A 56 Year Old Man with Parkinson's Disease and Depression: A Case Report on Treatment Management

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Abstract

Background: Depression is the strongest predictor of quality of life for Parkinson's disease (PD). **Presentation of Case:** A 56 years old man came with the main complaint of difficulty sleeping due to thinking about tremors in his left hand since 6 months. Complaints are accompanied by feelings of sadness, lack of enthusiasm, and decreased appetite accompanied by weight loss. The patient had been diagnosed with PD 8 years previously and was on medication. One month before the visit, the patient underwent a thalamotomy operation. After surgery, the patient received therapy in the form of a combination tablet of levodopa/carbidopa/entacapaone (100/25/200 mg) 4×1 tablet and 1×2 mg of ropirinole. On the Beck Depression Inventory (BDI) examination, a score of 23 was obtained and on the Montgomery Asberg Depression Rating Scale (MADRS) examination a score of 31 was obtained, both of which correspond to major depression. The patient was diagnosed with a major depressive episode without psychotic symptoms and was given escitalopram therapy 1×10 mg and lorazepam 1×2 mg. Patients also received biofeedback therapy with family psychoeducation and supportive psychotherapy. At the time of control, the patient admitted to feeling calmer and able to sleep after receiving therapy. **Conclusion:** Escitalopram has good efficacy for the management of depression in PD patients.

Keyword: *Depression, antidepressants, parkinson's disease*

Introduction

Parkinson's disease (PD) is the second most common neurodegenerative disease occurring in 0.5-5% of the population over 65 years of age. Depression is one of the most common psychiatric complications of PD with a prevalence of 20-35%. The prevalence of major depressive disorder was 17%, while the prevalence of dysthymia and mild depression were 13% and 22% respectively[1, 2]. Depression is also the strongest predictor of quality of life in PD[3].

Depression is caused by changes in the dopaminergic, noradrenergic, and serotonergic systems. Depression is associated with reduced dopamine transporters in the striatum and limbic regions, reduced forebrain serotonin innervation, reduced dopaminergic and noradrenergic innervation at the locus ceruleus, thalamus, and limbic region, increased loss of neurons and gliosis at the locus ceruleus, and loss of cortical cholinergic neurons. Psychological reactions to a diagnosis of PD or a disability related to PD can also trigger depression[2]. Depression in PD patients is quite difficult to diagnose because of the overlap between depressive symptoms and PD symptoms and the side effects of PD treatment[1]. Based on the description above we are interested in reporting the management of PD patients with depression.

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Case Presentation

A 56 years old man came to the hospital complaining of difficulty sleeping because of thinking about tremors in his left hand since 6 months. Complaints are accompanied by feelings of sadness, lack of enthusiasm, and decreased appetite accompanied by weight loss.

Tremors were first felt 8 years earlier on the right thumb. At that time, the patient was diagnosed with PD and received combination tablet therapy of entacapaone and levodopa. The patient is routinely treated, but after the tremor is reduced, the patient is no longer in control. At that time, there was no change in behavior. Two years later the tremors returned so that the patient returned to treatment and was given 2×1 tablets of a combination of levodopa and benserazide HCl (100 mg/25 mg). Since 2 years ago, the patient began to experience walking problems so that the dose of the combination tablet of levodopa and benserazide HCl was increased to 3×1 tablet and the patient was also given 2×2 mg of trihexyphenidil. One month before the visit, the patient was hospitalized because of complaints of severe tremor in the right hand, so the patient was decided to undergo thalamotomy surgery. After surgery, the patient received therapy in the form of a combination tablet of levodopa/carbidopa/entacapaone (100/25/200 mg) 4×1 tablet and 1×2 mg of ropirinole. The patient felt that the complaints of tremor in the right hand had decreased after surgery, but the tremors in the left hand were still felt. The patient had no previous medical history or history of smoking, coffee/alcohol consumption, and psychotropic use.

