

LETTER TO THE EDITOR

Eliminating racial disparities in kidney transplantation

Letter 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 support for universal removal of the Black race coefficient from the eGFR equation to rectify these inequities.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 ($P < .0001$) (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 transplant.⁹ Many suggestions have been made to attenuate the disparity caused by listing preemptively based on eGFR, including modification of eGFR thresholds to

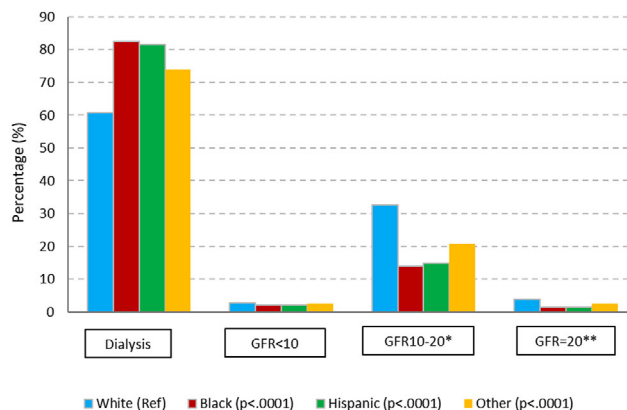


FIGURE 1 Renal function at time of listing among US kidney transplant candidates, 2017–2020

GFR10–20*: measured as eGFR in 97.4% and CrCl in 2.6%
 GFR=20**: measured as eGFR in 98.4% and CrCl in 1.6%

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.

AUTHOR CONTRIBUTION

Sylvia E. Rosas and Krista L. Lentine were responsible for study design. Huiling Xiao and Krista L. Lentine were responsible for data collection and analysis. Pitchaphon Nissaisorakarn and Sylvia E. Rosas were responsible for preparing the first draft. All authors were responsible for study design, data interpretation, and critical revision of the manuscript.

CONFLICT OF INTEREST

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.

DATA AVAILABILITY STATEMENT

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 US Government. SRTR registry data can be obtained from the SRTR.

Pitchaphon Nissaisorakarn¹ 

Huiling Xiao²

Mona D. Doshi³ 

Neeraj Singh⁴ 

Krista L. Lentine² 

Sylvia E. Rosas^{1,5} 

¹ Division of Nephrology, Department of Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts, USA

² Center for Abdominal Transplantation, Saint Louis University School of Medicine, St. Louis, Missouri, USA

³ University of Michigan, Ann Arbor, MI, USA

⁴ Willis Knighton Health System, Shreveport, LA, USA

⁵ Kidney and Hypertension Unit, Joslin Diabetes Center and Harvard Medical School, Boston, Massachusetts, USA

Correspondence

Sylvia E. Rosas, One Joslin Place, Boston, MA 02215, USA.

Email: Sylvia.Rosas@joslin.harvard.edu

KEYWORDS

estimated GFR, health disparities, kidney transplantation, preemptive transplant

ORCID

Pitchaphon Nissaisorakarn  <https://orcid.org/0000-0002-0245-2954>

Mona D. Doshi  <https://orcid.org/0000-0003-2510-1951>

Neeraj Singh  <https://orcid.org/0000-0002-3814-1920>

Krista L. Lentine  <https://orcid.org/0000-0002-9423-4849>

Sylvia E. Rosas  <https://orcid.org/0000-0002-9903-4002>

REFERENCES

1. Levey AS. A more accurate method to estimate glomerular filtration rate from serum creatinine: a new prediction equation. Modification of diet in renal disease study group. *Ann Intern Med.* 1999;130(6):461-470.
2. Levey AS, Stevens LA, Schmid CH, et al. A new equation to estimate glomerular filtration rate. *Ann Intern Med.* 2009;150(9):604-612.
3. Zelnick LR, Leca N, Young B, et al. Association of the estimated glomerular filtration rate with vs without a coefficient for race with time to eligibility for kidney transplant. *J Am Soc Nephrol : JASN.* 2021;4(1):e2034004.
4. Boulware LE, Purnell TS, Mohottige D. Systemic kidney transplant inequities for black individuals: examining the contribution of racialized kidney function estimating equations. *JAMA Network Popen.* 2021;4(1):e2034630.
5. Ayanian JZ, Cleary PD, Weissman JS, et al. The effect of patients' preferences on racial differences in access to renal transplantation. *New Engl J Med.* 1999;341(22):1661-1669.
6. Epstein AM, Ayanian JZ, Keogh JH, et al. Racial disparities in access to renal transplantation—clinically appropriate or due to underuse or overuse? *New Engl J Med.* 2000;343(21):1537-1544. 1532 p preceding 1537.
7. Joshi S, Gaynor JJ, Bayers S, et al. Disparities among Blacks, Hispanics, and Whites in time from starting dialysis to kidney transplant waitlisting. *Clin Transplant.* 2013;95(2):309-318.
8. Schold JD, Gregg JA, Harman JS, et al. Barriers to evaluation and wait listing for kidney transplantation. *Clin J Am Soc Nephrol : CJASN.* 2011;6(7):1760-1767.
9. Kuppachi S, Norman SP, Lentine KL, et al. Using race to estimate glomerular filtration and its impact in kidney transplantation. *Clin Transplant.* 2021;35(1):e141136.
10. Ku E, Mcculloch CE, Adey DB, et al. Racial disparities in eligibility for preemptive waitlisting for kidney transplantation and modification of eGFR thresholds to equalize waitlist time. *J Am Soc Nephrol : JASN.* 2021;32(3):677-685.
11. Doshi MD, Singh N, Hippen BE, et al. Transplant clinician opinions on use of race in the estimation of glomerular filtration rate: a National U.S. Survey Study. *NKF/ASN Task Force abstract session.* 2021.