Parkinson's Disease Assessment

Parkinson’s disease is a progressive neurological disorder that affects many older adults. It is characterized by a decrease production of dopamine by the substantia nigra in the brain, which leads to a resting tremor, bradykinesia, shuffling gait and potential cognitive decline.



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Assessment

Decreased Dopamine
Down-arrow Doberman
The substantia nigra in the brain degenerates and fails to secrete sufficient levels of dopamine. These low levels of dopamine prevent normal transmission signals to the thalamus as well as the motor cortex. The mechanism of basal ganglia dysfunction or disruption is complex and eventual failure of compensatory mechanisms are often why symptoms worsen with disease progression.

Older Adult
Older Adult
This disease is most common in older patients and is the third most common neurological disorder in the US. It has an average age of onset of 60 years of age.

Cogwheel Rigidity
Cogwheel of Stone
Cogwheel Rigidity or Lead Pipe Rigidity is seen in muscles of Parkinson's patients. In Cogwheel Rigidity, when extending a limb like the arm, the muscles will exhibit a stop and go phenomenon. In Lead Pipe Rigidity, there is constant resistance throughout the entire range of motion.

Bradykinesia
Snail-muscle with Kite
Bradykinesia, or slow movements, are often seen in this disease. Patients will require more time to complete ADLs, like walking to the restroom, eating and bathing. Akinesia, or no movement, is seen in the later stages of the disease.

Shuffling Gait
Shuffling Gate
Classically patients with this disease have a shuffling or festinating gait. This is characterized by small steps which often involve shuffling of the feet. This gait appears because fine control of the muscles are lacking. Postural instability is also seen in many patients.

Resting Tremor
Resting Trimmer
It is important to distinguish this disease from others because this tremor happens at rest. In normal patients, dopamine in the brain is constantly balanced to acetylcholine levels. When the dopamine levels decrease, acetylcholine is able to constantly stimulate small muscle contractions. This tremor will subside when the patient intentionally moves or is sleeping.

Pill-Rolling
Pills Rolling
This tremor is classically described as "pill rolling," as if the patient were rolling a pill between their thumb and other fingers, as the tremor often affects the muscles of the thumb.

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Mask-Like Face

Mask

As muscles become rigid, patients develop a mask-like face, which is described as expressionless. Patients may experience other muscle difficulties of the face, including drooling and dysphagia.

Cognitive Decline

Down-arrow Cog Brain

Not all patients experience cognitive changes or dementia, which usually present later in the disease progression. However, patients will frequently experience mood lability and report sleep disturbances.

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