

Complimentary and Alternative Therapies in Parkinson's Disease

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Overview

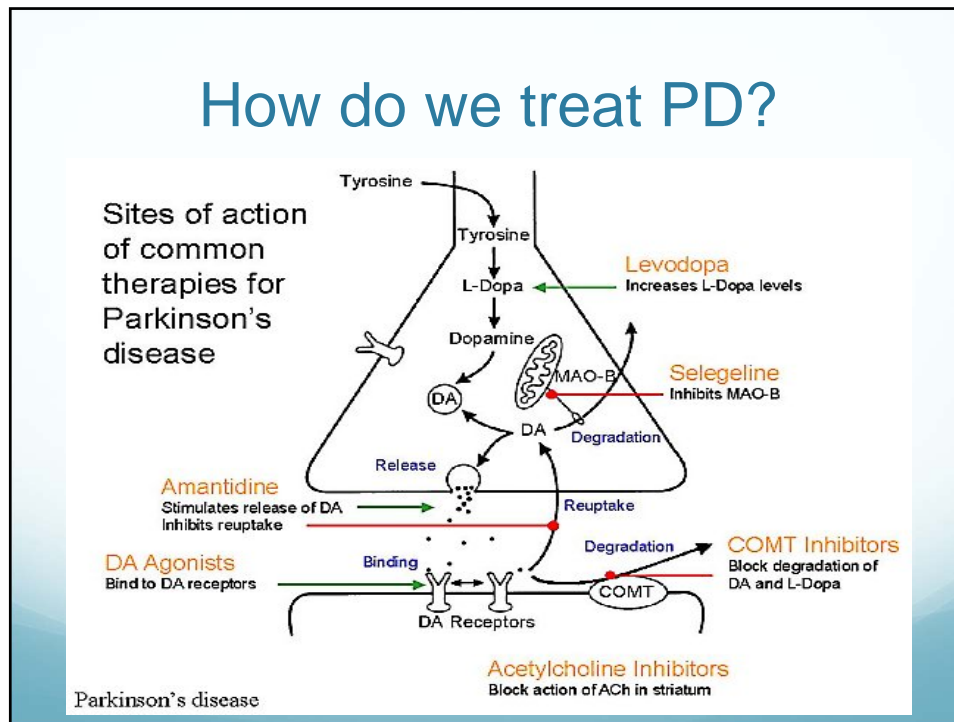
Cardinal Symptoms

- Bradykinesia
- Rigidity
- Tremor
- Postural Instability

Non-Motor Symptoms

- Fatigue
- Cognitive Disorders
- Hypophonia
- Depression
- Anxiety
- Constipation

How do we treat PD?



