ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 03,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

CLINICAL ASPECTS AND RISK FACTORS OF RECURRENT BRONCHITIS IN CHILDREN

Azizova N. D.

Republican Specialized Scientific and Practical Medical Center of Pediatrics of the Ministry of Health of the Republic of Uzbekistan.

Kabilova D.K.

Medical Faculty of the Central Asian Medical University. Fergana.

Zokirov B.K.

Andijan State Medical Institute.

Relevance: Bronchopulmonary pathology in childhood is diverse and includes acute and chronic, infectious-inflammatory and allergic diseases, congenital and hereditary lung diseases. Some nosological forms of respiratory

Recurrent obstructive bronchitis in young children, as a condition preceding bronchial asthma, is one of the pressing issues in pediatric pulmonology and allergology. Most authors acknowledge that, in terms of its etiological, pathogenetic, and clinical essence, recurrent obstructive bronchitis (ROB) sets the stage for the development of bronchial asthma, which provides grounds for considering children with recurrent obstructive bronchitis as a group at risk for this disease [1,2,3]. Bronchial obstructive syndrome (BOS) clinically manifests as difficulty and prolongation of exhalation, lung hyperinflation, involvement of accessory respiratory muscles, and wheezing during exhalation. The onset of bronchial obstruction usually occurs gradually, more often on the second or third day of ARI, which distinguishes it from an asthma attack that develops suddenly. The highest frequency of bronchial obstructive syndrome occurs in early childhood, which is due to the relative narrowness of the airways, weakness of the respiratory muscles, abundant blood supply, and hypersecretion of bronchial glands (115).

Thus, the trend of increasing acute respiratory diseases (ARD) in children and their role in the development of bronchial obstruction, the high risk of recurrent obstructive bronchitis and the possibility of developing bronchial asthma, the variety of immune disorders in this pathology determine the relevance of studying the factors and mechanisms of bronchial obstruction syndrome formation in children with respiratory tract infections.

Keywords: Recurrent bronchitis, Pediatric bronchitis, Clinical aspects, Risk factors, Prevention, Treatment strategies

Objective of the work: study the clinical features and risk factors for the development of recurrent bronchitis in children.

Materials and methods. Bronchoobstructive syndrome in young children manifests in two clinical variants: acute obstructive bronchitis (AOB) - an episode of bronchial obstruction that usually occurs for the first time in life against the background of an acute respiratory infection,

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 03,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

and recurrent bronchitis with bronchial obstruction (RB with BO) - the recurrence of episodes of bronchial obstruction 2-3 or more times over 1-2 consecutive years.

During the course of our work, 90 children aged from 3 months to 3 years were examined. The material for observations and studies consisted of the following groups of children:

I group - 45 patients with recurrent bronchitis with bronchial obstruction.

II group - 45 patients with recurrent bronchitis.

During the work, a questionnaire was used, which included questions accessible to parents about the child's history of BO, its frequency, clinical manifestations, hereditary predisposition to allergic and bronchopulmonary diseases, increased sensitivity to food, drug, vaccine allergens and antigens, as well as information about the number of pregnancies the mother had, the presence of gestosis, nephropathy, preeclampsia, and data on the ecological condition of the place of residence.

Results of the study and their discussion. Analyzing these indicators, we found that in cases of RB with BO, patients were mainly admitted on the 3rd to 5th day of the illness (67.3%); in cases of RB with recurrent course, children were mainly admitted on the 5th to 7th day of the illness - 24 (48.0%) children after unsuccessful home treatment.

It is known that the health and development of a child are influenced by important aspects such as the specifics of obstetric history, the condition of the newborn, and its development up to the moment the current disease arises. Analyzing the complete medical history data of the examined children, we identified the most frequently encountered risk factors (Table 1).

As can be seen from the table, the majority of RB patients with BO were born from II-III pregnancies 20 (45.3%) and, respectively, II-III births 17 (38.5%). RB patients 22 (49.2%) were born from the first pregnancy, from II-III pregnancies in 17 (38.5%) cases, and from IV and more – 5 (12.3%) children. In the majority of the observed mothers of the examined patients, there were various complications during pregnancy, and this was highest in the group of mothers of patients with BA, 39 (87.7%). Acute respiratory infections during pregnancy were most common in the group of mothers of children with RB, 36 (80.0%). During pregnancy, mild or moderate anemia was diagnosed in mothers of children with RB with BO in 64 (85.3%) cases, RB with BO in 45 (75.0%), and RB in 54 (83.1%). In the group of patients with RB, in 37 (83.1%) cases, the mothers had a history of pathological labor. Prematurity and birth asphyxia were identified with the highest frequency in the RB patient group – 2 (6.2%) and 6 (14.7%), respectively, while in the non-RB group, they were 2 (6.2%) and 9 (21.5%).

