Artery Research
Vol. **25**(**S1**); 2019, *p.* S3
DOI: https://doi.org/10.2991/artres.k.191224.003; ISSN 1872-9312; eISSN 1876-4401
https://www.atlantis-press.com/journals/artres

1.4 Prognostic Relevance of Augmentation Index in Prevalent Cardiovascular Disease and Total Mortality: Data From the General Population

Natalie Arnold[1,*], Tommaso Gori[1], Anika Gündling[1], Andreas Schulz[1], Jürgen H. Prochaska[1], Marina Panova-Noeva[1], Irene M. Schmidtmann[1], Norbert Pfeiffer[1], Manfred Beutel[1], Karl J. Lackner[2], Thomas Münzel[2], Philipp S. Wild[1]

[1]*University Medical Center of the Johannes Gutenberg-University Mainz, Mainz, Germany*
[2]*Institute for Clinical Chemistry and Laboratory Medicine of the Johannes Gutenberg-University Mainz, Mainz, Germany*

ABSTRACT

Objectives: To investigate the role of peripheral augmentation index (AIx) for the prediction of prevalent cardiovascular disease (CVD) and total mortality in the general population in age- and sex- specific manner.

Methods: AIx was measured in 11,250 participants of the population-based Gutenberg Health Study by Endo-PAT device. For analysis, the study population was stratified by age and sex (men: <60/≥60 years; women: <55/≥55 years), since a non-linear increase in AIx with aging with a plateau-building at age of 55 years in women and at 60 years in men was observed.

Results: During the 8-yrs follow-up, a total of 584 deaths (382 men/202 women) occurred. In males, top tertile (T) of AIx was associated with all-cause mortality (hazard ratio (HR) in younger men was 2.30 (95% CI 1.41–3.76) and 1.42 (95% CI 1.09–1.85) among men ≥60 years (T3 vs T1/T2; adjusted for height, heart rate, CVD risk factors). No association was found in females. A stronger predictive ability was observed in younger males, with AIx values above the reference limit (HR 3.15 (95% CI 1.73–5.74), multivariable-adjusted). Finally, an increased AIx was also associated with almost 2-fold higher prevalence of CVD in males <60 years (Prevalence ratio 1.81 (95% CI 1.33–2.45) for T3 vs T1/T2; or 2.01 (95% CI 1.40–2.86) for AIx values above reference in a fully adjusted model), but not in older males or women.

Conclusion: Within the present analysis, AIx demonstrated a strong predictive value for prevalent CVD and worse survival in younger males, thereby underlying its clinical usefulness in this particular population.

*Corresponding author. Email: natalie.arnold@unimedizin-mainz.de