syndrome (SARS) and / or other SARS. Blood serum of 486 patients was examined for the presence of IgM antibodies to SARS-CoV-2 by the method of "IgM-capture" enzyme-linked immunosorbent assay (ELISA) by monoclonal antibodies with the formation of anti-IgM-IgM complexes and with subsequent detection by peroxidase conjugate. Optical density of samples during conduction of the study is measured in two phases at a wavelength of 450/620 nm and is proportional to the concentration of IgM to SARS-CoV-2 in them. We use the test of the «DiaProphMed» system in this work (Kyiv, Ukraine).

Between August 19 and October 20, 2020, serum samples of 486 patients were examined, including 476 samples of female blood serum and 10 male samples. For positive control we used recombinant protein G Streptococcus, conjugated with horseradish peroxidase and for negative control we used inactivated human serum that does not contain HBsAg, p24 HIV-1, SARS-SoV-2 antibodies, HIV-1/2, and hepatitis C virus (HCV). During this period of study, the optical density of the samples studied regarding the high-quality content of IgM to SARS-SoV-2 varied/ranged from 0.012 to 0.054 (92% of samples). Optical density limit of 6.5% of samples was higher and amounted to be between 0.064 and 0.130. Six samples were questionable and corresponded to the limit (boundary value) for the detection of the studied parameters (0.187; 0.212; 0.233; 0.237; 0.264; 0.295) in accordance with the rules for calculating marginal and positive results. For example, the limit (boundary value) was calculated:

Boundary Value= Average Value +0.2,
where Average Value – is the average value of optical density of negative control
(at least two, while examining more than 24 samples
at the same time, the number of controls reaches four, etc.).

The value of the average arithmetic value (M ± m) for the samples studied was 0.037 ± 0.006 ($p< 0.001$). The optical density of positive control samples ranged from 1,268 to 2,694 depending on the series of controls. The amount of negative control was within: 0,012 -0,026. Conducting the analysis in accordance with the requirements of the methodology is considered reliable if optical density Average Value < 0.1, and the optical density of positive control samples > 0.6. Interesting was the fact that the value of IgM to SARS-SoV-2 was 0,233 and 0,212 in the same patient with a difference of two days. The PCR study was negative. Two others people with questionable results were hospitalized to a special isolation unit (i.e. there was still some symptomatology, currently there is no data concerning their PCR tests).

Thus, during the research period, we did not indicate high positive results. The percentage of marginal results was 1.23% and they were not in the verge of positive ones (>0.9). For the comparison of sensitivity of test systems of different manufacturers to detection of IgM to SARS-SoV-2 it is planned to conduct a similar study using sets of Ukrainian manufacturer to compare the value of results and to analyze the sensitivity of sets.

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THE CONTENT OF CERULOPLASMIN AND CATALASE ACTIVITY IN THE BLOOD IN CASE OF ALCOHOL INTOXICATION, ITS COMBINATION WITH MODIFIED PHOTOPERIOD AND MELATONIN ADMINISTRATION

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Alcoholism is one of the most serious medical and social problems. Ukraine ranks fifth in the world by the amount of alcohol consumed per capita. Numerous studies have found that the basis of toxic effects of ethanol is the activation of free radical oxidation of biomolecules. In modern life, the use of ethanol is often combined with the influence of other harmful factors, such as the violation of light regime. Light affects a modern person practically all around the clock. The biological rhythms are regulated by melatonin, which is produced in pineal gland in darkness, and besides many physiological effects has potent antioxidant action.

The aim of the work was to study the activity of antioxidant enzymes ceruloplasmin and catalase in rats' blood in terms of alcohol intoxication, its combination with constant light exposure and melatonin administration.

Experiments were performed on 32 white male rats weighing 180-230 g, kept under standard conditions and vivarium diet. Subacute alcohol intoxication was induced by intragastric administration of 40% ethanol in a dose of 7 ml/kg of body weight for 7 days. The light exposure was caused by a constant fluorescent light with an intensity of 1500 lux for 24 hours a day.

We have revealed that alcoholic intoxication was accompanied by an increase in catalase activity in rats' blood by 23% above the control. Combination of ethanol poisoning with light exposure caused more significant rise of catalase activity in the blood (by 53%). The content of ceruloplasmin in blood plasma against the background of alcoholic intoxication and its combination with constant lighting was by 82% and 83% above the control level correspondingly. Such rise of catalase and ceruloplasmin activity in the blood proves activation of natural antioxidant defense in response to ethanol poisoning and lack of melatonin under constant light exposure.

The administration of "Vita-melatonin" in dose of 5 mg/kg daily at 8 p.m. for 7 days contributed to the normalization of ceruloplasmin level in the blood plasma of animals of both experimental groups and catalase activity in alcoholized rats. The rats that had received melatonin against the background of the combination of alcohol intoxication and light exposure showed permanently high catalase activity (by 83% above the control level).

Thus, melatonin administration contributed to normalization of ceruloplasmin level in the rats' blood plasma against the background of alcoholic intoxication and its combination with constant lighting whereas normalization of catalase activity in the blood of alcoholized rats was under normal photoperiod.

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EFFECT OF MELATONIN ON THE ACTIVITY OF ANTIOXIDANT PROTECTION ENZYMES IN KIDNEYS IN CONDITIONS OF ACUTE INTOXICATION

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Enzymes of antioxidant protection of the kidneys play a key role, because they neutralize reactive oxygen species (ROS) which include superoxide anion radical, hydroxyl radicals and hydrogen peroxide, which are intensively formed under conditions of acute intoxication. The accumulation of a significant amount of ROS in the body leads to the development of oxidative stress and activation of lipid peroxidation (LPO) processes with subsequent destruction of phospholipids of nephrocyte membranes.

The experiment was conducted on 36 white adult male rats weighing 0.16-0.20 kg. which were divided into three groups. The first group was a control group. In the second group of animals toxic lesions were simulated by administering a 0.1% solution of 2,4-DNF intraperitoneally at a dose of 3 mg / kg once. In the third group of animals melatonin at a dose of 10 mg / kg was administered once. Superoxide dismutase activity was determined by the Dubinina method. Catalase activity was determined by the rate of cleavage of hydrogen peroxide. Glutathione peroxidase activity was recorded by color reaction in the interaction of SH groups with Elman's reagent. The presence of protein was determined by the Lowry method.

It has been proved that acute intoxication of rats under the conditions of administration of 2,4-dinitrophenol leads to the development of oxidative stress in the body, as indicated by an increase in the content of ROS in the blood. Accompanied by increased production of free radicals and activation of lipid peroxidation processes followed by damage to cell membranes and increased activity of superoxide dismutase and catalase in the mitochondria of nephrocytes of the experimental group of animals compared with those from the control group is somewhat normalized under the influence of melatonin. In parallel, there is a decrease in the activity of glutathione peroxidase in the experimental group of animals, probably due to the accumulation of oxidized