

THE USAGE OF THICK BEANS EXTRACT, METFORMIN, GLIBENCLAMIDE FOR CORRECTION OF DITHIZONE DIABETES COMPLICATIONS IN RABBITS

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Acute complications of diabetes mellitus are diabetic ketoacidotic, hyperosmolar and lactatacidotic coma and the chronic ones are vascular changes observed in the long course – diabetic microangiopathy. Despite a fairly wide range of modern antidiabetic agents, the problem of treatment and prevention diabetes is not completely solved, that encourages the search and development of new drugs for the correction of complications of the disease. The effect of a thick bean extract (TBE), metformin and glibenclamide on glucose and ketone bodies level in urine, urine pH was explored on the model of dithizone diabetes in rabbits. Dithizone diabetes was induced by intravenous injection of dithizone (35 mg/kg body weight) to male Chinchilla rabbits weighing 2.5-3.0 kg. The presence of glucose and ketone bodies in urine, and urine pH was determined after sampling the material using diagnostic test strips «Phan Laura» for urine analyzer «Laura Smart». Starting from 2 days of research animals with dithizone diabetes administered orally for two weeks TBE at a dose 40 mg/kg and the reference drugs – metformin at a dose of 30 mg/kg and glibenclamide at a dose of 5 mg/kg. We have studied the influence TBE, metformin and glibenclamide on the level of glucose and ketone bodies in urine, urine pH model dithizone diabetes in rabbits. 7, 10, 12 and 14 days later of the study of the TBE has reduced glucose levels in the urine of animals and prevailed over the effect of metformin in 9.8%, 9.7%, 31.2% and 37.4%, but has given in to the action of glibenclamide by 4.5%, 5.9 %, 1.3% and 0.7%. The TBE has reduced the level of ketone bodies in the urine of the animals in 7, 10, 12 and 14 days of the study, and prevailed over the effect of metformin in 5.5%, 10.2%, 8.4% and 12.0%, but has given in to the action of glibenclamide through 7, 10 and 14 days of the study by 4.1%, 3.8% and 3.3%, and in 12 days – the TBE has predominated over the effect of glibenclamide by 2.4%. On the 14th day the study the TBE has facilitated the normalization of urine pH in the animals, which corresponded (8.4 ± 0.38) to alkaline environment. In the group of the animals for which treatment the glibenclamide has been applied, urine pH has been close to the original data (7.9 ± 0.40), and the urine pH has been still acidic (7.5 ± 0.51) when metformin has been used in the treatment of the animals. It has been found that a long-term administration of the TBE, starting of 7 days and during 14 days of the study, has decreased blood glucose and ketone bodies in urine, helped to normalize the pH of the urine in the animals with dithizone diabetes, prevailed over the action of metformin and has been approaching to the glibenclamide action. The TBE is a promising hypoglycemic agent in the complex treatment of acute insulin deficiency, as well as the treatment of diabetes type 2, which will prevent the development of the disease complications.