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Parkinson's Disease and Depression: An Update Clinical Perspective

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ABSTRACT

Parkinson's disease is a progressive neurodegenerative disease and its prevalence continues to rise. The correlation between depression and the quality of life of Parkinson's patients has been proven by several studies that depression can affect up to 40-50% of the aspects assessed in the Parkinson's disease questionnaire (PDQ-39) questionnaire and also significantly affects the decline in quality of life of Parkinson's patients. Therefore, a multidisciplinary approach, apart from medication and therapy in the management of this disease, is very important to improve the overall outcome and quality of life related to Parkinson patients' health.

1. Introduction

Depression is a clinical illness characterized by depressed mood and anhedonia, and rating scales are frequently used to assess and screen for depression. Studies attempting to discover the best instruments for diagnosing depression in neurodegenerative disease have identified a weak link between rating scales, low sensitivity, or decreasing scale performance with increased cognitive impairment.¹ Parkinson's disease (PD) is a chronic central nervous system condition caused by the loss of substantia nigra nerve cells in the brain. Dopamine, a neurochemical messenger, is made up of these nerve cells and is responsible for all messages that coordinate regular movement. The lack of dopamine in a PD patient's brain cells leads to motor complications, and the progress turns out to be slow, gradually expanding over the years. Commonly occurring

cardinal motor symptoms in PD patients include resting tremor, rigidity, akinesia, and postural instability (TRAP). Most Parkinson's disease is found at the age of 40-70 years, with an average of age 58-62 years, and only about 5% occurs in age under 40 years.^{1,2}

Assessment of PD manifestations is done using foot pressure analysis, finger motion analysis, and the Unified Parkinson's Disease Rating Scale (UPDRS). Treatment options for PD patients are limited and primarily focused on reducing the disease symptoms. Recently, researchers have been focussing on the non-motor symptoms (NMS) of PD, which are not documented and thereby ineffectively cured through physicians. Non-motor symptoms (NMS) include depression, social phobias, low blood pressure, apathy, loss of sense of smell, fear and anxiety, and panic attacks, which are due to the mild lesions of the

mesolimbic and mesocortical pathways. Gliosis and cell loss in nigrostriatal neurons are interestingly the gold standard for the diagnosis of PD.²

Clinical features of depression in Parkinson's disease

Depression, apathy, and gait instability are all common symptoms among Parkinson's patients (PD). Depression is widespread in people with neurodegenerative disorders like Parkinson's disease (PD), and it has a negative impact on patient outcomes. Depressive symptoms impact 40–50% of people with Parkinson's disease, resulting in poor quality of life, cognitive impairment, functional limits, caregiver burden, therapy non-adherence, and mortality. Reduced facial expression, sleeping troubles, weariness, psychomotor impairment, and decreased appetite are all indications of depression and Parkinson's disease. These similar symptoms may contribute to the underdiagnosis of depression in patients with PD.^{3,4}

Furthermore, depression has been associated with exaggerated motor symptoms and increased disease severity in people with Parkinson's disease. Only 20% of individuals with PD and 18% of patients with dementia receive therapy even when they are diagnosed with depression. Furthermore, depression is the primary factor impacting quality of life (QOL) in people with Parkinson's disease.⁵

Assessment

There are several assessments and/or examinations that can be used for screening depression, such as self-assessment questionnaires (depression anxiety stress scale [DASS], beck depression inventory [BDI], social interaction anxiety scale [SIAS], social phobia scale [SPS], and state-trait anxiety inventory [STAI]), clinical interviews but the geriatric depression scale (GDS) is the most recommended for screening depression in individuals with Parkinson's disease (PD).^{6,7}

A questionnaire, on the other hand, can be used to assess the quality of life of Parkinson's disease

patients. The Parkinson's disease questionnaire (PDQ-39), which has 39 items and assesses significant areas of Parkinson's patients' everyday lives, is the international standard. Depression, as measured by the Beck depression inventory score, was found to be the most influential predictor of Parkinson's patients' quality of life. It has also been established that there is a link between depression, disability, and quality of life in Parkinson's patients, implying that psychopathological evaluation is critical.⁸

Depression and Parkinson's disease

A previous study revealed a positive correlation between depression scores and PDQ-39 scores. The higher the depression level in Parkinson's patients, the lower the patient's quality of life.⁸ Depression in people with Parkinson's disease can hasten the progression of motor problems and disability, as well as increase death. A review of a large number of patients revealed that neuropsychiatric illnesses had a stronger impact in the early stages of PD, demonstrating that neuropsychiatric disorders such as sadness and anxiety are not a reaction to stress caused by patients' restricted capacity, but due to changes in neuropathological processes.⁹

Treatment

Depression is defined as depressed mood, apathy, and anhedonia, all of which are linked to decreased levels of norepinephrine, dopamine, and serotonin in people with Parkinson's disease. High levels of sIL-2R and TNF- α in the blood of Parkinson's disease patients were linked to more severe depression and anxiety.^{2,3} Selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants (TCAs) have been considered to be the standard treatment for depression in patients with PD.¹⁰ Serotonin and norepinephrine reuptake inhibitors (SNRIs) are a newer class of antidepressant that may improve depressive symptoms in patients with PD.² Furthermore, one of the SNRI agents, duloxetine, may be useful in the treatment of a variety of motor complaints, including gait freezing (FOG). These findings imply that SNRIs and SSRIs could be

used to treat non-motor symptoms in Parkinson's disease patients with mild to severe depressive symptoms, such as depression and gait instability.^{2,11}

Patients' functional conditions improved after specialized interdisciplinary rehabilitation. According to a study by Pei-Ling Wu et al., non-pharmacological therapies, such as physical activity, should be the therapy of choice for mild depression, according to the findings. In addition, clinicians can participate in the PA intervention with PD patients, providing evidence for the effectiveness of Aerobic training (stretching-strengthening exercise, walking, stepping movement, a week 23 times, 45-60 minutes each time, and lasting for over eight weeks) in reducing physical and mental symptoms and improving the quality of life: all with the primary goal of reducing depression symptoms.^{4,12}

Although traditionally considered a pure motor disorder, PD is increasingly recognized as a complex disease process. Depression, apathy, and gait instability are all common non-motor symptoms among Parkinson's patients (PD), and it has a negative impact on patient outcomes. Depressive symptoms impact 40–50% of people with Parkinson's disease, resulting in poor quality of life.

There are several assessments and/or examinations that can be used for screening depression, such as self-assessment questionnaires, but the geriatric depression scale (GDS) is the most recommended for screening depression in individuals with Parkinson's disease (PD). The Parkinson's Disease Questionnaire, on the other hand, can be used to assess the quality of life of Parkinson's disease patients.

2. Conclusion

Psychiatric comorbidities in PD should be considered an integral part of the disease. A multidisciplinary approach, apart from medication and therapy, managing this disease is crucial to improve the overall outcome and the health-related quality of life of PD patients.

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