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Research Article

FUNGAL SENSITIZATION IN CHILDREN

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ABSTRACT

The Article is devoted to the actual problem of modern allergology and immunology – fungal sensitization in children, so it is of interest to study the prevalence of fungal sensitization in children living in extreme conditions of the Republic of Sakha (Yakutia).The aim of the study was the fungal sensitization and the structure of fungal sensitization in young children of the Republic of Sakha (Yakutia).The study was conducted on the basis of allergological study in National center of medicine, clinic NEFY, Victory clinics were examined 500 children with various allergic diseases aged 1 to 5 years. Examination of patients was carried out according to the standards of diagnosis of allergic diseases and included General clinical research methods and specific allergological examination. It is revealed that in the Republic of Sakha (Yakutia) fungal sensitization is less common than in countries with humid climate, in the structure of allergic pathology in children with fungal sensitization respiratory manifestations of Allergy prevail: bronchial asthma and allergic rhinitis. All children with fungal sensitization noted constant contact with fungi and mold. The most common sensitization to the fungus Alternariaalternata, rarely to Aspergillusfumigatus and Cladosporiumherbarum.

INTRODUCTION

Currently, multiple studies proved the role of fungal sensitization in the development of asthma, allergic rhinitis, allergic bronchopulmonary mycoses, exogenous allergic alveolitis, atopic dermatitis. The prevalence of mycogenic sensitization is about 4-6%. Formation of hypersensitivity to fungi and expansion of its spectrum occurs in childhood [3]. An important role of mycogenic hypersensitivity occupies in the structure of respiratory allergy, sometimes it is even more common than pollen. Mycogenic allergy can develop as a result of invasive fungal process, Mycobacterium, repeated or multiple receipt of fungal cells, their particles and their metabolic products or components of biotechnological production (food proteins, fodder yeast, enzyme preparations, etc.) through the respiratory tract and gastrointestinal tract. Contact with fungi can occur in areas affected by mold, rarely use a number of fermented products (yogurt, kvass, cheese, cottage cheese, etc.) [1,2].

Less common are allergies to fungi, in contact with hypoallergenic damaged skin and its appendages, as well as a result of repeated courses of antibiotic therapy. In the group of children with allergic diseases there is an increase in diagnosed pharyngomycosis, dermatomycosis. Sensitization to mold develops the more often, the more serious the pathology of the respiratory system suffers people and the more other allergens it is sensitive. Fungal hypersensitivity is almost never detected in isolation, as is not defined and management software to any one species of micromycetes [4,5]. It is of interest to study the prevalence and course of fungal sensitization in children living in extreme conditions of the Republic of Sakha (Yakutia).

Objective

To Study the fungal sensitization and the structure of fungal sensitization in children of early age of the Republic of Sakha (Yakutia).

MATERIALS AND METHODS

500 children with various allergic diseases aged from 1 to 5 years were examined on the basis of allergological study in National center of medicine Republic Sakha (Yakutia), clinic NEFY, Victory clinics. Examination of patients was carried out according to the standards of diagnosis of allergic diseases and included General clinical research methods and specific allergological examination.

Allergy testing was conducted for all children of the examined group. The allergological examination included a study of allergischen 2 panel. Comparisons of mean values were performed by one-factor dispersion analysis using student's T-

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test to assess the equality of mean Fisher's F-test to assess the equality of variance. The relationship between the parameters was estimated using linear and rank correlation coefficients.

RESULTS

We examined 500 children, 25% had sensitization to household allergens (dermatophagoides, domestic dust, etc.), 20% had sensitization to epidermal allergens (cat and dog hair, horse dandruff, etc.), 35% of the examined had sensitization to food allergens, 10% had Allergy to pollen of plants, 6% (30 children) to fungi and mold.

Next, an analysis was conducted of the structure of pathology in children with fungal sensitization. 41% of children had allergic rhinitis, 34% had bronchial asthma, only 18% had atopic dermatitis and 7% had allergic urticaria. Thus in children with mycogenic sensitization is dominated by a respiratory allergy. According to some researchers, the most common form of fungal allergy in children is bronchial asthma, in which hypersensitivity to allergens of fungi is detected in 15% of patients. However, as for the frequency of cases of asthma of fungal origin, the data of various scientific studies are ambiguous – from 34 to 78%. Mycogenic bronchial asthma is characterized by gradual onset, persistent and severe course. The vast majority (89%) of patients are characterized by frequent year-round attacks, especially in wet weather. The main clinical sign of severe fungal asthma is the presence of repeated attacks of suffocation, asthmatic conditions, poorly bathing bronchodilators.

The study of anamnestic data revealed the following patterns: 50% of the examined children lived on the 1st floor of the old building,43% of the parents of children pointed to a large number of domestic plants, 17% of children in wooden private houses had underground. Thus, all children had constant contact with fungi and mold.

Only 22% of children had monoallergic on fungi, in 88% of children showed combination of fungal sensitisation with sensitization to domestic, epidermal and food allergy (figure 4). The most frequent allergen associated fungal sensitization are allergens domestic dust (21%), dermatophagoides (dermatofagoidpteronissimus 8%, dermatofagoidfarinei 10%), cat hair (17%), dog hair (12%), dandruff horse (12%) (.
Thus, most often household allergens are associated sensitization in children with fungal sensitization. The number of children reported to be allergic to wormwood (15%).

Sensitization to allergens mold fungi significantly affects the severity of allergic asthma and allergic rhinitis, causes the erasing of a clear dependence of clinical manifestations of pollinosis from the flowering season of causal plants, is characterized by a longer persistence of symptoms. It should be noted that the concentration of spores of fungi in the air even during the season of dusting of plants is a thousand times higher than the concentration of pollen in the air, and the exposure of micro-allergens in the room is year-round. Unlike the existing plant dusting calendar, the periods of fungal sporulation are virtually unknown.

In the structure of fungal sensitization prevails fungus Alternaria alternate (54%), less pronounced sensitization to fungi Aspergillasfumigatum (25%), Cladosporiumherbarum 16%), Penicilliumnotatum 5%.

Summary

1. In the Republic of Sakha (Yakutia), fungal sensitization is less common than in countries with a humid climate.
2. In the structure of allergic pathology in children with fungal sensitization respiratory manifestations of allergy prevail: bronchial asthma and allergic rhinitis
3. All children with fungal sensitization noted constant contact with fungi and mold.
4. The most common sensitization to the fungus Alternariaalternata, rarely to Aspergillusfumigatus and Cladosporiumherbarum.
5. It is necessary to carry out all recommendations for the prevention of fungal allergy.

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