Case Report

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Metoclopramide-Induced Acute Dystonic Reaction: A Case Report

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Abstract

Extrapyramidal side-effects of metoclopramide are common. As this drug is used as adjunctive therapy in the treatment of a variety of disorders, difficulty in recognition of side effects as distinct from the primary pathologic condition may arise. Doctors in the emergency room should take an in-depth drug history as part of their evaluation of patients with sudden onset of movement disorders.

Keywords: Metoclopramide; Acute dystonic reaction; Diazepam

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Introduction

Metoclopramide is a commonly used drug in outpatient and in-patient treatment for its antiemetic property. It is a dopamine (D2) receptor antagonist with a short half-life; and also possesses 5HT3 antagonist and 5HT4 agonist activities [1]. Visceral stimulation resulting in nausea and vomiting occur in common tropical infections caused by *Plasmodium, Salmonella* and viruses. Antiemetic agents, including Metoclopramide, have been successfully used for years as cost-effective adjunctive treatments of these conditions in outpatient settings [2]. As side-effects of medication may occur, Physicians are required to report such adverse drug reactions as part of patient safety procedures as well as for the purpose of pharmacovigilance. The following case illustrates an acute dystonic reaction to metoclopramide reported in our hospital.

Case Report

A 21-year old woman presented to the Emergency Department with episodes of generalized painful muscle spasms following presumptive treatment for malaria given to her at a local Chemist shop.

Patient was treated with standard doses of Arthemeter/Lumefantrine (AL) - 80/480 mg, and tablets of Metoclopramide 20 mg administered eight hourly. About thirty-six hours after commencing treatment, having received 4 doses of AL and a cumulative dose of 100 mg Metoclopramide, the patient had paroxysms of painful muscle spasm, associated with sustained protrusion of the tongue and drooling of saliva. The paroxysms lasted for one to two minutes, with spontaneous resolution and recurred at intervals of three to five minutes. She remained conscious during and between paroxysms.

Clinical examination during an episode of spasm showed a young woman in painful distress with generalized muscle rigidity, a protruded tongue, sialorrhoea and hyperextension of the fingers and toes. Her pulse rate was 100 beats per minute, regular and of full volume; and the blood pressure was 130/100mmHg. She was fully conscious with a Glasgow Coma Score of 15 but had dysarthria and torticollis. There was generalized hypertonia and hyperreflexia, but the plantar response was equivocal. No ocular signs were elicited. Based on these features and antecedent use of Metoclopramide, a diagnosis of acute dystonic reaction was made. Mild sedation and muscle relaxation were achieved using IV Diazepam 10 mg slowly through a wide bore canulla. There was no further recurrence of spasms and she woke up free of pain after three hours. She was discharged for follow up in the Family Medicine Outpatient Clinic after being counseled and was advised to avoid Metoclopramide use. No recurrence of symptoms was reported at her clinic follow-up three days after discharge. The adverse drug reaction was reported in the yellow form and forwarded to the regional pharmacovigilance office.

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Discussion

Recognition of drug-induced acute dystonia may prove challenging in our setting where other causes of dystonia such as tetanus, meningitis, seizures and indiscriminate use of over the counter medication abound [3].

Dystonia is defined as a movement disorder characterized by involuntary, sustained muscle contractions that result in twisting and repetitive movements or abnormal postures [4]. Extrapyramidal symptoms due to metoclopramide are most commonly manifest as acute dystonic reactions and has been reported to occur in 0.2-25% of patients [5,6]. Dyskinetic manifestations occur within the initial 24-48 hours of metoclopramide use, as in this case. The risk of these reactions is increased at higher doses, in paediatric patients and adults less than thirty years of age [7]. There is also a relatively higher risk of females developing dystonic reactions, although reasons for this remain unclear [8]. The patient had three out of four listed risk factors above. Side effects of metoclopramide are known to occur more frequently with overdose, although they may occur at recommended doses [9]. The index patient used 60 mg of metoclopramide in the first 24 hours of treatment, which was at the maximum threshold of recommended treatment dosage [10]. Following drug use, dyskinetic symptoms appeared within 36 hours. Such an early manifestation has been seen with other cases reported where symptoms may start up to 48 hours following commencement of therapy with metoclopramide [4]. Common manifestations include torticollis, sialorrhoea, protrusion of the tongue and spastic hypertonia of the muscles, typically occurring in paroxysms. Oculogyric manifestations are also common, although they were not reported in this case. Delayed manifestations are more often seen with prolonged treatment and include tardive dyskinesia.

Various treatment options are available for acute dystonic reactions. Diphenhydramine hydrochloride, an anticholinergic agent with antiemetic effects, at a dose of 1.25 mg/kg/dose via oral, intramuscular or intravenous routes for treatment, as well as Benztropine (0.04 mg/kg/dose) and parenteral biperiden (0.02-0.05 mg/kg/dose or maximum 2 mg/day) can be used [11]. In this case, none of the aforementioned was used due to non-availability in our low-resource setting. Diazepam was utilized due to its known safety profile, ease of access and cost-effectiveness [12].

Conclusion

Metoclopramide is a commonly used antiemetic agent with notable side effects, especially acute dystonia as seen in this case. Doctors, especially those practicing in developing countries, may encounter challenges with recognition of dystonia. The management of acute dystonia may be difficult due to the lack of parenteral medication of first choice. Available parenteral benzodiazepines may be employed with good effect in the management of this disorder.

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