Comparative analysis of cardiopulmonary responses of healthy sedentary men and men after acute myocardial infarction

Vandeni C. Kunz¹, Karina B. Serra²; Erica N. Borges², Ana Cristina S. Rebelo¹, Roberta S. Zuttin², Nayara Y. Tamburus², Raquel B. Souza², Marlene A. Moreno², Paulo E. Serra³, Luiz A. Gubolino³, Nicolau A. Merino³, Luciano D. Dantas⁴, Ester da Silva¹².

¹Department of Physiotherapy, Federal University of São Carlos São Carlos, SP, Brazil; ²Cardiovascular Physiotherapy and Functional Tests Research Laboratory, Faculty of Health Sciences, Methodist University of Piracicaba, Piracicaba, SP, Brazil; ³Department of Cardiology, Hospital dos Fornecedores de Cana de Piracicaba, Piracicaba, SP, Brazil; ⁴Department of Cardiology, Santa Casa de Misericórdia de Limeira, Limeira, SP, Brazil.

E-mail: ester.silva@pq.cnpq.br

The aim of this study was to assess the aerobic capacity of men after acute myocardial infarction (G-AMI) and of healthy sedentary men (G-C) at the anaerobic threshold (AT) and at the peak of the exercise (up to physical exhaustion) during a ramp-type ergospirometric test (R-ET).

Methods: 22 volunteers divided into two groups: G-AMI (n=10), 55.6 ± 9.7 years old, undergoing β-blocking therapy (atenolol, dosage 46 ± 9.4 mg/day), Killip classification grade I, and G-C (n=12), 53.3 ± 3.2 years old. The G-C subjects took no type of medication. Experimental protocol: R-ET, with power increments of 10W/min for the G-AMI and of 15W/min for the G-C. The evaluated variables were: heart rate (HR), ventilatory and metabolic, recorded breath-by-breath using an ergospirometer (CPX/D MedGrafics – Breeze, St. Paul, Minnesota, USA). Statistical Analysis: Mann-Whitney tests α = 5%. The power, cardiovascular, ventilatory and metabolic variables obtained from the R-ET at the peak of the exercise, for G-AMI and G-C, presented a statistically significant difference (p<0.05), showing higher values for G-C, except the VO₂ in L/min. However, the variables showed similar values at the AT (p>0.05). Conclusion: The lower aerobic capacity at the peak of the exercise can be attributed to the use of β-blocking therapy and to prolonged bed rest.

Key words: acute myocardial infarction; heart rate; men.