P112: CENTRAL PULSE WAVE PARAMETERS ARE ASSOCIATED WITH VALVE CALCIFICATION IN PATIENTS WITH END-STAGE RENAL DISEASE ON MAINTENANCE HEMODIALYSIS

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in Table 1. Further comparison of mean values of CAVI did not yield statistically significant results.

Table 1. Mean values of CAVI.

eGFR	Men						Women					
	40−5	p	45−0	p	50−5	p	50−5	p	55−0	P	60−5	p
<60	5,80	0,159	8,58	0,610	7,74	0,150	7,70	0,948	6,34	0,172	7,33	0,068
60−90	6,63		7,80		7,71		7,54		7,73		8,23	
>90	7,17		7,67		8,32		7,49		7,78		7,92	

Vascular calcification (VC) is linked to post-transplant cardiovascular events in the long term. We aimed to evaluate whether pretransplant chest X-ray based aortic arch calcification (AoAC) or pulse wave velocity measurement can better predict post- transplant cardiovascular or cerebrovascular events, and to assess the progression of calcification within 2 years.
Methods: Our single-center observational longitudinal study enrolled 40 kidney transplant recipients (KTR) without previous history of vascular events (no cardiovascular, cerebrovascular events, no peripheral artery disease). Two radiologists evaluated pretransplant and postransplant (after 2 years) AoAC on chest X-ray by using two different AoAC scales: AoAC grade evaluation [1] and AoAC score as suggested by Ogawa et al. in 2009 [2]. Cohen's kappa coefficient was 0.75. The mismatching results were repeatedly reviewed and resulted in consensus. Carotid-femoral (cfPWV) and carotid-radial pulse wave velocity (crPWV) was measured using applanation tonometry and the PWV ratio (cfPWV/rPWV) was calculated. Patient clinical, biochemical data and cardiovascular/cerebrovascular event rate were monitored within 2 years.
Results: During 2-year follow-up 5 patients experienced cardiovascular events, which were predicted by PWV ratio, but not related to AoAC. In 3 patients, we observed progression of AoAC, in others − AoAC was less evident or remained unchanged in 2-years follow-up. AoAC score [2] could better describe the extent of vascular calcification in KTR.
Conclusions: KTR without previous vascular events have quite low cardiovascular/ cerebrovascular event rate within 2-year follow-up, which are better predicted by pretransplant PWV ratio. AoAC postransplant regression is evident even when using simplified chest X- ray scales.

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P110
DIFFERENCES IN ARTERIAL STIFFNESS MEASURED BY CARDIO-ANKLE VASCULAR INDEX IN PATIENTS WITH NORMAL AND DECREASED RENAL FUNCTION

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Background: Arterial stiffness (AS) is a highly prognostic risk factor of cardiovascular diseases. The aim of this study was to investigate the relationships between cardio-ankle vascular index (CAVI) and eGFR in patients under the risk of cardiovascular disease.
Methods: This was a retrospective study of Lithuania High cardiovascular risk patients' database. Demographic, renal function and AS data was gathered. Patients were divided into groups by gender and age by intervals of 5 years. Mean values of CAVI were further investigated according to the patients' eGFR. ANOVA was used to compare mean values of CAVI.
Results: This study included data of 2070 patients aged from 40 to 65 years. The mean eGFR of the patients was 100.13 ml/min/1.73m^2, 58.7% were women. The increase in CAVI was observed with age in overall population, with mean values in different age groups of 6.55 ± 1.28, 7.13 ± 1.84, 7.71 ± 1.92, 7.79 ± 1.95, 7.73 ± 1.98, 8.06 ± 1.79, $p < 0.001$. Calculation of the mean CAVI in different age and gender groups of eGFR are presented

Conclusions: Arterial stiffness increases with age in overall population. There was no statistically significant difference between mean values of CAVI in groups divided by age and gender according to eGFR.

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P111
ASSOCIATION AND CLINICAL RELEVANCE OF ABSENCE OF LOWER LIMB ARTERIAL PULSE AND CORONARY ARTERY DISEASE IN HEMODIALYSIS PATIENTS

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Objectives: To determine the association between PAD and DAC in patients treated by haemodialysis in the waiting list for renal transplantation and to assert the influence of that association on prognosis and clinical management.
Methods: 1246 renal transplant candidates underwent coronary angiography. Peripheral artery disease was defined as either absence of pulse in the lower limb or a history of gangrene, amputation, or vascular intervention.
Results: The prevalence of peripheral artery disease and coronary artery disease were 34% and 52%, respectively. The association of peripheral artery disease with coronary artery disease was significant (68% versus 32%, OR = 2.60, 95% CI 2.03−3.32, P = .0001). The specificity, sensitivity, positive predictive value, and negative predictive value were 77%, 44%, 67%, and 56%, respectively. Peripheral artery disease predicted the indication of coronary intervention. Patients lacking peripheral artery disease and coronary artery disease enjoyed higher event-free survival. Peripheral artery disease and coronary artery disease together did not add to the very high cardiovascular risk associated with each isolated condition. Death by any cause was influenced by peripheral artery disease independently of coronary artery disease.
Conclusions: A safe and inexpensive clinical method was useful to assess the association between PAD and CAD and may be useful to select patients for invasive studies. PAD was equivalent to CAD as a predictor of cardiovascular prognosis. Combining coronary and PAD evaluation helps to assess the prognosis of patients with CKD with reasonable accuracy.

