgesics, anti-inflammatory treatments
- Rehabilitation
- Steroids
- Surgery

Neuropathic Pain

- Pain from damage to or abnormal signaling of nerves

- "Pins-and-needles": tingling, numb, burning, "electric," "shock-like,

- Both Hands and feet
- Neuropathy
- Diabetes
- Vitamin B12, folate deficiency

- Radiating pain, usually asymmetric
- Shoulder
- Arm
- Back
- Legs
- Radiculopathy or "Pinched nerves"
- Degenerative disc disease
- Spinal stenosis
- Bulging herniated discs

Diagnosis and Treatment

- Neurologist or GP
- Blood tests
- Vitamin supplementation
- Glucose control
- MRI of neck or back
- EMG
- Rehabilitation & Pain specialist
- Medications:
  - Topicals
  - Gabapentin
  - Pregabalin
  - Tricyclic Antidepressants
  - Several Others
- Surgery for severe pain, weakness, or numbness from radiculopathy

Treatment of Pain in PD is incomplete if...

...Conditions that accentuate pain are not treated effectively!

- Depression
- Stress
- Anxiety
- Lack of exercises (stretching)
- Lack of Sleep
- Constipation
- Low BP
Marijuana for Pain in PD

- Effects of THC or CBD in PD are not known
- I don’t prescribe it

Mohanty 2019
https://www.webmd.com/a-to-z-guides/news/20180420/can-marijuana-be-the-answer-for-pain

Complementary treatment of Pain in PD:

- Yoga for functional
- Acupuncture
- Cognitive Behavioral treatment
- Other modalities that are safe and noninvasive

Yu 2019, van Puymbroeck 2018

In summary

- Causes of pain in PD are myriad
- PQRS of pain helps identify cause
- Optimization of PD treatment for both motor and nonmotor symptoms is essential
- Multidisciplinary treatment of pain is necessary

Thank you!

Information on Any other topics in PD?
Want to hear this talk again?
Please contact APDA!
APDA VIRTUAL OPTIMISM WALK
Walking Together, but separately.
Sunday, May 31st, 2020

Your participation as a Virtual Walker will make a difference in supporting our mission to provide support, education, and research that will help everyone impacted in Parkinson's.

www.apdaparkinson.org/Northwest