

Effectiveness of Treatment of Allergic Rhinitis in Children

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Abstract: **Objective:** To assess the relationship between the effectiveness of treatment of year-round allergic rhinitis in children, taking into account the state of the initial vegetative tone of the body.

Material and methods: The development includes 61 children with allergic rhinitis at the age of 7-15 years, of which 25 (41%) girls and 36 (59%) boys (main group). The control group consisted of 25 healthy children.

Results: In children with perennial allergic rhinitis, a relationship was found between the initial vegetative tone of the body and the effectiveness of treatment. With a predominance of the parasympathetic orientation of the initial vegetative tone, a longer treatment was required and at a certain stage an increase in the dose of the drugs used.

Conclusions: In children with perennial allergic rhinitis, there is a relationship between the results of pharmacotherapy and the initial autonomic tone of the body.

Keywords: children, allergic rhinitis, treatment.

Introduction

Allergic rhinitis (AR) occupies a large share among diseases of the ENT organs in children. This is not only a medical problem; it has social aspects. Worldwide, there are more than 600 million people with AR, 200 million suffer from bronchial asthma. The incidence of AR is characterized by a progressive increase: in the last decade alone, it has doubled [4]. At the same time, there is a significant underdiagnosis of allergic rhinitis, and the prevalence of AR is several times higher than the official medical statistics on referral rates. To date, a substantial body of knowledge has been accumulated on this problem [1,2,5]. However, despite this, many questions remain unclear regarding the study of the occurrence and structure of etiological predisposing factors in various regions, in particular in our Republic [3]. At present, the relationship between the results of treatment of the year-round form of allergy (PAR) in children, taking into account the state of the initial autonomic tone of the body, has not been sufficiently studied.

Purpose of the study: To evaluate the effectiveness of treatment of year-round allergic rhinitis in children with different states of the initial autonomic tone of the body.

Material and methods: The development included 61 children with AR aged 7-15 years (average age 14.7 ± 0.7 years), of which 25 (41%) were girls and 36 (59%) boys (main group). The examination and treatment of patients was carried out at the Department of ENT Diseases of the Bukhara State Medical Institute in 2022-2024. The control group consisted of 25 healthy children.

The diagnosis of CAP was established on the basis of complaints, study of anamnesis, results of clinical and allergological studies. The assessment of the state of the ANS was carried out during

the period of remission of the disease on the basis of a study of the initial autonomic tone (IVT) using special tables and the integral indicator of the cardiointervalogram (CIG) - the tension index [2,3]. The main symptoms characterizing the state of the sympathetic and parasympathetic divisions of the ANS. It is composed of the most reliable tests that are easy to perform and do not require special conditions or tools. After summing up the results obtained, the predominance of one or another autonomic tone is determined by the number of established signs characteristic of one or another type of IVT.

During the treatment process, we adhered to stepwise pharmacotherapy for AR, which was carried out in accordance with the recommendations of the WHO and the international consensus commission on the diagnosis and treatment of allergic rhinitis [3]. The results of treatment were assessed based on the analysis of the final indicators of comparable groups and in general. Groups that included patients with CAP of equal severity who received drugs similar in their mechanism of action were considered comparable, that is, the results of groups 1 and 2, as well as groups 3 and 4 were compared with each other.

The effectiveness of pharmacotherapy in patients with CAR was assessed according to the following criteria:

- disappearance or reduction of manifestations of basic, additional and general nonspecific symptoms of the disease;
- change in rhinoscopic and radiological picture;
- restoration of the studied functions of the nose;
- change in the number of eosinophils and mast cells in nasal mucus.

The timing of use of the drugs used, recommended by their manufacturers, as well as the severity and form of the disease were taken into account. If one course of treatment was ineffective, a repeat course was prescribed or switched to other treatment regimens. The condition of the patients at the end of treatment was assessed as:

- complete clinical recovery – absence of clinical manifestations of CAP. Restoration of all studied indicators of nasal function, the number of eosinophils and mast cells to normal or an unreliable difference of no more than two of them from control values;
- clinical improvement – disappearance of 1/3 of the clinical manifestations of AR and a decrease in others by more than 50% of their initial manifestation, or a decrease in all of them by 75%. Restoration of all studied indicators of nasal function, the number of eosinophils and mast cells to normal or an unreliable difference of no more than two of them from control values;
- no change – all assessed criteria did not change compared to the initial state or the dynamics of changes assessed qualitatively was very insignificant, the digital values were statistically unreliable;
- deterioration – negative dynamics of clinical manifestations, significant deterioration in the digital values of the studied indicators.

Statistical analysis of the obtained results was carried out using the method of variation statistics with the calculation of the standard deviation and the arithmetic mean error using the method of moments ($M \pm m$), Student's criterion for the significance of differences (t) and the degree of confidence (P) using the Microsoft Office Excel 2010 software package.

Results and discussion: A mild course of CAR was observed in 26 (42.6%) of the examined people, a moderate course - in 35 (57.4%). In 32 (52.5%) children with CAP, parasympathicotonia (vagotonia) predominated, 16 (26.2%) had normotension (balanced state of the ANS at rest), 13 (21.3%) had sympatheticotonia. Taking into account IVT, the distribution of patients was as follows: 10 (40%) had vagotonia, 9 (36%) had normotonia, 6 (24%) had sympatheticotonia.

Patients of group 1 received ceterizine 10 mg or desloratadine 5 mg orally once a day. For mild cases of the disease, a topical antihistamine, azelastine hydrochloride or cromoglycic acid, was used; for moderate cases, a topical glucocorticoid in the form of a dosed spray for intranasal use, mometasone furoate.

The latter was used 2 injections (doses) into each nostril 1 time per day (total daily dose 200 mcg).

Before the clinical effect of the drugs used was observed, patients used nasal decongestants if necessary.

As can be seen, in patients with CAP with vagotonia, the treatment period until clinical recovery was achieved was longer than in children with other types of IVT. The differences in results between the two groups were not statistically significant.

To achieve a clinical effect, 21 children with vagotonia were additionally given the following treatment regimen: desloratadine 5 mg 2 times a day and mometasone furoate in a total daily dose of 400 mcg, that is, 2 injections into each nostril 2 times a day until a stable clinical effect was achieved. Over the next week, mometasone furoate was prescribed at a total daily dosage of 400 mcg 2 times a day, after which 2 doses were continued in each nostril once a day (daily dose 200 mcg). Desloratadine was administered at a dose of 5 mg once daily from the moment clinical improvement was achieved. All children with CAP achieved clinical recovery after an additional course of treatment.

As can be seen from the results of the study, the results of pharmacotherapy depend on the IVT of the body. 65.6% of children with CAP with vagotonia required an additional “enhanced” treatment regimen to achieve clinical recovery.

Conclusions:

1. In children with CAP, there is a relationship between the body's IVT and the effectiveness of pharmacotherapy.
2. With the predominance of the parasympathetic orientation of IVT, the treatment of CAR required longer treatment and an increase in the dose of drugs used.

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