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Remove Race From Equation Used to Assess Kidney Function, Researchers Say

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Long-awaited reports released Thursday call for eliminating race in estimated glomerular filtration rate equations and point to alternatives in an effort to eliminate disparities in chronic kidney disease.

Ahead of the release of a national task force report about changing the long-standing practice of using race in a calculation to diagnose chronic kidney disease, a pair of studies released Thursday in *The New England Journal of Medicine* weighed in with data that support the use of alternative equations to better ensure that Black patients have equitable access to diagnosis and treatment.

Last year, the American Society of Nephrology and the National Kidney Foundation created a joint task force to reevaluate the inclusion of race in estimated glomerular filtration rate (eGFR) equations, which use a multiplier to assign higher values to Black patients and affect care decisions. eGFR is the total volume of filtrate passing through the glomeruli each minute, but that is challenging to assess in real time in a physician's office. Using serum creatine, factoring in age, height, weight, and gender, gives an estimate.

Since higher values indicate better kidney function, there has been increasing recognition that the multiplier leads to inequitable and delayed care in treating CKD. Some medical centers have already moved to stop using the multiplier, as inclusion of race, a social and not a biological construct, has care implications.

The studies released Thursday looked at other methods to calculate eGFR.

In one, researchers used 2 data sets to examine the effect of including serum creatinine as well as both serum creatinine and cystatin C, without including race.[1] Without race, an equation that incorporates both creatinine and cystatin C is more accurate and led to smaller differences between Black participants and non-Black participants than new equations with either creatinine or cystatin C alone.

In the second study, researchers used data from a large national database of patients with CKD to retrospectively model GFR without race and found that estimating equations that were based only on the serum creatinine level, age, and sex resulted in greater systematic underestimation of GFR among adults who identified as Black than of those who identified as non-Black.[2] When a race coefficient was included, differences in the statistical bias and accuracy of GFR estimates between groups were eliminated.

Both studies showed that equations based on cystatin C are more predictive and accurate than serum creatinine alone.

More than 37 million US adults in the United States have kidney diseases and 90% are not aware they have reduced kidney function. A disproportionate number are Black or African American, Hispanic or Latino, American Indian or Alaska Native, Asian American, and other ethnic groups who, studies have shown, are diagnosed with later stages of CKD and are less likely to be screened for placement on kidney transplant lists.

In releasing the task force report, the NKF and ASN said it urges an immediate shift to the eGFR 2021 CKD EPI creatinine

equation that estimates kidney function without a race variable. The task force also recommended increased use of cystatin C combined with serum creatinine, as a confirmatory assessment of GFR or kidney function.

An accompanying editorial noted some challenges—estimates are imperfect, no matter which equation is used, and shifting practice so as to incorporate cystatin C will take time—but argued that a change is long overdue.[3]

“Most important, however, is that estimates do no harm but rather help us care for all patients equally,” they wrote.

The 1999 landmark study that proposed the eGFR and included a coefficient for Black patients did so on the basis of 3 flawed, small, poor quality studies, and lacked any biological validity, researchers have said.

References

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