

# Non Motor Symptoms of Parkinson's Disease

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- Tremor
- Slowness
- Stiffness
- Unsteady gait

## **Motor Symptoms**

- Fatigue
- Constipation
- Depression
- Dementia
- Psychosis
- Drooling (sialorrhea)
- Light headedness/passing out (orthostatic hypotension OH)
- Forced eye closure (blepharospasm)
- Need to urinate frequently at night (nocturia)

## **Non Motor Symptoms**

- Multifactorial
- Poor sleep (this is also multifactorial)
- Side effects of medications
- Possibly a symptom of Parkinson's Ds

## **Fatigue**

- REM behavior sleep disorder (RBD)
- Restless legs syndrome
- Insomnia
- Urinary frequency (Nocturia)

## **Poor Sleep**

- Normally limbs/vocal muscles paralyzed in REM sleep (when dreaming occurs)
- RBD no paralysis occurs so people can move in their sleep, if severe can cause kicking, punching, yelling out in their sleep
- Falling out of bed and injury to bed partners can occur

## **RBD**

- Treatment
- Melatonin 6-16 mg/night
- Clonazepam 0.5-1 mg
- Put mattress on floor to prevent falling out of bed, lock windows etc

**RBSD**

- Common in PD
- Unpleasant sensation in legs that improves w movement
- Nocturnal predominance

## **Restless Legs Syndrome**

- Exercise-walking, deep knee bends
- Dopamine agonists, c/l-not favored d/t augmentation and tolerance
- Gabapentin-preferred treatment
- Pregabalin can also be tried
- Clonazepam-has side effects
- Narcotics-if all else fails

## **RLS treatment**

- Speaks for itself
- Common in PD
- Can be d/t medication effects-amantadine
- Treat underlying factors-limit naps, stop offending meds, depression, anxiety, OCD, pain
- Melatonin, sedating antidepressants, exercise!

## **Insomnia**

- Should look to find underlying cause and treat
- Poor sleep/insomnia
  - Snoring -?OSA
  - RLS/RBSD causing night time arousals or difficulty falling asleep
- Dizzy-Orthostatic hypotension
- Medication side effects-use lowest dose, consider ER/CR/XL formulations
- Possibly consider stimulant (methylphenidate, but modafinil not effective)

## **Fatigue**

- Amantadine and fluoxetine may be activating
- Donepezil, rivastigmine, galantamine may cause vivid dreams which may awaken you
- Dopaminergic medications are sedating, tempting daytime napping

## **Medication Side Effects**

- Common in PD and may be first symptom even evident years before diagnosis
- Nerves in gut also have PD pathology slowing transit time of intestinal contents

## **Constipation**

- Add fiber to diet-power pudding
- Ensure hydration
- Exercise

## **Constipation**

- Bulking agents (Fiber) PLUS adequate fluids
- Osmotic laxatives (or psyllium, methylcellulose)
- Stimulant laxatives (bisacodyl, senna, sodium picosulfate)
- Secretory agents (lubiprostone, linclootide) release sodium, chloride then water into gut

## **Constipation Medications**

- Common in PD- present in 35%
- Depressed mood
- Disinterest in usual activities
- Disrupted sleep-too much, not enough
- Change in appetite-too much, not enough
- Feelings of hopelessness, guilt
- Anxiety may also be present
- Irritability
- Apathy
- DBS may worsen depression so imp't to report/treat preoperatively

## **Depression**

- Improve sleep
- Exercise (mood boosters released during exercise)
- Psycho therapy,
- Medications

## **Treatment of Depression**

- Selective serotonin reuptake inhibitors (Fluoxetine, sertraline, citalopram)
- Tricyclic antidepressants
- Selective noradrenergic reuptake inhibitors
- Atypical antidepressants

## **Medications**

- 30-40% will develop dementia
- Older age, severity of PD symptoms and longer duration of disease are risk factors for dementia
- The mean duration of PD when dementia occurred was 14 years in one study

## **Dementia**

- Different than AD in which memory and language disorders are prevalent
- Executive dysfunction-poor planning, judgment, attention
- Visual spatial dysfunction-face recognition impaired early, problems w situating themselves in seats, staying in lane, parking issues, getting lost

## **Features of Dementia**

- Hallucinations-VISUAL-poorly formed-sense of presence, movement, or formed (seeing animals, insects, people)
- Auditory, tactile and olfactory hallucinations can occur
- Delusions occur often of spousal infidelity or persecution

## **Neuropsychiatric Symptoms**

- No cure
- Loss of neurotransmitter acetylcholine is similar to AD
- Anticholinesterase have some symptomatic benefit (donepezil, galantamine, rivastigmine)
- Replacing dopamine can also improve some symptoms but can also worsen hallucinations

## **Dementia Treatment**

- Lower/taper dopamine agents (amantadine, MAOIs, dopamine agonists, lower levodopa dose)
- Atypical antipsychotics-much less dopamine blocking than typical antipsychotics (quetiapine, clozapine)
- Pimavanserin (Nuplazid) little to no dopamine blocking
- Avoid other medications (Benadryl type drugs) that can increase confusion.

## **Psychosis Treatment**

- Due to slowed swallowing, not increased saliva production
- Chewing gum, hard candy to encourage swallowing for mild symptoms
- Glycopyrrolate (1mg 3X/day) limited crossing of BBB so little to no SE for more severe drooling
- Other anticholinergics (amitriptyline, atropine ophthalmic SL, ipratropium SL, hyocymine) more side effects including increasing confusion

## **Drooling (Sialorrhea)**

- Low BP especially when lay to sit, or sit to stand
- When severe may fall or lose consciousness, but mostly a sense of fatigue, light headedness or apathy
- Due to involvement of automatic nerves that usually control heart rate, heart squeeze and vascular tone

## **Orthostatic Hypotension**

- Increase fluids (at least 1 ½ liters non caffeinated fluids/day)
- Change positions slowly
- Salt food
- Divide calories into 4-6 small meals/day
- Wear compression stockings
- Ibuprofen 200 mg/day(check w your PCP first)

**OH**

- Fludrocortisone (Florinef) increases sodium/blood volume to increase BP
- Proamatine (Midodrine) increases vascular tone to increase BP
- Droxydopa (Northera) increases vascular tone to increase BP

## **OH Medications**

- Inability to open eyes/squeeze tightly shut
- Can be brought on by bright lights
- Treat muscles around eyes with botox

**Forced eye closure  
(blepharospasm)**

- Unknown mechanism but frequency suggests underlying symptom in PD
- Often no underlying urinary disorder as the cause (no BPH, UTI, etc)
- Frequency 3-8 times/night
- Treat with bladder muscle relaxers, sedating medications at bedtime

## **Night time urinary urges**