

CASE REPORT

Iran J Allergy Asthma Immunol
December 2013; 12(4):397-399.

Hallucination Development with Montelukast in a Child with Asthma: Case Presentation

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Received: 10 October 2012; Received in revised form: 9 December 2012; Accepted: 17 January 2013

ABSTRACT

Leukotriene receptor antagonists (montelukast) have been used for many years in the treatment of asthma both acute and chronic stages. They are accepted commonly as safe but mostly possible side effects are ignored. However, montelukast also could lead to important adverse reactions like hallucinations. In literature only 2 reports have been found about hallucinations with it. One is a study which reports 3 patients from 48 children and the other is a 29 year-old case report. In our case, psychiatric adverse reactions of montelukast, especially hallucinations are reported similarly. We are presenting a child who had visual hallucinations after starting to use montelukast and after stopping the medicine these complaints disappeared in 48 hours. Although it is a safe drug, it should not be forgotten that it has psychiatric side effects which may be missed easily especially in children.

Keywords: Adverse reactions; Asthma; Hallucination; Children; Montelukast

INTRODUCTION

Over 20 years time; leukotriene antagonists have been the first effective drugs added to the asthma treatment.¹ Leukotriene receptor antagonists, such as montelukast, provide a safe and effective treatment option with ease of administration, particularly in preschool children and as add on therapy in patients difficult to control asthma.^{1,2} Leukotriens are the

mediators synthesized in inflammatory cells like eosinophils, basophils and mast cells in bronchial mucosa. They have important roles in asthma pathogenesis.³ Montelukast reaches its peak plasma concentration in 3 hours time. Ninety-nine percent of it binds with plasma proteins. Foods do not affect its oral absorption. Both the drug and its metabolites plunge through the bile.⁴ In acute and chronic treatment; they make a %5-15 increase in FEV1 (forced expiratory volume at the end of the first second) and have a role in preventing the eosinophilic inflammation.⁵ Side effects of montelukast usage seem to be rare, especially psychiatric adverse reactions. So we believe that our case is interesting because it

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represents hallucinations which are montelukast induced.

CASE REPORT

Thirteen-year-old patient came to our clinic with the complaints of cough and shortness of breath. He had respiratory distress when he was one month old and had been suspected to have asthma in outpatient clinic. When was seven years old, he was reported to have a hyperactivity diagnosis in another hospital by child psychiatrist and time to time he had used thioridazine drops because he had been resistant to methylphenidate treatment.⁶ The patient had not used any medicine in the previous five years. He came to our hospital's emergency department with shortness of breath, and was given salbutamol (ventolin) inhaler and was relaxed; he was sent to his home with polyclinic control appointment. When he came to our clinic he had asthma diagnosis and his follow-up treatment was inhaler formoterol + budesonide, prednisolone and montelukast. After 24-36 hours of taking the montelukast, patient had fear and started to see people as they were passing next to him in the dark. He said that the door of his room opened and closed by itself and some white faces looked at him from the door. He believed that the objects he saw were real and out of his mind. Beside the patient's visual hallucinations; he did not have any auditory and sensory hallucinations. For two days, he had severe anxiety and insomnia and the patient was admitted to our clinic. We decided to stop the montelukast treatment. After stopping the medicine; his hallucinations was resolved rapidly.

When the patient was controlled, he was using only inhaler formeterol + budesonid. In the examination, breath sounds were normal. Hallucinations developed during the montelukast usage and was thought to be the side effects of montelukast's active substance. It was decided to discontinue the treatment and as the patient was a pediatric case, so we did not want to reintroduce the drug for verification of the diagnosis because of its serious side effects.

DISCUSSION

In a study between the years of 1998-2007 recorded in the databases in Sweden, patients with psychiatric symptoms after montelukast were examined (n=48). Most common complaint was nightmare (n=15) and

hallucination was found in three patients.⁷ Patients with psychiatric disorders may have predisposition for the side effects of montelukast⁸ but in this study, patient had no previous psychiatric problems.

In another study a 29 year-old woman, had an early diagnosis of schizophrenia. Patient had auditory hallucinations. Because of her asthma, she was treated with montelukast 10 mg/day and after 48 hours, her visual and auditory hallucinations started. Patient's visual and auditory hallucinations stopped by discontinuing montelukast and dramatically her hallucinations reduced in two days time like our case.⁹

With allergen exposure, cytokines such as TNF- α , IL-4, IL-5, and IL-6 and chemokines (IL-8, monocyte chemoattractant protein-1, macrophage inflammatory protein-1 α) are released.¹⁰ When an allergic patient having vulnerability for suicide, mood disorders encounters with allergen exposure, these cytokines are elevated. And these cytokines activate the hypothalamo-pituitary-adrenal axis and neuro metabolites are released. These metabolites cause depression, suicide and other behavioral disorders.

Montelukast does not reduce production of cytokines as corticosteroids do, so montelukast may not directly trigger neurologic side effects but fails to reduce suicide risk mediators elevated by the allergic inflammation.¹¹

Although montelukast is used widely, the side effects of drug have been reported rarely. Today as it is used commonly in allergic illness treatment in children; although it is rare facing with such kind of problem, psychiatric adverse reactions of montelukast during treatment should be remembered. As it is not easy for children to explain their complaints, it is suggested that children with change in temperament and restlessness should be investigated for drug side effects. Even the adverse reactions of montelukast about neurologic behavior disorders are known, we aimed to draw attention to the pediatric cases who may have such adverse reactions while using montelukast. In this way such cases can not be missed.

Although montelukast is considered as a safe drug, psychiatric adverse reactions on pediatric patients should not be dismissed.

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