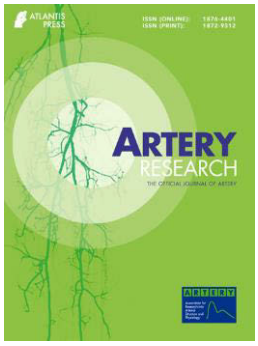

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P24: SEX-SPECIFIC PULSE WAVE VELOCITY CUT-OFFS IMPROVE SURVIVAL ANALYSIS IN PATIENTS WITH SUSPECTED CORONARY ARTERY DISEASE

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P23
PREDICTION OF TOTAL AND CAUSE-SPECIFIC MORTALITY INCIDENCE AS WELL AS CARDIOVASCULAR MORBIDITY BY USE OF NON-INVASIVE MEASUREMENT OF CAROTID- FEMORAL PULSE WAVE VELOCITY AS A MEASURE OF ARTERIAL STIFFNESS

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Objective: Arterial stiffness (AS) increases with age and predicts total mortality and total cardiovascular (CV) events. It has also been shown that positive family history (FH+) of cardiometabolic disease influences AS. We aimed to: 1) examine if AS predicts total mortality among elderly subjects, as well as total, fatal, and non-fatal CV events; and 2) to assess if FH+ influences the prediction of AS.
Methods: Participants from the Malmö Diet Cancer CV cohort (MDC-CV; n = 3,056, mean age 71 years, 40% men) in Sweden were examined during 2007–2012. AS was measured with carotid-femoral pulse wave velocity (c-f PWV; Sphygmocor®). Follow-up started from date of measurement and ended at death, emigration or on 31st December 2014. Hazard ratios (HRs) with 95% confidence intervals were computed using multivariable Cox and competing risks regression (sub-hazard ratio, SHR) adjusting for age, sex, cardiovascular risk factors, prevalent cardiometabolic diseases and FH+.
Results: c-f PWV (per log-unit) significantly predicted total mortality, HR 2.57 (95%CI: 1.28–5.16, p = 0.008), after full adjustment for risk factors, and HR 3.01 (95%CI: 1.41–6.42) after adding FH. The prediction of CV events was of borderline significance, HR 1.85 (95%CI: 0.91–3.78, p = 0.09). FH+ contribution to c-f PWV prediction of non-CV mortality was of borderline significance SHR 2.30 (95%CI: 0.89–5.95, p = 0.085).
Conclusion: Arterial stiffness (c-f PWV) predicts total mortality, even adjusted for family history. Thus c-f PWV is a promising risk marker for total mortality, beyond the prediction offered by conventional risk factors.

P24
SEX-SPECIFIC PULSE WAVE VELOCITY CUT-OFFS IMPROVE SURVIVAL ANALYSIS IN PATIENTS WITH SUSPECTED CORONARY ARTERY DISEASE

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Objectives: There is evidence for sex and age influences on pulse wave velocity (PWV). Guidelines suggest a sex-independent cut-off for PWV. It is not obvious that an age- and blood-pressure-independent cut-off is suitable in different populations [1, 2].
Thus, the aim is to investigate the suitability of sex-independent cut-offs for risk prediction in a high-risk cohort.
Methods: PWV was measured invasively (invPWV; catheter pullback) and non-invasively (non- invPWV; ARCSolver PWV) for patients with suspected CAD at the hospital in Wels- Grieskirchen (Austria). Patients were grouped in four subgroups based on sex and PWV cut-offs (guidelines and sex-specific ones). A combination of myocardial infarction, death, stroke and cardiovascular revascularization served as primary endpoint. Kaplan-Meier curves, logrank test and hazard-ratios were used for survival analysis and receiver-operating-characteristics (ROC) to determine sex-specific cut-offs.
Results: 604 male (61 (11 SD) years) and 324 female (65 (11 SD) years) with a median follow-up of 1576 days and 215 events were included. Logrank test revealed significant differences between Kaplan-Meier curves ($p < 0.001$), but dichotomized PWV remained just discriminative in women, but not men, for invasive and non- invasive recordings. ROC analysis revealed sex-specific cut-offs of 8.5 m/s (men) or 9.6 m/s (women) for invasive and 8.9 m/s (men) or 10.0 m/s (women) for non- invasive recordings. When using these cut-offs, PWV turned out to be discriminative in both sexes (Table).

Table. Results of survival and ROC analysis for invasive and non-invasive PWV for male and female. Hazard-ratios (HR) are presented with their 95% confidence intervals.

	HR (≤10m/s vs. >10m/s)	Sex-specific cut-off	HR (≤ sex-specific cut-off vs. > sex-specific cut-off)
invPWV			
Male	1.41 [0.94; 2.11]	8.5 m/s	1.64 [1.15; 2.34]
Female	2.46 [1.58; 3.84]	9.6 m/s	3.28 [2.14; 5.03]
non-invPWV			
Male	1.46 [0.99; 2.16]	8.9 m/s	1.73 [1.22; 2.46]
Female	3.20 [2.11; 4.85]	10.0 m/s	3.20 [2.11; 4.85]

Conclusion: Sex-specific PWV cut-offs improve survival analysis in patients with suspected CAD. Cut-offs seem to be directly dependent on the prevalence of CAD and thus need further investigation.

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P25
VASCULAR AGING IS ASSOCIATED WITH THE SEVERITY OF CEREBRAL WHITE MATTER LESION LOAD

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Background: Blood pressure (BP) levels and aortic stiffness are associated with the presence of cerebal small vessel disease, whereas little is known on the possible association of BP levels, aortic stiffness and the severity of cerebral small vessel disease. In a pilot study we investigated whether hemodynamic measures are associated with the presence and severity of cerebral white matter lesion load (WML).
Methods: Fazekas score was used to analyse WML on neuroimaging of 84 persons visiting the Outpatient Geriatric Clinic; an automatic white matter hyperintensity segmentation method was used in a subgroup of 44 MRI-scans to determine the exact volume of WML. Aortic stiffness, measured as aortic pulse wave velocity (aPWV), and BP levels were non-invasively measured by Mobil-o-Graph.
Results: Mean age was 76.6 years. Age was correlated with aPWV ($r^2 = 0.722$, $p < 0.001$) and volume of WML ($r^2 = 0.296$, $p < 0.001$). aPWV and central pulse pressure levels (cPP) increased with increasing Fazekas score (p for trend <0.001 and 0.043, respectively). After adjustment, higher aPWV was observed in the highest Fazekas category compared to the lowest, although not statically significant (p for trend = 0.151). Both cPP and aPWV were associated with WML volumes in univariate analyses ($ln\beta$ 0.298, p = 0.055 and $ln\beta$ 0.541, $p < 0.001$, respectively); in multivariate analyses, estimates were less consistent.