

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



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chemical pollutants, lead and its compounds occupy a special place, which are characterized by high toxicity and a high ability to accumulate both in ecosystems and in human and animal bodies. There is an opinion that variations in the response of different individuals to environmental factors may be related to the features of the genotype to the genetically programmed system of biotransformation, degradation and removal of xenobiotics. However, the role of individual genetic predisposition as a cause of the body's sensitivity to the influence of toxic compounds, in particular heavy metals, has not been sufficiently studied to date. Therefore, the study of the toxic effect of lead acetate depending on the rate of acetylation is an urgent task, the solution of which will allow us to determine possible markers of the body's susceptibility to the action of this compound.

The aim of the study. To determine the possible role of the phenotype of acetylation speed in the formation of the lead acetate toxic effect on indices of lipid peroxidation (LPO), antioxidant protection (AOP) and oxidative modification of proteins (OMP) in the blood and liver of rats.

Material and methods. Experimental studies were conducted on white conventional outbred mature male rats, divided according to aminodopyrin test, into two groups: with «rapid» and «slow» type of acetylation. Subacute intoxication was modeled by intraperitoneal injection of lead acetate to experimental animals at doses of 2,5 mg/kg (1/100 DL50) and 15,5 mg/kg (1/16 DL50) for 28 days. Control groups of animals were administered isotonic solution of sodium chloride (intraperitoneally) instead of lead acetate.

Results. The introduction of lead acetate at a dose of 2,5 mg / kg (1/100 DL50) and 15,5 mg / kg (1/16 DL50) into the blood of adult rats with «slow» and «rapid» types of acetylation is accompanied by increase parameters of LPO, OMP, opposite changes of AOP, and in the liver – reducing of lipid peroxidation, OMP and the AOP. It has been established that the introduction of lead acetate at a dose of 2,5 mg / kg (1/100 DL50) and 15,5 mg / kg (1/16 DL50) is accompanied by clearly increase of OMP and LPO with a decrease in the activity of glutathione peroxidase, more significant reduction in the level of total protein in the blood, OMP indices and catalase activity in the liver, and increased content of δ -aminolevulinic acid in urine was observed in animals with «rapid» type of acetylation.

Conclusion. Animals with «rapid» type of acetylation can be considered to be more susceptible to lead acetate toxic effects.

Tkachuk O. V.

POSTPANCREATIC INSULIN EXPRESSION IN ACUTE DISTURBANCES OF THE CEREBRAL BLOOD FLOW AGAINST A BACKGROUND OF DIABETES MELLITUS

Department of Anesthesiology and Resuscitation

Bukovinian State Medical University

Introduction. It is known that there is a close relationship between acute pathological processes of the central nervous system (impaired cerebral circulation, injuries) and carbohydrate metabolism disorders. We tried to investigate how the expression of insulin by the thymus affects these relationships (and whether it affects at all).

The aim of the study. To study indices of insulin thymus expression in animals with experimental diabetes mellitus under conditions of its complication with acute disturbance of the cerebral blood flow.

Materials and methods. Incomplete global brain ischemia was modelled in 6month intact rats with experimental diabetes by means of the duplex clipping of the common carotid arteries during 20 minutes. Animals were taken out from the experiment on the 12th day by decapitation under narcosis. Diabetes mellitus (DM) was reproduced by a single intraperitoneal streptozotocyn (Sigma, USA, 60mg/kg of the body weight) introduction to the white non-linear female rats at the age of 2 months. The duration of diabetes – 4 months. Insulin-positive cells of the thymus were detected by indirect immunofluorescence method. Statistical significance of discrepancies was estimated according to the Student t-criterion for independent selection.

