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P4.11: ASYMMETRIC DIMETHYLARGININE LEVELS ARE INCREASED IN HUMAN IMMUNODEFICIENCY VIRUS INFECTED PATIENTS ON ANTIRETROVIRAL THERAPY COMPARED TO NAÏVE TO TREATMENT PATIENTS AND HEALTHY CONTROLS

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Results: Recruitment began in January 2008 and will be completed in June 2012. It is hypothesized that there will be no significant difference in LV mass between groups. However, there will be significantly reduced use of medication and improved quality of life in the central BP group because more appropriate titration choices will be made to maintain normal central SBP.

Conclusion: Principal findings will be presented at ARTERY 12.

P4.11

ASYMMETRIC DIMETHYLARGININE LEVELS ARE INCREASED IN HUMAN IMMUNODEFICIENCY VIRUS INFECTED PATIENTS ON ANTIRETROVIRAL THERAPY COMPARED TO NAÏVE TO TREATMENT PATIENTS AND HEALTHY CONTROLS

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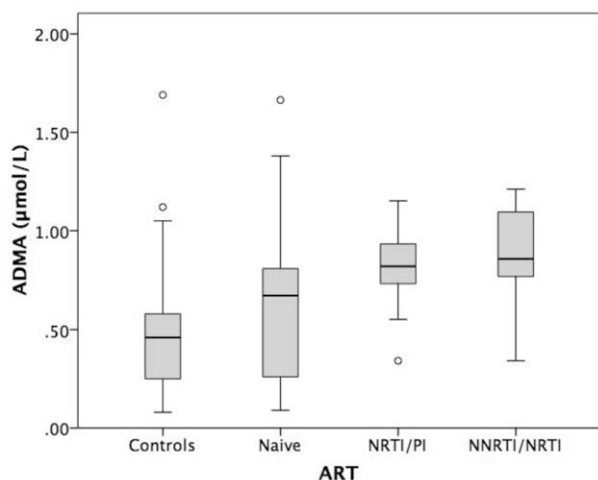
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Background: HIV infection is linked to higher cardiovascular risk. Adverse outcomes may be mediated through mechanisms of endothelial dysfunction attributed to nitric oxide (NO) inhibition. The aim of the study was to compare blood plasma levels of asymmetric dimethylarginine (ADMA), a natural NO inhibitor, of HIV infected patients who are either naïve to treatment or on antiretroviral therapy (ART) and healthy controls.

Methods: 108 subjects were studied: 29 non-infected controls and 79 HIV infected patients [33 naïve to treatment, 30 on a nucleoside reverse transcriptase inhibitor plus non-nucleoside reverse transcriptase inhibitor combination (NRTI/NNRTI) and 16 on a nucleoside reverse transcriptase inhibitor plus a protease inhibitor combination (NRTI/PI)]. Plasma ADMA levels were measured using a commercially available ELISA kit. Between group comparisons were made using non-parametric tests.

Results: HIV infected patients had higher ADMA levels compared to controls ($P=0.003$). ADMA levels differed significantly across groups; non-infected controls had the lower levels of ADMA ($P=0.001$). Among HIV infected patients, those on ART exhibited higher ADMA levels versus ART-naïve patients [0.84 (0.77, 1.05) $\mu\text{mol/L}$ for ART versus 0.67 (0.26, 0.86) $\mu\text{mol/L}$ for ART-naïve patients, $P=0.002$]. ADMA levels did not differ between patients on NNRTIs [0.86 (0.77, 1.10)] or PIs [0.82 (0.71, 0.95)], $P=0.31$.

Conclusions: ART-naïve patients exhibit lower ADMA levels, denoting increased NO bioavailability compared to patients on ART; this may be attributed to their lower viral load that translates in a diminished inflammatory burden and better functional status. Patients on NNRTIs and PIs have comparable ADMA plasma levels.



