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Metoclopramide Induced Parkinsonism – A Case Report

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ABSTRACT

A drug that is often prescribed to treat upper gastrointestinal symptoms is metoclopramide hydrochloride. Despite being generally safe, a growing corpus of research has linked movement abnormalities to the drug's usage. Here we report the case of an adult female with recurrent CVA with hemorrhagic transformation and posterior fossa decompression with persistent vomiting and gastritis who, upon administration of metoclopramide for a long duration, presented with Parkinson tremors after 2 weeks of initiation of the drug. The parkinsonism improved with the discontinuation of metoclopramide therapy. Metoclopramide-induced parkinsonism is not relatively rare, and when necessary, patients should have the dosage adjusted accordingly in order to minimize the incidence of this morbidity.

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INTRODUCTION

Metoclopramide is a drug that works as a dopamine receptor antagonist to treat and prevent nausea and vomiting. [1] Increased lactation, extrapyramidal responses, GI problems, and sleepiness are the most frequent adverse effects. [2] A.H. Robins first commercialized the medication as an injectable in the United States in 1979 under the name Reglan. [3] The medicine worked by blocking serotonin 5-HT3 and dopamine D2 receptors in the chemoreceptor trigger zone, which is situated in the brain's postrema region, to produce antiemetic effects. When this medication is administered, it inhibits both postsynaptic and presynaptic D2 receptors, agonizes serotonin 5-HT4 receptors, and antagonizes muscarinic receptor inhibition, all of which result in prokinetic effects. Gastric emptying and transit through the gut are accelerated by this action, which also increases the release of acetylcholine and lowers the oesophageal sphincter and gastric tone. [4] It was discovered that elderly women were more likely to develop methotripramide-induced parkinsonism, which manifested as subacute bilateral symptoms. Clinically, rest tremors can occasionally accompany metoclopramide-induced parkinsonism, leading to confusion with Parkinson's disease. [5] The Food and Drug Administration released safety alerts in 2009 about the risks connected to using metoclopramide at high doses or for extended periods of time. [6] Because the majority of cases are caused by drugs prescribed by departments other than neurology, it is suggested that physicians pay closer attention to the Parkinsonian side effects of the commonly prescribed drugs. Such drug-induced parkinsonism reactions are frequently overlooked, and their clinical course is not well understood. [7]

Case report

A 41-year-old woman with recurrent episodes of vomiting and abdominal pain was admitted to our hospital. She has had a history of diabetes mellitus and hypertension for a month, as well as a history of posterior fossa decompression and hemorrhagic transformation. In laboratory findings, endoscopy depicted erosive pangastritis, and the Glasgow coma scale was E1V5M6. Based on the clinical findings, it was the diagnosis of recurrent CVA with hemorrhagic transformation s/p posterior fossa decompression and persistent vomiting. Based on persistent vomiting and gastritis, metoclopramide at a dose of 10mg was administered twice a day from day 11 since the treatment had started. After the 30^{th} dose on the 25^{th} day of metoclopramide, the patient experienced Parkinson's tremors. On administration of another dose, the tremors worsened. The situation was acknowledged, and the drug was discontinued

on the 26th day of treatment in view of drug-induced parkinsonism. Post-this, there was recovery in the patient, and she was advised antibiotics and anti-emetics, and the tremors have subsided. On review of the patient's physical assessment, it was observed that the treatment plan was followed consistently, and signs of recovery were found in the patient. She was told to revisit for a follow-up after a month.

Discussion

The FDA has approved metoclopramide, a dopamine receptor antagonist, to treat nausea and vomiting in patients with diabetic gastroparesis or gastroesophageal reflux disease by boosting gastric motility. Additionally, it helps chemotherapy patients manage their nausea and vomiting. [8] Metoclopramide-induced parkinsonism is probably not unusual, but it is not well understood. Advanced age, diabetes mellitus, polypharmacy, and female sex are risk factors. [9] It is supported by epidemiological research that metoclopramide is frequently disregarded as a possible cause of extrapyramidal effects. Metoclopramide-treated patients had a nonsignificant relative risk of 1.67 (95% confidence interval = 0.93 to 2.97) for tardive dyskinesia and a relative risk of 4.0 (95% confidence interval = 1.5 to 10.5) for drug-induced parkinsonism, according to a case-control study involving 53 patients and 51 controls.

Metoclopramide's underappreciated role in drug-induced parkinsonism underscores the necessity of a thorough pharmacotherapy evaluation for patients who exhibit this movement disorder. Although it can take several months, recovery is usually achieved after stopping metoclopramide. [10]

Conclusion

When metoclopramide is given, especially in larger than usual doses due to vomiting or gastritis, the doctor should be advised. They should weigh the advantages and disadvantages of the treatment before determining whether to continue it or not. It would be beneficial to conduct additional research on drugs that cause Parkinson's disease or to select different medications.

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