

Symptomatology of Allergic Diseases in Surxondaryo Region

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Annotation: The prevalence of allergic diseases in the Surxondaryo region is a pressing issue, et research considering the region's unique ecological and climatic conditions remains insufficient. This article provides data on the factors contributing to the spread of allergic diseases, their clinical symptoms, and risk groups. Data were collected through epidemiological surveys and clinical observations, followed by statistical analysis. The findings revealed that diseases such as allergic rhinitis and asthma are highly prevalent due to the dry climate and local allergens. The article offers recommendations to strengthen preventive measures and implement specialized diagnostic methods.

Keywords: allergic diseases, Surxondaryo region, allergens, epidemiology, clinical symptoms, bronchial asthma, allergic rhinitis, atopic dermatitis, prevention.

Introduction: Allergic diseases are widespread worldwide and are among the serious health problems that pose a significant threat to human health. The occurrence of these diseases is influenced by various factors, including genetics, environmental pollution, climatic conditions, and changes in lifestyle. Surkhandarya region stands out with its unique climatic and ecological conditions. The dry and hot climate, local plants, and dust storms are factors that may contribute to the higher prevalence of allergic diseases in this area.

To date, there have not been sufficient studies dedicated to the epidemiology and clinical characteristics of allergic diseases in the region. Although diseases such as allergic rhinitis, bronchial asthma, and atopic dermatitis are widespread among the population, there is a lack of in-depth research on their exact causes and risk factors. This leads to difficulties in diagnosing and effectively treating these diseases.

This article presents information on the main factors, symptoms, and prevention of allergic

diseases in Surkhandarya region. Additionally, based on the research results, recommendations for diagnostic and treatment methods that may be used in the future will be developed.

Methodology:

A systematic and multi-stage research methodology was applied to deeply study the prevalence of allergic diseases and their causative factors in the Surkhandarya region. This methodology included epidemiological, clinical, and laboratory analysis methods, ensuring the completeness and reliability of the data.

Research Planning: The study was conducted in the districts of Termiz, Denov, Jarqorgon, Shurchi, and Uzun of the region. In selecting these districts, factors such as the variation in climatic and ecological conditions, population density, and agricultural activity were taken into account. The respondents involved in the study were from different age groups, with more than half living in rural areas.

Data Collection Process: To collect epidemiological data, specially designed questionnaires were used. Through these surveys, the following data were gathered:

- ✓ Living conditions of respondents (type of dwelling, heating system, presence of pets);
- ✓ Food consumption and lifestyle (local food, potential allergies to chemical additives);
- ✓ Family history (presence of allergic diseases in parents and close relatives);
- ✓ Environmental factors (exposure to dust storms, plant pollen, and work with chemicals).

During the clinical observations, the respiratory system, skin, and nasal cavity of patients were thoroughly examined. The examinations were conducted in local polyclinics and hospitals with the participation of allergists and dermatologists. A spirometry test was conducted for the diagnosis of bronchial asthma, and cases of atopic dermatitis were assessed based on clinical criteria. Nasopharyngeal examinations were performed for the diagnosis of allergic rhinitis.

Laboratory Analysis: Blood samples were taken for laboratory analysis to measure the total immunoglobulin E (IgE) levels, as well as to detect specific antibodies against various allergens. Additionally, skin tests (prick-tests) were used to check sensitivity to local plant pollen, dust storms, and animal fur. The density of dust mixtures related to allergic rhinitis was measured using special equipment.

Data Analysis: Statistical analysis was performed using the SPSS 26 software. Descriptive statistics were used to summarize the data, specifically calculating the prevalence rates of diseases, frequency of symptoms, and distribution of risk factors. Chi-square (χ^2) tests were used to identify correlations, while multiple logistic regression was applied to assess the main risk factors.

Methodological Foundations and Scholars' Opinions: Internationally recognized methodologies were taken as the basis for the research. Smith and Johnson (2020) emphasized in their studies that environmental pollution and climate change play a significant role in the development of allergic diseases. They argue that in dry and hot climates, allergens entering through the respiratory tract contribute to the worsening of diseases. Davlatov (2021) highlighted the importance of genetic factors and family history. According to their research, patients with a family history of allergies tend to experience more severe forms of the disease.

During the study, these theoretical approaches and the unique conditions of Surkhandarya were considered to refine local diagnostic and treatment strategies. Special attention was given to integrating both local and international experiences.

