



The effect of high-intensity interval exercises on changes in tissue levels of HMGB1, TLR4, and TNF- α in male rats with myocardial infarction

Oral Presentation

1Rahman Soori * ; 2Zahra Mosayebi; 1Parisa Pournemati; 2Ali Akbarnejad

¹Dept.of Exercise Physiology, Faculty of Physical Education, University of Tehran, Tehran, Iran(soori@ut.ac.ir)

²Department Exercise Physiology, Faculty of Physical Education, University of Tehran, Tehran, Iran

Abstract

Introduction: After myocardial infarction, the inflammatory phase begins with a rapid influx of neutrophils, monocytes, and macrophages within a few hours after ischemia. Expression of HMGB1 Protein Levels as a Proinflammatory Indicator and its Downstream Pathways Increased in Cardiac Tissue after Myocardial Infarction. The aim of this study was to investigate the effect of high-intensity interval exercises on changes in tissue levels of HMGB1, TLR4, and TNF- α in male rats with myocardial infarction.

Methods: Thirty male Wistar rats (mean weight, 270 ± 25 g) were randomly divided into three groups (n=10 each): Healthy control, control myocardial infarction, and trained myocardial infarction. To induce myocardial infarction, rats underwent LAD coronary artery bypass grafting and then MI confirmed by echocardiography. Warts performed the exercise protocols for 8 weeks and 5 sessions per week. The high-intensity interval group training program consisted of 4 minutes of training with an intensity of 85-90% VO₂max and 3 minutes of active recovery with the intensity of 40% VO₂max. At the end of the intervention, the rats were described, and the data were analyzed by one-way ANOVA and Tukey post hoc tests.

Results: Expression of HMGB1 / TLR4-TNF- α protein levels in cardiac tissue of rats with myocardial infarction was significantly lower than the control group. ($p \leq 0001$).

Conclusion: It seems that high-intensity interval exercises can prevent the negative effects of inflammation by attenuating the expression of HMGB1, TLR4, and TNF- α protein levels in the cardiac tissue of rats with myocardial infarction, which is an important mechanism for Cardiac function and prevention of heart damage.

Keywords

High-intensity interval training; myocardial infarction; HMGB1

Reference:

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