

Effect of 10 Weeks of Aerobic Exercise Training on Serum Concentrations of Surfactant Protein D and Insulin Resistance in Women with Type 2 Diabetes

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Abstract : Background and purpose: Surfactant protein D (SP-D) is a lung-specific protein that is detectable in human plasma. Effect of exercise training on SP-D levels as well as its relation to metabolic indices is not known. The present study then aimed to investigate the effects of 10 weeks of aerobic training on serum levels of SP-D and insulin resistance in women with type 2 diabetes. Materials and methods: Twenty-two overweight women with type 2 diabetes mellitus were recruited through deliberate sampling and randomly assigned to intervention and control groups (11 in each group). The intervention group underwent a progressive aerobic training program for 10 weeks, 3 days per week, 30-55 min/day at 50-75% heart rate reserve (HRR). Control group continued with its everyday routine. Blood samples were obtained before and after training for biochemical analysis. Within-group and between-group differences were analyzed with paired and independent t-tests in spss software, respectively, and the relation between variables was analyzed with Pearson's correlation coefficient (all at $P = 0.05$). Results: Significant differences were observed between groups in leptin, glucose, waist circumference and VO₂ max after training. SP-D was decreased and VO₂ max was increased significantly in intervention group. However, no significant correlation was observed between SP-D and other variables. Conclusion: Since there was no corresponding decrease in insulin resistance with decreased levels of SP-D, it seems unlikely for SP-D to mediate the association between obesity and insulin resistance in type 2 diabetics.

Keywords : exercise training, SP-D, insulin resistance, type 2 diabetes

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