

A Dystonia Case Due to Metoclopramid Usage

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Abstract

Metoclopramid is the dopamine receptor antagonist. It has been used widely as antiemetic agent. This drug enters the blood-brain barrier and causes extrapyramidal symptoms such as Parkinsonism, malignant neuroleptic syndrome, akathisia, tardive dyskinesia and acute dystonic reaction. Our case is a 17-year-old female, who took 3x10 mg metoclopramid for the purpose of treatment for three days and applied to our emergency service with the involuntary spasm in the neck and both arms.

Keywords: Metoclopramide, acute dystonic reaction, adolescent

Özet

Metoklopramid, bir dopamin reseptörü antagonistidir. Antiemetik ajan olarak yaygın olarak kullanılır. Bu ilaç kan-beyin bariyerini geçerek ve Parkinsonizm, malign nöroleptik sendrom, akatizi, tardif diskinezi ve akut distonik reaksiyon gibi ekstrapiramidal semptomlara neden olur. Olgumuz, üç gün boyunca tedavi amacıyla 3x10 mg metoklopramid kullanan ve boyun ve her iki kolda istemsiz spazmla başvuran 17 yaşında kadın hastadır.

Anahtar Kelimeler: Metoklopramid, akut distonik reaksiyon, adolesan

Introduction

Dystonia is a neurological disorder which is characterized by posture disorder caused by repetitive, bending, strong involuntary muscle contractions. Acute dystonic reaction manifests itself with muscle contractions, opisthotonus, torticollis, oculogyric crisis, dysarthria, trismus especially on the face, neck and back muscles¹. Metoclopramide is the most dystonic drug among antiemetics². Metoclopramide is an effective and commonly used antiemetic, acts as dopamine-2 receptor antagonist, inhibits both central and peripheral effects of apomorphine³. Its effect is emerging in 1-3 minutes when given intravenously, within 15-20 minutes when given orally. Its half life is four hours⁴. Most common extrapyramidal adverse reactions due to metoclopramide use are, parkinsonism, tardive dyskinesia, neuroleptic malignant syndrome, akathisia and acute dystonic reaction^{5,6}. In this article, we present a case with acute dystonic reaction associated with metoclopramide. It was intended to draw attention to the diagnosis and treatment of extrapyramidal symptoms and, in particular, acute dystonic reaction and the detailed evaluation of the differential diagnosis in emergency departments.

Case Report

A 17-year-old female patient presented to Başkent University Istanbul Research and Practice Hospital Emergency Department due to sudden, involuntarily contraction of neck and both arms, and backward shifts of eyes. From the patient history, it was determined that a nasal spray containing Oxymetazoline HCl (four times a day), a tablet containing Ibuprofen and Pseudoephedrine HCl (three times a day), a throat spray containing Benzidamine HCl, and Chlorhexidine Gluconate (four times a day) and a tablet containing Metoclopramide (three times a day) were prescribed 3 days prior due to complaints of nausea and cold symptoms. In the first evaluation of the patient, her general condition was anxious, agitated, conscious, cooperative and oriented, with GCS: 15. On physical examination, her temperature was 37.3°C, blood pressure 125/75 mmHg, pulse 102 / min and respiratory rate was 22 / min. Pupils isochoric, with both direct and indirect light reflexes present. In laboratory examinations, complete blood count and biochemical values were found to be normal. Blood gas pH: 7.4, lactate: 1.4, base excess -0.9. From the patient history and the first evaluation, it was learned that she had been using the medications prescribed for treatment regularly for 3 days only, did not have any health problems and did not use any drugs prior. Motor

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examination and muscle tone were normal and there was no rigidity determined. The deep tendon reflexes were equal and normoactive in all four extremities. Extrapyramidal system examination revealed hyperextension in the neck, dystonic movements in the arms and an ocular gait. Other system examinations of the patient were considered normal. Due to the absence of a similar complaint, the acute dystonic reaction was thought to have developed due to use of metoclopramide. 5 mg biperidene was administered to the patient intravenously. Symptoms disappeared within approximately one hour after injection. However, 10 mg Diazepam was administered intravenously as the patient agitation continued. The patient was discharged after six hours of follow-up and referred for control to the neurology outpatient clinic the next day. It was found that the patient's physical examination was completely normal and the patient's symptoms did not recur and the patient was advised not to use any medications in this group again.

Discussion

Antipsychotics, antidepressants and metoclopramide, used as an antiemetic in particular, are among the main drugs causing acute dystonic reaction. In addition, antihistamines, decongestants, expectorants, antipyretics along with the use of codeine, cocaine, carbamazepine, phenytoin, chloroquine and diazepam have been reported to cause the development of an acute dystonic reaction^{6,7}. Metoclopramide is an antiemetic dopamine agonist commonly used in gastroesophageal reflux disease, nausea due to chemotherapy, respiratory infections and gastroenteritis in children. This drug is metabolized in the liver and excreted in the urine. Therefore, dose adjustment should be done in patients with liver and renal failure and these problems should be queried before the prescription of this drug. Our case was a 17-year-old female adolescent and had no liver and kidney problems. The extrapyramidal side effects of metoclopramide (tardif dyskinesia, Parkinson's disease, akathisia, malignant neuroleptic syndrome and acute dystonia) develop due to dopamine receptor antagonism in basal ganglia and disappear within 24 hours after the discontinuation of the drug⁸. The acute dystonic reaction seen in 0.5-1% of patients treated with metoclopramide, manifests itself especially with contractions in the face, neck and back muscles, opisthotonus, torticollis, oculogyric crisis, dysarthria, trismus. The frequency is not related to gender and age^{1,9}. These drug-related effects are not only dose-dependent (they develop more in those receiving doses greater than 0.5 mg / kg), but may also be idiosyncratic due to individual factors. However, there are

studies that indicate that side effects occur more frequently when the recommended dose is exceeded and cumulative effects occur in repeated doses. In our case, the patient was admitted to our clinic with a total of 90 mg metoclopramide over a course of 3 days. It has been reported that Patients with acute dystonic reaction may receive different diagnoses such as encephalitis, hypocalcemia, seizures, convulsion, insect bite and tetanus¹⁰. Such misdiagnoses can cause a loss of time on the one hand, and on the other hand the use of unnecessary drugs for treatment.

Conclusion

In conclusion, for every patient with involuntary movements in the neck and/or arms presenting to the the emergency department, the emergency physician should definitely consider acute dystonic reaction in a differential diagnosis. The use of anti-emetics, in particular the use of metoclopramide, should be queried.

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