Response to the Antihypertensive Effects of Exercise Among Those With Resistant Hypertension

We read with interest the letter by Ash et al. The authors state that, according to the literature, postexercise hypotension contributes to the antihypertensive effects of exercise and therefore postulate that the assessment of postexercise ambulatory blood pressure (ABP) should take place ≥ 24 hours after the last training session. Without doubt, postexercise hypotension contributes to the antihypertensive effects of exercise. Current hypertension guidelines therefore recommend aerobic exercise at most days of the week to make use of this effect. But if postexercise hypotension contributes to the aspired effect, why should we try to prevent measuring it? In our study population, 60% of the participants performed ABP 1 or 2 days after the last training session and 40%, at days 3 to 5. There was no statistical difference in the change of ABP in these 2 groups (P = 0.68). We agree with the authors that missing ABP values may affect the results of a trial. In our study, however, we can exclude a substantial effect, because 95% of the ABP tests had valid readings > 90%.

Ash et al. state that exercise prescription based on lactate curves may not have been warranted in our study. However, their explanation that the study participants had no diseases and health conditions other than resistant hypertension is inaccurate. The cardiovascular concomitant diseases of the elderly study population are provided in Table 1. Congestive heart failure was an exclusion criterion only in case of New York Heart Association class ≥ 3. Moreover, blood pressure peaks necessitating interruption of a maximal stress test are more frequent in resistant hypertensives. The estimation of maximal oxygen uptake, however, strictly depends on individuals exercising to exhaustion. Finally, usual recommendations for training heart rates do not apply to patients with β-blockers. In these patients, training heart rates are ≥ 20% lower. In the present trial, 68% of the subjects in the exercise group were on β-blockers. For all of these reasons, we decided to base the assessment of physical performance and training prescription on lactate curves. This method does not depend on compliance, allows a reliable and valid estimation of physical performance, is a solid basis for the prescription of exercise, and has been proven to be an adequate training prescription technique in patients with β-blockers as well. Ash et al. criticize that frequency, intensity, time, and type of the aerobic exercise were not provided. We disagree in this point. We provided data on frequency (3 times weekly), intensity (target lactate 2.0 ± 0.5 mmol/L), time (8–12 weeks), and type of the aerobic exercise at most days of the week to make use of this effect.

Finally, the authors ask for a documentation of adherence to the training program. The training program took place on treadmills within the hospital. Hence, adherence could be documented continuously. All of the patients fulfilled the requirement to participate in training sessions 3 times weekly for 8 to 12 weeks.

Disclosures

None.


References

Response to the Antihypertensive Effects of Exercise Among Those With Resistant Hypertension
Fernando Dimeo, Nikolaos Pagonas and Timm H. Westhoff

*Hypertension*, 2013;61:e2; originally published online November 5, 2012; doi: 10.1161/HYPERTENSIONAHA.111.00189

*Hypertension* is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2012 American Heart Association, Inc. All rights reserved.
Print ISSN: 0194-911X. Online ISSN: 1524-4563

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://hyper.ahajournals.org/content/61/1/e2

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in *Hypertension* 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 *Hypertension* is online at:
http://hyper.ahajournals.org//subscriptions/