

# 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,  $67.4 \pm 14.9$  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.