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Meaning Of Respiratory Mycoplasma Infection In Children With Bronchial Asthma

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ABSTRACT

Meaning and role of mycoplasma infection for children with bronchial asthma small studied. By us was inspected 39 children with BA in age from 2 to 14, from them 27 (69,2%) boys and 12 (30,8) girls. Obtained data from PChR testing is shown: among the children of patients with BA for 33,3% (13/39) patients found out M. pneumoniae.; for 66,7% (26/39) patients and for all children of control group M. pneumoniae. it is not discovered (table.№1). For children in a range 2-5, the more than half (53,8%) of children-asthmatics was got positive results of PChR; among the investigated children in age 6-14, only at 46,2% patients had M. pneumonia. Except it, among patients with BA, for 69,2% boys and 31% girls made the positive result of PChR, and correlation of sexes was made by 2,2: 1.

KEYWORDS

Bronchial asthma, respiratory infection, mycoplasma infection, children, atopic, atopic dermatitis, food allergy, family allergic anamnesis.

INTRODUCTION

From data of results of analysis of modern literature in the whole world in the last few years, a tendency is marked to the increase of morbidity bronchial asthma (BA) for children from early age and often has a heavy flow, and the met makes her from 5% to 15%.

The presence of next triad determines of BA for children: chronic inflammation, bronchial

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obstruction and increasing bronchial reactivity [11,15,23]. Wheezing (whistling breathing), shortness of breath, constraint in a breast, cough, products of sputum - clinical symptoms are characteristic for bronchial asthma.[11].

Flow BA for children related to the row of anatomical-physiological features: narrowest of road clearance of bronchial tubes, enhanceable vascularization of respiratory tracts, insufficient rigidity of thorax, elasticity of lungs, weak development of smooth musculature of bronchial tubes, hypersecretion of viscid mucus by gobled cages. Predominance of edema of mucous membrane, resulting in a selection mucuses in the road clearance of bronchial tubes above the spasm of smooth muscles, is another personal touch jf BA for children [15,23].

Causes different irritants of BA in children (atypical, viral infections, trigger factors) under their influence at any time can there is narrowing road clearance of bronchial tubes. In addition in pathogenesis of bronchial asthma, influences to difficult mixture of a few well-known factors, such as genetic, ecological, dietary changes and professions, confessed as factors of predisposition to bronchial asthma [2,6].

In the last time, the scientists are spare large attention on a role different to the infection at BA in children. An infectious process can be provocateur, as a factor for the attack of bronchial spasma, or sharp viral infection often become reason of intensifying of BA in children. Some infectious microorganisms (viruses, bacteria) considerably influences on the immune reaction of child, promotes secondary to infecting of respiratory tracts; increase of bronchial hyperreactivity and to development of bronchial spasm. Sick children with an atopic form of BA genetically predisposition to the persistent flow of some viral and atypical (intracellular) infections. In pathogenesis of BA the role of infection of respiratory tracts is great. And at intensifying they play not unimportant role. Lately role of atypical causative agents at BA for children (Chl. pneumoniae and M. pneumonia) began to be actively studied [5].

To date it is well-proven that M. pneumonia is one of basic causative agents of pneumonia for children [1,4,5,6,23].This insufficiently known infection can be primary reason of pneumonia for children or because of joining with a secondary infection causes the chronic fever of lungs. Values and role of mycoplasma infection in children with BA small studied, therefore study of role and value of mycoplasma infection in children with BA opens new ideas about the mechanism of development of BA in children.

The aim of our researches is a study of role of respiratory mycoplasma infection in intensifying of BA in children.

MAIN PART

By us was inspected 39 children with BA, in age of from 2 to 14, from them 27 (69,2%) boys and 12 (30,8%) girls. All children were on a planning inspection and treatment, in periods of 2019-2020- years on the base of child allergist and pulmonologist departments, at the Multi-field clinic of TMA. Clinical diagnosis of BA was put on the basis of taking the history (life, illness, allergic anamnesis), clinic, results of analyses of laboratory and instrumental research methods. It is diagnosed concordantly on protocol to Ministry health Protection of Republic of Uzbekistan. For determination of fragments of deoxyribonic nucleid acid (DNA)

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of mycoplasma (MP) in sputum at the investigated groups of children, a method was used polymer chain reaction (PChR) in a laboratory to the clinic of Medilux. All inspected children on the basis of laboratory researches we divided into 2 groups. A 1th group was made by 13 (33,3%) children with the presence of M. Pneumoniae a 2th group was made by 26 (66,7%) children without M. Pneumoniae For

RESULTS

Obtained data from PChR testing is shown: among the children of patients with BA, for 33,3% (13/39) patients found out M. pneumoniae.; for 66,7% (26/39) patients and for all children of control group M. pneumoniae. it is not discovered (table.№1). For children in a range 2-5, the more than half (53,8%) of children-asthmatics was got positive results of PChR; among the investigated children in age 6-14, only at 46,2% patients had M. pneumonia. Except it, among patients with BA, for 69,2% boys and 31% girls made the positive result of PChR, and correlation of sexes was made by 2,2: 1 (p=0,648).

