Response of Biochemical Blood Parameters to a 8-week Aerobic Physical Training in Female Patients with Metabolic Syndrome

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Introduction: Obesity, hypertension, dyslipidemia and insulin resistance are linked to the development of metabolic syndrome (MS). Moreover, the sedentary lifestyle is a strong risk to cardiovascular diseases and few studies have investigated the impact of aerobic training as a single intervention in women with MS. **Objective:** to verify the effects of an moderate aerobic training program (AT) on the biochemical blood parameters of women with MS. **Material and Methods:** Sedentary women with MS were recruited and signed a written informed consent. AT was performed in treadmills, 3 times per week and with weekly progression of intensity and duration time during 8 weeks. The training intensity was controlled by heart rate monitors and data collection were performed before and after the 8 weeks of AT. Serum levels of total cholesterol (TC), triglycerides (TG), high-density lipoprotein cholesterol (HDL), low-density lipoprotein cholesterol (LDL), glucose (GC), creatinine (CR), uric acid (UA), albumin (AL) and alkaline phosphatase (AP) were assayed with commercially available kits. Systolic (SB) and diastolic blood (DB) pressure, body mass index (BMI) and maximal oxygen uptake (VO2max) data collection were also performed. Student’s t-test for parametric and Wilcoxon test for nonparametric data were used with significance at 5%. **Results and Discussion:** Sixteen women aged 48±9,47 years completed the AT and exhibited a significant reduction in LDL (100,90±23,35 vs. 83,89±24,16 mg/dL), CR (1,04±0,17 vs. 0,73±0,25 mg/dL), UA (4,68±1,62 vs. 2,98±0,91 mg/dL) and AP (66,24±27,37 vs. 23,65±8,17 mg/dL) levels, while the CT (171,44±27,23 vs. 159,21±20,91 mg/dL), TG (136,17±79,87 vs. 121,46±48,25 mg/dL), HDL (43,30±11,65 vs. 51,0±18,03 mg/dL), GC (87,79±11,56 vs. 84,89±4,96 mg/dL), BMI (32,47±5,17 vs. 32,47±5,08 kg/m²), SB (135,33±18,94 vs. 132,66±20,25) and DB (82±9,41 vs. 79,66±13,81 mmHg) parameters remained unaltered. There were a increased in AL (3,73±0,27 vs. 4,15±0,41 g/dL) and VO2max (23,89±6,42 vs. 25,96±5,94) parameters. **Conclusions:** The AT induces beneficial effects on biochemical blood parameters of women with MS.

Word Keys: obesity, diabetes; aerobic training; biochemical parameters.