INFLUENCE OF HORMONAL REPLACEMENT THERAPY IN LIPID PEROXIDATION LEVELS OF POST-MENOPAUSAL WOMEN WITH DIFFERENT CARDIOVASCULAR CAPACITY

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Introduction
It has been suggested that exercise has a positive impact on the prevention and progression of cardiovascular disease (CVD) (1). One of the main mechanisms is through the modification of lipoprotein levels and the risk of its oxidation, especially LDL lipoproteins (1). After menopause, women experience an increased incidence of cardiovascular disease (2). In contrast, women receiving hormonal replacement therapy (HRT) seem to be protected (3, 4). The aim of this study was to infer how HRT affect lipid peroxidation levels in post-menopausal women with different levels of aerobic fitness.

Methods
Sixty four women participate in this study, 32 of them receive HRT (group with HRT – GWHRT) (average age=55.9 years, average weight=66.9 kg and average high=156.0 cm) and the remained 32 women didn’t receive HRT (group without HRT – GWOHRT) (average age=61.0 years, average weight=67.6 kg and average high=154.3 cm). Total cholesterol (mg.dL-1), HDL-cholesterol (mg.dL-1), LDL-cholesterol (mg.dL-1) and triglycerides levels (mg.dL-1) have been analyzed in serum obtained from a blood sample collected after 8 hours of fasting, and measured in Dr. Lange LP20 according to the specific manufacturer instructions. Serum TBARs concentration (ng.L-1).was determined according to Wills (5). Aerobic capacity (VO2max. ml.kg-1.min-1) was assessed according to an adaptation of Bruce protocol. Differences between groups were tested through Student t-test. A Spearman correlation was performed in order to test variables associations. Significance level was established at 5%.

Results/Conclusions
Our results have found differences between groups in age (t=3.018; p<0.01), in VO2max (t=-3.774; p<0.01) and in serum TBARs concentration (t=6.750; p<0.01). The GWHRT were younger, had a higher VO2max (31.38 for GWHRT and 26.19 for GWOHRT), and had lower levels of serum TBARs concentration (0.29 for GWHRT and 0.73 for GWOHRT) comparatively with those women from the GWOHRT. However, our results failed to find any differences between groups regarding serum triglycerides, total cholesterol, HDL-cholesterol, LDL-cholesterol or BMI. In this study, serum TBARs concentration didn’t correlate with higher levels of lipid profile, as we might have expected, but correlate inversely with HRT (r=-.726, p=.00) and with VO2max (r=-.287, p=.02). Our results suggest that HRT should exert an antioxidant protective effect against lipid peroxidation, as well as exercise (4) perhaps through the stimulation of antioxidant capacity.

References


Keywords: Aerobic Power, Therapy, Oxidative Stress

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