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КОМПЛЕКСНОЕ ЛЕЧЕНИЕ БРОНХИАЛЬНОЙ АСТМЫ У ДЕТЕЙ С ИСПОЛЬЗОВАНИЕМ РЕЗИСТОЛА

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АННОТАЦИЯ

Нами обследовано, 78 детей с различной степенью тяжести бронхиальной астмы в возрасте от 6-14 лет. Первая группа больных, получавшие стандартную базисную терапию и таблетку плацебо (n=35); вторая группа больных (n=43), получавшие наряду с аналогичным спектром базисной терапии был назначен препарат «Резистол» по схеме. Комбинированное использование противовоспалительных препаратов и Резистола дает выраженный эффект в плане улучшения клинического состояния детей, нормализации иммунологических, лимфоцитарных показателей у больных бронхиальной астмой.

Ключевые слова: бронхиальная астма у детей, иммунология, Резистол.

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COMPREHENSIVE TREATMENT OF BRONCHIAL ASTHMA IN CHILDREN USING RESISTOL

ANNOTATION

We examined 78 children with varying degrees of severity of bronchial asthma at the age of 6-14 years. The first group of patients who received standard basic therapy and a placebo pill (n = 35); the second group of patients (n = 43), who received along with a similar spectrum of basic therapy, was prescribed the drug "Resistol" according to the scheme. The combined use of anti-inflammatory drugs and Resistol gives a pronounced effect in terms of improving the clinical condition of children, normalizing immunological and lymphocytic parameters in patients with bronchial asthma.

Keywords: bronchial asthma in children, immunology, Resistol.

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BRONXIAL ASTMANI KOMPLEKS DAVOLASHDA REZISTOL MODDASINI QO'LLASH USULI

ANNOTATSIYA

Biz 6-14 yoshda bronxial astmaning og'irligi har xil bo'lgan 78 bolani tekshirdik. Standart terapiya asosida platsebo tabletkasini olgan bemorlarning birinchi guruh deb atadik ($n = 35$); shunga o'xshash asosiy terapiya spektri bilan birga qabul qilingan bemorlarning ikkinchi guruhiga ($n = 43$) sxema bo'yicha "Resistol" preparati buyurildi. Yallig'lanishga qarshi vositalar va Resistolni birgalikda qo'llash bolalarning klinik holatini yaxshilash, bronxial astma bilan og'rikan bemorlarda immunologik, limfotsitik ko'rsatkichlarni normallashtirish nuqtai nazaridan sezilarli ta'sir ko'rsatadi.

Kalit so'zlar: bolalarda bronxial astma, immunologiya, rezistol.

The problem of asthma continues to be relevant throughout the world, despite numerous studies and a sufficient amount of treatment and preventive measures. In childhood, bronchial asthma is one of the most common chronic diseases [1, 2, 4, 9].

According to the results of a number of researchers, the prevalence of asthma in the Republic of Uzbekistan varies from 3.1% to 8.2%, which is due not only to the influence of external regional factors, but also to the use of various diagnostic methods [1]. However, as shown by virtually all studies conducted under the ISAAC (International Study of Asthma and Allergy in Children) program in all regions of the planet, the true incidence of asthma was significantly higher than official statistics [8, 9, 10]. The discrepancies between official statistics on recruitment and the results of epidemiological studies are also associated with the underdiagnosis of bronchial asthma in different age groups.

Analysis of epidemiological studies in the city of Andijan showed that in the structure of the prevalence of allergic diseases, bronchial asthma is in 2nd place ($5.6 \pm 0.03\%$), yielding to allergic rhinitis ($12.7 \pm 0.19\%$) [1].

Despite the use of increasingly effective means for anti-inflammatory therapy of respiratory allergies, up to a third of patients continue to complain about the persistence of symptoms of the disease even when it is carried out in an adequate age dosage.

Unfortunately, treatment with inhaled corticosteroids, being the most effective one currently used, has a number of side effects, including depression of the hypothalamus-pituitary-adrenal cortex axis, the formation of local candidiasis, and others [5, 10]. In this regard, one of the areas of pharmacotherapeutic research is the search for approaches aimed at reducing the dose of steroids used to achieve a sufficient clinical effect.

One of such approaches may be the joint appointment of traditional anti-inflammatory drugs - local corticosteroids and leukotriene receptor antagonist drugs, agents for systemic use in obstructive respiratory diseases, which are also known from the literature [6, 7].

