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ASSESSMENT OF INFLAMMATORY RESPONSE INDICATORS IN ACUTE OBSTRUCTIVE BRONCHITIS IN "FREQUENTLY ILL CHILDREN".

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According to the literature data of domestic and foreign researchers, diseases of the respiratory system account for more than half of the total number of sick children, which indicates the relevance of the problem.

In infants with acute respiratory infection, the incidence of bronchial obstruction in recent years has tended to increase and reaches from 25 to 50% or more [6, 12]. The problem of frequently ill children is currently no less relevant in pediatrics [12, 14]. In Western European medicine, the term "recurrent infections" is used, which includes a dispensary group of children with frequent, repeated, recurrent respiratory infections that arise due to an imbalance in the body's defenses. Such children have disorders of cellular and humoral immunity.

The CWD group includes children who, under the age of 1 year, suffer acute respiratory diseases 4 times or more per year, from 1 to 3 years - 6 or more, from 4 to 5 years - 5 or more, and over 5 years - 4 or more episodes [15, 16]. When studying literature studies on the immune status of patients with recurrent infections, it was revealed that the frequency of acute respiratory infections up to 8 times a year with a favorable course may be a variant of the norm, while the immune imbalance is compensated by the immune system.

The morbidity of the respiratory system in children is influenced by endogenous and exogenous factors. Endogenous factors include the age of the mother

(too young or, conversely, old), toxicosis of pregnancy, prematurity, morphofunctional immaturity, purulent-septic diseases in the newborn period, perinatal lesions of the central nervous system, hypovitaminosis, protein deficiency, rickets, iron deficiency anemia, stressful situations in the family . Exogenous factors include environmental pollution, unfavorable material and living conditions, low levels of sanitary culture, passive smoking, irrational daily routine, and unhealthy diet.

Despite numerous studies, the cytokine status in frequently ill children with obstructive bronchitis has not been sufficiently assessed.

In general, the negative impact of the above risk factors for the development of CBD leads to increased reactivity of the child's body, decreased resistance to viral and bacterial infections, which causes tension and then depletion of the immune system, disruption of compensatory-adaptive mechanisms and decreased immunological resistance, which are the main pathological background of the formation groups of children with recurrent respiratory infections.

There are two main reasons for the occurrence of repeated and frequent respiratory diseases in people with chronic illness, which include dysfunction of the immune system and genetic predisposition and their combinations due to adverse environmental influences.

Literary information from studies in children with acute obstructive bronchitis from the group of acute respiratory infections indicate an existing imbalance of the immune system, while questions about studying the role of immune mechanisms in children with acute obstructive bronchitis and in the formation of a group of frequently ill children are contradictory, insufficient and further study is relevant .

Goal of the work. Assessment of indicators of the inflammatory response and immunological characteristics in patients with obstructive bronchitis from the group of "frequently ill children."

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

Generally accepted anamnestic, clinical, laboratory, paraclinical and special examination methods were carried out on patients with acute obstructive bronchitis in children from the group of "frequently ill children" who were hospitalized in the pediatric intensive care units, I and II emergency pediatrics of the Samarkand branch of the Republican Scientific Center for Emergency Medical Care between 2020 and 2022.

Instrumental research methods included x-ray examination of the chest organs.

A comprehensive assessment of the degree of bronchial obstruction in children with obstructive bronchitis was used as a special study. Objective instrumental examination methods were used as criteria for diagnosis, severity and control of treatment methods for bronchial obstruction: determination of the level of C-reactive protein, procalcitonin and the level of Interleukin-6 in the blood using the enzyme-linked immunosorbent method.

80 children were examined. Of these: 40 patients in group I (main group) - children with acute obstructive bronchitis from the group of "frequently ill children" and 40 patients in group II (comparison group) - children with acute obstructive bronchitis.

Research results. All patients had typical clinical symptoms of broncho-obstructive syndrome. The disease was diagnosed based on standard laboratory and instrumental examinations.

