cerebrated European surgeons. It was Pirogov who was called in to remove the bullet from the famous Italian revolutionary Garibaldi. Pirogov's creative work formed an epoch in the development of medicine and anatomy. N. I. Pirogov organized the Anatomical Institute in the Medico-Surgical Academy and invited W. L. Gruber, the Prague anatomist, to work with him. After Pirogov's death his body was embalmed by Vychodsev, and sixty years later re-embalmed.

CHRONOPHARMACOLOGICAL PECULIARITIES OF ANTIOXIDANTS ACTION IN TOXIC LIVER DAMAGE

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Treatment of toxic liver damage is one of the actual problems of hepatology. Chlorine-organic compounds have the important place between xenobiotics causing pathological liver changes of chemical etiology. Carbone tetrachloride (CCl_4) is among them. This substance is widely used in different industries and characterized by well-known danger to humans. We have previously demonstrated the significantly high efficacy of antioxidants in toxic influence of CCl_4.

An aim of this study was the investigation of chronopharmacological peculiarities of vitamin E and sodium selenite in toxic liver damage caused by CCl_4.

It was found, that hepatotoxicity of CCl_4 is manifested in maximal degree during spring and summer. In these seasons, lipid peroxidation and low thiol-disulfide ratio are more expressive than in autumn and winter. It is necessary to notice, that the maximal increase of lipid peroxidation level under CCl_4 influence during spring and summer and minimal one during autumn and winter corresponds with maximal and minimal activity of aminotransferases. Efficacy of sodium selenite in treatment of CCl_4-induced liver damage is higher during autumn and winter. Vice versa, hepatoprotective effect of vitamin E is higher during spring and summer. Sodium selenite prevents hepatotoxicity of CCl_4 in autumn-winter season. Combination of sodium selenite with vitamin E exhibits more expressive effect, than separate agents. This combination prevents toxic action of CCl_4 in autumn, winter, spring, and in less degree – in summer. It is due to higher toxicity of poison in summer period.

Obviously, unequal efficacy of vitamin E and sodium selenite in different seasons is result of seasonal pharmacokinetic peculiarities of vitamin E, because selenium concentration in blood and internal organs of rats is independent from seasons. Intensity of free-radical processes (which markedly increased in summer) has significant influence upon distribution of vitamin E in organism, including its accumulation in liver in the hot season.

CHANGES OF THE HEART AT HYPOOSMOLAR OVERHYDRATION

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Introduction. Nearly all the major systems of our body depend on water to work properly. Drinking plenty of water throughout the day aids in regulating body temperature, preventing constipation, flushing waste products out of the body, and many other important functions. However, overhydration—or drinking too much water—is also a potentially deadly condition, one that can throw off the balance between water and sodium in our blood. Hyponatremia is an electrolyte disturbance characterized by sodium concentration in the plasma below 135 mmol/L. At lower levels, overhydration (water intoxication), an urgently dangerous condition, may result in this situation. Too little sodium in our body prevents our nerves from communicating properly with our muscle tissue, leading to muscle weakness, as well as spasms and cramps. Hyponatremia also affects our heart muscle, increasing our heart rate.

The aim of our study was to understand the concept of changes of the heart wall under the influence of overhydration using scanning electron microscopy

Materials and methods. The experiment involved 12 eight month of age white laboratory male rats. Alimentation and experiments were conducted in accordance with the "European Convention for the protection of vertebrate animals used for experimental and other scientific purposes"(Strasbourg, 1986). Animals were divided into 2 series: experimental and control, 6 animals in each. To achieve the overhydration experimental rats received 10 ml distilled water three times a day through a tube, ate boiled demineralized food and were injected synthetic analogue of ADH (vasopressin)"Mynyrin "(Ferring) twice daily at a dose of 0.01 mg. The simulation of severe overhydration was 25 days. The control animals were injected the "Mynyrin"(Ferring) twice daily at a dose of 0.01 mg, considering the potential effects of vasopressin on the cardiovascular system. Animals received normal drinking water and food within the daily physiological needs. The animals were taken out of the experiment by the introduction ketamine at a dose of 70 mg/kg. Preparations for scanning electron microscopy were prepared according to standard methods.

Resuts and discussion. Upon reaching the animals severe overhydration the heart wall becomes widened and swollen. We observe thickening of left ventricular wall in 1.2 times and thickening of the right ventricular wall by almost half compared with the control. The walls of the heart are thickened under overhydration, especially in the ventricles because the ventricles perform most function of pumping blood.The myofibrils increase in thickness, in regards to this, at the onset of this condition(overhydration /water intoxication),the fluid outside the cells of the heart muscle has an excessively low amount of solutes. In comparison to that inside of the cells is more concentrated causing the fluid to shift through (via Osmosis) into the cells to balance the concentration. This causes the cells (myocytes) to swell due to inflow of the fluid to the intracellular matrix. Swelling of the cells causes the stiffness or thickening of myofibrils that make up the myocytes. We mark local missing of myofibrils transverse striation (cytolysis phenomenon), dilatation of intracellular spaces with collagen strands inside, aggregation of erythrocytes in vessels.

Conclusions. Using the method of scanning electron microscopy allows to reconstruct the volumetric structure of the heart wall. At water intozication we observe changes both in the myocardial parenchyma and stroma. Changes in parenchymal component manifested by swelling of the myofibrils with local cytolysis. Changes in stromal component expressed in edema of intercellular spaces, increasing of collagen production and stasis of erythrocytes in the blood vessels.

PERIOSTAL REACTION AFTER IMPLANTATION OF B (ZR-TI) AND TI – ALLOYS

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Osteoinegration is a main factor of successful implant ingrowth. It is depends on quality of bone, lack of initial stability, excessive loading, loosening or fracture of screw and fracture of implants. Other factors that can affect osteoinegration are implant composition and futures of implant surface. There are a lot of metals and ceramics have used in dental surgery last 40 years. Dental implants have applied as a alternative treatment method for the prosthodontic restoration of partial or full edentulous patient. There are a lot of reports about implant failure that from 6% to 11% according different search. The main reason of implant failure is disorders of osteointegration that depends on composition of implant material, surface structure and implant elasticity and strength. Titanium is a good material for dental implants due it mechanical parameters, not-toxicity and bio-inert. But it has some disadvantages such as high Young Module, low elasticity and low bone integrity. To improve quality of dental implants we can modify titanium alloys by adding of other metal such as aluminum or zirconium. There are a few reports about the periostal reaction after pure Ti and Zr-Ti alloys implantation.

The aim of current research was to evaluate histology reaction of hosting bone in different period after the implantation of Ti and Zr-Ti alloys.