Impact of cardiac rehabilitation physical fitness and Health

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Background:

Sedentary behavior and physical inactivity are among the leading modifiable risk factors worldwide for cardiovascular disease. Many patients in contemporary cardiac rehabilitation programs are quite deconditioned on entry[1]. Cardiac rehabilitation Program (CRP) is crucial to accelerate recovery following an acute event and reduce the risk of recurrent events through structured exercise prescription, education, and risk factor modification[2].

The positive effect of CRP on functional capacity has been known some years ago[3]. In this study, we aimed to assess health-related quality of life (HRQoL), Metabolic Equivalents (METS); body mass index and waist circumference in patients with cardiovascular disease, before and after being submitted to CRP.

Material and methods:

Thirty sex male patients with coronary heart disease, 51.2±8.7 years old, concluded a three months CRP with 25.4±6.4 sessions. The HRQoL was assessed with the MacNew and medical outcomes short form-36 (SF-36) questionnaires. METS were calculated at exercise tests at beginning and end of the program. Bruce protocol was used for all tests. Body mass index (BMI) and waist circumference (WC) was measured, at initial physical examination. All subjects signed an informed consent.

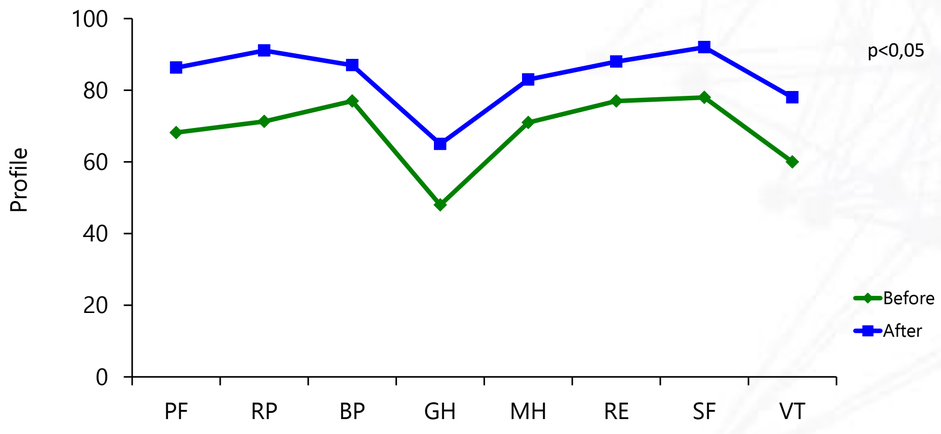
n= 36, male, 51.2±8.7 y

3 mths CRP - 25.4±6.4 sessions

- HRQoL
  - MacNew
  - SF - 36
- METS - Bruce
- BMI
- Waist Circ.

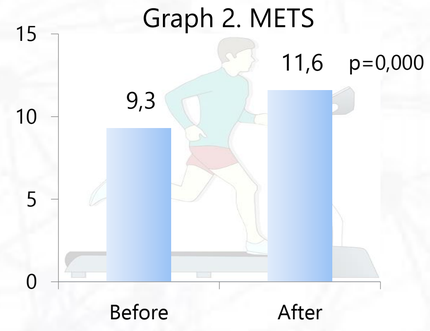
Results: In HRQoL we observed improvements in some domains of SF-36: physical function (68.2±18.3; 86.3±11.5), role physical (71.3±17.1; 91.1±8.7) vitality (60.0±24.1; 78.1±12.5), ($p<0.05$), Graph 1. In MacNew questionnaire we saw significant improvements ($p<0.05$) in all domains. In BMI and waist circumference there was no significant improvements (Fig 1.), but there was significant improvements in METS (9.3±2.5; 11.6±3.2) p=0,000 (Graph 2.). There was a negative correlation between METS, BMI and waist circumference ($r = -0.620$; $p = 0.006$), Graph 3. The domain physical functioning score from SF-36 was positively correlated with METS ($r = 0.822$; $p = 0.000$), and was negatively correlated with waist circumference ($r = -0.569$; $p = 0.011$).

Graph 1. Medical Outcomes Study SF-36



p<0,05

Graph 2. METS



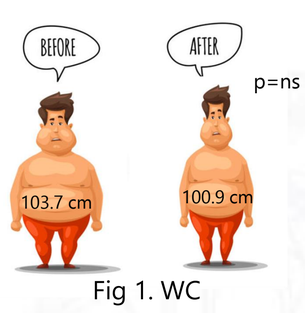
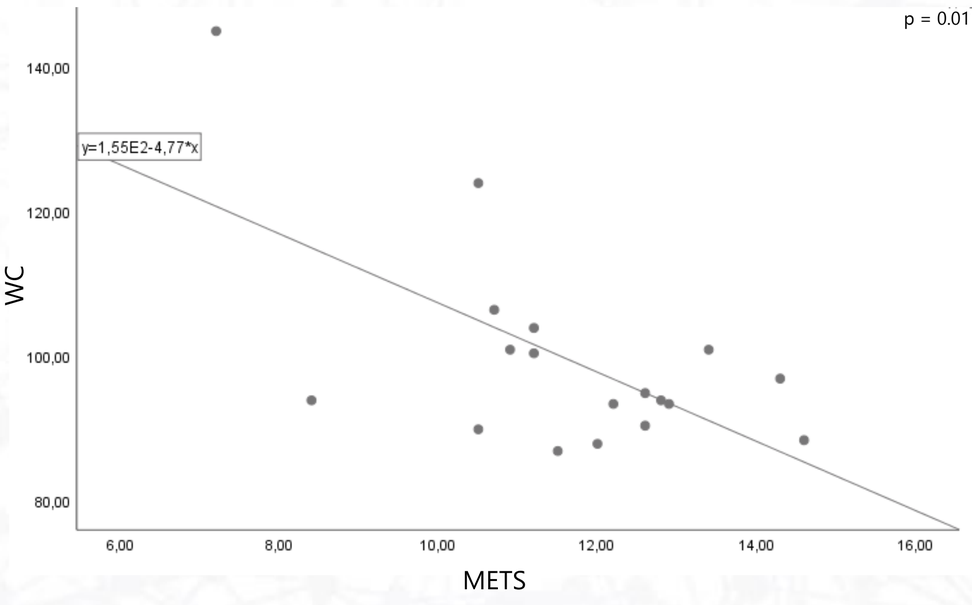


Fig 1. WC

Graph 3. Correlation Between METS and WC



Discussion and conclusion: As expected, CRP had positive impact on cardiorespiratory fitness and better perception HRQoL. Nevertheless the improvements observed in BMI and waist circumference weren´t significant, they were in accordance with previous studies, which reports decreases of 1.3 Kg/m^2 in BMI and reduction of 2 cm in waist circumference. We can conclude that a short-term CRP have positive impact on cardiorespiratory fitness and HRQoL, but may be insufficient to have positive impact on body composition.

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