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## CLINICAL FEATURES AND RISK FACTORS FOR THE DEVELOPMENT OF ATOPIC BRONCHIAL ASTHMA COMBINED WITH ALLERGIC RHINOSITUITIS IN CHILDREN

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### ABSTRACT

*The urgency of the problem of bronchial asthma is explained by the steady growth, in all countries of the world, of its cases with a more severe clinical course, often ending in a fatal outcome. In this regard, Uzbekistan is no exception, here, in recent years, there has been an increase in bronchial asthma among the child population by more than 20 times. Bronchial asthma is especially common among children living in an ecologically unfavorable region. Although various aspects of the problem of bronchial asthma are being successfully developed, there are still many open issues that need to be resolved. In this regard, the problem of combined forms of bronchial asthma with other allergic diseases is of great scientific and practical interest.*

**KEYWORDS:** *Asthma, Allergy, Clinic, Bronchial Asthma, Neutrophil Activity.*

### INTRODUCTION

#### The purpose of the study

He will study the features of the clinic and determine the importance of risk factors in the development of atopic bronchial asthma combined with ARS in children.

**Materials and methods**

A study was conducted of 100 children suffering from atopic bronchial asthma, combined and not combined with ARS at the age of 7-14 years. 30 practically healthy children served as a control. Methods – clinical and allergic, functional, laboratory, immunological and statistical.

**Results**

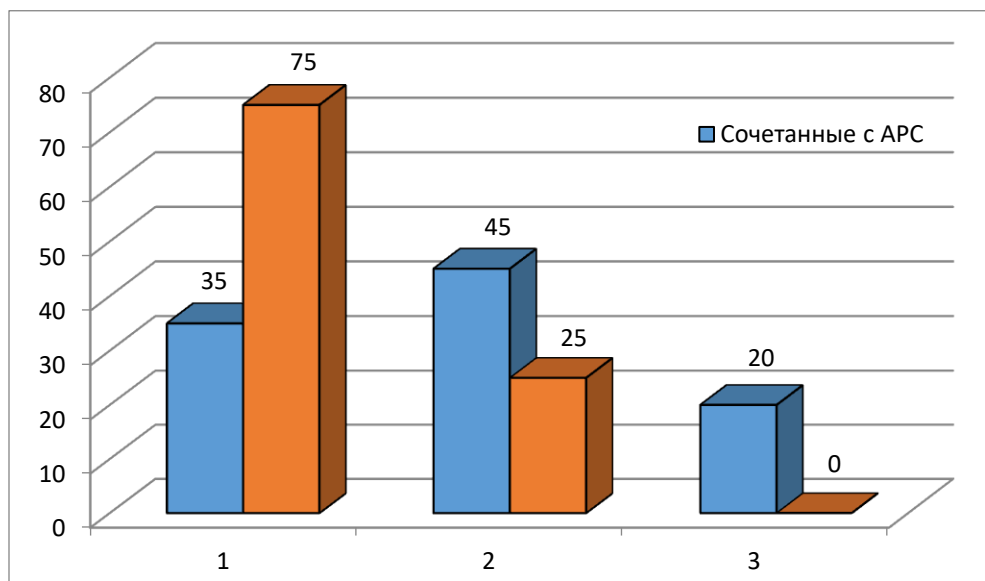
The features of the clinical course of atopic bronchial asthma combined with ARS were established: the predominance of cases with a more severe clinical course, pronounced meteorological stability, violation of the psychological state, hyperreactivity, bronchial receptors to histamine and acetylcholine, inhibition of respiratory function, rhinometry, phagocytic activity of neutrophils. The importance of risk factors (predisposing and contributing) to the development of bronchial asthma in children has been determined.

For example, there are conflicting opinions regarding bronchial asthma combined with allergic rhinosinuitis (ARS). It is believed that the primary pathology of the upper respiratory tract is of great importance in the development and formation of the bronchial asthma clinic (2,11).

The purpose of the study was to study the features of the clinic and the importance of risk factors in the development of atopic bronchial asthma combined with ARS in children.

