P.080: GRADED ASSOCIATION BETWEEN ARTERIAL STIFFNESS AND DIVERSE INFLAMMATORY MARKERS IN NEWLY DIAGNOSED ESSENTIAL HYPERTENSIVE SUBJECTS: LINKING PROINFLAMMATORY MECHANISMS WITH VASCULAR DYSFUNCTION


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P.079 PULSE WAVE VELOCITY IN SUBJECTS WITH MASKED HYPERTENSION AND WHITE COAT HYPERTENSION

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Purpose: To examine the possible correlations between pulse wave velocity and plasma inflammatory markers such as Interleukin-6 (IL-6), tumor necrosis factor-alpha (TNF-α) and E-selectin plasma levels in essential hypertensive patients.

Methods: Our population of 148 newly diagnosed non-diabetic hypertensive patients (98 men, aged 49 years, office blood pressure (BP) = 150/97 mmHg) was divided into three groups according to carotid to femoral pulse wave velocity (PWV). Group A (PWV ≥ 7.8 m/s, n = 55), group B (PWV = 7.9-8.7 m/s, n = 54) and group C (PWV > 8.7 m/s, n = 39). Moreover, venous blood samples were drawn for estimation of lipid profile and inflammatory markers levels.

Results: In the total population, PWV was correlated with office systolic BP (r = 0.221, p < 0.05) and TNF-α (r = 0.189, p < 0.05), while IL-6 was associated with body mass index (r = 0.175, p < 0.05) and office systolic BP (r = 0.226, p < 0.005). Moreover, TNF-α and E-selectin were related to body mass index (r = 0.314 and r = 0.274, respectively; p < 0.05 for both cases). Patients in group C exhibited higher levels of IL-6 when compared to groups B and A (1.8 ± 0.1 vs 1.3 ± 0.5 vs 0.8 ± 0.3 pg/ml, respectively; p < 0.005 for all), TNF-α (3.5 ± 0.07 vs 2.5 ± 0.1 vs 1.2 ± 0.3 pg/ml, respectively; p < 0.0001 for all) and E-selectin (55.3 ± 2.1 vs 48.7 ± 2.4 vs 43.1 ± 1.7 ng/ml, respectively; p < 0.05 for all). Analysis of covariance revealed that inflammatory markers values remained significantly different between groups after adjustment for confounding factors (p < 0.05).

Conclusions: In essential hypertension, there is an augmentation in IL-6, TNF-α and E-selectin values throughout increasing PWV tertiles. These findings suggest that arterial stiffening is closely related to subclinical inflammatory processes, in this setting.

P.081 HYPERTENSIVE SUBJECTS WITH AN EXAGGERATED BLOOD PRESSURE EXERCISE RESPONSE ARE CHARACTERIZED BY A STATE OF INFLAMMATORY ACTIVATION, IMPAIRED THROMBOSIS/FIBRINOLYSIS SYSTEM AND ARTERIAL STIFFENING

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Purpose: To examined the correlations between hypertensive response to exercise (HRE), high-sensitivity C-reactive protein (hs-CRP), plasminogen-activator inhibitor type 1 (PAI-1) and arterial stiffening, in essential hypertensives.

Methods: 84 newly diagnosed untreated non-diabetic hypertensive subjects [58 men, mean age 52 years, office BP = 145/93 mmHg] with a negative treadmill exercise test were divided into those with HRE (n = 24) (peak systolic BP > 100 mmHg greater than rest) and those without HRE (n = 60). Moreover, in all subjects venous blood samples were drawn for estimation of hs-CRP and PAI-1 levels, whereas arterial stiffness was evaluated on the basis of carotid to femoral pulse wave velocity (PWV).

Results: Patients with HRE compared to those without HRE had higher PWV as compared to normotensives (10.15 ± 1.6 vs 8.56 ± 1.45 m/s; p < 0.005). Moreover, in all subjects with masked hypertension (n = 37) we observed higher PWV as compared to normotensives (10.15 ± 1.6 vs 8.56 ± 1.45 m/s; p < 0.005). In subjects with masked hypertension (normal office but white coat hypertension), as compared to normotensives, are characterized by higher values of pulse wave velocity, similar to values observed in hypertensives.

Conclusions: Masked hypertension is independent determinant of increased arterial stiffness. This observation might be related to stronger correlation of target organ damage with ambulatory than office blood pressure.