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MEETING ABSTRACT

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Effects of a water extract of *Ocimum basilicum* on glycemia in normoglycemic and alloxan-induced diabetic rats

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Background: Basil (*Ocimum basilicum*) is herbaceous perennial plant of the family Lamiaceae (mints). The whole plant has been used as traditional medicine for household remedy against various human ailments from antiquity, and nowadays it is used as aroma additive in food, pharmaceuticals and cosmetics. Basil extracts affect glycemia primarily by preventing the occurrence of postprandial hyperglycemia and increasing the usability of glucose in peripheral tissues.

Methods: Experiments were carried out on laboratory Wistar rats. Animals were treated with a water extract of *O. basilicum* for seven days. Alloxan was used to induce hyperglycemia. The effects of the water extract of *O. basilicum* on glycemia were evaluated using the oral glucose tolerance test and by measuring blood glucose levels in alloxan-induced diabetic rats. In addition, the effect of the treatment on the body weight of the rats was recorded.

Results: The body weight of the diabetic animals treated with a water extract of *O. basilicum* was significantly decreased compared to the body weight in the control group ($p < 0.05$) and the experimental group that was treated only with basil extract ($p < 0.01$). In the group of the diabetic animals treated with the water extract of *O. basilicum*, there was a significantly lower increase of the body weight compared to the control group ($p < 0.05$) and the experimental group that was treated only with basil extract ($p < 0.01$). After the induction of hyperglycemia with alloxan, the water extract of *O. basilicum* significantly lowered glycemia ($p < 0.01$).

Discussion: The aqueous extract of basil did not lead to significant decreases in blood glucose in normoglycemic animals during the seven-day treatment. In contrast, in diabetic animals there was a statistically significant reduction of serum glucose levels. The treatment with a water extract of *O. basilicum* prevents disorders in glucose homeostasis induced by pro-oxidant effects of alloxan. The water extract of *O. basilicum* has no significant influence on the change in body mass in animals with alloxan-induced hyperglycemia.

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