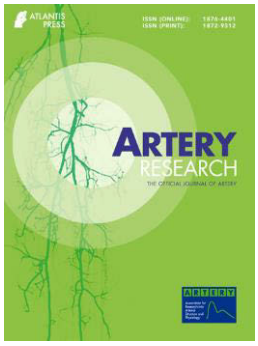

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P8.13: CORONARY IMPLANTATION OF SIROLIMUS-ELUTING STENT IMPAIRS THE PERIPHERAL VASCULAR COMPLIANCE IN PATIENT WITH CORONARY ARTERY DISEASE

M. Vatrano, R. Ceravolo, C. Nesta, A. Ferraro, E. Campopiano, F. Borrello, V. Pascale, G. Ciconte, V.A. Ciconte

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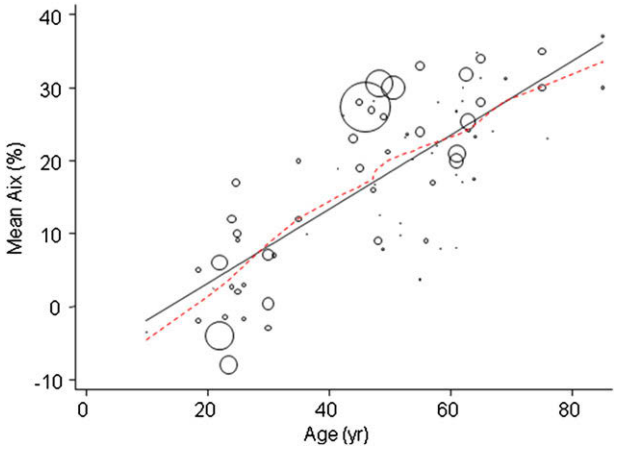
Results: Subjects were categorized according to CRP levels that relate to future CVR (<1, 1-3, and >3 mg/L). There was no significant difference in the mean age (51.2 ± 5.3, 53.6 ± 6.6 and 53.6 ± 7.2, $p = 0.19$) and gender distribution ($p = 0.44$) between the CRP categories. However, body mass index and waist circumference differed as did mean arterial pressure ($p < 0.001$, $p = 0.001$ and $p = 0.016$ respectively). Carotid AS (2.86 ± 1.09; 3.49 ± 1.52; 3.77 ± 1.68, $p = 0.028$) and several parameters of EF assessed by laser Doppler in microcirculation, e.g. percent change of skin perfusion (5090 ± 2385; 3636 ± 1777; 3885 ± 2731 %, $p = 0.033$) and time to half before hyperaemia (9.76 ± 15.10; 4.51 ± 8.04; 3.47 ± 5.69 s, $p = 0.036$), were significantly related to CRP category (Kruskal-Wallis Test). Multiple regression analysis revealed that CRP is independently associated only with alterations in microcirculation — percent change of skin perfusion (rest-to-peak flow, beta = 0.27, $p = 0.016$) but not other arterial parameters.
Conclusion: In MetS patients CRP is independent predictor of endothelium-dependent alterations in skin microcirculation. Association between CRP categories and other parameters of microcirculation and carotid arterial stiffness was also observed.

P8.10
THE RELATIONSHIP BETWEEN AUGMENTATION INDEX AND AGEING: A META-REGRESSION ANALYSIS

A. J. Baksi, T. A. Treibel, J. E. Davies, N. Hadjiloizou, R. A. Foale, K. H. Parker, D. P. Francis, J. Mayet, A. D. Hughes.
International Centre for Circualtory Health & Imperial College London, London, United Kingdom

It has been reported that augmentation index (AI_x) increases with age, but that the increase is more prominent in younger subjects [1], and may even decrease with age in individuals over 50yrs [2]. We undertook a meta-analysis of the published literature of 9,551 individuals (5,659 male), aged 4 to 91 years (mean 54.2 years) and undertook meta-regression to further investigate the relationship of AI_x with age. AI_x increased with age (0.51 (0.41, 0.61) %/yr; coefficient (95% CI); adjusted $r^2 = 59.97\%$; $p < 0.0001$) with little evidence of marked non-linearity over the life course (Figure).



Meta-analysis of AI_x vs age (solid line) with LOWESS fit shown(dashed line).
This meta-analysis suggests that AI_x increases relatively uniformly with age, although there may be a small decline in the rate of increase at older ages.

1. McEniery et al. *J Am Coll Cardiol* 2005; **46**:1753-60.
2. Mitchell et al., *Hypertension.* 2004;**43**:1239-1245.

P8.11
SUPINE CLINIC BLOOD PRESSURE IS RAISED IN HYPERTENSIVE NON-DIPPERS: A NOVEL TEST TO DETERMINE DIPPER STATUS?

C. T. Coleman [1], D. Gilroy [2], L. Wright [2], M. Stowasser [2], J. E. Sharman [1].
[1]*Menzies Research Institute, University of Tasmania, Hobart, Tasmania, Australia*
[2]*University of Queensland, Department of Medicine, Brisbane, Queensland, Australia*

