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The peritonitis, hospitalization and mortality rate in patients starting with incremental peritoneal dialysis: a propensity score matching study

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Objectives:

Incremental peritoneal dialysis (iPD) can be useful in selected patients with higher residual renal function, needing lower financial cost, or wanting less time burden of PD treatment. In addition, patients on iPD would have a reduced risk of peritonitis or peritoneal glucose exposure. However, the long-term effects of iPD on patient survival and PD survival are not clear compared to conventional PD (cPD). The aim of this study to evaluate the patient survival and PD survival in iPD compared to cPD.

Methods: Clinical data was retrospectively collected from a single center between January 2007 and December 2018. We included 303 patients percutaneously inserted PD catheter by surgical methods. An analysis was performed using propensity score matching for age, gender, and the presence of DM. Finally, 96 cPD patients and 48 iPD patients were included. Incremental PD was defined as starting PD with 3 or fewer peritoneal exchanges per day.

Results: Median duration of iPD was 51.5±25.8 months and mean PD duration of iPD was longer than cPD. Initial blood urea nitrogen and serum creatinine levels (7.3±2.7 vs. 9.7±3.7 mg/dL, $p < 0.001$) were significantly lower in iPD patients than cPD patients. Mortality as well as rates of peritonitis and hospitalization was significantly lower in patients with iPD than those with cPD PD (log-rank, $p=0.034$, $p=0.001$ and $p=0.023$). Mortality and hospitalization rate were prominent in iPD patients with diabetes. However, there was no significant difference in PD survival between iPD and cPD.

Conclusions: Incremental PD may be not only safe PD modality but also has better clinical outcome in less uremic patients to initiate and maintain PD. Further prospective studies are necessary to confirm these benefits in diabetic patients treated with PD.