The basal autonomic balance and during isometric exercise in young people with different cardiovascular reactivity.

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Abstract:

Introduction: the autonomic nervous system plays an important role in cardiovascular readjustments to exercise. In cardiovascular hyperreactivity there is a greater sensitivity of the sympathetic system to different stressors.

Objective: to determine the characteristics of cardiac autonomic control in young adults with different degrees of cardiovascular reactivity at rest and during isometric exercise.

Material and Methods: the sample consisted of 97 individuals of both sexes, it was divided into three groups; normorreactives, hyperreactive and with hypertensive response according to the pressor response to the sustained weight test. All individuals underwent a variability study of heart rate at rest and during the isometric test. Variables in the frequency domain were studied: HF, LF, resting LF/HF ratio and the parameters of the Poincaré diagram SD1, SD2 and the SD1/SD2 ratio at rest and during exercise.

Results: At the basal state, hyperreactive individuals and with a hypertensive response had a sympathetic predominance over cardiac function and a lower variability of heart rate. During isometric exercise the values of the SD1 and SD2 axes decreased in all groups and the SD1/SD2 ratio decreased in normorreactive individuals and with hypertensive response, but it was only significantly in the hyperreactive ones.

Conclusions: In individuals with cardiovascular hyperreactivity, an autonomic imbalance is already present in the basal state and there is a reduction in autonomic vagal modulation during exercise that may contribute to the development of hypertension.

Keywords. Cardiovascular hyperreactivity, Heart rate variability, isometric sustained weight test, hypertension