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A Brief Overview on Parkinson's Disease

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Opinion Article

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DESCRIPTION

Parkinson's Disease (PD), is a long-term central nervous system degenerative condition that primarily affects the motor system. Tremor, rigidity, slowness of movement, and trouble walking are the most noticeable early symptoms. Many persons with PD experience despair, anxiety, and apathy, which can lead to cognitive and behavioural issues. Parkinson's disease dementia becomes more common as the condition progresses. The disease's motor symptoms are caused by the loss of cells in the substantia nigra, an area of the midbrain that produces Dopamine.

Classification

The cause of this cell death is unknown; however it appears to be related to the accumulation of misfolded proteins in Lewy bodies in neurons. The predominant motor symptoms are together referred to as Parkinsonism or a parkinsonian condition.

The aetiology of Parkinson's disease is unknown, however genetic and environmental factors are thought to play a role. Those who have a family member who has the condition are at a higher risk of contracting it, as some genes are known to be inheritable risk factors. Those who have been exposed to specific pesticides or who have had prior head injuries are also at danger.

Parkinson's disease is the most frequent type of Parkinsonism, and it's also known as "Idiopathic parkinsonism or Parkinsonism with no known aetiology. Because of an aberrant accumulation of the protein alpha-synuclein in the brain, it is sometimes referred to as a form of neurodegenerative illness called synucleinopathy. The synucleinopathy categorization separates it from neurodegenerative disorders like Alzheimer's disease, in which the

brain accumulates a different protein called tau. Tauopathies and synucleinopathies have a lot of clinical and pathological overlap, however there are some variances. Memory loss is the most prevalent symptom of Alzheimer's disease, in contrast to Parkinson's disease. The hallmarks of Parkinson's disease (slowness, tremor, stiffness, and postural instability) are not typical of Alzheimer's disease.

Prevention

Exercise in middle age may help to lower the chance of Parkinson's disease later in life. Caffeine appears to be beneficial as well, with a higher intake of caffeinated beverages such as coffee resulting in a lower risk. Antioxidants such as vitamins C and E have been proposed to guard against the disease, however research results have been mixed, and no protective effect has been established. In the case of fat and fatty acids, the results have been mixed, with several researches reporting preventive, risk-increasing, or no effects. There are tentative suggestions that anti-inflammatory medications and calcium channel blockers may be beneficial.

Management

Parkinson's illness has no recognized cure. Medications, surgery, and physical therapy may give comfort and enhance a person's quality of life, and they are far more effective than therapies for other neurological conditions including Alzheimer's disease, motor neuron disease, and Parkinson's syndromes. Levodopa, which is always paired with a dopa decarboxylase inhibitor and sometimes additionally with a COMT inhibitor, dopamine agonists, and MAO-B inhibitors are the main medication families used to treat motor symptoms. The group which is most useful depends on the stage of the sickness and the age at which it began. Braak staging of Parkinson's disease uses six phases to distinguish between early, medium, and late stages. The first stage, in which some disability has already developed and pharmacological treatment is required, is followed by later stages associated with the development of levodopa-related complications, and a third stage in which symptoms unrelated to dopamine deficiency or levodopa treatment may predominate. In the first stage of treatment, the goal is to achieve the best possible balance of symptom control and treatment adverse effects. The goal in later stages is to diminish PD symptoms while regulating drug effect variations.

Epidemiology

After Alzheimer's disease, PD is the second most common neurodegenerative ailment, affecting roughly seven million people worldwide and one million people in the United States. In developed countries, the proportion in the population at any given time is around 0.3 percent. Parkinson's disease is more common among the elderly, with incidences ranging from 1% in those over 60% to 4% in those over 80. The average age of onset is around 60 years, while 5%–10% of cases, known as early onset PD, start between the ages of 20 and 50. Males are 3 times as likely as females to be afflicted. PD may be less common in people of African and Asian heritage, though this is debatable. The rate of new instances of Parkinson's disease per 100,000 person–years varies between 8 and 18.

In Estonia, the age-adjusted rate of Parkinson's disease is 28.0 per 100,000 person years. Between 2000 and 2019, the Estonian rate remained steady. Parkinson's disease has becoming more common in China. In 2030, China is expected to have nearly half of the world's Parkinson's disease population. The number of patients with Parkinson's disease is anticipated to reach 14 million by 2040, a phenomenon known as the Parkinson's pandemic.