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IMPROVING TREATMENT IN CHILDREN WITH COMMUNITY-ACQUIRED PNEUMONIA WITH ATYPICAL ETIOLOGY

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Abstract

Improving the tactics of treating pneumonia is one of the most urgent problems of modern pediatrics. We conducted a survey of 120 sick children with community-acquired pneumonia aged 6 months to 14 years, divided into 2 groups: group I - 30 patients with mycoplasma and 30 with chlamydial etiology, who received standard therapy, group II - 30 patients with mycoplasma and 30 patients with chlamydial etiology who received josamycin and resistol in the complex of standard therapy. Josamycin was administered at 50 mg/kg in 2-3 doses per day orally, Resistol for children from 1 year to 6 years 10 drops 3 times a day, from 6 to 12 years 20 drops 3 times a day. The drugs were used throughout the course of treatment.

Keywords: children, treatment, atypical pneumonia, resistol, josamycin

Relevance. Pneumonia is the most common childhood illness requiring hospitalization. The urgency of the problem of inflammation of the lung tissue is explained by the high morbidity, mortality from pneumonia among young children, as well as the high cost of treatment. [1,2]. Among the main reasons for the poor outcome of pneumonia in children are untimely diagnosis and inadequate therapy. Speaking about the optimization of treatment, it should be remembered that the selection of antibiotics for the treatment of community-acquired pneumonia is optimal when deciphering its etiology, however, express methods are not always reliable and available. [4,6].

The main pathogens that cause atypical course of pneumonia are mycoplasma, chlamydia, legionella. The most common causative agent of mycoplasmal pneumonia is M. pneumoniae. The incidence of mycoplasmal pneumonia is higher in children and adolescents. Epidemics of mycoplasma pneumonia may occur in schools and kindergartens. [3]. Our analysis of the frequency of anamnestic data and clinical manifestations in patients with atypical pneumonia in comparison with typical pneumonia revealed that for mycoplasmal pneumonia the characteristic leading criteria are the age of children over 6 years old - 56.7%, the gradual development of the disease - 68.3%, the condition of children moderate severity - 81.7%, subfebrile temperature - 55.0%, dry, whooping cough - 47.6%, manifested by scanty difficult to separate sputum - 71.7%, auscultatory hard breathing - 93.3%, absence or slight shortness of breath breathing - 21.7% and 50.0%, the development of pharyngitis 30.0%, broncho-obstructive syndrome - 21.7% and a high frequency of "family" nature of pneumonia - 21.7%.

Also, the content of CRP and PCT in mycoplasmal pneumonia exceeded the standard values. Analysis of the data obtained showed that in patients with atypical pneumonia, there is a significant increase in endogenous production of both anti-inflammatory - IL-4, and pro-inflammatory cytokines - IL-6 and TNF-α, respectively, compared with standard indicators. There is also an increase in the concentration of cytokines - IL-4, IL-6. The severity of inflammation depends on their level. A feature of the pathogenesis of atypical pneumonia is the intracellular location of the pathogen, which involves the use of antibiotics and immunomodulatory drugs. [5,7,8]. First of all, these are macrolides. One such drug is josamycin. which has a bacteriostatic effect due to the inhibition of protein synthesis by bacteria. When creating high concentrations in the focus of inflammation, it has a bactericidal effect. It has high activity against intracellular microorganisms: Chlamydia trachomatis and Chlamydia pneumonuae, Mycoplasma pneumoniae, Mycoplasma hominis, Ureaplasma urealyticum, Legionella pneumophila; against gram-positive aerobic bacteria: Staphylococcus aureus, Streptococcus pyogenes and Streptococcus pneumoniae (pneumococcus).

Maintaining a high concentration of the drug in the fluid lining the epithelium and alveolar macrophages for a long time confirms the possibility of its use in the treatment of respiratory tract infections. Resistol is an extract of the roots of Pelargonium sidoides. The agent affects the mechanism of attachment of bacteria and viruses to the mucous membrane, thereby preventing the penetration of viruses and bacteria into the body. The drug has a pronounced immunomodulatory effect, which leads to the rapid suppression of viral infection. It also prevents the reproduction of bacteria that have already entered the body, thereby preventing the

development of complications. The drug helps to activate the mechanisms of cleaning the respiratory tract, which improves the excretion of viscous mucus and eliminates the conditions for further reproduction of pathogenic bacteria.

