Starting dialysis earlier may be harmful for some patients

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Beginning dialysis therapy earlier in the development of advanced kidney disease appears to be associated with a greater risk of death for some patients in the following year, according to a report posted online today that will be published in the March 14 print issue of *Archives of Internal Medicine*.

Dialysis—a procedure in which a machine performs the blood-filtering functions of the kidneys—should help patients with advanced kidney disease live longer, reduce their illness burden and improve their quality of life, according to background information in the article. "The appropriate timing for initiating hemodialysis relative to estimated levels of residual renal function is an important, but as yet unresolved, question having considerable patient outcome and financial consequences," the authors write. Since 1996, more U.S. patients have begun dialysis early as indicated by their estimated glomerular filtration rate (eGFR, a measure of kidney function).

Steven J. Rosansky, M.D., of Wm. Jennings Bryan Dorn Veterans Hospital and the University of South Carolina, Columbia, and colleagues analyzed data from 81,176 patients age 20 to 64 who began dialysis between 1996 and 2006. They assessed only patients who did not have diabetes or any other co-occurring illness besides high blood pressure.

Overall, 9.4 percent of patients died within the first year and 7.1 percent died the second year. Patients who had an early start to dialysis based on their eGFR were more likely to die in the first year than were those who

started later (20.1 percent vs. 6.8 percent).

Patients with the lowest levels of albumin—a protein made by the liver—also had an increased risk of death in the first year compared to those with the highest albumin levels (21 percent vs. 4.7 percent). Other factors associated with increased risk of death included increasing age, being black or male and having a lower body mass index (BMI), whereas having higher levels of hemoglobin (a protein in red blood cells that contains iron), being treated in a later year, being Asian and having certain types of kidney disease (polycystic kidney disease or glomerular disease) were associated with survival.

The higher death rate among those starting dialysis early "raises a concern that hemodialysis may be providing more harm than benefit," the authors write. Possible mechanisms for this harm include sudden cardiac death or recurring myocardial ischemia (cutoff of blood flow to the heart), which can lead to lasting defects in the heart's left ventricle.

"Hemodialysis is an invasive, lifelong, potentially dangerous intervention," the authors conclude. These results and those of other recent studies have failed to find benefit in early dialysis and suggest the potential of harm. "Initiation of hemodialysis should not be based on an arbitrary level of eGFR or serum creatinine level unless this measure is accompanied by definitive end-stage renal failure–related indications for hemodialysis."

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