



# P135 Assessment of Novel Blood Pressure Corrected Cardio-ankle Vascular Index in Response to Acute Blood Pressure Changes

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## ABSTRACT

**Background:** Cardio-ankle vascular index (CAVI) has long been considered a measure of arterial stiffness independent of short-term changes in blood pressure (BP) [1]. Recently and theoretically, CAVI was found to be partially affected by actual BP, thus, a novel BP-corrected index, CAVI<sub>0</sub>, was proposed to diminish these effects [2,3]. Direct, repeated measures experimental data comparing CAVI's and CAVI<sub>0</sub>'s acute blood pressure dependence is lacking. Hence, the aim of this study was to assess the effects of short-term changes of BP on CAVI<sub>0</sub> in comparison with standard CAVI.

**Methods:** 60 healthy adults were examined using vascular screening system VaSera 1500 N (Fukuda Denshi Co., Tokyo, Japan) during four examination periods lasting 5 minutes – baseline, cold pressor test (CPT), recovery period, and isometric handgrip exercise (IHE). CAVI and cardiovascular parameters for calculation of CAVI<sub>0</sub> were measured after baseline, at the peak of pressor response to CPT, after recovery period, and at the peak of pressor response to IHE. CAVI, CAVI<sub>0</sub>, and mean BP were assessed for all periods.

**Results:** CAVI significantly increased during CPT compared to baseline rest ( $p = 0.008$ ), returned to baseline values during recovery period ( $p = 0.011$  compared to CPT), and significantly increased during IHE compared to recovery period ( $p = 0.002$ ). No significant changes of CAVI<sub>0</sub> were found. CAVI significantly correlated with changes in mean BP ( $p = 0.012$ ; multilevel regression); CAVI<sub>0</sub> did not ( $p = 0.570$ ).

**Conclusion:** In this repeated measures, experimental, acute study, CAVI showed short-term blood pressure dependence, whereas CAVI<sub>0</sub> did not.

## REFERENCES

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