

The effect of exercise training on RBP4 Serum Levels and Insulin Resistance in women with type II diabetes

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Abstract

Background & Aim: Retinol binding protein 4 (RBP4) is known as an adipokine that involves in the regulation of insulin function and glucose metabolism. Increasing of RBP4 serum levels can lead to dysfunction in glucose tolerance and insulin resistance. Exercise training improves insulin resistance. Thus, this study was conducted to investigate the effect of exercise training on RBP4 serum levels and insulin resistance in women with type II diabetes.

Methods: This is a quasi-experimental study conducted on 23 women with type II diabetes. Participants were randomly divided into 2 experimental groups (endurance training n=8, strength training n= 8) and a control group (n=7). The exercise training schedule was performed as follows: Endurance training with intensity (50% to 70%) maximal heart rate and strength training with intensity (60-70% of 1RM) three days a week for 10 weeks. To evaluate the RBP4 serum levels and blood insulin, blood samples were taken in fasting state from all subjects.

Results: Mean and standard deviation of age in subjects were 50±3. After intervention, RBP4 serum levels significantly reduced in strength group (P=0.03) compared to endurance group (P=0.57). Also glucose serum levels significantly decreased in both experimental groups (P <0.05).

Conclusion: Reduced RBP4 serum levels are associated with reduced body fat percentage. Strength training reduces body fat percentage and consequently leads to a decrease in RBP4 serum and glucose levels and, on the other hand, an improvement in insulin sensitivity.

Keywords: RBP4, insulin resistance, strength training, endurance training