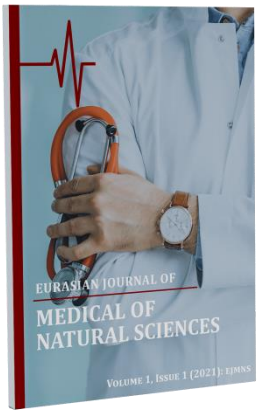
EURASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES
Innovative Academy Research Support Center
UIF = 8.3 | SJIF = 7.921 www.in-academy.uz



CLINICAL, LABORATORY AND INSTRUMENTAL FEATURES OF ACUTE OBSTRUCTIVE BRONCHITIS IN FREQUENTLY ILL CHILDREN

Mamarizaev Ibrokhim Komildzonovich
Assistant of the department of 1-pediatrics and neonatology,
Samarkand State Medical University.
Samarkand, Uzbekistan.
https://doi.org/10.5281/zenodo.13358311

ARTICLE INFO

Received: 16th August 2024
Accepted: 21th August 2024
Online: 22th August 2024

KEYWORDS

Bronchitis, obstruction, children, procalcitonin, immunodeficiency, frequently ill people.

ABSTRACT

The share of frequently ill children on average accounts for up to 70-85% of all cases of respiratory diseases in children (1,5,6). Recent studies have shown that bronchopulmonary diseases often develop against the background of a violation of the normal functioning of the immune system, and in some cases of immunodeficiency states - primary and secondary. Consequently, immunotherapy plays an important role in the therapeutic tactics of obstructive bronchitis (2,3,7).

Based on this articleв, it is revealed that children with obstructive bronchitis from the frequently ill group have an increase in the level of inflammatory markers C-reactive protein, procalcitonin by 1.3-1.5 times compared to children not from the frequently ill group.

It was found that the use of polyoxidonium at a dose of 12 mg /day leads to a significantly significant (by 1.6 bed-days) reduction in the duration of hospitalization in frequently ill children with obstructive bronchitis.

Relevance. Despite the success achieved in diagnosis and treatment, diseases of the respiratory system still occupy one of the first places in the structure of morbidity in children and adolescents. This is due to the deterioration of the environmental situation around the world, and respiratory pathology is closely related to the environment [1,2,6]. The growing trend of respiratory pathology in children, the high risk of recurrent obstructive bronchitis, and the possibility of developing bronchial asthma determine the relevance of studying the factors and mechanisms of obstructive bronchitis formation in children. Despite the significant progress made in the development of bronchitis treatment methods, clinicians often face insufficient effectiveness. At the same time, the resistance of pathogenic factors to traditional medicines is growing. This indicates the need to improve the tactics of etiotropic and pathogenetic therapy.

The share of frequently ill children on average accounts for up to 70-85% of all cases of respiratory diseases in children (3,4,7). Recent studies have shown that bronchopulmonary diseases often develop against the background of a violation of the normal functioning of the

immune system, and in some cases of immunodeficiency conditions - primary and secondary. Consequently, immunotherapy plays an important role in the therapeutic tactics of obstructive bronchitis [5,7].

In the current literature, there is no systematic information on the relationship between clinical and immunological characteristics in "frequently ill children" with acute obstructive bronchitis. In this regard, it seems relevant to study the clinical and immunological features of acute obstructive bronchitis in children in order to improve diagnostic and therapeutic measures, which was the purpose of this study.

Objective: to study the course of acute obstructive bronchitis in frequently ill children.

Materials and methods of research.

To achieve this goal and objective, we conducted an in-depth study of frequently ill children with acute obstructive bronchitis aged 2 to 7 years.

The research was conducted in pediatric departments and the pediatric intensive Care unit of the Samarkand branch of the Republican Scientific Center for Emergency Medical Care, and the Samarkand Regional Children's Multidisciplinary Medical Center. 80 children were examined. Among them:

Group I (main group)– children with acute obstructive bronchitis from the group "frequently ill children" (40 patients).

Group II (comparison group)– children with acute obstructive bronchitis (40 patients)

Patients with acute obstructive bronchitis from the group "frequently ill children" were divided into 2 subgroups:

Ia subgroup (20) –received standard therapy

Ib subgroup (20 – - received oral Polyoxidonium in addition to standard therapy

Research resultsand their discussions.

We studied the main markers that characterize the state of the inflammatory response, cytokine status, and humoral immunity. In particular, the state of the inflammatory response was assessed by C-reactive protein(CRP) and procalcitonin (PCT). Cytokine status was assessed by the levels of Interleukin-6 (IL-6) and Interleukin-10 (IL-10). Humoral immunity was examined by blood concentrations of the main non-specific immunoglobulins IgG, and IgA.

Analysis of the studied parameters depending on the nosological form (tof paragraph 3.1) showed that in patients with acute obstructive bronchitis in frequently ill children, comparable changes occur in increasing the duration of CRP-27.40±1.10 seconds, PCT-1.27±0.04 seconds. Significant disorders of the blood coagulation system were revealed in patients with uncomplicated obstructive bronchitis.

Analysis of the studied parameters depending on the nosological form (tof paragraph 3.3) showed that in patients with obstructive bronchitis in children from the group of frequently ill (group I), in comparison with acute obstructive bronchitis (IIgroup II), comparable changes occur in increasing the duration of CRP - 27.4±1.1 and 21.38±0.61 (PP <0.001), PKT - 1.27±0.04 and 0.84±0.05, respectively, groups (P<0.001).

