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Clinical-laboratory peculiarities of the course of infiltrative tuberculosis combined with chronic bronchitis in complex treatment using glucosaminyl muramyl pentapeptide

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Abstract

Tuberculosis – is an infectious disease that affects not only antisocial population, but can affect any person. Whereas, it is transmitted by airborne droplets through coughing, sneezing or communication with the patient with active TB of the lungs, people with impaired immunity arising after such diseases as pneumonia, bronchitis, peptic ulcer, diabetes mellitus, can fall ill. According to WHO data this diagnosis is made approximately to 1.000 people in Europe, and the morbidity indexes show that it will be difficult to overcome TB on this continent during the coming 85 years. We have examined 40 patients with infiltrative tuberculosis combined with chronic bronchitis, of which 22 patients have taken immunomodulator together with anti-mycobacterial medicines, and 18 patients – only standard treatment scheme. The results of the study show the expediency of administration of the immunomodulator together with anti-TB medicines.

Keywords: tuberculosis, chronic bronchitis, immunomodulatory, treatment.

1. Introduction

As we know from WHO data, about a third of the world’s population is infected with *Mycobacterium tuberculosis*, but only a small part of it falls ill [8, 9]. People who smoke 10-20 pack years or more, have 20% greater risk to fall ill with TB and mortality among such people is much higher [7, 8].

The Global Phthisiological Community calls for special attention as to the condition of TB occurrence associated with HIV-infection in patients with the presence of chronic non-specific inflammatory lung pathology [6, 9]. Smoking, alcoholism, recurrent respiratory inflammatory disease, decrease in immunity, social-economic conditions remain common for tuberculosis and chronic bronchitis [9].

It is known from many literary sources that the course and duration of tuberculosis treatment depends on many factors, namely: on the condition of the immune system, the properties of mycobacteria. Treatment of patients with primarily diagnosed tuberculosis is important because timely and proper treatment prevents the development of resistant tuberculosis [2]. Administration of anti-mycobacterial medicines is the basis of the treatment of patients with tuberculosis, but the result of the treatment depends on the condition of the immunity in some cases [3, 4, 5]. Therefore, it is appropriate to prescribe medicines that can influence the immune system next to the specific therapy.

According to studies’ results, immunomodulators that enhance the effectiveness of active tuberculosis treatment should be prescribed together with a standard scheme of pulmonary tuberculosis treatment [1, 3].

One of these drugs is the immunomodulator Liastenum of a natural origin with a wide spectrum of action. This immunomodulatory is a cellular wall fragments of *Lactobacilli* stimulating macrophage function and normalize the number of T-lymphocytes.

Materials and Methods: The study of the immunomodulator efficiency Liastenum (“Enzym” Vinnytsia, Ukraine) in patients with infiltrative tuberculosis combined with chronic bronchitis was performed. 40 patients with infiltrative tuberculosis, which is connected with chronic bronchitis, were examined: 18 patients took basic therapy according to the category; 22 patients together with basic care (according to the order of Ministry of Health of Ukraine № 1091 from 12.21.2012 and № 620 from 04.09.2014) were added Liastenum. Basic therapy consisted of isoniazid, rifampicin, ethambutol and pyrazinamide, the dose of which was calculated according to the weight of the patient.

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The first course of treatment – Liastenum was taken intramuscularly at a dose of 2 mg, 5 injections with an interval of 5 days between them; in 3 months – the second course, its duration was 20 days, 1 tablet 2 times a day. The efficacy of this medicine was determined according to the clinical picture, general blood test indexes and durability of bacterioexcretion.

Results of the study and their Discussion

The division of patients into the control and basic groups according to gender is represented in Table 1. Men dominated in both groups. In the basic group the number of men was 19 (86.4%) and in the control one – 14 (77.8%).

Table 1: Division of patients according to gender.

Groups	Men, (%)	Women, (%)
Control	14 (77.8)	4 (22.2)
Basic	19 (86.4)	3 (13.6)

Changes in the clinical parameters are represented in Table 2. Symptoms of intoxication, bronchopulmonary discharge and bacterioexcretion at the moment of hospitalization were observed in all 40 patients. The most frequent subjective

manifestation was cough, which initially was observed in all patients, sputum was of mucopurulent character. On the 30th day of the treatment, we have noticed slight changes in groups. In the basic group intoxication syndrome was observed in 17 patients (77.3%). On the 60th day of the treatment intoxication symptoms (low-grade fever, general weakness, night sweating) in this group are absent. Cough was present in 9 (40.9%), dyspnea during physical exertion was observed in 7 patients and was 31.8%. Bacterioexcretion was observed in 4 patients and amounted 18.2%. On the 120th day of the treatment clinical signs of bacterioexcretion were not observed. The following picture was observed in the control group. On the 30th day in 15 patients (83.3%) signs of intoxication syndrome was observed. On the 60th day there were no symptoms of poisoning, as in the basic group. Cough was present in 13 patients (72.2%), dyspnea during physical exertion was observed in 10 patients (55.6%). Bacterioexcretion was present in 8 patients (44.4%). On the 120th day 4 patients (22.2%) complained of intermittent cough. Thus, we have seen positive changes in the clinical dynamics of patients of the basic group, which in the complex therapy have taken immunomodulator of the muramylpeptide series – glucosaminyl muramyl pentapeptide.

Table 2: Clinical parameters of patients (intoxication syndrome, bronchopulmonary syndrome, bacterioexcretion)

Clinical symptoms	The basic group, n=22				The control group, n=18			
	Before treatment	30 days of treatment	60 days of treatment	120 days of treatment	Before treatment	30 days of treatment	60 days of treatment	120 days of treatment
Cough	100.0	81.8	40.9	0	100.0	94.4	72.2	22.2
Shortness of breath during physical exertion	68.2	59.1	31.8	0	77.8	72.2	55.6	0
Symptoms of intoxication	100.0	77.3	0	0	100.0	83.3	0	0
Bacterioexcretion	100.0	100.0	18.2	0	100.0	100.0	44.4	0

Note: * - the probability of difference

At admission to the hospital patients of both groups were found almost identical changes of common blood test parameters that showed the presence of inflammatory alterations in the lungs. In the basic group during the 30th day of the treatment leukocytosis was observed in 18.2% of patients, lymphopenia – in 4.5%, increase in erythrocyte sedimentation rate – in 22.7%. On the 60th day of hospital stay parameters of general blood analysis have normalized in all patients. In the control group parameters differ significantly, namely on the 30th day leukocytosis was observed in 61.1%, lymphopenia – in 44.4%, increase in erythrocyte sedimentation rate – in 72.2% of patients. On the 60th day of the treatment leukocytosis was noted in 27.8%, lymphopenia – in 22.2%, increased erythrocyte sedimentation rate – in 33.3% of patients. During the discharge from the hospital all indicators of general blood count were within normal limits.

Conclusion

The inclusion of glucosaminyl muramyl pentapeptide into the standard treatment scheme facilitates the decrease of the clinical signs duration and timing of bacterioexcretion, normalizes indexes of peripheral blood. Immunomodulator of muramylpeptide series could be administered to the patients with infiltrative tuberculosis combined with chronic bronchitis to improve the effectiveness of basic treatment.

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