

Older Kidney Donors in Dual Heart-Kidney Transplantation: How Do They Stack Up?

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Abstract

Background: Older kidney donors (OKDs) defined as >50 yrs old in dual heart-kidney transplant (HKTx) may have less renal reserve especially when compounded by donor cardiac arrest. Some OKDs may have additional risk factors for renal disease (ie hypertension or diabetes). Whether recipients with OKDs are at greater risk for kidney failure or delayed graft function (DGF) following dual HKTx has not been established. Therefore, we assessed renal function of patients (pts) with OKDs after dual HKTx.

Methods: Between 2008-2016 we identified 72 dual HKTx pts of which 10 had OKDs. The heart and kidney came from the same donor in all cases. Endpoints assessed included Cr and GFR at 1,3, 6, and 12 months after HKTx, prevalence of DGF (defined by need for dialysis within 7 days of renal transplant), need for temporary (<1-mth) or chronic (≥ 1-mth) dialysis, and 1-yr survival. Heart function was assessed to ensure adequate renal perfusion. All data were compared to a control HKTx group with heart-kidney donors <50 yrs age.

Results: Despite the older donor age, 1-yr survival was comparable between the two groups. HKTx with OKDs had numerically increased DGF and reduced 1-yr freedom from temporary dialysis, but this was not statistically significant [Table]. Cr and GFR at 1, 3, 6, and 12 months after HKTx was similar between the two groups. 1-yr rejection fraction was also similar between the two groups.

Conclusion: Pts with OKDs did well following dual HKTx. Kidney function appears comparable with donors < and > 50 yrs of age.

Background

- Older kidney donors (OKDs) defined as >50 yrs old in dual heart-kidney transplant (HKTx) may have less renal reserve especially when compounded by donor cardiac arrest.
- Some OKDs may have additional risk factors for renal disease (i.e. hypertension or diabetes).
- Whether recipients with OKDs are at greater risk for kidney failure or delayed graft function (DGF) following dual HKTx has not been established.

Purpose

- To assess renal function of patients (pts) with OKDs after dual HKTx.

Methods

- Between 2008-2016 we identified 72 dual HKTx pts of which 10 had OKDs.
- The heart and kidney came from the same donor in all cases.
- Endpoints included:
 - Cr and GFR at 1,3, 6, and 12 months after HKTx
 - Prevalence of DGF (defined by need for dialysis within 7 days of renal transplant)
 - Need for temporary (<1-mth) or chronic (≥ 1-mth) dialysis
 - 1-yr survival
- Heart function was assessed to ensure adequate renal perfusion.
- All data were compared to a HKTx group with heart-kidney donors <50 yrs age.

Demographics

Demographic	HKTx Donor > 50 Years (n=10)	HKTx Donor < 50 Years (n=62)	P-Value
Mean Recipient Age, Years ± SD	61.0 ± 6.7	56.0 ± 10.7	0.154
Mean Donor Age, Years ± SD	54.9 ± 3.5	33.6 ± 10.2	<0.001
Body Mass Index, Mean ± SD	23.1 ± 2.8	25.4 ± 5.4	0.060
Female (%)	20.0%	21.0%	1.000
Previous Pregnancy in Females (%)	69.2%	100.0%	0.359
Ischemic Time, Mean Mins ± SD	160.2 ± 61.7	168.9 ± 61.1	0.692
Primary Reason for Transplant, Underlying Diagnosis of Coronary Artery Disease (%)	87.5%	55.3%	0.548
Status 1 at Transplant (%)	82.0%	40.0%	0.003
Cytomegalovirus Mismatch (%)	10.0%	16.7%	0.591
Diabetes Mellitus (%)	50.0%	45.2%	0.775
Treated Hypertension (%)	80.0%	73.3%	0.661
Insertion of Mechanical Circulatory Support Device (%)	0.0%	32.3%	0.091
Prior Blood Transfusion (%)	57.1%	67.2%	0.593
Pre-Transplant PRA ≥ 10% (%)	20.0%	31.1%	0.712
Pre-Transplant Creatinine, Mean ± SD	3.6 ± 2.1	4.1 ± 3.3	0.629
ATG Induction Therapy (%)	100.0%	88.5%	0.259

Outcomes

Endpoints	HKTx Donor > 50 Years (n=10)	HKTx Donor < 50 Years (n=62)	P-Value
1-Year Survival	90.0%	91.8%	0.816
Delayed Graft Function of Kidney, %	66.7%	42.4%	0.282
1-Year Freedom from Temporary Dialysis (< 1 Month)	40.0%	61.3%	0.245
1-Year Freedom from Chronic Dialysis (≥ 1 Month)	100.0%	91.9%	0.365
Baseline Creatinine, Mean ± SD	3.1 ± 2.0	3.6 ± 1.6	0.379
Baseline GFR, Mean ± SD	33.4 ± 34.5	20.1 ± 8.8	0.012
1-Month Creatinine, Mean ± SD	1.1 ± 0.3	1.5 ± 0.8	0.124
1-Month GFR, Mean ± SD	79.0 ± 48.4	62.1 ± 28.1	0.119
3-Month Creatinine, Mean ± SD	1.0 ± 0.3	1.3 ± 0.7	0.188
3-Month GFR, Mean ± SD	73.0 ± 21.8	67.3 ± 25.2	0.502
6-Month Creatinine, Mean ± SD	1.2 ± 0.2	1.3 ± 0.7	0.657
6-Month GFR, Mean ± SD	61.0 ± 13.2	78.3 ± 76.6	0.481
12-Month Creatinine, Mean ± SD	1.2 ± 0.2	1.4 ± 0.7	0.375
12-Month GFR, Mean ± SD	58.4 ± 12.8	61.2 ± 19.5	0.663
Mean 1-Year Ejection Fraction (%)	60.4%	61.9%	0.535

Results Summary

- Despite the older donor age, 1-yr survival was comparable between the two groups.
- HKTx with OKDs had numerically increased DGF and reduced 1-yr freedom from temporary dialysis, but these were not statistically significant [Table].
- Cr and GFR at 1, 3, 6, and 12 months after HKTx was similar between the two groups.
- 1-yr left ventricular ejection fraction was also similar between the two groups.

Conclusion

- Pts with Older Kidney Donors did well following dual HKTx.
- Kidney function appears comparable with donors < and > 50 yrs of age.

Author Disclosures

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