Table 1.

Factor analysis of examined children

Risk factors	**RB n=45**		**RB with BO n=45**		**P**
	abc	%	abc	%	
Born from: I am pregnant	22	49,2	18	41,3	>0,05
II-III pregnancy	17	38,5	20	45,3	>0,05

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 03,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

IV and more pregnant.	5	12,3	5	13,3	>0,05
Born from: I births	24	53,9	19	44,0	>0,05
II-III degrees	17	38,5	15	45,3	<0,01
IV and more births	3	7,7	3	10,7	>0,05
Complications of the current pregnancy: toxemias of the first and second halves	39	87,7	21	46,7	>0,05
Anemia grade I-II	37	83,1	38	85,0	>0,05
Maternal diseases during pregnancy: ORI	36	80,0	17	38,7	>0,05
Pathological course of labor	18	40,0	12	28,3	<0,01
Born: premature	2	6,2	6	14,7	<0,01
in asphyxiation	9	21,5	13	30,0	<0,01
Nutrition up to one year: - natural	20	46,6	18	66,6	<0,01
- artificial	10	22,3	4	10,0	>0,05
- mixed	15	35,3	10	23,3	>0,05

In the clinical picture of recurrent bronchitis (Table 1), all 45 children (100%) exhibited signs of intoxication: subfebrile temperature in 14 (32.5%) children, fever (above 38.1 °C) in 6 (14.5%), weakness, adynamia in 34 (76.9%), decreased appetite in 33 (73.5%), emotional lability in 25 (57.3%) children. In 32 (72.6%) children, difficulty in nasal breathing was noted, mucous nasal discharge in 22 (47.9%). In 100% of children, the dominant symptom was cough, of which 20 (45.3%) had a non-productive cough, and the rest had a productive cough. Signs of expiratory difficulty in breathing, noisy or wheezing in nature, were present in 11 (25.6%) children, involvement of accessory muscles in the act of breathing in 4 (9.4%), nasal flaring in 23.9%. Additionally, pallor of the skin was observed in 28 (62.4%) children, dry skin in 8 (19.6%), oral cyanosis in 17 (39.3%) children.

Table 2.

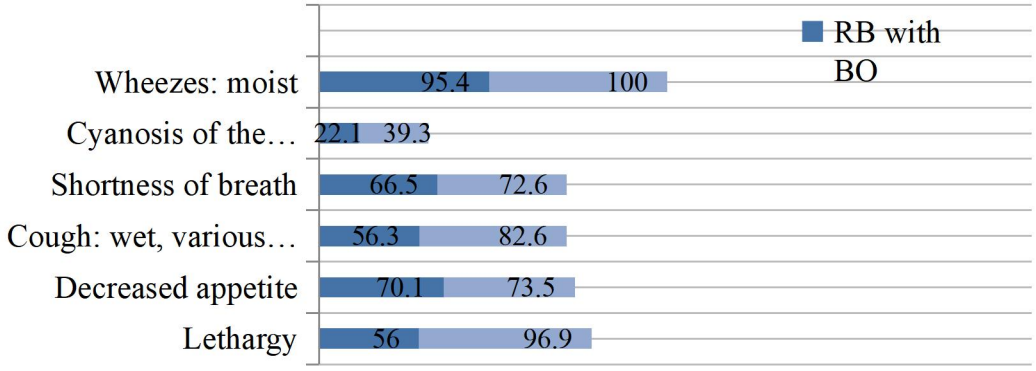
The frequency of clinical symptoms in the examined children, (%)

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 03,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai



The clinical picture in 43 (95.7%) patients with recurrent bronchitis was characterized by the enlargement of lymph nodes in various groups, hypertrophy of the tonsils in 35 (79.5%). Percussion over the lungs revealed a boxy shade of percussion sound in 11 (25.6%). Auscultation revealed scattered dry wheezes in 20 (45.3%) children, moist, varied in caliber in 37 (82.6%), in 3 (8.5%) there was dullness of heart sounds, and in 5 (11.9%) a systolic murmur was heard at the apex of the heart. Hepatomegaly was present in 23 (52.9%) patients, and hepatosplenomegaly in 14 (32.7%).