**Materials and methods**

130 children aged 7-14 years were under observation, including those suffering from atopic bronchial asthma combined with ARS-60, not combined with ARS - 40 and practically healthy 30. The diagnosis of the main and concomitant diseases was made on the basis of clinical and allergological, functional, laboratory, X-ray studies. The power of forced exhalation was determined by a pneumomanometer, the threshold of sensitivity of the bronchial receptor apparatus to histamine and acetylcholine, the respiratory function of the nose, the number of eosinophils in peripheral blood and nasal secretions, the cause of sensitization of the body by allergic skin tests. The complex of paraclinical studies included the assessment of serum IgE, phagocytic activity of neutrophils and the psychological state of children [1,7,8,10]. Digital data were processed by the method of variational statistics. The differences were considered significant under the condition  $t \geq 2$ ,  $P < 0.05$ .

**Fig. Clinical course of atopic bronchial asthma in children**

**1-Light; 2-Medium-Heavy; 3-Heavy**

## RESULTS AND DISCUSSION

Analysis of the results showed that boys suffer from atopic bronchial asthma more often (65.0-71.7%) than girls – 28.3-35.0% (Table 1). In the majority of sick children – 38 (63.3%), the development of bronchial asthma began with symptoms of allergic rhinitis and sinusitis, in 18 (30.0%), the disease began with the simultaneous manifestation of symptoms of bronchial asthma and ARS and only a small number of children – 4 (6.7%) of diseases began with symptoms of bronchial asthma and some time after that, symptoms of allergic inflammation of the nose and its paranasal sinuses appeared.

The severity of the clinical course of bronchial asthma, combined and not combined with ARS, was different. With bronchial asthma, combined.

**TABLE 1 CHARACTERISTICS OF CHILDREN BY CLINICAL FORMS OF THE DISEASE, GENDER AND AGE**

№	Name of the disease	7-12 лет		13-14 лет		Total		
		Boys	Girls	Boys	Girls	Boys	Girls	Total
1	Bronchial asthma, combined ARS (n=60)	13 (21,6)	7 (11,7)	30 (50,0)	10 (16,7)	43 (71,7)	17 (28,3)	60 (100)
2	Bronchial asthma, combined ARS (n=40)	12 (30,0)	6 (15,0)	14 (35,0)	8 (20,0)	26 (65,0)	14 (35,0)	40 (100)
3	Practically healthy (n=30)	9 (30,0)	6 (20,0)	10 (33,3)	5 (16,7)	19 (63,3)	11 (36,7)	30 (100)
4	Total	34 (26,2)	19 (14,6)	54 (41,5)	23 (17,7)	88 (67,7)	42 (32,3)	130 (100)

**Note: The percentages of % are shown here and in parentheses.**

**TABLE 2 CLINICAL AND LABORATORY FEATURES OF BRONCHIAL ASTHMA COMBINED WITH ALLERGIC RHINO SINUSITIS**

№	Indicators	Sick children	Practically health
1.	Clinical course	Prevalence of severe cases	-
2.	Meteorological stability	Clearly expressed	Normal
3.	Seasonality	Clearly expressed	-
4.	Psychological state	Violated	Normal
5.	Forced exhalation (l/sec)	1,56±0,45+	3,86±0,56
6.	Threshold sensitivity (mcg%) of bronchial receptors to:		
	Histamine (mcg%)	400+	-
	Acetylcholine (mcg%)	1200	-
7.	Allergic rhinitis (%)	100+	-
8.	Allergic sinusitis (%)	45,0+	-
9.	Nasal polyps (%)	3,3+	-
10.	Rhinometry (mm. of water.st)		
	Right half Left half	16,8±3,1+ 18,4±3,2+	8,7±0,3 8,7±0,3
11.	Eosinophilia %	10-15+	4-5
12.	Eosinophils in smears prints of the nasal mucosa %	16,2±4,7	2-4
13.	Phagocytic number (%)	44,6±5,1+	75,5±4,5
14.	Phagocytic index	305±0,4+	7,4±0,5
15.	The power of phagocytosis	156,1±10,3+	558,7±16,2

