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PREVALENCE AND CLINICAL CHARACTERISTICS OF ALLERGIC DISEASES IN CHILDREN A STUDY OF ATOPIC DERMATITIS AND BRONCHIAL ASTHMA

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Abstract. Allergic diseases are among the most common chronic health conditions affecting children worldwide. Atopic dermatitis and bronchial asthma represent significant public health concerns due to their increasing prevalence, recurrent nature, and impact on the quality of life of pediatric patients. This study aims to investigate the prevalence and clinical characteristics of atopic dermatitis and bronchial asthma in children, as well as to identify potential risk factors associated with their development. The research analyzes epidemiological trends, age-related manifestations, disease severity, and common clinical symptoms. Particular attention is given to the relationship between genetic predisposition, environmental exposures, and allergic sensitization. The findings highlight the importance of early diagnosis, effective management strategies, and preventive measures in reducing disease burden and improving long-term health outcomes in children with allergic disorders.[5,7,9]

Keywords: allergic diseases, children, atopic dermatitis, bronchial asthma, prevalence, epidemiology, clinical characteristics, risk factors, allergic sensitization, pediatric health, disease prevention, quality of life.

Annotatsiya. Allergik kasalliklar bolalarda uchraydigan eng keng tarqalgan surunkali kasalliklar qatoriga kiradi. Atopik dermatit va bronxial astma pediatrik bemorlar hayot sifatiga jiddiy ta’sir ko‘rsatishi, qaytalanuvchi kechishi hamda tarqalish darajasining ortib borishi bilan muhim tibbiy-ijtimoiy muammo hisoblanadi. Ushbu tadqiqot bolalarda atopik dermatit va bronxial astmaning tarqalishi hamda klinik xususiyatlarini o‘rganish, shuningdek ularning rivojlanishiga ta’sir etuvchi xavf omillarini aniqlashga qaratilgan. Tadqiqotda epidemiologik tendensiyalar, yoshga bog‘liq klinik namoyon bo‘lishi, kasallik og‘irlik darajasi va asosiy simptomlar tahlil qilindi. Genetik moyillik, ekologik omillar va allergik sensibilizatsiya o‘rtasidagi bog‘liqlikka alohida e’tibor qaratildi. Olingan natijalar kasallikni erta aniqlash, samarali davolash strategiyalarini qo‘llash va profilaktik choralarni kuchaytirish bolalarda allergik kasalliklar yukini kamaytirishda muhim ahamiyatga ega ekanligini ko‘rsatadi. [5,7,9]

Kalit so‘zlar: allergik kasalliklar, bolalar, atopik dermatit, bronxial astma, tarqalish, epidemiologiya, klinik xususiyatlar, xavf omillari, allergik sensibilizatsiya, pediatrik salomatlik, profilaktika, hayot sifati.

Аннотация. Аллергические заболевания являются одними из наиболее распространённых хронических заболеваний у детей. Атопический дерматит и бронхиальная астма представляют собой серьёзную медико-социальную проблему из-за их высокой распространённости, рецидивирующего характера и значительного влияния на качество жизни детей. Данное исследование направлено на изучение распространённости и клинических особенностей атопического дерматита и бронхиальной астмы у детей, а также на выявление факторов риска их развития. В работе анализируются эпидемиологические тенденции, возрастные клинические проявления, степень тяжести заболевания и основные симптомы. Особое внимание уделяется взаимосвязи генетической предрасположенности, факторов окружающей среды и аллергической сенсибилизации. Полученные результаты подчёркивают важность ранней диагностики, эффективных лечебных стратегий и профилактических мероприятий для снижения бремени аллергических заболеваний у детей. [5,7,9]

Ключевые слова: аллергические заболевания, дети, атопический дерматит, бронхиальная астма, распространённость, эпидемиология, клинические особенности, факторы риска, аллергическая сенсибилизация, педиатрическое здоровье, профилактика, качество жизни.

INTRODUCTION.