When examining peripheral blood, pronounced shifts were not characteristic: in 11 (25.6%) cases, the erythrocyte sedimentation rate (ESR) was moderately accelerated, slight leukocytosis was observed in 7 (17.1%), anemia in 14 (32.5%), lymphocytosis in 45 (100%), and lymphomonocytosis in 28 (62.4%). Radiologically, bilateral enhancement of the lung pattern was determined in 45 (100%), enlargement of the lung roots in 45 (100%), increased transparency of the lung fields in 14 (32.5%), and thickening of the pattern in the root sections in 11 (25.6%). In 4 (10.3%) children, signs of incomplete blockade of the right bundle branch of the His bundle were detected on electrocardiography (ECG).

Gastrointestinal disturbances manifested as changes in appetite: an increase in 6 (15.0%) children with recurrent bronchitis or a decrease in 23 (51.7%) children with RB. Thirst was increased in 21 (47%) patients with RB, decreased in 23 (51.7%) with RB.

Changes in the urinary system in the form of nocturnal enuresis were identified in patients with RB in 10 (23.3%) cases.

Clinical manifestations of allergic reactions of various etiologies were observed 9 times more frequently in children with recurrent bronchitis 1 (3.3%).

Conclusions: thus, the comparison of clinical observations of children in all study groups showed that in RB, there is a longer duration of oral wheezing, wet cough, and wet wheezing in the lungs. X-rays of patients in all groups revealed bilateral enhancement of the lung pattern, enlargement of the lung roots, and increased transparency of the lung fields, which are characteristic of BO syndrome. The main prognostic risk factors for the development of recurrent bronchitis in children are: perinatal factors, a complicated premorbid background, concomitant and past illnesses.

ISSN: 2692-5206, Impact Factor: 12,23
American Academic publishers, volume 05, issue 03,2025

Journal: https://www.academicpublishers.org/journals/index.php/ijai

References:

1. Ахмедова Д.И., Ашурова Д.Т., Арифова Г.А. Факторы риска развития синдрома бронхиальной обструкции у детей раннего возраста // Ж. Педиатрия.- Т., 2019. - 2-3. - С. 52-53
2. Ашурова Д.Т. Клинико-иммунологическая характеристика синдрома бронхиальной обструкции у детей раннего возраста // Материалы 9 съезда педиатров России, Москва. - 2021. –С. 54.
3. Балаболкин, И.И. Атопия и аллергические заболевания у детей / И.И.Балаболкин // Педиатрия.–2022.
4. Германова О.Н. Клинико-иммунологические особенности обструктивного бронхита у детей с инфекциями респираторного тракта: автореф. дис. … канд. мед. наук / О.Н. Германова - Ставрополь, 2021.- 23 с.3.–№ 6.–С. 4-7, 99-102.
5. Даминов Т.А. Выявление группы риска по развитию бронхиальной астмы у детей и прогнозирование отдаленных последствий заболеваний с бронхообструктивным синдромом: Даминов Т.А., Халматова Б.Т., Сотиболдиева Н.Р. Инф.письмо (№8п/53).–Т.,2015.–4 с
6. Жукова О. В. Концепция факторов риска в оценке влияния "атипичных" возбудителей на формирование бронхиальной астмы у детей с острым и рецидивирующим обструктивным бронхитом : научное издание / О. В. Жукова // Российский медицинский журнал. - М., 2016. - Том 22 N2P220162. - С. 77-81. - Библиогр.: 5 назв.
7. Pojsupap S., Iliriani K., Sampaio T. Z. A. L. Efficacy of high-dose vitamin D in pediatric asthma: a systematic review and meta-analysis //Journal of Asthma. – 2021. – Т. 52. – №. 4. – С. 382-390.
8. Raissy, H. H. Benefits and Risks of Long-Term Asthma Management in Children: Where Are We Heading? // Drug safety. –2017. – Vol. 40, № 3. – P. 201-210.
9. Sarah, D. Regulatory T cells, inflammation and the allergic response. The role of glucocorticoids and Vitamin D/ D. Sarah [et al.]// The Journal of Steroid Biochemistry and Molecular Biology .-2020.-№120(2).-P.86-95.
10. Ullmann N, Bossley CJ, Fleming L, Silvestri M, Bush A, Saglani S. Blood eosinophil counts rarely reflect airway eosinophilia in children with severe asthma. Allergy (2023) 68:402–6.
11. Yong S. J. Body mass index and asthma in United States // Arch intern Med. – 2021. – Vol. 161, №13. – P. 1605-1611.