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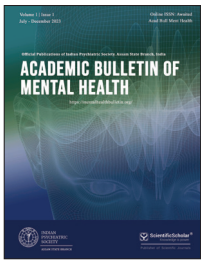

Case Report

Unveiling the Side Effects: Extrapyramidal Symptoms Caused by Blonanserin

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ABSTRACT

Schizophrenia is a chronic debilitating illness with positive and negative symptoms and cognitive impairment that significantly limits social functioning. First authorized in January 2008 for the treatment of schizophrenia in Japan, Blonanserin was also approved in Korea in August 2009 and China in February 2017. Dopamine 2 receptors, serotonin 2A receptors, and dopamine 3 receptors are all blocked by Blonanserin. This case report describes the case of a 28-year-old man hailing from Kamrup Rural district, Assam, who was diagnosed with chronic schizophrenia on regular medications for the last six years. History of previous hospital admission in 2023 for drug-induced extrapyramidal symptoms (EPS) was present after receiving a long-acting injection of Fluphenazine Decanoate 25 mg and tablet Risperidone. He was discharged with tablet Blonanserin 8 mg twice daily, and doses increased to 24 mg/day in a subsequent follow-up after discharge. The patient developed slowness of movements, stooped posture, tightening of limbs, tremors, increased salivation, reduced verbal communication, reduced oral intake, and not passing urine and stools for six days, for which he was admitted to the psychiatry ward of a tertiary care hospital in 2024 with a provisional diagnosis of chronic schizophrenia with drug-induced EPS and treated with injection Promethazine, injection Lorazepam, tablet Trihexyphenidyl, and tablet Amantadine after stopping Blonanserin. During the patient's hospital stay, he developed akathisia, after which beta-blocker Propranolol was added. This case highlights the adverse effects of Blonanserin and emphasizes the importance of proper monitoring of the adverse effects of antipsychotic medications in every patient, especially those having a history of drug-induced EPS.

Keywords: Dopamine 2 receptors, Schizophrenia, Serotonin 2A receptors

INTRODUCTION

Schizophrenia is a chronic debilitating illness with positive and negative symptoms and cognitive impairment that significantly limits social functioning.[1] The Japanese Guideline for Pharmacological Therapy of Schizophrenia advises against stopping the use of antipsychotics because doing so could cause the condition's symptoms to worsen or recur.[1] Consequently, long-term antipsychotic usage requires careful selection to prevent treatment resistance linked to dopamine supersensitivity psychosis or tardive dyskinesia.

First authorized in January 2008 for the treatment of schizophrenia in Japan, Blonanserin was also approved in Korea in August 2009 and China in February 2017.[2] Blonanserin works by blocking serotonin 2A receptors and dopamine D2 receptors; it also blocks D3 receptors. It is hypothesized that D3 antagonism action improves negative, cognitive, and emotional symptoms.[3]

Numerous randomized and noncomparative trials have demonstrated the efficacy of Blonanserin in the treatment of positive and negative symptoms of schizophrenia, offering both short-

and long-term benefits against the disorder's symptoms. It was found that compared to Haloperidol, Blonanserin had less extrapyramidal symptoms (EPS), and compared to Risperidone, it had fewer reports of increase in serum prolactin levels. However, among the most common side effects of Blonanserin seen in noncomparative long-term trials were EPS and hyperprolactinemia.[4]

Drug-induced parkinsonism, dystonia, or akathisia, urinary retention, sedation, anxiety, and insomnia are a few more noteworthy adverse effects.[2]

In this case report, we try to highlight the Blonanserin-induced extrapyramidal side effects on a patient suffering from chronic schizophrenia with a past history of antipsychotic-induced EPS.

