

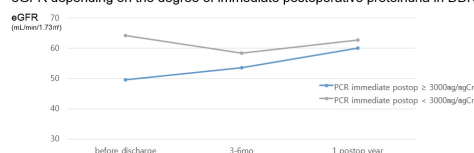
# Postoperative proteinuria in predicting early renal outcome in kidney transplant recipients

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**Background/Aims:** Proteinuria in kidney transplant recipients (KTRs) is associated with poor patient and allograft survival. However, the relationship between urinary protein to creatinine ratio (uPCR) or urinary albumin to creatinine ratio (uACR) during the immediate postoperative period and renal outcome of KTRs is yet to be determined. **Methods:** This single center retrospective cohort study included 474 KTRs who underwent kidney transplantation (KT) from January 2014 to December 2017 and were followed up for  $\geq 1$  year. After excluding patients without urine PCR and ACR within 7 days after KT and those without serum creatinine at 1 year after KT, a total of 353 KTRs were finally analyzed: 186 received living donor KT and 167 received deceased donor KT (DDKT). Immediate postoperative uPCR and uACR were measured within postoperative day 7. The primary outcome was estimated glomerular filtration rate (eGFR) at 1 year after KT. The secondary outcome was the incidence of delayed graft function (DGF) in DDKT recipients. **Results:** Patients with higher eGFR ( $\geq 60$  mL/min/1.73 m<sup>2</sup>) at 1 year after KT had lower uPCR (patients with  $\geq 60$  mL/min/1.73 m<sup>2</sup> vs. those with  $< 60$  mL/min/1.73 m<sup>2</sup>, median 810 ug/mgCr [IQR 480 - 1650] vs. median 1075 ug/mgCr [IQR 567 - 3227];  $p=0.014$ ) and lower uACR (median 338 ug/mgCr [IQR 157 - 922] vs. median 584 ug/mgCr [IQR 229 - 2013];  $p=0.005$ ) during the immediate postoperative period than those with lower eGFR. DDKT recipients with uPCR  $\geq 3$  mg/mgCr during the immediate postoperative period were associated with a higher incidence of DGF (DDKT recipients with uPCR  $\geq 3$  mg/mgCr vs. those with uPCR  $< 3$  mg/mgCr, 30% vs. 13% [odds ratio 2.87];  $p=0.007$ ), and lower eGFR before discharge (49.6 mL/min/1.73 m<sup>2</sup> [IQR 35.8 - 66.5] vs. 64.2 mL/min/1.73 m<sup>2</sup> [49.7 - 85.4];  $p=0.001$ ) than those with uPCR  $< 3$  mg/mgCr. **Conclusions:** Our results suggest immediate postoperative uPCR as a potential predictor of early renal outcome in KTRs.

eGFR depending on the degree of immediate postoperative proteinuria in DDKT recipients



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	PCR immediate postop $\geq 3000$ ug/mgCr (n = 67)	PCR immediate postop $< 3000$ ug/mgCr (n = 100)	p-value
Delayed graft function (DGF*), n (%)	20 (30%)	13 (13%)	0.007
eGFR, before discharge, median (IQR)	49.6 (35.8, 66.5)	64.2 (49.7, 85.4)	0.001
eGFR, 3-6mo, median (IQR)	52.6 (41.5, 67.7)	58.5 (45.5, 68.2)	0.375
eGFR, PostOP 1YR, median (IQR)	60.0 (46.3, 73.4)	62.8 (48.0, 74.7)	0.744

\* DGF : an event in which renal replacement therapy was required within 7 days after transplantation.