The long-term of 16 weeks aerobic exercise program with nutritional intervention in primary hypertensive and overweight/obese adults: preliminary results of 6 months follow-up of the EXERDIET-HTA controlled trial


BACKGROUND. Both exercise training and diet are recommended to prevent and control primary hypertension (HTN) and overweight/obesity. However, there is no agreement about the optimal dose of intensity, volume and type of exercise, neither the knowledge regarding the long-term effect after intervention period.

PURPOSE. To investigate the effect of different 16-week aerobic exercise programs with nutritional intervention on mean arterial blood pressure (MAP), body mass index (BMI) and cardiorespiratory fitness (VO_{2peak} and MET_{peak}) in primary hypertensive and overweight/obese adults and during an extended unsupervised period of six months.

DESIGN. Randomized controlled trial. After baseline measurements (T0, n=104) participants were allocated to one of the four intervention groups for 16 weeks (T1, n=102), as well as after six months of unsupervised period with only physical activity and dietary recommendations (T2, n=88).

METHODS. Overweight/obese participants (53.3±7.9 yrs old) diagnosed with HTN performed assessments to evaluate MAP, BMI and VO_{2peak} and MET_{peak} at T0, T1 and T2. All participants received an energy restricted diet and were randomized to attention control group (AC, diet and physical activity recommendations) or three exercise groups (diet and supervised training 2 days/week): moderate continuous and high volume (MCT) group, high-volume and high-intensity interval training (HV-HIIT) group, and low-volume and high-intensity interval training (LV-HIIT) group. Paired t-test was used to detect differences among T0, T1 and T2 measures. An analysis of covariance (ANCOVA) was performed to compare training and the six-month unsupervised period effects among the groups.

RESULTS:

CONCLUSIONS. This study indicates that:

- Combined treatment (diet+exercise) exerted positive effects on reducing BMI and MAP and increasing cardiorespiratory fitness, and many of the changes persisted for six months follow-up with some attenuation of the benefits.
- Low-volume HIIT may be a practical time-efficient strategy to improve cardiorespiratory fitness (i.e. “less is more”).
- However, HV-HIIT seems to have a higher long-term cardioprotective-effect (i.e. “the higher and the more the better”).

(Absence of Conflicts of Interest!)

(Clinical Trials.gov ID: NCT02283047)