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The Impact of Residual Renal Function on Mortality in Patients with End-Stage Renal Disease

Yong Kyun Kim[1], Su-Hyun Kim[2], Young Ok Kim[1], Bum Soon Choi[1]
Dong Chan Jin[1], Ho Chul Song[1], Yong-Soo Kim[1], Euy Jin Choi[1]
Yong-Lim Kim[3], Yon-Su Kim[4], Shin-Wook Kang[5], Nam-Ho Kim[6], Chul Woo Yang[1]

Department of Internal Medicine[1] College of Medicine The Catholic University of Korea
Department of Internal Medicine[2] College of Medicine Chung-Ang University
Department of Internal Medicine[3] School of Medicine Kyungpook National University
Department of Internal Medicine[4] College of Medicine Seoul National University
Department of Internal Medicine[5] College of Medicine Yonsei University
Department of Internal Medicine[6] Chonnam National University Medical School
Clinical Research Center for End Stage Renal Disease (CRC for ESRD) investigators

Background: Residual renal function (RRF) has been shown to be a independent predictor of mortality, especially in peritoneal dialysis. The aim of this study is to determine the impact of RRF on mortality in Korean patients with end-stage renal disease on chronic hemodialysis and peritoneal dialysis.

Methods: This study was a multicenter prospective cohort study of 2,231 end-stage renal disease (ESRD) patients on chronic hemodialysis and peritoneal dialysis. Residual renal function was defined as (urea clearance+creatinine clearance)/2 derived from 24-hour urinary volumes.

Results: RRF was preserved in 479 (21.5%) patient. RRF was more preserved in patients with peritoneal dialysis compared to those with hemodialysis (59.7% vs 40.3%, $p<0.001$). During the median follow-up period of 16 months, 76 patients died. The Kaplan-Meier plot showed a decreased mortality in patients with RRF compared to patents without RRF (log rank, $p=0.013$). The Cox proportional hazard models showed that RRF was significant independent predictor of mortality after adjustment for age and gender (HR 0.598, 95% CI, 0.369-0.969, $p=0.037$).

Conclusion: RRF is associated with decreased mortality in patients with end-stage renal disease on chronic hemodialysis and peritoneal dialysis.

Key Words: Hoemodialysis, Peritoneal dialysis, Mortality