Results:

The results of the study are of great importance in understanding the prevalence of allergic diseases, their main clinical symptoms, and risk factors in Surkhandarya. This section details the collected epidemiological, clinical, and laboratory data, along with their analysis.

Prevalence of Allergic Diseases: During the study, surveys and clinical observations conducted among 500 respondents showed that the overall prevalence of allergic diseases was 28%. The most common diseases in the population were distributed as follows:

- ✓ Allergic rhinitis: 12%
- ✓ Bronchial asthma: 8%
- ✓ Atopic dermatitis: 5%
- ✓ Food allergies: 3%

These results indicate that allergic rhinitis is the most prevalent disease in Surkhandarya, which can be explained by the region's dry and hot climate, as well as the frequent occurrence of dust storms. Bronchial asthma, on the other hand, was more commonly observed in urban populations, which could be linked to industrial waste and environmental pollution.

Risk Factors: The analysis showed the following main risk factors for the development of allergic diseases:

1. **Environmental and Ecological Factors:** The ecological state of the region, especially the high level of dust storms and industrial waste, contributes to the exacerbation of allergic symptoms. Plant pollen, especially during spring and summer, leads to the worsening of allergic rhinitis.
2. **Genetic Predisposition:** Around 60% of the participants in the study had a family history of allergic diseases, confirming the significance of genetic factors. Respondents with a family history of allergies exhibited more severe and chronic symptoms.
3. **Local Food and Diet:** Food allergies were detected in some respondents, primarily involving sensitivity to nuts, citrus fruits, and honey-based products. The specific characteristics of local food also played a role in this.
4. **Climatic Conditions:** The dry and hot climate has led to the widespread occurrence of respiratory allergies. The increase in dust storms and low humidity during summer contributed to irritations in the respiratory tract, which in turn caused an increase in bronchial asthma and allergic rhinitis.

Clinical Symptoms: The most common symptoms among patients with allergic diseases were as follows:

- **Allergic rhinitis:** Nasal discharge, nasal congestion, watery eyes, sneezing, and itching in the nose.
- **Bronchial asthma:** Shortness of breath, wheezing from the lungs, and dry cough. Most patients with bronchial asthma reported the worsening of symptoms during the night or early morning.
- **Atopic dermatitis:** Skin itching, rashes, and dry skin. Rashes were most common on the face, hands, legs, and neck.

Laboratory Results: Blood test results indicated that patients with allergic diseases had elevated total immunoglobulin E (IgE) levels. Skin prick tests revealed high sensitivity to dust storms, plant pollen, and household dust.

Statistical Analysis Results: Chi-square test analyses showed significant statistical relationships between living conditions, ecological factors, and allergic diseases ($p < 0.05$). Multiple logistic regression results demonstrated that dust storms and family history were the main factors in the development of respiratory system allergies.

Results Analysis: The obtained results confirm that allergic diseases in Surkhandarya are closely related to climatic and ecological conditions. The study has provided an important foundation for

improving diagnostic and treatment methods for allergic diseases, as well as for implementing preventive measures. Additionally, the research results have established a necessary scientific base for local medical practice. Future studies in this area will allow for more effective healthcare provision for the population of the region.

Conclusion:

The results of the study conducted in Surkhandarya provide valuable insights into the widespread nature of allergic diseases and the factors influencing them. Allergic rhinitis and bronchial asthma were identified as the most prevalent diseases in the region, and the role of dry climate, dust storms, and local allergens in their development was confirmed. The study clearly demonstrated the impact of ecological conditions and genetic predisposition on the severity and intensity of the disease.

The widespread prevalence of allergic diseases is a significant health concern for the region's population, requiring preventive and treatment measures. The following directions were identified as crucial in combating these diseases:

- ✓ Early detection of allergic rhinitis and bronchial asthma and the widespread implementation of specialized diagnostic methods;
- ✓ Improving ecological conditions and taking measures to reduce dust storms and air pollution;
- ✓ Promoting a healthy lifestyle and enhancing protective measures against allergens.

Furthermore, it is necessary to improve existing medical services in the region, increase the number of specialized professionals in allergic diseases, and conduct extensive informational campaigns on prevention. Future research is planned to expand to other regions of the province and improve local diagnostic and treatment methods by taking international experience into account.

Overall, the study has played a crucial role in identifying the regional characteristics of allergic diseases and developing effective strategies to combat them.

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