Letter to the Editor

Chronotropic Incompetence in Diabetic Elderly on Echocardiography

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Dear editor,

We congratulate the authors of the article on the prognosis of chronotropic incompetence in diabetic elderly undergoing physical stress echocardiography, published in the Arq Bras Cardiol. 2013;100(5):429-43[1].

When chronotropic deficit is observed on pharmacological stress echocardiography, a relationship is observed with neither prognosis nor prevalence of coronary artery disease, but with sinus node disorders, extrasystoles or dysautonomia, which might be due to dobutamine effects[2,3]. We would like to know whether, in those authors' opinion, the chronotropic deficit can play any prognostic role in pharmacological stress echocardiography.

Keywords

Ageing; Diabetes Mellitus; Stress Mechanical; Echocardiography, Heart Rate.

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Reply

Our group has experience with chronotropic incompetence (CI) by using physical stress echocardiography as the diagnostic method; according to already performed cohorts, CI has shown prognostic value. That is the preferred method for individuals with preserved physical capacity.

Despite the well-known clinical implications, the underlying mechanism of CI has not been well clarified, autonomic dysfunction being the most frequently found hypothesis in the studies. The use of dobutamine is known to involve an autonomic system participant, the myocardial beta 1 adrenergic receptor, and is more restrictive than physical effort, which involves all the complexity of the system.

For practical purpose, most studies define CI as the incapacity to reach 80% of heart rate (HR) reserve according to the formula: HR reserve = (peak HR – resting HR) / (maximum HR – resting HR) x 100.

It has been suggested that the definition of CI should be assessed when the diagnostic method uses positive inotropic drugs to induce HR increase. It is necessary to better understand which practical concept of CI applies to the pharmacological stress echocardiography method to study the prognosis of those who have chronotropic incompetence according to that method.

The prognostic value of CI probably does not depend on the method used; however, the diagnosis of patients with CI should be well established.

Sincerely,

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