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# Case Report: Metoclopramide-Induced Acute Psychosis

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**ABSTRACT**

Here we present a case of a 68-year-old male who developed acute psychosis shortly after receiving high-dose metoclopramide for post-operative nausea and vomiting. This case highlights the potential for severe neurological side effects associated with metoclopramide, particularly in elderly patients, emphasizing the need for vigilant monitoring and individualized dosing strategies.

## INTRODUCTION

Metoclopramide, a dopamine D2 receptor antagonist, is commonly used as an antiemetic for nausea and vomiting. While generally safe and well-tolerated, especially at lower doses, it carries a known risk of extrapyramidal symptoms (EPS), including acute psychosis. This case report illustrates the potential for severe psychiatric manifestations due to metoclopramide, particularly in an elderly patient, and underscores the importance of cautious administration and risk assessment (1-5).

## CASE PRESENTATION

A 68-year-old male with a history of hypertension and mild cognitive decline underwent abdominal surgery. Post-operatively, he received intravenous metoclopramide 10 mg four times daily for nausea and vomiting. Within 24 hours, he developed significant agitation, confusion, and disorientation. He exhibited persecutory delusions, bizarre beliefs, and visual hallucinations, including seeing insects crawling on his walls. Physical examination revealed no focal neurological deficits, and routine laboratory tests were unremarkable. A diagnosis of metoclopramide-induced acute psychosis was suspected based on the temporal association, clinical presentation, and exclusion of other potential causes.

Metoclopramide was immediately discontinued, and supportive care with benzodiazepines (lorazepam) was initiated. Within 48 hours, the patient's psychotic symptoms significantly improved, and he gradually regained baseline mental state over the next week. He was discharged home in stable condition without further episodes of psychosis.

## DISCUSSION

Acute psychosis is a rare but potentially severe side effect of metoclopramide, mainly reported in elderly patients, children, and individuals with pre-existing neurological conditions. The underlying mechanism involves blockade of dopamine D2 receptors in the striatum, leading to an imbalance in dopaminergic neurotransmission. This imbalance can manifest as diverse psychiatric symptoms, including delusions, hallucinations, and psychomotor agitation. Several factors contribute to the increased vulnerability of elderly patients to metoclopramide-induced psychosis. Age-related declines in dopamine metabolism and increased blood-brain barrier permeability may lead to higher drug concentrations in the central nervous system, exacerbating its effects. Additionally, pre-existing cognitive impairment or neurodegenerative conditions can further sensitize the brain to dopaminergic alterations (6-12).

This case highlights the importance of careful risk-benefit assessment before administering metoclopramide, particularly in elderly patients. Factors like age, baseline mental state, and co-existing neurological conditions should be considered. Lower doses and shorter durations of therapy are recommended in such populations. Alternative antiemetics with lower EPS risk should be considered whenever possible. Furthermore, close monitoring for potential neurological side effects, including early signs of agitation or confusion, is crucial. Prompt discontinuation of metoclopramide and initiation of supportive therapy, like benzodiazepines, can significantly improve outcomes and prevent long-term psychiatric complications.

While metoclopramide remains a valuable tool for managing nausea and vomiting, the potential for severe neurological side effects, particularly acute psychosis in elderly patients, should not be overlooked. Vigilant monitoring, individualized dosing strategies, and awareness of early symptoms are crucial for ensuring safe and effective use of this medication. Recognizing the delicate balance between symptom relief and potential harm empowers healthcare professionals to provide optimal care while safeguarding the well-being of their patients.

## REFERENCES


1. Lu ML, Pan JJ, Teng HW, Su KP, Shen WW. Metoclopramide-induced supersensitivity psychosis. Ann Pharmacother. 2002;36(9):1387-1390. doi:10.1345/aph.1A440
2. Alvarez-Cisneros T, Lara-Reyes A, Sansón-Tinoco S. Hiccups and psychosis: two atypical presentations of COVID-19. Int J Emerg Med. 2021;14(1):8. Published 2021 Jan 20. doi:10.1186/s12245-021-00333-0
3. Livermore C, White H, Bailey L, et al. A retrospective case notes review of the effectiveness and tolerability of metoclopramide in the treatment of clozapine-induced hypersalivation (CIH). BMC Psychiatry. 2022;22(1):277. Published 2022 Apr 20. doi:10.1186/s12888-022-03940-0
4. Lertxundi U, Peral J, Mora O, Domingo-Echaburu S, Martínez-Bengoechea MJ, García-Moncó JC. Antidopaminergic therapy for managing comorbidities in patients with Parkinson's disease. Am J Health Syst Pharm. 2008;65(5):414-419. doi:10.2146/ajhp060624
5. Peselow ED, Stanley M. Clinical trials of benzamides in psychiatry. Adv Biochem Psychopharmacol. 1982;35:163-194.
6. Velasco M, Luchsinger A. Dopamine: pharmacologic and therapeutic aspects. Am J Ther. 1998;5(1):37-43.
7. Siegel RB, Motov SM, Marcolini EG. Droperidol Use in the Emergency Department: A Clinical Review. J Emerg Med. 2023;64(3):289-294. doi:10.1016/j.jemermed.2022.12.012
8. Jenkins G. Review of Dopamine Antagonists for Nausea and Vomiting in Palliative Care Patients. J Pain Palliat Care Pharmacother. Published online October 16, 2023. doi:10.1080/15360288.2023.2268065
9. Christodoulou C, Kalaitzi C. Antipsychotic drug-induced acute laryngeal dystonia: two case reports and a mini review. J Psychopharmacol. 2005;19(3):307-311. doi:10.1177/0269881105051543
10. Walsh P, Spelman L, Sharifi N, Thakore JH. Male patients with paranoid schizophrenia have greater ACTH and cortisol secretion in response to metoclopramide-induced AVP release. Psychoneuroendocrinology. 2005;30(5):431-437. doi:10.1016/j.psyneuen.2004.11.003
11. Barnett BS, Balaji D, Weleff J, Carroll BT. Catatonia and Neuroleptic Malignant Syndrome in Patients With Cerebral Palsy: Two Case Reports and a Systematic Review of the Literature. J Acad Consult Liaison Psychiatry. 2023;64(3):277-293. doi:10.1016/j.jaclp.2022.12.008
12. Ganzini L, Casey DE, Hoffman WF, Heintz RT. Tardive dyskinesia and diabetes mellitus. Psychopharmacol Bull. 1992;28(3):281-286.