Burden of Antipsychotic-induced Parkinsonism: A Case Report

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ABSTRACT

Background

A wide range of side effects have been reported since the discovery of antipsychotics, amongst which are the extrapyramidal side effects that occur as a result of excessive blockade of D2 receptors in the brain.

Parkinsonism resulting from use of antipsychotics or other psychotropic medications characteristically presents with rigidity, bradykinesia and tremors, and this has significantly added to the burden of illness in patients and worsened burden of care in caregivers.

Case presentation

We present the case of a 29year old man who was previously managed with first generation antipsychotics for a psychotic disorder at a peripheral centre but left on high dose of the medication after remission. He presented at our facility with severe features of drug-induced parkinsonism without symptoms of psychosis. He was managed on admission for four weeks and only became free of features of parkinsonism after six weeks of treatment with anticholinergic medication.

Conclusion

Asides from the burden of primary illness, antipsychotic-induced parkinsonism causes additional distress and impairment to patients as it was with the reported case. However, adequate anticipation and management of attendant EPSE is very crucial in reducing this additional morbidity and burden associated with managing patients with neuro-psychiatric disorders.

Keywords: drug-induced parkinsonism, extrapyramidal side effects, burden of psychiatric illness

INTRODUCTION

Since the advent of antipsychotics in the 50s, a wide range of side effects have been reported (Ali et al., 2021; D'Souza & Hooten, 2022). Extrapyramidal side effects (EPSE) constitute the most serious reported side effects of first-generation antipsychotics, FGAs (Wubeshet et al., 2019). EPSEs usually occur due to excessive blockade of D2 receptors along the Nigrostriatal dopaminergic pathway, thus producing different movement abnormalities (D'Souza & Hooten, 2022). These abnormalities may be acute in onset, presenting as: acute dystonia, akathisia, parkinsonian-like symptoms; or they may develop at a later stage: tardive dyskinesia, tardive dystonia (D'Souza & Hooten, 2022). The term Tardive syndrome has also been used by some researchers to

describe this later class which comprises: tardive dyskinesia, tardive dystonia, tardive tremor, tardive pain, tardive akathisia, tardive myoclonus and tardive parkinsonism (Skokou et al., 2018).

Drug induced Parkinsonism (DIP) usually presents as tremor, muscle rigidity, and akinesia or bradykinesia in the absence of primary Idiopathic Parkinson's disease (Femi et al., 2012; Kumsa et al., 2020). In addition to the immediate distress, many of the persistent side effects have been reported to cause significant impairment in personal, occupational and social functioning, even in the absence of active symptoms of primary illness. This eventually affects drug compliance, thus increasing risk of illness relapse. With multiple relapses and impairing adverse effects of medications comes significant burden to patient and caregivers (Ugoya et al., 2011).

The aim of this report is to detail a preventable case of neuroleptics-induced parkinsonism in the absence of active symptoms of psychosis, and emphasise the need for adequate anticipation and management of EPSE in patients being managed with FGAs in order to reduce burden of illness.

Clinical Information

N.K is a 29-year-old male unemployed graduate who presented with progressively worsening body stiffness of about 6months duration; excessive salivation, tremors, difficulty talking of 3 days' duration; and inability to eat of a day prior to presentation. He was initially managed on Haloperidol at a peripheral centre for a Psychotic disorder, 8months prior to index presentation, but became increasingly slow in movement hence presented at another unverified facility where he was placed on Tabs Trifluoperazine 10mg thrice daily (tds), Tabs Chlorpromazine 100mg tds, Tabs Nitrazepam 5mg twice daily (bd), Tabs Benzhexol 5mg tds, without clearly reported active psychiatric symptom. Stiffness worsened with fresh onset of inability to talk, eat and excessive salivation, and this warranted final presentation at our facility. There was no reported family history of movement disorder, however his 27year old sister was diagnosed of Paranoid Schizophrenia few years back and currently stable on medications.

Mental state examination findings revealed a young man brought into the Emergency room on wheelchair, with markedly reduced arm swing and neck movement. Severely tremulous, with persistent hyper-salivation and hypomemia. Patient was totally mute and only slowly responded to questions by nodding.

