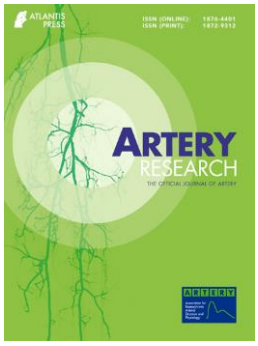

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P11.20: COMMON CAROTID ARTERY PARAMETERS AND CARDIOVASCULAR RISK FACTORS IN HYPERTENSIVE ADOLESCENTS

K. Simanauskas, V. Sapoka, V. Kasiulevicius, K. Ryliskiene, A. Jankauskiene, T. Rekasius, A. Laucevicius

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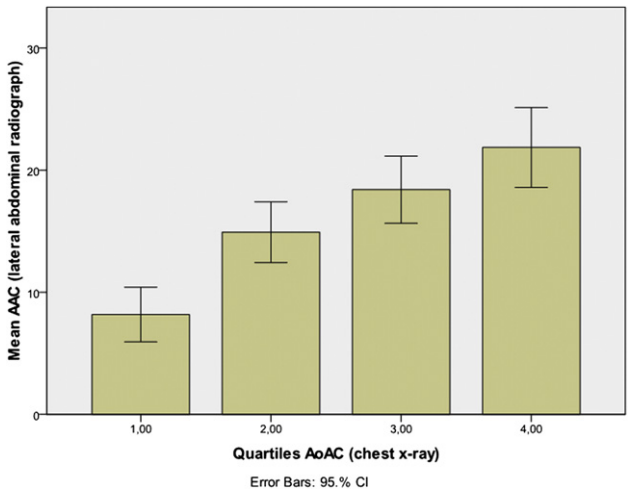
on chest x-ray was correlated with the above mentioned established markers of vascular calcification.
Methods: AAC, AoAC and PWV were measured in 88 patients on RRT who were Danish participants in a European multicenter cross-sectional study. Inclusion criteria were: >18 years of age and >3 months of maintenance haemo- or peritoneal dialysis treatment. AoAC was measured using a semi-quantitative method. The cross section of the aortic arch was divided into 16 sectors on a plain frontal chest x-ray. Sectors showing signs of calcified plaques in the form of typically shaped densities were identified. The carotid-femoral PWV was measured using applanation tonometry.
Results: 72% had a AoAC score > 0 compared to 81 % with a AAC score > 0. AoAC was significantly positively correlated with AAC ($r=0.69$, $p<0.001$) and PWV ($r=0.35$, $p<0.001$). The positive- and negative predictive values of AoAC with respect to AAC were 98% and 32%, respectively.
Conclusion: The presence of calcification on chest x-ray was positively correlated with AAC and PWV. Chest x-ray is inexpensive and frequently obtained in this patient population. We believe it may provide valuable data on calcification and may be used in risk stratification of dialysis patients. Further evaluation is required.



P11.18
DETERMINANTS OF SUBCLINICAL ORGAN DAMAGE IN PAEDIATRIC KIDNEY TRANSPLANT RECIPIENTS

Kis É. [1], O. Cseprekál [1], A. Kerti [1], T. Horváth [2], A. J. Szabó [1], M. Kollai [2], G. S. Reusz [1]
[1]*1st Department of Pediatrics, Semmelweis University, Budapest, Hungary*
[2]*Clinical Experimental Research and Institute of Human Physiology, Semmelweis University, Budapest, Hungary*

Increased cardiovascular (CV) risk caused by uraemic milieu decreases after kidney transplantation (Tx), however it remains 5 fold higher than in the general population. CV mortality can be characterized by non-invasive measure of arterial stiffness (Ast). (Pulse Wave Velocity (PWV), distensibility (D), and Intima media thickness (IMT)) Clinical studies on arterial wall damage in kidney transplant children are sparse.
Our aim was to evaluate the Ast parameters and the possible pathophysiological factors responsible for impaired arterial function among kidney Tx patients. PWV, D and IMT of 24 Tx children (age: 16.6±4.9 years) were measured by applanation tonometry, and carotid artery ultrasound. Laboratory values of lipid, calcium phosphate metabolism, and renal function were also assessed at the time of measurements and retrospectively one year after Tx.
PWV SDS of Tx showed a tendency of discrete elevation (0.97±0.71), IMT was above the 95th percentile (1.64±1,36). D SDS was in the normal range (-0.01±0.98). Compared to the controls PWV SDS showed positive correlation with creatinine, P, CaxP ($r=0.51$;$r=0.4$;$r=0.46$; $p<0$-05). P, CaxP values were significantly higher in Tx with IMT >95th percentile (0.13 vs. 2.61) one year after tx. (P 1.24 vs. 1.63 mmol/l; CaxP:3.19 vs 4.18 $mmol^2/l^2$).
To conclude, 4.5 years after Tx, both morphological and functional changes can occur. Disturbances of calcium phosphate metabolism can enhance the progression of athero- and arteriosclerosis, thus the impairment of arterial elastic function in children after transplantation.
Supported by: OTKA 71730, ETT 06-123/2009, TÁMOP-4.2.2-08/1/KMR-2008-0004

