

## Comparison of the Impact of High-flux Dialysis on Mortality in Hemodialysis Patients with and without Residual Renal Function

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**Background:** The effect of flux membranes on mortality in hemodialysis (HD) patients is controversial. Residual renal function (RRF) has shown to not only be as a predictor of mortality but also a contributor to  $\beta$ 2-microglobulin clearance in HD patients. Our study aimed to determine the interaction of residual renal function with dialyzer membrane flux on mortality in HD patients.

**Methods:** HD Patients were included from the Clinical Research Center registry for End Stage Renal Disease, a prospective observational cohort study in Korea. Cox proportional hazards regression models were used to study the association between use of high-flux dialysis membranes and all-cause mortality with RRF and without RRF. The primary outcome was all-cause mortality.

**Results:** This study included 893 patients with 24h-residual urine volume  $\geq 100$  mL (569 and 324 dialyzed using low-flux and high-flux dialysis membranes, respectively) and 913 patients with 24h-residual urine volume  $<100$  mL (570 and 343 dialyzed using low-flux and high-flux dialysis membranes, respectively). After a median follow-up period of 31 months, mortality was not significantly different between the high and low-flux groups in patients with 24h-residual urine volume  $\geq 100$  mL (HR 0.86, 95% CI, 0.38-1.95,  $p=0.723$ ). In patients with 24h-residual urine volume  $<100$  mL, HD using high-flux dialysis membrane was associated with decreased mortality compared to HD using low-flux dialysis membrane in multivariate analysis (HR 0.40, 95% CI, 0.21-0.78,  $p=0.007$ ).

**Conclusions:** Our data showed that HD using high-flux dialysis membranes had a survival benefit in patients with 24h-residual urine volume  $<100$  mL, but not in patients with 24h-residual urine volume  $\geq 100$  mL. These findings suggest that high-flux dialysis rather than low-flux dialysis might be considered in HD patients without RRF.

**Key Words:** Hemodialysis,  $\beta$ 2-microglobulin,  $\beta$ 2-microglobulin, Hemodialysis, Mortality