



Assessment of Renal Function in Transgender Patients With Kidney Disease

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Gender-affirming care and chronic kidney disease (CKD) are each increasing in prevalence, resulting in a growing population of transgender patients with CKD. A population of 26 million patients with CKD, with 0.3% of the population identifying as transgender, translates to about 2500 transgender patients living with CKD.^{1,2} As Collister et al mention in a recent review, “Providing Care for Transgender Persons With Kidney Disease: A Narrative Review,” an accurate estimated glomerular filtration rate (eGFR) is essential in the assessment and treatment of CKD and its associated comorbidities.³ From our experience, the assessment of renal function should begin with a thorough understanding of the patient’s physical anatomy, medical/surgical history, medication history, and serum lab value history. Collister et al reviewed some of the literature surrounding serum creatinine changes after gender affirmation care and found that creatinine increases approximately 5 to 10 $\mu\text{mol/L}$ in transgender men and decreases 5 to 10 $\mu\text{mol/L}$ in transgender women.³ In contrast, a recent review found that serum laboratory values were more similar to identified gender than birth-assigned gender in three-fourths studies.⁴ The review recommended that creatinine clearance should be calculated with the patient’s identified gender if hormonal therapy had been taken for at least 6 months.⁴ Ultimately, the current authors recommended using both sexes in eGFR equations to create an eGFR range that can be adjusted based on the individual’s muscle mass. Although this is an interesting approach, we would caution against this method because the extent of a patient’s hormone therapy and lean muscle mass are difficult to accurately estimate. Rather than using data from small series with heterogeneous patient populations to deduce changes in serum creatinine, we believe that eGFR should be calculated by other means in transgender patients.

Creatinine clearance may not be an accurate estimation of GFR in transgender patients because it is dependent on age, race, muscle mass, diet, and medications.² The gold standard measurement of eGFR is inulin clearance, which has not been used often in the clinical setting due to its financial and labor costs.⁵ Serum cystatin c was mentioned in the current narrative review for its independence of sex, but can be influenced by systemic infection, obesity, smoking, corticosteroids, and hyperthyroidism.⁵ Although inconvenient, the most practical measurement of GFR in this patient population is by a 24-hour urine creatinine collection.² An accurate assessment of renal function is important to appropriately dose renally cleared medications and to monitor the progression and development of medical conditions. Transgender patients with CKD require special attention to their renal function to appropriately guide hormone therapy and to assess the necessity for renal replacement therapies.

Declaration of Conflicting Interests

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References

1. Hoch DA, Bulman M, McMahon DW. Cultural sensitivity challenges in management of the transgender patient with ESRD in transplantation. *Prog Transplant*. 2016;26:13-20.
2. Jue JS, Alameddine M, Ciancio G. Kidney transplantation in transgender patients. *Curr Urol Rep*. 2020;21:1.
3. Collister D, Saad N, Christie E, Ahmed S. Providing Care for transgender persons with kidney disease: a narrative review. *Can J Kidney Health Dis*. 2021;8:2054358120985379.
4. Webb AJ, McManus D, Rouse GE, Vonderheyde R, Topal JE. Implications for medication dosing for transgender patients: a review of the literature recommendations for pharmacists. *Am J Health Syst Pharm*. 2020;77:427-433.
5. Whitley CT, Greene DN. Transgender man being evaluated for a kidney transplant. *Clin Chem*. 2017;63:1680-1683.