Clinical outcomes after renal replacement therapy in heart failure patients with cardiorenal syndrome and refractory congestion: a comparison between peritoneal dialysis and hemodialysis

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Topic(s):
Chronic Heart Failure: Multidisciplinary Interventions

Citation:

Introduction: Patients with advanced heart failure (HF) frequently present worsening renal function known as cardiorenal syndrome that may participate in causing refractory congestion and repeated hospitalisations. Even though the use of renal replacement therapy (RRT) has already been described in this clinical scenario, there is no previous comparison of the outcomes between different ambulatory methods of dialysis in those patients.

Purpose: Compare the main outcomes between 2 dialysis methods, namely peritoneal dialysis (PD) and hemodialysis (HD), in patients with advanced heart failure with reduced ejection fraction (HFrEF) associated with cardiorenal syndrome and refractory congestion.

Methods: This is a retrospective study, based on the review of medical records of 22 consecutive patients with advanced HFrEF (persistent functional class IV, under optimized medical therapy) with refractory congestion and repeated hospitalisation within 6-months or single hospitalisation with refractory congestive status, associated with cardiorenal syndrome, in which RRT was indicated (PD or HD), aiming at clinical compensation and decrease in subsequent hospitalisation rate. Patients with prior chronic renal disease progressing to heart failure or systemic diseases leading to both cardiac and renal failure (type 5 cardio-renal syndrome) were excluded.

Results: Despite all patients were initially considered for PD, only 11 patients were effectively submitted to PD at long term (n=11; 65±9-year-old, 54% male, left ventricular ejection fraction=27±14%) and 11 patients eventually underwent HD (67±10-year-old, 73% male, left ventricular ejection fraction=25±6%). The reasons leading to indication of HD were: urgent clinical situation (n=4), lack of social conditions for installation of PD (n=1), contraindication of PD by nephrologist (n=1), patient refusal of PD (n=2), patient non-adaptation to the PD method (n=1), ineffective PD (n=1) and repeated peritonitis episodes (n=1). We observed a significant reduction in the number of heart failure hospitalisations between the 12-months previous to the RRT (total number=32; mean hospitalisations per patient=1.38 [range = 6.0 - 0.0]) and the 12-months follow-up after the start of RRT (total number=5; mean hospitalisations per patient=0.09 [range = 1.0 - 0.0]), p = 0.0024. At 12-months after start of the RRT a higher proportion of patients were alive in the PD group (n=9; 82%) as compared to the HD group (n=3; 27%), p = 0.03. There were only 4 hospitalisations for peritonitis in the peritoneal dialysis group within 12-months of RRT.

Conclusions: The use of RRT in patients with HFrEF and refractory congestion due to cardiorenal syndrome is associated to reduction of HF hospitalisations. PD seems to be the preferential dialysis method, as it presents a higher survival rate as compared to HD. Larger studies are needed to confirm the results of this small retrospective study.