Volume 20 Issue 72
Originally issued as K14



Global Journal of Medical Research: K
Interdisciplinary
Volume 20 Issue 14 Version 1.0 Year 2020
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

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Keywords: *respiratory diseases, bronchial asthma, prevalence, risk factors.*

GJMR-K Classification: *NLMC Code: WF 553*



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Prevalence and Risk Factors for the Formation of Bronchial Asthma

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Abstract- Bronchial asthma is a multifactorial disease. Industrial chemical compounds are also included in the list of causative factors of bronchial asthma. The contribution of industrial allergens to the formation of bronchial asthma is undeniable. In studies carried out in conjunction with professional pathologists, children were found to be sensitized to industrial allergens (nickel, chromium, formaldehyde, etc.), which contribute to the formation of bronchial asthma. However, determining factor, is the presence of atopy.

Until now, bronchial asthma is sometimes considered as a condition of the respiratory tract, and not as a disease, as a heterogeneous syndrome, which can only be given a descriptive definition. Such conclusions lead to clinical uncertainty, erasure of nosological boundaries, and therefore to disorientation of the doctor.

Keywords: respiratory diseases, bronchial asthma, prevalence, risk factors.

I. Introduction

In the previous versions of the National Program (1997, 2006 - 2008), it is rightly indicated that bronchial asthma is an independent nosological form characterized by a complex pathogenesis. In children, the immunological mechanism of the development of the disease is the leading and decisive one. The question of non-immunological forms of bronchial asthma in children, as before, is the subject of scientific discussions. According to most researchers, nonspecific factors provoking bronchial asthma in children are secondary, and their effects are preceded by body sensitization and the development of allergic inflammation of the bronchi.

Modern genetic studies have proven the role of hereditary predisposition to the development of bronchial asthma; however, the phenotypic realization of the genotype is determined by the influence of environmental factors.

The key role in the development of bronchial asthma in children belongs to the IgE-dependent type of allergic reaction. Sensitization to allergens and their repeated exposure leads to asthma manifestations as a result of airway inflammation, reversible obstruction and increased bronchial reactivity. However, it is possible to involve non-allergic mechanisms of airway inflammation, which are not well understood in our time.

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II. Materials and Methods

The understanding of the immunological mechanisms of bronchial asthma is constantly deepening, new and new aspects of them are being discovered not only at the cellular, but also at the molecular level. The combination of various inflammatory mediators causes the whole complex of clinical manifestations characteristic of bronchial asthma. Bronchoconstriction, mucus hypersecretion, edema of the bronchial mucosa develop, bronchial hyperreactivity is formed. The dynamics of various immunological parameters correlates to a certain extent with the activity of inflammation and clinical symptoms.

Currently, the important role of infection, primarily viral, as a triggering factor in the development of bronchial asthma and the main trigger mechanism has been shown.

As clinical experience shows, typical for the overwhelming number of sick children are attacks of bronchial asthma, occurring in the form of difficulty breathing, paroxysms of expiratory suffocation. Atypical manifestations of bronchial asthma in children are sometimes expressed by attacks of persistent spasmodic cough.

Treatment approaches are determined by the severity and control of the disease. The development of severe exacerbations of bronchial asthma can pose a threat to the patient's life, and a severe exacerbation can develop with any severity of the course of the disease.

Bronchial asthma is a real life-threatening disease, which makes it necessary to pay special attention to the organization of medical care and social support for patients. Only under the influence of adequate and systematic pathogenetic therapy in children with bronchial asthma, a stable remission can be achieved.

Taking into account the above fundamental provisions, the following definition of bronchial asthma in children has been adopted:

Bronchial asthma in children is a disease based on chronic allergic inflammation of the bronchi, involving a number of cells, including eosinophils, neutrophils, mast cells, lymphocytes. This is accompanied by airway hyperresponsiveness, bouts of shortness of breath or

