Uncovering the Role of Kidney Disease and Its Care in the US Maternal Health Equity Crisis

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There is a clarion call to disrupt the ongoing maternal morbidity and mortality health equity crisis in the US. This crisis has worsened across the overall US population over the past 2 decades, and it has disproportionately burdened Alaska Native, American Indian, and Black individuals, heightening the need for our collective attention. Studies designed to better understand the causes for this crisis and its associated social inequities are emerging, and the rising prevalence of chronic conditions such as hypertension and diabetes among pregnant women has drawn scrutiny as these are important potential contributing factors for poor pregnancy outcomes and racial and ethnic disparities. Chronic kidney disease has been implicated as an additionally important potential risk factor for poor pregnancy outcomes. Pregnancy-related acute kidney injury is associated with adverse maternal outcomes. However, little has been known regarding the characteristics of pregnant individuals who develop pregnancy-related end-stage kidney disease (PRESKD) or factors that may contribute to their poor health outcomes.

Kucirka et al conducted a national retrospective observational cohort study to characterize individuals at risk for PRESKD and to elucidate potential associations with their health outcomes. Using data obtained from 183,649 reproductive-aged women with incident ESKD between 2000 and 2020, they described the prevalence and characteristics of individuals with PRESKD, and they studied these individuals' time to mortality, access to kidney transplant (joining a waiting list or receiving a living donor kidney), and time to transplant after waitlisting when compared with individuals with non-PRESKD. Although the prevalence of PRESKD was relatively low (341 total individuals identified), Black individuals had disproportionately greater (nearly double) representation among the population of individuals with incident PRESKD when compared with the proportion of Black individuals in the 2020 general birthing population (31.9% vs 16.2%). Individuals with PRESKD also had a nearly 5-fold greater prevalence of diabetes and 27-fold greater prevalence of hypertension when compared with the general birthing population. Compared with women with other causes of ESKD, those with PRESKD were more likely to have a reported Hispanic ethnicity and Medicaid as a primary insurer. After adjustment for race, ethnicity, insurance type, employment, and comorbidities, individuals with PRESKD had similar mortality risk as individuals with ESKD due to glomerulonephritis and cystic kidney disease (adjusted inverse hazard ratio [aHR], 0.96; 95% CI, 0.76-1.19), and lower mortality risk than individuals with diabetes and hypertension (aHR, 0.49; 95% CI, 0.39-0.61; P < .001) or other causes of ESKD (aHR, 0.60; 95% CI, 0.48-0.75) respectively. However, individuals with PRESKD had less access to kidney transplant when compared with individuals with all other causes of ESKD including glomerulonephritis or cystic kidney disease (adjusted subhazard [aSHR], ratio 0.51; 95% CI, 0.43-0.66) diabetes and hypertension (aSHR, 0.81; 95% CI, 0.67-0.98), or other or unknown causes (aSHR, 0.82; 95% CI, 0.67-0.99). Furthermore, individuals with PRESKD were less likely than those with glomerulonephritis or cystic disease, diabetes and hypertension, or other causes to have comprehensive kidney care (33.6% vs 58.1%-77.6%), or graft or arteriovenous fistula dialysis access placement before incident ESKD.

This study is one of the first in the US to describe the prevalence and characteristics of individuals with PRESKD and to characterize factors potentially associated with their inequitably poor health outcomes. Kucirka et al did not perform analyses formally evaluating racial or ethnic differences in outcomes among individuals with PRESKD. However, minoritized individuals were
disproportionately represented among individuals with PRESKD compared with the general population. For this reason, it is important to consider that some poor outcomes could have been contributed to by well-described inequities in access to high-quality preconception care and lower quality obstetric care commonly experienced by minoritized women.\(^6,7\) Compared with their White counterparts, Black women have been demonstrated to face numerous challenges throughout obstetric care including inadequate attention to pain, inaccurate and delayed diagnoses, and poorer quality communication with health care teams, which exacerbate detection and appropriate management of predisposing PRESKD conditions.\(^7\) Notably, individuals with PRESKD were less likely to receive pre-ESKD nephrology care. Although reasons for this are unclear, prior studies have shown that individuals with chronic conditions fail to have these conditions well controlled before pregnancy and may miss important subspecialty care.\(^2,6\) Reasons for suboptimal prepregnancy care require more study, particularly given high rates of diabetes and hypertension among this population with a disproportionate representation of racially and/or ethnically minoritized women. For instance, among women at risk for PRESKD, acute kidney injury and other risk factors for PRESKD may be underdiagnosed due to physicians’ historical use of biased race-based kidney function estimation equations which could have inappropriately labeled individuals included in this study cohort as having better kidney function. Pregnancy-related knowledge among nephrologists has also been demonstrated to be low,\(^8\) and many women may experience missed opportunities for proteinuria and other screenings. These deficits in care may be particularly prevalent among minoritized women who have been shown to experience gaps in preventive care during pregnancy. Improved adherence to US Preventive Services Task Force guideline recommendations for screening for hypertensive disorders in pregnancy and research initiatives, such as the National Institutes of Health’s IMPROVE: Implementing a Maternal Health and Pregnancy Outcomes Vision for Everyone,\(^10\) may enhance risk monitoring and coordinated management of peripartum complications including pregnancy-related acute kidney injury. Additional efforts that ensure equitable access to evidence-based diagnostic and therapeutic options for women with pregnancy-related acute kidney injury are urgently needed to minimize PRESKD. This will require providing antiracist, antibiased, structurally competent multidisciplinary care for pregnant individuals, which may occur through colocated clinic and expanded telehealth access for consultations. Given lower rates of kidney transplantation among individuals with PRESKD when compared with others with ESKD, interventions that further ensure patients with PRESKD are educated about and have access to kidney transplantation once PRESKD is identified are also needed, particularly among individuals from ethnically and racially minoritized groups who have been documented for decades to have higher rates of incident ESKD, yet lower rates of kidney transplantation when compared with White individuals.

Several caveats of this study by Kucirka et al\(^5\) are important to consider. First, data on PRESKD emanate from administrative 2728 forms which rely on physician report. These forms lack guidance for adjudicating the diagnosis of a pregnancy-related kidney disease, which can have overlapping clinical manifestations and underlying etiologies with other kidney disease diagnostic categories (eg, glomerular disease in systemic lupus or an acute kidney injury due to hemorrhage).\(^4\) Existing 2728 categories also do not provide data regarding diagnostic evaluation, time of diagnosis in the context of pregnancy, or further categorization of PRESKD into those with underlying CKD and/or predisposing conditions including preeclampsia and glomerular disease.\(^4\) These factors could lead to underestimation of the true prevalence of PRESKD. Finally, 2728 forms do not promote consistent recording of self-reported race, ethnicity, sexual orientation and gender identity, disability, or social determinants of health (eg, housing or transportation), which may contribute to morbidity or poor access to kidney transplants. Future studies directly measuring these factors will further elucidate the causes and contributors to inequitably poor health among women with PRESKD.

Further work to understand and disrupt the crisis of maternal health inequities is needed. As we navigate a new post–Roe vs Wade landscape in which the burden of pregnancy-related kidney disease is anticipated to increase overall with disproportionately greater burden among marginalized individuals,\(^9\) we must seize opportunities to transform existing care through better identification,
pre-ESKD care, and focus on ensuring all patients receive optimal treatments. Through solutions that prioritize the equitable prevention and early effective management of conditions that predispose individuals to PRESKD and comprehensive multidisciplinary kidney care, we can begin to achieve this moral imperative.

ARTICLE INFORMATION
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