

шляхами та була оборотною. Гіпохромна дистрофія нейронів характеризувалася різними формами хромотолізу. Ядра нейронів мали округлу форму та гетерогенне забарвлення. Відзначалася гідратація ядер і тіл нейронів, збільшення ядерно-цитоплазматичного індексу. Судинне русло неокортексу характеризувалося обмеженням набряку навколо артеріол та прекапілярів, помірним потовщенням стінки та поодинокими ознаками капіляростазу.

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CYTOKINES, MAJOR MINERAL ELEMENTS AND TRACE ELEMENTS UNDER VIOLATION OF MORPHOFUNCTIONAL STATE OF THE PANCREAS OF RATS HAVING A HYPOCALORIC DIET

RELEVANCE OF A PROBLEM

The important problem of a modern pankreatologia are the functional violations of the pancreas caused by influence of exogenous pathogenic factors.

WORK PURPOSE

Studying the morfofunctional features of a pancreas at rats at action of an alimentary factor.

MATERIALS AND METHODS

By means of morphological, morphometric and biochemical methods the condition of endocrine part of a pancreas of the pregnant rats who received unbalanced food with the reduced content of nutrients (1 group) and being on the balanced food (2 group) is studied. For the rats, the experiment was stopped immediately after the birth of offspring in compliance with the ethical principles.

RESULTS AND DISCUSSION

The pancreas of rats treated with hypocaloric diet revealed morphological changes: reduced parenchymal area and acini, edema, fibrosis and lipomatosis stroma, its inflammatory infiltration, degenerative changes in the nuclei and cytoplasm. The rats (100 %) in 1-th groups are diagnosed as having identical tendencies of cytokines

ВИСНОВКИ

Результати проведеного дослідження свідчать, що вживання щурами 60 %-го розчину фруктози протягом 8 тижнів призвело до дегенеративно-деструктивних змін у нейрональних та гліальних клітинах. Водночас з цим курсом введення пропіленгліколевих екстрактів горобини протягом 2-х тижнів забезпечило достатній захист нервової тканини за умов експерименту.

change; significant buildup of pro-inflammatory interleukin-12 and reduction of anti-inflammatory interleukin-4 which indicates predominant involvement in pathogenesis of violation of pancreas cell component of immune system. The study of macro- and microelements level in the tissue homogenate showed an increase of calcium level by 20.9 % in 100 % of the rats-mothers. Magnesium level decreased in 50 % of the rats (20 % showed normal level, 30 % – increased), while the average value of the index did not differ from that of animals of the comparison group. The level of zinc (in average by 44.7 %) reduced in 100 % of animals.

CONCLUSIONS

At all pregnant rats who were on a hypocalorie diet with the decreased consumption of carbohydrates and fats morfofunctional changes of a pancreas take place. The rats in all groups are diagnosed as having identical tendencies of cytokines change: pro-inflammatory and anti-inflammatory cytokines imbalance with marker cytokine Th₁ lymphocytes (interleukin-12) domination; major mineral elements and trace elements imbalance in the pancreas tissue (hyper- or hypocalcemia, hypomagnesemia, reduction of zinc content). Such morphological changes of the pancreas of animals suggest that hypocaloric diet in pregnant rats is a significant risk factor for chronic diseases of the pancreas.