MIPHA November Lecture: Parkinson's Disease

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Diagnosis: Parkinson's Disease (PD)

Overview:

- neurodegenerative disorder that progressively gets worse with age
- for unknown reasons, it kills neurons in the brain, specifically the substantia nigra and basal ganglia
- the substantia nigra is responsible for producing dopamine, which relays messages for controlling muscles

Causes:

- Genetics:
  - evidence has shown that a variety of genes may cause PD but no specific mutation can be identified yet
- Environment:
  - risks include toxin exposure, head injuries, air quality and others
- Sex:
  - Males are more likely to get Parkinson's

Parkinson's Disease

Healthy Brain

Corpus callosum

Lateral ventricle

Internal capsule

Third ventricle

Caudate nucleus

Putamen

Globus pallidus

Thalamus

Substantia nigra

Parkinson's Disease Brain

Corpus callosum

Lateral ventricle

Internal capsule

Third ventricle

Caudate nucleus

Putamen

Thalamus

Globus pallidus

Loss of dopeminergic neurone in the substantia nigra
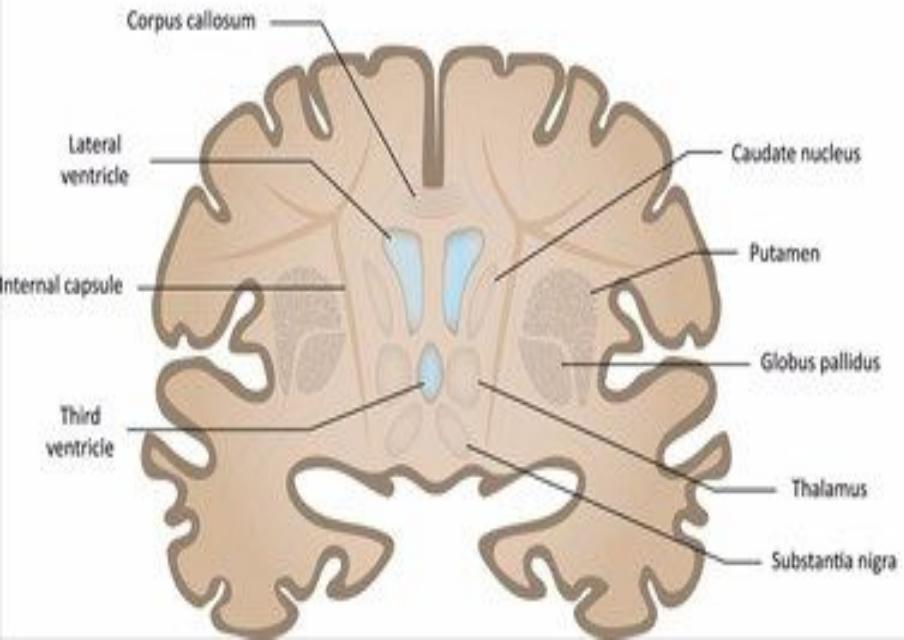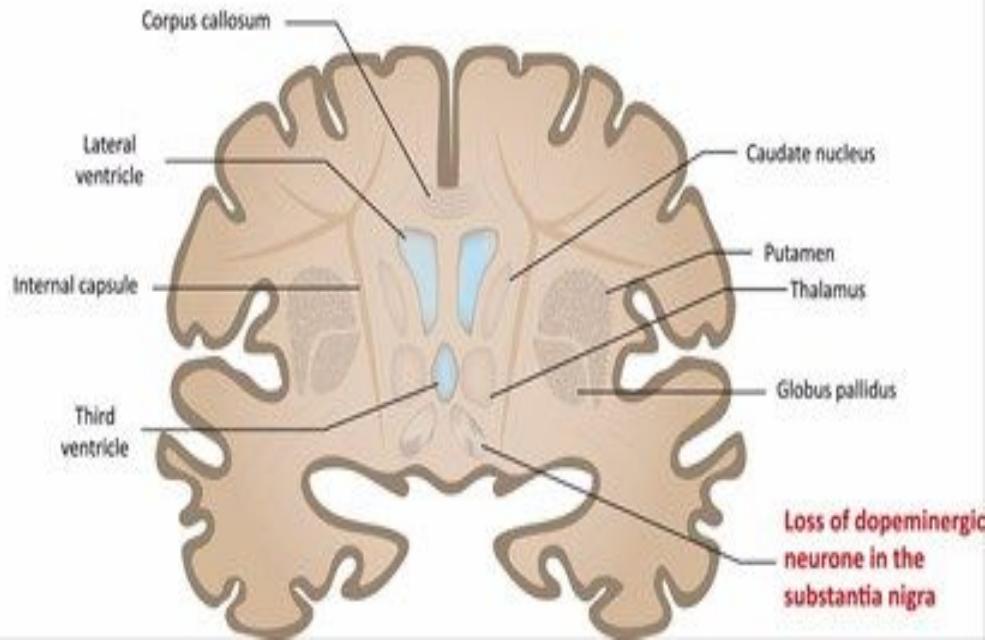
Diagnosis: Parkinson's Disease (PD)