P11.19
DIFFERENT BEHAVIOUR OF ARTERIAL STIFFNESS ACCORDING SEX AND AGE IN A POPULATION OF PATIENTS IN PRIMARY PREVENTION

P. Forcada, D. Olano, S. Gonzalez, S. Obregon, C. Castelaro, C. Kotliar
Hospital Universitario Austral, Pilar, Argentina

Background: There is conflicting evidence about the arterial stiffening process with age. Although differences according sex have been described in the CV system (heart, emodynamics, IMT etc) little was described about arterial stiffening according sex and age simultaneously.
Objective: To analyze arterial stiffness parameters as Pulse Wave Velocity (PWV), pulse pressure (PP) and augmentation index (Aix) in central and peripheral arteries according sex and age in large series of p. in primary CV prevention.
Methods: We evaluated 3523 p. without CV history, who underwent a complete vascular non invasive assessment including PWV, PP and Aix (using Complior and Arteriograph devices).The data were compared according age (deciles) and sex.
Results: BP was higher in males than in women from 20 y.o until 50's.
PWV was significantly higher in males than in females at every age.
PP in central aorta and peripheral vessels was higher in males until 50's and then raised in women.PP Ao began to be higher at this age in females than peripheral PP. (see table)
Aix were higher in women, and the negative value of peripheral augmentation shifted to positive in women at 40's.In men the rise of central pressures and the positive turn of the peripheral augmention index occured late in 60's.
Conclusion: Several explanations to these phenomena can be considered, but: a)Increased PWV and PP in men b) a higher central aortic PP in women and c) early peripheral arterial stiffening in females should be taken into account when tailoring antihypertensive treatment according sex and age.
Comparison of main data according sex

PARAMETERS	TOTAL POP (4523)	MALES (2991)	FEMALES (1523)	P value (M vs F)
AGE	50 +/- 12	49 +/- 12	52 +/-12	<.001
SBP	134 +/- 18	135 +/- 17	132 +/- 20	<.001
DBP	83 +/- 14	84 +/- 11	82 +/- 19	<.001
PWV	10,7 +/- 2	10,9 +/- 3	10,2 +/- 2	<.001
PP Ao	48 +/- 17	46 +/- 17	53 +/- 17	<.001
PP B	51 +/- 16	60 +/- 12	51 +/- 21	<.001
Aix Ao	28 +/- 14	24 +/- 14	36 +/- 12	<.001
Aix B	-10 +/- 34	-19 +/- 32	10 +/- 31	<.001

P11.20
COMMON CAROTID ARTERY PARAMETERS AND CARDIOVASCULAR RISK FACTORS IN HYPERTENSIVE ADOLESCENTS

K. Simanauskas [1], V. Sapoka [1], V. Kasiulevicius [1], K. Ryliskiene [2], A. Jankauskiene [3], T. Rekasius [4], A. Laucevicius [5]
[1]*Vilnius University, Faculty of Medicine: Clinic of Internal Diseases And Family Medicine, Vilnius, Lithuania*
[2]*Vilnius University, Faculty of Medicine: Clinic of Neurology and Neurosurgery, Vilnius, Lithuania*
[3]*Vilnius University, Faculty of Medicine: Clinic of Children's Diseases, Vilnius, Lithuania*
[4]*Vilnius Gediminas Technical University Department of Mathematical Statistics, Vilnius, Lithuania*
[5]*Heart and Vascular Medicine of Vilnius University Hospital Santariskiu Klinikos, Vilnius, Lithuania*

