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Mortality of elderly patients with acute kidney injury undergoing continuous renal replacement therapy; is age a risk factor?

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Objectives: The incidence of elderly patients with acute kidney injury (AKI) requiring continuous renal replacement therapy (CRRT) is increasing. There is little evidence on the difference of mortality rates according to age in elderly patients. This study aimed to evaluate the age effect and predictors for mortality in elderly patients with AKI requiring CRRT.

Methods:

A retrospective analysis was performed in elderly patients with AKI who underwent CRRT. A total of 480 patients aged ≥ 65 years were stratified into three groups according to age: youngest-old (age 65-74 years, $n=205$), middle-old (age 75-84 years, $n=217$), and oldest-old (age ≥ 85 years, $n=58$). The 28-day and 90-day survival rates were compared between three groups and predictors for mortality were analysed.

Results: The 28-day and 90-day survival rates were not different between three age groups ($P=0.156$ and $P=0.189$, respectively). The oldest-old group did not show an inferior survival rate to other two groups. For 28-day mortality, prothrombin time [hazard ratio (HR) = 1.37, 95% confidence interval (CI) = 1.01 – 1.88, $P=0.046$] and urine output at the start of CRRT (HR = 0.999, 95% CI = 0.998 – 1.000, $P=0.012$) and CRRT duration (HR = 0.89, 95% CI = 0.83 – 0.95, $P=0.001$) were predictors. For 90-day mortality, mean arterial pressure (HR = 1.02, 95% CI = 1.00 – 1.05, $P=0.019$), admission duration (HR = 0.97, 95% CI = 0.95 – 0.99, $P<0.001$) and CRRT duration (HR = 0.96, 95% CI = 0.91 – 0.99, $P=0.036$) were predictors. The middle-old group or the oldest-old group did not exhibit higher risk compared to the youngest-old group for 28-day and 90-day mortality.

Conclusions: An older age was not a risk factor for mortality in elderly patients with AKI undergoing CRRT. This implicates the importance of active management and application of CRRT in critically ill elderly patients with AKI.