The criteria for diagnosing bronchial obstruction were clinical (shortness of breath, emphysematous bloating of the chest; physical: boxed percussion sound over the lungs, weakened breathing, dry wheezing scattered rales with an expiratory component) and radiological (increased transparency of the pulmonary fields, horizontal position of the ribs, low position of the diaphragm) signs.

Mostly boys (60.0%) were sick compared to girls (40.0%). Most often, acute obstructive bronchitis was observed in children aged 1 to 3 years.

The clinical symptoms of patients with obstructive bronchitis from the group of frequently ill children and outside this group are characterized not only by pathological changes in the lungs, but also by the frequent involvement in the pathological process of other vital organs and systems, such as the cardiovascular and nervous systems. The numerous and serious complications of the disease occurring against the background of concomitant diseases indicate the development of disorders in the "internal" environment of the patient's body.

Table 1

Frequency of severity and degree of respiratory failure in patients of the study groups upon admission.

Clinical signs	I group (n=40)		II group (n=40)	
	abs.	%	abs.	%
General state				
medium-heavy	12	30,0	15	37,5
Heavy	25	62,5	24	60,0
extremely difficult	3	7,5	1	2,5
Degree of respiratory failure				
respiratory failure I degree	2	5,0	8	20,0
respiratory failure II degree	33	82,5	31	77,5
respiratory failure III degree	5	12,5	1	2,5

Studies have shown that in frequently ill children, acute obstructive bronchitis is more severe and is accompanied by degree III respiratory failure with a predominance of the expiratory component, respectively 3 and 5 times more often.

The main markers characterizing the state of the inflammatory response and cytokine

status were studied. The state of the inflammatory reaction was assessed by C-reactive protein (CRP), procalcitonin (PCT). The cytokine status was assessed by the level of Interleukin-6 (IL-6).

Analysis of the studied indicators depending on the nosological form showed that in patients of group I, i.e. in frequently ill children, comparable changes occur in the increase in the duration of CRP - 27.40±1.10 sec, PCT - 1.27±0.04 sec (Table 2). Significant disorders of the blood coagulation system were identified in patients with uncomplicated obstructive bronchitis.

Table 2

Indicators of the inflammatory response and cytokine status in patients with acute obstructive bronchitis

Indicators	I group (n=40)		II group (n=40)		P
	M	m	M	m	
CRP (mg/l)	27,40	1,10	21,38	0,61	<0,001
PCT (ng/ml)	1,27	0,04	0,84	0,05	<0,001
IL-6 (ng/ml)	19,92	0,69	11,02	0,53	<0,001

