

Oculogyric crisis following single administration of clebopride maleate

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Abstract

Oculogyric crisis is a type of acute dystonia characterized by spasmodic movement of eyeball, usually upward, and each spasm lasts from seconds to hours. This phenomenon can be caused by administration of dopaminergic receptor blocking agent. There was a previous report of oculogyric crisis induced by clebopride, a dopaminergic receptor blocking agent in a patient who took the medicine for several days. We report a 16-year-old female with oculogyric crisis induced by a single administration of the same drug. Her oculogyric crisis was completely resolved by benzodiazepine.

Keywords: Clebopride, dystonia; oculogyric crisis

INTRODUCTION

Oculogyric crisis (OGC) is a type of acute dystonia characterized by spasmodic movement of eyeball, usually upward, and each spasm lasts from seconds to hours.¹ According to a recent review article based on 147 publications reporting the 394 patients with OGCs, the majority of the reported OGC cases were drug-induced.² A previous literature has reported OGC induced by clebopride, a dopaminergic receptor blocking agent, in a patient who took the medicine for several days.³ The present study describes a patient with OGC induced by a single administration of the same drug.

CASE REPORT

A 16-year-old female presented to emergency room with involuntary tonic upward gaze (Figure 1). The symptom suddenly occurred 3 hours prior to visit. The same day she admitted to our hospital, she had visited other outpatient clinic for dyspepsia. Clebopride maleate 0.68mg, an anti-dopaminergic prokinetics, and pancreatin 40 mg, simethicone 30 mg, ursodeoxycholic acid 10mg complex tablet three times a day were prescribed. Five hours after her taking the medication only once, ocular deviation suddenly occurred. On initial presentation, she was alert and oriented. Sustained conjugate upward deviation of both eyes was observed. Examination did not reveal any

other regional involvement including neck, trunk, and limbs. She could move her eyes downward with effort, however, eyes soon deviated back to upward. Vital signs were normal and routine blood work-up revealed no definite abnormality. Her brain CT scan was normal. She had been healthy without history of previous seizure, movement disorder, or developmental problems. Based on the history and examination, a diagnosis of clebopride induced OGC was proposed. Following administration of diazepam 10mg intravenously, OGC disappeared rapidly within several minutes of commencing the treatment. She was discharged the day after admission. She did not appear at the scheduled follow-up 1 week later, only her mother visited and reported that the patient had not experienced any residual or recurrent symptom.

DISCUSSION

Oculogyric crisis is not usually life threatening but it can be very distressing to the patient and family. Clinical presentation of OGC commonly includes craniocervical distribution with blepharospasm, buccolingual, mandibular, face and neck dystonia, and OGC with contracture of the extraocular muscles leading to conjugate eyes deviation, usually with a predominance of the superior rectus muscle and consequent upward eye deviation.^{4,5} Backward and lateral flexion of the neck, wide open mouth, tongue protrusion and ocular pain are other commonly reported symptoms.

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This phenomenon was traditionally related to postencephalitic parkinsonism, and is more common today as a complication of dopaminergic receptor blocking agents. Rarely juvenile parkinsonism, parkinsonism associated with the degenerative disease such as neuronal intranuclear inclusion disease, metabolic disorders of aromatic amino acid decarboxylase deficiency and pterin deficiency were reported to be associated with the development of OGC.⁶ This acute dystonic reaction is produced by nigrostriatal D2 receptor blockade, which results in an excessive striatal cholinergic output. Thus, following imbalance between dopaminergic and cholinergic neurotransmission within the striatum may also result in other acute dystonic symptoms and drug-induced parkinsonism.

Clebopride (4-amino-N-(1-benzyl-4-piperidyl)-5-chloro-O-anisamide) is a substituted benzamide sharing antidopaminergic activity of the known benzamide derivative, metoclopramide, which has similar structure and pharmacological effect to clebopride (Figure 2). A case of clebopride induced OGC was reported in 2008, in which the patient had taken clebopride maleate 0.68mg three times a day for two weeks.³ In the present case, the patient took the same medication just once and OGC occurred 5 hours after administration. In about half of the cases, acute dystonic reaction occurs within 48 hours^{15,16}, and may occur after the first dose of dopamine receptor antagonist.¹⁷ A study reported predominant occurrence of OGC between 2PM and 8PM¹¹, a tendency of acute dystonic episodes was four times more during afternoon and evening, indicating there's diurnal variation.¹² It is thought that endogenous circadian rhythm play an important role in this variation, rather than pharmacokinetic changes or time-based blood level of medications.¹² Several studies also have reported patients with parkinsonism following long-term use of clebopride developing concomitant tardive dyskinesia (TD).⁷⁻⁹

The risk factors for developing OGC were not well studied in the patients without any neurological disorder. A literature has reported that OGC can be provoked by alcohol, emotional stress, fatigue, or suggestion.⁶ For the treatment of acute dystonia, anticholinergic drugs (for example, biperiden 5 mg or procyclidine 5 mg) or antihistamines (for example, promethazine 50 mg) are usually effective within 20 minutes. Occasionally, second or third injections are necessary.¹³ If the dystonia persists, a search for other underlying illnesses should be made. If the patient has an OGC that does not respond to anticholinergic drugs, treatment with

benzodiazepine may be beneficial.¹⁴

By reporting this case, we hope to draw attention to this unexpected acute oculogyric crisis following administration of clebopride, and clinicians who prescribe this drug should be aware of it.

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