Symptoms:

- slowness of movement
- impaired posture and movements
- tremor that starts at one limb

- stiffness and rigidity in muscles
- sense of imbalance
- writings change
- speech change

Prognosis

- PD is not a fatal disease in the sense that patients will not die from it. Moreover, PD affects the quality of life (trouble to perform motor activities) for the patients.
- There are no cure for PD but symptoms may be reduced with self care, medication, and surgery.
- Medications require a fix schedule and may include those that increase dopamine levels and reduce tremors.
- As for the life expectancy, people with Parkinson's disease usually live at a normal or near-normal life expectancy.
- Many people respond well to therapy and only have mild to moderate impairment, but a small percentage of people do not respond as well and may grow more seriously disabled over time.
- People with Parkinson's may experience depression and fatigue.

Link of Disease to Communication Errors

- In short, Parkinson's disease occur due to the degeneration of neurons in the substantia nigra (a basal ganglia structure located in the midbrain).
- This causes the body to be unable to produce adequate amount of dopamine (a type of neurotransmitter that is necessary for our body) it needs; thus, causing Parkinson's disease.
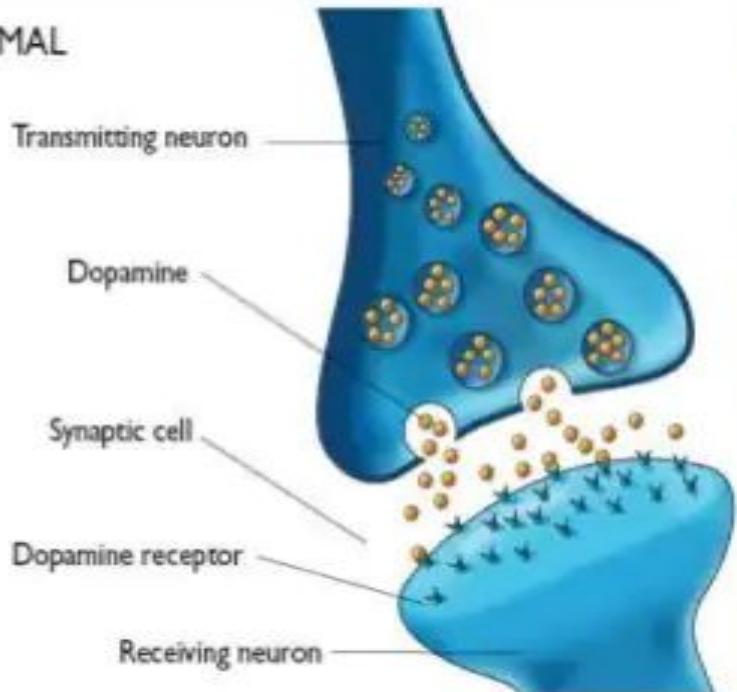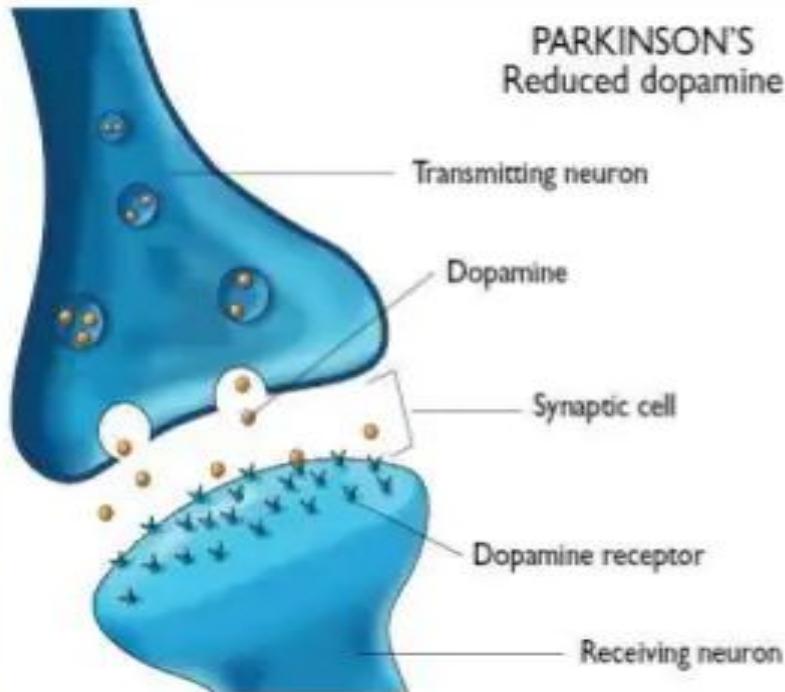
FIGURE 3. Illustration showing low levels of dopamine in a neuron affected by Parkinson's disease (right) and normal levels (left).

Medical Professionals Related to Parkinson's Disease: Movement Disorder Specialist

Movement Disorder Specialist: A type of neurologist with additional training in Parkinson's disease and other movement disorders. They personalize care for individuals.