As an example, we chose the drug Galichpharm OJSC (Ukraine, Lviv) "Resistol" oral drops, the drug "Resistol" is permitted in Uzbekistan (Order of the Minister of Health of the Republic of Uzbekistan No. 3087 dated November 12, 2018). "Resistol" contains an extract of the seed-like *Pelargonium sidoides*, which grows in South Africa. It is known that with oral use of the extract, there was a decrease in the signs of the disease (non-specific symptoms of the disease that occur due to infection) and antioxidant properties were manifested.

In the course of in vitro studies, the following drug actions were confirmed:

- stimulation of non-specific protective mechanisms;
- stimulation of the oscillation frequency of the villi of the ciliary epithelium;
- modulation of the synthesis of interferon and anti-inflammatory cytokines;
- stimulation of the activity of NK cells;
- stimulation of phagocytosis, expression of adhesive molecules, chemotaxis

This message is devoted to determining the feasibility of using the drug "Resistol" against the background of standard therapy of bronchial asthma in children.

Materials and methods: Under our supervision in the clinic of the department of hospital, polyclinic and emergency treatment of the Andijan State Medical Institute based on ODMMTS Andijan there were 78 children with varying degrees of severity of bronchial asthma between the ages of 6-14 years.

For a prospective study, we formed two groups of patients: the first group of patients who received standard basic therapy ($n = 35$); the second group of patients ($n = 43$) who received, along with a similar range of basic therapy, received the drug Resistol on a five-day schedule (1-day 1.0 ml, 2-day 1.5 ml, 3-day 2.0 ml, 4-day 2.5 ml, 5-day 3.0 ml. Intramuscularly) with a break of 1 day, 3 times.

The duration of "Resistol" therapy was 15 days. The duration of the observation of the patients of the studied groups lasted for a year. In addition to age, the criteria for inclusion in the study group were verification of the diagnosis of bronchial asthma, mild, moderate, severe disease. The exclusion criteria from the study group were severe for the disease using systemic glucocorticoids for more than 6 months.

All observed patients received hydrocortisone as a basic therapy in the form of a metered-dose inhaler. Depending on the severity of asthma, the daily dose of the drug averaged 25-50 mg. All observed patients were given a short-acting β_2 -adrenomimetic - (salbutamol). In all cases, undesirable drug reactions were recorded. Against the background of the use of the drug "Resistol" we have not registered the side effects of the drug.

The survey included monitoring peak expiratory flow rate over the entire observation period, assessing the quality of life using a specially designed questionnaire, studying mucociliary clearance (MSC), β_2 -adrenoreceptor activity, and immune status parameters. The diagnosis of bronchial asthma was set according to international criteria on the basis of detecting reversible bronchial obstruction, confirmed in functional tests. The presence of specific sensitization to atopic allergens was detected by skin allergic testing methods.

To compare the peak expiratory flow rates in children of the experimental groups with the control, we used the standards developed earlier for the metropolitan area [9]. In terms of obtaining standards of mucociliary clearance, 30 children of the same sex and age were examined. Statistical processing of the obtained material was performed using the t-criterion of reliability of differences between the Student and Oyvin IA groups.

Results and discussion. According to the literature it is known that the effects of bronchodilation of the β -agonist and Resistol are additive. Treatment with Resistol reduces both the early and late phases of bronchoconstriction caused by antigens. It is known that in adults and children aged 2 to 14 years, treatment with Resistol significantly reduces the number of eosinophils in the respiratory tract (as measured in sputum) and in peripheral blood, while improving the clinical control of asthma.

With the appointment of this drug, the metabolism of corticoid hormones in the body is suppressed, and the duration of their action increases.

Own studies have shown that in group 1 it was possible to reduce the dose of inhaled glucocorticosteroids by $13.5 \pm 3.1\%$.

The positive effect of the use of the drug was to reduce the number of day and night attacks, the increase in the absolute values of PSV and reduce the pronounced variability. The majority of the most normalized indicators MCC.

Table 1.

**Dynamics of indicators of peak expiratory flow rate and daily dose of
IGCC in children during treatment**

No	of patients treated Qty children	Qty children (n)	Need to use β 2-adrenomimetics per/day (n)	
			Before treatment лечения	After treatment
1 gr.	Children treated with basic therapy (hydrocortisones)	35	2,45 $\pm$ 0,1	2,07 $\pm$ 0,1
2 gr.	Children who received basic therapy and "Resistol"	43	2,52 $\pm$ 0,1	1,38 $\pm$ 0,1 P < 0,001

Note: P - reliability of differences in performance between groups.

