



THE INFLUENCE OF ALLERGEN-SPECIFIC IMMUNOTHERAPY AND DYNAMIC SENSITIZATION OF PATIENTS WITH ATOPIC BRONCHIAL ASTHMA

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ABSTRACT

Epidemiological data indicate an increase in the prevalence of asthma worldwide. According to a report by the Global Asthma Network, approximately 334 million people currently suffer from this disease, 14% of whom are children {1,2}..

According to the Centers for Disease Control and Prevention (CDC), 24.6 million (7.8%) people in the United States suffered from asthma in 2005. Of these, 6.2 million (8.4%) were children, with 4.7% aged 0 to 4 years, 9.8% aged 5 to 14 years, and 9.8% aged 15 to 17 years. According to this report, the asthma-related mortality rate in children was 3.0 per 1 million (219 patients) {1.3}.

However, as the first and still few standardized epidemiological studies show, asthma prevalence rates in Uzbekistan are similar to those in most European countries and significantly exceed official medical statistics. The incidence of atopic asthma in children ranges from 10% to 18% of the overall asthma burden and depends on the study conditions. Although the association between asthma and atopy is well-established and well-known, the precise links between these two conditions remain unclear and not fully defined. (4.5.6.7.)

The primary goal of treatment for patients with asthma is to achieve and maintain optimal asthma control. However, despite advances in asthma therapy over the past decades, the majority of patients with asthma do not have adequate control. Meanwhile, results from international clinical trials have shown that achieving complete or good asthma control is possible in most patients, provided the severity and current level of asthma control are properly assessed and adequate long-term anti-asthmatic therapy is prescribed. Understanding the causes of uncontrolled atopic asthma and defining criteria for adequate pharmacotherapy, its regimens, and methods are pressing but still unresolved issues in modern allergology. (4.5.6.)

Inflammatory parameters in asthma, in addition to the central airways, are detected in the upper and distal respiratory tract, and in the nasal sinuses, suggesting that asthma is a systemic disease. Therefore, it requires a systemic approach to treatment. Of all the currently available treatments for atopic asthma, sublingual allergen-specific immunotherapy (SASIT) is the most illustrative example of a systemic approach.

Methods

For this purpose, 42 patients aged 5 to 17 years (16 boys and 26 girls) were examined. They had no contraindications for sublingual allergen-specific immunotherapy (SASIT) along with background therapy (budisanide 200 mg once daily, twice daily).

The effectiveness of sublingual ASIT was assessed based on the availability of clinical studies on its intensity, duration, and medication requirements. Skin and endonasal testing were performed using standard methods {6,7} with water-salt extracts of allergens. Computerized spirometry was used to measure respiratory function before treatment and monthly during treatment for one year.

Results of respiratory function testing with calculation of flow-volume curve parameters during SIT (6-12 months).

All patients strictly met the inclusion criteria for the study. Patients received a course of ASIT strictly according to the schedule. Results and discussion.

Studying certain sensitization indicators will help identify objective immunotherapy criteria for assessing treatment outcomes and determining the mechanism of action of allergens. After a course of therapy with ASIT containing allergens, positive tests (++++, +++) became negative in 18.8% of cases after one year.

The antigenic properties of weed and grass pollen and household allergens had varying effects on the dynamics of scarification tests. After ASIT containing allergens, positive tests faded more frequently in patients sensitized to house dust and grass pollen (12%), and to weed extracts (6%).

After determining the dynamics of the hyposensitizing effect with

Sl. After the first course of ASIT treatment with non-infectious allergens, nasal mucosal sensitivity remained unresponsive in 25% of patients. This continued to decline after subsequent courses.

Analyzing the respiratory function data, it is worth noting the high baseline respiratory function (FEV1) parameters (91.6% (see Table 1)). This is explained by the fact that ASIT was administered alongside background therapy using the topical steroid budisonide at moderate daily doses. During SIT, respiratory function parameters were stable and tended to slowly and gradually increase toward the end of treatment: FEV1 values (before treatment) were 91.6%, while after 12 months of treatment, they were 100%. The average increase in FEV1 was 11.1% ($P < 0.05$).

Table 1. Dynamics of respiratory function parameters during ASIT.

Показатели ФВД %	До лечения	После лечения
FVC	106,8±4,7	112.2±2.7 **
FEV 1	91, 6 ± 7.0	100.1±7.3*
FEF 75	77.7 ± 10.1	86.8±11.1**
FEF 50	63.1±9.4	82.4±10.6**
FEF25	56.2± 9.0	78.4±9.1**

Note: * - $p < 0.05$ ** $p < 0.001$ compared to baseline data

It should be noted that no general or local reactions were recorded during treatment during the entire observation period.

Conclusion.

Thus, ASIT in our study demonstrated a high level of safety, reducing not only general sensitization but also local sensitization in children with asthma. No patients experienced local or systemic adverse reactions. It can be recommended as a convenient and safe method for the pathogenetic treatment of respiratory atopic diseases in children.

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