- They review the medication patients are taking and give them critical suggestions.
- Patients with Parkinson's often claim that they feel more informed and better in managing symptoms.

Medical Professionals Related to Parkinson's Disease: Pharmacist

Pharmacist: A group of specialized medical professionals that are responsible for compounding and dispensing medications for the patients.

- When it comes to Parkinson's patients, pharmacists usually prescribe levodopa and carbidopa as both drugs are the most commonly prescribed medication to treat Parkinson's. It aids in stiff movements and rigid body parts.
- Levodopa-carbidopa functions as dopamine for the body. Essentially, Parkinson's disease is the lack of dopamine, so with the consumption of levodopa and carbidopa, it is believed that the concentration of dopamine in the body is restored.

Levodopa and Carbidopa

NDC 0006-6724-68

Sinemet®
(carbidopa and levodopa) Tablets

25 mg /100 mg

Each tablet contains 25 mg carbidopa (anhydrous equivalent) and 100 mg levodopa.

Store at 25°C (77°F), excursions permitted to 15-30°C (59-86°F) [see USP Controlled Room Temperature]. Store in a tightly closed container, protected from light and moisture.

Rx only
100 Tablets

USUAL ADULT DOSAGE: See Package Insert.
Dispense in a tightly dosed, light-resistant container.
This is a bulk package and not intended for dispensing.
Package not child resistant.

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FPO

- Can be taken orally.

- Can be taken with IV, but is not practical. Hence, people take Levodopa and Carbidopa orally.

- Side Effects: dizziness, irregular heartbeat, and mood shifts.

Reference and Citations

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