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Influence of dialysis vintage on post-transplant clinical outcomes: a single center study

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Objectives: Dialysis vintage is associated with patient mortality after kidney transplantation (KT) because patients with longer duration of dialysis has high cardiovascular mortality. However, the association between dialysis vintage prior KT and graft survival is less clear.

Methods: We retrospectively analyzed the medical records of 1,330 patients performed KT at Keimyung university Dongsan hospital between 1982 and 2019. We divided them into the three groups according to the dialysis vintage prior KT as follows; KTRs underwent dialysis within 1 month (G1); between 1 month and 12 months (G2); over 12 months (G3). We investigated baseline characteristics, the incidence of delayed graft function (DGF), biopsy-proven acute rejection (BPAR) within 12 months, the risk factors associated with allograft failure, graft survivals among the three groups.

Results: Mean follow-up duration was 182.2 ± 120.6 months. There were no significant differences of mean age of recipient and donor, the rate of gender, HLA mismatched number, the cause of end-stage renal disease, immunosuppressant, and preformed DSA among the three groups. The incidence of DGF was the highest in the G3 group compared to other groups (12.9% vs. 4.6% vs. 2.0%, P<0.001), but there was no significant difference of the incidence of BPAR within 12 months among three groups. Death-censored graft survival rate was the lowest in the G2 group compared to other groups (P<0.001). BPAR, serum creatinine levels at 12 months, and development of *de novo* DSA were independent risk factors for allograft failure (HR 4.42, 95% C.I. 1.70-11.47, P=0.002; HR 4.34, 95% C.I. 2.30-8.19, P<0.001; HR 3.95, 95% C.I. 1.57-9.95, P=0.006, respectively).

Conclusions: Patients with dialysis for 1 to 12 months showed the worst allograft survival rate. Careful attention should be paid to the change of allograft function and the development of acute rejection in the early period after KT and careful monitoring of *de novo* DSA.