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Acute blood pressure response in hypertensive elderly women immediately after water aerobics exercise: A crossover study

Raphael Martins Cunha , José Vilaça-Alves, Marcelo Vasconcelos Noleto, Juliana Sá Silva, Andressa Moura Costa, Christoffer Novais Farias Silva, ...show all

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ABSTRACT

Water aerobics exercise is widely recommended for elderly people. However, little is known about the acute effects on hemodynamic variables. Thus, we assessed the effects of a water aerobic session on blood pressure in hypertensive elderly women. Fifty hypertensive elderly women aged 67.8 ± 4.1 years, 1.5 ± 0.6 m high and BMI 28.6 ± 3.9 kg/m², participated in a crossover clinical trial. The experiment consisted of a 45-minute water aerobics session (70%–75% HRmax adjusted for the aquatic environment) (ES) and a control session (no exercise for 45 minutes) (CS). Heart rate was monitored using a heart rate monitor and systolic blood pressure (SBP) and diastolic (DBP) measurements were taken using a semi-automatic monitor before and immediately after the sessions, and at 10, 20 and 30 minutes thereafter. It was using a generalized estimating equation (GEE) with Bonferroni's post-hoc test ($p < 0.05$). At the end of the experimental session, ES showed a rise in SBP of 17.4 mmHg (14.3%, $p < 0.001$) and DBP of 5.4 mmHg (7.8%, $p < 0.001$) compared to CS. At 10 minutes after exercise, BP declined in ES by a greater magnitude than in CS (SBP 7.5 mmHg, 6.2%, $p = 0.005$ and DBP 3.8 mmHg, 5.5%, $p = 0.013$). At 20 minutes after exercise and thereafter, SBP and DBP were similar in both ES and CS. In conclusion, BP returned to control levels within 10–20 minutes remaining unchanged until 30 minutes after exercise, and post-exercise hypotension was not observed. Besides, BP changed after exercise was a safe rise of small magnitude for hypertensive people.

KEYWORDS: [Elderly women](#), [exercise training](#), [hypertension](#), [water aerobics](#)

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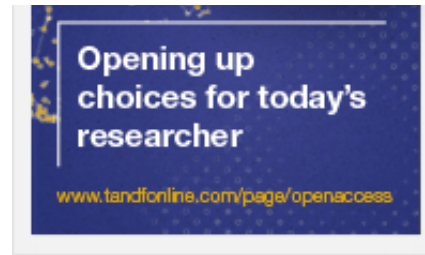
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