THE STUDY OF EXTRACT OF BLUEBERRIES LEAVES ON INDICATORS OF TYPE 2 DIABETES

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Introduction. Diabetes mellitus – is a complex systemic disease caused by absolute or relative deficiency of the hormone insulin, because of which a violation of carbohydrate metabolism develops in the body, in particular glucose utilization of tissues is inhibited. In addition to this the metabolic processes of fat, protein, water and salt balance are broken.

The purpose of this study has been to investigate the effect of a dry extract from the leaves of blueberry on the development of metabolic disorders in rats with experimental insulin resistance.

Materials and methods. The experiment has been conducted on a 18-month-old white male randombreeds rats weighing 350-370 g. Insulin resistance has been modeled by keeping the animal on a diet enriched with fructose (60.3% fructose, 18.3% protein, 5.2% fat), which is accompanied with obesity, impaired carbohydrate and lipid metabolism. We have used the glycosylated hemoglobin level (HbA1c), fructosamine, ss a marker of the degree of compensation of carbohydrate metabolism.

The Results. As it can be seen from the results of the studies, the maintenance of the rats on the diet enriched with fructose causes an increase in blood glucose concentration, which leads to an increase in the concentration of 20% HbA1c, fructosamine and 84%. The decrease of the α-cholesterol level and elevated levels of β-cholesterol are associated with increased transfer of cholesterol esters from HDL to atherogenic apoB-LP and due to the accumulation of TAG. The injection of the dry blueberry extract has expressed a normalizing effect on all studied parameters: significantly reduced the concentration of glucose, insulin, glycated hemoglobin, fructosamine, TAG, as well as improving the ratio of α-cholesterol levels to β-cholesterol.

Conclusion. Therapeutic and prophylactic application of the dry extract of blueberry leaves has a normalizing effect on glycosylation, as well as glucose and lipid metabolism in the serum of the studied animals that proves the further feasibility study of this extract with the aim of creating on its basis the means for correcting sugar type 2 diabetes.