Introduction: Patients with nocturnal blood pressure (BP) that fails to decline ≥10% compared with daytime BP (non-dippers) have increased mortality risk. This may be related to increased arterial stiffness and raised central BP whilst supine. This study aimed to test this hypothesis. We also sought to determine if non-dippers could be identified by the BP change from seated-to-supine positions.
Methodology: 24-hour-ambulatory BP was recorded in 95 treated hypertensive patients (aged 62 ± 8 years), comprising 43 (45%) non-dippers and 52 (55%) dippers (nocturnal BP decline ≥10%). Brachial and central BP (SphygmoCor) were recorded in the seated and supine positions after ≈5 minutes rest in each position. Arterial stiffness was estimated by augmentation index and aortic pulse wave velocity.
Results: Arterial stiffness was not significantly different between dippers and non-dippers, nor were brachial or central systolic BP (SBP) whilst seated ($p > 0.05$ for all). However, non-dippers had significantly higher supine brachial SBP (132 ± 14 vs 126 ± 11 mmHg: $p < 0.05$) and central SBP (121 ± 15 vs 115 ± 11 mmHg: $p < 0.05$). Moreover, the changes in both brachial and central SBP to the supine position were also higher in non-dippers ($p < 0.05$ for both). A brachial SBP increase of ≥8mmHg from the seated-to-supine position predicted non-dipper status with 87% specificity ($p < 0.05$). Night-time SBP correlated with clinic brachial SBP in the supine ($r = 0.39$; $p < 0.001$), but not seated ($r = 0.19$; $p > 0.05$) position ($Z = 2.11$; $p < 0.05$).
Conclusion: Supine central SBP is elevated in non-dippers, which may contribute to cardiovascular risk. Increased supine, relative to seated, brachial SBP may be a useful clinical test to identify non-dipper status.

P8.12
ASSOCIATION BETWEEN ASYMMETRIC DIMETHYLARGININE AND THE INDICES OF VASCULAR FUNCTION IN PATIENTS WITH ESSENTIAL HYPERTENSION

M. Sergejev [1], M. Zagura [2], P. Kampus [1], J. Kals [2], P. Muda [1], T. P. Tuomainen [3], K. Zilmer [2], M. Zilmer [2], J. Eha [1].
[1]*Department of Cardiology, University of Tartu, Tartu, Estonia*
[2]*Department of Biochemistry, University of Tartu, Tartu, Estonia*
[3]*The Research Institute of Public Health, University of Kuopio, Kuopio, Finland*

Background: Asymmetric dimethylarginine (ADMA) is an inhibitor of nitric oxide production and is associated with endothelial dysfunction. Elevated plasma levels of ADMA have been demonstrated in patients with hypertension. The aim of the present study was to investigate the relationship between ADMA and the structural and functional indices of arteries in patients with hypertension.
Methods and results: Eighty middle-aged (47 ± 1.0 years, 41 male and 39 female) untreated mild to moderate essential hypertension patients underwent routine medical examination, pulse wave analysis (PWA) with salbutamol and nitroglycerin test, carotid-femoral pulse wave velocity (PWV) and duplex ultrasound measurements of the carotid artery intima media thickness (IMT). PWA with the administration of salbutamol and nitroglycerin was used to assess endothelium dependent (EDV) and independent vasodilation.
In patients with hypertension ADMA was significantly associated with EDV ($r = -0.26$; $p = 0.02$) and IMT ($r = 0.32$; $p = 0.007$). In multiple regression analysis ADMA was significantly independently correlated with peripheral diastolic blood pressure, EDV and IMT ($R^2 = 0.28$; $p < 0.01$). No correlation was detected between ADMA and AIx ($p = 0.48$) or PWV ($p = 0.54$). In multiple regression analysis IMT was independently associated with age, peripheral pulse pressure, LDL cholesterol, WBC and ADMA concentration ($R^2 = 0.4$; $p < 0.01$).
Conclusion: Present study demonstrated independent associations between ADMA levels and the structural and functional indices of arteries in patients with untreated hypertension. Plasma levels of ADMA were associated with increased carotid artery IMT and with reduced EDV. Thus, ADMA is a potential marker of endothelial dysfunction and intima media thickening in hypertensive patients.

P8.13
CORONARY IMPLANTATION OF SIROLIMUS-ELUTING STENT IMPAIRS THE PERIPHERAL VASCULAR COMPLIANCE IN PATIENT WITH CORONARY ARTERY DISEASE

M. Vatrano, R. Ceravolo, C. Nesta, A. Ferraro, E. Campopiano, F. Borrello, V. Pascale, G. Ciconte, V. A. Ciconte.

Haemodinamic and Interventional Cardiologic Unit. ''Pugliese — Ciaccio'' Hospital of Catanzaro, Catanzaro, Italy

Introduction: To the best of our knowledge, any studies evaluated potential influence on peripheral arterial stiffness, measured by pulse wave velocity (PWV), of percoutaneous coronary intervention (PCI) and stenting.
Methods: 150 patients were enrolled and underwent coronary angiography. In 68 patients was performed coronary stenting (PCI group). PWV was invasively obtained before and after coronary stenting.
Results: Coronary stenting produced a significant augment of PWV (from 4.59 to 5.82 m/s, $P = 0.000$). In contrast, the sub-population which performed angiography without PCI (noPCI group), didn't show any significant change in PWV. The analysis of PCI group demonstrated that only implantation of Sirolimus eluting stent (SES) caused a significant increase of PWV (from 4.62 to 6.15 m/s, $P = 0.029$). In a stepwise multiple regression model stent length, glycaemia and body mass index were significantly associated with increase of PWV, accounting for a total of 51.7% of the variation ($P = 0.009$). In particular, stent length accounted for 39.6% of the variance in PWV augmentation; glycaemia and body mass index explained an additional 12.1% of its variability. In the same analysis performed in PCI group, stent length accounted for 65.3% of the variance ($P = 0.024$) and other than glycaemia and body mass index, also implantation of SES explained an additional 18.5%.
Conclusion: We have shown, for the first time, a significant association between SES implantation and an central stiffness worsening.