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Variability of eGFR and allograft outcome

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Renal function in the first year after kidney transplantation (KT) can predict long-term renal graft survival. we investigated whether estimated glomerular filtration rate (eGFR) variability during the first year after KT is a risk factor for poor renal allograft outcomes. This retrospective cohort study included 3077 patients who underwent repeated eGFR measurements for 1 year after KT at Severance Hospital Transplantation Center between 1979 and 2012. The eGFR variability during the first year after KT was the predictor. The patients were divided into four quartile groups of eGFR variability according to the coefficient of variation for eGFR (eGFR-CV). We selected a cutoff of eGFR-CV for graft failure and performed the sensitivity analyses. The graft outcome was worse in the highest quartile group of eGFR variability than in the other groups among all patients (Q4: HR 1.631, 95% CI 1.278-2.081; $p < 0.0001$) and among patients without AR (Q4: HR 1.425, 95% CI 1.024-1.982; $p = 0.0358$) after adjusting for eGFR at 1 year after KT and other covariates. Additionally, all-cause mortality was higher in this highest quartile group than in the other groups among all patients but not among patients without AR. Higher eGFR-CVs than the cutoff were significantly associated with a high risk of graft failure among all patients (HR 1.670, 95% CI 1.395-2.000; $p < 0.0001$) and among patients without AR (HR 1.899, 95% CI 1.457-2.477; $p < 0.0001$) after fully adjusting for covariates. For all-cause mortality, a higher eGFR-CV was an independent risk factor among all patients but not among patients without AR after adjusting for covariates. eGFR variability in the first year after KT is an independent risk factor for poor renal allograft outcomes.