P112
CENTRAL PULSE WAVE PARAMETERS ARE ASSOCIATED WITH VALVE CALCIFICATION IN PATIENTS WITH END-STAGE RENAL DISEASE ON MAINTENANCE HEMODIALYSIS

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Background: Arterial stiffness is known marker of poor cardiovascular prognosis. The aim if the study was to assess the incidence of valve calcification

(VC) in patients with end- stage renal disease (ESRD) and its associations with clinical parameters of arterial stiffness.

Methods: In 68 adults with ESRD on maintenance hemodialysis for >3 months (45.6% males, median age 58.3 (interquartile range (IQR) 54.6; 61.6) years, dialysis duration 62.7 (47.8; 77) months, echocardiography and applanation tonometry was performed.

Results: Calcification of the aortic, mitral and both valves was revealed in 46 (67.6%), 34 (50%) and 33 (48.5%) of patients. 20 (29%) patients had no signs of VC. Patients with vs without AVC were older (65.1 ± 9.5 vs 41.4 ± 11,9 years, p < 0.001), had higher dialysis duration (51 (8; 252) vs 21 (10; 38) months, p < 0.01), lower peripheral diastolic blood pressure (DBP) (76 ± 17 vs 84 ± 12 mmHg, p < 0.05), central DBP (75 ± 15 vs 82 ± 11 mmHg, p < 0.05), reflected wave transit time (RWTT) (131 ± 17 vs 137 ± 15 ms, p < 0.05). Patients with vs without MVC were older (67.8 ± 8.2 vs 47.9 ± 13,5 years, p < 0.001), had higher dialysis duration (51 (34; 111) vs 36 (14; 57) months, p < 0.01), carotid-femoral pulse wave velocity (10.1 ± 2.7 vs 8.9 ± 3.5 m/s, p < 0.05), lower peripheral DBP (73 ± 17 vs 84 ± 14 mmHg, p < 0.01), central DBP (72 ± 13 vs 83 ± 13 mmHg, p < 0.001), higher central pulse pressure (52 ± 13 vs 45 ± 16 mmHg, p < 0.05), lower RWTT (133 (120; 130) vs 135 (132; 142) ms, p < 0.05).

Conclusion: High prevalence of VC (71%) was revealed in patients with ESRD on maintenance hemodialysis. Patients with vs without VC were older, had higher duration of dialysis and more pronounced arterial stiffness.

P113
DIASTOLIC AMBULATORY BLOOD PRESSURE PARAMETERS ARE ASSOCIATED WITH VALVE CALCIFICATION IN PATIENTS WITH END-STAGE RENAL DISEASE ON MAINTENANCE HEMODIALYSIS

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Objective: Valve calcification (VC) is common in patients on hemodialysis and increases the risk of cardiovascular morbidity and mortality. The aim if the study was to evaluate the association between VC and 44-hour ambulatory blood pressure (ABP) variables.

Materials and methods: In 68 patients with end-stage renal disease (ESRD) on maintenance hemodialysis (45.6% males, median age 58.3 (interquartile range (IQR) 54.6; 61.6) years, dialysis duration 62.7 (47.8; 77) months, arterial hypertension 94%, heart failure 28%, diabetes mellitus 21%, glomerulonephritis 35%, pyelonephritis 25%, multicystic dysplastic kidney 13%) echocardiography and 44-hour ABP monitoring was performed. Mann-Whitney test was considered significant if p < 0.05.

Results: Calcification of the aortic (AVC), mitral (MVC) and both valves was revealed in 46 (67.6%), 34 (50%) and 33 (48.5%) of patients. 20 (29%) patients had no signs of VC. Patients with vs without AVC had lower daytime diastolic BP (DBP) (79 ± 13 vs 89 ± 12 mmHg, p < 0.01), nighttime DBP (75 ± 13 vs 83 ± 13 mmHg, p < 0.05), day one DBP (77 ± 13 vs 89 ± 15 mmHg, p < 0.01), day two DBP (79 ± 14 vs 88 ± 10 mmHg, p < 0.01), 44-hour DBP (78 ± 13 vs 88 ± 12 mmHg, p < 0.01). Patients with vs without MVC had lower daytime DBP (78 ± 15 vs 86 ± 11 mmHg, p < 0.01), nighttime DBP (74 ± 14 vs 81 ± 12 mmHg, p < 0.05), 44-hour DBP (77 ± 15 vs 85 ± 11 mmHg, p < 0.01), higher daytime DBP variability (10 ± 3 vs 9 ± 3 mmHg, p < 0.01).

