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Incremental Peritoneal Dialysis is Beneficial in Preserving Residual Renal Function, Compared to Full-dose Peritoneal Dialysis

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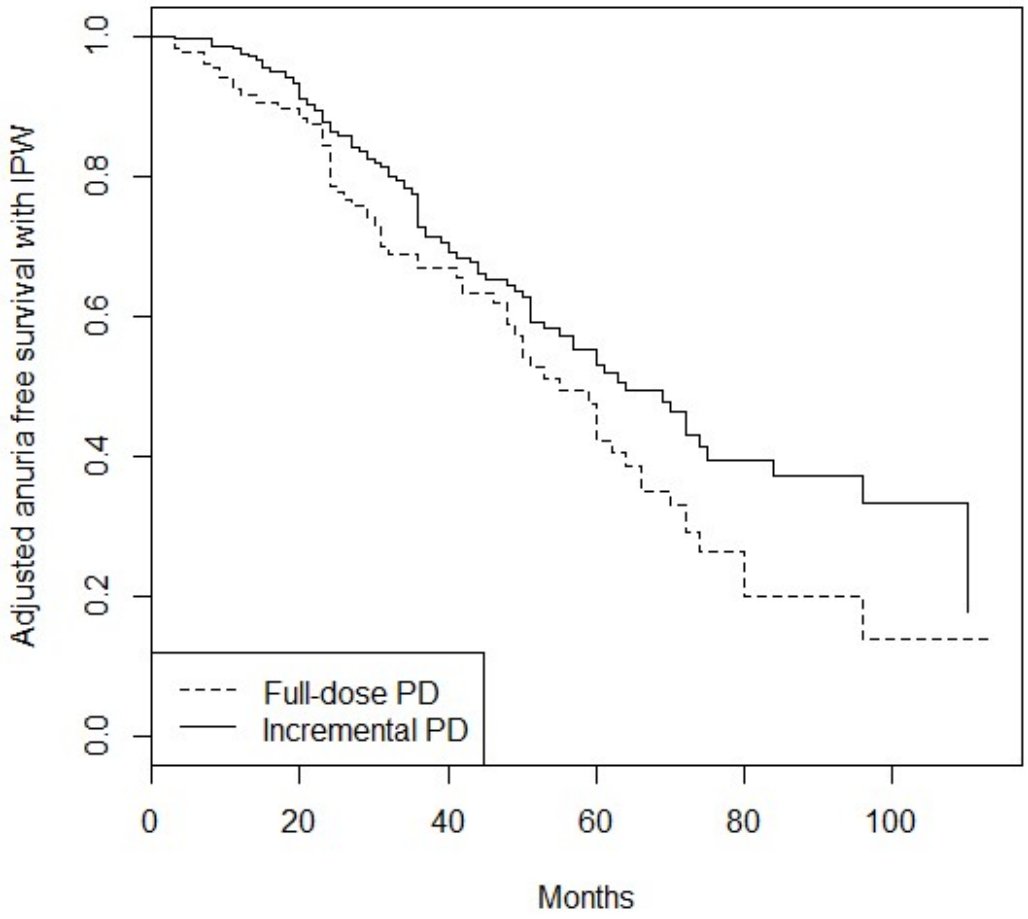
Objectives: Maintaining residual renal function is a crucial issue in peritoneal dialysis (PD). Incremental dialysis is the practice of initiating PD exchanges less than four times a day in consideration of residual renal function (RRF), and increasing dialysis dose step-wisely as the RRF decreases. Effects of incremental PD on the RRF and technique survival have not been widely studied yet. The aim of this study was to compare the outcomes of incremental PD and full-dose PD in terms of RRF preservation and other outcomes.

Methods: Data were extracted from a retrospective PD cohort who started PD between 2007 and 2015 in the PD Unit of Seoul National University Hospital. We used propensity scores matching and inverse probability weighting (IPW) adjustment to balance covariates between incremental and full-dose PD groups. Multivariate time-dependent Cox analyses were performed. $P<0.05$ was considered statistically significant.

Results: Among patients older than 16 years who started PD since 2007, 277 underwent incremental peritoneal dialysis and 132 underwent conventional full-dose PD. After propensity-score matching, Incremental PD group exhibited a lower risk of developing anuria (HR 0.99; 95% CI, 0.983 to 0.998). Patient survival, technical survival and peritonitis free survival was similar (Log rank test, $P>0.05$).

Conclusions: In this observational study, incremental PD was beneficial for preserving residual renal function compared to conventional full-dose PD and showed similar patient survival.

Figure. Rate of anuria free survival between incremental and full-dose PD groups, from an analysis adjusted with the use of inverse probability weighting


Adjusted anuria free survival with IPW
0.0
0.2
0.4
0.6
0.8
1.0
0
20
40
60
80
100
Months
Full-dose PD
Incremental PD