

Parkinson's Disease: An Overview

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Abstract

Parkinson's disease is an age associated chronic and neurodegenerative disease affecting 1% of the population over the age of 50 and 4-5% over the age of 85. The pathological hallmark of Parkinson's disease is progressive and selective loss of dopaminergic neurons in the substantia nigra pars compacta, causing dopamine deficiency in the brain and accumulation of Lewy bodies in the affected neurons. Clinical symptoms of Parkinson's disease include resting tremor, bradykinesia, rigidity, and postural instability. Non-motor symptoms such as sleep disorder, olfactory impairment, constipation and neuropsychiatrics are manifested many years before the onset of motor symptoms. Environmental toxins such as paraquat and rotenone cause sporadic Parkinson's disease while genetic mutations cause familial Parkinson's disease. Therapy of Parkinson's disease is divided into 140 years before dopamine and 50 years of dopamine era. 140 years before dopamine includes venesection, vibratory therapy, hydrotherapy, spa treatment and 50 years of dopamine era includes L-dopa and deep brain stimulation. *Drosophila* model of Parkinson's disease has been a great use to screen natural products with anti-oxidant and anti-inflammatory properties to decipher their neuroprotective efficacy with an aim to develop therapeutic molecules for Parkinson disease in humans. To understand pathways leading to death of dopaminergic neurons and to prevent it remains a challenge and opportunity for all the biochemical researchers.

Key words: Alpha-synuclien, Lewy bodies, dopamine, levodopa, curcumin, resting tremor, bradykinesia, shaking palsy, antioxidant, anti-inflammatory, Parkinson's disease.