Case Report

Development of acute dystonia in three brothers due to metoclopramide

Ibrahim Silfeler[1], Vefik Arica[1], Secil Arica[2], Murat Dogan[3]

[1]Department of Pediatrics, School of Medicine, Mustafa Kemal University, Hatay, Turkey. [2]Departmend of Family Medicine, School of Medicine, Mustafa Kemal University, Hatay, Turkey. [3]Department of Pediatrics, Special District Hospital, Hatay, Turkey.

One of the agents that cause dystonic reactions is metoclopramide. In this study, we presented three individuals of the same family who were admitted to our hospital while receiving the treatment of metoclopramide because of developing acute dystonic reaction. Appropriate doses of metoclopramide therapy had begun to all brothers with a diagnosis of gastroenteritis. After receiving the first dose of medication, acute dystonia was observed within half an hour in these brothers who used metoclopramide. Thus, if there is a patient who developed acute dystonia in the same family due to metoclopramide, avoiding from use of metoclopramide will be beneficial for other members of the family.

Key words: Dystonic reaction, medicine side effects, metoclopramide

INTRODUCTION

Metoclopramide is used as an antidopaminergic effective drug to prevent vomiting and a prokinetic agent to improve upper gastrointestinal motility. Fluid therapy in cases of diarrhea and vomiting should be in the forefront. Oral rehydration may be sufficient parenteral rehydration.[1] In these cases, as anti-emetic metoclopramide is used. It is frequently applied to children by physicians in our country. The most serious side effect is the presence of acute extrapyramidal symptoms which require emergency treatment. Acute extrapyramidal symptoms that start in childhood must immediately. The extrapyramidal symptoms include dystonic reactions, akathisia associated dyskinesia, akinesia, Parkinsonism and tardive dyskinesia.[2] We have known for a long time that these symptoms may develop secondary to the use of drugs that have similar character to dopamine receptor antagonist. Metoclopramide is one of these drugs more used as a prokinetic agent.[3] Metoclopramide is a selective dopamine receptor (D2-R) antagonist that has central and peripheral antidopaminergic effects.[3,4] In the children, it is mostly used for treatment of gastroesophageal reflux and as an antiemetic drug in the patients who have nausea and vomiting due to receiving chemotherapy or gastrointestinal tract infections. In this report, three male brothers [6 (case 1), 8 (case 2) and 15 (case 3) years old] who admitted our department of emergency were reaction had developed in spite of receiving a proper dose of metoclopramide. We emphasize that this and similar drugs likely have adverse effects and it should be recommended to patients by considering the risks of them besides the benefits.

Case 1

A day before being applied to us (Istinye Public Hospital, Istanbul, Turkey, 2008), the patient (6-year-old male) with his two brothers had been taken to a physician with complaints of nausea and abdominal pain. Five milligram dose of metoclopramide had been prescribed to the patient. After receiving the first dose of medication, the contraction and retention of neck, contractions of chin and arms occurred within half an hour in the patient who used metoclopramide. The patients were brought to our clinic. The patient's conscious was clear, but he was agitated and restless. Pulse was 102/min; blood pressure was 85/45 mmHg. Respiratory rate was 27/min as normal. There were speech dysfunction, trismus, and dystonic movements of sleeves. Involuntary movements gradually increased and opistotonus developed. Results

Address for correspondence: Mr. Ibrahim Silfeler, Urgenpasa mah, Sehit Sabri Aksu sok, Ece APT, no.: 21, D:22 Antakya, Hatay, Turkey.
E-mail: drsilfeler@gmail.com
Received: 14-06-2011; **Revised:** 20-10-2011; **Accepted:** 29-11-2011

of complete blood count (CBC), liver and kidney function tests and electrolytes were within normal values.

Case 2

The patient was 8 years old and male. The story was same with his brothers. Five mg dose of metoclopramide had been prescribed to the patient. On physical examination, conscious of the patient was clear but he was agitated and restless. Pulse was 95/min; blood pressure was 90/50 mmHg. Respiratory rate was 25/min as normal. There were speech dysfunction, trismus, and dystonic movements of arms. Results of CBC, liver and kidney function tests, and electrolytes were normal.

Case 3

The patient was 15 years old and male. The story was same with his brothers. Ten mg doses of metoclopramide had been prescribed to the patient. Conscious of the patient was clear but he was agitated and restless. Pulse was 92/min; blood pressure was 125/85 mmHg. Respiratory rate was 22/min as normal. There were speech dysfunction, trismus and dystonic movements of arms. And involuntary movements gradually increased and opistotonus developed. Results of CBC, liver, and kidney function tests and electrolytes were found as normal. Examination of the other systems was also normal.

