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A Case Report of Psychosis in Parkinson Disease Treated with Anticholinesterase Drug

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Abstract

Case report: We present a 68-year-old male, retired civil servant who was seen in the neurology clinic at Barau Dikko Teaching hospital, Kaduna-Nigeria with a complaint of abnormal movements of upper and lower limbs for one year, and difficulty in walking for two months. The abnormal movement started on the distal part of both upper limbs simultaneously. It was noticed more at rest and got aggravated during movements. He was diagnosed with PD and was treated with L-dopa and Artane. However, six weeks after the commencement of his therapy he started developing a visual hallucination that subsequently became so intense that he started isolating himself and became suspicious of the wife conniving with strange people to kill him. His psychosis was initially treated with clozapine which controlled the hallucination to some extent but made his dyskinesia worse. This prompted us to stop the clozapine and to decrease the l-dopa, while introducing an anticholinesterase pyridostigmine which helped in treating the psychotic episode.

Discussion: The use of psychotropic medication may control the psychotic features but will aggravate the PD. A trial with anticholinesterases has been found to be effective in the control of psychosis in PD.

Keywords: Parkinson's disease; Psychosis; L-dopa; Anticholinesterases

Introduction

Parkinson Disease (PD) is the second most common neurodegenerative disease after Alzheimer's disease, affecting up to 1% of the elderly population [1]. DLB, which may be indistinguishable from PD neuropathologically and has similar clinical features (e.g., dementia, spontaneous parkinsonism, and attentional impairment), is now thought to be the second most common dementing illness after Alzheimer's disease in Western countries. Dementia also occurs commonly in PD, affecting up to 75% of PD patients over the long term [2].

In Parkinson's disease, where mainly nigrostriatal tract dopamine deficiency is present mesolimbic and mesocortical pathways are also impaired which may be related to some of the psychiatric complications. Mjones studied 262 cases revealing mental symptoms in 40% out of which organic features predominated over neurotic symptoms. Psychotic disorder occurs rarely in untreated PD patients [3]; those with comorbid late dementia, depression, or delirium are at the greatest risk [4]. In contrast, illusions or hallucinations occur in 15% to 40% of treated PD patients [5-8]. Up to 10% of patients experience delusions, usually in addition to hallucinations [6,8].

In one study [9] of Pacchetti et al. 289 consecutive PD outpatients, 18% had hallucinations only, 7% had hallucinations plus "confusion," 4% had hallucinations plus delusions, and 2% had delusions only. Persistent psychotic symptoms in PD are associated with greater functional impairment, caregiver burden, and nursing home placement [6,9-11]. The treatment of psychosis in the context of Parkinson's disease is therefore challenging, since optimizing the management of motor symptoms with dopaminergic medication typically worsens psychosis, and treating psychosis with an antipsychotic can worsen the parkinsonism. A case presented highlights the occurrence of an episode of psychosis in a patient treatmented with l-dopa who developed persistent visual hallucination and was successfully treated with anticholinestrase drug.

Case Report

A 68-year-old male, right handed, married, and a retired civil servant presented to the neurology clinic at Barau Dikko Teaching hospital, Kaduna-Nigeria on the 6th of January, 2017 with a complaint of abnormal movements of upper and lower limbs for one year and difficulty in walking for two months. The abnormal movement started on the distal part of both upper limbs simultaneously. It was noticed more at rest and got aggravated during movements. Recently the lower limbs were also affected and were noted more on the both great toes. Patient also gave history of difficulty in walking in the form of difficulty in initiation and once he starts walking he stoops forward with small and fast steps. However, he freezes during turning and has a tendency to fall forward and backward. No history of similar illness, hypertension, diabetes, or mental illness in the family.

On general examination, he was conscious and well orientated, afebrile, not pale, anicteric, and well hydrated. He had no significant lymphadenopathy. He looked thin with shuffling gait and tendency to fall forward and backward, He had a masked facial expression. His BP was 130/80 and apex beat was at 5th LICML with a normal heart sounds. His trachea was central and had normal vesicular breath sound bilaterally. No organomegally detected and had normal bowel sounds.

