

Rehabilitation Medicine 2018: Cardiac rehabilitation and changes in serum and salivary hs-CRP among male patients with coronary artery disease- Boshra Jamshidpour and Farid Bahrpeyma - Tarbiat Modares University, Iran

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Abstract

Introduction & Aim: Cardiac rehabilitation is a key part in the management of coronary risk factors by its anti-inflammatory effects. However, the effect of exercise training programs on salivary concentrations of hs-CRP in patients with coronary artery disease has not been well studied. The objective of this study was to evaluate the effect of an exercise based cardiac rehabilitation program on serum and salivary concentrations of hsCRP, in relation to the anthropometric measurements of obesity and the relationship between salivary and serum levels of hs-CRP in male patients who received coronary artery bypass grafting (CABG). **Materials & Methods:** 40, 45 to 75 year old male volunteers with coronary artery disease participated in 6-8 weeks of moderate intensity aerobic exercise training consisting of 45 min sessions of treadmill, stationary bicycle and arm bicycle. Anthropometric measurements of obesity (body mass index (BMI), waist, hip circumference, waist- hip and waist-height ratio), levels of hsCRP concentration in the serum, stimulated and non-stimulated saliva were measured at the beginning, in the middle and at the end of exercise sessions. **Results:** All anthropometric measurements increased ($P < 0.05$) following cardiac rehabilitation except waist-hip ratio ($P > 0.05$).

The exercise training induced reduction in serum CRP levels by 36% independent of changes in anthropometric measurements. Stimulated and non-stimulated salivary hs-CRP concentrations decreased by 68% and 54%, respectively after 24 sessions of exercise-based cardiac rehabilitation. Non-stimulated salivary hs-CRP levels appear to be correlated to serum levels of hs-CRP at baseline and following exercise training. **Conclusion:** 24 sessions of exercise based cardiac rehabilitation seem to be effective to improve serum and salivary hs-CRP concentrations independent of anthropometric measurements. **Clinical Significance:** Non-stimulated salivary hs-CRP measurement could be a surrogate for blood measurement for determining cardiovascular disease risk expressed by hs-CRP during cardiac rehabilitation in male patients with CAD.

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