Original Paper

The comparison of acute aerobic and resistance training method on plasma fibrinogen concentration in young women

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Abstract

Background and Objective: Fibrinogen, an inflammatory marker as well as a fundamental part of the coagulation cascade, is suggested to play a significant role in the pathogenesis of atherosclerosis and complications of atherothrombotic diseases. This study was carried out to assess the comparison of acute aerobic and resistance training method on plasma fibrinogen concentration in young women.

Materials and Methods: This semi-experimental study was done on twenty trained volunteer women students, which was selected objectively, and availability. The subjects were randomly divided into two groups of aerobic (n=10) and resistance training (n=10). Aerobic group performed exhaustive workout program on treadmill intensity 65 to 75% of VO2max on treadmill. The resistance group completed three sets of 5-7 repetitions of six exercises at an intensity corresponding to 80% of 1RM. Following 12 to 14 hours of nightly fasting, venous blood samples (5 cc) were collected pre, immediately after exercise and after 60 min of recovery and analyzed for fibrinogen content. Participants were matched according to anthropometric measurements, age, fat percentage and VO2max. Data tested by using independent t, repeated measures analysis of variance and post-hoc test least significant difference (LSD) (P≤0.05).

Results: In both the aerobic and resistance training groups, fibrinogen levels increased immediately after exercise and remained higher than baseline levels during recovery. This changes were significant only in aerobic group (P<0.05). Resistance training increased significantly the fibrinogen levels immediately after exercise than aerobic exercise (P<0.035).

Conclusion: It can be concluded that the exhaustive aerobic exercise may induce slightly increase the fibrinogen levels in comparison with resistance training at intensity corresponding to 80% of 1RM.

Keywords: Resistance training, Aerobic exercise, Blood coagulation, Fibrinogen

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