Results. On the 12th day of ischemic-reperfusion period the density of the location of the thymus insulin immuno-positive macrophages and non-identified cells reliably decreased in the control rats, the percentage of macrophages decreased, and in dendrite and non-identified cells – increased. In animals with diabetes mellitus the density of macrophages location decreased after ischemia-reperfusion of the brain, density of the dendrite cells remained invariable, but in

comparison with diabetes, the density of the non-identified cells, reliably increased. The percentage changes of the re-distribution were the following: the percentage of the dendrite cells increased, but the percent of the non-identified cells decreased, the per cent of macrophages did not change. Density decrease of the macrophages arrangement in the thymus of animals without DM following ischemia reperfusion is accompanied by an increase in them of insulin concentration, at the same time, density decrease of the non-identified cells under such conditions is characterized by insulin concentration decrease in these cells. Thus, as a final result, the total insulin quantity in the thymus decreased. In spite of the unchanged density of the arrangement of the macrophages and dendrite cells and decreased - non-identified, an increase of insulin concentration, reliably of a compensatory character, was revealed in all types of cells in rats with diabetes, not complicated brain ischemia. However, the analysis of the insulin content in the studied cells of the animals' thymus with diabetes following ischemia-reperfusion of the brain showed its reliable total decrease, that substantially differs from the reaction of the given index to ischemia-reperfusion in the control groups. Thus, combined analysis of the results of the carried out investigations is indicative of availability of the specific diabetes-substantiated reaction of insulin immuno-positive thymus cells to ischemic-reperfused disturbance of the nervous tissue. This may represent the effects of the mutual involvement of two pathological processes with auto-immune manifestations at the expense of the disturbance of the negative selection of β -cellular autoreactive clones in the thymus, the reason of which can become the change of the representation of β -cells antigens or change of the quantity and saturation of antigen-presenting cells with insulin.

Conclusion. Ischemia-reperfusion disturbance of the brain in rats with streptozotocyn diabetes decreases the density of the arrangement in the thymus of insulin-expressing macrophages and increases the density of insulin-expressing non-identified cells. Reliable decrease of insulin concentration was detected in animals of the given experimental group in all types of the insulin-expressing cells.

Акентьев С.О.

ПЛАЗМОСОРБЦІЯ В ПЕРЕДДІАЛІЗНОМУ ПЕРІОДІ ЛІКУВАННЯ СИНДРОМУ НИРКОВОЇ НЕДОСТАТНОСТІ

Кафедра анестезіології та реаніматології

Буковинський державний медичний університет

Вступ. Сучасна комплексна терапія гострої ниркової недостатності (шок, інфекційні захворювання, гострі отруєння та ін.) неможлива без застосування еферентних методів детоксикації (екстракорпорального гемодіаліза, гемосорбції та ін.). При лікуванні захворювань, які супроводжувалися нирковою недостатністю, застосовувався один із сорбційних методів детоксикації – плазмасорбція (ПС). Відмінними особливостями даної методики є: 1) форменні елементи крові в зовнішньому контурі не піддаються пошкодуючій дії детоксикуючої системи – колонки з гемосорбентом; 2) власна плазма хворого після проходження через колонку знову повертається в організм.

Мета дослідження. Покращення результатів лікування хворих з нирковою недостатністю в умовах інтенсивної терапії.

Матеріал та методи дослідження. В групу захворювань з синдромом ниркової недостатності в умовах інтенсивної терапії увійшли: лептоспіроз, токсичний гепатит, хронічний гепатит, жовчно-кам'яна хвороба, механічна жовтяниця, стан після операції, панкреонекроз, гострий холецисто-панкреатит, сепсис, цироз печінки, перитоніт, сечокам'яна хвороба. Всього хворих – 26, чоловіків – 12, жінок – 14. За віком: до 30 років – 2; до 40 – 1; до 50 – 3; до 60 – 11; понад 60 – 9. З огляду на загальний стан хворих та рівень ендотоксикозу ПС виконувалася в переддіалізному періоді. Активна детоксикація здійснювалася зазвичай в 1-2-й день поступлення хворого у відділення реанімації за умови наявності олігурії або олігоанурії. Технічно сеанси ПС виконувалися переривчастим (дискретним) способом (55 сеансів).