Original Paper

Effect of four weeks of endurance training on serum level of paraoxonase-1 and lipid profile in non-athlete obese men

Amouzad Mahdirejei T (M.Sc)*1, Berarei AR (Ph.D)2
Farzanegei P (Ph.D)3, Ahmadi M (Ph.D)4

1M.Sc in Exercise Physiology, Islamic Azad University, Sari Branch, Sari, Iran. 2Assistant Professor, Department of Sport Physiology, Islamic Azad University, Amol Branch, Amol, Iran. 3Assistant Professor, Department of Sport Physiology, Islamic Azad University, Sari Branch, Sari, Iran. 4Ph.D in Laboratory Sciences.

Abstract

Background and Objective: Paraoxonase-1 is an important factor in preventing lipid oxidation and formation of oxidized low-density lipoprotein. There are conflicting reports on the impact of physical activity on serum level of Paraoxonase-1. This study was done to determine the effect of four weeks of endurance training on serum level of Paraoxonase-1 and lipid profile in non-athlete obese men.

Method: In this clinical trial study, sixteen obese healthy non-athletic men randomly divided into intervention and control groups. Subjects in interventional group were practiced endurance running periodic for four weeks, three sessions a week with 65-80% of maximum heart rate. Blood samples collected 48 hours prior the first and 48 hours following the final training. Serum level of Paraoxonase-1 and lipid profile including cholesterol, triglycerides, low-density lipoprotein and high-density lipoprotein were measured by ELISA method.

Results: At the end of the training, the serum level of of paraoxonase -1 increased 15.57% (P<0.05) in interventional group and non-significantly reduced in control group (19.25%). The serum level of serum Paraoxonase-1 in interventional group significantly increased compared to controls (P<0.05). The serum level of low-density lipoprotein in interventional group significantly reduced in comparison with controls (P<0.05).

Conclusion: 4 weeks of endurance training increased serum level of paraoxonase -1 and decreased low-density lipoprotein in non-athlete obese men.

Keywords: Obesity, Endurance training, Paraoxonase-1 enzyme, Low-density lipoprotein, High-density lipoprotein, Male

* Corresponding Author: Amouzad Mahdirejei T (M.Sc), E-mail: taleb.amoozad@gmail.com

Received 29 Oct 2013 Revised 7 Apr 2014 Accepted 16 Apr 2014