

## Metoclopramide and acute dystonia: A case report

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### ABSTRACT

Metoclopramide is one of the frequently used antiemetic and prokinetic. The aim of this case report is to emphasize the occurrence of metoclopramide induced acute dystonic reaction. Its prevalence is increasing and can be life threatening. We present a case of 18 years old female, who presented to the emergency of Kathmandu Medical College with the complaints of pain and stiffness of the neck and inability to keep her tongue in her mouth. She developed acute dystonic reactions after her fourth dose of Metoclopramide; which was prescribed for her vomiting associated with dysmenorrhea. The drug was discontinued and 25 mg of intravenous Chlorpheniramine was administered. The symptom subsided in two hours and was discharged with oral Chlorpheniramine. Metoclopramide can cause severe adverse reaction such as acute dystonic reaction, which is of unpredictable nature, physicians should be aware of this bizarre effect and the treatment.

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### INTRODUCTION

Hermann Oppenheim coined the term dystonia in 1911, when he applied the name *dystonia musculorum deformans* to a childhood onset form of generalized dystonia. Dystonia is a movement disorder characterized by patterned, directional and often sustained muscle contractions that produce abnormal postures or repetitive movements.<sup>1</sup> The prevalence of acute dystonia caused by treatment with metoclopramide has been estimated to be 28.6 per million prescriptions.<sup>2</sup> The treatment of acute dystonia is straightforward and nearly always effective. Standard management involves discontinuation of the drug and rapid intravenous or intramuscular administration of an anticholinergic or antihistaminic drug.<sup>1</sup> We present a case of Metoclopramide induced Acute Dystonic Reaction managed in the emergency room of a teaching hospital.

### CASE REPORT

A 18 year old female from Ghattekulo, Kathmandu, Nepal with no significant past history, was treated

for dysmenorrhea and associated vomiting with oral Mefenamic acid and Metoclopramide respectively. She was discharged with the oral medication, Tablet Mefenamic Acid 500mg and Tablet Metoclopramide 10mg three times a day respectively. The following day, after her fourth dose of Metoclopramide she developed pain and stiffness of the neck and inability to keep her tongue in her mouth. With these complaints she was brought to the Emergency of Kathmandu Medical College, Sinamangal. On examination, she was conscious and anxious. Her blood pressure was 110/80 mm of Hg, left arm supine, pulse rate of 98 bpm, respiratory rate of 20 breaths/min, temperature of 98 °F, and SpO2 of 98% in ambient air. Her neck was arched towards right side with her tongue hanging out without accumulation of saliva. Her swallowing was difficult. The rest of the examination findings were unremarkable. With the supportive history and examination findings, a diagnosis of Metoclopramide induced acute dystonic reaction was made. 25 mg of Intravenous Chlorpheniramine was administered. Her symptoms subsided in about 2 hours. We further

observed her for 2 more hours and then she was discharged with oral chlorpheniramine for 5 days. The subsequent follow up visit in a week was unremarkable.

## DISCUSSION

Metoclopramide is an oral prokinetic and antiemetic agent used in the therapy of gastroesophageal reflux disease, gastroparesis and severe or chemotherapy induced nausea.<sup>3</sup> The antagonistic activity of metoclopramide at the central and peripheral dopamine receptors gives rise to its anti-emetic properties. It's gastrointestinal smooth muscle stimulatory effects are related to its ability to antagonize the inhibitory neurotransmitter, dopamine; to augment acetylcholine release and sensitize the muscarinic receptors of the gastrointestinal smooth muscle; and to coordinate gastric-pyloric-small intestinal motor function.<sup>4</sup> Drug-induced acute dystonic reaction is a common presentation to emergency department. They occur in 0.5-1% of patients given metoclopramide or prochlorperazine as anti-emetic in the medical ward.<sup>5</sup> Manifestations of acute dystonia can be diverse either appearing alone or in some other combinations, which may however obscure diagnosis. There could be upper airway obstruction from pharyngeal muscle spasms or laryngospasm, which is rare but potentially life-threatening, temporomandibular joint dislocation and oropharyngeal dysphagia.<sup>5</sup> Female patients, children, adults less than 30 years of age, and patients receiving high doses of metoclopramide have higher chances of developing dystonic reactions.<sup>6</sup>

The Extrapyramidal Symptoms following metoclopramide administration may take 24-48 hours to manifest and are usually in the form of involuntary limb movements, facial grimacing, torticollis, oculogyric crisis, rhythmic protrusion of the tongue, bulbar type of speech, trismus, opisthotonus and rarely stridor and dyspnea which result from laryngospasm.<sup>6,7</sup>

The standard treatment includes intramuscular administration of anticholinergic drugs (for example, biperiden 5 mg or procyclidine 5 mg) or antihistamines (for example, promethazine 50 mg) and is usually effective within 20 minutes. Occasionally, second or third injections may be required; additional doses should be administered at half hour intervals. If the patient has an oculogyric crisis that does not respond to anticholinergic drugs, treatment with clonazepam

0.5 to 4 mg may be beneficial. After the dystonia has resolved, treatment with anticholinergics should be continued in addition to the treatment with antipsychotic drugs for at least 24 to 48 hours to prevent a recurrence.<sup>6-8</sup> In our patient we managed with Intravenous Chlorpheniramine 25 mg followed by oral chlorpheniramine for 5 days.

Acute dystonic reactions are a common and distressing complication of metoclopramide therapy and doctors should be aware of this bizarre side effect. It is very important to consider dystonic reactions as a possible side effect each time metoclopramide is administered and one should know the prompt management.<sup>6,9</sup>

## CONCLUSION

Metoclopramide is one of the commonest drugs used for nausea and vomiting in our country. It can cause acute dystonic reaction, one of the severe adverse events and should be used with caution. Treating physicians should be familiar with its adverse possible side effect. The most effective and rapid treatment is parenteral administration of Anticholinergics.

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