

IMPACT OF BEARBERRY LEAVES POLYPHENOL EXTRACT ON SOME LIPID METABOLISM INDICES UNDER EXPERIMENTAL INSULINE RESISTANCE

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Introduction. Modern style of life is coupled with everyday effect of systemic combination of physical and psychoemotional stress factors leading to metabolic disorders. One of the most common diseases is diabetes mellitus 2 (DM2), which is triggered by insulin resistance (IR) state. The literature data indicate that herbal therapy helps to prevent IR, delay the DM2 development or have a therapeutic effect on its complications.

Aim. Our experiment was performed to study antidiabetic activity of Bearberry leaves polyphenol extract (PE) under experimental IR in rats.

Materials and Methods. Experiment was carried out in male mature outbred rats randomized into 4 groups. The first united healthy animals (intact control, IC), in the 2 other groups was modeled IR by everyday dexamethasone intraperitoneal injection for 5 weeks. Beginning from 5th week animals from one of them were treated by intragastrical PE administration (IR_PE) and pathology control (IR). The last group of healthy animals were administered PE (PE). At the end of the 7th week animals were sacrificed and blood samples were taken. The triacylglycerols (TAG), cholesterol (Ch), free fatty acids (FFA) were determined in blood serum using commercially available kits and TBK-active reactants (TBARs) by the spectrophotometric method. The results were processed statistically.

Results and Discussion. Between the IC and PE groups there are no significant difference in studied parameters. As for rats injected with dexamethasone had significantly increased levels of TAG (3.78 ± 0.54 vs 1.57 ± 0.25 mmol/l) and FFA (684 ± 54 vs 350 ± 69 μ mol/l), when compared to IC group. But Ch level didn't show a big difference – 4.27 ± 0.35 vs 4.78 ± 0.44 mmol/l compared with healthy animals. There are evidences that ROS production plays a fundamental role on developing IR that was proved by almost three times elevated level of TBARs in blood of IR group rats in our experiment. Thus, PE administration during two weeks significantly lowered TAG (2.18 ± 0.49 mmol/l) and FFA (482 ± 46 μ mol/l) levels simultaneously reducing TBARs content in blood serum (5.18 ± 0.44 vs 11.71 ± 1.71 nmol/l).

Conclusions. IR development led to the elevated levels of TAG, FFA and significant increase of TBARs content in blood serum of experimental animals. Treating rats with PE decreased these indices and improve the IR state.

RESEARCH OF THE BEHAVIORAL REACTIONS OF RATS AFTER AN INTRANASAL ADMINISTRATION OF MODIFIED FRAGMENT OF NEUROPEPTIDE Y

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Introduction. Neuropeptide Y (NPY) is a regulatory compound that performs many functions in the body, including the processes of food consumption, reaction to stress, learning, etc. A modified NPY fragment, which is an analogue of the functionally active NPY site, was studied in this work.

Aim. Study of the effect of a low molecular weight fragment of neuropeptide Y on the behavior of rats after intranasal administration.