

Eliminating Racial Disparities in Kidney Transplantation:

Race-adjusted eGFR in Black candidates and its implications on Preemptive Listing

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CONTRIBUTIONS STATEMENT

S.E.R. and K.L.L. were responsible for study design. H.X. and K.L.L. were responsible for data collection and analysis. P.N. and S.E.R. were responsible for preparing the first draft. All authors were responsible for study design, data interpretation, and critical revision of the manuscript.

IRB/ETHICS STATEMENT

The publicly available data analyzed in this letter are IRB exempt.

COI STATEMENT

The authors have no relevant conflicts of interest or other relevant financial disclosures. All authors approve and agree to be accountable for ensuring the accuracy and integrity of the final manuscript.

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The data reported here have been supplied by the Hennepin Healthcare Research Institute (HHRI) as the contractor for the Scientific Registry of Transplant Recipients (SRTR). The interpretation and reporting of these data are the responsibility of the authors and in no way should be seen as an official policy of or interpretation by the SRTR or the U.S. Government. SRTR registry data can be obtained from the SRTR.

Abstract

Kidney transplantation improves survival and quality of life among patients with kidney failure. Based on OPTN policy 8.4.A, non-dialysis candidates can accrue wait time once their GFR is ≤ 20 ml/min. Race coefficients in GFR estimation equations has been proposed as a cause for disparity in access to transplantation, specifically delaying transplant listing in Black individuals. Using SRTR data from 2017- 2020, we found a significant racial disparity between the proportion of candidates who were listed preemptively, with a higher proportion of White candidates compared to Black, Hispanic and other candidates ($p < 0.0001$). (Figure. 1) Among White candidates, 39.4% were listed preemptively, by comparison, only 17.5% of Black candidates, 18.5% of Hispanic candidates, and 26.0% of other race candidates, were listed preemptively. Our findings that only a small portion of Black patients were listed for kidney transplantation preemptively, suggesting that changes in GFR estimation alone will likely be insufficient to mitigate the large disparity. More focus is needed on other steps along the path to kidney transplantation to achieve higher impact on dismantling racial inequities, including early referral, education and support for timely evaluation completion, and mitigation of biases in GFR estimation.

To the Editor:

Kidney transplantation improves survival and quality of life among patients with kidney failure. Based on Organ Procurement and Transplantation Network (OPTN) policy 8.4.A, non-dialysis candidates can accrue wait time for kidney transplantation once their GFR is ≤ 20 ml/min. However, OPTN policy does not regulate or specify how GFR is determined. Use of current GFR estimation equations, which assign a higher GFR to Black patients (21% higher using MDRD equation and 16% higher in the CKD-Epi equation)^{1,2} has been proposed as a cause for disparities in access to preemptive wait-listing for kidney transplant. Recently, eGFR calculated without (vs with) the use of race coefficient was shown to be associated with a 35% (95% CI, 29%-41%) higher likelihood of achieving an eGFR less than 20 mL/min/1.73 m² and a shorter median time to waitlist eligibility of 1.9 years.³ These findings suggest that use of race coefficient delays eligibility for preemptive wait-listing in Black individuals. In line with these results, an editorial accompanying this study voices

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support for universal removal of the Black race coefficient from the eGFR equation to rectify these inequalities.⁴

Variables that have previously been shown to be associated with less preemptive waitlisting for Black patients include poor socioeconomic status, variable insurance coverage, Black patients' attitude about health care system, and physicians' racial bias in referrals.⁵⁻⁸ To further examine disparities in access to transplant care, we used data from the SRTR for individuals waitlisted between 2017 and 2020 to investigate possible differences in preemptive listing according to race. Among 146,551 candidates listed in the period, race was self-reported as 42.2% Non-Hispanic White, 28.7% Black and 19.2% Hispanic and 9.9% other. There was a significant racial disparity between the proportion of candidates who were listed preemptively versus listed while on dialysis, with a higher proportion of White candidates listed preemptively compared to Black, Hispanic and other candidates ($p < 0.0001$). (Figure. 1) Among Non-Hispanic White candidates, 39.4% were listed preemptively and 60.7% were listed while on dialysis. By comparison, only 17.5% of Black candidates, 18.5% of Hispanic candidates, and 26.0% of other race candidates, were listed preemptively.

Our findings that only 17.5% of Blacks were listed for kidney transplantation preemptively suggests the importance of early referral for transplant evaluation. Systematic misclassification errors in estimation of kidney function are likely one contributing element to systemic inequities in timely access to transplant⁹. Many suggestions have been made to attenuate the disparity caused by listing preemptively based on eGFR, including modification of eGFR thresholds to equalize waitlist time for Black individuals or removal of race from GFR estimation.^{10,11} However, our findings demonstrate that only a small proportion of Black candidates are listed preemptively and thus, changes to policy regarding listing may will likely be insufficient to mitigate the large disparity. More focus is needed on other steps along the path to kidney transplantation to achieve higher impact on dismantling these inequities, including early referral, education and support for timely evaluation completion, and mitigation of biases in GFR estimation that promote systematic delays in qualification for waiting time points. Every effort should be made to eliminate racial transplant inequity, once and for all.

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