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BRONCHOOBSTRUCTIVE SYNDROME IN CHILDREN

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Abstract: Bronchoobstructive syndrome (BOS) in children is a clinical manifestation characterized by partial or complete obstruction of the lower airways, leading to symptoms such as wheezing, coughing, and difficulty breathing. It is commonly observed in various respiratory conditions including asthma, acute bronchitis, and bronchiolitis, particularly in early childhood. The syndrome is frequently triggered by viral infections, allergens, environmental pollutants, or structural abnormalities of the airways. Early diagnosis and effective management are crucial to prevent complications and improve quality of life. This paper reviews the etiology, pathophysiology, clinical presentation, diagnostic approaches, and current strategies in the treatment and prevention of BOS in pediatric patients. Emphasis is placed on the importance of individualized care, environmental control, and parental education in the management of this increasingly prevalent condition.

Keywords: Bronchoobstructive syndrome, pediatric respiratory disorders, airway obstruction, wheezing in children, pediatric asthma, bronchiolitis, obstructive bronchitis, respiratory infections, childhood dyspnea, pediatric pulmonary care

Bronchial obstruction, which develops against the background of infectious diseases of the lower respiratory tract in children, is observed, according to various authors, in 5-40%. In children with a family history of allergies, bronchoobstructive syndrome (Bos) usually develops in 30-40% of cases, the same trend is observed in children suffering from respiratory infections more than 6 times a year. Bronchoobstructive syndrome (Bos) is an urgent problem in pediatrics and occupies the first place in the structure of respiratory diseases in children. In recent years, doctors have increasingly encountered conditions such as bronchial obstruction during childbirth. Various factors influence the occurrence and development of bronchoobstructive syndrome (BOS) in young children. Viral infection is of great importance in the development of BOS. In addition, the period of early childhood is characterized by the imperfection of many immunological mechanisms: the formation of interferon in the upper respiratory tract, the level of immunoglobulin A in the blood serum by the end of the first year of life is 28% of the adult level, since secretory immunoglobulin A reaches its maximum values only at the age of 10-11 years. In addition to perinatal pathology, allergic history, bronchial hyperreactivity, rickets, dystrophies, thymus hyperplasia, early artificial feeding, respiratory organs observed in children 6-12 months

Bronchial diseases also play an important role in the development of bronchial obstruction.

According to the literature, there is a shortage of data for a comprehensive study of the pathogenesis of diseases accompanied by bos, as well as for the development of new and effective approaches to its therapy. In-depth research is needed to help develop more effective treatment strategies for children with these diseases. In this regard, it is important to substantiate the diagnostic criteria for cytokine status and vitamin D levels in children with BOS.

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Based on the above, the constant work on improving medical technologies and approaches to the prevention, diagnosis and treatment of bronchial obstruction determines the urgent problems of pediatrics. The early diagnosis of bos, as well as the ongoing discussions about the most favorable and least complicating treatment methods, as well as the paucity of proven data on solving this problem in the literature, determined the goals and objectives of the study.

The aim of the study was to assess the functional state of the respiratory system in children with bronchoobstructive syndrome.

Materials and methods. The study was conducted in the Department of Pulmonology of the Andijan regional Children's Multidisciplinary Medical Center and in the Department of Pulmonology of the Republican Specialized Pediatric Scientific and Practical Medical Center. The study involved 90 sick children aged 7 to 15 years. 20 practically healthy children of the same age were taken as a control group.

The study of the function of external respiration (TNOF) was carried out using the SEMA 2000 program on the Schiller srovit CP-1 spipometer (mockva). Statistical processing of the obtained results was carried out using the Statistica 6.0 software package.

Results and its discussion. Assessment of the functional state of the respiratory system, which is one of the main diagnostic criteria, is important for forecasting, treating and determining the necessary measures in the field of rehabilitation of bronchoobstructive syndrome in children.

A peak flowmetric study showed that in children with acute obstructive bronchitis (OB) in 80.0% of cases, Ncheut was registered in more than 80% of cases, while in children with recurrent bronchitis (BO or CB), at the same time, regulatory indicators were registered in 37.6% of children. The majority of ncheut values in the range from 80% to 60% of the norm were recorded in 44.1% of children with boli QB and in 11.4% of children with OOB ($p<0.05$).

