



The effect of parallel training on selected variables vascular biomechanics, blood biomechanics, cardiac function and hematological of femoral artery of Middle-aged women after coronary artery bypass grafting

Poster Presentation

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Abstract

Introduction: Due to the sedentary life of the elderly, which itself increases all the main causes of mortality and doubles the risk of cardiovascular disease, attention to their health becomes more important (1,2). The aim of this study was to determine the effect of eight weeks of parallel training on selected biomechanical variables of blood, vascular biomechanics, cardiac function and hematological femoral artery of middle-aged women following coronary artery bypass grafting.

Methods: In this study, 30 patients with coronary heart disease who underwent CABG surgery were randomly selected from those referred to the Rehabilitation Clinic of Tehran Heart Center. Patients were divided into control and experimental groups. Using Doppler ultrasound device, blood flow velocity, blood pressure and resting lumen diameter of arteries in systolic and diastolic phases and intima-media thickness of bilateral femoral arteries were measured before and after exercises in the experimental group. Blood flow intensity, compliance and the ratio of intima-media thickness to lumen diameter were calculated using the relevant formulas. Patients performed an eight-week parallel exercise program consisting of a combination of aerobic and positional exercise of a certain intensity for each patient. Data were analyzed using SPSS software version 26, descriptive statistics (mean and standard deviation) and inferential statistics (ANCOVA, independent t-test and Wilcoxon test).

Results: Parallel exercise had a significant effect on most vascular biomechanical variables, all cardiac function and hematological variables. A significant effect was only observed in the left femoral artery in the systolic phase of blood biomechanical variables.

Conclusion: Parallel exercise is recommended to improve all vascular biomechanical, cardiac, and hematologic variables. To improve blood biomechanical variables, it is recommended that parallel exercise along with aerobic exercise be performed more intensely and over time with drug therapy.

Keywords

coronary artery bypass grafting; femoral artery; Middle-aged women; parallel training; vascular biomechanics; blood biomechanics; cardiac function; hematologic

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