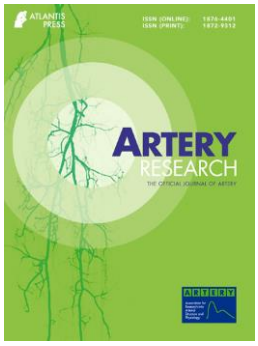

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P14.01: ARTERIAL STIFFNESS IN HEALTHY YOUNG PEOPLE: INFLUENCE OF AGE, GENDER, BLOOD PRESSURE AND ANTHROPOMETRIC PARAMETERS

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aPWVdes (m/s) was higher in SA (7.2±0.3) than AfC (6.2±0.3) or Europeans (6.1±0.3) after adjusting for age and SBP (R^2=0.42). aPWVarch (m/s) did not differ significantly; AfC: 8.3±0.5, SA 7.8±0.5 and Europeans: 7.3±0.5, in a similar regression model. Substituting central BPs did not alter these results. Central systolic and pulse pressures (mmHg) were not significantly different in AfC (127±4, 45±2), SA (128±5, 47±3) and Europeans (125±4, 45±2), respectively adjusting for age and HR.
Conclusions: aPWVdes described cross-ethnic CHD risk differences better than LVMI and central pressures. aPWVarch, although not significantly different here, may predict stroke risk best in larger samples.

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P14.01

ARTERIAL STIFFNESS IN HEALTHY YOUNG PEOPLE: INFLUENCE OF AGE, GENDER, BLOOD PRESSURE AND ANTHROPOMETRIC PARAMETERS

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Increased arterial stiffness assessed using pulse wave velocity (PWV) measurements is a predictor of cardiovascular risk in adults. There are limited data on PWV and its determinants in young people.
Objective: To compare PWV and its association with gender, blood pressure (BP) and anthropometric parameters in healthy high school and university students.
Methods: First group - 42 high school students (22 males) 14-15 years (14,8±0,3 years), the second group - 38 university students (18 males) aged 17-21 years (18,8±1,1 years). To study velocities in elastic (Ve) and muscular (Vm) arteries sphygmomanometry was performed on carotid, femoral and radial arteries.
Results: Older students had higher BMI 22,2±2,8 vs 20,06±2,05 kg/m^2;p=0,002) and trend to higher systolic BP (126,2±16,6 vs 119,6±10,2 mm Hg;p=0,07) No difference between groups in Vm was found (7,28±1,18 m/s in 1st group; 7,09±1,14 m/s in 2nd). Ve was higher in older group (6,24±1,06 vs 5,57±0,67 m/s in younger group; p=0,001). No gender difference was found in Ve or Vm in either group. Correlation analysis performed jointly in both groups revealed that Ve significantly correlated with age (r=0,26), body mass index (BMI) (r=0,34), systolic (r=0,29), diastolic (r=0,30) and mean BP (r=0,33). Vm correlated only with height (r=0,28). Pulse BP did not correlated with Ve no Vm. Multiple regression found only BMI as independent factor associated with Ve (β=0,27;p = 0,04).
Conclusions: Elastic type arteries stiffness is increased with age in young people with no gender difference. It depends on BP levels and BMI. The main determinant of Ve is BMI.

P14.02

SLOW BREATHING AND FINGER ARTERY COMPLIANCE

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It is known that 0,1Hz paced breathing reduces blood pressure, but the mechanisms involved in this phenomenon are not completely clear. The aim of our study was to evaluate the changes of finger artery compliance associated with this breathing pattern.
We measured ECG, arterial pressure and finger artery compliance in 21 young adults at rest and during slow breathing. Values obtained were compared by paired t-test. The finger artery compliance measurements based on the comparison of two oscilometric signals, one from Finapres and another from the cuff attached to the middle finger of the same hand, measuring the finger volume changes. A spectral analysis of R-R intervals was done by autoregression method to determine the changes of autonomic tone during slow breathing. We determined the area under the power spectrum curves over high frequency (HF) band (0.15-0.4 Hz), low frequency (LF) band (0.04-0.15 Hz) and very low frequency (VLF) band (<0.04 Hz).
Our results show that finger artery compliance decreased (from 1.04±0.12 to 0.50±0.06), HF component of HRV decreased (from 58.62±5.31 to 26.59±3.81) and percent of LF component increased (from 38.15±4.23 to 69.58±3.43) during slow breathing. All differences were statistically significant (p<0.001).
Our results unexpectedly showed that sympathetic tone increased during slow breathing. This could be the reason for diminished finger artery compliance in our experimental settings. We suspect that paced breathing acted as stressor agent on persons not familiar with such breathing. Further investigation should be done to clarify this question.