Objective: According data of clinical studies the relationship between cardiovascular risk factors and measured common carotid artery (CCA) intima-media thickness (IMT) is a marker of preclinical atherosclerosis in adolescence. The aim of our prospective cross-sectional study was to

evaluate arterial wall parameters — IMT, distensibility and stiffness of CCA and cardiovascular risk factors (systolic and diastolic blood pressure (BP), body mass index (BMI) and smoking) — in hypertensive adolescents (HA) and normotensive adolescents (NA).
Methods: Arterial wall structural and functional parameters were measured using echo-tracking method (Art. Lab system). BP was measured using BP monitor (Schiller ARGUS VCM). Twenty nine HA (17-18 yr. old, systolic BP $\geq$140 mmHg, diastolic BP $\geq$90 mmHg) and fifty five NA were included. Height, weight, BMI, and smoking distribution were obtained from each group. All analysis was performed using the Statistical Analysis System, SAS (version 8.1).
Results: Hypertensive adolescents had significantly greater values of IMT (494 $\pm$ 84.69 μm vs. 465 $\pm$ 65.2 μm), distensibility (767 $\pm$ 121.94 μm vs. 692 $\pm$ 149.01) and carotid stiffness (2.28 $\pm$ 0,8 vs.1.86 $\pm$ 0.76) ($p<0.05$) compared with normotensive adolescents. They also had significantly higher weight, height, BMI and systolic blood pressure) ($p<0.05$). No significant differences were found between smokers and non-smokers.
Conclusions: Disturbance of arterial wall parameters can be found in adolescents. Hypertensive adolescents had significantly greater values of IMT, distensibility and stiffness of common carotid artery than normotensive adolescents. Short period of smoking had no significant impact on CCA parameters.

P11.21
PARAMETERS OF LOCAL AND SYSTEMIC ARTERIAL STIFFNESS IN PATIENTS WITH ARTERIAL HYPERTENSION AND MODERATELY MARKED CAROTID ATHEROSCLEROSIS WITH AND WITHOUT DIABETES

T. V. Vakhovskaya, T. V. Balakhonova, M. M. Loukyanov, O. A. Pogorelova, S. A. Boytsov
Russian Cardiology Research Centrer, Moscow, Russian Federation

Aim: To evaluate parameters of local and systemic arterial stiffness in patients with arterial hypertension (AH) and moderately marked carotid atherosclerosis (CA) with/without diabetes.
Materials and methods: Seventy-one patients (53 female) with AH (Grade 1-2) and CA (stenosis 20-55%) were enrolled in the study. Patients with diabetes were included in Group 1 (n=29), and patients without diabetes - in Group 2 (n=42). Mean age in two groups was 67.4$\pm$6.5 vs. 66.4$\pm$6.9 (p=0.9); stenosis intensity - 38.3$\pm$9.3% vs. 33.9$\pm$8.0% (p=0.03). Both groups were comparable in sex ratio, incidence of cardiovascular risk factors, duration of AH and diabetes. Local stiffness of carotid arteries was evaluated by means of *e*TRACKING technology (ALOKA α7). Arterial stiffness parameter "β-index", elastic modulus (Ep), arterial compliance (AC) and local pulse wave velocity (PWVlocal) were measured. Systemic arterial stiffness (pulse wave velocity, PWV) was evaluated using applanation tonometry (SphygmoCor).
Results: eTRACKING results for distal segment of the left common carotid artery (CCA) in Groups 1 and 2 were respectively: β-index 11.3$\pm$4.5 vs. 9.5$\pm$2.7 (p=0.04); 175.2$\pm$71.3 vs. 137.9$\pm$40.8 (p=0.0007). Local stiffness parameters for the distal segment of the right CCA in groups were respectively: β-index 10.3$\pm$3.8 vs. 8.8$\pm$2.9 (p=0.1); Ep 158.6$\pm$61 vs. 135.3$\pm$39.9 (p=0.09). There were no significant differences of AC and PWVlocal values between groups (p>0.05). PWV in Group 1 was significantly higher than in Group 2 (15.3$\pm$3.0 vs.13.0$\pm$2.8, p=0.0005).
Conclusions: Local and systemic arterial stiffness parameters in patients with AH and moderately marked carotid atherosclerosis were significantly higher in cases of diabetes than in its absence.

P11.22
LONG-TERM PROGNOSIS OF CORONARY ARTERY CHRONIC TOTAL OCCLUSIONS REVASCULARIZATION

M. A. Maslennikov, Y. A. Karpov, O. V. Cherkavskaya, B. A. Rudenko, A. P. Savchenko
Russian Cardiology Research-and-Production Complex, Ministry of Health and Social Development of the Russian Federation, Moscow, Russian Federation