TableNº1. Results of PChR testing

PChR testing on determination of fragments of DNA of MP infection	Sick children with BA n (%)		Control group n (%)		P meaning
	Positive	Negative	Positive	Negative	
Results	13(33.3%)	26(66.7%)	0(0%)	44(100%)	<0.001
Common	39(100%)		44(100%)		

In a table №2 the complaints of sick children are shown with BA both groups. Both them, with MP infection and without a MP infection. For patients 1st groups with the positive PChR testing answer were next complaints: at 46,15% on a fever (p=0,135), at 76,93% on a cough (p=0,023), at 84,62% wheezing sound in a thorax (p=0,006). On survey roentgengraphy of thorax for patients with MP of infection, for 57,7% patients it is found out single infiltration hearths in lungs. For patients 2nd groups with the negative PChR answer were next

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complaints: at 23,7% on a fever (p=0,135), at 23,7% on a cough (p=0,023), at 15,38% wheezing sound in a thorax (p=0,006). On survey roentgengraphy of thorax for patients with the negative answer of MP of infection, for 32,4% patients it is found out single infiltration hearths in lungs.

TableN°2. Complaints of sick children with BA with positive and negative PChR answers in the presence of *M. pneumonia*.

Complaints and symptoms	PChR Positive n (%)		PChR Negative n (%)		P Meaning
	Positive	Negative	Positive	Negative	
Fever	6 (46.15%)	7 (53.85%)	6 23.07%)	20(76.29%)	0.135
Cough	10 (76.93%)	10 (38.46%)	3 (23.07%)	16 (61.54%)	0.023
Wheezing sound	11 (84.62%)	10 (38.46%)	2 (15.38%)	16 (61.54%)	0.006

At inspection of children with BA, we studied such factors as, seasonal allergy and allergy to the animals (table.N°3). From a table N°3 evidently, that a seasonal allergy is educed at 17 (43,6%) patients, at that time allergy to the animals educed patients at 24 (61,5%). These factors are to the starting factors, at finding out of anamnesis and diagnostics disease.

At taking the history also exposed burdened of diseases. At 25 (64,1%) patients are marked the burdened anamnesis with BA, at 23 (58,9%) the burdened anamnesis is marked with atopic dermatitis, and at 32 (82,1%) marked the burdened anamnesis with an alimentary allergy (table.N°4).

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TableNº3. Comparative description between the investigated groups of children with BA and healthy.

Variable descriptions		Children with BA n (%)	Healthy n (%)	P meaning
Sex	Boys	27(69.2%)	26(59%)	0.233
	Girls	12(30.8%)	18 (41%)	
Seasonal allergy	Positive	17(43.6%)	25(56.8%)	0.163
	Negative	22(56.4%)	19(43.2%)	
Allergy to the animals	Positive	24(61.5%)	31(70.5%)	0.266
	Negative	15(38.5%)	13(29.5%)	

TableNº4. Family atopic anamnesis of the investigated groups of children with BA and healthy

Family anamnesis	Children with BA n (%)		Healthy children n (%)		P meaning
	Positive	Negative	Positive	Negative	
Burdened anamnesis with BA	25(64.1%)	14(35.9%)	36(81.8%)	8(18.2%)	0.057

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Burdened anamnesis with atopic dermatitis	23(58.9%)	16(41.1%)	38(86.4%)	6(13.6%)	0.005
Burdened anamnesis with food allergy	32(82.1%)	7(17.9%)	43(97.7%)	1(2.3%)	0.019

The presence of atopy for family members and bronchial asthma are closely constrained. For children with BA domestic allergic anamnesis (it was educed for family members: atopic dermatitis, bronchial asthma, alimentary allergy) was burdened (p=0,05), as compared to control groups of the investigated children.

DISCUSSION

The got analyses of results showed, that for 35,9% children with BA family anamnesis is one of key risk factors development of BA. Burdened family anamnesis with atopic dermatitis too (as statistically meaningful (p=0,005)), plays a not insignificant role as risk factor for development of BA from child's age. This result was educed at 41,1% as compared to 13,6% in a control group. It is necessary to take into account, burdened family anamnesis and atopy, not only saved but also strengthens a flow BA and other atopic disease further.

An alimentary or food allergy is in family anamnesis, development matters by child's bronchial asthma. Research results show 17,9% of asthmatic patients as compared to 2,3% in a control group (p = 0,019). To talk it about that, children with a food allergy in 7,8 time were more often ill asthma, than themes, children-asthmatics do not have a food allergy.

A food allergy also appeared the marker of weight of bronchial asthma. Results undertaken laboratory studies are determination of DNA of fragments of M.pneumoniae shows, statistical connection between bronchial asthma and MP infection (p 0,001).

At 33,3% of sick patients it was got positive reaction on the M.pneumoniae method of PChR, in a control group this index was made by 0,0%.

Sick children with the positive ПЦР result, as compared to the negative patients of M. pneumoniae, did not show to the association (p = 0,44, p = 0,64 and p = 0,19 accordingly).

Seasonal allergy (p = 0,02) and burdened domestic anamnesis, (p

CONCLUSION

Thus, taking the family history has a very large role, showed the presence of atopy (presence of bronchial asthma, atopic dermatitis and alimentary allergy) closely-coupled interface with bronchial asthma. M. pneumonia is closely related to bronchial asthma. She can be counted, as major risk factors at intensifying of bronchial asthma. Mycoplasma an infection aggravates a clinical flow BA in children, and in one season there were a few episodes of intensifying BA in children. A cough and wheeze in a breast are considered the major sign of M. pneumonia, but here in a roentgengraphy, defining not maybe.

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