Below the norm of 60% ncheutii in most cases (18.3%) BO li was registered in children with QB, and in 8.6% of 6 cases in children with OOB. We would like to note that in children with OB there is a tendency to clinical exacerbation of OB in 18.3% of cases, that is, this group is at risk of transformation of the QB disease (Table 1).

Table 1.

Analysis results of picfloumetry data in children examined, (%)

< / Score >	O‘OB (n=40)		BO li QB (n=50)		R
	abs	%	abs	%	
NChEYuT, must level 80	32	80,0 %	19	37,6 %	<0,001

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%	5	11,4 %	22	44,1 %	<0 , 05
NChEYuT, from the threshold	3	8,6 %	9	18,3 %	<0 , 05

Usually, the spipogram is divided into types of obstructive and restrictive types, but this indicator is relative, since in many diseases, obstructive and restrictive types of disorders can coexist.with chronic obstructive pulmonary diseases occurring in a calf, a pathological process may develop in the lung parenchyma, which is reflected in spirographic indications. This development can lead to the appearance of restriction symptoms against the background of existing obstructive symptoms.

Spirometry was used to identify syndromes of various obstructive, restrictive, or mixed ventilation disorders in children. Interestingly, 25.8% of children with OB.while other indicators of lung vital volume and airway permeability, measured using spirometry, were within the normal range. It is important to note that the standard values are set only for children with OOB, while such standards are not set for children with boli QB (Table 2).

Restrictive ventilation disorders occur due to processes that limit the stretching of the lungs and the volume they fill with air. In the pediatric population, restrictive disorders are most often observed (12.2%) in children with BV. Obstructive pulmonary ventilation disorders associated with narrow airways and increased resistance to airflow are also characteristic of respiratory diseases.

Table 2.

Spirometric parameters of patients in the study groups, (%)

Specification	**O‘OB (n=22)**		**BOli QB (n=47)**		**R**
	abs	**%**	**abs**	**%**	
Norm	6	25,8	6	13,4	<0,001
Obstructive type	14	59,6	26	54,4	<0 , 05
Restrictive type	-	-	6	12,2	<0 , 05
Mixed species	2	8,2	9	20	<0 , 05

In all the examined children, the obstructive type of ventilation disorder prevailed in the groups: OOB – 14 (59.6%), bo li QB – 26 (54.4%), and a lower mixed type of ventilation disorder was noted in all groups.: epo – 2 (8.2%), bo li QB – 9 (20%).).

An extended analysis of the function of external respiration (TNF) in the studied groups is presented in Table 3.

Table 3. Comparative analysis of TNF in examined children, (m±m)

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Parameters	Control group (n=20)	O‘OB (n=22)	BO li QB (n=90)	P
TNChH1	88,6±1,7	71,3±1,8	65,4±0,65	<0 , 01
O‘HH	87,5±3,1	73,5±2,1	67,3±0,9	<0 , 01
TNChH1/O‘HH (Tiffno indeksi)	80,3±2,1	62,7±1,1	53,3±1,1	<0 , 01
SHT 25	68,5±1,6	61,6±1,4	60,3±0,7	<0 , 05
SHT 50	68,5±1,6	58,8±1,2	49,4±0,6	<0,001
SHT 75	68,5±1,6	52,7±1,3	56,1±0,8	<0 , 05

The results of the TNF study in the examined patients revealed violations expressed to varying degrees.

As can be seen from the data obtained, the tnchh1 level in patients with QB is reliably 1.1 compared to the group of children with OOB? ($p<0.01$).

A study of OHH levels showed that it was reliably reduced by 1.1 times in children with BO Li QB compared with the group of children with OOB ($p<0.01$). There was a significant decrease in the Tiffen index by 1.3 times compared with the group of children with BO Li QB ($P<0.01$).

Compared with the group of children with OOB, children with BO li QB had a reliable decrease in the level of ST50 by 1.1 times ($p<0.05$).

Conclusion. The study showed that a special type of impaired lung ventilation detected by spirometry in children with OOB and Bo Li QB is obstructive. Based on the conducted studies, a decrease in ugg and typhn index was found in most children, which is a symptom of impaired bronchial permeability. This disease is usually caused by inflammatory changes in the bronchi and lungs.

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