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Creatinine-Cystatin C Ratio and Death with a Functioning Graft in Kidney Transplant Recipients

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Introduction: Given that the number of elderly kidney transplant recipients with multiple comorbidities continues to rise, death with a functioning graft is becoming an increasingly common and important issue. However, little research has focused on death with a functioning graft, an important cause of overall graft loss. Therefore, clinical parameters to reliably identify patients at higher risk of death with a functioning graft are urgently required.

Methods: In this study, we evaluated the association between post-transplant creatinine-cystatin C ratio and death with a functioning graft in 1592 kidney transplant recipients. We divided the patients into tertiles based on sex-specific creatinine-cystatin C ratio.

Results: Among the 1592 recipients, 39.5% were female, and 86.1% underwent living-donor kidney transplantation. The cut-off value for the lowest creatinine-cystatin C ratio tertile was 0.86 in males and 0.73 in females. The lowest tertile had a significantly lower 5-year patient survival rate and was independently associated with death with a functioning graft (adjusted hazard ratio 2.574, 95% confidence interval 1.339-4.950, $P < 0.001$). Infection was the most common cause of death in the lowest tertile group, accounting for 62% of deaths.

Conclusion: A low creatinine-cystatin C ratio was significantly associated with an increased risk of death with a functioning graft after kidney transplantation, and the creatinine-cystatin C ratio can be used as a clinical parameter to predict death with a functioning graft.