P – significance of differences between the compared groups

Figure 1 shows a cluster of most points relative to the trend line; there are also several points at the beginning and end of the graph, located above and below the trend line, while there is a high direct correlation between indicators of the duration of respiratory failure and IL-6. The data obtained indicate the importance of IL-6 in the prognosis of the course of obstructive bronchitis from a group of frequently ill
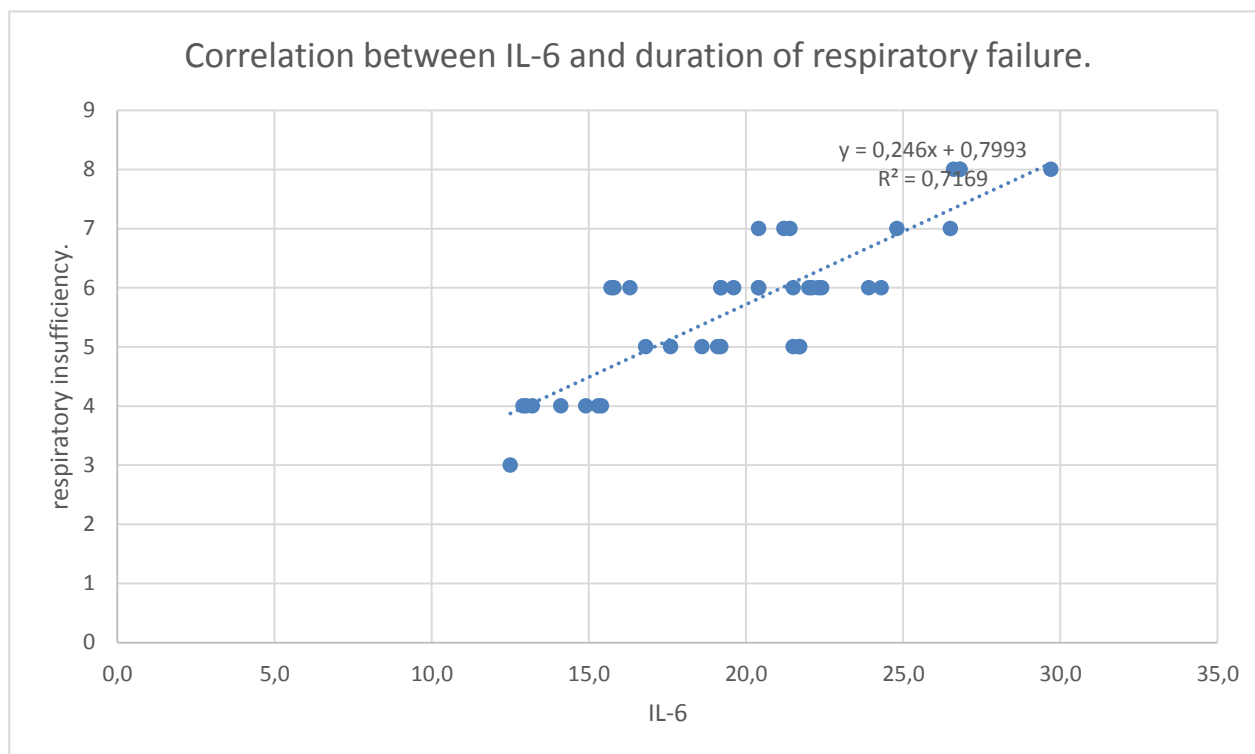
children.

Figure 1. Correlation between IL-6 and the duration of respiratory failure in patients of group I.

Analysis of the studied indicators depending on the nosological form (Table 1) showed that in patients with obstructive bronchitis in children from the group of frequently ill patients (group I), in comparison with acute obstructive bronchitis (group II), comparable changes occur in increasing the duration CRP - 27.4±1.1 and 21.38±0.61 (P<0.001), PCT - 1.27±0.04 and 0.84±0.05 (P<0.001). There is an increase in the level of IL-6 in patients of group I (19.92±0.69 g/l) compared to patients of group II (11.02±0.53), which indicates the involvement of the inflammatory response system and cytokine status in often sick children and is reflected in the form of a negative effect on the course of obstructive bronchi (P<0.001).

Ultimately, based on the correlations between the indicators of CRP, PCT, IL-6, with indicators of the duration of respiratory failure, hospitalization and morbidity per year in patients with acute obstructive bronchitis from the group of frequently ill children, we compiled a final correlation table. Correlation analysis showed a high correlation between indicators of the inflammatory response and immunology during

broncho-obstructive syndrome and the re-development of acute obstructive bronchitis in frequently ill children, which will help not only timely diagnosis, but also reduce the rate of recurrence of the disease.

The studies have shown that the examined patients have pronounced changes in the indicators of the inflammatory response, which are manifested by disruption of the processes of an adequate anti-inflammatory response, which determines the nature of the course of the disease. The severity of the identified changes indicates an important pathogenetic role in the development and progression of bronchial obstruction, which aggravates the course of obstructive bronchitis in children.

Thus, the research results obtained show that the characteristics of clinical manifestations and cytokine imbalance will make it possible to determine and predict the course of the disease, which dictates the need to develop methods of corrective therapy.

Conclusions. In children with obstructive bronchitis from the group of frequently ill patients, there is an increase in the level of inflammatory markers C-reactive protein, procalcitonin and the immunological indicator IL-6, respectively, by 1.3; 1.5 and 1.8 times compared to children not from the group of frequently ill people. In this regard, it is recommended to determine indicators of the inflammatory response and cytokine status in frequently ill children with obstructive bronchitis to identify prolonged forms of broncho-obstructive syndrome.

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