Exercise adaptation of the left ventricular myocardium in men over 50 years of age

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Background.—The cardiac consequences of extensive athletic activity in men over the age of 50 years are unknown.

Aims.—We intend to describe the remodelling that occur due to intensive athletic activity in men ≥50 years of age.

Methods.—We conducted a prospective analysis of 21 athletes ≥50 years of age. Fifteen sedentary healthy controls and ten patients diagnosed with a left ventricular hypertrophy who were all over the age of 50. All subjects underwent a resting and a sub-maximal exercise echocardiography in order to measure left ventricular systolic and diastolic functions.

Results.—Left ventricular (LV) volumes, which were similar at rest in the three groups, were higher in the athletes during exercise (P < 0.01). Systolic ejection volumes and longitudinal global left ventricular strains were greater at rest in healthy subjects (athletes and controls) in comparison to those in LHV-patients (P < 0.01). During exercise, the increase in longitudinal strain was higher in athletes than in the two other groups (P < 0.05). Concerning left ventricular relaxation, septal e'- and lateral e' -waves were higher both at rest and during exercise in the group of healthy subjects in comparison to those in patients (P < 0.05).

Conclusion.—Distinguishing physiology from pathology is challenging at rest, particularly in the elderly. However, exercise stress echocardiography helps. Only the changes in shape and in the longitudinal LV systolic function during exercise are significantly different between athletes and controls or LHV-subjects.

Prevalence of coronary artery spasm during dobutamine stress echocardiography

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Background.—Previous care reports have suggested that dobutamine stress echocardiography may induce coronary artery spasm. The aim of this study was to assess the prevalence of coronary artery spasm during dobutamine stress echocardiography.

Methods.—Over a nine-year period (from November 2001 to October 2010), we reviewed all patients (n = 2,224) referred for dobutamine stress echocardiography. Criteria for selection included patients aged ≥18 years and with dobutamine stress echocardiography. We systematically analysed all ECG performed during dobutamine stress echocardiography, allowing to detect ST elevation during the examination. All patients with ST elevation underwent a coronary angiography.

Results.—A dobutamine stress echocardiography was performed in 2,224 patients. In 20 patients, a ST elevation was observed (always in inferior leads) and all these patients underwent an urgent coronary angiography. In 13 patients (65%), a significant coronary stenosis was observed: ST elevation was observed in case of critical coronary stenosis in six patients and in case of chronic coronary occlusion in seven patients. Finally, seven patients (35% of patients presenting with ST elevation during dobutamine stress echocardiography; six men, mean age: 67 ± 11 years) had no significant coronary stenosis. The prevalence of coronary artery spasm during dobutamine stress echocardiography was 0.3%. In the last patient who presented with this clinical presentation, we induced a coronary artery spasm during coronary angiography with dobutamine perfusion and a second coronary angiography confirmed the diagnosis of coronary spasm after methergin testing.

Conclusion.—Coronary artery spasm during dobutamine stress echocardiography is rare but may occur. Its prevalence is estimated at 0.3%. Physicians should be aware of its presence in dobutamine stress echocardiography.