strandard therapy for renoprotection and optimization of functional affiliation. Infusion therapy is the basis for treatment of purulent-septic complications and secondary toxic auto aggression. Among infusion solutions sufficiently promising are preparations of polyhydric alcohols, in particular sorbitol-based. It expands the prospects for using adjuvant therapy, in particular, the combination of solutions of polyhydric alcohols with L-arginine. However, the effect of combined use of sorbilact with L-arginine on renal function remains unknown

The purpose of the work is to investigate the effect of combined use of sorbilact and Larginine on the kidneys' volume-regulatory function of patients with endogenous intoxication syndrome (EIS) of purulent-septic origin in the period of stabilization of secondary toxic autoagression.

Indicators of kidney volume receptor function have been studied in patients of the following groups. The first group (I, control) consisted of 31 patients with systemic inflammatory response syndrome (SIRS). The second group (II) consisted of 22 patients with EIS who were treated according to Surviving Sepsis Campaign 2016 (standard therapy). The third group (II) consisited of 24 patients with EIS, who received sorbilact in addition to standard therapy. The fourth group (IV) included 21 patients with SEI who received standard therapy as well as Sorbilact and L-arginine. Sorbilact infusion to patients of III and IV groups was performed at a rate of 6-7 ml/kg body weight, intravenously dripping at a rate of 7-8 ml/min. 216 After the end of infusion of sorbilact, patients of IV group were infused with 4.2% solution of Larginine ("Tivortin" intravenous drip according to the instructions). Data was obtained and results gathered on the application of drugs in the period of stabilization of secondary toxic autoagresion (fourth day of drugs' application).

In the period of stabilization there is a restoration of the volume-regulatory function of the kidneys under standard therapy of endotoxicosis of purulent-septic genesis. The use of sorbilact with standard therapy activates the volume-regulatory function of the kidneys (in terms of sodium clearance by 31%, $p < 0,05$) in the period of stabilization of toxic autoaggression. The combination of sorbilact with L-arginine increases the activity of sodium clearance by 12% ($p < 0,05$) induced by sorbilact.

Thus, the investigated features of basic adjuvant therapy with L-arginine and sorbilact can be recommended for use in order to restore the volume-regulatory function of the kidneys in cases of endotoxicosis of purulent-septic genesis.

Nechytailo O.Y.

PATHOPHYSIOLOGY OF THE LOWER LIMBS CRITICAL ISCHEMIA IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

Department of anesthesiology and resustitation
Bukovinian State Medical University

The worldwide prevalence of diabetes has continued to increase dramatically. The number of people with type 2 diabetes increases in every country in 80% of people with diabetes mellitus living in low- and middle-income countries. The poor controll of hyperglycemia lead to multiple, primarily vascular, complications that affect small vessels (microvascular), large vessels (macrovascular), or both. Diabetic lower limb ischemia often leads to limbnecrosis and increases the risk of infection which is difficult to treat in most patients. It may require amputation and may even become life-threatening in some untreated cases. It has been conservatively reported that, worldwide, a major amputation takes place every 30 seconds with over 2500 limbs lost per day. At least 60% of all nontraumatic lower extremity amputations are related to complications of diabetes.

The aim of the present study was to analyze the pathogenetic mechanisms of the lower limbs critical ischemia formation in subjects with diabetic foot syndrome (DFS) type 2 diabetes.

In total 87 patients with type 2 diabetes and DFS at the age of 43-82 years were investigated. The patients were subdivided in 2 groups – the first group with DFS without lower limbs critical ischemia (47 patients) and the second group consisted of 40 patients with lower limbs critical ischemia. Clinical and paraclinical investigations were done. Infrared thermometry of low limbs and sublingual biomicroscopy were done with digital devices. In the study we used simple clinical

screening method for diabetic neuropathy which included four tests: tactile and pain sensation, vibration perception, presence and level of Achilles reflex. Patients were treated with either oral hypoglycemic agents or insulin.

The leading pathophysiological mechanism in all patients with DFS were microcirculation disorders, with a decrease in the number of functioning capillaries, and a slowdown in the blood flow. The degree of these disorders corresponded to the asymmetry of the skin temperature of the extremities. The presence of microaneurysms and ampullary vasodilators was established according to the results of sublingual biomicroscopy. In the first group it was in 87.5% and 68.7%, in the second group - in 94.2% and 88.2%. In keeping with the total level of these disorders in patients of the second group there was a significant difference with the first group with a high probability ($p < 0,01$). The most changes in the microcirculatory tract were observed in the precapillary vessels, which had a regulatory function of the blood flow. In particular, the spasm and some changes in the caliber of arterioles led to a violation of effective blood flow in the capillaries, which were accompanied by stasis and the exclusion of capillaries from functioning. The second most frequent disorder was neuropathy, with the earliest symptom in the form of the decreased vibration sensitivity. Approximately 75% of all study subjects had sensory neuropathy. The majority of such patients noted mild to moderate discomfort associated with the neuropathy. Diabetic subjects with neuropathy were older and had longer duration of diabetes. The degree of neuropathy in our study correlated with age ($r=0.44$, $p<0.05$), duration of disease ($r=0.45$, $p<0.05$), level of diastolic blood pressure ($r=-0.28$, $p<0.05$) and local skin temperature ($r=-0.35$, <0.05). Osteoarthropathies developed in a smaller number of patients and correlated with the duration of diabetes. Reduced bone density in the lower limbs has been observed in these patients.

Thus, in patients with lower limbs critical ischemia, all three pathophysiological mechanisms are present, with the prevalence of persistent microcirculation disorders. The diabetic sensory neuropathy is one of the causative factors in critical lower limbs ischemia and development of DFS. DFS pathogenesis in general is complex and includes impaired glycemic control, microcirculation deterioration and sensory neuropathy. The simple clinical screening method which included four tests: tactile and pain sensation, vibration perception, presence and level of Achilles reflex is effective for diagnostic diabetic sensory neuropathy.

Petrynych V.V.

DYNAMICS OF CHANGES OF BEHAVIOURAL REACTIONS IN SEXUALLY MATURE RATS IN CASE OF MANGANESE INTOXICATION, DEPENDING ON THE SPEED OF ACETYLATION TYPE

Department of Anesthesiology and Resuscitation
Bukovinian State Medical University

There is speculation that the marker predisposition to action of the unfavorable factors of the environment, including the salts of heavy metals, is the type of acetylation.

The experiments were conducted on white conventional outbred sexually mature male rats that were on a full diet of vivarium.

To determine the acetylating ability of the animals amidopirin aqueous suspension at the rate of 20 mg/kg was administered intraperitoneally. Urine was collected for 3 hours in animals to determine the activity of 4-aminoantipyrine and N-acetyl-4-aminoantipyrine. The number of urinary metabolites of the test animals was divided into two groups: «quick» and «slow» acetylators.

Subacute intoxication was modeled by intragastric administration of $MnCl_2$ to experimental animals at a dose of 50 mg/kg for 28 days. Euthanasia of rats was performed 24 h after the last injection of substances by decapitation. The control was an intact group of animals that were injected tap water intraperitoneally.

In order to evaluate the damaging effect of $MnCl_2$, taking into account the type of acetylation before the beginning of the experiment and in the dynamics of intoxication (on the 7th, 14th, 21st and 28th day), the indicators of behavioral responses of rats were studied: horizontal