Impact of dialysis modality on long-term outcomes in kidney transplantation recipients: a propensity-matched cohort study

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Background: Kidney transplantation (KT) is the ideal therapy for patients with end stage renal disease. However, pre-emptive KT is not always possible, most patients undergo peritoneal dialysis (PD) or hemodialysis (HD) while awaiting KT. Previous studies analyzing the impact of pre-transplant dialysis modality on patient and graft survival were conflicting and follow-up period is not sufficient. We evaluated the relationship of pre-transplant dialysis modality with long-term clinical outcomes by using propensity score matching method.

Methods: We conducted a retrospective cohort study of 590 patients who underwent KT at Keimyung University Dongsan Medical Center from 2003 to 2016. Of the 590 KT recipients, we excluded pre-emptive KT, second or third KT and 470 recipients were analyzed.

Results: Among 470 KT recipients, 95 recipients (20.2%) were treated with PD before KT. After using propensity score matching method, 93 recipients were included in each group. The mean follow-up duration was 98.6 ± 47.3 months. In the entire cohort, PD group had lower creatinine level at 3 years after KT than HD group ($P=0.030$). However, there was no significant differences between two groups after matching ($P=0.055$). Delayed graft function ($P=0.662$) and biopsy proven acute rejection within 1 year after KT ($P=0.445$) were comparable between the groups. Ten-year patient survival rates ($P=0.521$) and 10-year death-censored graft survival rates ($P=0.407$) were similar between two group. In Cox proportional hazard model, pre-transplant dialysis modality was not an independent risk factor for the patient mortality, graft failure, and death-censored graft failure.

Conclusions: Pre-transplant dialysis modality of PD or HD did not influence on the long-term patient and graft survival after KT. Moreover, short-term complications were similar between two groups.

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