PRESS RELEASE

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HOW MIGHT ELIMINATING RACE-BASED ADJUSTMENTS IN ESTIMATES OF KIDNEY FUNCTION AFFECT KIDNEY TRANSPLANT WAITLISTING?

Study reveals that such changes will attenuate racial disparities in accrual of pre-emptive waiting time.

Highlight

- New clinical equations that estimate individuals' kidney function have eliminated an adjustment for Black race. This study examined the impact of using these new race-free equations on the accumulation of waiting time for kidney transplantation before a patient needs dialysis.

Washington, DC (September 19, 2022) — Recent efforts have been working to do away with race-based algorithms in medicine—such as an adjustment for Black race in equations that estimate individuals' kidney function. New research published in *CJASN* examines the impact of using these new equations on kidney transplant waitlist access.

Assessing individuals' kidney function plays an important role in screening for and treating kidney diseases, and current methods primarily rely on estimating kidney function, what's known as a patient's estimated glomerular filtration rate (eGFR), from the serum creatinine level. Historically, eGFR equations include an adjustment for Black versus non-Black race, resulting in higher eGFR values for a Black patient compared with a non-Black patient. Recognizing that race is a social and not a biological construct, however, several healthcare institutions no longer report eGFR with an adjustment for Black race, and ASN and the National Kidney Foundation have endorsed the idea that race modifiers should not be included in equations to estimate kidney function. A new set of race-free equations to estimate GFR were published in 2021.

eGFR is the primary criterion for determining eligibility for registration on the kidney transplant waitlist in patients not yet treated with dialysis—called preemptive waitlisting. Preemptive wait time accrual, or the waiting time that can accumulate before a patient starts dialysis, impacts when a patient may ultimately receive an offer for a kidney transplant. According to current national policy, patients can begin to accrue wait time for transplantation when their eGFR is 20 mL/min or less.

Elaine Ku, MD, MAS (University of California, San Francisco) and her colleagues examined whether using new race-free equations to guide preemptive waitlisting could

minimize racial differences in accruable preemptive wait time. The team determined the association between race (Black or white) and time spent with eGFR<20 mL/min/1.73 m^2 using the new race-free creatinine-based equation or a new race-free cystatin C–based equation, which could potentially be accrued as preemptive wait time. (Blood levels of creatinine and cystatin C are different indicators of kidney function.)

In a previous study, the authors showed that when using the older equation that included Black race, Black individuals had a shorter time to kidney failure (and would theoretically accrue less wait time). In this study, they found that using the new race-free creatinine-based equation, time to kidney failure was similar between Black and white patients. However, the time to kidney failure was still shorter for Black patients using the cystatin C-based race-free equation. The findings suggest that using the race-free creatinine-based equation to determine preemptive waitlist eligibility is the strategy that may reduce racial differences in access to preemptive wait time accrual.

“We believe that the findings in our study are helpful in providing some preliminary data on how use of the different GFR estimating equations would theoretically affect wait time accrual prior to the start of dialysis,” said Dr. Ku. “We found that the new creatinine-based equation seemed to be associated with more similar wait time that could potentially be accrued compared with use of the cystatin-C based equation, but our findings require further validation in larger groups of patients.”

An accompanying editorial notes that although a race-free creatinine-based equation for eGFR may attenuate racial differences in access to kidney transplantation, it is uncertain what consequences there may be from widespread implementation of this formula. “Although the number of Black patients affected by use of the new formula will be smallest for dialysis initiation and referral for transplantation, more Black patients will be affected at higher eGFR thresholds, including kidney donor candidacy and postdonation follow-up. There would be a corresponding increase in the prevalence of CKD among individuals in the general population who identify as Black and may now be excluded from kidney donation, thus limiting access to living donation in a population already at a disadvantage,” the authors wrote. “There are also potential implications for enrollment and conduct of clinical trials, such as fewer outcomes observed in trials where events are more likely to occur in those with lower eGFR who may now be excluded. Furthermore, although systematic overestimation among non- Black patients has the potential to result in inappropriate drug continuation or overdosing for medications, underestimation among Black patients may result in drug discontinuation and underdosing, including of chemotherapeutic agents and weight loss medications.”

Additional study authors include Sandra Amaral, MD, MHS, Charles E. McCulloch, PhD, Deborah B. Adey, MD, Libo Li, PhD, and Kirsten L. Johansen MD.

Disclosures: D.B. Adey reports consultancy agreements with Otsuka and Natera; research funding from Hansa Pharmaceuticals, Allovir, and Natera; honoraria from Otsuka, Fresno-Madera Medical Society, and American Board of Internal Medicine; and advisory or leadership roles for American Society of Transplantation OPTN/UNOS Policy Committee Conflict of Interest Committee, American Board of Internal Medicine Subspecialty Governance Board, and *Transplant International Journal* Editorial Board. S. Amaral reports consultancy agreements with Bristol Myers Squibb - DSMB; advisory or leadership roles for Dialysis Patient Citizens- Advisory Council, Education Center, Ad Hoc MOT Committee, POC and VCA committees - UNOS/OPTN; and NIH funding- NIDDK, NICHD. K.L. Johansen reports employment with Hennepin Healthcare, consultancy agreements with Akebia and Vifor, grant funding from the NIH, serves as a member of Steering Committee for GlaxoSmithKline prolyl hydroxylase inhibitor clinical trials program, serves an advisory or leadership role for Akebia Advisory Board, and serves as an Associate Editor of *JASN*. E. Ku reports ownership interest in Edison Company, research funding from CareDX and the NIH, and an advisory or leadership role for American Kidney Fund Health Equity Coalition. L. Li reports employment with Public Health Institute and ownership interest in ANTM and UNH.

The article, titled “Comparison of 2021 CKD-EPI Equations for Estimating Racial Differences in Preemptive Waitlisting for Kidney Transplantation,” will appear online at http://cjasn.asnjournals.org/ on September 19, 2022, doi: 10.2215/CJN.04850422.

The editorial, titled “Reducing Racial Disparities in Access to Transplant in the United States,” will appear online at http://cjasn.asnjournals.org/ on September 19, 2022, doi: 10.2215/CJN.09590822.

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