Treatment with the drug leads to a rapid decrease in the severity of symptoms such as cough, profuse sputum, general malaise, fever and rhinitis, significantly reduces the duration of the disease, does not contribute to the development of resistance of microorganisms.

Purpose of work: To improve treatment methods for pneumonia with atypical etiology in children.

Materials and research methods. Depending on the prescribed therapy, 120 patients aged 6 to 14 years were divided into 2 groups, who were hospitalized at the Samarkand Branch of the Republican Scientific Center for Emergency Medical Care, in pediatric departments № 1,2. We conducted a survey of 120 sick children with community-acquired pneumonia aged 6 months to 14 years, divided into 2 groups: group I - 30 patients with mycoplasma and 30 with chlamydial etiology, who received standard therapy, group II - 30 patients with mycoplasma and 30 patients with chlamydial etiology who received josamycin and resistol in the complex of standard therapy. Josamycin was administered at 50 mg/kg in 2-3 doses per day orally, Resistol for children from 1 year to 6 years 10 drops 3 times a day, from 6 to 12 years 20 drops 3 times a day. The drugs were used throughout the course of treatment.

To clarify the atypical flora of community-acquired pneumonia, microbiological studies were used by taking material from the depth of the pharynx and determining it by bacterioscopic method in Gram-stained smears. The content of C-reactive protein in blood serum was determined on an automatic immunochemiluminescent analyzer; Determination of procalcitonin in blood serum was carried out on an automatic immunochemiluminescent analyzer.

The effectiveness of therapy in patients was assessed by the regression of pathological clinical symptoms of the disease, the dynamics of normalization of laboratory and instrumental data, as well as by changes in the indicators of special research methods.

Results of the work: After the study, the main indicators of patients in the compared groups were analyzed and compared upon admission to the hospital. Thus, the improvement of the general condition in patients of group II occurred 1.3 times faster - by 5.0 ± 0.2 days, the elimination of hyperthermia by 1.2 times - by 6.3 ± 0.2 days, the disappearance of respiratory failure in 1, 2 times - on 3.7±0.1 days compared with patients with standard therapy, respectively, on 6.3±0.3, 7.3±0.3 and 4.6±0.2 days.

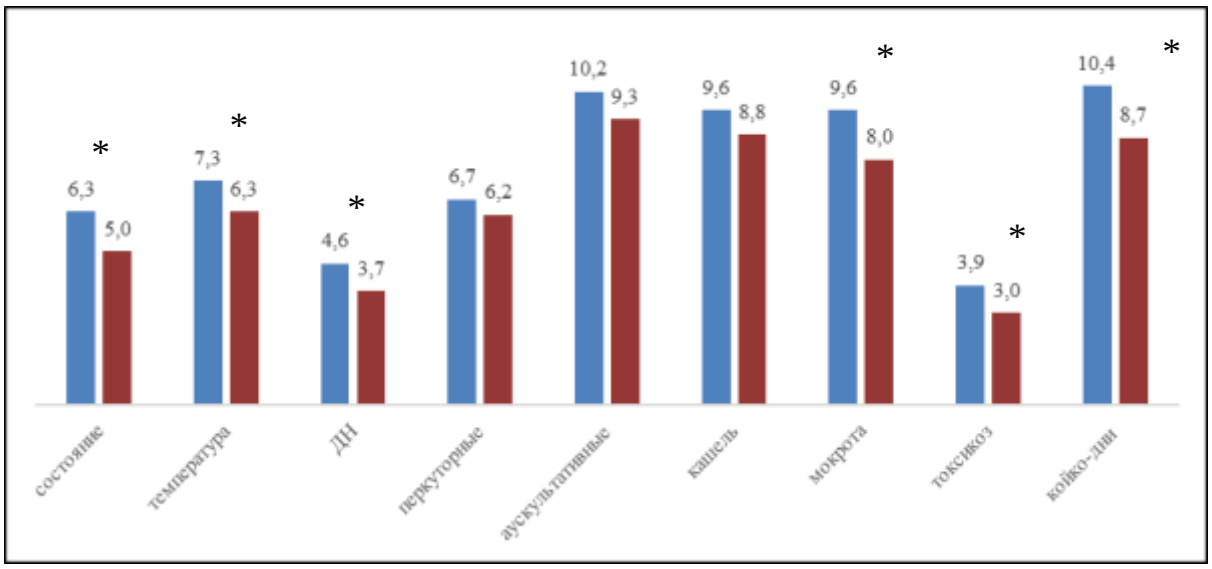

Figure 1. Dynamics of the elimination of the main clinical signs community-acquired chlamydial pneumonia in patients of groups I and II.