We considered that acute dystonic reaction originated from metoclopramide, because the complaints of three brothers began suddenly onset and there were no similar complaints before. Therefore, biperiden 5 mg (IM) was performed to all three cases in order to treat them. The symptoms disappeared dramatically after 10 min from drug application. Patients were followed in observation room and there were no additional developing problem after the observation. Therefore, he was discharged to come back for control. The family was informed about the issue.

DISCUSSION

Metoclopramide-related side effects might occur in different times according to application of drug. If the drug was applied intravenously, the side effects might arise 1-3 min. If the drug was applied orally, the side effects might arise within 1-3 min.[5,6] Metoclopramide rarely makes sedation and restlessness via antagonism of dopamine. These effects are reversible. Furthermore, hypotension and arrhythmias may occur slightly.[4,7] Although it prescribes frequently in children, the number of patients who admitted to the clinic is less due to recovering of adverse events spontaneously until the family perceives. These drug-induced side effects occur as dose-independent.[6] Therefore, side effects can even be seen in therapeutic doses. In addition, extrapyramidal side effects have been reported in two of four cases due to metoclopramide. Therefore, the acute dystonic reaction due to metoclopramide suggests that it may be inherited by family. If there are any developed symptoms of dystonia in a family member, the approach is that metoclopramide should not apply to other individuals in the same family.[8] In another study, homozygous gene polymorphism of cytochrome P4502D6 had been exhibited in two patients who acute dystonic reaction developed following metoclopramide usage.[9] In a study, extrapyramidal effects were not changed depending on age and gender.[10] In our patients, side effects of metoclopramide have emerged when it is used in therapeutic doses. Because sudden onset of findings, rapid progression, quick to respond to biperidene and healthy condition first, other factors that might be capable of dystonia were not considered in the differential diagnosis. In addition, if any extrapyramidal side effect occurred in a member of the family due to metoclopramide, other individuals also should be kept in mind for the same conditions. A drug history should be questioned in patients who admitted to emergency department with an acute dystonic reaction and a careful physical examination should be executed for other concomitant neurologic findings.

REFERENCES

1. Dedeić-Ljubović A, Hukić M, Bekić D, Zvizdić A. Frequency and distribution of diarrhoeagenic escherichia coli strains isolated from pediatric patients with diarrhoea in bosnia and herzegovina. Bosn J Basic Med Sci 2009;9:148-55.
2. Ulug NC, Ulug M. A case report of acute dystonia caused by a therapeutic dose of metoclopramide. Bull Clin Psychopharmacol 2011;21:70-2.
3. Dipalma JR. Metoclopramide: A dopamine receptor antagonist. Am Fam Physician 1990;41:919-24.
4. Cekman N,Akcabay M, Mahli A, Arslan M. Comparison of the effects of dexamethasone and metoclopramide on postoperative nausea and vomiting. Erciyes Med J 2003;25:137-43.
5. Yis U, Ozdemir D, Duman M, Unal N. Metoclopramide induced dystonia in children: Two case reports. Eur J Emerg Med 2005;12:117-9.
6. Kızılelma A, Teksam Ö, Haliloğlu G. Acute dystonia caused by metoclopramide: A case report. Çocuk Sağlığı ve Hastalıkları Dergisi 2008;51:162-4.
7. Watcha MF, White PF. Postoperative nausea and vomiting: Its etiology, treatment and prevention. Anesthesiology 1992;77:162-84.
8. Guala A, Mittino D, Ghini T, Quazza G. Are metoclopramide dystonias familial? Pediatr Med Chir 1992;14:617-18.
9. Van Der Padt A, Van Schaik RH, Sonneveld P. Acute dystonic reaction to metoclopramide in patients carrying homozygous cytocrome P450 2D6 genetic polymorphisms. Neth J Med 2006;64:160-2.
10. Bateman DN, Rawlins MD, Simpson JM. Extrapyramidal reactions with metoclopramide. Br Med J (Clin Res Ed) 1985;291:930-2.

How to cite this article: Silfeler I, Arica V, Arica S, Dogan M. Development of acute dystonia in three brothers due to metoclopramide. J Res Med Sci 2012; 17(3): 308-9.

Source of Support: Nil, **Conflict of Interest:** None declared.