There is an increase in the level of IL-10 (13.19±0.54), IL-6 (19.92±0.69 g / l), IgG (16.73±0.22) and an increase in the content of IgM (4.62±0.12) in patients Iof group I in comparison with patients IIof group II (21,38±0,61, 0,84±0,05, 9,80±0,45, 11,02±0,53,

11,43±0,23, 2,82±0,14), These data indicate the involvement of the inflammatory response system and immunological status in obstructive bronchitis in children from the group of frequently ill patients, which is reflected in the negative impact on the course of the disease (P<0.001).

To assess the significance of indicators of inflammatory response and immunology in assessing the severity of clinical manifestations of acute obstructive bronchitis in frequently ill children, we analyzed the correlation relationships between the main clinical indicators and indicators of cytokine status, inflammatory response and non-specific immunoglobulins in patients I группыof group I.

Correlationspbetween the main indicators of inflammatory response and immunology and the duration of respiratory failure in patients with obstructive bronchitis are shown in Figures 3.19-3.24. Figure 3.19 shows that almost all points are highly dispersed relative to the trend line, only a few points are located along the trend line, which, however, does not reflect the main trend, as follows: the average strength of the direct correlation between the duration of tachycardia and CRP. A similar pattern persists on graphs 3.20-3.24. There is an uneven distribution of points on the planes relative to the trend line, against which correlation values are noted, indicating the average strength of direct and inverse correlation between indicators. Thus, the obtained data indicate a low significance of the main indicators of the inflammatory response and immunology in the prognosis of the course of respiratory failure in obstructive bronchitis.

Finally, based on the correlation relationships between the indicators of CRP, PCT, FA, IL-10, D-dimer c and the duration of respiratory failure, tachycardia and hospitalization in patients with acute obstructive bronchitis without myocarditis, we compiled the final correlation matrix. The analysis of correlation relationships showed the significance of indicators of inflammatory response and immunology in the course of bronchial obstructive syndrome in children with obstructive bronchitis, which, apparently, is associated with the influence of these pathological mechanisms on the development of bronchial obstructive syndrome in children who are not often ill.

Conclusions. Thus, the conducted studies have shown that the patients examined by us have marked changes in the indicators of the inflammatory response and immunology, which are manifested by a violation of the processes of an adequate immunological and anti-inflammatory response, which determines the nature of the course of the disease. The revealed orientation of immunological components and their severity indicate an important pathogenetic role in the development and progression of bronchial obstruction, which makes the course of obstructive bronchitis in children more difficult.

References:

1. Kannan A. et al. Infections in critically ill children //Indian Journal of Pediatrics. – 2023. – Т. 90. – №. 3. – С. 289-297.
2. Fedorovna I. M., Kizi S. Z. S. STATE OF HUMORAL IMMUNITY IN PATIENTS WITH ATYPICAL PNEUMONIA IN FREQUENTLY ILL CHILDREN //Research Focus. – 2023. – Т. 2. – №. 10. – С. 125-128.

3. Papakyritsi D. et al. Epidemiology and outcomes of ventilator-associated events in critically ill children: Evaluation of three different definitions //Infection Control & Hospital Epidemiology. – 2023. – Т. 44. – №. 2. – С. 216-221.
4. Thomas S. et al. Unmet supportive care needs of families of children with chronic illness: A systematic review //Journal of Clinical Nursing. – 2023. – Т. 32. – №. 19-20. – С. 7101-7124.
5. Komildzonovich M. I. ALLERGIC DISEASES IN CHILDREN WITH IMPAIRED INTESTINAL DYSBIOSIS //International journal of medical sciences. – 2024. – Т. 4. – №. 08. – С. 23-25.
6. Мамаризаев И. К. FEATURES OF THE COURSE, MORPHO-FUNCTIONAL AND CLINICAL-INSTRUMENTAL INDICATORS OF COMMUNITY-ACQUIRED PNEUMONIA WITH MYOCARDITIS IN CHILDREN //УЗБЕКСКИЙ МЕДИЦИНСКИЙ ЖУРНАЛ. – 2024. – Т. 5. – №. 2.
7. Komilzhonovich M. I. OPTIMIZATION OF TREATMENT OF ATOPIC DERMATITIS IN CHILDREN //International journal of scientific researchers (IJSR) INDEXING. – 2024. – Т. 5. – №. 2. – С. 642-646.
8. Мамаризаев И. К., Абдукадирова Ш. Б., Джураев Ж. Д. THE ROLE OF THE HEMOSTATIC SYSTEM IN THE DEVELOPMENT OF ACUTE OBSTRUCTIVE BRONCHITIS IN CHILDREN AGAINST THE BACKGROUND OF MYOCARDITIS //УЗБЕКСКИЙ МЕДИЦИНСКИЙ ЖУРНАЛ. – 2023. – Т. 4. – №. 5.
9. Джураев Ж. Д., Абдукадирова Ш. Б., Мамаризаев И. К. HISTORICAL, CLINICAL, LABORATORY AND INSTRUMENTAL CHARACTERISTICS OF HEMORRHAGIC DISEASE OF NEWBORNS //УЗБЕКСКИЙ МЕДИЦИНСКИЙ ЖУРНАЛ. – 2024. – Т. 5. – №. 2.