عنوان مقاله:

Inflammatory Markers in Response to Different Intensity of Aerobic Exercise in Obese Male Wistar Rats

محل انتشار:

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نویسندگان:

Keyvan Hejazi - *Department of Sport Physiology, Faculty of Sport Sciences, Hakim Sabzevari University, Sabzevar, Iran*

Seyyed Reza Attarzadeh Hosseini - *Faculty of Sports Sciences, Ferdowsi University of Mashhad, Mashhad, Iran*

Mehrdad Fathi - *Faculty of Sports Sciences, Ferdowsi University of Mashhad, Mashhad, Iran*

Mohammad Mosaferi Ziaaldini - *Faculty of Sports Sciences, Ferdowsi University of Mashhad, Mashhad, Iran*

Mahdi Nabavinik - *Department of Motor Behavior, Faculty of Physical Education and Sport Science, Mazandaran University, Mazandaran, Iran*

خلاصه مقاله:

Background: The lack of physical activity and obesity causes mild chronic inflammation that is associated with increased plasmalevels of inflammatory markers. Evidence suggests that physical activity can reduce inflammatory markers.Objectives: The purpose of this study was to determine the effects of eight weeks of aerobic training with two intensities on levelsof tumor necrosis factor-alpha (TNF-), interleukin-۶ (IL-۶), and insulin resistance in obese Wistar rats.Methods: Twenty-four Wistar male rats (fourteen weeks old and weighing ۲۵۰ - ۳۰۰ g, body mass index > ۳۰ g/cm۲) were used. Aftertwo weeks of familiarity with the laboratory environment, the animals were randomly divided into three groups: (۱) high-intensityaerobic exercise (n = ۸); (۲) moderate-intensity aerobic exercise (n = ۸), and control (n = ۸). The rats in moderate and high-intensityaerobic exercise groups were performed an increasing training for eight weeks and five days a week and one session per day for ۶۰minutes running at different speeds on a rodent motor-driven treadmill. Data were analyzed by paired sample t-test and repeatedmeasures (ANOVA) for the inter-group and intra-group comparison of the variance changes.Results: Significant differences were found in serum TNF- levels (P = ۰.۰۲۷ and F = ۳.۴۲), IL-۶ levels (P = ۰.۰۴۳ and F = ۲.۹۹), and insulinresistance index (P = ۰.۰۰۸ and F = ۴.۶۹) between the moderate, high-intensity aerobic exercises, and control groups. The levelsof TNF- concentration was significantly different between moderate-intensity and control group (P = ۰.۰۱) and between the highintensityand control groups (P = ۰.۰۱). The insulin resistance index in MI (P = ۰.۰۱) and HI (P = ۰.۰۱) groups significantly decreasedcompared to the control group.Conclusions: The results of the present study show that both types of moderate-intensity and high-intensity aerobic exercise leadto the reduction of TNF- , interleukin-۶, and insulin resistance index compared to the control group. Further studies are needed toshed light on the effects of different types of exercise on such indices, especially the use of long-term training sessions.

کلمات کلیدی:

Aerobic Training, Inflammatory Markers, Obesity Insulin Resistance