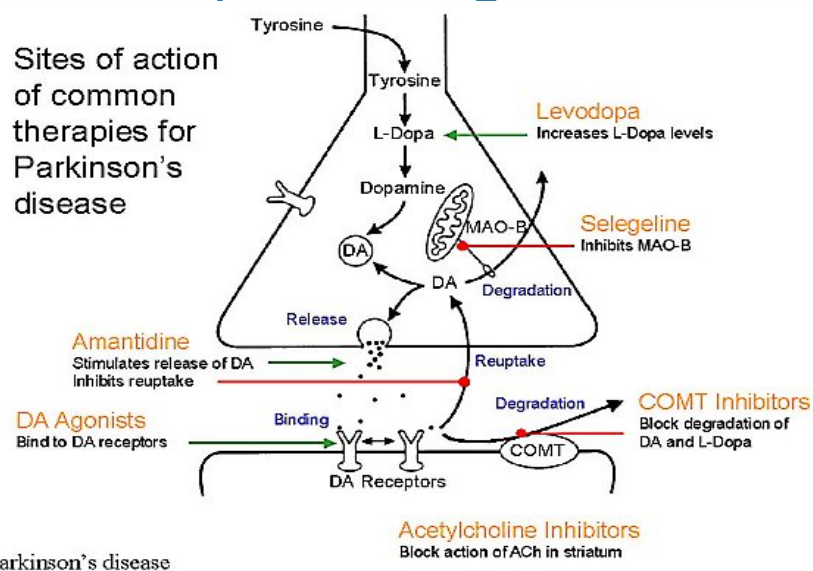
Traditional Therapies

- Carbidopa/Levodopa
- Stalevo
- Pramipexole (Mirapex)
- Ropinirole (Requip)
- Rotigotine (Neupro)
- Bromocriptine (Parlodel)
- Rasagiline (Azilect)
- Amantadine (Symmetrel)
- Selegiline (Eldepryl)
- Zydys Selegiline (Zelapar)
- Entacapone (Comtan)
- Trihexyphenidyl (Artane)
- Bzntropine (Cogentin)
- Apokyn (Apomorphine)

Sinemet

- Levodopa induced dyskinesias
- Motor Fluctuations
 1. Wearing off
 2. Sudden offs / unpredictable offs
 3. Dose failures/ “dud pills”

Dopamine Agonists



Pramipexole (Mirapex)

- Good when used in combination with levodopa
- Can reduced motor fluctuations
- Lots of side effects
- Higher costs

Pramipexole Side Effects

- Somnolence – Sleep attacks
- Nausea
- Vomiting
- Hypotension
- Edema
- Impulse control disorders
- Punding

Ropinirole (Requip)

- Similar side effect profile
- Dopamine agonist
- Immediate release is dosed 5 times daily
- Available in an extended released form dosed once daily

Rotigotine (Neupro)

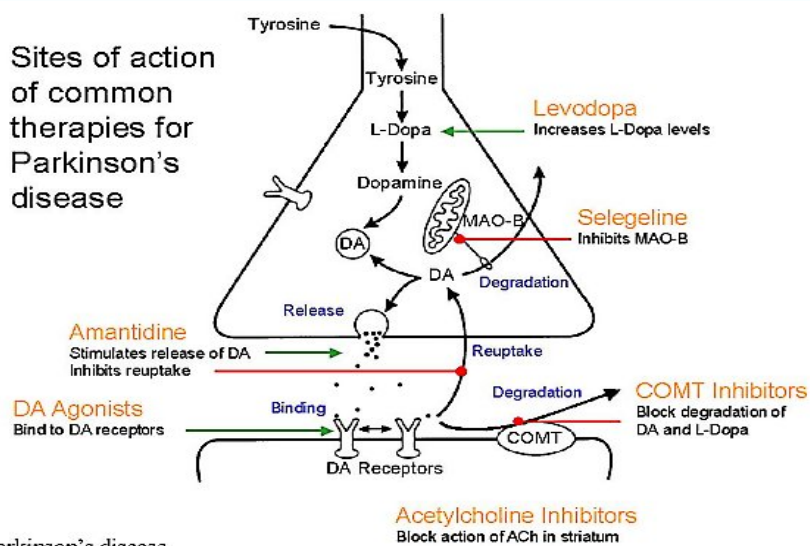
- Transdermal patch
- Novel delivery method
- Dosed once daily
- Avoids peaks and troughs
- Compliance improved
- Similar side effects
- Red Squares

Apokyn

- Apomorphine (injection)
- Almost immediate effect (3-5 min)
- Only works for a short time
- Particularly helpful for dose failures, morning akinesia and sudden offs
- Apokyn pump available overseas
- Lots of nausea, vomiting and hypotension

COMT Inhibitors

Sites of action of common therapies for Parkinson's disease



Entacapone (Comtan)

- COMT inhibitor
- Only works when dosed with levodopa
- Increases the availability of levodopa in the brain
- Prevents breakdown of levodopa
- Allows levodopa to last for longer time (60-90 min)

