**ESTIMATION OF GLOMERULAR FILTRATION RATE IN HEART TRANSPLANTATION RECIPIENTS: IS CKD-EPI EQUATION A SUPERIOR PROGNOSTIC INDICATOR THAN THE MDRD EQUATION?**

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Objectives: Orthotopic heart transplantation (OHTx) is often complicated by chronic kidney disease (CKD). Incidence of CKD and its predisposition for adverse outcomes has been linked to the differences in baseline estimated glomerular filtration rate (eGFR) calculated by CKD-EPI and MDRD equations. We sought to investigate the estimation and prognostic accuracy of these equations in OHTx recipients.

Methods: We retrospectively reviewed 844 consecutive patients who underwent OHTx from 1998-2010. Pre-transplant eGFR (mL/min/1.73m2) was calculated with CKD-EPI and MDRD equations. Patients grouped as having Stage 1 (eGFR≥90), Stage 2 (eGFR≥60-90), Stage 3 (eGFR≥30-60), Stage 4 (eGFR≥15-30), or Stage 5 (eGFR<15) CKD. The Kappa statistic and Bland-Altman plot were used to evaluate agreement between the estimates. Kaplan-Meier survival curves and Cox regression analysis were used for survival analysis.

Results: Mean baseline eGFR was 65.93±27.01 (CKD-EPI) and 67.51±31.98 (MDRD). The two equations showed overall agreement in eGFR grouping (Kappa=0.92), especially when mean eGFR<90. Patients with eGFR≥15-30 experienced significantly increased risk of overall long-term mortality compared with the rest of the cohort (CKD-EPI: log-rank p=0.011; MDRD: log-rank p=0.047). When adjusted for age, gender, and black ethnicity, patients in this group had an increased risk of death when using CKD-EPI compared to MDRD equation (HR:1.69,p=0.029,95% CI: 1.06-2.72; HR:1.58,p=0.087,95% CI: 0.93-2.68).

Conclusions: CKD-EPI and MDRD show agreement calculating baseline eGFR in OHTx recipients. The MDRD formula overestimate GFR when mean eGFR>90.

Patients with baseline eGFR≥15-30 have increased mortality using either equation; however, in this group, eGFR calculated by the CKD-EPI versus MDRD shows a stronger association with mortality.