The Use of The Antihistamine Fexafenadine in the Treatment of Children with Seasonal Allergic Rhinitis

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ABSTRACT

The issues of application and efficacy of III generation antihistamine drug fexofenadine (Telfast) at treatment of seasonal allergic rhinitis in children living in Priaralie region (the Republic of Karakalpakstan) are considered in the article. The main drug of the III generation of antihistamine series fexofenadine is characterized. Fexofenadine is high effective drug which pharmacological effect is realized by blockade of H_1-histamine receptors of different tissues and stabilization of membrane of mast cells.

Keywords: IgE-antibodies, mast cells, eosinophils, interleukins, H1-receptors, half-life

Allergic diseases are increasing all over the world. The most common allergic condition, especially in children, is allergic rhinitis. The leading treatment for allergic rhinitis is antihistamines. This is because histamine is one of the most important mediators of allergy. It is released during an allergic reaction when the allergen interacts with specific IgE-antibodies fixed on the membrane of mast cells of the nasal mucosa. It is associated with the symptoms of allergic rhinitis, such as nasal itching, swelling and nasal breathing difficulties. It also causes increased epithelial permeability and mucus hypersecretion, and its indirect reflex action leads to sneezing. In addition to histamine, the arachidonic acid metabolites prostaglandins, leukotrienes, and platelet-activating factors play an important role in the pathogenesis of allergic rhinitis. [2,3]

The efficacy and safety of various antihistamines in the complex treatment of allergic rhinitis has been shown by many researchers. However, the use of first-generation drugs is limited by their sedative, anticholinergic and antiadrenergic effects. They are being replaced by a new generation of antihistamines, among which fexofenadine (Telfast) occupies a worthy place.[1,7]

Fexofenadine (substituted benzene acetic acid) is an active metabolite of terphenodine, which is a racemic mixture of two pharmacological active isomers; it has no sedative action. Pharmacological action is anti-allergic, antihistamine. It selectively blocks histamine H1-receptors, stabilizes the membranes of mast cells, prevents the release of histamine. It relieves symptoms of allergy: sneezing, rhinorrhoea, itching, red eyes and lacrimation. [1,7]

The third generation antihistamine drug fexofenadine is a highly specific H1-histamine receptor antagonist with no cholinolytic or antiadrenergic activity, rapid onset of clinical

effect and long duration of action. Among the pharmacological properties of Telfast is its rapid absorption when taken orally and weak blood-brain barrier passage. It has complex anti-allergic and anti-inflammatory properties. [1,7,8]

The maximum concentration of the drug in blood is reached after 1-3 hours, its duration of action is 24 hours, which allows it to be used once a day. It does not cross the blood-brain barrier and has no effect on the CNS, thereby causing no sedative effect. No development of tolerance has been observed during 28 days of continuous use. [1,7]

The advantages of fexofenadine are: absence of biotransformation, large latitude of therapeutic action, sufficiently high plasma concentrations when administered at a therapeutic dose, low incidence of adverse side effects, no cumulation in the body. [1,7]

Fexofenadine is excreted unchanged from the body via the gastrointestinal tract (with bile) and the kidneys (with urine). The elimination half-life is 11-15 hours. There is no cardiotoxic interval and the QT interval is not altered.[1,7,8]

Fexofenadine acts on allergic inflammation of the mucous membranes of the respiratory and digestive systems. On the one hand, it inhibits the release of inflammatory mediators (interleukin 8, granulocyte monocyte colony-stimulating factor) and intercellular aggregation molecules from nasal mucosal epithelia caused by activated eosinophils, and on the other hand it inhibits chelotaxis and eosinophil adhesion to endothelial cells. Thus, fexofenadine not only blocks H1 receptors but also inhibits the involvement of inflammatory cells in the allergic reaction.[1,7,8]

Telfast is available in the form of tablets coated with an easily soluble coating. Each tablet contains 112 or 168 mg of the active substance or 120 and 180 mg of fexofenadine hydrochloride, respectively. The 120 mg dosage is approved for use from 12 years of age and the 30 mg dosage from 6 years of age. The course of treatment with Telfast averages 14-21 days.[7]

Study objective. To determine the therapeutic efficacy of fexofenadine III generation antihistamine drug and high specificity to H1-histamine receptor in the treatment of allergic rhinitis in children, living in the Aral Sea region (Karakalpakstan Republic).

Materials and methods of research.

The efficacy of fexofenadine was studied in Nukus city in the family policlinic #3, in children from 7 to 14 years old suffering from seasonal allergic rhinitis. The therapeutic efficacy of Telfast was studied in 103 schoolchildren with seasonal allergic rhinitis. The drug was administered in dose of 30 mg per day, 2 times a day for 21 days.

Results of the study and their discussion.

The severity of symptoms of seasonal allergic rhinitis was estimated in points (from 0 to 3) before treatment in dynamics on the background of therapy with Telfast in 5 and 21 days. At the same time:

n./n.	Symptom severity	Score (in points)
1	Strong, pronounced symptoms	3 points
2	mildly pronounced	2 points
3	mild	1 point
4	No symptoms	0 points

Almost all children with allergic rhinitis before taking the drug had marked symptoms, the intensity of which ranged from 1.7+0.003 to 2.5+0.003 points.

The effect of taking Telfast in children with seasonal allergic rhinitis was already observed on the 5th day of treatment, which was expressed in reduced intensity of such clinical symptoms of the disease as rhinorrhea, sneezing, nasal itching, nasal congestion, "eye" symptoms. By day 21, rhinorrhoea, itching and sneezing had completely disappeared. "Eye" symptoms (conjunctival hyperemia, itching and lacrimation) during treatment with Telfast significantly decreased.

Conclusions.

The treatment of allergic rhinitis in children is effective with the use of Fexofenadine III generation antihistamine. The conducted studies showed high efficiency of Telfast in therapy of seasonal allergic rhinitis. Convenience of application and decrease of

therapeutic activity allow using it for treatment and prevention of exacerbations of this disease.

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