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P13.07: SEVERITY OF VASCULAR DISEASE IN UNCONTROLLED HYPERTENSIVES: ARE TWO SIDES OF A COIN?

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age is less than vascular age and delta "+" (n=40), when chronological age is higher than vascular age.

We used ultrasound images of carotid arteries for assessing IMT and carotid plaques; computer sphygmography for assessing PWV. "Vascular age" was calculated by using multivariable sex-specific risk factor algorithm, formulated by D'Agostino et al in 2008, which incorporates age, total and HDL cholesterol, systolic BP, use of antihypertensive medication, smoking and diabetes status.

Results: Results showed that vascular age was higher than chronological age in all groups, especially in group "with AG" (p=0,00001)(figure1). The statistical data of "delta" - median" 7,0; low quartile (-13); upper (-2), which means that the largest difference of vascular age from chronological age was 13 year. The PWV, IMT, common plaque levels were not significantly different in two groups. The correlations between both ages (chronological and vascular) and PWV(p=0,001), IMT (p=0,0003), common plaque level (p=0,0001) were almost the same (table 1).

Conclusions: Vascular age is associated with markers of subclinical atherosclerosis at the same weak level as chronological age.

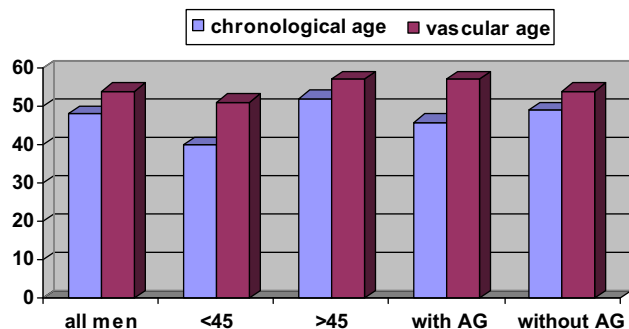


Figure 1 Comparison between chronological and vascular ages in different groups.

Table 1 Spearman Correlations Coefficient between measured study variables and vascular, chronological ages.

№	Parameters	Chronological age (y)		Vascular age (y)	
		R	p	R	p
1	PWV(sm/c)	0,29	0,001	0,25	0,006
2	IMT(mm)	0,34	0,00004	0,30	0,0003
3	Total plaque (%)	0,53	0,0001	0,56	0,0001

p<0,05- significant correlation; R- level of rank correlation.

P13.07

SEVERITY OF VASCULAR DISEASE IN UNCONTROLLED HYPERTENSIVES: ARE TWO SIDES OF A COIN?

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Introduction: Uncontrolled blood pressure (UBP) is associated with higher risk of target organ damage and CV events. A severe subclinical impairment of vascular function and structure should be expected in this situation but, currently this has not been analyzed.

Objective: To determine the pattern of vascular damage in UBp p.

Methods: We screened 3277 p. derived for non-invasive vascular evaluation (NIVE) (Dec 2006/Dec 2009). After applying exclusion criteria (age >65; diabetes mellitus, secondary HTN, previous CV events/secondary prevention) 1503 hypertensives were included and classified according BP values as UBp (≥140/90 mm Hg) or controlled (CBP)(<140/90 mm Hg). (ESH 2007) NIVE comprised: IMT; PWV and FMD; atherosclerotic plaque (AP) characterization; Aortic and Peripheral pulse pressure(CPP and PPP) and Augmentation indexes (CAix and PAix).

Results: UBp were 729 p. (47 y.o.; 63% males; 153/96 ± 14/8mm Hg, 69 ± 11 bpm) and CBP 774p. (48.9 years old; 70% males; 124/78 ± 8/6 mm Hg, 66 ± 10 bpm).

UBP patients showed: >IMT (LCC 0,71 ± 0,2 vs 0,68 ± 0,2mm), >PPP (57 ± 12 vs 46 ± 7 mmHg), >CPP (58 ± 16 vs 43 ± 12 mmHg), >PAix (0.9 ± 32 vs -11 ± 32 %) and PWV (11 ± 3 vs 10 ± 2 m/s)(p< 0.5 for all). CPP/ PPP relation was inverted in UBp group.

Conclusions: UBp was associated with moderate to severe subclinical vascular disease in this large population but it is not clear if UBp is rather a consequence than a cause of subclinical vascular disease.

P13.08

CAROTID INTIMA-MEDIA THICKNESS CORRELATION WITH THE NEW ARTERIAL WALL PARAMETERS IN HIGH CARDIOVASCULAR RISK PATIENTS

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Introduction: Increased carotid intima-media thickness (IMT), as early sign of atherosclerosis, closely correlates with traditional risk factors: increased cholesterol level, high blood pressure (BP), age, metabolic syndrome. The aim of our study was to evaluate the relationship between IMT and other arterial wall parameters.

Methods: Consecutive high cardiovascular risk patients aged from 50 to 55 were investigated at the Vilnius University Hospital, including detailed assessment of cardiovascular risk factors, serum lipid profile, C-reactive protein (CRP). Carotid IMT and carotid stiffness were measured by echo-tracking with ART.LAB system. Aortic and brachial pulse wave velocity (aPWV and bPWV), heart rate adjusted aortic augmentation index (AIx/HR) were evaluated by applanation tonometry with SphygmoCor. Endothelial function in brachial artery was assessed by calculating the flow mediated dilatation (FMD). Correlations between IMT and other arterial wall parameters were estimated.

Results: 860 patients (mean age±SD 52.63±1.58; 536 (62.3%) females) were analyzed. There was only a very weak correlation between IMT and femoral PWV (r=0.094; p=0.049) in the whole group. IMT did not correlate with arterial wall parameters in female group, however, IMT correlated with AIx/HR in male group (r=0.190; p=0.004). Significant but relatively weak IMT correlations with age (r=0.079; p=0.024), BMI (r=0.134 ; p<0.001), systolic BP (r=0.122; p=0.001), diastolic BP (r=0,106; p=0,003), HDL-Ch (r=-0.143 ; p<0.001), CRP (r=0.089 ; p=0.013) were observed without impact of gender. Regression models showed that IMT may not be predicted by PWV, AIx/HR, FMD.

Conclusions: Carotid IMT has a weak correlation with the new arterial measures in high cardiovascular risk patients.

P13.09

REGIONAL AORTIC PULSE WAVE VELOCITY VERSUS LEFT VENTRICULAR MASS IN CLASSIFYING CARDIOVASCULAR RISK DIFFERENCES; A MAGNETIC RESONANCE STUDY

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Background: Compared with Europeans, South Asians (SA) suffer from excess coronary disease (CHD) while African-Caribbeans (AfC) have less CHD despite greater hypertension/stroke. Underlying arterial function differences are unclear.

Aim: To compare aortic pulse wave velocity (aPWV), and left ventricular mass index (LVMI), both strong, independent predictors of outcomes, in describing cross-ethnic CHD risk difference.

Methods: Magnetic resonance (MR) imaging was used to measure LVMI, and aPWV in the arch (aPWVarch) and descending aorta to bifurcation (aPWVdes) in 50 asymptomatic medication-free community-sampled AfC (n=17, age: 52.2±6yr), SA (15, 52.1±6) and European (18, 53.5±6) men recruited to the European Male Ageing Study. Central systolic blood pressure (BP) was measured using the Arteriograph device on the left arm, supine.

Results: Mean±SE of LVMI (g/m²) was lower in SA (65±2) than in AfC (74±2, p=0.005) and European (71±2, p=0.047) group adjusted for age, systolic blood pressure (SBP) and heart rate (HR); R²=0.45.