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Effect of the long term physical activity practice following cardiac rehabilitation program on the arterial compliance, physical capacity and weight

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Purpose: Pursuing a regular physical activity following a rehabilitation program seems necessary to maintain its acquired benefits. Although rehabilitation benefits are many and well documented, there is little information on the fate of patients after rehabilitation. So the aim of this study was to examine the influence of maintaining the recommended physical activity after cardiac rehabilitation on arterial compliance, physical capacity and weight.

Methods: 42 patients were included in the study. The Dijon physical activity score was employed to identify two groups: 20 sedentary patients (SG) and 22 active patients (AG). Small artery elasticity indices (in ml/mmHg x 10) were measured using the HDI/PulseWave™ CR-2000 tonometer and the physical capacity was determined with a 6-minutes walk test (6MWT). Patients were evaluated at the beginning (T0), end (T1) and 18.3±5.3 months after their cardiac rehabilitation (T2).

Results: At T0, no significant difference was observed between both groups except for the distance performed at the 6MWT ($p=0.022$). The distance performed at the 6MWT increased significantly with rehabilitation for SG ($p=0.017$) and remains stable for AG. For SG, at T2 compared to T1, the arterial compliance and the distance performed at the 6MWT decreased ($p<0.001$) and the weight increased ($p<0.05$). For AG, there was no significant change in arterial compliance, in distance at the 6MWT and in weight between T1 and T2. Lastly, at T2 in comparison with T0, the arterial compliance was lower ($p=0.013$) and the weight was higher ($p=0.021$) for SG.

Conclusion: This study shows that pursuing physical activity following cardiac rehabilitation allows counteracting the worsening of cardiovascular markers and risk factors such as arterial compliance, physical capacity and weight. Therefore, physical activity following cardiac rehabilitation must be considered to be central in the management of cardiovascular risk.