Comtan

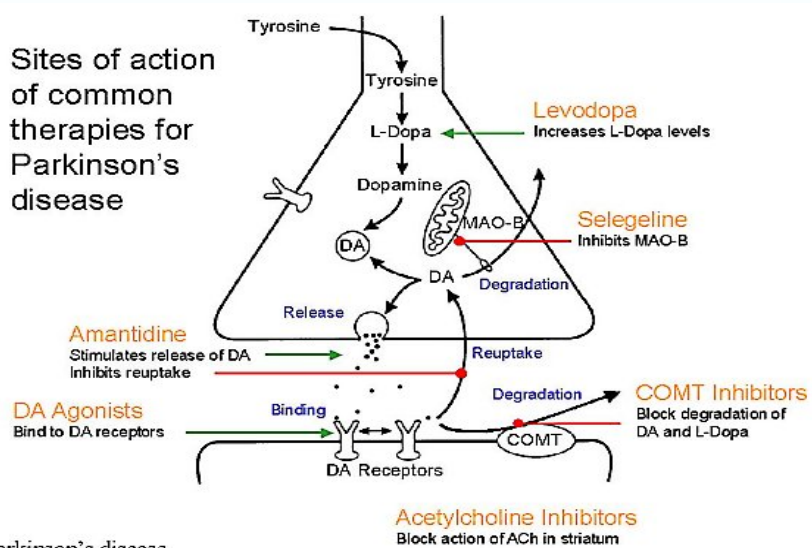
- Helpful in motor fluctuations
- Orange colored urine and sweat
- Diarrhea
- Worsening dyskinesias

Stalevo

- Carbidopa/ levodopa/ entacapone
- Side effect profile is the same as Sinemet plus Comtan
- Combination pill

Amantadine

Sites of action
of common
therapies for
Parkinson's
disease

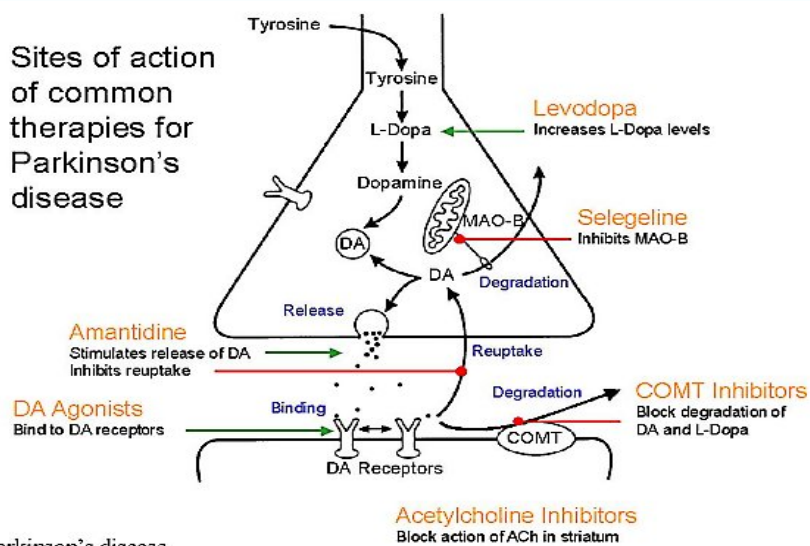


Amantadine (Symmetrel)

- Previously used in early stage PD before the era of levodopa
- Helpful for levodopa refractory tremor
- Reduces dyskinesias
- Inexpensive
- Lots of side effects: confusion, hallucinations, dry mouth, fatigue, livedo reticularis rash, swelling, nightmares

MAO Inhibitors

Sites of action of common therapies for Parkinson's disease



MAOIs

- Selegiline, rasagiline (Azilect)
- Small improvement in the UPDRS
- Has been used for freezing
- Package insert warns of food and drinks with tyramine
- Interactions with Demerol, pseudoephedrine, dextromethorphan, halothane
- Can be helpful for motor fluctuations
- NOT NEUROPROTECTIVE

