



CASE REPORT

METOCLOPRAMIDE INDUCED ACUTE DYSTONIC REACTION: TWO CASE REPORTS

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ABSTRACT

Metoclopramide is a widely used antiemetic agent in paediatric population with the primary side-effect of extrapyramidal reactions. Incidence is 0.5-1% in children while incidence in young adults and elders is 25%. Patients can be misdiagnosed as meningitis, encephalitis, hypocalcemia, seizure and tetanus. We report two cases, 8-month-and 10-year-old boys referred to our hospital with a presumptive diagnosis of encephalitis and diagnosed as metoclopramide induced acute dystonic reaction, to stress this side-effect of metoclopramide.

Keywords: Metoclopramide, acute dystonic reaction, children

METOKLOPRAMİDE BAĞLI AKUT DİSTONİK REAKSİYON: İKİ OLGU SUNUMU

ÖZET

Metoklopramid, çocukluk çağında yaygın olarak kullanılan antiemetik bir ajan olup, en sık görülen yan etkisi ekstrapiramidal reaksiyonlardır. Çocuklarda insidansı % 0.5-1 iken, adolesan ve yaşlılarda % 25 civarındadır. Hastalar, meninjit, ensefalit, hipokalsemi, nöbet ve tetanoz şeklinde yanlış tanı alabilmektedir. Biz de ensefalit ön tanısı ile hastanemize sevk edilen 8 aylık ve 10 yaşında iki erkek hastada, metoklopramide bağlı akut distonik reaksiyon gelişen iki vaka saptadık.

Anahtar Kelimeler: Metoklopramid, akut distonik reaksiyon, çocuklar

INTRODUCTION

Metoclopramide is a chlorobenzamide functioning as postsynaptic dopamine receptor antagonist and widely used for children as an antiemetic. It is also used as a prokinetic agent to increase upper gastrointestinal tract motility and distal oesophagus sphincter tonus¹. Side-effects such as acute extrapyramidal reactions, tardive dyskinesia, Parkinsonism, neuroleptic malign syndrome, and confusion may develop both in normal and higher doses^{1,2}. Either the

antiemetic activity or the side-effects can be seen as a result of postsynaptic dopamine receptor antagonism in corpus striatum. The incidence of developing acute extrapyramidal reactions in metoclopramide users is approximately 0.5-1%, although in very young and elder's patients have an incidence of approximately 25%³. We report two cases of eight month-old and ten-year-old boys who presented to our hospital with a presumptive diagnosis of encephalitis and were diagnosed

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Marmara Medical Journal 2008;21(2);159-161



as acute dystonic reactions secondary to metoclopramide in our institution.

CASE REPORT

Case-1

A ten-year-old boy was referred to our hospital with a presumptive diagnosis of encephalitis. Two-days ago he was admitted to the state hospital with the complain of fever, productive cough, sore throat and vomiting (2 times with in 1 day) and administered oral antibiotic, non-steroidal anti-inflammatory analgesic, and metoclopramide tablets (0.5mg/kg, tid) for the treatment of upper respiratory infection. Dysarthria, stiff neck and opisthotonus were reported on the second day of the treatment. His previous medical records did not reveal any significant pathology.

He was 30 kg (25-30 p) in weight and 137 cm in height (50 p). His neurological examination revealed normal level of consciousness and orientation, but he had difficulty in speaking, hyperreflective deep tendon reflexes, with an opisthotonus posture. Light reflexes and fundoscopic examination revealed no pathological signs.

Laboratory findings including blood count, electrolytes, liver and renal function tests, urinalysis were within normal limits. His cerebral computer tomography (CT) was evaluated as normal.

Case-2

An eight-month-old boy with fever, diarrhea and vomiting for three days, presented to state hospital and was treated with intravenous fluid and metoclopramide 10 mg (1.25 mg/kg), but after an hour of treatment, hyperextension of the neck, deviation of the eyes, muscle contractions on the extremities were observed. The patient was referred to university hospital with presumptive diagnosis of encephalitis. The previous medical history of the patient was normal.

