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Acute Kidney Injury

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Short and long term outcomes of acute kidney injury in the elderly patients undergoing continuous renal replacement therapy

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Background: The incidence of acute kidney injury (AKI) is increasing. Despite advances in the continuous renal replacement therapy (CRRT), the outcomes of AKI requiring RRT remain poor, and the mortality rate of elderly AKI patients aged more than 65 years is reported especially higher than the younger patients. Thus, for the fear of worse treatment outcomes, the initiation of CRRT application is often hesitated in patients aged more than 65 years. In this study, we investigated short- and long-term mortality of CRRT in the elderly patients treated in the intensive care unit (ICU).
Methods: This is a single-center, retrospective cohort study that underwent CRRT in the ICU from January 2013 to December 2015. Patients were divided into four age cohorts: the middle aged (55-64), the young old (65-74), the old (75-84), and the oldest old (≥85) cohort. We collected demographic features, comorbidities, disease severities, treatment histories, in-hospital mortality (short-term mortality) and all-cause mortality after discharge (long-term mortality). Short- and long-term mortality rate in each age cohort were compared, and cox regression analysis was performed to find out independent factors for the prediction of short- and long-term mortality.
Results: A total of 562 patients met the inclusion criteria: the middle aged, 151; the young old, 229; the old, 162; and the oldest old, 20. The short-term mortality rate was 57.1% in the entire cohort. In the cox regression analysis, when compared to the middle aged cohort, only the oldest old aged cohort showed the increased short-term mortality (OR 2.08 (1.07-4.06), p=0.004) along with the increased SOFA score (OR 1.12 (1.08-1.16), p<0.001), lower serum albumin level (OR 0.78 (0.63-0.97), p=0.023) and lower serum creatinine level (OR 0.89 (0.83-0.95), p=0.001). When we further analyzed the long-term mortality rate in the survived 239 patients, 33.8% of the patients were dead during the median follow up period of 282 days. In the cox regression analysis, the old aged cohort was an independent risk factor (OR 2.98 (1.38-6.45), p=0.005) along with the lower BMI (OR 0.88 (0.81-0.95), p=0.001) for the prediction of long term mortality.
Conclusion: When compared to the middle aged cohort, the short-term mortality rate was increased in the oldest old aged cohort and, the long-term mortality rate was increased in the old aged cohort. However, in the young old cohort, neither the short-term nor the long-term mortality rate was increased. Thus, the initiation of

RRT application should not be hesitated in the patients aged between 65 and 74 along with their younger counterparts.

Keywords: continuous renal replacement therapy, elderly patient