EXPERIMENTAL RESEARCH OF HYPOGLYCEMIC ACTIVITY OF PLANTS EXTRACTS

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Diabetes mellitus (DM) type II is the most common and progressing endocrine disease in most countries. Adequate correction of diabetes and its complications is one of the urgent problems of modern endocrinology. Such factors as hyperglycemia and its effects: hypertension, atherosclerotic disorders, diabetic microangiopathy, retinopathy, and some others are important in the pathogenesis of diabetic complications. The use of medicinal plants in the diabetes based on the fact that a significant number of them – more than 400 – causes antidiabetic effect, and also has some other positive effects that enhance their effect in complications of diabetes. Traditionaly medicinal plants are used in diabetes type II.

The aim of the research was investigation of the hypoglycemic activity of extracts of beans, dogwood leaves and lupine fruits in intact rats and in rats with a glucose load. Identification of possible hypoglycemic action of beans, dogwood leaves and lupine fruits extracts in dose 50 mg/kg compared with metformin in therapeutic dose 50 mg/kg was performed in two stages. The first phase of the research determined the hypoglycemic activity of plant extracts in intact rats, and the second stage – in rats with normal carbohydrate homeostasis under conditions of glucose load. The concentration of glucose was determined with glucosoxydase method by using a set of reagents of “Filisit-diagnosis” firm.

Thick bean extract showed a more pronounced hypoglycemic activity after 6 hours after a single injection in intact animals than dogwood leaf extract and extract of lupine and was approaching to the drug comparison – metformin, which was a decrease in blood glucose levels for 10 hours. Intragastric input of glucose at a dose of 3 g/kg led to a significant increase of blood glucose at 30, 60, 90 and 180 minutes in all groups of animals, as compared with the original data, except the intact group of animals. Single-dose of thick bean extract revealed a severe hypoglycemic activity after 30 and 60 minutes than extracts: leaf dogwood and lupine fruit in comparision with the control group and with drug comparison – metformin.

Thus, the data suggest the expediency of further experimental studies of dense bean extract to create phytopreparation with hypoglycemic properties.