

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



МАТЕРІАЛИ

**104-ї підсумкової науково-практичної конференції
з міжнародною участю
професорсько-викладацького персоналу
БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ
06, 08, 13 лютого 2023 року**

Конференція внесена до Реєстру заходів безперервного професійного розвитку,
які проводитимуться у 2023 році №5500074

Чернівці – 2023

Conclusions. The established endothelial dysfunction in patients with comorbid disorders CC by pathological induction of iNOS activity and increasing nitrate causes hypokinetic gallbladder dysfunction and progression CC that deepens with increasing degree of obesity.

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CORRECTION OF CARBOHYDRATE METABOLISM DISORDERS IN PATIENTS WITH NON-ALCOHOLIC STEATOHEPATITIS AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE, THE EFFECTIVENESS OF ANTRAL AND POLICOSANOL

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Introduction. Taking into account the increase in the comorbidity of non-alcoholic steatohepatitis (NASH) and chronic obstructive pulmonary disease (COPD), there is a need to conduct studies regarding general mechanisms of development and burden interaction of these nosologies with the development of new correction methods.

The aim of the study. The study aimed to determine the state of glycemic parameters, regulation of carbohydrate metabolism, and establishment of the effectiveness of Antral and the combination of antral with phytostatin usage regarding the effect on the state of glycemia, the degree of insulin resistance in patients with non-alcoholic steatohepatitis against the background of obesity in comorbidity with chronic obstructive pulmonary disease.

Material and methods. 160 patients were screened and divided into 3 groups. I group consisted of 35 patients with NASH in the setting of obesity of the I degree. II group contains 90 patients with NASH, obesity of the I degree and COPD 2-3 B, C, D, III group - 35 patients with COPD 2-3 B, C, D. According to the treatment received, the II group of patients was divided into 3 subgroups, of which 25 patients (1t subgroup - control) received NASH therapy (Essentiale forte N (Sanofi-Avensis / Nutterman & Sai GmbH) 300 mg 2 capsules 3 times daily) 60 days and baseline COPD therapy. Subgroup II (primary, 2t) - 35 patients, in addition to similar COPD therapy, for the treatment of NASH, instead of Essentiale forte N, received Antral (Farmak, Ukraine) 200 mg 3 times a day for 60 days. Subgroup III (primary, 3t) - 30 patients, in addition to similar COPD therapy, for the treatment of NASH received Antral 200 mg 3 times daily and, additionally, Phytostatin (Policosanol) (Omnifarma, Ukraine) 20 mg after the dinner for 30 days. The comparison group consisted of 30 practically healthy individuals (PHIs).

Results. Before treatment, a slight significant increase in the level of fasting glycemia by 10.9% and 14.3%, respectively ($p < 0.05$) were established in patients of the I and II groups, the content of postprandial glucose in the blood - by 18.6% and 34.4% ($p < 0.05$), while in the patients of the 3rd group, the changes in indicators were insignificant. After treatment, in patients with B1 and B2 subgroups, the decrease in fasting glucose was 8.9% ($p < 0.05$), while in the control subgroup, a slight decrease was revealed - 3.4% ($p > 0.05$). The content of postprandial blood glucose in patients of all groups decreased in 1t, 2t and 3t subgroups, by 10.6%, 21.3% and 21.9%, respectively, compared with the data before treatment ($p < 0.05$). The maximum decrease in blood insulin content (in 1.9 times) and the degree of insulin resistance (46.8%) was also observed in the 3t subgroup ($p < 0.05$).

Conclusions. The administration of antral with policosanol for 60 days led to a significant correction of glycemia in NASH patients against the background of obesity and COPD, accompanied by a significant decrease in insulin levels ($p < 0.05$), postprandial glucose content and insulin resistance degree ($p < 0.05$).

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LASER RADIATION EFFECT ON THE STATE OF FIBRINOLYSIS OF RAT LIVER

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Introduction. In the regulation of fibrinolysis, which is considered a process that plays an important role in the physiology and pathology of the body, a significant role is played by the

liver. Fibrinolysis is a vital mechanism that prevents the pathological deposition of fibrin and keeps the blood in a liquid state. Under normal conditions, the activator and inhibitory functions of the fibrinolytic system are in dynamic balance. The resonant nature of the electromagnetic oscillations of laser radiation action produces an impact on the state of the microcirculatory tract and fibrinolytic activity. In vitro laser radiation ($\lambda = 632.8$ nm) activates processes that obviously lead to a change in the charge of blood proteins.

The aim of the study. The objective of the study is to determine the nature of the effect of laser radiation on the state of fibrinolytic system in the liver of rats.

Material and methods. The study was performed on 48 white nonlinear male rats weighing 120 - 150 g, which were kept on a regular diet of vivarium. Laser irradiation was performed through pre-shaved skin on the liver for 60 s for 10 days with an interval of 24 h on the LGN-207-A apparatus ($\lambda = 632.8$ nm, beam diameter 0.3 mm). Decapitation of rats was performed under ether anesthesia in the dynamics at the end of the course laser radiation (the first - group 1, tenth - group 2 and twentieth days - group 3). The control group consisted of intact rats, which were decapitated at the same time as the experimental ones. Tissue fibrinolytic activity was determined in rat liver homogenate for azofibrin lysis ("Simko Ltd", Lviv), i. e. orange-colored fibrin, which gives a basic medium bright red color. The principle of the method is based on the fact that the incubation of azofibrin and the standard amount of plasminogen in the presence of tissue activators of fibrinolysis produces plasmin, the activity of which is assessed by the color of the solution degree in alkaline medium with addition of ϵ -aminocaproic acid (non-enzymatic fibrinolysis).

The difference between them characterizes the state of enzymatic fibrinolysis. Enzymatic fibrinolytic activity was calculated according to the formula:

$$EFA = TFA - NFA.$$

Fibrinolytic activity was expressed in $E_{440} / h * g$ of raw tissue. The drugs used in the work are manufactured by Simko LTD, Lviv. Statistical analysis was performed by Student t - criterion. The results of the studies were expressed as a percentage of control.

Results. The course of laser irradiation caused an increase in fibrinolytic activity in the liver homogenate of rats 1 day after its completion. There was an increase in EFA, NFA and TFA by 23%. 10 days after the end of the laser course, there was a divergence in fibrinolytic activity changes. Thus, the enzymatic fibrinolytic activity (EFA) remains insignificantly higher due to enzymatic activity (above the control values), the non-enzymatic fibrinolytic activity (NFA) tends to decrease (15% less than the control). Twenty days after the end of the laser radiation course, there was a decrease in total fibrinolytic activity (TFA) by 23%, mainly due to EFA. NFA remained at the same level as 10 days after exposure to laser radiation.

Dystrophic changes and necrosis of individual hepatocytes, lymphocytic infiltration of the stroma of the portal tract, which were observed at the end of the laser irradiation course, caused the activation of fibrinolytic activity. After 10 days, dystrophic changes persisted. Infiltration of the vessel wall with fibrin was observed, i.e. reparative processes were stimulated.

The incidence of dystrophy decreased 20 days after irradiation. Lymphocytic infiltration still remained. Deposition of fibrin accumulations in sinusoids was observed. Such morphological changes in the liver explain the decrease in the activity of the fibrinolytic system in 20 days after irradiation.

Conclusions. One can see from the above data that laser radiation significantly affects the state of the fibrinolytic systems in the liver of rats. Oscillatory changes in the activity of fibrinolytic system will require further study.