Letter by Yalçin et al Regarding Article, “Left Ventricular Wall Thickness and the Presence of Asymmetric Hypertrophy in Healthy Young Army Recruits: Data from the LARGE Heart Study”

To the Editor:

We have read with great interest the report by Lee et al1 on the relationship of the physiological response to exercise and asymmetrical wall thickening in healthy army recruits. They evaluated the variations in myocardial wall thickness using cardiovascular magnetic resonance after the exercise period of 12 weeks and concluded that asymmetrical septal hypertrophy develops commonly as part of the physiological response to exercise. In this report, a 40% smoking range was reported in the study group. Despite hypertension being excluded from the beginning, no attempt was made for complete elimination of increased blood pressure (BP) response along the training regime of recruits. No information regarding potential contribution of exercise-mediated hemodynamic response to myocardial geometric findings was read in the Response to Physical Training section.

Gottdiener et al2 described that increased BP response to exercise can be associated with increased incidence of hypertensive left ventricular hypertrophy in healthy normotensive adults. Left ventricular remodeling in previously undiagnosed patients presenting with normal office BP may be associated with high BP during exercise. We have recently reported the importance of both BP and rate-pressure product at peak exercise in a large review in which we also pointed out that geometric and functional features of hypertension-mediated septal hypertrophy can be detected quantitatively using novel cardiac imaging, including tissue Doppler, strain and combined stress test, and tissue Doppler imaging.3

In the report by Lee et al,1 prevalence of asymmetrical wall thickening increased from 2.2% to 10%, most commonly on the septum, after the exercise training program. In this report, the difference in prevalence from previous echocardiographic studies in which the prevalence was 1% to 2% was described as a sharp contrast and interpreted as the greater sensitivity of cardiovascular magnetic resonance to regional increases in wall thickness than echocardiography. However, as mentioned in one of the cited article by Lee et al,1 those elite sportsmen were on a routine program that included cardiovascular magnetic resonance after the exercise period of 12 weeks and concluded that asymmetrical septal hypertrophy develops commonly as part of the physiological response to exercise. In this report, a 40% smoking range was reported in the study group. Despite hypertension being excluded from the beginning, no attempt was made for complete elimination of increased blood pressure (BP) response along the training regime of recruits. No information regarding potential contribution of exercise-mediated hemodynamic response to myocardial geometric findings was read in the Response to Physical Training section.

Gottdiener et al2 described that increased BP response to exercise can be associated with increased incidence of hypertensive left ventricular hypertrophy in healthy normotensive adults. Left ventricular remodeling in previously undiagnosed patients presenting with normal office BP may be associated with high BP during exercise. We have recently reported the importance of both BP and rate-pressure product at peak exercise in a large review in which we also pointed out that geometric and functional features of hypertension-mediated septal hypertrophy can be detected quantitatively using novel cardiac imaging, including tissue Doppler, strain and combined stress test, and tissue Doppler imaging.3

In the report by Lee et al,1 prevalence of asymmetrical wall thickening increased from 2.2% to 10%, most commonly on the septum, after the exercise training program. In this report, the difference in prevalence from previous echocardiographic studies in which the prevalence was 1% to 2% was described as a sharp contrast and interpreted as the greater sensitivity of cardiovascular magnetic resonance to regional increases in wall thickness than echocardiography. However, as mentioned in one of the cited article by Lee et al,1 those elite sportsmen were on a routine program that included cardiovascular evaluation not only by history, physical examination, and chest radiography, but also by 12-lead exercise stress electrocardiography and echocardiography.4 BP in all participants was consistently or predominantly <140/90 mm Hg during the 2 years.4

Lee et al1 also stated that the explanation for why some recruits developed asymmetrical wall thickening remains unclear. Nevertheless, absence of hemodynamic data under exercise stress of the healthy study group could be a limitation for this precisely designed imaging study, and we believe this could be mentioned in the Limitation section. Therefore, evidence-based approach should include the BP and rate-pressure product for complete elimination of previously undiagnosed hypertension cases, which is becoming an important health problem around the world. In fact, a very recent article by Korhonen et al5 has clearly documented that undiagnosed cases with hypertension are associated with nonignorable consequences that 1 of 5 patients is associated with subclinical target organ damage, including left ventricular hypertrophy.

Acknowledgments

Dr. Yalçin is supported by the US Government Fulbright Program, Washington DC.

Sources of Funding

Dr. Yalçin has accepted only research equipment support from Novartis Pharmaceuticals.

Disclosures

None.

Fatih Yalçin, MD  
Theodore P. Abraham, MD  
Department of Cardiology  
Johns Hopkins Medical Institutions  
Baltimore, MD

John S. Gottdiener, MD  
Department of Cardiology  
University of Maryland  
Baltimore, MD

References

Letter by Yalçin et al Regarding Article, "Left Ventricular Wall Thickness and the Presence of Asymmetric Hypertrophy in Healthy Young Army Recruits: Data from the LARGE Heart Study"
Fatih Yalçin, Theodore P. Abraham and John S. Gottdiener

_Circ Cardiovasc Imaging_, 2013;6:e28
doi: 10.1161/CIRCIMAGING.113.000720
_Circulation: Cardiovascular Imaging_ is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2013 American Heart Association, Inc. All rights reserved.
Print ISSN: 1941-9651. Online ISSN: 1942-0080

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circimaging.ahajournals.org/content/6/5/e28

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in _Circulation: Cardiovascular Imaging_ can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to _Circulation: Cardiovascular Imaging_ is online at:
http://circimaging.ahajournals.org//subscriptions/