

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ  
ВИЩИЙ ДЕРЖАВНИЙ НАВЧАЛЬНИЙ ЗАКЛАД УКРАЇНИ  
«БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



## **МАТЕРІАЛИ**

**101 – ї**

**підсумкової наукової конференції**

**професорсько-викладацького персоналу**

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The aim of the study was to study the daily fluctuations of proteolysis in patients with rheumatoid arthritis.

The survey involved 15 patients with RA. The age of patients was from 28 to 57 years. The middle age constituted  $42 \pm 9.1$  years. Control group ( $n = 10$ ) - practically healthy subjects are representative by age and gender. The evaluation of proteolytic activity was performed by the determination of collagenolytic activity (CA), low molecular weight proteolysis (PNMP) and high molecular weight proteins (PVMP).

The PNMP chronogram in RA patients had a wavy daily rhythm and was inverse in the healthy group. The meson level of PNMP in RA patients was increased 1.06-fold against the control group. The oscillation amplitude in the latter was 0.43, in patients with RA - 2.1. The chronogram of PVMP indices in RA patients was sinusoidal and inverted to the control group. The daily average values of PVMP in RA patients increased during the day at the expense of separate intervals by 26.3% -28.6%. The curve of KAP indicators in patients with RA and in the control group approached the shape of the sine wave. The KAP level fluctuated throughout the day, forming a single-phase rhythm in two groups. The average daily value in RA patients increased by 2.2-4.2 times during the day.

Thus, patients with RA have changes in daily rhythms of proteolysis, the depth of disturbances of which depended on the degree of activity of the process.

**Mykytyuk O.P.**

### **THERAPEUTIC HYPOTHERMIA IN INTENSIVE CARDIOLOGY: DEFINITION, MECHANISMS OF ACTION, SAFETY AND TECHNICAL ASPECTS**

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Therapeutic hypothermia (TH) can be defined as the process of actively lowering core body or target organ temperature in order to decrease its end injury in some acute conditions. TH is recommended in international Neurology guidelines as a method that reduces the risk of death and improves long-term neurological outcome in patients who suffer from hospital cardiac arrest.

Research interest in early interventions that may produce significant cardioprotective influence in case of acute myocardial injury, prevent downstream heart failure after it is maintained by the desire to reduce the economic, social and personal cost of complications of myocardial infarction. Structured literature review of data on TH application as adjuvant therapy in cardiology was the objective of the present paper.

TH is a treatment recommended by the guidelines of the American Heart Association on post-cardiac arrest management. Recommendations include achieving target temperature of 32-36 °C as and soon as possible and maintained over 24 h that is a highly effective strategy of heart protection from acute ischemia. Numerous animal experiments and human observation confirmed significant improvement of outcomes and survival rate after cardiac arrest and myocardial infarction. TH initiated after reperfusion following 60min of coronary artery occlusion substantially reduces the extent of no-reflow. Moreover, TH has been shown to decrease inflammation, reduce myocardial metabolism in parallel to oxygen demand, and promote heart epicardium flow. Mild hypothermia preserved myocardial conduction during ischemia by maintaining gap junction intracellular communication and Na<sup>+</sup> channel function. As a result, reduction in the myocardial infarction size was observed in many studies (benefit from 8 to 38% between TH and control groups). Beyond infarction size reduction, TH-induced cardioprotection was associated with long-term improvement in terms of left ventricular remodelling and performance.

The process of TH was reported to be well tolerated in most studies without causing any evidence of significant hemodynamic compromise. Episodes of self-terminating ventricular fibrillation, or cases corrected by electrical cardioversion were reported. Other cardiac side effects included bradycardia, the QT interval prolongation.



Techniques employed to achieve quick and effective hypothermia of the myocardium include external cooling with surface pads, cooling via an endovascular catheter (cold saline solution circulating through it), combination of endovascular cooling and infusion of chilled saline, application of hypothermia inducing suits. The disparity in achievement of the target temperature was attributed to causes such as technical difficulty, device malfunction, kinking of the catheter and first medical contact to reperfusion time being slow.

In spite of a great number of performed trials, there is still incomplete understanding of the mechanism and magnitude of the protective effect of hypothermia on the myocardium, and limited clinical data. That seems to be a perspective field for further investigation.

**Nesterovska O.A.**

**EFFECTS OF LONG-TERM MACROLIDE THERAPY AT LOW DOSES IN ASTHMA-CHRONIC OBSTRUCTIVE PULMONARY DISEASE OVERLAP**

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Patients with asthma-chronic obstructive pulmonary disease overlap (ACO) experience more frequent exacerbations and have poorer quality of life, more decline in lung function and higher mortality than asthma or chronic obstructive pulmonary disease (COPD) alone. A low dose of macrolide antibiotics have been shown to improve the lung function and reduce frequency of infective exacerbations in COPD patient. Recently, several reports showed the effectiveness of azithromycin in some patients with asthma. However, little is known about the potential for macrolide therapy to transfer these effects to patients with ACO.

Objective: to study the effectiveness of low-dose and long-term treatment with azithromycin in ACO patients.

Our study involved 20 ACO patients divided into azithromycin (15 patients) and a control group – 5 patients (without azithromycin treatment). The azithromycin group was treated with antibiotic in the dose of 250 mg twice weekly for 3 months. Inflammatory cells in induced sputum, pulmonary function, the COPD assessment test (CAT) test and a 6-minute walk distance (6MWD) were analyzed.

After treatment, sputum significantly decreased in the in azithromycin group compared with control group. Treatment with azithromycin decreased the total cell count, the number of neutrophil counts and neutrophil ratio were also significantly decreased compared to the control group ( $p < 0.5$ ). No significant QTc prolongation was observed among patients assigned to azithromycin. CAT test score decreased from  $20,56 \pm 1,62$  to  $14,00 \pm 1,16$  ( $p < 0.05$ ) after treatment. There were no significant changes in 6-MWD scores after 3 month of azithromycin treatment.

Erythromycin reduced airway inflammation, total number of cells, neutrophil counts, and neutrophil ratio in induced sputum in ACO patients. Prolonged treatment, however, seems to require maintenance of clinical benefits.

**Plesh I.A.**

**METHOD OF THE VASCULAR TONUS DETERMINATION: DIAGNOSTIC VALUE**

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A new method of complex synchronous determination of arterial and venous pressure was proposed at the Department of Patient Care and Higher Nursing Education within the period of the research work fulfilment (2015-2019).

The method is based on the biophysical inverse relationship between the impedance of a part of the limb and its pulse volume level because of the physiological compression (as for the determination of blood pressure (BP)).