TRANSPLANTATION

Pretransplantation serum phosphorus level: association with mortality and graft survival

High pretransplantation levels of serum phosphorus are associated with adverse outcomes in kidney transplant recipients, according to new findings. The research team led by Kamyar Kalantar-Zadeh found that pretransplantation serum phosphorus levels ≥ 2.4 mmol/l were associated with an increased risk of functional graft loss and levels ≥ 3.1 mmol/l were associated with increased risks of all-cause and cardiovascular death.

“...recipients with pretransplantation phosphorus levels ≥ 3.1 mmol/l had a 2.4-fold higher risk of all-cause death...”

To investigate the relationship between pretransplantation phosphorus levels and post-transplantation outcomes, Sampaio

et al. retrospectively divided a cohort of 9,384 primary transplant recipients into five categories based on serum phosphate level.

After adjustment for case-mix, malnutrition–inflammation–complex syndrome and transplant-related variables, recipients with pretransplantation phosphorus levels ≥ 3.1 mmol/l had a 2.4-fold higher risk of all-cause death and a 3.6-fold higher risk of cardiovascular death than recipients with pretransplantation phosphorus levels of 1.1 to <1.8 mmol/l. Although an association between risk of death and pretransplantation phosphorus levels <1.1 mmol/l was identified in an unadjusted model, this association was not significant after adjustment.

Transplant recipients with pretransplantation phosphorus levels of 2.4 to <3.1 mmol/l had a 1.4-fold increased risk of graft failure compared with patients

with pretransplantation phosphorus levels of 1.1 to <1.8 mmol/l, while recipients with a pretransplantation phosphorus level >3.1 mmol/l had a 2.4-fold increased risk.

Sampaio *et al.* say that the association of phosphorus levels >2.4 mmol/l with graft loss but not with mortality indicates that relatively lower levels of phosphorus before transplantation may be more closely associated with graft function than with survival. They acknowledge that further studies are required to determine whether more aggressive control of phosphorus may improve post-transplantation outcomes.

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Original article Sampaio, M. S. *et al.* Association of pretransplant serum phosphorus with posttransplant outcomes. *Clin. J. Am. Soc. Nephrol.* doi:10.2215/CJN.06190611