From the presented own data it is clear that in the group of children who received, along with inhalation glucocorticosteroids, also Resistol, the steroid dose was reduced from 299.5 to 229.9 mcg/day, that is, by 24.7%. Ego difference was statistically significant (P < 0.001). One of the criteria for the effectiveness of the treatment of bronchial asthma is to reduce the need for the use of inhaled β 2-adrenomimetics. Our studies have shown that in children who received the combined treatment with hydrocortisone and Resistol, the need for the use of salbutamol was reduced from 2.07 to 1.38 per day. This difference was highly statistically significant (P < 0.001).

The average peak expiratory flow rate in children who received the drug Resistol, compared with children who received only traditional therapy of asthma, was 29.7% higher even with the statistical significance of these differences (P < 0.05).

If in children of the control group (group 3), the MCC index was 8.8 ± 0.2 min, then in patients with bronchial asthma before

treatment it was 15.6 ± 0.4 min (P < 0.001). During treatment with hydrocortisone, the index decreased to 13.7 ± 0.3 min (P < 0.001), thus differing by 1.13 times compared with the initial parameter. However, this figure was 1.15 times higher than that of children with bronchial asthma, who received, along with hydrocortisone, propionate also Resistol. In our work, we also studied biological markers of the severity of the inflammatory process in allergic diseases [2]. The levels of low and high density eosinophils have been studied (According to modern concepts, eosinophils are non-dividing granulocytes, which, like other polymorphonuclear leukocytes, are continuously formed in the bone marrow from a single stem cell. Eosinophilopoiesis and the differentiation of eosinophils from precursor cells by regulating secretion of colony-stimulating factor granulocytes and macrophages (GM-CSF), interleukin-3 (IL-3) and interleukin-5 (IL-5). In addition, IL-5 and GM-CSF activate eosinophils, inducing the

Table 2.

**Dynamics of daily consumption requirements
(β 2-adrenomimetics per day for children during treatment)**

No	Of the group of treated patients	Qty children	Indicators of PSV (l / min)		Average daily dose of IGS (mkg)	
			Before treatment	After treatment	Before treatment	After treatment
1 gr.	Children who received basic therapy (hydrocortisone)	35	190,0 $\pm$ 21,6	218,8 $\pm$ 21,6	347,3 $\pm$ 23,6	299,5 $\pm$ 23,4
2 gr.	Children receiving basic therapy and "Resistol"	43	199,3 $\pm$ 21,2	259,5 $\pm$ 24,4 p < 0,05	347,8 $\pm$ 23,3 p < 0,05	229,9 $\pm$ 15,7 p < 0,001

transition of cells from normal density to low) [3]. As a result of combined anti-inflammatory therapy, a significant decrease in the activity of allergic inflammation was noted. Within 3,4,5,6 months from the beginning of treatment in both groups, a significant decrease in EPS was revealed. So, after 3 months from the start of therapy in patients of the 1st group, the level of ENP was 79.4 ± 13.0 , while in the 2nd group - 99.6 ± 13.8 per 1000 cells. 6 months after the combination therapy, the number of ENPs in the 1st group was 54.7 ± 12.5 , in the 2nd group - 883.3 ± 11.2 . It should be noted that with a significant difference in ESP and EEC levels after treatment, P < 0.001. As for the absolute amount of EEC, it should be noted that before treatment, their level in both groups was increased: in the 1st group - 158.2 ± 17.1 , in the 2nd - 163.3 ± 12.7 . 3 months after treatment, the number of EEC in patients of group 1 decreased to 129.4 ± 11.9 , in group 2 - 145.8 ± 13.5 .

Conclusion. Combined therapy of bronchial asthma with the use of the drug "Resistol" to a greater extent contributed to the reduction of allergic inflammation, which was manifested by a decrease in the absolute number of eosinophils, especially low density.

Thus, treatment with Resistol not only contributed to more effective rehabilitation of children with bronchial asthma, including an increase in the parameters of external respiratory function, but also favorably influenced the upper respiratory tract, contributing, apparently, to the reduction of allergic inflammation. The combined use of anti-inflammatory drugs and Resistol gives a pronounced effect in terms of improving the clinical condition of children, the normalization of immunological parameters in patients with bronchial asthma.

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