

Sustained low-efficiency dialysis versus continuous venovenous hemofiltration for acute renal failure

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ABSTRACT

Objective: In post-surgical acute renal failure (ARF) patients with unstable hemodynamics or fluid overload, the choice of dialysis modality is difficult. This study was to compare the outcomes between the sustained slow-efficiency dialysis (SLED) and continuous veno-venous hemofiltration (CVVH) on these patients.

Design: Retrospective analysis of the recorded data from a clinical database.

Setting: Surgical intensive care unit of a university hospital.

Patients: Sequential post-operative ARF patients undergoing acute dialysis with CVVH (2002-2003), or SLED (2004-2005) due to severe fluid overload or unstable hemodynamics.

Interventions: Among the 101 recruited patients (35 women, 67.4 ± 14.9 years old), 38 received SLED and the rest received CVVH.

Measurements and Main Results: The 30-day after hospital discharge (AHD) mortality was 62.4%. Demographics and the observed variables at the initialization of the acute dialysis and on the sequential 3 days after the acute dialysis were included in a logistic regression analysis for predicting the 30-day AHD mortality. The independent risk factors of 30-day AHD mortality included older age ($p = 0.008$), lower first post-dialysis mean arterial pressure (MAP) ($p = 0.021$), higher first post-dialysis blood urine nitrogen (BUN) level ($p = 0.009$), and absence of the history of hypertension ($p = 0.002$). A further linear regression analysis found that dialysis using SLED associated with higher first post-dialysis MAP ($p = 0.003$)

Conclusions: Among the post-operative patients requiring acute dialysis due to severe fluid overload or unstable hemodynamics the patients treated with SLED had higher first post-dialysis MAP than those treated with CVVH, and thus they had lower 30-day AHD mortality. Further large multicenter randomized clinical trials are needed to assess the benefits of SLED and its hemodynamic impact.