RENAL TRANSPLANTATION. CLINICAL - 1

FP830 **CLINICAL CORRELATES OF SERUM CALCIFICATION PROPENSITY IN KIDNEY TRANSPLANT RECIPIENTS**

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Introduction and Aims: Kidney transplant recipients (KTRs) are at increased risk of cardiovascular disease compared with the general population. In CKD, accelerated vascular calcification contributes to arterial stiffness and mortality. A blood test for calcification propensity was recently developed by measuring the maturation time (T50) of calciprotein particles in serum, with a lower T50 corresponding to a higher calcification propensity. The clinical correlates of T50 in KTRs are not known.

Methods: We measured T50 in biobanked blood obtained 10 weeks after transplantation during two eras, 2000-2003 and 2009-2012. The cross-sectional clinical correlates of T50 were assessed in a linear regression model with stepwise entry and backward selection of covariates, excluding patients with missing values (1%).

Results: Of 1886 eligible adult kidney or kidney-pancreas recipients during the two eras, 1435 (76%) had T50 measured. Hospital staff shortage excluded 161 patients and 290 were transferred to other hospitals before the investigation in week 10.The cohort was primarily Caucasian with mean age 52 ± 14 years, eGFR 57 ± 19 ml/min/1.73m2, male 66%, diabetes 29.1% including 9.3% post-transplant diabetes, simultaneous pancreas transplant 6%, rejection 23%, cytomegalovirus (CMV) infection 39% and T50 196 ± 72 minutes.T50 was lower in the former era (beta -26 [95% CI -32 to -20], p<0.001), diabetes (-14 [-21 to 8], p<0.001), recipients of deceased donor kidney (18 [-24 to -11], p<0.001), recipients of a first kidney (-13 [-22 to -4], p=0.01), after rejection (-12 [-21 to -3], p=0.01), with higher dosed calcineurin inhibitors (highest quartile trough levels [tac >8.5 or csa >220 ng/mL]; -9 [-16 to -2], p=0.02) and higher prednisolone dose (≥12.5 mg; -34 [-42 to -25], p<0.001), CMV infection (-8 [-15 to -2], p=0.01) and higher phosphate (per 0.20 mmol/L; 36 [-39 to -33], p<0.001). This model explained 40% of the variance in T50. An association between eGFR and T50 was lost after adjustment for phosphate, suggesting phosphate is an intermediate variable. Other variables not independently associated with T50 included recipient age and gender, known cardiovascular disease, smoking, delayed graft function, thymoglobulin induction, diuretics, ionized calcium and log-transformed PTH.

Conclusions: The clinical correlates of serum calcification propensity T50 included measures of kidney graft quality and function, intensity of immunosuppression, serum phosphate and inflammatory states such as rejection and CMV infection.