Exercise Training Improves Systolic Function in Heart Failure Patients without Systolic Dysfunction

Alves, Alberto[1]; Ribeiro, Fernando[1]; Rivlin, Yelena[2]; Rosenschein, Uri[3]; Duarte, Jose Alberto[1]; Sagiv, Michael[4]; Oliveira, Jose[1]; Goldhammer, Ehud[2]

[1]University of Porto, Porto, Portugal; [2]Bnai Zion Medical Center, Haifa, Israel; [3]Bnai Zion Medical Center, Technion, Faculty of Medicine, Haifa, Israel; [4]Zinman College, Wingate Institute, Netanya, Israel

Background: It is well established that exercise training improves cardiac function in heart failure with systolic dysfunction, however the effects in patients with heart failure and normal ejection fraction remain less well established.

Purpose: To evaluate the effect of exercise training on left ventricle systolic and diastolic function in patients with heart failure and normal ejection fraction.

Methods: Forty-one patients with heart failure and preserved (>50%) left ventricular ejection fraction (29 male and 12 female, mean age 63.5 „b 10.1 yrs) were allocated to either a 3-month exercise-training program (n=25) or a control group (n=16). The left ventricle ejection fraction (LVEF), mitral inflow velocities (E/A ratio), deceleration time of early filling velocity (DT), and the annular E/E' ratio were measured before and after the intervention.

Results: The groups presented no differences relative to age, gender, medication and cardiac function at baseline. There was no significant influence of exercise training on diastolic function. In contrast, LVEF improved with exercise training (55.9 „b 2.7 % vs. 57.6 „b 2.9 %, p=0.002) and remained unchanged in the control group and 55.3 „b 2.0 % vs. 55.60 „b 1.9 %, p=0.441).

Conclusions: Exercise training improves systolic function in heart failure patients without systolic dysfunction.