CASE REPORT

A 28-year-old man hailing from Kamrup Rural district, Assam, was admitted to the Department of Psychiatry of a tertiary care hospital in February 2024 with chief complaints of the slowness of movements, stooped posture, tightening of limbs, tremors, increased salivation, reduced verbal communication, reduced oral intake, and not passing urine and stools for six days. The patient was under antipsychotics regularly for the past six years from the psychiatry outpatient department (OPD) of the tertiary care hospital, although documents of the previous medications were unavailable. As per his mother, he had several episodes of tremors, rigidity, slowness of movements, dystonia, slurring of speech, and increased salivation on and off, hence doses were adjusted accordingly every time on his follow-up visits. On enquiring about the illness from the mother, the patient was having symptoms of remaining withdrawn, staring blankly at walls, crying and laughing spells, unprovoked outbursts of anger, wandering behavior, self-muttering, inappropriate gesturing, irrelevant talks, decreased sleep, and lacking personal care and hygiene for the last eight years. Symptoms improved with medications, but the patient had a history of two episodes of relapse on stoppage of medication due to financial constraints. He was first brought to the psychiatry OPD in October 2023 for exacerbation of his symptoms on discontinuing medications. Considering the chronicity of the illness, poor compliance, and financial difficulty of the patient, an easily available and cost-effective (in comparison to other atypical long-acting injections) injection Fluphenazine Decanoate 25 mg was given on his first visit. Tablet Risperidone 3 mg twice daily was added, considering his good response to one of the previous prescriptions. However, just after reaching home that day, he developed symptoms of increased salivation, tightness of limbs, deviation of face toward right side, uprolling of eyes, tongue bite, twisting movement of the neck, and difficulty eating and talking along with slowness of movements and stooped posture. He was brought to the hospital the same night. The patient was seen in an emergency and was treated with injection Promethazine. Ear, nose, throat opinion was taken for tongue bite. The following day, he was seen in the psychiatry OPD and was admitted to the psychiatry ward. His symptoms improved after treatment and he was discharged after 15 days of hospital admission with tablets Blonanserin 8 mg one twice daily, Trihexyphenidy l 2mg one twice daily, and Lorazepam 2 mg at bedtime. In his follow-up visit after two weeks, his symptoms had improved, but reduced sleep and negative symptoms did not improve. Therefore, the tablet Blonanserin was increased to 24 mg (one tablet in the morning and two tablets at bedtime), but within one month, again, he gradually developed tremors, rigidity, slurring of speech, staring gaze, and feelings of inner restlessness and urge to move around, for which he was brought to OPD and tablets Blonanserin (8 mg) was reduced to one twice daily, Procyclidine 5 mg twice daily, Lorazepam 2 mg twice daily, and Propranolol 20 mg. After one month, tablet Blonanserin was again increased to 24 mg for his negative symptoms, and therefore, tablet Propranolol was increased to 40 mg for his persisting feeling of inner restlessness along with tablet Mirtazepine 7.5 mg for reduced sleep. Changes in the treatments with rapid dose escalations by the treating physician are highlighted here, although no clues could be gathered regarding the reasons for it.

In the next follow-up visit after about three weeks, the patient was complaining of fearfulness, decreased sleep, presence of staring gaze, and reduced communication along with a feeling of inner restlessness for which he was prescribed tablet Quetiapine 50 mg at bedtime for ten days and increased to 150 mg in one month along with tablets Blonanserin 24 mg, Propranolol 40 mg, and Procyclidine 5 mg twice daily. Tablet Mirtazapine was stopped.

However, in one month, the patient again gradually developed symptoms of slowness of movements, stooped posture, tightening of limbs, tremors, increased salivation, reduced verbal communication, reduced oral intake, and not passing urine and stools for six days. He was brought to the psychiatry OPD and admitted in February 2024.

On general examination, the patient was mesomorphic in build with six feet in height and good musculature. He had tremors and rigidity in both upper limbs. Central nervous system examination revealed abnormal gait with stooped posture and reduced arm swings. A mental status examination revealed poor personal hygiene and grooming, slurring of speech, and poor eye-to-eye contact.

Routine workup along with concurrent delivery of injections Promethazine and Lorazepam and tablets Trihexyphenidyl, Amantadine, and Propranolol was done. All his previous

antipsychotics were stopped. There was an improvement in his EPS by day seven. Hence, he was again started with a low dose of tablet Blonanserin 8 mg with proper monitoring. Unfortunately, the patient developed akathisia again the same day, and hence it was stopped. Tablet Clozapine 25 mg was started with a gradual increment in doses. Improvement of symptoms was observed. Finally, the patient was discharged on March 2024 after 25 days of hospital admission with tablets Clozapine 50 mg twice daily, Trihexyphenidyl 2 mg, Propranolol 40 mg, and Prucalopride 1 mg.

DISCUSSION

This case is a Blonanserin-induced EPS in a patient with chronic schizophrenia where a dose of Blonanserin was increased up to 24 mg/day in short intervals, highlighting the fact that the probability of developing EPS depends not only on the particular antipsychotic but also on the rapidity of dose titration, the higher dose, and the patient's innate susceptibility to EPS with a higher risk in those having a previous history of drug-induced EPS. The anticholinergic medications are helpful in the treatment of drug-induced EPS by blocking the muscarinic cholinergic receptors, but at the same time can induce side effects like constipation, dry mouth, blurred vision, drowsiness, and cognitive dysfunction. Therefore, caution is to be taken while using anticholinergic drugs in the treatment of drug-induced EPS. Age and gender, duration of illness, age of onset of illness, and build and musculature of the patient are also important factors that determine the emergence of drug-induced EPS.

The results of this case report are consistent with a network meta-analysis of Japanese randomized-controlled studies on antipsychotics for adult schizophrenia, which found that while the risk of extrapyramidal adverse events associated with Blonanserin was significantly lower than that of haloperidol, it was almost equal to that of other second-generation antipsychotics (higher than that of olanzapine and quetiapine, but similar to that of aripiprazole, clozapine, paliperidone, perospirone, and risperidone). Therefore, the rate of discontinuation owing to adverse events was 3.7%, which was quite similar to the rates (5.1–9.2%) reported for other antipsychotics.[5]

CONCLUSION

Blonanserin is a new second-generation antipsychotic (SGA) that is used to treat schizophrenia. It has an acceptable weight gain profile and is generally well tolerated. As demonstrated in this instance, EPS are the most and typical adverse reaction with it. Atypical antipsychotic drug selection for patients with long-term conditions such as schizophrenia necessitates balancing efficacy and safety, with an emphasis on the safety profile through appropriate monitoring of side effects.

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