



rats of III group were daily administered lipin at a dose of 50 mg/kg. Functional state and histological changes in kidneys were estimated on the 7th day.

Administration of the investigational drug in a prophylactic-therapeutic regimen resulted in a significant reduction of the degree of damage to nephrocytes in rats with gentamicin-induced nephropathy. Lipin demonstrated high nephroprotective efficacy, as evidenced by an improvement of the excretory kidney function with an increase in GFR by 2.3 times ( $p < 0,01$ ), diuresis – by 65.5% ( $p < 0,01$ ), reduction of azotemia and proteinuria. The protective effect of lipin on the epitheliocytes of the proximal tubules is confirmed by an increase in reabsorption capacity and a corresponding decrease in fractional sodium excretion by 3.2 times ( $p < 0,01$ ), as well as the normalization of tubular-channel balance. At the same time, under the influence of lipin, antioxidant protection is activated, which manifests itself in a decrease in the content of peroxidation products in both erythrocytes and kidney tissue, a decrease in catalase activity, ceruloplasmin content and an increase SH-groups compared to untreated animals. Therefore, in the gentamicin model of AKI, lipin normalizes the state of prooxidant-antioxidant balance in animals, suppressing lipid peroxidation intensity.

Lipin has a nephroprotective effect in gentamicin-induced nephropathy, and the results may serve as a basis for further study in acute renal injury of various etiologies.

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## **STUDY OF THE FUNCTIONAL STATE OF KIDNEYS IN CONDITIONS OF FEVER**

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Kidney and urinary tract diseases, especially of microbial-inflammatory origin, occupy one of the leading places in the structure of somatic pathology. The kidneys play an important role in the maintaining homeostasis, which is characterized by a constant volume of fluid, its osmotic concentration and ionic composition. Therefore, any renal dysfunction can lead to significant changes in electrolyte and water-salt homeostasis. The extreme degree of these disorders indicates a disturbances of the basic homeostatic constants of the body.

According to the literature, about 90% of kidney diseases are accompanied by fever, which often develops in response to the effects of pyrogens of viral or bacterial nature, which in general significantly impairs the body's compensatory capacity and affects the course and consequences.

On the other hand, it is known that fever in infectious diseases is a protective response. Rise in the body temperature activates metabolic processes, functions of the nervous, endocrine, immune systems (an increase in the production of antibodies, interferon, and stimulation of the phagocytic activity of neutrophils), increase in the antitoxic function of the liver, increase in the renal circulation.

Recently, a highly active broad-spectrum immunomodulator pyrogenal has been widely used to induce fever. Pyrogenal is a protein-free exogenous highly pyrogenic lipopolysaccharide, which acts by activating the production of macrophages and polymorph nuclear leukocytes, endogenous pyrogens, which results in a shift of the set point of thermoregulation to a higher level. Pyrogenal affects the thermoregulatory centre of the hypothalamus and also has desensitizing, anti-inflammatory properties, increases the general and specific resistance of the body. Following the pyrogen administration, antigen or mitogen binds to the cellular receptor, promoting the proliferation of lymphocytes and stimulating the synthesis and secretion of Ig, potentiating the factors of nonspecific resistance and cellular immunity.

Therefore, the aim of research is to study the effect of fever on the structural and functional state of kidney and possible mechanisms of renal dysfunction; to study the function of kidney during the first and second stage of fever, the renal mechanism of autoregulation – glomerular-tubular and tubular-tubular balance in the stage of temperature decrease, biochemical and histological characteristics of the kidney cortex and medulla in the dynamics of fever development.