Surgical Treatments

- Deep Brain Stimulation
- Duodenal Pumps

Deep Brain Stimulation

- One or 2 devices are implanted to deliver electrical stimulation to parts of the brain involved in Parkinson's disease.
- Electrical current delivered by the device disrupts abnormal activity in the brain caused by these diseases.
- The DBS can reduce or eliminate tremor, rigidity, and bradykinesia



Best Candidates

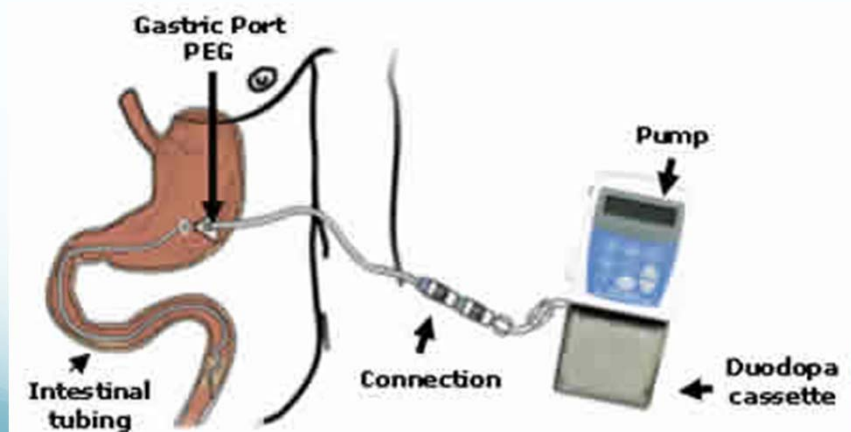
- Medication refractory tremor
- Moderate PD
- Side effects to medications especially dyskinesia
- Younger
- Most bothersome symptoms are treated with levodopa
- 20%

DBS IN PD

- Does not cure
- Bilateral DBS not necessarily needed
- Smooths out ons/ offs
- Improves tremor, stiffness and dyskinesia in most cases but does not eliminate
- Never Improves symptoms that don't respond to your best on (ex tremor)
- Programming visits required
- Decreases medications

Levodopa Intestinal Gel

- Duodopa



Continuous Apomorphine

- CAI
- Subcutaneous infusion of apomorphine
- No surgical PEG tube required
- Needle changed daily
- Can cause skin breakdown and abscesses
- Requires co treatment with an anti-nausea medication.

APO-GO



Complimentary treatments

- Supplements
- Herbs
- Botulinum toxin
- Yoga
- Tai Chi
- Active lifestyle

Popular Herbs & Supplements

- Coq10
- Caffeine
- Fava beans
- Nadh
- Mediterranean diet
- Coconut oil
- Tumeric
- Ginko
- Mucuna Pruriens
- Creatine

CoEnzyme Q 10

- Coq10
- Possibly neuroprotective
- Low doses are ineffective at slowing disease progression
- It is possible that higher doses may be more effective
- Greater than 2400 mg/day

Caffeine

- Non-motor symptoms
- May be helpful for fatigue
- Some suggestion that there is improvement in cognitive impairment
- Constipation treatment

Fava beans

- Mediterranean diet
- Low doses of l-dopa
- Natural, plant-based levodopa
- Treats motor symptoms

Creatine

- Has been studied as a possible neuroprotective agent
- Not beneficial
- Safe
- NIH recently discontinued the study looking for neuroprotection

HERBS

Mucuna Pruriens

- Velvet Bean
- Cowitch
- Cowhage
- Contains levodopa, serotonin, nicotine
- Available in multiple formulations



Ginko

- Claims to improve blood flow to the brain
- Improvement in both motor and non-motor symptoms
- Aid in the dopamine delivery to the neurons

Green Tea

- Suggested that this helps preserve neurons
- Possibly slows death rates of brain cells
- Limited neurology studies and so can't be called "neuroprotector"

Brahmi

- Suggestion of improvement in both motor and non-motor symptoms
- Stimulates dopamine receptors in the brain
- Anti inflammatory properties