P14.03

IS THERE A SHIFT OF THE REFLECTION POINT FROM PERIPHERAL TO CENTRAL ARTERIES WITH AGE IN HYPERTENSIVE PATIENTS?

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Introduction: Stiffening of arteries with age has been extensively described but this proccess has not been fully characterized at different levels of the arterial tree.
Aim: To evaluate the behavior of arterial function parameters according to age.
Methods: We screened 3277 p. derived for non-invasive vascular evaluation (NIVE) (Dec 2006/Dec 2009). NIVE comprised: IMT; PWV and FMD; atherosclerotic plaque (AP) characterization; Aortic and Peripheral pulse pressure(CPP and PPP) and Augmentation indexes (CAix and PAix). After applying exclusion criteria (age >65; diabetes mellitus, secondary HTN, previous CV events/secondary prevention) and the availability of data of PWV, CAix and PAix 1503 p. were included and analyzed according age (from 20 to 80 years old in deciles).
Results: We observed a progressive increase of all the arterial parameters with age (from 20 to 80 y.o.): PWV (8,8± 2 to 14± 4 m/sec), CPP (from 43± 15 to 59± 17mmHg), PPP (from 49± 12 to 58± 13 mmHg), CAix (from 12 to 36%) and PAix (from - 40% to 13%).
In the 50th decade a cross of values of PP (Central >Peripheral) and increase of PAix was observed suggesting a shift of the reflection point from peripheral to central arteries.
Conclusions: The stiffening of central arteries with age is associated with a progressive shift of the reflection point from peripheral to the central arteries and the loss of the pulse amplification in peripheral arteries.

P14.04

THE ENDOTHELIAL FUNCTION AND THE INTIMAL-MEDIAL THICKNESS IN PATIENTS WITH CORONARY ARTERY DISEASE WITH THE METABOLIC SYNDROME

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Aims: To learn endothelial function and intimal-medial thickness in patients with coronary artery disease and metabolic syndrome depending on the presence of the diabetes. 100 patients with CAD, MS, which made two clinical groups:1-st group (n-47) from CAD, MS and DT II; 2-nd group (n-53) from CAD, MS without type II diabetes were examined. All patients were determinated: anthropometric data, levels of glucose, lipids profile, measuring of IMT carotid artery, endothelial function of brachial artery. As a result complex intimal-medial and endothelial function in patients with CAD, MS and diabetes the IMT were higher than in the groups of patients with CAD, MS without diabetes. The positive correlation between descriptions of IMT and levels of cholesterol (r=0,68, p<0,001), LDL-cholesterol (r=0,69, p<0,001) in patients at the 1-st group was found, in this group there was negative correlation between the lipid profile and endothelial function (cholesterol r=-0,53, p<0,001, LDL-cholesterol r=-0,55, p<0,001) . In patients with CAD, MS without diabetes the faint direct correlation between the levels of cholesterol (r=-0,14, p<0,001), LDL-cholesterol (r=0,17, p<0,001) and IMT. In this group found the negative correlation between the endothelial function and levels of cholesterol (r=-0,77, p<0,001), LDL-cholesterol (r=-0,74, p<0,001. The diabetes in patients with CAD and MS associate with the increase IMT, which have close positive connection with the level of cholesterol and LDL-cholesterol. Functional changes of endothelial function have negative correlation with the lipid profile.

P14.05

VASCULAR AGING INDICES IN THE DISCRIMINATION OF PREMATURE CORONARY ARTERY DISEASE IN SOUTH ASIANS

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South Asian populations have a greater prevalence and earlier presentation of coronary artery disease (CAD) than populations from most other countries. The CAD risk profile common to South Asians (particularly those with early CAD) is devoid of many factors common to White populations of