

ABSTRACT: TH-PO1009

The Association of Calcium Oxalate Deposition in Kidney Allografts with Graft and Patient Survival

Session Information

- Transplant Recipient Education, Adherence, and Novel Risk Factors for Graft Loss

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BACKGROUND

Oxalate is a dicarboxylic anion that can precipitate with calcium and cause kidney injury. Patients with end-stage renal disease (ESRD) have elevated plasma levels of oxalate. After kidney transplant (Tx), hyperoxaluria ensues, increasing risk of calcium oxalate deposition (CaOxD) in the allograft. Few studies have examined risk factors for CaOxD in this setting and its association with patient outcomes.

METHODS

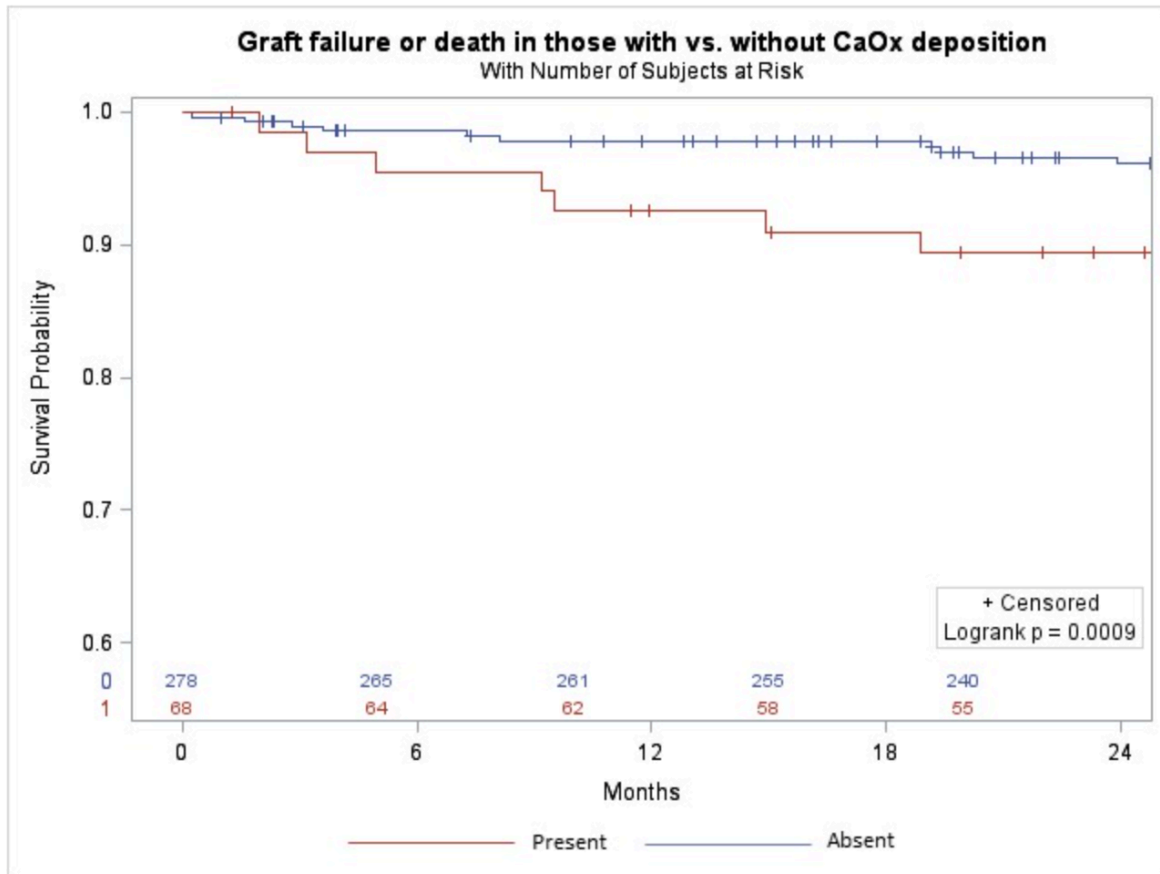
We performed a retrospective cohort study of patients who had allograft biopsies at our hospital within 3 months of Tx, from 10/1999–2/2015. The presence or absence of CaOxD was extracted from biopsy reports. We determined risk factors for CaOxD and evaluated its association with the composite outcome of graft failure or death at 2 years.

RESULTS

68 of 346 patients had CaOxD in allograft biopsies. Factors associated with CaOxD in multivariable models adjusting for serum calcium, black race and donor type (living vs. deceased) were: dialysis vintage (odds ratio (OR) 1.15, 95% CI 1.01-1.30 per additional year), diabetes as a cause of ESRD (OR 2.67, 95% CI 1.26-5.63) and elevated serum creatinine at the time of biopsy (OR 1.31, 95% CI 1.16-1.48 per additional mg/dL). After further adjusting for delayed graft function (DGF), these associations became non-significant with only DGF remaining a significant predictor of CaOxD. CaOxD was associated with 2.56-fold (95% CI 1.20-5.45) increased odds of graft failure or death at 2 years in a multivariable model adjusted for black race, donor type, dialysis vintage and acute rejection. After adjusting for DGF, the association between CaOxD and graft failure or mortality became non-significant (OR 1.56, 95% CI 0.68-3.57).

CONCLUSION

CaOxD is common in patients with early graft dysfunction after Tx, and is strongly associated with DGF and poor graft and patient survival. Whether CaOxD in the allograft contributes to poor outcomes through DGF or other mechanisms is a possibility that could be tested in trials involving oxalate lowering therapies prior to Tx.



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Palsson R et al. J Am Soc Nephrol 28, 2017:356.