

Exercise improves endothelial dysfunction in young women with metabolic syndrome #15

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Recent studies have reported that regular exercise reduces pro-inflammatory biomarkers in women with metabolic syndrome. However, to date little information is available on the influence of exercise on endothelial dysfunction, despite its important role during the development of atherosclerotic plaque. Accordingly, this study was designed to determine the influence of exercise on soluble vascular cell adhesion molecule (VCAM-1) in women with metabolic syndrome. Sixty adult women with metabolic syndrome according to the criteria reported by the National Cholesterol Education Program Adult Treatment Panel III volunteered for this study. Fourty-five were randomly included in experimental group to perform a 12-weeks aerobic training program, 3 days/week, consisting of warm up (10-min), main part (20-35-min [increasing 5 minutes each 3 weeks]) at a work intensity of 60-75% of peak heart rate (increasing 5% each 3 weeks) and cool-down (10-min). Control group included 15 age, sex and BMI-matched women with metabolic syndrome who did not perform any program. Written informed consent was obtained. Further the protocol was approved by an institutional ethic committee. Serum soluble VCAM-1 concentration was measured by ELISA, using a commercially available kit (Parameter, R&D Systems) twice: 72-hours before starting the program (pre-test) and after its ending (post-test). When compared to baseline soluble VCAM-1 concentration was significantly decreased after the 6-week protocol (448.3 ± 26.7 vs 372.2 ± 24.7 ng/ml; $p < 0.05$). No changes were reported in controls. A 12-weeks training program decreased soluble VCAM-1 concentration in women with metabolic syndrome. Further studies on this topic are required.

Key- Words: exercise, endothelial dysfunction, metabolic syndrome