Combined Resistance/Endurance Training Versus Endurance Training Alone: Effects on Blood Pressure and Glucose Metabolism in Male Hypertensive Patients with Coronary Artery Disease

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Purpose:
Resistance training (RT) and endurance training (ET) is more effective than ET alone in improving blood pressure and glucose metabolism in hypertensive patients with coronary artery disease (CAD).

Methods:
Thirty-five male patients with stable CAD, median age 74+/–4 years, were enrolled.Twenty pts were randomized to group A performing the combined training and 15 patients to group B (ETonly). At baseline and after 24 weeks all patients underwent a cardiopulmonary test, fasting insulin and glycemia assessment with HOMA-index calculation and 24-hour ambulatory BP monitoring. RT was performed at 50-60% of pre-training maximal strength. ET consisted on ciclying or walking at 60% of VO2. Both RT and ET were performed 3 times/week.

Results:
No patients had adverse events during the follow up period. No patients withdrawn during the study period. After 24 weeks exercise time improved in both groups with significant intergroups differences. After 12 weeks A group had a greater reduction of daytime (-16% vs –7%; p 0.02) and nighttime (-19% vs–8; p 0.006) diastolic blood pressure, and lower daytime (-12% vs –9; p 0.07) and nighttime (-13% vs –6; p 0.002) heart rate than B group. Heart rate recovery at I min and HOMA index had a greater significant decrease in the A group (-18+/–5; 1.1+/–0.4 respectively) compared to B(-11+/–5; 0.61+/–0.2 respectively).

Conclusions:
The combined training seems to determine greater effects on diastolic BP, exercise tolerance and insulin resistance compared to ET alone in hypertensive patients with CAD.