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More intensive dialysis does not improve outcomes among patients with acute kidney injury

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No significant difference in death rates or other outcomes was found between a group of patients with acute kidney injury that received intensive dialysis and another group that received a more standard regimen of dialysis, according to a joint Department of Veterans Affairs (VA) and National Institutes of Health (NIH) study published in the June issue of the *New England Journal of Medicine*. Acute kidney injury, also called acute renal failure, is a common complication in hospitalized patients that is associated with very high mortality rates. In-hospital mortality rates of critically-ill patients typically range from 50 percent to 80 percent.

Several prior single-center studies in patients with acute kidney injury had suggested improved survival with more intensive dialysis, which is significantly more costly to administer. "We now have definitive evidence that intensive treatment of acute kidney injury is no more beneficial in improving treatment outcomes than the usual level of care," said NIH Director Elias A. Zerhouni, M.D. "As a result, the findings of this well-designed study may help prevent unnecessary medical expenditures."

Within 60 days after starting dialysis, 302 patients (53.6 percent) in the intensive treatment group died compared to 289 patients (51.5 percent) in the less-intensive treatment group. Also, the study reports no significant differences between the two groups in recovery of kidney

function, the rate of failure of organs other than kidneys, or the number of patients able to return to their prior living situations.

No medications have been found to be effective in treating acute kidney injury, so doctors use hemodialysis and other forms of renal-replacement therapy to support patients whose kidneys do not function properly. Hemodialysis uses a machine to clean waste and extra fluid from the blood when the kidneys can't do the job.

In this study, doctors provided renal-replacement therapy to both patient groups. Patients who did not require medications to maintain their blood pressure were treated with conventional dialysis, either three times per week in the less-intensive arm of the study or six times per week in the intensive arm.

Patients who were unstable and required medications to increase their blood pressure were treated with more gentle forms of dialysis, either a slower form of hemodialysis called SLED or a continuous form at a lower or higher dose as randomly assigned. Patients were able to switch between forms of therapy as their clinical condition changed, while remaining within the lower or higher intensity treatment arms of the study.

"The main purpose of this study was to see if intensive therapy would reduce the death rate, shorten the duration of the illness, and decrease the number of new complications in other organs among patients with acute kidney injury," said co-author Robert A. Star, M.D., director of NIDDK's Division of Kidney, Urologic and Hematologic Diseases. "Though this was found not to be the case, it is important that we know this so we can focus future research on finding more beneficial treatment strategies."

"Unlike earlier studies that used only a single method of therapy, our use

of an integrated strategy of continuous and intermittent methods of therapy allows us to apply these study results more readily to clinical practice," explained study chair Paul M. Palevsky, M.D., chief of the Renal Section at the VA Pittsburgh Healthcare System and a professor of medicine at the University of Pittsburgh School of Medicine. "What is important about these results is that they outline the limits of effective therapy."

Source: NIH

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