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Renal Replacement Therapy in Patients With Sepsis-Associated AKI

Acute kidney injury (AKI) is a serious complication of sepsis. According to data from several clinical studies, AKI can occur in nearly 50% of patients with sepsis and has a mortality rate of approximately 60% at three months.

Renal replacement therapy (RRT) is used to treat AKI, but some data show that it exerts only a limited effect in patients with sepsis-associated AKI (SA-AKI). Additional studies suggest early RRT could be an independent risk factor in these patients. RRT use in patients with SA-AKI has also been linked to high mortality and morbidity.

In a new study, the researchers compare the outcomes of different RRT strategies for patients with SA-AKI. The parameters that were evaluated include mortality, renal recovery and systemic organ function at 90 days after admission between the RRT group, the non-RRT group, the early-RRT group and the delayed RRT group.

One hundred and sixteen patients admitted to the hospital with sepsis were included in the study. Patients were defined according to the time from admission to RRT initiation and Kidney Disease Improving Global Outcomes classification. The two primary endpoints of the study were 90-day renal recovery and 90-day death. Secondary endpoints included mechanical ventilation and shock. The researchers also analysed changes in the SCr and urea nitrogen levels and alterations in the SOFA scores between patient admission and discharge. They used the SOFA score at discharge and the ΔSOFA (maximum-minimum) and ΔSOFA (admission–discharge) as the primary endpoint to determine organ recovery in living patients.

Thirty-eight study participants received RRT, and 46 died within 90 days. Findings from the study show no significant differences in mortality and renal recovery among the different RRT groups. However, the SOFA score in the early RRT group and the RRT group was higher compared to patients in the non-RRT group. In addition, the 90-day renal recovery was better in the early RRT compared to the delayed RRT group.

These findings suggest that while renal replacement therapy did not reduce mortality among patients with SA-AKI, its timely use may be beneficial for restoring systemic organ function in these patients, thus improving their quality of life.

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