Note: I groups, ups * -

In group I children, the normalization of physical data in the lungs did not have a statistically significant effectiveness compared with patients who received traditional therapy. Thus, the use of josamycin and resistol led to a slight acceleration in the normalization of altered percussion data by 1.1 times - by 6.2 ± 0.3 days, auscultatory data by 1.01 times - by 9.3 ± 0.4 days, compared with conventional therapy at 6.7. ±0.3, 10.2±0.4 days Also, cough persisted for a long time in patients of both groups up to 8.8±0.4 and 9.6±0.4 days.

It was revealed that in the II group of patients, the disappearance of sputum occurred 1.2 times faster - by 8.0 ± 0.4 days, the disappearance of the toxic syndrome by 1.3 times - by 3.0 ± 0.1 days, with a significant difference from patients who are on traditional therapy - 9.6±0.4 and 3.9±0.2 days.

Thus, in the group of patients on standard treatment, an increase in the content of CRP (31.5±1.3 mg/l) by 9.5 times, PCT (1.07±0.03 ng/l) by 6.7 times was observed, in in the group of children treated with josamycin and resistol, an increase in CRP (33.2±1.3 mg/l) by 6.8 times and PCT (1.09±0.04) by 6.8 times was noted compared with standard values

table 1

Indicators of inflammation markers at admission in patients with community-acquired pneumonia (M±m)

indicators	norm	Group I	Group II
CRP (mg/l)	3,3±0,2	31,5±1,3	33,2±1,3
PCT (ng/l)	0,16±0,01	1,07±0,03	1,09±0,04
IL-4 pg/ml	4,8±0,3	15,2±0,6	16,4±0,7
IL-6 pg/ml	16,3±0,7	46,7±2,2	45,5±1,7
TNF-α pg/ml	24,5±0,8	62,1±2,6	60,6±2,8

In the group of patients who received the generally accepted complex of therapeutic measures, a positive trend in the normalization of inflammation markers was noted. So, when patients were discharged from the hospital in patients of group I, a decrease in the level of CRP by 8.5 times, PCT by 5.9 times in relation to the initial values observed upon admission from the hospital, which reached significant standard values, was noted. up to 3.7±0.1 mg/l and 0.18±0.01 ng/l, respectively

In group II, when josamycin and resistol were included in the complex of therapeutic measures for pneumonia, a significant decrease in the content of CRP and PCT by 9.5 and 6.4 times, respectively, was registered compared with the indicators detected at admission and with complete normalization of the indicators to 3.5 ± 0 .2 mg/l and 0.17±0.01 ng/l

table 2

Indicators of inflammation markers at discharge in patients depending on the method of treatment (M±m)

indicators	norm	Group Ia	Group Ib
CRP (mg/l)	3,3±0,2	3,7±0,1	3,5±0,2
PCT (ng/l)	0,16±0,01	0,18±0,01	0,17±0,01
IL-4 pg/ml	4,8±0,3	11,2±0,5	5,3±0,2
IL-6 pg/ml	16,3±0,7	17,9±0,6	17,3±0,6
TNF-α pg/ml	24,5±0,8	28,8±1,2	26,2±1,1

Accelerated normalization of the concentration of CRP and PCT in blood plasma in patients of group II indicates the effectiveness of the modified method of treatment, in comparison with standard therapy.

Conclusions. Thus, the inclusion of josamycin and resistol in the complex therapy of chlamydial pneumonia in children quite effectively led to the elimination of the main pathological symptom complexes of the disease compared with standard therapy, being the result of the antibacterial action of josamycin and the positive effect of resistol on the state of the cytokine status, which allows us to recommend it for clinical practice.

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