P4.12

COMMON CAROTID ARTERY WALL SUBCLINICAL LESIONS ARE PRESENT IN SUBJECTS WITH RENAL FIBROMUSCULAR DYSPLASIA

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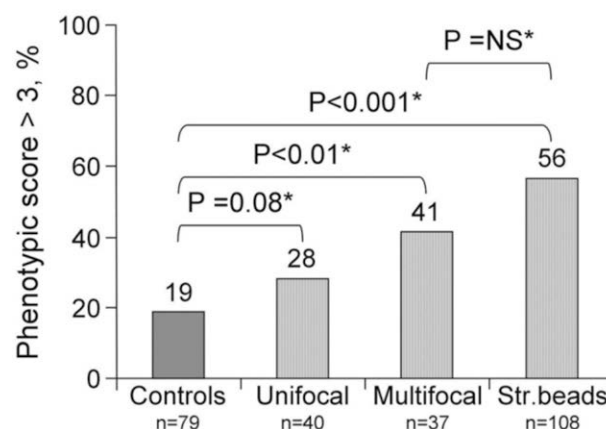
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The common carotid artery (CCA) is an unusual localization of fibromuscular dysplasia (FMD). However, we previously detected CCA phenotypic alterations in a small population of patients with renal FMD and validated a CCA score. We aimed to test this score in a larger population of patients with renal FMD and hypertension.

Methods: CCA score was calculated with an high resolution echotracking device as the sum of B-mode and radiofrequency score as follows: *B-mode*. Normal=1; discontinuous blood-intima interface=2; discontinuous additional interface within the media=3; continuous interface within the media=4. *Radiofrequency signals*. Constant normal two-waved (double) signal=1; alternation of double and triple signal over successive acquisitions=2; constant three-wave (triple) signal=3.

Results: 185 hypertensive patients with renal FMD (40 patients with unifocal and 145 with multifocal lesions) and a control group of 79 hypertensive patients without renal FMD were enrolled. Prevalence of CCA score>3 was higher in patients with multifocal, with or without string of beads, than unifocal FMD and controls (Figure 1). In multivariate analysis, intima-media thickness (150 μm increase: OR 1.83, 95%CI 1.27-2.64; $P=0.001$) and FMD distribution (renal FMD alone: OR 2.97; 95%CI 1.38-6.37; $P<0.01$. *Multisite FMD*: OR 6.03; 95%CI 2.62-13.89; $P<0.001$.) were associated with CCA score>3.

Conclusions: Phenotypic alterations of the CCA were reported in subjects with renal FMD with a higher prevalence in those with multifocal lesions. The CCA score>3 is associated with FMD distribution and intima-media thickness.



P4.13

HIGH OUTPUT, LOW RESISTANCE HAEMODYNAMICS ARE ASSOCIATED WITH AUGMENTATION INDEX IN PATIENTS WITH TYPE 2 DIABETES

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Objectives: Augmentation index (Alx) is associated with increased arterial stiffness. However, several reports have shown that Alx is not significantly raised in patients with type 2 diabetes (T2DM) despite having increased arterial stiffness. This suggests different mechanisms contributing to Alx in T2DM, although the exact cause is unknown. The aim of this study was to examine haemodynamic determinates of Alx in healthy people compared with T2DM.

Methods: Resting haemodynamics were recorded in 53 T2DM patients (aged 61 ± 8 years, 51% male) and 53 matched controls (aged 58 ± 6 , 51% male). Tonometry was used to record Alx, central blood pressure (BP) and aortic stiffness (aPWV). Cardiac output (CO) and systemic vascular resistance (SVR) were measured using impedance cardiography.

Results: There was no significant difference between groups in Alx (24 ± 11 vs $27\pm 9\%$, $p=0.107$). T2DM patients had significantly higher aPWV (7.6 ± 1.6 vs 6.8 ± 1.9 m/s), heart rate (64 ± 9 vs 57 ± 7.0 bpm), CO (5.54 ± 1.15 vs 4.49 ± 0.71 L/min), and central SBP (114 ± 12 vs 107 ± 12 mmHg), but lower SVR (1326 ± 249 vs 1559 ± 281 d.s.cm⁵) ($p<0.05$ all). The strongest correlates of Alx in T2DM patients were heart rate ($r=-0.632$), CO ($r=-0.604$) and SVR ($r=0.542$) ($p<0.001$ all). However, these were not related to Alx in controls,