Effect of Exercise Training among Patients with Resistant Hypertension: EnRicH Trial

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Resistant hypertension is a complex condition characterized by the limited success of the available treatment options to lower blood pressure, namely antihypertensive drugs and renal denervation. It is an important medical and societal concern given its economic and health-related burden. In addition to the cost of multiple medications, those with resistant hypertension show higher risk of myocardial infarction, stroke, heart failure, chronic kidney disease or death. Although exercise is recommended globally as a first-line approach for the treatment of hypertension, it is with great delay that its efficacy is tested in resistant hypertension. The Exercise Training in the Treatment of Resistant Hypertension (EnRicH) trial was designed to test with a rigorous design if aerobic exercise training compared with usual care indeed reduces blood pressure among patients with resistant hypertension. Sixty patients were randomized (1:1 ratio) to a 12-week moderate-intensity (50-70% VO2max) aerobic exercise program, 3 sessions per week, added to usual care or a usual care group. The aerobic exercise reduced 24-hour and daytime ambulatory blood pressure as well as office systolic blood pressure, by 7.1/4.4, 8.4/5.7 and 10 mm Hg, respectively, and improved cardiorespiratory fitness and several biomarkers of cardiovascular risk. These results provide clinicians with evidence to embrace moderate-intensity aerobic exercise as a coadjutant therapy targeting this patient population. The EnRicH results were published in renowned journals (e.g. JAMA Cardiology) and presented at several congresses. EnRicH had a relevant scientific and societal impact being awarded with several prizes (e.g. Menção Honrosa, in Prémios Nunes Correa Verdades de Faria, SCML 2022, and Boas Práticas de Envelhecimento Ativo e Saudável categoria Saúde+, CCDRC 2019, best oral communication and travel grants).

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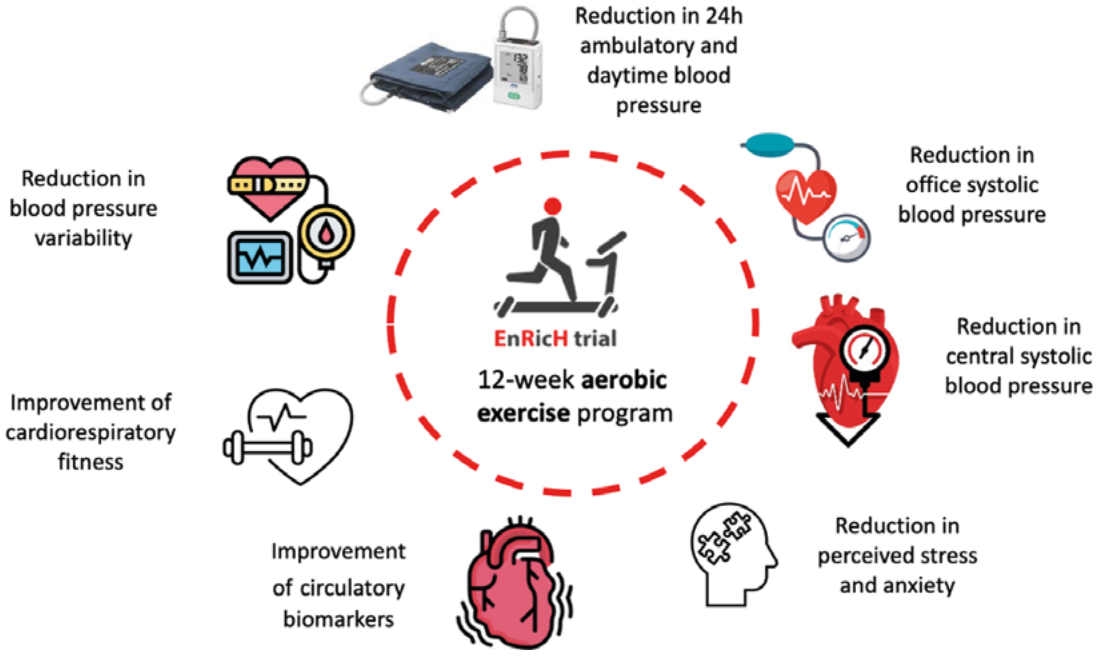

FIGURE 1
Benefits of the 12-week aerobic exercise program of the EnRicH trial among patients with resistant hypertension.