

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



## **МАТЕРІАЛИ**

**105-ї підсумкової науково-практичної конференції  
з міжнародною участю  
професорсько-викладацького персоналу  
БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ  
присвяченої 80-річчю БДМУ  
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Матеріали підсумкової 105-ї науково-практичної конференції з міжнародною участю професорсько-викладацького персоналу Буковинського державного медичного університету, присвяченої 80-річчю БДМУ (м. Чернівці, 05, 07, 12 лютого 2024 р.) – Чернівці: Медуніверситет, 2024. – 477 с. іл.

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У збірнику представлені матеріали 105-ї підсумкової науково-практичної конференції з міжнародною участю професорсько-викладацького персоналу Буковинського державного медичного університету, присвяченої 80-річчю БДМУ (м. Чернівці, 05, 07, 12 лютого 2024 р.) із стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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**Results.** The analysis of the intensity of fibrous reactions in patients with NASH, depending on the presence of comorbid COPD, indicates a probable increase in the content of protein-bound oxyproline in the blood of patients of all groups: in the 1st group – 1.8 times in comparison with the AHP ( $p < 0.05$ ), in patients of group 2 – 2.9 times ( $p < 0.05$ ). At the same time, the index of free oxyproline content in the blood, which is the biochemical marker of collagen catabolism, in patients of group 1 was 1.3 times higher ( $p < 0.05$ ) than that in AHP, indicating a parallel increase in collagen degradation against the background of its high synthesis. The activity of collagen degradation was even more intense in comorbidity with COPD: in patients of group 2 - 1.8 times ( $p < 0.05$ ) respectively.

**Conclusions.** The received data confirm that patients with NASH secondary to COPD, which developed against the background of obesity, suffer from a significant increase in the synthesis of collagen and glycoproteins, accompanied by an ineffective resorption of newly formed collagen due to insufficient activation of collagenolysis, a significant imbalance in the connective tissue metabolism system, which leads to progressive fibrosis of the lungs and liver and disturbances of their functions.

**Ivanushko Y.G.**

## **THE INFLUENCE OF DIFFERENT X-RAY IRRADIATION DOSES ON THE FIBRINOLYTIC SYSTEM OF RATS' LIVER**

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**Introduction.** Fibrinolysis is considered as a process that plays an important role in the physiology and pathology of the body. It is a vital mechanism that prevents pathological deposition of fibrin and maintains blood in a liquid state. Fibrinolysis is carried out by a multicomponent enzyme system, which includes four main components: plasminogen proenzyme, plasmin enzyme, activators and inhibitors. Under normal conditions, the activator and inhibitory functions of the fibrinolytic system are in dynamic balance. The Chernobyl nuclear power plant accident participants of its consequences liquidation have signs of functional disorganization in the homeostasis system: activation of hemocoagulation and platelet aggregation on the background of the activity of fibrinolysis decrease and antithrombogenic properties of the vascular wall.

**The aim of the study.** The aim of the work is to clarify the effect of small-dose fractionated X-ray radiation on the fibrinolytic system of rats' liver.

**Materials and methods.** The research was conducted on 48 white non-linear male rats with a weight of 120 - 150 r, which were kept on the usual vivarium food ration. Fractional total irradiation of animals with X-rays in total doses of 0.3; 0.6; 0.9 and 1.2 Gr (groups 1, 2, 3 and 4, respectively) were carried out for 30 days with an interval of 24 h on the X-ray diagnostic unit 12 P6: exposure dose power 0.258 mCi/s, voltage 90 kV, force current 40 mA, aluminum filter, skin-focal distance 48 cm. The control group consisted of intact rats, which were decapitated at the same time as the experimental ones. Tissue fibrinolytic activity was determined in 10% rat liver homogenate, prepared in 0.9% NaCl by azofibrin lysis ("SimkoLtd", Lviv), i.e. fibrin bound with an orange dye, which gives a bright red color in an alkaline medium. Statistical analysis was performed by Student t - criterion. The results of the studies were expressed as a percentage of control.

