

Abstract Submission No. : 2199

Continuous renal replacement therapy as salvage therapy for critically ill patients with kidney failure with replacement therapy.

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Objectives:

Continuous renal replacement therapy (CRRT) is commonly used for acute kidney injury refractory to medical treatments. In kidney failure with replacement therapy (KFR), CRRT could be used as extension of maintenance dialysis in many cases and the role of CRRT in KFR is ambiguous.

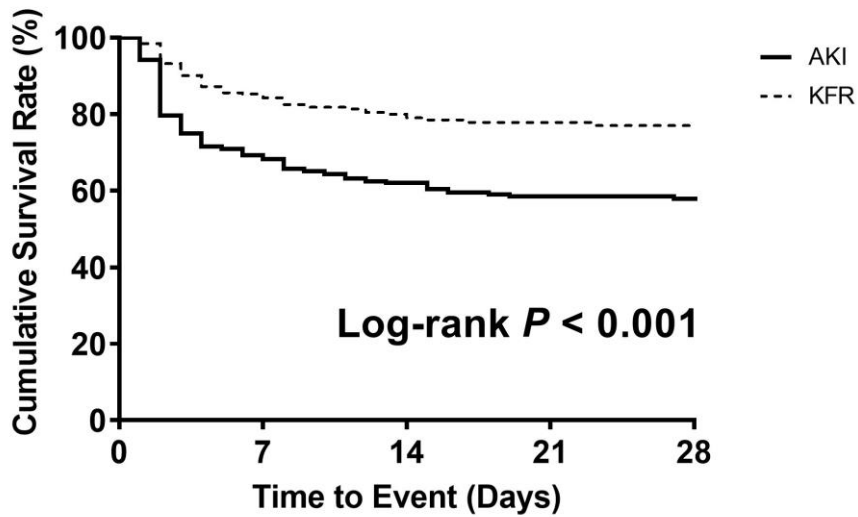
Methods: We conducted retrospective and comparative analysis in age- and sex-matched patients with acute kidney injury (AKI) (n=326) and KFR (n=326) who received CRRT from march 2013 to December 2020. Patients who was diagnosed with malignancy were excluded. We compared the the 28-day mortality after initiation of CRRT between two groups and evaluated prognostic factors associated with mortality.

Results: The 28-day mortality after initiation of CRRT was higher in AKI group compared with those in KFR group, (39.6% vs. 20.2%, $P < 0.001$). The indications of CRRT in KFR group were volume overload, hyperkalemia, metabolic acidosis, septic shock, acute brain injury, toxin removal. The prognostic factors for mortality were arterial pH (HR: 0.056, 95% CI: 0.02-0.19), cerebrovascular accident (HR 0.537, 95% CI: 0.30-0.98), total protein (HR: 0.785, 95% CI: 0.65-0.94) in AKI group. Whereas in KFR group, brain injury & trauma (OR: 2.033, 95% CI: 1.03-4.00), arterial pH (HR: 0.020, 95% CI: 0.00-0.16), prothrombin time international normalized ratio (HR: 1.233, 95% CI: 1.02-1.49), red cell distribution width-coefficient of variance (RDW-CV) (HR: 1.187, 95% CI: 1.05-1.34).

Conclusions: Despite the high mortality rate of disease itself of kidney failure, CRRT may be helpful management option as a salvage therapy in critically ill patients with KFR.

Figure 1 Kaplan-meier curve for 28-day mortality during CRRT.

Figure 1 Kaplan-meier curve for 28-day mortality during CRRT



Kaplan-meier curves for 28-day mortality of patients who underwent continuous renal replacement therapy between AKI and KFR. Survival differences was observed between two groups.

Death was observed about 39.6% in AKI, 20.2% in KFR group.

Median survival duration was in 12.0 (3.0, 29.0) AKI, 13.0 (7.0, 24.0) in KFR.

Log rank between two group, <0.001.

AKI; acute kidney injury, KFR; kidney failure with replacement therapy