



Hypertension should be ruled out in patients with hyperdynamic left ventricle on radionuclide myocardial perfusion imaging, diastolic dysfunction and dyspnea on exertion



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We have read with great interest the report by Gorantla RS. et al. [1] on the relation of hyperdynamic myocardial response to stress induction and diastolic dysfunction using radionuclide myocardial perfusion imaging [1]. They evaluated the patients presenting dyspnea on exertion (DOE) who were found to have hyperdynamic left ventricle (equal or greater LVEF than 70%) on stress radionuclide myocardial perfusion imaging and diastolic dysfunction on echocardiography. They selected the study group who had no evidence of reversible ischemia in addition to hyperdynamic LV function. They concluded that hyperdynamic LV function is a significant predictor of diastolic dysfunction in the patients with DOE who have no evidence of ischemia.

In the result part of the article, there is no information regarding the prevalence of hypertension in the study group. Hypertension and concentric LV remodeling were mentioned in the paper; however, we strongly believe that prevalence of resting hypertension and blood pressure response to exercise in normotensives at rest in all study groups should be mentioned. Association between hyperdynamic LV function and exaggerated blood pressure response to exercise in normotensive subjects at rest was described precisely using first-pass radionuclide angiography long time ago [2]. In a large group of healthy individuals who developed exercise-induced LV remodeling, we recently have pointed out the importance of complete elimination of this phenomenon in diagnosis of physiologic LVH [3]. Even in healthy individuals, this phenomenon can be associated with increased incidence of hypertensive LV remodeling which was clearly shown by Gottdiener et al. [4].

In hypertensive patients with LV remodeling, hyperdynamic LV could be related to increased sympathetic response to stress induction. In fact, correlation between increased sympathetic activity and LV myocardial mass was shown precisely by microneurography in hypertension [5]. In addition to cardiac index and ejection fraction determination during stress test as mentioned above, hyperdynamic LV could be determined on tissue level. In fact, we found stress-induced hyperdynamic LV performance in hypertensive individuals using combined tissue Doppler imaging and stress induction [6]. We also suggested that this comprehensive approach in follow-up of hypertensive patients could contribute to early management to prevent heart failure with preserved ejection fraction, predominantly seen in hypertension, female gender [7].

The authors also mentioned that cardiac etiology for this group of patients with DOE could be alternated as diastolic dysfunction or heart failure with preserved ejection fraction. However, hypertension could possibly be mentioned as the potential etiologic reason in the conclusion, because in addition to DOE and diastolic dysfunction, majority of hypertensive patients also have stress-induced hyperdynamic LV function [8,9]. It is known that blood pressure measurement at exercise may have prognostic information in healthy individuals [10]. In fact, previously undiagnosed cases are not rare and becoming important health problems, in fact, some part of missed hypertensive patients could be associated with target organ damage [11]. We have mentioned in a large review that the diagnosis of exaggerated hypertension as well as the determination of increased rate-pressure product at peak exercise may need more comprehensive evaluation during exercise test [12].

Nevertheless, lack of prevalence of hypertension and hemodynamic data under exercise stress could have been mentioned in the article of Gorantla RS. et al. [1]. Therefore, physicians should pay more attention to exercise-induced increases in arterial blood pressure as it may raise the awareness of early developing arterial hypertension and end organ damage may be prevented if appropriate preventive medical care is installed in a timely fashion.

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