Antihypertensive Effects of Exercise Among Those With Resistant Hypertension

To the Editor:

Dimeo et al. tested the hypothesis that aerobic exercise training reduces ambulatory blood pressure (ABP) among individuals with resistant hypertension and found that daytime systolic (6 mm Hg) and diastolic (3 mm Hg) ABPs were reduced after an 8- to 12-week aerobic exercise training program. Their findings indicate that exercise is effective antihypertensive therapy in a clinical population that is not responsive to drug therapy. Nonetheless, they should be interpreted with caution for the reasons below.

Daytime ABP was the primary outcome. A complete description of the ABP methods including the timing when ABP was taken and procedures for handling missing ABP values should have been provided. Other than stating the ABP measurements were made within 5 days of the last training session, the details of these 2 important considerations were lacking.

A session of aerobic exercise acutely lowers blood pressure for 24 hours, that is, postexercise hypotension. Evidence suggests that the antihypertensive effects of exercise training may be entirely attributable to postexercise hypotension. Therefore, the assessment of ABP post training should occur ≥24 hours after the last training session because of postexercise hypotension, but not >48 hours after the last training session because blood pressure increases to pretraining levels after only 1 week of detraining. It is possible that postexercise hypotension and detraining effects confounded their findings.

Dimeo et al. prescribed exercise intensity by the lactate curve method because this method is not dependent on exercise adherence, and in the elderly a cardiopulmonary graded maximal exercise stress test to exhaustion, be it the gold standard, is limited. The subjects enrolled in the exercise training program were 42 to 78 years with an average age of 63 years and had no diseases and health conditions other than resistant hypertension. Therefore, prescribing exercise intensity by the lactate curve method does not appear warranted.

The authors state that the recommended intensity for lowering blood pressure is moderate. However, the frequency, intensity, time, and type of the aerobic exercise training program were not provided. This information would be helpful for healthcare and exercise professionals to know when to prescribe exercise to this clinical population. Finally, adherence to the training program was not disclosed, an important confounder when interpreting the impact of exercise on blood pressure.

The findings by Dimeo et al. support growing evidence of the importance of exercise as a nonpharmacological strategy to treat hypertension. However, without disclosure of the timing of the ABP measurements, how missing ABP data were handled, the frequency, intensity, time, and type, and exercise adherence, their findings should be interpreted with caution noting these limitations.

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