STUDY OF THE INFLUENCE OF RECOMBINANT ANTAGONIST OF INTERLEUKIN-1 RECEPTOR ON THE COURSE OF ALLOXAN DIABETES IN RATS

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Diabetes mellitus (DM) occupies an important place in the structure of mortality and disability among the causes of the violation and the deteriorating quality of life. Therefore, optimization of diabetes therapy is one of the most pressing health problems. Anticytocine therapy is one of the most promising directions of optimization of diabetes therapy.

The task of this work is the experimental study of hypoglycemic properties of the recombinant receptor antagonist IL-1 raleukin obtained in St. Petersburg Research Institute of Pure Biochemicals on the model of alloxan diabetes in rats. Pathology model was reproduced by single subcutaneous injection of alloxan in a dose of 20 mg per 100 g body weight white mongrel female rats. Raleukin in a dose 7 mg/kg and the reference drug anakinra in a dose 8 mg/kg were injected subcutaneously, the second reference drug metformin in a dose 30 mg/kg - intragastrically once a day for 10 days, starting 4 days after reproduction model pathology. Hypoglycemic action of the drugs was evaluated by animal survival and dynamics of basal serum glucose after 3 hours, 3 and 14 days after the alloxan injection.

The survival rate was 62.5% in the group of control patology and group treated by anakinra. The survival rate was 75% In groups of animals treated by metformin and raleukin. Administration of all study drugs decreased the level of basal glucose in the blood serum of experimental animals. Under the action of raleukin and anakinra on the 14th day of the experiment the level of glucose in the blood serum of animals was significantly decreased in 2 times, under the action of metformin - in 1.4 times relative indicator in the control group pathology.

Thus, on the model of alloxan diabetes in rats the original recombinant interleukin-1 receptor antagonist has hypoglycemic action for which expression is not inferior to anakinra and superior to metformin. We can assume that the hypoglycemic effect of raleukin is the result of the blockade of IL-1 receptors in the pancreas and the subsequent protection of β-cells from the damaging effect of alloxan.

Research results indicate the prospects of further experimental study of anti-diabetic properties of raleukin for subsequent inclusion of the drug in the complex therapy of type I diabetes.