On CNS examination, all the cranial nerves were intact. Examination of the motor system showed a masked like face and positive glabellar test, a resting tremor and bilateral upper and lower limbs rigidity (cogwheel type). The muscle power in both the upper and lower limbs was 4/5. Most of the reflexes were intact. A diagnosis of Parkinson's disease was made. The results of laboratory investigations were; Hb:12.3 gm/dl, WBC: 84,000/cmm (N-65% L-32% E-2% M-1%), ESR: 26 mm in 1st hour, Urea: 30.1 mg/dl, S. Cr: 1.0 mg/dl and TSH: 0.871 micro IU/L.

The patient was initially treated with L-dopa 125 mg tds, Benzhexol

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5 mg bid, and Neurovite fort one capsule daily. After two weeks of the commencement of the treatment, the patient showed little improvement and as a result, the frequency of the levedopa was increased to 6 hourly, and that of benzhexol (Artane) was also increased to 8 hourly. However, six weeks after the adjustment of his medication, the patient started complaining of seeing some strange people watching him through the window and sometimes even enter his room and be watching him closely. He kept complaining of this visual experience despite the assurance given to him by his wife that there were no strange people around him. By the 8th week the visual experience became so intense that he started becoming agitated and confused and started blaming the wife of conniving with people to kill him. This prompted the family to bring back the patient to the clinic before his follow up day.

While in the clinic he still maintained seeing the strange people following him to the hospital and to prove that, he was even pointing to the direction he believed they were standing and watching him. Apparently, he had no auditory hallucination and no thought disorder but was having the belief that his wife was planning to kill him using the strange people. His physical condition has remarkably improved. His tremor had lessened and the rigidity was much less.

A diagnosis of acute psychotic illness in Parkinson's disease was made, and his L-dopa was decreased to 125 mg Bid, and clozapine 25 mg twice daily was introduced and asked to continue treatment on outpatient basis. Barely, a week after the clozpine therapy, his visual experiences began to disappear, but his rigidity and bradykinesia became worse. A decision was therefore made to stop the clozapine and exchange with cholinestres inhibitor Pyridostigmine 60 mg twice daily while increasing the dose of l-dopa to 125 mg 8 hourly. To our greatest surprised, the patient responded well to the new treatment regimen that by the 3rd week the patient had stopped seeing those strange people and his physical condition got better.

Discussion

Parkinson's disease which is a low dopaminergic state and psychosis which is a high dopaminergic state is a very unusual combination. The treatment of psychosis in the context of PD is challenging, since optimizing the management of motor symptoms with dopaminergic medication typically worsens psychosis, and treating psychosis with an antipsychotic can worsen parkinsonism. In the case presented above the patient had features of Parkinson's disease with episodes of psychosis which responded to clozapine, however, the PD features got worsen with clozapine, as such a decision was made to use to stop the clozapine and to try the use of anticholinesterase in the treatment of the psychosis.

There is some evidence that cholinesterase inhibitors may have antipsychotic properties in PD. A large placebo-controlled study of rivastigmine for PD with dementia found that the rivastigmine group had a significantly greater decrease in neuropsychiatric symptoms than the control group and were less likely to report hallucinations as an adverse event [12]. In a secondary analysis, the greatest benefit from treatment with rivastigmine was found to occur in patients who had visual hallucinations at baseline [13]. Based on the reported result of rivastigmine in the treatment of psychosis, we decided to use pyridostigmine which is also a cholinesterase inhibitor (primarily use in the treatment of myasthenia gravis) and available in our locality to treat our patient. The trial of pyridostigmine in this case was astonishing as our patient responded very well, with his visual hallucination and suspiciousness disappearing.

Conclusion

Although, treatment of psychosis in PD can be complex and challenging, this case report and those elsewhere has proven that the use of anticholinesterase drug can provide a good solution in the treatment of PD patients that develop psychotic features.

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