

# STUDY OF PREDISPOSING FACTORS OF ALLERGIC RHINITIS IN SCHOOLCHILDREN

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## Abstract

Currently, the incidence of allergic rhinitis in the general population is 10–20%, and these figures tend to further increase this disease [1,5,6]. According to a number of epidemiological studies conducted in different regions of the world, the prevalence of AR in the pediatric population reaches 22%. It is especially common in children aged 3 to 16 years [6]. The disease limits the life of children, reduces their social and physical activity [6].

**Keywords:** Allergy, rhinitis, ecology, epidemiology, population.

## Introduction

According to the results of epidemiological studies, allergic rhinitis affects about 20% of the population of all age groups.

According to various data, 54-75% of patients with allergic diseases have a hereditary predisposition, the relationship between the course of AR and the functional state of the autonomic nervous system (ANS), the features of the manifestation of autonomic changes in various forms and severity of the course of the disease, their dynamics under the influence of various methods of treatment, targeted correction, morphological changes in the tissues of the nasal cavity, taking into account the initial autonomic tone (IVT), are not properly reflected organism [2,3,5].

Thus, the analysis of modern literature has shown that the problem of the formation and course of AR in children is one of the significant aspects of medicine, including otorhinolaryngology and allergology [6,7].

The occurrence and course of allergic diseases are significantly influenced by the climatic and geographical conditions of the human environment, ethnic characteristics of the population, lifestyle and nutrition, individual reactivity of the body, that is, the disease has clearly delineated regional features.

**The purpose of the study** was to determine the features of the identified allergens and predisposing factors in children with allergic rhinitis

**Materials and methods of research.** Objectification and verification of the diagnosis was achieved by mandatory confirmation of its clinical and laboratory parameters, i.e., characteristic complaints and allergological anamnesis, including the presence of the influence of risk factors for the development of allergies, clinical symptoms, characteristic changes in

the general blood count, skin allergy tests, IgE in the blood serum, nasal secretions, positive treatment results with the use of antihistamines in the past.

In the case where it was not possible to determine causally significant allergens, the diagnosis was verified on the basis of the assessment in dynamics of the other indicators listed above.

All 120 AR children were divided into two groups. The first group consisted of 55 (45.8%) children with KAR. The second group included 65 (54.2%) children with SAD.

**Results of the study and their discussion.** The list of allergens and predisposing factors for the development of AR was studied on the basis of complaints of patients and their parents, the history of the development of the disease and life, and scarification allergy tests.

Of the total number of examined, only 56 (46.6%) children and their parents gave the names of allergens, after contact with which the disease began and the course of AR worsens.

Of these, 38 cited only one as a causal allergen, 10 - two, 6 - three, 3 - four, 1 - five or more. Among this group, children with SAD prevailed compared to KAR, 37 (30.8%) and 19 (15.8%) respectively.

Girls (34-28.3%) have a better causative allergen than boys (22-18.3%).

14 (11.6%) individuals calculated the type of allergen themselves, and in the remaining 42 (35.0%) the type of allergen was identified by an allergist earlier before this study.

The list of causative allergens indicated by patients and their parents is given in Table 1.

As can be seen from the table, the most often patients pointed to house dust, a pillow feather, sheep and dog hair, and an egg.

The same allergens often appeared in polysensitization.

Girls more often pointed to the smell of flowers, cat hair, boys - citrus fruits, walnuts, sheep and dog wool.

In total, 88 (73.3%) children with AR and their parents indicated the presence of allergic diseases in relatives.

In relatives, 28 (23.3%) were found to have food allergies, 20 (16.6%) - allergic rhinitis, 19 (15.8%) - drug allergies, 14 (11.6%) - bronchial asthma, 13 (10.8%) - allergic dermatitis, 6 (5.0%) - urticaria and 57 (47.5%) their combination.

The list and frequency of previous diseases as a trigger for the development of AR is presented in Figure 1.

**Table 1. List of allergens according to the survey of children with allergic rhinitis and their parents, in percentage**

Type of allergens	Allergy cases detected in absolute numbers	
	Girls n=57	Boys n=63
House dust	24	20
Feather Pillow	22	16
Woolen clothing	28	19

Tobacco smell	13	18
The smell of flowers	25	21
Wormwood	31	20
Orach	30	23
Fish	19	21
Egg	28	20
Citrus fruits	17	19
Red beets	13	11
Walnut	16	41
Sheep wool	29	33
Cat hair	18	14
Dog coat	16	11
Cattle wool	18	44
Sensitization to: - to one or more allergens	42	36
- two or more allergens	46	27

All 120 patients underwent skin scarification testing. The types of identified reactions of the scarification test are presented in Table 2.

**Table 2. Types of Scarification Test Reactions in Allergic Rhinitis Patients (n=120)**

A group of patients	Identified types of reactions, in absolute numbers			
	Harshly Positive (+++)	Positive (++)	Weakly positive (+)	Doubtful (±)
The first group (n= 57)	22	18	14	3
The second group (n=38)	16	14	7	1
Third group (n=25)	6	8	10	1
Mild course (n=36)	6	12	16	2
Moderate course (n=51)	9	28	19	2
Severe course (n=23)	18	5	-	-
Total(n=120)	33	45	28	4

Based on the analysis of the frequency of detection of various allergens during the scarification test, the following was revealed:

- the species composition of allergens differed in CAR and SAR;
- KAR reveals mainly epidermal, household, food allergens;
- the causative factor of SAD was mainly pollen allergens, namely cotton, pyramidal poplar, willow, walnut, wormwood;
- In children, KAR has a more pronounced reaction in the presence of sensitization of the body to sheep and dog wool, house dust;
- in children with SAD, a more pronounced reaction was noted in the presence of sensitization of the body to cotton, pyramidal poplar, willow, walnut, wormwood.

### Findings

Thus, in children with AR, various types of allergens were identified with the help of a scarification test, which had differences in different forms of the disease. The degree of manifestation of allergic reactions differed depending on the form, clinical course of AR and IVT of the body. All these data require attention and are important in the diagnosis, differential diagnosis, assessment of the clinical course and effectiveness of treatment of this disease.

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