**Note: + Numerical differences are significant (P<0.05).**

With bronchial asthma combined with moderate-severe and severe ARS, the physical activity of children was limited, colloquial speech was difficult, expiratory dyspnea and meteorological stability were clearly expressed, as well as violations of the psychological state were noted. Such children's school performance was low, they were characterized by impossibility and irritability. The seasonality of the disease was clearly expressed and depended on the cause of sensitization. Bronchial asthma of pollen etiology (wormwood, quinoa, etc.) often worsened in spring and summer, and household (household dust) - more often in autumn and winter. Forced exhalation rates (1.56 l/sec.) were significantly lower (P<0.05). The sensitivity of bronchial receptors to histamine and acetylcholine was high (hyperreactivity). This is evidenced by the low threshold concentration of these substances, which causes bronchospasm. All patients had allergic rhinitis. Along with this, allergic sinusitis (45.0%) and nasal polyps (3.3%) were detected in a significant part of patients. Indicators of rhinometry (16.8-18.4 mm of water) and phagocytic activity of neutrophils: phagocytic number (44.6%) phagocytic index (3.5). The strength of phagocytosis was also low. Eosinophilia (10-15%) of peripheral blood was noted and eosinophils (16.2%) were detected in smears - prints of nasal secretions (Table 2).

**TABLE 3 RISK FACTORS FOR THE DEVELOPMENT OF BRONCHIAL ASTHMA IN CHILDREN (M ± M%)**

Risk factors	Bronchial asthma	
	Combined with APC	Not combined with APC
Predisposing factors		
- IgE content in the blood	850,5	615,5
- hyper reactivity of the bronchi	100%	100%
- hereditary burden	45 (75,0+5,5)	28 (70,0+9,9)
- allergic diathesis	33 (55,0-6,4)	25 (62,5+9,6)
Contributing:		
- toxicosis of pregnancy in mothers;	41 (68,3+7,2)	24 (60,0+10,0)
- pathology of pregnancy and childbirth in mothers	16 (26,7+11,0) 23 (38,3+10,1)	6 (15,0+14,5) 13 (32,5+12,9)
- artificial and (or) early mixed feeding	39 (65,0+6,1)	22 (55,0+10,6)
- combination with allergic dermatitis	35 (59,8+8,2)	18 (45,0+9,5)

**Note: Numerical differences are unreliable (P>0.5)**

In the development of bronchial asthma, the presence of risk factors is of great importance. According to our data, predisposing and contributing risk factors were of the same importance in the development of atopic bronchial asthma combined and not combined with ARS (tab3). The body of patients reacted vividly to the allergenic effect and produced a sufficiently high amount of IgE (615.5-880.0IU/ml) bronchial hyperreactivity was observed in all patients, hereditary allergic burden - in 70.0-75.0%, allergic diathesis - in 63.5-55.0% of patients. Among the contributing factors, toxicosis (60.0-68.3%), pathology of pregnancy and childbirth were important (15-26,7%, 32,5-38,3) mothers of sick children. Artificial or previously mixed mercy was significant in 55.0-65.0% more combination of the underlying disease with allergic dermatitis – 45.0-59.8% of patients.

Thus, the clarification of the features of bronchial asthma combined with ARS is of scientific and practical importance. The fact is that ARS often transform into bronchial asthma, and its frequency depends on the development of allergic rhinitis and is within 6.2-11.1% at stages 1 and 2, 36.1% at stages 3-4 (3).

## CONCLUSIONS

1. The combination of bronchial asthma with ARS creates a qualitatively new situation in which the characteristic features of the clinical course are formed: a more severe course, a sharp deterioration in air permeability, hyper reactivity of the bronchi, a decrease in the activity of factors of nonspecific protection of the body.
2. For the prevention of bronchial asthma, early diagnosis and timely therapy of allergic lesions of the nose and its par nasal sinuses are necessary.

3. Risk factors are of great importance in the appearance and formation of bronchial asthma in children, and APC determine the development of the disease and the severity of the clinical course.

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