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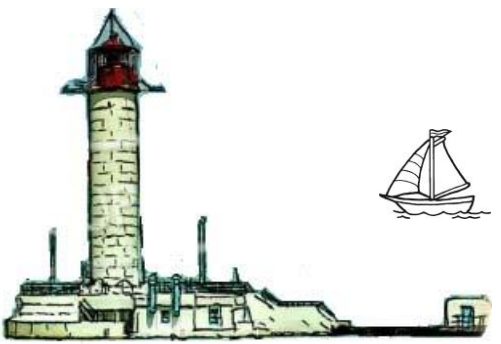

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comparison with the group of healthy individuals (norm 132.7±13.44 ml /h) with preserved daily diuresis.In healthy people, 2 hours after performing a functional load using water in a volume of 0.5% of the body weight, diuresis, when recalculated per hour, increased 2 times compared to 12 hours and averaged more than 80% of the water load. In patients with grade I obesity, in response to water load, the total diuresis was 1.7 times reduced ($p<0.05$) and amounted to only 1/3 of the load volume, the plasma creatinine concentration increased by 38%, and the GF level in terms of creatinine clearance decreased by almost 3 times.

Thus, when carrying out a functional load, clear changes in the excretory function of the kidneys are revealed, which under normal conditions are not found in most patients with obesity of the 1st degree.Evaluation of the reserves of the filtration capacity of the kidneys can make it possible to predict the rate of progression of chronic kidney disease in obese patients even with an initial normal GF level and to select patients in time for dispensary observation and the appointment of pathogenetic therapy.

Key words: functional load, kidneys,obesity.

Ключові слова: функціональне навантаження, нирки, ожиріння

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ASSESSMENT OF THE FUNCTIONAL STATE OF THE VESSELS ENDOTHELIUM IN RATS WITH A NITRITE-INDUCED MODEL OF ALZHEIMER-TYPE DEMENTIA

ОЦІНКА ФУНКЦІОНАЛЬНОГО СТАНУ ЕНДОТЕЛІЮ СУДИН У ЩУРІВ З НІТРИТ-ІНДУКОВАНОЮ МОДЕЛЛЮ ДЕМЕНЦІЇ АЛЬЦГЕЙМЕРІВСЬКОГО ТИПУ

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Many authors are convinced that Alzheimer's disease is accompanied not only by neurodegenerative processes but also by vascular dysfunction. At the same time, vascular pathology can occur even before the formation of amyloid plaques and the appearance of

clinical symptoms of the disease. Cerebrovascular injury, accompanied by dysfunction of the blood-brain barrier, hypoperfusion, and hypoxia, can initiate damage to neurons, neurodegenerative processes and the development of cognitive disorders.

Despite numerous studies of the etiopathogenesis of neurodegenerative diseases and the ways of influencing the mechanisms of their progression, the attention of many researchers today is focused on studying the relationship between vasculopathy and further neuropathy of the brain. Considering the above, it is important to determine the role of the functional state of the vascular endothelium in the mechanisms of the development of dementia of Alzheimer's type.

Materials and methods. To reproduce the nitrite-induced model of dementia of the Alzheimer type, groups of rats received intraperitoneal injections of an aqueous solution of sodium nitrite (Nitr) at a dose of 50 mg/kg daily for 14 days: Nitr-14 (n=8). Among the biochemical indicators that assess the state of the endothelium, cranial arteriovenous blood was studied (ET-1 - endothelin-1, (pg/ml) in serum and vWF - von Willebrand factor, % in blood plasma), VEGF-A and eNOS, which was determined by the enzyme-linked immunosorbent assay method using standard reagent kits (Elabscience, Wuhan, Hubei, China, 2019) on the IFA STAT FAX 303+. The normality of the sample distribution was assessed using the Shapiro-Wilkie test. According to its results, non-parametric tests were used for comparing independent groups of variables.

Results of the research Assessment of the functional state of the vascular endothelium in rats with nitrite-induced Alzheimer's type dementia revealed that in the cranial arteriovenous blood already after 14 days of injections, significant changes in the dynamics of indicators reflecting the functions of the endothelium were observed. Thus, compared to the control group, the blood serum of animals (Nitr-14) showed a significant, 3.8-fold increase in the average level of ET-1 gr., a 1.4-fold increase in the activity of endothelial NO-synthase (eNOS), and 1 .4 times the concentration of VEGF-A.

Similar changes in the direction of the deviations were observed during the study of the level of vWF in the blood, where its significant increase was noted.

Conclusion. Input of sodium nitrite for 14 days causes the development of hemic hypoxia against the background of which endothelial dysfunction occurs due to the presence the last one can be judged by reliable deviations of blood indicators (a reliable increase of

ET-1, eNOS activity, VEGF-A concentration, and vWF level), which reflect the main functions inherent in the vascular endothelium.

Hemic hypoxia together with endothelial dysfunction which observed after 14 days of Nitr injection is a predictor of subendothelial amyloid deposition and the development of cognitive impairment in rats later.

Ключові слова: деменція Альцгеймерівського типу, нітрит натрію, гіпоксія, біохімічні показники, ендотеліальна дисфункція

Key words: Alzheimer's type dementia, sodium nitrite, hypoxia, biochemical indicators, endothelial disfunctions.

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MORPHOMETRIC PARAMETERS OF THE STRUCTURAL ELEMENTS OF THE EXO- AND ENDOCRINE PART OF THE PANCREAS OF NEWBORN RATS AFTER CHRONIC PRENATAL STRESS

МОРФОМЕТРИЧНІ ПОКАЗНИКИ СТРУКТУРНИХ ЕЛЕМЕНТІВ ЕКЗО- ТА ЕНДОКРИННОЇ ЧАСТИНИ ПІДШЛУНКОВОЇ ЗАЛОЗИ НОВОНАРОДЖЕНИХ ЩУРІВ ПІСЛЯ ХРОНІЧНОГО ПРЕНАТАЛЬНОГО СТРЕСУ

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The ability of the organism to adapt in response to the impact of external stimuli of different nature and duration of exposure ensures its survival in the outside world. The degree of adaptation depends on the initial functional state, as well as the characteristics of the conditioned reflex reactions of organs and systems It is precisely chronic stress that poses a threat to health and life, when the accumulated tension can lead to a breakdown in adaptation and the appearance typical violations regulation of the functioning of internal organs, especially the digestive organs even under the influence of the most common stimuli. Complications of pregnancy caused by the action of stressors lead to occurrence of deviations in the development of the offspring, which are observed long after birth. There is an increase in the levels of

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