P109: PROGRESSION OF AORTIC ARCH CALCIFICATION AFTER KIDNEY TRANSPLANT AND ITS IMPORTANCE IN PREDICTING CARDIOVASCULAR RISK: SINGLE-CENTER 2-YEAR FOLLOW-UP STUDY


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Conclusion: Oscillometric measurement of 24-hour pulse wave velocity is a simple and valid method and has an additional predictive value for all-cause mortality in elderly patients with end-stage renal disease.

References

P108 IMPACT OF KIDNEY TRANSPLANTATION ON AORTIC STIFFNESS INDEX b0
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Purpose/ Background/ Objectives: We have shown that aortic stiffness improves as early as 3 months post-kidney transplantation (KTx). Aortic stiffness index b0, a blood pressure independent parameter, has been proposed to be a better indicator of vascular wall property. This study was designed to examine 1) the early versus late changes in aortic stiffness index b0 and 2) to define the characteristics of patients with favourable and unfavourable trajectories of aortic stiffness index b0 after KTx.

Methods: In 79 patients who underwent KTx, aortic stiffness was assessed before, 3, 6 and 24 months after KTx. Aortic stiffness was determined by carotid-femoral pulse wave velocity (cf-PWV), while aortic stiffness index b0 was obtained using a formula proposed by Spronck and colleagues. Cytokines profile was measured in plasma by ELISA.

Results: There was a reduction of b0 3 months after KTx (29.0 ± 2.0 to 25.8 ± 1.2, P = 0.033). Then, aortic stiffness index b0 gradually increased at 6 (28.0 ± 1.4, P = 0.005 vs 3 months) and 24 months (28.3 ± 1.3, P = 0.003 vs 3 months). Unfavourable progression of b0 was not related to renal function, age, comorbidities or kidney donor characteristics. However, the unfavourable progression of b0 was associated with higher levels of interleukin-6 (P = 0.029).

Conclusions: The improvement of aortic stiffness index b0 3 months after KTx suggests that KTx leads to an early improvement of the intrinsic mechanical properties of aorta. However, this improvement is followed by a late progression of b0, which is associated with increased pro-inflammatory cytokine, suggesting that activation of immune system may be involved in arterial wall remodeling in kidney transplant recipients.

P109 PROGRESSION OF AORTIC ARCH CALCIFICATION AFTER KIDNEY TRANSPLANT AND ITS IMPORTANCE IN PREDICTING CARDIOVASCULAR RISK: SINGLE-CENTER 2-YEAR FOLLOW-UP STUDY
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Abstracts 91
Vascular calcification (VC) is linked to post-transplant cardiovascular events in the long term. We aimed to evaluate whether pre-transplant 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 posttransplant (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 (cPWV) and carotid-radial pulse wave velocity (cpPWV) was measured using applanation tonometry and the PWV ratio (cpPWV/rPWV) was calculated. Patient clinical, biochemical data and cardiovascular/cerebrovascular event rate were monitored 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 posttransplant regression is evident even when simplified chest X-ray scales.

References
1. Symeonidis G, Papanas N, Giannakis I, Mavridis G, Lakasas G, Kyriakidis G. eGFR. ANOVA was used to compare mean values of CAVI. Patients were divided into groups by gender and age by intervals of 5 years. 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/1.73m², 58.7% were women. The increase in CAVI was observed with age in overall population, with mean values in different age groups of 6.35 ± 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 in Table 1. Further comparison of mean values of CAVI did not yield statistically significant results.

Table 1. Mean values of CAVI.

<table>
<thead>
<tr>
<th>eGFR</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40–5</td>
<td>45–0</td>
</tr>
<tr>
<td>&lt;60</td>
<td>5.80</td>
<td>0.159</td>
</tr>
<tr>
<td>60–90</td>
<td>6.63</td>
<td>7.80</td>
</tr>
<tr>
<td>&gt;90</td>
<td>7.17</td>
<td>7.67</td>
</tr>
</tbody>
</table>

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.

References

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 in patients treated by haemodialysis 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

References
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