Parkinsons Disease

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Sunday 11th of April 2021 recognised World Parkinson's Day which increases awareness of the disease during the month of April which marks Parkinson's Awareness Month.

Parkinson's Disease is a progressive neurodegenerative disease that was first described by James Parkinson in 1817, with research estimating that more than 100,000 Australians are living with Parkinson's. PD is uncommon in people younger than 40, and the incidence of the disease increases rapidly over 60 years. While the cause of Parkinson's is still largely unknown, with many postulated mechanisms, there has been significant advancement in understanding this complex condition (1, 2).

PATHOPHYSIOLOGY

German pathologist Frederick Lewy played a role in understanding pathological features of Parkinson's Disease, by describing neuronal cytoplasmic inclusions in a variety of brain regions, coining the term 'Lewy bodies'. In later research, investigators discovered the importance of dopamine, particularly a depletion in dopamine produced by cells in the basal ganglia of the brain, leading to major disruptions in important connections to other regions of the brain including the thalamus and motor cortex, which lead to typical features of Parkinson's, or 'Parkinsonian signs'. The loss of dopaminergic neurons in the substantia nigra is universally accepted as the central pathological feature of Parkinson's Disease (3).

FACTORS AND FEATURES

Parkinson's Disease is a complex condition with motor and non-motor features, with an accurate diagnosis reliant upon recognition of characteristic signs and associated symptoms, and Clinical expertise (2,4)

Factors:

- Advancing Age
- Family History of Parkinson's Disease
- Male preponderance has been observed in many but not all epidemiologic studies
- Genetic Factors, particularly with age of onset younger than 50 years

Features of Parkinson's Disease:

- Tremor (pill-rolling)
- Bradykinesia (slowness of movement)
- Rigidity (increased resistance to passive movement about a joint).
- Postural instability (imbalance and tendency to fall), although it does not generally occur until much later in the course of the disease and is thus not included in any published diagnostic criteria for PD
- Facial expression, speech and swallowing impairment, visual impairment, altered posture, altered biomechanics, shuffling short stepped gait to name a few.

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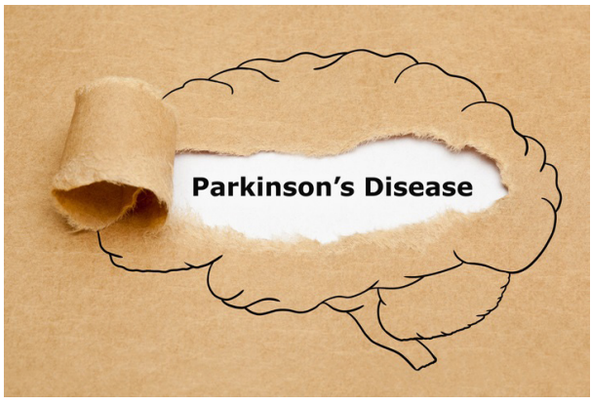
- Cognitive dysfunction
- Dementia
- Mood disorders, psychosis and hallucinations
- Sleep disorders
- Fatigue
- Specific sensory disturbance.

DIAGNOSIS

There are no diagnostic tests that have been developed to distinguish Parkinson's from other forms of parkinsonism, thus it remains a clinical diagnosis, based on characterstic signs, associated symptoms, and use of diagnostic criteria. Clinical expertise is critical in obtaining an accurate diagnosis. There are no physiologic, radiologic, or blood tests, with the "gold standard" for a definitive diagnosis being neuropathologic examination (autopsy and brain tissue sampling) with the "gold standard" for a clinical diagnosis being an expert clinician. MRI of the brain may be performed to exclude alternative structural abnormalities and may be helpful in assisting the diagnosis in patients presenting with atypical Parkinsonism. Other tests that have been reported in the literature include Advanced MRI techniques, DaTscan, PET, Sonography, Olfactory Testing and Autonomic testing (4).



A plethora of conditions can cause secondary parkinsonism, which highlights the importance of Clinician expertise and recognition of early features and cardinal manifestations.

TREATMENT OF PARKINSON'S DISEASE

There is no currently known cure for Parkinson's Disease, however there are many treatment options available that may provide benefit. The decision to initiate treatment is often determined by the degree to which symptoms interfere with activities of daily living, daily functioning, quality of life and patient preferences regarding use of medications. The timing of this decision varies greatly among patients but is influenced by a number of factors. The literature reports multiple treatment considerations for the future, however many novel interventions, such as stem cell therapy, are yet to prove if they are hope or hype, but a case has been made for the acceleration of clinical trials (5, 6, 7).

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