

**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  
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disability groups. The structural analysis of MR by comorbidities shows that 94% of patients had comorbidities in addition to the main diagnosis.

**Conclusions.** Taking into account the results of the MR analysis, it can be stated that patients with AD need social protection from the state. Alzheimer's disease causes are a significant burden on the budget due to indirect costs that involve an increase in social benefits.

**Filipets N.D.**

## **EXPERIMENTAL STUDY OF THE KIDNEY FUNCTIONS CHANGES AFTER PHARMACOLOGICAL ACTIVATION OF POTASSIUM CHANNELS**

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**Introduction.** Adenosine triphosphate-sensitive potassium (KATP) channels of cell membranes play a special role in the mechanisms of restoration of disturbed oxygen homeostasis of the body. Their opening in response to a decrease in the intracellular ATP pool stabilizes energy processes, activates physiological reactions to hypoxia. The unique biological ability of KATP channels determines their research as targets for pharmacotherapy of multiorgan dysfunctions caused by hypoxia. Among the openers of KATP channels is Flocalin, which due to the presence of a fluorinated radical has powerful cardioprotective and vasodilating properties. Taking into account the presence of cardiorenal functional interconnections, it is logical to assume renal effects of Flocalin.

**The aim of the study** was an experimental investigation of Flocalin effect on the glomerular filtration rate (GFR) and indicators of proteinuria under the conditions of the initial stage of the development of acute hypoxic nephropathy.

**Material and methods.** The functional state of the kidneys was evaluated after a single administration of Flocalin (5 mg/kg, on 1% starch mucus, intragastrically) to laboratory white rats weighing 0.15-0.17 kg against a background of 5% water load in 2 hours after hypoxic kidney damage. Acute hypoxic nephropathy was modeled by sequential administration of sodium nitrite (50 mg/kg, subcutaneously) and 2,4-dinitrophenol (3 mg/kg, intraperitoneally). As a result of the action of the former of methemoglobin and the disconnection of the oxidation and phosphorylation processes, histological hypoxia occurred. GFR was assessed by the clearance of endogenous creatinine, the concentration of protein in urine was determined by the sulfosalicylic method.

**Results.** The glomerular reaction in rats with hypoxic nephropathy was characterized by an increase in GFR by 36.1%. Mechanisms of changes can be considered powerful systemic vasodilatation, increase in renal blood flow, in particular, microcirculation. The damaging effects on the juxtaglomerular zone, which is particularly sensitive to hypoxia, decreased, and the activity of the renin-angiotensin system was suppressed. The evaluation of the dynamics of proteinuria showed that after the activation of KATP channels, the concentration of protein in the urine decreased by 53.5% and the excretion of protein by the kidneys decreased by 41.8%.

**Conclusions.** Due to the improvement of intrarenal hemodynamics and the strengthening of compensatory antihypoxic reactions, both the selectivity of the glomerular filtration barrier and the permeability of the tubular part of the nephron for protein were stabilized after the use of Flocalin. Therefore, an increase in the rate of glomerular filtration, a decrease in the loss of protein in the urine, after the introduction of Flocalin under the conditions of the initial stage of the development of acute hypoxia, indicate nephroprotective properties and complement the spectrum of protective effects of KATP channels activator.