



URINARY RETENTION AS AN EXTRAORDINARY ADVERSE EFFECT OF CLOZAPINE: A CASE REPORT

*Rochaknaveen Bains, MD, Gaurav Chaudhari, MD, Dhrumil Patel, MD.

Research Assistant, Solon, Ohio, United States.

Article Received: 26 November 2022 || Article Revise: 17 December 2022 || Article Accepted: 08 January 2023

Corresponding Author: Onodagu, V. C.

Department of Biochemistry, Federal University of Technology Owerri.

ABSTRACT

Background: Introduction

This case report discusses rare adverse effects of clozapine in a patient who has been managed on this medication for a few years. Urinary incontinence can cause a negative impact on patient's quality of life and cause noncompliance with medication adherence. Urinary retention can lead to irritability and agitation, requiring emergency treatment.

KEYWORDS: Urinary retention, clozapine, anti-cholinergic, treatment-resistant schizophrenia.

CASE REPORT

We are presenting a case of a sixty five-year-old male with a past psychiatric diagnosis of Intellectual Disability, Autism Spectrum Disorder, and Schizophrenia. He presented to ED from his group home for agitation and aggressive behavior with active visual hallucinations dated 03/2022. The patient was prescribed risperidone and topiramate in the past but was non-compliant. The patient was known to be nonverbal at baseline but was observed occasionally grunting and lashing out at caregivers. Risperidone was restarted without significant improvement in his condition. His medication was changed to clozapine and titrated to an effective dose of 200 mg BID. The patient continued to have frequent physical outbursts and agitation in the inpatient unit, and eventually, valproate and topiramate were added to augment mood stabilization. Additionally, to relieve anxiety, clonazepam was added to his medications. With all these medication changes and given his ID diagnosis, the patient was at risk of falls and reactive aggression, for which a one-on-one sitter was present at all times. His oral intake continued to be very poor, and he developed ketonuria. The total score of the adverse drug reaction probability scale was 8. On medical evaluation, he was also found to have trace pleural effusion at his left lung base, and because of poor oral intake, he was transferred to the medical floor. The patient required a nasogastric tube to address his nutrition needs and straight catheterization for worsening urinary retention. Psych CL team followed up on the patient on the medical floor and decided to lower the dose of Clozapine which caused a decrease in urinary retention after 4-5 days. The patient showed improvement in his behavior and was

at baseline on Clozapine 25 mg BID, valproate, and topiramate for mood stabilization and tamsulosin for urinary retention.

DISCUSSION

Clozapine is an peculiar antipsychotic indicated within the control of treatment-resistant schizophrenia. Clozapine binds dopamine receptors and exerts potent anticholinergic, serotonergic activity, antihistaminic and adrenergic. Patients dealt with with clozapine may additionally enjoy damaging outcomes ranging in severity from particularly benign to severe and doubtlessly life-threatening situations such as agranulocytosis and seizures.

Numerous possible mechanisms can give an explanation for the incidence of urinary retention and incontinence. The amazing anticholinergic interest of clozapine might also bring about urinary retention with subsequent overflow resulting in incontinence. It has also been proposed that the antiadrenergic activity of clozapine decreases bladder sphincter tone and reasons bladder emptying. CLZ can cause an overactive bladder tone, ensuing in continuous impairment because of acting as a dopamine antagonist. Clozapine-induced constipation may additionally aggravate urinary retention ensuing in secondary overflow, and incontinence secondary to diabetes and seizures might also occur.^[1,2] Another reason which is often considered is the sedating property of clozapine, which reduces the urge of micturition, causing retention that sometimes leads to overflow.^[3] Some studies also show that Clozapine has a high probability of causing drug-induced diabetes insipidus in some patients, which causes polyuria. With the contribution of various other mechanisms, as reported above, urinary retention is seen.^[4]

CONCLUSIONS

The above case report suggests the importance of understanding the rare but known anticholinergic side effect of clozapine which has been shown to influence bladder control adversely. Resolution of urinary incontinence at a lower dose of clozapine suggests the importance of careful medication monitoring.

DISCLOSURES

The authors record no financial relationships with any agencies whose products are cited in this article or with manufacturers of competing merchandise.

REFERENCES

1. Warner JP et al. Clozapine and Urinary Incontinence. *Int Clin Psychopharmacology* 1994; 9: 207-209. PMID: 7814831. DOI: 10.1097/00004850-199409000-00010.
2. Kho KH and Nielsen O. Clozapine-Induced Nocturnal Enuresis: Diagnostic and Treatment Issues. *Psychiatry Bull* 2001; 25: 232-233. DOI: <https://doi.org/10.1192/pb.25.6.232>.
3. Alicia Hanes, Tammie Lee Demler, Claudia Lee and Campos. Pseudoephedrine for the treatment of clozapine-induced urinary retention. PMID: 23696957.
4. H Bendz¹, M Aurell. Drug-induced diabetes insipidus: incidence, prevention, and management. PMID: 10612269. DOI: 10.2165/00002018-199921060-00002.