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


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Background: The assessment of clinical implications of often observed differences between ambulatory (ABP) and office blood pressure (OBP) measurements might be of particular importance. The aim of the study was to assess the arterial stiffness in subjects with masked hypertension (normal OBP, elevated ABP) and in subjects with white coat hypertension (elevated OBP, normal ABP) as compared to hypertensives and normotensives.

Methods: The study group included 259 untreated subjects recruited from general population [age 32.8 ± 12.9 years, 136 F/123 M, BMI = 24.7 ± 4.5 kg/m², n = 70 (27.0%) current smokers, n = 54 (20.9%) declared regular alcohol intake]. The 24-h ABP monitoring was performed using oscillometric SpaceLabs 90207 monitors. Aortic pulse wave velocity (PWV) was measured with Complior® device.

Results: In subjects with masked hypertension (n = 37) we observed higher PWV as compared to normotensives (10.15 ± 1.62 vs 8.56 ± 1.45 m/s; p < 0.05). Also subjects with white coat hypertension (n = 20) appeared to have higher PWV than normotensives (9.39 ± 1.23 m/s; p < 0.05). In the multifactorial analysis, with adjustment applied for age, gender, BMI, smoking and alcohol intake, the observed higher values of PWV in subjects with masked hypertension as compared to normotensives remained significant (p < 0.05).

Conclusions: Subjects with masked hypertension and with white coat hypertension, as compared to normotensives, are characterized by higher values of pulse wave velocity, similar to values observed in hypertensives. Only 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.

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

K. Dimitriadis1 *, C. Tsilouf1, C. Vasiliadou, K. Giannakopoulos1, A. Kakkavas1, I. Skladas1, C. Stefanadis1, I. Kallikazaros. Department of Cardiology, Hippokration Hospital, Athens, Greece

Purpose: To examine the possible correlations between large artery stiffness and plasma inflammatory markers such as interleukin-6 (IL-6), tumor necrosis factor-alpha (TNF-α) and E-selectin plasma levels in essential hypertensive subjects.

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) values: Group A (PWV < 7.8 m/s, n = 53), Group B (PWV > 7.8 < 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: 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 selected as control variables (r = 0.134 and r = 0.274, respectively; p < 0.05 for both cases). Patients in group C exhibited higher levels of IL-6 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 stiffness is closely related to subclinical inflammatory processes, in this setting.