

Effect of 8 weeks aerobic training on plasma apelin in male rats treated with L-NAME

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Abstract:

Background: Evidence supports the systemic inflammation in obesity and insulin resistance. Apelin is secreted by adipose tissue and plays an important role in the inflammation process. The present study aimed to examine the effect of 8 weeks aerobic training on plasma Apelin in male rats treated with Nitro-L-Arginine-Methyl Ester (L-NAME).

Materials and Methods: In this experimental study male Wistar rats (n=24, age 20 months) were randomly assigned into four groups: Control, Training, Training+S+L-NAME and L-NAME. An aerobic training protocol was performed for eight weeks, 5 times a week with an intensity of 75-80% of maximal oxygen consumption. The rats were sacrificed 72 hours after the last exercise session and blood samples were collected. Data were analyzed by ANOVA and Tukey post hoc test at $P<0.05$ significance level.

Results: The results showed that plasma Apelin level did not change significantly after eight weeks of aerobic training compared to the Control group. However, the results showed that there was a significant difference in plasma Apelin between L-NAME and Control group ($P<0.003$). In addition, the results showed no significant difference between the insulin level and glucose in four groups.

Conclusion: It seems that with increasing age plasma Apelin level is not affected by aerobic exercise. However, nitric oxide inhibitors can reduce the plasma Apelin level.

Keywords: Aerobic training, L-NAME, Plasma apelin, Rat

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