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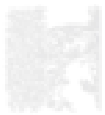
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STATE OF ENDOGENOUS INTOXICATION AND MOS-LIVER IN PATIENTS WITH LATENT EARLY SYPHILIS

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Abstract: Recent decades have been characterized by an increasing trend in the incidence of syphilis throughout the world, with a particularly alarming fact being the increase in latent forms of the disease. The infectious-toxic effect of treponema pallidum on the body can be accompanied by various disorders of the liver, in particular the monooxygenase system (MOS) and affect the state of endogenous intoxication of the body. These disorders can affect both the course of the disease and the quality of specific treatment. Our study showed that patients with latent early syphilis had impaired liver MOS parameters and high endogenous intoxication; after treatment they tended to normalize, but did not return to the control values, which dictates the need to prescribe pathogenetic therapy.

Introduction.

An increase in the incidence of syphilis is observed throughout the world, according to Schillinger JA et al . incidence of syphilis in 2012-2016. in New York (USA) increased by 81% from 24.8 to 44.8 cases per 100 thousand population. The authors note that the majority of cases are predominantly black, non-Hispanic men [1]. Peeling RW et al . It is believed that the prevalence of syphilis is high in low- and middle-income countries, and in high-income countries there is a tendency for the incidence to increase among men who have sex with men (MSM). An important point is that the risk of adverse pregnancy outcomes is also high in low-income countries [2]. A study by American scientists Mangone E, et al . revealed an increase in late latent syphilis in Arizona. A study of almost 15 thousand patients with syphilis over 5 years (2016-2021) showed that 5372 (36%) had latent syphilis with an uncertain duration of infection. It turned out that the completion of 3 injections of benzathine-penicillin G within a period of 7 to 9 days was only 42.9% in this group of patients. Thus, the percentage of receiving the drug three times in patients with latent syphilis is extremely low, which may be one of the factors in the development of latent syphilis [3]. Factors in the transition of a syphilitic infection to a latent form may also be a violation of the body's internal homeostasis. Lipid peroxidation, endogenous intoxication, the causes of which may be syphilitic infection, lead to changes in the physicochemical properties of membrane proteins and lipids, disrupt membrane permeability and ion transport, thereby changing cellular metabolism at all levels [4].

Purpose of the study . To study the state of endogenous intoxication and MOS-liver in patients with latent early syphilis.

Materials and methods of research. 61 patients diagnosed with early latent syphilis were examined. The age of the patients ranged from 20 to 63 years. There were 41 men, 20 women. The study of the MOS liver was carried out according to the Wallenberg method (1975). The technique consists in the ability of microsomal Liver monooxygenases

metabolize the administered substances at different times. A change in the metabolism time of test drugs indicates a violation of this liver function. The drug isoniazid was used as a test agent. The drug was given at the rate of 10 mg per 1 kg patient's body weight, and blood was taken for testing from the cubital vein 3, 5 and 8 hours after taking the drug.

As tests characterizing the syndrome of endogenous intoxication, we used the determination of the level of medium molecular peptides (MMP), sorption capacity of erythrocytes (SSE), hematological index of intoxication (GPI) and leukocyte intoxication index (LII). Determination of medium molecular peptides (MMP) was carried out according to the method of Gabrielyan N.I. (1983). Determination of the sorption capacity of erythrocytes (SSE) was carried out according to the method of A.A. Togaibaeva et al. (1988 г.). The determination of the leukocyte intoxication index (LII) was carried out according to the Kalf-Kalif method Ya. Ya. (1969 г.). The determination of the hematological index of intoxication (HPI) was carried out according to the method of V.S. Vasilyeva, V.I. Mosquito (1983 г.).

To conduct a comparative analysis of the state of the MOS liver and indicators of endogenous intoxication, 15 healthy individuals aged 20-45 years were examined.

Results and discussion. A study of the MOS liver showed that those examined had severe disturbances in the enzymatic activity of the MOS liver. Thus, the half-life of isoniazid was significantly increased to 10.8 ± 0.2 hours, when in the control this figure was 7.3 ± 0.15 .

Another indicator reflecting the functional state of the MOS liver is the clearance of the test drug. In our observations, this indicator was significantly lower than control values in all study groups. In the study group of patients, drug clearance was reduced to 66.5 ± 4.85 ml. to g.h. (Table 1).

Table 1. Indicators of the MOS liver before the start of specific treatment

Group	Number of examined	Isoniazid half-life, hour	Isoniazid clearance, ml/kg/h
Patients with syphilis hidden early	61	10.8 ± 0.2	66.5 ± 4.85
Control	15	7.3 ± 0.15	76.1 ± 0.6

The results obtained after specific therapy showed that the half-life of isoniazid in patients was slightly reduced and amounted to 9.2 ± 0.42 hours, while the decrease was statistically significant in relation to the data in this group before the start of treatment, but did not reach similar values. indicators in the control group.

The clearance of the test drug after treatment in the examined group of patients tended to increase and amounted to 69.2 ± 2.35 ml/kg/h. Despite a significant increase in this indicator in relation to the indicators before treatment, they still did

Table 2. Indicators of MOS liver after treatment

Group	Number of examined	Isoniazid half-life, hour	Isoniazid clearance, ml/kg/h
Patients with syphilis	42	9.2±0.42	69.2±2.35
Control	15	7.3±0.15	76.1±0.6

Also, in these patients, the state of endogenous intoxication syndrome was studied before treatment and after specific treatment.

The control group consisted of 15 practically healthy individuals.

The results of the study revealed an increase in indicators of endogenous intoxication syndrome in patients with latent early syphilis. An increase in the level of medium molecular peptides (MMP) was observed on average by 1.5 times. At the same time, the level of MPS in the examined group was 0.38 ± 0.03 . When studying another indicator, the sorption capacity of erythrocytes (SSE), a significant increase in these values was also revealed. Thus, the SSE was increased to 51.2 ± 3.5 .

Calculation of GPI and LII also revealed an increase in these indicators. GPI turned out to be increased to 1.72 ± 0.18 . LII was increased accordingly to 1.91 ± 0.21 .

Under the influence of specific therapy, patients experienced a slight decrease in endogenous intoxication indicators, which, however, did not reach control values. GPI decreased to 1.71 ± 0.12 . A similar decrease occurred in another indicator of EI - LII, it decreased to 1.56 ± 0.18 .

The decrease in the level of MPS in patients was 0.31 ± 0.06 , SSE – 48.1 ± 2.7 (Table 3).

Table 3. Indicators of endogenous intoxication in patients with latent early syphilis before and after specific therapy

Index	Control	Patients with latent early syphilis	
		Before treatment n =41	After treatment n =32
SMP	0.248 ± 0.001	0.38 ± 0.03	0.31 ± 0.06
SSE	34.7 ± 0.64	51.2 ± 3.5	48.1 ± 2.7
LII	1.215 ± 0.04	1.72 ± 0.18	1.56 ± 0.18
GPI	1.239 ± 0.04	1.91 ± 0.21	1.71 ± 0.12

Consequently, the study conducted in patients with latent early syphilis reveals functional changes in the MOS liver, manifested by an increase in the half-life of isoniazid and a decrease in the clearance of the test drug, which indicates a violation of the enzymatic function of the liver. These disorders, in turn, may be one of the factors increasing the syndrome of endogenous intoxication. Some improvement in these indicators in patients who received specific therapy does not lead to a significant correction of these disorders, which dictates the need to search for auxiliary means of pathogenetic therapy to restore the enzyme MOS system of the liver and improve the values of endogenous intoxication, which in turn will increase the effectiveness of therapy.

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