On physical examination, it was observed that the child was 8 kg (50 p) in weight, 72 cm (75 p) in height and 43 cm (25-50) of head circumference. Anterior fontanel was 1x1 cm

in wide and minimally descended, oral mucosa was minimally dry, and skin turgor was decreased. In neurological examination, his consciousness level was normal but he was restless. Deep tendon reflexes were found as increased, direct and indirect light reflexes were reactive, pupils were isocoric. He had opisthotonus and torticollis. The extremities were in extensor tonus. Both of his eyes were deviated to up with a normal fundoscopic examination.

Laboratory findings including blood count, electrolytes, liver and renal function tests, urinalysis were in normal limits. CT scan of the brain was also normal.

The scenario in both cases were evaluated as metoclopramide induced acute dystonic reactions and treated with diphenhydramine 1 mg/kg. After an hour of treatment with diphenhydramine all symptoms were relieved in both of the patients.

DISCUSSION

Metoclopramide is widely used antiemetic administered to treat gastroesophageal reflux disease, emesis caused by chemotherapy, respiratory tract infections and gastroenteritis in children⁴⁻⁶. The effect of metoclopramide, a prokinetic agent, starts 1-5 minutes after intravenous, and 15-30 minutes after oral administration. The primary side-effect of the drug is extrapyramidal reactions which can emerge with in a few hours up to 24-36 hours. The extrapyramidal reactions resolve within 24 hours after discontinuation^{1,7, 8}. Metoclopramide induced extrapyramidal reactions are dystonia (opisthotonus, torticollis, oculogyric crisis, dysarthria, and trismus), akathisia, Parkinsonism and tardive dyskinesia^{1,2}. Contraction of tongue and mouth muscles can affect swallowing^{1,8}. Besides life-threatening laryngospasm can also develop⁹. Walking can be affected by hand and leg muscle contraction. The patients administered metoclopramide are consciousness. Parkinsonism and tardive dyskinesia are the adverse effects developing with the chronic metoclopramide use¹⁰.



No relationship between gender and metoclopramide induced dystonic reactions was reported. Metoclopramide is metabolized in liver and excreted in urine. Dose adjustment should be needed in liver and renal failure¹¹. Side-effects can be not only dose related, but also related to individual factors independent from dose of drug⁵. The incidence of dystonic reactions increase with the dose administered more than 0.5 mg/kg, however this reaction was reported in patients that received normal doses of drug^{1,4,7}, and even in patients with fever and/or dehydration presents these side effects with lesser amount of drug⁵.

Eight-month-old infant had fever and dehydration caused by gastroenteritis. Metoclopramide was administered in higher in this case. Ten-year-old boy had dystonic reaction although he was treated with normal doses. This shows us that dystonic reactions are not dose-dependent and can develop both in normal and higher doses.

Drug induced dystonic reactions are common situations, including phenothiazines, butyrophenons, tricyclic antidepressants, lithium, alpha-methyl dopa, reserpine, trimethobenzamide, diazoxide, organophosphates, phencyclidine, ketamine, phenytoin, carbamazepine, chlorokine and antihistamines^{6,12,13}. It is difficult to diagnose metoclopramide induced acute dystonic reactions. Patients with acute dystonic reactions were reported to be misdiagnosed such as encephalitis, hypocalcemia, seizure, conversion, insect bite, and tetanus^{11,14}. These misdiagnosing situations result in loss of time and treatment with unnecessary medications. Our patients were also diagnosed as encephalitis first and referred to our hospital. Both cases were diagnosed as metoclopramide induced acute dystonic reaction with the history of metoclopramide administration, because both cases were conscious and had no prior medical problems, no progressive symptoms, and a good response to diphenhydramine.

We reported here two patients who had metoclopramide induced acute dystonic reactions. In conclusion, we aimed to point out that metoclopramide induced acute dystonic reactions can be seen even with recommended doses, so it should be prescribed for correct indication and adjusted dose. Also, we emphasize that dystonic reactions can be confused and mistreated.

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