



Conference Abstract

P.56 Differences in Vascular Effects Between One Session of Moderate-Intensity Continuous Physical Exercise and High-Intensity Interval Physical Exercise in Individuals with High Blood Pressure

Sara Rodrigues*, Renata G S Verardino, Marcel J A Costa, Ana Luíse Duenhas-Berger, Valéria Costa-Hong, Luiz A Bortolotto

InCor HC FM USP

Keywords

Physical exercise
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ABSTRACT

Purpose: To compare augmentation index (AIx) between one Moderate-intensity continuous physical exercise (MICPE) and one High-intensity interval physical exercise (HIIPE) session in normal/high normal blood pressure (BP) (120–140 for systolic and 80–90 mmHg for diastolic). Additionally, to compare two AIx methods (SphygmoCor® and Arteriograph®) [1].

Methods: Exercise intensity and energy expenditure (equalizing) were according to the cardiopulmonary stress test. Individuals were randomized to exercise sessions, performed as cross-over. AIx were analyzed at baseline, immediately after and 24 hours after MICPE and HIIPE session and compared among all times. Δ AIxHIIPE (AIxHIIPE - AIxBaseline) and Δ AIxMICPE were calculated. Correlation and agreement analysis was performed between AIx methods.

Results: Individuals ($n = 23$; 78% women; 48 ± 1 years; systolic/diastolicBP = $125 \pm 2/84 \pm 1$ mmHg) had lower AIxSphygmoCor® at MICPE compared to baseline and to 24 hours MICPE (27.2 ± 2.2 vs 32.8 ± 1 and $31.0 \pm 2.5\%$; $p < 0.01$). AIxSphygmoCor® was lower in HIIPE than other times (23.2 ± 2.4 vs baseline 32.8 ± 1.9 $p < 0.01$; vs MICPE 27.2 ± 2.2 ; $p = 0.039$; vs 24 hours MICPE 31.0 ± 2.5 ; $p < 0.01$ and vs 24 hours HIIPE $32.2 \pm 2.0\%$; $p < 0.01$). AIxArteriograph® was lower in HIIPE ($16.0 \pm 3.7\%$) than baseline ($28.9 \pm 3.4\%$; $p = 0.001$), 24 hours MICPE ($25.7 \pm 4.0\%$; $p = 0.008$) and 24 hours HIIPE ($29.5 \pm 3.9\%$; $p = 0.005$). Δ AIxHIIPE was greater than Δ AIxMICPE (-9.37 vs -5.15 ; $p = 0.028$). AIxArteriograph® showed a positive correlation with AIxSphygmoCor® ($r = 0.793$; $p < 0.01$) and showed agreement.

Conclusion: Regardless of intensity, one exercise session improves AIx. The effect seems to be greater after HIIPE than MICPE.

REFERENCES

- [1] Williams B, Mancia G, Spiering W, Rosei EA, Azizi M, Burnier M, et al., 2018 ESC/ESH Guidelines for the management of arterial hypertension: the Task Force for the management of arterial hypertension of the European Society of Cardiology (ESC) and the European Society of Hypertension (ESH) Eur Heart J 2018; 39: 3021–104.

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