Background: The clinical benefit of chronic total occlusions (CTO) recanalisation is still being discussed. The aim of our study is to analyse long-term clinical results of CTO recanalisation drug-eluting stent implantation.
Methods: Patients were divided into groups: main group(A) consisted of patients with successful revascularization(n-321,mean age 58$\pm$9 years) compared with patients(control group B),who received medical therapy(n-264, mean age 61$\pm$10 years). The average follow-up was 1095$\pm$36 days. Predictors of survival without coronary events (angina+myocardial infarction+coronary death) and chronic heart failure reoccurrence were analyzed employing Cox proportional hazards model.
Results: The frequency of angina and chronic heart failure reoccurrence was lower in the group with successful revascularization of CTO ($p<0.05$). According to the functional tests, after a period of 3 years of follow-up, the frequency of positive exercise tolerance tests was higher in group B($p<0.05$). Patients in group A required less antianginal therapy ($p<0.05$). Analysis of coronary events predictors in both groups revealed that the main factors negatively affecting the long-term prognosis are: patient's age over 65 years and diabetes mellitus (p=0.006).The left anterior descending artery lesion (p=0.001) is the main factor that increases the risk of heart failure progression in the long run in group B. 3-year survival without coronary events was higher in group A. Survival without progression of chronic heart failure by the end of the 3d-year of observation period was also higher in group A.
Conclusion: Revascularization of CTO of coronary arteries is effective and feasible. Endovascular recanalization of CTO with drug-eluting stent implantation can improve the long-term prognosis.

P11.23
ARTERIAL STIFFNESS AND INTIMA-MEDIA THICKNESS AS EARLY MARKERS OF VASCULAR ALTERATIONS IN PATIENTS WITH METABOLIC SYNDROME

N. Spasova, E. Kinova, D. Somleva, T. Kourteva, A. Goudev
UNHAT "Tsaritsa Yoanna - ISUL", Sofia, Bulgaria

Background: Metabolic syndrome (MS) is associated with early abnormalities in arterial wall and an increased risk of cardiovascular diseases. High arterial stiffness and intima-media thickness (IMT) are markers of vascular aging and subclinical organ damage.
Aim: To test the possibilities of carotid-femoral pulse wave velocity (PWV), wave reflections, and IMT of the common carotid artery, to identify early vascular alterations in patients with metabolic syndrome.
Materials and methods: Ninety nine patients (63 with MS, and 33 controls), were examined. Metabolic syndrome was defined according to National Cholesterol Education Program Adult Treatment Panel III criteria. Patients aged from 45 to 59 years and had no cardiovascular diseases. SphygmoCor system was used for measurement of carotid-femoral PWV, central aortic systolic pressure (CAP) and wave reflections. IMT was measured by B mode ultrasound.
Results: Patients with MS had significantly increased PWV (9.71$\pm$1.92 m/s vs. 7.75$\pm$1.10 m/s, p<0.0001) and IMT (0.65$\pm$0.12 mm vs. 0.57$\pm$0.08 mm, p=0.003). There was no statistically significant difference in Augmentation Index between patients with and without MS (29.04 $\pm$9.68 % vs. 27.61$\pm$6.36 %, p=0.501). CAP was significantly elevated in the MS group (123.74$\pm$13.39 mmHg vs. 117.09$\pm$12.47 mmHg, p=0.047). Among the patients with MS, there were no statistically significant differences in PWV, IMT between groups with and without diabetes mellitus.
Conclusions: Patients with metabolic syndrome have increased arterial stiffness and intima media thickness, even in the absence of cardiovascular complications and diabetes mellitus. Early detection of vascular abnormalities may help to improve cardiovascular risk prediction in this group.

P11.24
RHEUMATOID ARTHRITIS AND CARDIOVASCULAR EVENTS

S. Stropuviene [1,2], S. Aidietiene [2], A. Cypiene [1,2], R. Rugiene [1,2], A. Laucevicius [1,2]
[1]*State Research Institute Center For Innovative Medicine, Vilnius, Lithuania*
[2]*Vilnius University Hospital Santariskiu Clinic, Vilnius, Lithuania*

Objective: Rheumatoid arthritis (RA) is inflammatory autoimmune disease, which is associated with increased cardiovascular mortality. In this study clinical data were analysed to look for a risk factors for the development of cardiovascular events in RA patients.
Materials and methods: The case control study was done between RA patients, who admitted to Rheumatological department and had cardiovascular events history and those, who haven't. Clinical, laboratory tests, arterial stiffness, flow-mediated dilatation measurement were analysed to look for a risk factors for the development of cardiovascular events.
Results: 54 patients, who were diagnosed with RA, formed the case control study by disease duration and age. 18 of them had a history of cardiovascular event (myocardial infarction and cerebral stroke were the most common) and 36 were controls (without the event). 90,7% were women. Mean age was 62,9(7,1) years, mean disease duration - 15,5(10,2) years. Patients