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suffocation as a result of widespread bronchial obstruction caused by bronchoconstriction, mucus hypersecretion, edema of the bronchial wall. Bronchial obstruction (under the influence of treatment or spontaneously) is reversible. The impact of allergens and various nonspecific factors on the respiratory tract provokes the development of acute reactions in the sensitized organism in the form of bronchospasm, edema of the bronchial wall, obturation of their lumen with mucus. Chronic allergic inflammation leads over time to structural changes in the bronchial wall (remodeling).The clinical manifestations of bronchial asthma in children depend on age. This is especially true for children in the first five years of life, which suggests appropriate approaches to diagnosis and treatment. In clinical practice, until now, bronchial asthma in children is often not diagnosed, the diagnosis is replaced by the concept of "obstructive syndrome", "obstructive bronchitis", "asthmatic component in 17 respiratory viral infections", etc. Episodes of recurrent cough and / or obstruction in 60–70% of children in the first six years of life are transient. Bronchial asthma (BA) is a heterogeneous disease (a disease characterized by chronic inflammation of the respiratory tract and diagnosed by respiratory symptoms such as wheezing, shortness of breath, tightness in the chest or coughing, variable in duration and intensity, combined with reversible obstruction. Chronic inflammation, respiratory hyperactivity and remodeling, which are at the heart of BA, are implemented with the participation of a large number of different types of cells and mediators, which determines the pathogenesis, phenotypes and endotypes of the disease. The cytokine cascade of an allergic reaction, which develops in a sensitized organism through repeated contact with an allergen, causes allergic inflammation, tissue damage, and contributes to narrowing and hyperreactivity of the respiratory tract [4]. In terms of frequency, current severity, disability and danger to life (especially in teenagers), BA is one of the most important problems in modern paediatrics (3). According to ISAAC, the true prevalence of BA in different regions of our country is 7-8 times higher than official statistics [1,2]. In the structure of hospital morbidity of the Uzbekistan, children with AD make up 33%, specialized children's pulmonary sanatorium - 45%, among patients with diseases of the bronchopulmonary system the level of disability from AD is 70%, which indicates the socio-economic importance of this problem for the region under consideration.

III. Results and Discussion

In recent years, allergic diseases have been increasingly referred to as the "global problem of our time" because of their high prevalence in children and adults (S.Yu. Kaganov, 1997; Patterson R., Gryammer L.K., 2000; Holgate S.T., Arshad S.H., 2004). A special place among allergic diseases belongs to bronchial asthma as one of the most significant and widespread diseases of childhood. The social significance of the disease and the impact of its nature on the state of the labor force in present and future society have necessitated large-scale epidemiological studies.

Epidemiological studies in recent years indicate that at least 5-10% of the child population and 5% of adults suffer from bronchial asthma (Chuchalin A.G. 2000; National Programme "Bronchial Asthma in Children. Treatment and Prevention Strategy "2006). At the same time, data on disease prevalence based on medical statistics is much lower, and there is also a discrepancy between the distribution of patients by the severity of bronchial asthma. Thus, according to official statistics, severe and severe forms of the disease are much more common in children than mild asthma, which differs significantly from the prevalence structure revealed by epidemiological methods, where mild asthma prevails (MizernitskyYu.L., Rosinova H.H. and others 2004; Geppe H.A., Mokina H.A., 2007). Thus, a significant proportion of children with a mild course of the disease are practically not diagnosed.

The published results of epidemiological studies conducted both in our country and abroad mainly concern the prevalence of bronchial asthma in large industrial centres, while the overall incidence of bronchial asthma in children living in rural areas has not been studied (E.G. Kondyurina, Elkina T.N., 1998; Petrova T.I. 2004; Chernyak B.A., Tyarenkova C.B., 2004; Asher M.I., Weiland S.K., 1998). In addition, there are practically no data on the prevalence of the disease in children of different age groups living in urban and rural areas, and the structure of the disease by severity depending on age is not described.

The State Programme for Staged Implementation of a Set of Measures for Early Detection and Treatment of Bronchial Asthma, Complication Prevention and Disability Development is a priority in the modern concept of health care development (V.A. Revyakina, 2005). This determines the importance of epidemiological research to obtain reliable data on the prevalence of the disease in various climatological and geographical regions, independent of the quality and level of health care development. However, the medical and social significance of such studies also lies in their ability to better understand the role of exogenous and endogenous factors in the development of such a multifactorial disease as bronchial asthma (Baranov A.A., 1999). Determining the ratio of internal factors to environmental factors in the prevalence of this disease in children, especially in connection with the growth of negative trends in the population health of children and various environmental problems, is a difficult but promising trend in pulmonology (VeltishchevYu.E., Fokeeva V.V., 1996). Such information allows us to

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expand our understanding of factors predisposing to the disease, and thus to make individual medical forecasts and, consequently, make the right decisions in planning both therapeutic and preventive work.

Thus, conducting transverse single-stage studies to examine the true prevalence or prevalence of bronchial asthma, in accordance with international recommendations, using a representative sample and a validated questionnaire followed by clinical, instrumental and immunological examination seems to be a relevant and up-to-date task.

Conflict of Interests

The authors declare the absence of obvious and potential conflicts of interest related to the publication of this article and report on the contribution of each author.

Source of Financing

No funding was required for this research.

Ethical Approval

No ethical approval is needed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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