Conclusion: High prevalence of valve calcification (71%) was revealed in patients with ESRD on hemodialysis. Patients with VC were older, had higher duration of dialysis, lower values of ambulatory DBP.

P114
ARTERIAL STIFFNESS IS ASSOCIATED WITH AMBULATORY BLOOD PRESSURE PARAMETERS IN PATIENTS ON MAINTENANCE HEMODIALISYS

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Introduction: Arterial stiffness is a principal pathogenetic mechanism of aortic systolic blood pressure (SBP) augmentation, left ventricular hypertrophy and sudden cardiac death. The aim of the study was to evaluate the

association between parameters of pulse wave and 44-hour ambulatory blood pressure (ABP) variables in patients with end- stage renal disease.

Methods: In 68 patients with ESRD on maintenance hemodialysis (45.6% males, median age 58.3(interquartile range (IQR) 54.6; 61.6) years, dialysis duration 62.7(47.8; 77) months applanation tonometry and 44-hour ABP monitoring was performed.

Results: Carotid-femoral pulse wave velocity (PWV) < 10 vs PWV ≥ 10m/s was revealed in 52(76.5%) of patients respectively. Patients with PWV ≥ 10 vs < 10 m/s had higher dialysis duration (median 60; IQR 36; 84) vs 28; IQR 11; 50.5) months, p < 0.05), peripheral SBP (148.1 ± 24,8 vs 140.7 ± 23,6 mmHg, p < 0.05); diastolic blood pressure (DBP) (85.7 ± 15,2 vs 83.3 ± 12,7 mmHg, p < 0.05); 48-hour heart rate (HR) (74.7 ± 13,0 vs 72 ± 8,7 bpm, p < 0.05), mean day one HR (78.7 ± 7,5 vs 72.5 ± 9,7 bpm, p < 0.05), 48- hour DBP variability (DBPV) (78 ± 13 vs 88 ± 12 mmHg, p < 0.01), day two SBP variability (13.5 ± 4,4 vs 13.1 ± 4,1) mmHg, p < 0.05), mean day two BD variability (12 ± 3,9 vs median 11; 11.8 ± 3,6) mmHg, p < 0.05).

Patients with PWV ≥ 10 vs <10 m/s had lower daytime DBPV (median 8.5; IQR 7; 9) vs IQR 10 (8; 11) mmHg, p < 0.05), day one DBPV (median 8; IQR 8; 9) vs 9 IQR 8; 10 mmHg, p < 0.01).

Conclusions: Patients with PWV ≥ 10 m/s had higher duration of dialysis, higher values of ambulatory DBP and higher − of HR. These findings may have implications in gaining further insights into the mechanism of arterial stiffness.

P115
ALBUMIN-TO-CREATININE RATIO IS ASSOCIATED WITH TARGET ORGAN DAMAGE IN HYPERTENSION

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Purpose/Background/Objectives: Hypertension is associated with higher cardiovascular risk as well as several markers of subclinical target organ damage (TOD). Albumin to creatinine ratio (ACR) in urine has been recognised as an independent risk factor for cardiovascular events. We hypothesised that there is a relationship between ACR and markers of TOD in never-treated hypertensives.

Methods: We enrolled 924 consecutive essential hypertensives (mean age 53 ± 12 years, 486 males) without known cardiovascular disease (CVD). Markers of subclinical TOD [left ventricular mass index (LVMI), pulse wave velocity (PWV), ankle-brachial index (ABI) and estimated glomerular filtration rate (eGFR)] were evaluated in all patients. LVMI was assessed echocardiographically using the Devereux formula. Carotid-femoral PWV was estimated with the Complior device. eGFR was calculated by the Cockcroft-Gault formula. ABI was calculated by dividing the highest ankle systolic blood pressure by the highest brachial systolic blood pressure.

Results: ACR exhibited significant association with LVMI (r = 0.277, p < 0.001), PWV (r = 0.277, p < 0.001) ABI (r = −0.078, p = 0.018) and eGFR (r = −0.100, p = 0.002). In further analysis, ACR was associated with TOD as suggested by the 2013 European Guidelines for Hypertension [left ventricular hypertrophy (LVMI > 115 g/m² in men and >95 g/m² in women), increased PWV (PWV > 10m/s), decreased ABI (ABI < 0.9) and decreased renal function (eGFR < 60ml/min)]. Specifically, ACR exhibited a significant association with the number of TOD and this association was independent of age and gender (p < 0.05).

Conclusions: Our findings support the close relationship between ACR and TOD in hypertension, as well as, the predictive ability of ACR for TOD.

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PRECISION CALIBRATION OF PERIPHERAL PRESSURE WAVEFORMS USING INTRA-ARTERIAL BLOOD PRESSURE REVEALS THE NEED FOR IMPROVED WAYS TO ACCURATELY ESTIMATE AORTIC BLOOD PRESSURE

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Background: Estimating aortic blood pressure (BP) non-invasively requires peripheral waveform calibration using cuff systolic (SBP) and diastolic