ACUTE EFFECT OF RESISTANCE EXERCISE ON THE LEPTIN, ADIPONECTIN, TUMOR NECROSIS FACTOR ALPHA LEVELS, GLYCEMIA AND LIPID PROFILE IN HEALTHY VOLUNTEERS

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OBJECTIVE: The purpose of this study was to evaluate the effect acute of resistance training on the blood pressure, percentage of body fat, creatine kinase, glycemia, lipid profile, leptin, adiponectin, and tumour necrosis factor levels in healthy volunteers. METHODS: This study was approved by the policies and ethical Committee of the Institute of Bioscience from UNESP. Twenty five volunteers, 11 men (age 29±33 years) and 14 women (23±2 years) were eligible. The training protocol consisted of 2 bouts with 9 different exercises: leg press 45°, supine bench press, lat pull down, bilateral knee-extension, bilateral knee flexion, triceps pulley, standing free-weight biceps curl, dumbbell side shoulders raise and abdominal. Resistance exercises were performed at 12RM with 3 sets of 12 repetitions, resting time of 2 minutes between one exercise and the next. RESULTS: The body mass index (BMI) was 26.5 and 22 kg/m², for men and women, respectively. The work load was significantly higher in men (P < 0.05) as compared to women (352.81±25.79 kg versus 185.69±12.96 kg). Men exhibited lesser values for percentage of body fat and skinfold thickness than women. Blood glucose and total cholesterol levels were significantly reduced in both groups approximately 40% and 12% after resistive exercise (glucose men: from 104±3 to 61±1 mg/dL, and women from 99±2 to 61±2 mg/dL and total cholesterol men from 174±10 to 152±12 mg/dL, and women from 200±8 to 175±10 mg/dL). On the other hand, triglycerides levels were reduced only in men group (31% from 125±19 to 86±10 mg/dL), whereas LDL cholesterol (from 129±7 to 102±11 mg/dL) and serum leptin (from 20.20±2.99 to 15.55±2.55 ng/mL) was diminished in women group. In both groups, the resistive exercise provokes increase in creatine kinase (men from 152.12±45.55 to 727.84±287.64 U/L and women from 51.54±3.57 to 1192±404.83 U/L). Physical exercise did not promote any alterations on BMI, percentage of body fat, blood pressure, heart rate, HDL cholesterol, adiponectin and tumour necrosis factor alpha levels. CONCLUSION: In conclusion, our findings show a beneficial effect of acute resistive exercise in endocrine-metabolic parameters in both men and women.

Keywords: Adipose Tissue, Hormones, Exercise