EXERCISE TRAINING DECREASES OXIDATIVE STRESS IN PEOPLE LIVING WITH HIV/AIDS – A PILOT STUDY

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Background and Purpose: Exercise training has been shown to be an effective strategy to improve the oxidative stress status; however, this is little explored in people living with HIV/AIDS (PLWHA). Objective: This study evaluated the effects of exercise training in oxidative stress in PLWHA undergoing antiretroviral therapy. **Material and Methods:** Virologically suppressed patients performed 24 sessions (3 times a week, during 8 weeks) of either Aerobic (AT) or Resistance (RT) or Concurrent Training (CT). AT consisted of 40 min on a treadmill, RT comprised 3 sets of 10-12 repetitions of 6 resistance exercises and CT consisted of 20 min on a treadmill in addition to a single set of the same exercises used in RT. Oxidized to reduced glutathione ratio (GSSG/GSH) and thiobarbituric acid–reactive substances (TBARS) were assessed in circulating erythrocytes and plasma, respectively, as oxidative stress markers. Fourteen PLWHA started the training protocol and eight completed it (AT=3, RT=3, CT=2). The GSSG/GSH and TBARS values were logarithmically transformed to approximate a normal distribution. A paired Student *t*-test was used to determine the differences between baseline and post-training values. **Results:** A marked improvement of redox status was observed in all the test groups after exercise training protocol (log GSSG/GSH = -1.26±0.57 *vs* -1.54±0.65 p=.01 and log TBARS = 0.73±0.35 *vs* 0.43±0.21 p=.01). This was paralleled by a rise in maximal oxygen uptake (VO_{2peak} = 29.14±5.34 *vs* 32.48±5.75 $mL.kg^{-1}.min^{-1}$ p=.04). All the subjects who performed resistance exercises showed an average gain of 40±11% in muscle strength with no difference between performing single or multiple sets in terms of muscle strength

gain. **Conclusion:** The results of this study confirm the benefits of exercise training on physical fitness as well as the decrease of oxidative stress, reinforcing that exercise training may be an effective antioxidant strategy in PLWHA. (CEP UFCSPA 951/09)

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