

Acute Focal Dystonia After a Single Dose of Oral Cetirizine in a 9-Year-Old Boy

Indar Kumar Sharawat, MD* and Lesa Dawman, MD†

Abstract: Common cold is an acute illness affecting pediatric population in particular. The use of antihistamines is a common practice, with cetirizine being a frequently used drug with a good safety profile. However, adverse events due to the use of antihistamines have been rarely reported, such as drug-induced dystonia with the use of cetirizine. In our present case, dystonia due to the intake of cetirizine was observed, which the patient responded well to the use of benzodiazepines, namely, clonazepam. We report this case to highlight the occurrence of this adverse event with the use of cetirizine.

Key Words: cetirizine, common cold, dystonia

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Common cold is an illness affecting all age groups including children.¹ Over-the-counter antihistamines are being commonly used for the treatment of common cold, and cetirizine is one of them. Cetirizine is a second-generation, selective H₁ receptor antagonist, which has a rapid and long duration of action.² The safety profile of cetirizine is good, and usually, it does not affect the central nervous system.³ Dystonia is a movement disorder that is characterized by sustained muscle contraction that can lead to abnormal posturing of a limb or body part.⁴ In pediatric population, drugs are a common cause of focal or generalized dystonia.⁵ Although drug-induced dystonia in children have long been described in the literature, reports of cetirizine-induced dystonia are very few, and to the best of our knowledge, none of them are from our country. Here, we report a child with focal cervical dystonia after taking a single oral dose of cetirizine.

CASE

A 9-year-old boy came to the emergency department with complaints of acute-onset involuntary turning of the head toward the right side along with deviation of the jaw to the same side since the last 2 hours. He had difficulty in turning his head to the midline or to the left side. There was history of mild cough and nasal congestion since 4 days. His mother gave him oral cetirizine in a 5-mg tablet, 10 hours back. There was no history of throat pain, neck swelling, ear discharge, or drug intake other than the cetirizine tablet. The psychomotor development was normal. There was no history of similar illness in the past or movement disorder in the family.

On examination, his vitals were within reference range. The throat of the child was mildly congested without any pus or bleeding points. The rest of the examination was within reference limits.

From the *Department of Paediatrics, VMMC & Safdarjung Hospital; and †Department of Paediatrics, All India Institute of Medical Sciences, New Delhi, India.

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Reprints: Indar Kumar Sharawat, MD, Department of Paediatrics, VMMC & Safdarjung Hospital, Gautam Nagar, New Delhi 110049, India (e-mail: sherawatdrindar@gmail.com).

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On the basis of clinical history and examination, a diagnosis of acute focal dystonia induced by a single dose of oral cetirizine was made, and a single dose of oral clonazepam was given. Within 2 hours of the clonazepam dose, all of the symptoms subsided. The child was kept for a 24-hour observation, and no symptoms were observed.

DISCUSSION

Dystonic movements in the pediatric age group are due to hereditary or acquired causes. Drugs are the major cause of acquired, focal, or generalized dystonic reaction. Drug-induced dystonia is a common adverse reaction to antipsychotics and antiemetics.^{6,7} These reactions are far less common with antihistamines. Drug-induced dystonic movements result from the alteration of dopaminergic-cholinergic balance in the basal ganglia. Drugs that cause acute dystonic reaction as an adverse effect block D₂ receptors in the striatum of the basal ganglia. The dopamine blockade causes increased sensitivity of the postsynaptic receptor and excessive striatal cholinergic output.⁸

Cetirizine is a second-generation antihistamine with selective action on H₁ receptor and has a rapid onset and long duration of action. It is a large-sized, lipophilic compound, which has decreased central nervous system penetration and related adverse effects.⁹ Theoretically, as being a piperazine derivative, cetirizine has weak dopamine receptor (D₂ receptor) blockade property in the striatum of the basal ganglia and causes interference with postsynaptic dopamine release, which leads to an alteration in dopaminergic-cholinergic balance. D₂ receptor blockade may inhibit striatal γ -amino butyric acid (GABA) output and causes excitation in the primary motor cortex. Dopamine depletion along with cholinergic overactivity and decreased GABA activity in the central nervous system may cause acute dystonia in susceptible individuals, and we believe that this happened in our case.

The treatment of acute drug-induced dystonic reaction includes the withdrawal of offending drug and the use of anticholinergic agents, dopamine agonists, and benzodiazepines, which may often reduce the severity of the acute dystonic reaction. In the present case, we manage the cetirizine-induced focal dystonia with oral clonazepam. Benzodiazepines potentiate GABAergic neurotransmission and may be effective in the treatment of dystonia, particularly focal dystonia. Studies have showed the efficacy of clonazepam in treating generalized and focal dystonias, with up to 23% of patients demonstrating a good clinical response.¹⁰ Joseph Jankovic¹¹ suggested that clonazepam is useful in the treatment of focal dystonia and in patients whose response to anticholinergic drugs is unsatisfactory. Clonazepam has abuse potential and possible agitation on withdrawal, but these reactions are not seen with a single dose or with short-duration use.

CONCLUSIONS

In conclusion, it is important for treating pediatricians to be aware that cetirizine may cause drug-induced dystonic reactions and it should be in the differential diagnosis of acute drug-induced focal or generalized dystonia.

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