INTERNATIONAL JOURNAL OF INTEGRATIVE AND MODERN MEDICINE

Dynamics of the Course of Allergic Diseases in Children Depending on Age

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Annotation: In recent decades, allergic diseases in children have become a global public health problem. According to epidemiological studies, about 20–30% of the pediatric population suffer from various manifestations of allergy, with a clear trend toward an earlier onset and more severe clinical course.

Keywords: children, allergy, age-related features, atopic dermatitis, allergic rhinitis, bronchial asthma, allergic march, prevention

Particular importance lies in studying the age-related characteristics of allergic reactions, since age-dependent changes in the immune system and the interaction of genetic and environmental factors determine the disease phenotype. The most common forms of allergy in children include atopic dermatitis, food allergy, allergic rhinitis, and bronchial asthma.

The purpose of this study is to analyze the dynamics of clinical manifestations of allergic diseases in children depending on age and to identify risk factors for the aggravation of their course.

Materials and Methods

The study included 120 children who received treatment and follow-up care at a pediatric allergy center. All children were divided into five age groups:

- **Infant age (0–1 year, n=25)**
- **Early childhood (1–3 years, n=20)**
- **Preschool age (4–6 years, n=25)**
- **Primary school age (7–11 years, n=30)**
- **Adolescent age (12–17 years, n=20)**

Research methods included:

- **Medical history collection:** presence of hereditary predisposition (allergic diseases in parents or close relatives).
- **Clinical methods:** physical examination, food diaries, assessment of frequency and nature of symptoms.
- **Laboratory tests:** total IgE level, peripheral blood eosinophil count, skin allergy tests.
- **Instrumental methods:** spirometry in children over 6 years old, peak expiratory flow rate.

Statistical data processing was performed using the SPSS software package. Descriptive statistics, Pearson's χ^2 test, and Student's t-test were applied.

Results

1. Infant age (0–1 year)

- Main manifestations: atopic dermatitis (76%), food allergy (52%).
- Symptoms: skin rashes, itching, digestive disturbances.

- Frequently associated with artificial feeding and early introduction of complementary foods.

2. Early childhood (1–3 years)

- Food allergy persists (42%), but respiratory manifestations come to the forefront: bronchial obstruction syndrome (33%).
- In half of the cases, episodes of nocturnal cough and shortness of breath were noted.

3. Preschool age (4–6 years)

- Allergic rhinitis – 48%.
- Bronchial asthma – 27%.
- Often there is a combination of skin and respiratory manifestations.

4. Primary school age (7–11 years)

- Increase in polyvalent sensitization (56%).
- Allergic rhinitis and asthma become chronic, requiring continuous drug therapy.
- 22% of children have a severe course with frequent hospitalizations.

5. Adolescent age (12–17 years)

- Allergic diseases become chronic and recurrent.
- Exacerbations are often associated with hormonal changes, stress factors, and poor environmental conditions.
- Bronchial asthma occurs in 34% of adolescents, allergic rhinitis in 45%, and atopic dermatitis persists in 18%.

Discussion

The obtained results confirm the phenomenon of the “allergic march,” characterized by a sequential change in the clinical forms of allergy depending on the child’s age. In infancy, food allergy predominates; later, respiratory manifestations develop; and during school and adolescence, diseases become chronic.

A hereditary predisposition significantly increases the risk of severe allergy. Environmental factors play a major role: air pollution, passive smoking, unbalanced nutrition, and excessive antibiotic use.

Special attention should be paid to preventive measures:

- maintaining breastfeeding for at least 6 months;
- rational introduction of complementary foods;
- minimizing contact with potential allergens;
- early diagnosis and regular follow-up of high-risk children;
- allergen-specific immunotherapy (ASIT) when indicated.

Conclusion

Age-related characteristics of allergic diseases in children confirm the need for a differentiated approach to diagnosis, treatment, and prevention. Understanding the patterns of the “allergic march” allows predicting disease progression and optimizing therapeutic and preventive strategies.

Early diagnosis and timely lifestyle correction can significantly reduce the severity of clinical manifestations and improve children’s quality of life.

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