In the psychiatric examination, the patient's awareness of compos mentis, sad mood, depressive effects, realistic thought processes, coherent flow, preoccupation thought content on complaints of tremor on the left, perceptions within normal limits, decreased willpower. Based on auto and heteroanamnesis, prior to experiencing PD, the patient had anancastic personality traits. The results of Mini Mental State Examination (MMSE)[4, 5] obtained a score of 23 (normal). On the Beck Depression Inventory-II (BDI-II)[6] examination, a score of 23 was obtained and the Montgomery Asberg Depression Rating Scale (MADRS)[7] was obtained a score of 31, both of which correspond to major depression. The results of Hamilton Anxiety Rating Scale (HAM-A)[8, 9] showed a score of 23 (moderate anxiety).

The patient was diagnosed with a major depressive episode without psychotic symptoms and was given escitalopram therapy 1x10 mg and lorazepam 1x2 mg. Patients also received biofeedback therapy with family psychoeducation and supportive psychotherapy. At the time of control, the patient admitted to feeling calmer and able to sleep after receiving therapy.

Discussion

Depression is one of the most common psychiatric complications of PD with a prevalence of 20-35%, where the prevalence of major depressive disorders is 17%. The risk factors for depression in this patient were the severity of motor symptoms (tremor) which was quite severe, the presence of anxiety which was confirmed by the HAM-A examination, and sleep disturbances[1, 2]. Apart from the pathophysiology associated with changes in the dopaminergic, noradrenergic, and serotonergic systems, in this patient depression was mainly due to a reaction to PD symptoms in the form of tremors[2]. Symptoms in these patients are consistent with depressive symptoms often found in PD patients with depression, namely loss of energy, anhedonia, changes in appetite and sleep, fatigue, and impaired concentration[3].

In these patients, the management of depression was carried out with antidepressants as well as non-pharmacological therapy. The antidepressant used in this patient was escitalopram, a selective serotonin reuptake inhibitor (SSRI) class. A multicentre study in 2019 reported that SSRIs are the standard therapy often given to PD patients with depression. However, several previous studies reported that SSRIs were associated with higher apathy than other antidepressants. The study reported a side effect rate of 36% with SSRIs. Side effects found included nausea, vomiting, headache, somnolence, diarrhea, abdominal discomfort, and tremors. SSRIs have been shown to significantly reduce

depressive symptoms[10]. Apart from being able to improve symptoms of depression, SSRIs are also able to improve daily life and motor function[2]. Escitalopram, citalopram, or sertralin are also options in elderly patients in advanced PD. SSRIs are also an option in patients with comorbid anxiety disorders. This is consistent with this patient who has entered old age and has preoccupation/ anxiety related to tremor symptoms. The ability of SSRIs to improve motor symptoms can also reduce tremor complaints that patients complain about. Another option that can be given to patients is antidepressants that have a sedative effect such as amitriptyline, mirtazapine, and trazodone given the difficulty of sleeping[11]. However, the patient has been given lorazepam which has a similar function and has succeeded in improving the symptoms experienced by the patient.

Patients also received biofeedback therapy with family psychoeducation and supportive psychotherapy. Previous case reports demonstrated the ability of psychotherapy to improve depression scores in PD patients. Studies comparing CBT with doxepine and placebo in PD patients have also shown that CBT is able to better improve the sleep quality index[12]. Other non-pharmacological therapies that can be applied to patients include physical activity[13], acupuncture therapy[14], or dancing[15, 16], while the efficacy of repetitive transcranial magnetic stimulation and electroconvulsive therapy (ECT) is unclear[2, 3]. Deep brain stimulation (DS) also has inconsistent results in the management of depression in PD[17].

Conclusion

Management of depression in PD patients includes non-pharmacological and pharmacological therapy. Escitalopram has good efficacy for the management of depression in PD patients.

Conflict of Interest: The authors declare that they have no conflict of interest.

Funding: None.

Ethical Approval

All procedures performed in studies involving human participants were in accordance declaration of helsinki the Ethics Committee in Dr. Soetomo General Academic Hospital, Surabaya, Indonesia.

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