

DIALYSIS

Survival differences in patients on dialysis—not just black and white

A study comparing the survival of black and white patients on dialysis has shown that the commonly cited belief that black patients undergoing dialysis have a survival advantage does not apply to those aged <50 years.

The incidence of end-stage renal disease (ESRD) is disproportionately higher among black individuals than white individuals. Racial disparities exist in terms of access to and quality of care, including lower rates of transplantation referral and longer dialysis vintage at referral among black patients than among their white counterparts. Despite these disparities, previous studies have reported that black patients with ESRD have better survival on dialysis than do white patients. “The long-standing belief in the field of dialysis that African Americans have better survival than Caucasians was based on numerous population-based studies that compared survival by race,” says Dorry Segev, an investigator on the new study. “However, population-based studies include all dialysis patients, the majority of whom are over the age of 65 years. So, in effect, inferences from most of these studies are driven by older adults. We hypothesized that racial differences in dialysis outcomes would vary across age groups.”

Data from 1,330,007 patients with ESRD collected by the US Renal Data System between January 1st 1995 and September 28th 2009 were included in the study. Approximately two-thirds of the study cohort were identified as Caucasian/white ($n = 922,867$) and one-third as African American/black ($n = 407,140$). All patients were observed from diagnosis of ESRD until death, kidney transplantation or the end of the study (September 28th 2009). As rates of death and transplantation are high in this population, outcomes for many patients occurred soon after the onset of ESRD; median follow-up time was 21.5 months.

Dialysis survival among black and white patients was assessed after adjustment for several factors, including sex, BMI, cause of ESRD and dialysis type. The cohort was then stratified by age, and survival among black and white patients was compared. Patients were censored at transplantation or end of study. The data were also analyzed using competing risk regression in which transplantation was treated as a competing risk and end of study as administrative censoring.

In the multivariate Cox proportional hazards model that included patients of all ages, black patients had a significantly lower risk of death as dialysis recipients than did white patients (57.1% and 63.5% mortality, respectively). However, this result was substantially modified by age. Patients aged 18–30 years had the highest disparity in risk of death, with 27.6% of black patients and 14.2% of white patients dying as dialysis recipients. Black patients aged 31–40 years and those aged 41–50 years also had significantly higher mortality than did white patients in these age groups. This risk was increased when the differential rates of transplantation for black and white patients were considered in the competing risk analysis. By contrast, black patients aged >50 years had very similar or lower mortality than did white patients of the same age. In each age group, fewer black patients received a transplant, and of those who underwent transplantation, fewer received a transplant from a live donor.

“The findings are particularly important because they could drive clinical decision making and counseling,” comments Segev. “For years, African Americans have been making decisions about renal replacement therapy based on the notion that they survive better on dialysis than Caucasians. It is no surprise then that African Americans have half the rates of kidney transplantation compared with Caucasians. Counseling and clinical decision making need to change in light of these findings.”



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In an analysis of the youngest patient group, the authors found that the marked racial disparity was associated with the fact that black patients aged 18–30 years were less likely to have private insurance, more likely to have Medicaid or no insurance, more likely to have hypertension as the primary cause of renal failure and less likely to receive erythropoietin.

“The most important question that remains is why do young African Americans do so poorly on dialysis,” says Segev. “It is difficult to separate out the various explanations, ranging from differences in the biology of the disease to differences in access to health care. Moving forward, our goal is to better understand the mechanisms causing this significant disparity, with the hope of identifying potential ways of addressing it.”

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Original article Kucirka, L. M. *et al.* Association of race and age with survival among patients undergoing dialysis. *JAMA* 306, 620–626 (2011)