CHARACTERIZING RENAL FUNCTION IN STANDARD AND EXTENDED CRITERIA CARDIAC TRANSPLANT PATIENTS: A 10-YEAR EXPERIENCE

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Background: The use of extended-criteria cardiac transplantation (TXP) allows transplantation in otherwise ineligible recipients with advanced age or comorbid conditions. However, renal function following TXP has not been characterized in extended criteria recipients. This study compares differences in renal function between standard (SC) and extended (EC) criteria adult cardiac transplant recipients at a single center.

Methods: All patients (pts) who underwent TXP between 2000-2010 were retrospectively evaluated. Pts were stratified by listing status (SC or EC). Serial measures of renal function including serum creatinine (Cr), and estimated glomerular filtration rate (eGFR; MDRD) were collected at baseline, 1-year (y) and 5y. Mean values for continuous variables were compared using one-way ANOVA and non-paired t-tests.

Results: 478 pts underwent HTX during the study period (386 SC and 92 EC). Mean age of the overall cohort was 53y, with 76% male and 73% non-African American (nAA) subjects. Mean age (51y vs. 64y, p<.0001) and proportion of nAA patients (72% vs. 82%) were different between SC and EC groups. Baseline mean Cr in SC and EC groups was 1.38 mg/dL and 1.44 mg/dL, respectively (p=.57), but mean GFR was 63.91 ml/min/1.73 m² and 54.57 ml/min/1.73 m² (p=.0008). No differences were found in mean Cr between SC and EC groups at 1 (1.703 vs. 1.826, p=.25) and 5y (2.03 vs. 2.287, p=.29). Statistically significant differences were found between SC and EC pts at 1 (48.08 ml/min/1.73 m² vs. 42.79 ml/min/1.73 m², p=.02) and 5y (42.92 ml/min/1.73 m² vs. 34.70 ml/min/1.73 m², p=.0083).

Conclusions: In our experience, there was no difference in Cr between SC and EC recipients during the first 5 post-transplant years. However, the EC group consistently demonstrated greater renal impairment by eGFR. These findings are partially explained by the older age and smaller number of AA patients in the EC group. Our results suggest true differences in renal function may be underestimated by serum Cr alone. Given the unavoidable nephrotoxicity associated with chronic immunosuppression, patients at high risk for renal failure should be monitored with appropriate measures of renal function and regimens tailored accordingly.