Physical examination revealed resting tremor, bradykinesia, rigidity across joints. Pulse: 104beats in one minutes and Blood pressure was 120/80 mmHg.

At presentation, he was rated 31 on modified Simpson-Angus Extrapyramidal Side Effect scale.

Biochemical profile and other essential investigations were within normal limits.

Diagnostic consideration

An assessment of Extrapyramidal side-effects of antipsychotics, most predominantly Parkinsonian-like side effect.

A major differential was Primary Idiopathic Parkinson's disease, however young age of patient, history of neuroleptic use, negative family history of movement disorder, and bilateral onset of movement symptoms excluded Parkinson's disease.

Therapeutic intervention

All antipsychotics were withheld while patient was administered intramuscular anti-cholinergic medication (Biperiden Lactate, 5mg stat.), this was repeated after 6hours and with no significant improvement, tabs Benzhexol was commenced at 5mg bd. He was also placed on intravenous dextrose saline alternated with normal saline as he could not tolerate orally.

Patient only started tolerating fluid orally after 48hours. Speech, starting with monosyllables, resumed within the first week of admission. At this point, patient was still noticed to be predominantly rigid, although with some supports, he could walk a short distance. While still on Benzhexol, patient was discharged in his 4th week of

admission to promote ambulation and rehabilitation as outpatient. Prior to his discharge he was commenced on tabs Olanzapine 5mg bd to maintain remission and prevent relapse of psychotic illness. All symptoms of EPSE eventually resolved on the first follow-up as outpatient, and Benzehol was gradually tapered off. Patient has remained stable since then and started an apprenticeship as he works towards returning to a teaching job which he once had before illness.

DISCUSSION

Drug-induced Parkinsonism (DIP) often presents as bradykinesia, rigidity and tremor, with most cases appearing within hours to weeks of initiation of an offending agent or with increase in dosage. It is the second most common cause of Parkinsonism after Idiopathic Parkinson's disease (Ugoya et al., 2011; de Germay et al., 2020). One in five patients on antipsychotics have reported parkinsonism, and many patients have reported debilitating symptoms with affectation of activities of daily living (Ali et al., 2021). In addition, psychotropic medication-induced movement disorders often expose patients to stigma, posing huge negative impacts on patient's quality of life. With reduction in quality of life comes worsening interpersonal and occupational functioning, and increased risk of suicidality. In an attempt to circumvent some of these distressing impacts and burden, medication adherence becomes a problem and this often opens window for relapse of illness (Kumsa et al., 2020). In the case reported, despite being psychosis free, at least 6months prior to presentation at our facility, patient remained non-functional due to persistent rigidity. This was unnecessary and unwarranted distress and burden of illness that could have been prevented with adequate anticipation and management of EPSE from patient's first presentation at a peripheral facility.

Furthermore, symptoms of DIP are dose dependent and with continuation of offending agent, there may be medication-induced tolerance or gradual reduction in symptoms (Bolu et al., 2019). As it was seen in the case reported, DIP often resolves within few weeks to 6months of discontinuation of offending agents. While some may only resolve after years, 10 to 50% of patients have been reported to show persistent or tardive DIP (Ward et al., 2018).

CONCLUSION

The burden Neuro-psychiatric disorders have been worsened by numerous side-effects of psychotropic medications used in their management. This is further worsened by over-medication and polypharmacy (Read & Williams, 2019). In other to mitigate these undesirable effects that come with managing psychiatric disorders, thorough evaluation of potential cases to exclude those that may not be requiring psychotropic agent is crucial (Stroup & Gray, 2018). In cases where an antipsychotic is indicated, the newer generation medications with fewer risk of EPSE should be prioritized, and for cases where typical or older generation drugs are the most feasible and readily available, adequate anticipation and management of attendant EPSE is very crucial in reducing morbidity and burden associated with illness (Stroup & Gray, 2018).

Disclosure Statement

The authors report no conflicts of interest.

Consent

The patient gave informed consent, and his identity has been kept anonymous.

Data Availability

The data supporting the findings of this case report are not publicly available due to ethical and privacy considerations but could be made available from corresponding author upon reasonable request, subject to appropriate approvals.

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