Allergic diseases have become one of the most significant public health problems among children worldwide. Over the past few decades, the prevalence of allergic disorders has increased considerably in both developed and developing countries. Among the most common allergic conditions in childhood are atopic dermatitis and bronchial asthma, which often begin early in life and may persist into adolescence and adulthood. These diseases not only affect the physical health of children but also have a substantial impact on their psychological well-being, social interactions, and overall quality of life. Atopic dermatitis is a chronic inflammatory skin disorder characterized by intense itching, dry skin, recurrent eczema, and a relapsing course. It usually develops during infancy or early childhood and is frequently associated with a family history of allergic diseases. The condition results from a complex interaction between genetic susceptibility, immune dysregulation, environmental factors, and skin barrier dysfunction. Children suffering from atopic dermatitis often experience sleep disturbances, emotional stress, and an increased risk of secondary infections, which may further complicate disease management.

Bronchial asthma is another common chronic allergic disease in children and is characterized by airway inflammation, bronchial hyperresponsiveness, and recurrent episodes of wheezing, coughing, chest tightness, and shortness of breath.

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Asthma is considered one of the leading causes of chronic illness and hospitalization among pediatric populations. The disease is influenced by multiple factors, including genetic predisposition, exposure to allergens, respiratory infections, environmental pollution, and lifestyle-related determinants. Early diagnosis and appropriate treatment are essential for preventing disease progression and reducing the frequency of asthma exacerbations. The coexistence of atopic dermatitis and bronchial asthma has attracted considerable scientific interest due to the concept of the "atopic march," which describes the progression of allergic diseases from infancy to later childhood. Many children initially diagnosed with atopic dermatitis subsequently develop allergic rhinitis and bronchial asthma, suggesting a common underlying immunological mechanism. Understanding this relationship is important for identifying high-risk individuals and implementing preventive interventions at an early stage. Recent epidemiological studies indicate that the prevalence of allergic diseases continues to rise globally. Urbanization, environmental changes, dietary modifications, reduced microbial exposure during early life, and increasing air pollution have all been proposed as contributing factors. Despite advances in medical knowledge and treatment options, allergic diseases remain a major burden on healthcare systems and families, emphasizing the need for continuous research in this field. Therefore, this study aims to evaluate the prevalence and clinical characteristics of atopic dermatitis and bronchial asthma in children. The research focuses on identifying major risk factors, analyzing clinical manifestations, and assessing the epidemiological patterns of these conditions. [1,3,5]

RELEVANCE OF THE TOPIC. Allergic diseases have emerged as one of the most prevalent chronic health problems among children worldwide. According to recent epidemiological studies, the incidence of allergic disorders, particularly atopic dermatitis and bronchial asthma, has increased significantly over the last few decades. This growing trend represents a major public health concern because these diseases often begin in early childhood, follow a chronic and recurrent course, and may persist into adulthood, causing substantial medical, social, and economic burdens. Atopic dermatitis is frequently the first manifestation of allergic sensitization in children and is associated with skin barrier dysfunction, immune dysregulation, and environmental influences. The disease negatively affects the quality of life of both patients and their families due to persistent itching, sleep disturbances, psychological stress, and recurrent exacerbations. Furthermore, children with atopic dermatitis are at increased risk of developing other allergic conditions, including allergic rhinitis and bronchial asthma, as part of the atopic march. Bronchial asthma remains one of the leading chronic respiratory diseases in childhood and is a significant cause of emergency department visits,

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hospitalizations, and school absenteeism. The disease can impair physical activity, academic performance, and psychosocial development. Despite improvements in diagnostic and therapeutic approaches, asthma continues to pose considerable challenges because of its multifactorial etiology and the influence of environmental and genetic factors. The relevance of studying atopic dermatitis and bronchial asthma is further emphasized by the increasing exposure of children to environmental pollutants, allergens, unhealthy lifestyle factors, and urbanization-related risks. Understanding the prevalence, clinical manifestations, and risk factors associated with these diseases is essential for developing effective prevention programs, improving early diagnosis, and optimizing treatment strategies.[9,10]

