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. ΔAIXHIIPE (AIXHIIPE - AIXBaseline) and ΔAIXMICPE were calculated. Correlation and agreement analysis was performed between AIX methods.

**Results:** Individuals (n = 23; 78% women; 48 ± 1 years; systolic/diastolicBP = 125 ± 2/84 ± 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 ± 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 ± 2.0%; p < 0.01). AIXArteriograph® was lower in HIIPE (16.0 ± 3.7%) than baseline (28.9 ± 3.4%; p = 0.001), 24 hours MICPE (25.7 ± 4.0%; p = 0.008) and 24 hours HIIPE (29.5 ± 3.9%; p = 0.005). ΔAIXHIIPE was greater than ΔAIXMICPE (−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


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