

The Difference between Parkinson's Disease in Men and Women

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Introduction

Parkinson's disease (PD) is the second most common age-related neurodegenerative disorder, affecting approximately 3% of the population by the age of 65 and up to 5% of those over the age of 85. The main pathological feature of Parkinson's disease (PD) is the progressive loss of midbrain dopaminergic (DA) neurons in the substantia nigra pars compacta (SNc) and the presence of alpha-synuclein positive cytoplasmic inclusions in surviving neurons, known as Lewy bodies.

The role of biological sex as an important factor in the development of Parkinson's disease has been widely discussed in the last decade, alongside ageing, genetics, environment and immune status. There are clear gender differences in the disease's epidemiological and clinical features: men are affected twice as often as women, but women have a higher mortality rate and a faster progression of the disease. Furthermore, women exhibit distinct symptoms as well as differences in response to pharmacological therapies and deep brain stimulation procedures, as well as in personal assessment of quality of life when compared to men [1].

Description

Biomarkers for Parkinson's disease

Late detection is currently one of the most significant limitations in the treatment of Parkinson's disease. Despite strenuous efforts in patient management and clinical research, methods for diagnosing, refining prognosis, predicting individual responses to therapeutic interventions tracking disease progression are suboptimal. Thus, the need for validated biomarkers with high sensitivity and specificity is critical, with the obvious goal of assisting in disease diagnosis. The following section discusses recent advances in the development of various biomarkers for Parkinson's disease [2].

Imaging biomarkers are increasingly being used to supplement clinical observations in the diagnosis of Parkinson's disease. Molecular imaging, transcranial sonography, magnetic resonance imaging (MRI) optical coherence tomography are examples of imaging biomarkers.

Molecular imaging techniques do not only provide anatomical images. In Parkinson's disease, molecular imaging is a type of medical imaging that, when compared to other imaging techniques, provides images of events occurring inside the body at the cellular and molecular levels and measures chemical and biological processes. It measures the functions of neurons and other brain tissues that use neurotransmitters like dopamine, which become

abnormal in Parkinson's disease. Molecular imaging procedures are painless, noninvasive and safe. An imaging device, an imaging agent and a probe are used. Dopamine transporter single-photon emission computed tomography (DAT-SPECT) and fluorodopa positron emission tomography (FET) are two widely used imaging techniques that focus on dopamine [3-5].

Conclusion

MRI has become a standard technique that is routinely performed in patients with Parkinson's disease in order to rule out secondary causes and provide specific information that aids in the diagnosis of a neurodegenerative disease such as Parkinson's. Transcranial sonography is a more widely used and recent advancement in the diagnosis of Parkinson's disease. Transcranial sonography is thought to be superior to MRI in detecting people in the premotor phase of Parkinson's disease.

Acknowledgement

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Conflict of Interest

There are no conflicts of interest by author.

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