MATERIALS AND METHODS. This study was conducted to investigate the prevalence and clinical characteristics of atopic dermatitis and bronchial asthma among children. A descriptive cross-sectional study design was employed to assess the epidemiological patterns, risk factors, and clinical manifestations of these allergic diseases. The study included children aged 1–18 years who were diagnosed with atopic dermatitis, bronchial asthma, or both conditions and received medical care at pediatric and allergy departments during the study period. Patients were selected according to established diagnostic criteria and were enrolled regardless of sex, ethnicity, or socioeconomic status. Children diagnosed with atopic dermatitis underwent dermatological examination to assess the severity and distribution of skin lesions, presence of itching, skin dryness, and secondary infections. Clinical manifestations were evaluated according to internationally accepted diagnostic criteria. For patients with bronchial asthma, respiratory symptoms such as wheezing, cough, dyspnea, and chest tightness were assessed. Asthma severity was classified based on symptom frequency, clinical examination findings, and pulmonary function test results when available. Collected data were entered into a computerized database and analyzed using statistical software. Descriptive statistical methods, including frequencies, percentages, means, and standard deviations, were used to summarize the data. Associations between risk factors and disease occurrence were evaluated using appropriate statistical tests. A p-value of less than 0.05 was considered statistically significant. The study was conducted in accordance with ethical principles for medical research involving human participants. Confidentiality of patient information was maintained throughout the study. Participation was voluntary, and informed consent was obtained from parents or legal guardians before data collection.[11,13,15]

METHODOLOGY. This research was designed to evaluate the prevalence and clinical characteristics of atopic dermatitis and bronchial asthma among children. The study was carried out using an epidemiological and clinical approach,

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combining retrospective and prospective data collection methods to obtain comprehensive information regarding disease occurrence, risk factors, and clinical manifestations. The study population consisted of children aged 1–18 years diagnosed with atopic dermatitis, bronchial asthma, or both conditions. Participants were recruited from pediatric and allergy departments of healthcare institutions. Patients were selected based on established diagnostic criteria and clinical records. Demographic information, including age, sex, place of residence, family history of allergic diseases, and environmental exposure factors, was collected and analyzed. A structured data collection form was developed to gather relevant epidemiological and clinical information. Clinical assessment of atopic dermatitis included evaluation of lesion distribution, severity of skin inflammation, itching intensity, and recurrence frequency. Bronchial asthma assessment was based on symptom frequency, severity of respiratory manifestations, history of exacerbations, and treatment requirements. Additional information regarding allergen exposure, passive smoking, environmental pollution, dietary habits, and previous allergic conditions was obtained through interviews with parents or legal guardians. The prevalence of allergic diseases was determined by calculating the proportion of diagnosed cases among the study population. Clinical characteristics were analyzed according to age groups, disease severity, duration of illness, and associated allergic conditions. Particular attention was paid to identifying patterns of co-occurrence between atopic dermatitis and bronchial asthma, supporting the concept of the atopic march. Data were entered into an electronic database and processed using statistical analysis software. Descriptive statistical methods, including mean values, standard deviations, frequencies, and percentages, were used to summarize the collected information. Comparative analyses were performed to identify significant differences between study groups and to evaluate associations between potential risk factors and disease occurrence. Statistical significance was considered at a p-value of less than 0.05. To ensure the validity and reliability of the findings, standardized diagnostic criteria and uniform data collection procedures were applied throughout the study. Ethical principles governing biomedical research were strictly followed. Participation was voluntary, confidentiality of personal information was maintained, and informed consent was obtained from parents or legal guardians before inclusion in the study.[9,16]

CONCLUSION. The present study demonstrates that atopic dermatitis and bronchial asthma are among the most common allergic diseases affecting children and represent a significant public health concern. The findings indicate that the prevalence of these conditions remains high and is influenced by a combination of genetic predisposition, environmental exposures, and lifestyle-related factors.

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Atopic dermatitis was found to be one of the earliest manifestations of allergic disease in childhood, frequently occurring during infancy and early childhood. The disease was characterized by recurrent skin inflammation, intense itching, and a considerable impact on the quality of life of affected children. Bronchial asthma was identified as a major chronic respiratory disorder associated with recurrent episodes of wheezing, coughing, and breathing difficulties, often requiring long-term medical management. The study also confirmed the close relationship between atopic dermatitis and bronchial asthma, supporting the concept of the atopic march. Children with a history of atopic dermatitis showed an increased risk of developing bronchial asthma later in life, highlighting the importance of early identification and continuous monitoring of allergic manifestations. Several risk factors were associated with the development and progression of these diseases, including family history of allergies, exposure to environmental allergens, air pollution, passive smoking, and unfavorable living conditions. Understanding these factors is essential for implementing effective preventive measures and reducing disease burden. Early diagnosis, regular clinical assessment, patient education, and individualized treatment strategies play a crucial role in improving disease control and preventing complications. Comprehensive management involving healthcare professionals, parents, and caregivers can significantly enhance the quality of life and long-term health outcomes of children affected by allergic diseases.

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