Exercise Training Initiated Late After Myocardial Infarction is Related With Better Cardiac Function, Oxidative and Antioxidative Protein Expression

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To evaluate the effects of exercise training (ET) initiated early or late after myocardial infarction (MI) on cardiac dysfunction and ventricular remodeling in ovariectomized (OVX) rats. OVX Wistar rats were subjected to MI or Sham surgery and divided in SHAM, MI, MI+ET3d and MI+ET15d groups. ET was performed on a treadmill (5x/wk, 60 min/day, 8 weeks). Cardiac function was assessed by ventricular catheterization. Collagen deposition, myocyte hypertrophy and infarct size were assessed by histology. Catalase, SOD-2, Gp91phox and AT1 receptor (AT1R) expression were evaluated by western blotting. Left ventricular end-diastolic pressure increase in MI rats which was reduced only in the group MI+ET15d and +dP/dt decreased after MI and was improved by the training in both times compared with MI-sedentary rats. AT1R and Gp91phox expression increase after MI. However, the increase in AT1R was prevented only by the training initiated 15 days after MI. Catalase expression was increased only in the group MI+ET15d compared with other groups. Therefore, ET initiated late after MI is related to a better cardiac function and oxidative and antioxidative protein expression in ovariectomized rats.