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

We read with interest the letter by Ash et al.1 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.1 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.2 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 al1 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 1.3 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.4 In these patients, training heart rates are ≥20% lower.4 In the present trial, 68% of the subjects in the exercise group were on β-blockers.6 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.6,7 Ash et al1 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 (walking on a treadmill). Furthermore, we translated the achieved lactate-based training intensity to practical parameters such as mean training heart rate and perceived exertion including a rule of thumb for training prescription in the discussion.3

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.

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