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What to do with race: social factors and evaluating clinical risk in kidney transplantation

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What to do with race: social factors and evaluating clinical risk in kidney transplantation

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America is undergoing a reckoning with race in the wake of highly publicized killings of African Americans (AA) by law enforcement, political debates encircling grade school curriculum and enfranchisement, and even the proliferation of commercial genetic ancestry testing. The field of transplant nephrology is not isolated from the contention over what race is or to what extent it should be allowed to affect outcomes. With the increasing recognition that race is a social fact \(^1\) and on its own offers little by way of meaningful categorization of biological difference \(^2,3\) there is momentum to reflect on how race becomes intertwined with clinical practice and predictive modeling in transplantation \(^4,5\). At stake in these discussions is the possibility that by continuing to include race as a variable in predictive modeling, the field runs the risk of overemphasizing its impact and obscuring the causal pathways of genetic / biological factors that drive the outcomes we are most concerned with--access, quality, and safety. Further, without investigation of these hidden pathways, the utilization of race may perpetuate inequities in access to transplant through the mismanagement of scarce donor organs.

In the issue of *Kidney360*, Chong et. al. evaluate the impact of removing race from the calculation of the kidney donor risk index (KDRI), a measure of donor organ quality, on the metric’s ability to predict allograft and patient survival. \(^6\) They compared the characteristics of AA and non-AA donors before assessing the predictive accuracy of KDRI with and without a race variable included and calculated the magnitude of donors who would be reclassified under the new approach (e.g. as kidney donor profile index <20%, 21-85%, and >85%). The removal of race from the KDRI calculation accounted for minimal reductions in hazard ratios for the combined outcome “allograft failure or patient death” and in receiver operator characteristics (ROC) curves evaluating model performance. Additionally, they found that the removal of race from KDRI results in significant reclassification of donor organs. In particular, 6251 (52.7%) low quality or KDPI >85% donors would be reclassified as KDPI 21-25%, and the new model reclassified 73.1% (2,700/3,692) of Black donors with KDPI >85% to ≤85%, with a median allograft/patient survival of 6.54 year (95% CI: 6.20-6.88) compared with 5.39 year (95% CI: 4.67-6.01) for those with KDPI remaining >85%.

In the face of this evidence, the removal of the race variable from the calculation of KDRI appears justified. Chong et. al. demonstrate that the inclusion of a race variable offers minimal improvement in predictive power and results in the overestimation of risk / misclassification of donor organs. Combined with the associated benefit to allograft and patient survival, these shortcomings are difficult to overlook. However, the inclusion of a race variable predictive metrics in transplantation is not necessarily universally bad. The inclusion of race becomes a problem when the inclusion of a race variable lacks sufficient premise and negatively impacts access to transplant. Certain conditions should be met or taken into consideration when deciding whether to include a race variable. At the least, inclusion should afford statistically and clinically significant improvements in predictive power over alternative models. In addition, there should be systematic efforts taken to determine whether other factors could account for the apparent race effect.

At the same time, removing race from the calculation of KDRI and other metrics should not be seen as the end of the discussion about the role of race and systemic bias in transplant. We must explore the implications of such a shift and be ready to address cascading effects across the transplant system. For instance, would the reclassification of 50% of high KDPI (>85%) and 17% of low KDPI (<20%) kidneys as KDPI 21-85% impact the composition of the waitlist? With the Kidney Allocation System (KAS) giving priority to candidates with estimated post-transplant survival (EPTS) <20 for KDPI <20% donor organs, such a change may require a reevaluation of this system. Finally, as advances in science bring to relief the factors that are obscured by race, such as the link between allograft failure and the APOL1 gene variant \(^7\) we must maintain a critical lens and take caution as we adopt new understandings of human difference and biological variation. Screening protocols for potential donors using categories like “recent African ancestry” may align poorly with lived experience and common notions of identity / genealogy, and obscure or minimize the impact of non-African ancestry. \(^8\) Rather, screening for APOL1 should be universal and race-blind to avoid conflating biological variation with categories of identity based in legal and cultural arenas.
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AUTHOR CONTRIBUTIONS

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