and damaged β -cells, the last are extremely sensitive to the toxic effect of free radicals. Thus, the process of lipid peroxidation is most represented in cells of Langerhans islets. Considering the important role of oxidative stress in the development of diabetes mellitus, it is reasonable to search the drugs with high antioxidant activity. The group of such compounds includes the substances of flavonoid row, which are very prospective.

Aim. Purpose of the given work was to study the impact of dry extract from the stevia leaves on metabolic disorders development in rats under experimental insulin resistance induced by high-fructose diet.

Materials and methods. Indices of lipid peroxidation was determined by the content of diene conjugates (DK) and TBK-reactive products (TBK-RAP) by the reaction with thiobarbituric acid using spectrophotometric method, antioxidant system condition was evaluated by determining the concentration of reduced glutathione (GSH) – using spectrophotometer method on the reaction with alloxan.

Results and discussion. As seen from the results, retention of rats on high-fructose diet has led to an increase in the content of TBK-AP and DK (primary products of lipid peroxidation) in the liver of animals, which correlates with the decrease of GSH content, indicating the activation of lipid peroxidation and exhaustion of antioxidant protection means.

Conclusion. Administration of dry stevia leaves extracts in our experimend conditions caused normalization of indicators of antioxidant status of organism of investigated laboratory animals that probably could be explained by antiradical properties of polyphenols of stevia leaves extracts.

THE EFFECT OF LETROZOLE ON THE MORPHOLOGICAL STATE OF VISCERAL ADIPOSE TISSUE AGAINST THE BACKGROUND OF EXPERIMENTAL METABOLIC SYNDROME

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Introduction. Metabolic syndrome is a set of metabolic-modifying factors that include obesity and increase the risk of type 2 diabetes and cardiovascular pathology development. In accordance with WHO data about 11% of adult men and 15% of adult women are afflicted by metabolic syndrome and abdominal obesity. Sex hormones imbalance caused by increased peripheral aromatase activity is also plays an important role in aggressive clinical behavior of metabolic syndrome with overweight and obesity. The most common condition that changes the ratio of sex hormones is the enhancement of peripheral aromatase activity caused by abdominal fat weight gain and increased preadipocyte proliferation.

Aim. Consequently, the testing of letrozole aromatase inhibitor effect on the morphological state of visceral adipose tissue in hamsters with experimental metabolic syndrome became a focal point of our research.

Materials and methods. The study was carried out on 60 Syrian hamsters at the age of 2.5 months, which were divided in 3 groups by 10 animals of each sex. Metabolic syndrome in animals was recreated using classic for hamsters model based on fructose- and fat-enriched diet for 6 weeks. The treatment of animals was carried out by oral administration of letrozole in the dose 0.3 mg/kg for 21 days. After euthanasia, adipose tissue was stained with hematoxylin-eosin and sudan IV.

Results and discussion. Letrozole administration had led to reduced size of the adipocytes in the abdominal-visceral adipose tissue of the both male and female hamsters. It was also decreased lymphocytic-macrophage infiltration in peripheral regions around full-blooded capillaries regardless of the sex. At the same time signs of fibrosis were noticeably diminished. Also it was morphometrically determined that the mean perimeter of adipocytes in animals of the letrozole group decreased in 40.2% and 33.8% in males and females respectively, compared with similar parameters of the negative control. The average cell area decreased in 68.7% (males) and in 65.7% (females).

Conclusions. The results of our study confirm the prospect advisability of letrozole clinical using in the therapy of metabolic syndrome and obesity, especially in adult men with secondary hypogonadism and hyperestrogenemia.