



P42 Correlation Between Neck Circumference and Pulse Wave Velocity in a Population Based Study in Salvador-Brazil, Preliminary Results

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ABSTRACT

Introduction: Pulse wave velocity (PWV) is considered a gold standard for assessment of arterial stiffness [1]; neck circumference (NC) is a good anthropometrical indicator of fat accumulation in the upper body region [2].

Methods: A population-based cross-sectional study representative of a neighborhood of Salvador-BA, Brazil, distributed in 12 census tracts according to the Brazilian Institute of Geography and Statistics. The overall sample is randomized in adults from the assigned area, from December 2016 to May 2019 comprise 145 people. Individual and household records are filled out PWV was the measuring velocity between the carotid and right femoral wave, coupled to the electrocardiogram. The committee for research on human subjects of the FTC approved the protocol (No1827621). The measurement equipment was the flattening tonometer SphygmoCor[®] apparatus (XCEL, AtCor Medical, Sydney, Australia). The NC was obtained by using an inelastic fiberglass tape measure based on the height of the cricothyroid cartilage. The values ≥ 37 cm for men or ≥ 34 cm for women were used for their classification [3]. The frequency and descriptive measures, Spearman's linear correlation coefficient between the laboratory tests and adjusted PWV. STATA v.12 software was used for treatment and generation of results. The level of statistical significance was set at 5%.

Results: There was a predominance of women (70.3%). The correlation is the same for both sexes ($r = 0.30$), a weak positive, however it was statistically significant for women ($p = 0.0031$).

Conclusion: The NC and PWV measurements showed a weakly positive. There was a statistically significant correlation for women.

REFERENCES

- [1] Van Bortel LM, Laurent S, Boutouyrie P, Chowienczyk P, Cruickshank JK, De Backer T, et al. Expert consensus document on the measurement of aortic stiffness in daily practice using carotid-femoral pulse wave velocity. *J Hypertens* 2012; 30:445–8.
- [2] Fan S, Yang B, Zhi X, He J, Ma P, Yu L, et al. Neck circumference associated with arterial blood pressures and hypertension: a cross-sectional community-based study in northern Han Chinese. *Sci Rep* 2017;7:2620.
- [3] Ben-Noun L, Laor A. Relationship of neck circumference to cardiovascular risk factors. *Obes Res* 2003;11:226–31.

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