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Commentary: A Tough Call: Does the Kidney Come with the Heart?

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Central Message: Simultaneous Heart-Kidney Transplant may offer benefit for patients with impaired renal function undergoing heart transplantation.

Central Picture Legend: Joseph C. Cleveland, Jr., MD

Cardiorenal impairment is typical for patients who require cardiac transplantation. The decision to offer heart transplantation alone (HTA) or simultaneous heart-kidney (SHK) transplantation for patients with end-stage heart failure and renal insufficiency is one of the more difficult decisions for those who care for patients with advanced heart failure. Feng and colleagues (1) examine this very question in this issue of the Journal. Their analysis concluded that a survival benefit of SHK over HTA is demonstrated once the eGFR decreases to less than 45 ml/min. This benefit included both superior patient and graft survival in the SHK vs. HTA patients. In addition, SHK patients had lower development of renal failure or dialysis after cardiac transplantation. We now have a number, and we should simply offer SHK to all patients who fall below an eGFR of 45 ml/min. If only the answer were this simple.

The study by Feng builds upon the work of Itagaki (2) who similarly concluded that patients with an eGFR <40 ml/min benefitted with SHK. The study by Feng includes propensity matching which strengthens the findings considerably. One of the novel and very important details of Feng’s report includes patients both before and after the 2018 Heart Allocation Policy Change by UNOS(3). Indeed, if one focuses upon the subset of patients who transplanted after 2018, the survival benefit for SHK for patients with impaired renal function is no longer evident even to an
eGFR of 60 ml/min. The present study opens the door to further investigations. For example, the influence of greater temporary mechanical support may alter the outcomes in the group of patients with an eGFR of 30-60 ml/min. Finally, there exists tremendous variation in the use of SHK or HTA for non-dialysis dependent patients with an eGFR in the 30-60 ml/min range (2). Such institutional variation suggests that analyses of datasets from registries such as the one used in this analysis by Feng need to be placed into perspective as well.

The cardiac and renal transplant community must utilize these data to strongly consider policy changes. Patients who have renal insufficiency which progresses to renal replacement therapy (RRT) after cardiac transplant have inferior outcomes (4). Thus, one can understand the desire to reduce this risk by performing SHK for patients with an eGFR in the 30-45 ml/min range. However, given the uncertainty of benefit in SHK, an alternative approach might be to provide a better safety net for these patients in this eGFR range who receive HTA. UNOS could provide an exemption for patients who undergo HTA and develop renal failure with RRT to have a pathway to obtain a renal allograft expeditiously under this circumstance. As always, shared-patient decision making with cardiac and renal physicians should provide an individualized approach to appropriate select patients with end stage cardiomyopathy and impaired renal function for either SHK or HTA.
References

1. Feng I, et al., Simultaneous Heart-Kidney Transplant Compared to Heart Transplant Alone in Non-Dialysis Dependent Patients with Borderline Renal Function. JTCVS 2023