P1.16: CLINICOPATHOLOGICAL FACTORS ASSOCIATED TO CENTRAL AORTIC PRESSURE PARAMETERS IN PATIENTS WITH HYPERTENSION

T.R. Bregvadze, V.J. Tseluyko, N.E. Mishchuk

To cite this article: T.R. Bregvadze, V.J. Tseluyko, N.E. Mishchuk (2012) P1.16: CLINICOPATHOLOGICAL FACTORS ASSOCIATED TO CENTRAL AORTIC PRESSURE PARAMETERS IN PATIENTS WITH HYPERTENSION, Artery Research 6:4, 156–156, DOI: https://doi.org/10.1016/j.artres.2012.09.053

To link to this article: https://doi.org/10.1016/j.artres.2012.09.053

Published online: 21 December 2019
P1.16 CLINICOPATHOLOGICAL FACTORS ASSOCIATED TO CENTRAL AORTIC PRESSURE PARAMETERS IN PATIENTS WITH HYPERTENSION

T. R. Bregvadze, V. J. Tselyuko, N. E. Mishchuk
Kharkiv Medical Academy of Postgraduate Education, Kharkov, Ukraine

Aim: To investigate association of central aortic pressure (CAP) parameters — augmentation index (Alx), augmentation index, normalized for heart rate 75/min (Alx75), augmentation pressure (AP), central systolic (SPa) and pulse pressure (PPa) with some clinical, laboratory and hemodynamic characteristics of patients with hypertension.

Material-Methods: 100 hypertensive patients at the age of 22—73 years (mean age 54±10.8) were examined, 43% men. Investigation included electrocardiography, echocardiography, determination of serum lipids, creatinine, creatinine clearance (CrCl) calculation, CAP registration using SphygmoCor device.

Results: Alx, Alx75, AP, PPa in women were higher than in men (30% vs. 20%; 28% vs. 17%; 14.5 vs. 8.7mmHg (p<0.001); 46.7 vs. 40.6mmHg (p<0.05); respectively), increased with older age (r=0.28; r=0.23; r=0.36; r=0.33 respectively; p<0.05), negatively correlated with CrCl (r=-0.55; r=-0.56; r=-0.53; r=-0.34 respectively; p<0.05), Alx, Alx75, AP negatively correlated with height and waist circumference (r=-0.48; r=-0.61; r=-0.41 and r=-0.32; r=-0.36; r=-0.21 respectively; p<0.05), positively - with LDL cholesterol (r=0.22; r=0.22; r=0.24 respectively; p<0.05). Alx, Alx75, AP, SPa correlated positively with late ventricular filling velocity (r=0.23; r=0.29; r=0.26; r=0.27 respectively; p<0.05). SPa correlated positively with myocardial mass (r=0.24; p<0.05), intra-ventricular septum and posterior wall thickness (r=0.36 and r=0.34 respectively; p<0.05), negatively — with ratio between early and late ventricular filling velocity (r=-0.28; p<0.05). Alx and Alx75 negatively correlated with diameter of left atrium and end-diastolic diameter of left ventricle (LV) (r=-0.23; r=-0.28 and r=-0.2; r=-0.29 respectively; p<0.05).

Conclusions: As a result, parameters of CAP were associated with gender, age, anthropometric characteristics, renal disease, dyslipoproteinemia, LV hypertrophy and diastolic dysfunction.

P1.17 ARTERIAL STIFFNESS PARAMETERS AND AMBULATORY BLOOD PRESSURE MONITORING IN PATIENTS WITH HYPERTENSION

T. R. Bregvadze, V. J. Tselyuko, N. E. Mishchuk
Kharkiv Medical Academy of Postgraduate Education, Kharkov, Ukraine

Aim: To investigate correlation between ambulatory blood pressure monitoring (ABPM) parameters and central aortic pressure (CAP) parameters (which are the main indicators of arterial stiffness), such as: augmentation index (Alx); augmentation index, normalized for heart rate 75/min (Alx75); augmentation pressure (AP); central systolic (SPa) and pulse pressure (PPa) in patients with hypertension.

Material-Methods: 100 hypertensive patients at the age of 22—73 years (mean age 54±10.8) were examined, 57% women. Investigation included electrocardiography, echocardiography, ABPM, determination of serum lipids, creatinine clearance, CAP registration using SphygmoCor device.

Results: Mean levels of AP, SPa, PPa positively correlated with 24h systolic BP (SBP) (r=0.23; r=0.63; r=0.5 respectively; p<0.05), 24h PP (r=0.35; r=0.52; r=0.66 respectively; p<0.05), daytime and nighttime SBP (r=0.21; r=0.67; r=0.3 and r=0.19; r=0.5; r=0.44 respectively; p<0.05), high BP load (Hx) and area under curve (Hxpt) of SBP (r=0.19; r=0.6; r=0.47 and r=0.23; r=0.61; r=0.48 respectively; p<0.05), Alx, AP, PPa negatively correlated with heart rate (HR) (r=-0.22; p<0.05), Alx, Alx75, AP, SPa correlated positively with the diurnal variability (SD) of SBP (r=0.19; r=0.24; r=0.25; r=0.31 respectively; p<0.05). SPa had positive correlation with 24h diastolic BP (DBP) (r=0.44; p<0.05), daytime and nighttime DBP (r=-0.48 and r=0.37 respectively; p<0.05), Hx and Hxpt of DBP (r=0.42 and r=0.45 respectively; p<0.05), SD of DBP (r=0.24; p<0.05).

Conclusions: According to our study results, parameters of CAP positively correlates with all parameters of ABPM, except HR. Arterial wall stiffness increases in response to lower HR and/or higher BP during 24h.