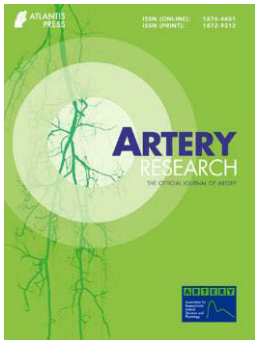

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1.1: PROMOTION OF ARTERIAL STIFFNESS BY CHILDHOOD CANCER AND ITS CHARACTERISTICS IN ADULT LONG-TERM SURVIVORS

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ARTERY 18, Guimaraes Oral Presentation abstracts

Oral Session I – Epidemiology + Special Populations

1.1
PROMOTION OF ARTERIAL STIFFNESS BY CHILDHOOD CANCER AND ITS CHARACTERISTICS IN ADULT LONG-TERM SURVIVORS

Natalie Arnold [1], Hiltrud Merzenich [2], Arthur Wingerter [3], Andreas Schluz [4], Astrid Schneider [2], Jürgen H. Prochaska [5], Sebastian Göbel [6], Marie-Astrid Neu [3], Nicole Henninger [3], Marina Panova-Noeva [5], Susan Eckerle [3], Claudia Spix [2], Irene Schidtmann [2], Karl J. Lackner [7], Manfred E. Beutel [8], Norbert Pfeiffer [9], Thomas Münzel [6], Jörg Faber [3], Philipp S. Wild [4]

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Background: Vascular alterations induced by antineoplastic treatment might be considered as a possible underlying mechanism of increased cardiovascular (CV) sequelae in childhood cancer survivors (CCS). Therefore, we thought to evaluate the changes in arterial stiffness (AS) among long-term CCS compared to the general population.
Methods: AS was assessed by digital photoplethysmography (Stiffness Index (SI); m/s) among 1,002 participant of "Cardiac and Vascular late Sequelae in long-term Survivors of childhood cancer" study, diagnosed with neoplasia prior to an age of 15 years (1980–1990). A population-based subsample from the Gutenberg Health Study (GHS) ($n = 5,252$) was used for comparison. All subjects underwent a comprehensive, standardized clinical examination in the same study center.
Results: Compared to the population subsample with similar age range, CCS had higher SI in multivariable linear regression analysis with adjustment for cardiovascular risk factor and comorbidities ($\beta = 0.66[0.51/0.80]$; $p < 0.0001$). Moreover, SI was varying according to tumor entity with highest values in bone tumors. Interestingly, CCS demonstrated stiffer vessels than individuals from the population even in absence of a history of chemo- or radiotherapy ($\beta = 0.56[0.16/0.96]$; $p = 0.0066$) or prevalent hypertension ($\beta = 0.66[0.50/0.81]$; $p < 0.0001$) in fully-adjusted models. Finally, a 5.2-fold [3.9; 7.0] higher prevalence of SI values exceeding age-specific, population-based reference limits was observed among CCS compared to individuals from the population.
Conclusions: This is the first study demonstrating increased AS among long-term CCS. The data suggest that AS promotion might differ in individuals with childhood cancer: Cancer development and antineoplastic treatment might be relevant determinants.

1.2
ASSOCIATIONS BETWEEN INDICATORS OF CARDIOVASCULAR DISEASE AND PULSE WAVE ANALYSIS AND VELOCITY: A COMPARISON OF DEVICES

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Background: Both the Sphygmocor (S) and Vicorder (V) devices can be used for Pulse Wave Analysis (PWA) and Velocity (PWV). We investigated if there were differences in the associations between markers of Cardiovascular Disease (CVD) and PWA and PWV variables as assessed by the two devices.
Methods: 1,722 men (78.5 ± 4.7 yrs) from the British Regional Heart Study underwent PWA and PWV with the Sphygmocor and Vicorder devices. Carotid artery Intima-media Thickness (cIMT), NT-proBNP and Left Ventricle Hypertrophy (LVH) detected by ECG were also assessed. Multiple regression was used to investigate the associations between cIMT, NT-proBNP and LVH with each of the following measures, central Augmentation Pressure (cAP) Augmentation Index (cAIx) Blood Pressure (cBP) and carotid to femoral PWV.
Results: Men with data obtained from both devices were included (PWA $n = 1,373$, PWV $n = 1,122$). Following adjustment for CVD risk factors, Sphygmocor cAP, cAIx and cBP were all positively associated with LVH ($p < 0.05$), the relationship between Sphygmocor PWV and LVH was negative (OR 0.87 95% CI 0.78–0.97). There were no associations between LVH and Vicorder variables. cAP measured by both devices and cAIx by Vicorder were predictors of NT-proBNP levels (ScAP Beta 0.097 $p < 0.05$, VcAP Beta 0.153 $p < 0.001$ & VcAIx Beta 0.129 $p < 0.001$). Vicorder cBP was the only predictor of cIMT (Beta 0.057 $p < 0.05$).
Conclusion: The same measures from two devices were predictors of different indicators of CVD. Further exploration is needed to understand these differences, but device used needs to be taken into consideration when comparing findings of these variables with other published results.

1.3
PREDICTION OF CARDIOVASCULAR MORTALITY AND MORBIDITY IN THE MALMÖ DIET-CANCER COHORT FOR THE IDENTIFICATION OF HEALTHY VASCULAR AGEING, USING MARKERS OF VASCULAR STATUS

Benjamin Nilsson Wadström [1], Peter Nilsson [2], Abd Al-Hakim Fatehali [1], Gunnar Engstrom [1]

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