

PREDIABETOGENIC ACT OF MARINATED TOMATOES — *LYCOPERSICON ESCULENTUM* MILL.

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In compliance with the theory of diabetogenesis of Ibn Sina, (sugar) diabetes (type 2) is considered as the hepatic renal disease, which occurs as a result of changes of nature (mizaj) of inside (endon) into cold strontium. We have previously shown that cold nature corresponds to acid reaction, and warm corresponds to alkaline reaction. pH. The aim of this work was to study the nature and the actions of marinated tomatoes (MT) for the development of insulin resistance (IR) and pre-diabetes in the subacute experiment.

Subjects and methods of researches:

The experiments were performed on 30 rabbits with an average weight of 1.8–2 kg, which were divided into three series: 1-intact or control which were in the same conditions with experimental; 2 and 3 experimental animals, which daily for 14 days intraperitoneally (i/p) injected the porridge of marinated tomatoes (PMT) at the rate of 2 and 5 ml/kg. of the mass. The basic criteria used as evidence were the indications pH of blood and urine, as well as glycated hemoglobin (GH) of red blood cells, the level of glucose, cholesterol, triglycerides (TG), low density lipoprotein (LDL) cholesterol, high density lipoprotein (HDL), uric acid, urea, residual nitrogen in blood and insulin tolerance test (ITT, 0.5 IU per kg of the mass of e/r). The condition of the liver was judged by the level of bilirubin. ALT, AST, total protein, and albumin of serum. The results were processed statistically with the use of conventional methods. The state of insulin resistance was judged by the results of studying the insulin tolerance test (0.5 IU per kg of e/r).

The degree of contamination of inside-endothelial system was judged by the character of changes in acid-base resources (ABR) to the acid side. The state of a kidney was assessed on the basis of the results of the level of creatine, uric acid, urea and residual nitrogen composition of blood serum.

Results. The PMT in the case of daily intragastric (i/g) injection for 14 days, respectively, decreased the pH of blood and urine by 2.96 and 8.2%, compared with an intact series. The level of the marker for diabetes HG glycated hemoglobin (GH) of red blood cells after the conducted course of the PMT had increased the rate of 45%. In the acidic environment pH of the organism there was violated the tolerance of the organism of experimental animals to insulin. In setting up the test of tolerance to insulin (0.5 IU per kg, e/r) in experimental animals by 45–90 and 90–180 min the blood glucose levels, respectively, decreased only by 62.1 and 59% versus 86.1 and 70.3% in the control series. The ghyppoglikiemic effect of insulin in the acidic environment of the organism from an average of 24% (after 45–90min) to 10% (after 190 minutes) revealed weaker than in intact animals.

Under the action of the PMT, the level of cholesterol in blood serum increased 1.5-fold, triglycerides by 42.4%, LDL more than 2-fold, and HDL cholesterol decreased by 59.4%. The amount of total protein in the blood serum decreased by 12.4%, and 32.5% for albumin. The level of Bilirubin increased almost 2-fold. ALT of serum increased by 46.6% and AST by 25.8%.

Under the action of the PMT the level of uric acid in the blood serum of experimental rabbits raised by 65.6% urea in a two-fold, creatine in 3 times and the residual nitrogen by 54.3%. The found data testify about the manifestation of severe nephrotoxicity and hepatotoxic effects of MP, in general, promoting the development of IR and prediabetes.

Conclusions: The conducted experiments showed the early not known mechanism of the development of the insulin resistance of prediabetes, and characteristic to type 2 diabetes, occurring under the action of widely used worldwide marinated tomatoes.