

THE INFLUNENCE OF POLYPHENOL CONCENTRATES FROM GRAPES WITH STEVIA ON THE LIPID CONTENT UNDER EXPERIMENTAL DIABETES MELLITUS

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Introduction. More than 230 million people worldwide suffer from diabetes, accounting for 6% of the adult population of the world. In the present work we have studied the effect of a substance containing a complex of polyphenols of grapes *vinifera* and carbohydrate derivatives of stevia, on the effects of experimental diabetes in rats. The **aim** of this study was to investigate the influence of dry extract from the stevia leaves on metabolic disorders under experimental insulin resistance development in rats.

Materials and methods. DM1 ave been modeled by a single intraperitoneal injection of streptozotocin solution (STZ) in 1 M citrate buffer pH 4.5 at a dose of 55 mg / kg of a body weight. Polyphenol concentrate, containing the stevia extract (PCS) has been injected intragastrically. The content of free fatty acids (FFA) has been determined by reacting them with salts of copper diethyldithiocarbamate. The concentration of glycerides has been measured using a standard enzymatic assay. The content of cholesterol (LDL) has been determined by the standard enzymatic cholesterolxidase sets. Total lipid concentration has been determined using a standard assay – the reaction with a vanillin reagent. Statistical data processing has been carried out using the variation statistics.

Results and discussion. In our experiments it has been shown that among the animals with type 1 diabetes there is an increase in the content of AR, TAG, FFA in 1.69; 1.86; 2.1 and 1.5 times, respectively. PL content in the liver of the rats has been significantly reduced with a factor of 1.7. The injection to the animals the studying polyphenol concentrates has resulted in a significant decrease in these parameters. However, it should be noted that the injection of the investigated substances has not led to the normalization of the studied parameters. This fact seems to be playing a leading role in the fact that under DM1 the injected substances do not have a strong effect on normalizing lipid metabolism. This is evidenced by a fairly high level of triglycerides, free fatty acids and a reduced content of FFL. Similar changes have been also observed in type 2 diabetes.

Conclusions. Using PCS has prevented hyperlipidemia and reduced the hepatic parameters of lipotoxicity in a liver of the experimental animals. Thus, the studies have shown the feasibility of a combination of grape polyphenols with stevioside in the complex treatment of diabetes.