**Results.** In a day after the end of the course of X-ray irradiation, changes in the fibrinolytic activity of the liver of rats were observed for 30 days. A slight decrease in total fibrinolytic activity (TFA) was detected in all experimental groups. The lowest level of activity was noted under the effects of X-ray radiation in a total dose of 0.3 Gr, due to a decrease in non-enzymatic fibrinolytic activity (NFA) by 22%. In the 3rd and 4th experimental groups, the total fibrinolytic activity decreased to a greater extent due to enzymatic fibrinolysis. On the 30th day, the fibrinolytic activity normalized only in the 1st and 2nd groups. In the 3rd and 4th groups, total non-enzymatic and enzymatic fibrinolytic activity remained low.

**Conclusions.** Thus, the effect of fractionated X-ray radiation in the applied doses on the fibrinolytic system of rats' liver is shown, which is more pronounced at total radiation doses of 0.9 and 1.2 Gr.

**Kaushanska O.V.**

**PRACTICAL USE OF EFFERENT TREATMENT METHODS  
IN THE COMPLEX THERAPY OF PATIENTS WITH RHEUMATOID ARTHRITIS**

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**Introduction.** Rheumatoid arthritis is a chronic progressive systemic disease of the connective tissue with damage to the joints, mostly small, according to the type of erosive-destructive polyarthritis and frequent systemic inflammatory damage to the internal organs. Plasmapheresis is a method of extracorporeal hemocorrection (ECH), which is based on replacing the patient's blood plasma with components, blood products and/or blood substitutes.

**The aim of the study.** To evaluate the effectiveness and safety of the use of efferent therapy methods (plasmapheresis) in patients with rheumatoid arthritis.

**Material and methods.** 20 patients with rheumatoid arthritis took part in the study: 15 (75.0%) women and 5 (25.0%) men aged from 29 to 69 years (average age -  $47\pm 3.2$  years), duration of the disease - from 1 up to 10 years ( $5.6\pm 2.2$  years on average). Patients of the 1st group were prescribed: methotrexate according to the scheme: 7.5 mg 1 time per week, with a subsequent increase in the dose by 2.5 mg every 2 weeks to a maximum dose of 20 mg/week, combined with the intake of 5 mg folic acid 1 time per week 48 hours after taking methotrexate. Patients of the 2nd group, on the background of identical treatment, underwent 5 sessions of membrane plasmapheresis every other day. To prevent the development of ricochet syndrome during plasma replacement, glucocorticoids (GC) were administered in a dose of 4 mg.

**Results.** At the beginning of treatment, patients in both groups complained of morning stiffness, joint pain, and limited movement. The appointment of therapeutic agents in patients of the 2nd group at the same time as plasmapheresis required taking into account their pharmacokinetics and pharmacodynamics. The drugs were taken immediately after the next procedure to create the maximum concentration in the patient's blood. After the first session of plasmapheresis, patients of the 2nd group noted an increase in joint syndrome. 3 months after the prescribed therapy, it was possible to interrupt the progressive stage of rheumatoid arthritis in all patients. Patients noted a decrease in joint syndrome and morning stiffness. In addition, positive dynamics of other investigated indicators, including physical well-being, were noted. A decrease in the intensity of pain and the activity of arthritis according to VAS was revealed from  $8.4\pm 1.4$  to  $3.2\pm 0.7$ , which is 45% in the 1st group, and in the 2nd group from  $7.3\pm 1.2$  to  $2.2\pm 0.6$  (31%).

The number of painful joints in the 1st group decreased from  $8.6\pm 1.5$  to  $2.9\pm 0.6$ , which is 28%, in the 2nd group - from  $10\pm 2.8$  to  $2.2\pm 0.8$ , 8 (33%). The number of swollen joints in the 1st group decreased from  $4.8\pm 1.2$  to  $2.3\pm 0.8$  (41%). Against the background of methotrexate and plasmapheresis, the functional condition of patients in both groups improved, as evidenced by a decrease in the HAQ index. Thus, the use of plasmapheresis in the complex treatment of patients with rheumatoid arthritis is effective and safe.

**Conclusions.** Rheumatoid arthritis patients have marked positive dynamics against the background of plasmapheresis. The value of the HAQ index decreased by 62.6%, which ensured a long clinical and laboratory remission. To prevent the phenomenon of ricochet, it is necessary to conduct repeated sessions of plasmapheresis with the introduction of HA during plasma replacement in appropriate doses. The results of the conducted study indicate the effectiveness of combined treatment by the plasmapheresis method in combination with basic therapy with methotrexate in patients with rheumatoid arthritis, which improves the quality of life of patients.