RACE AND LEFT VENTRICULAR STRUCTURE IN CHRONIC KIDNEY DISEASE: THE CHRONIC RENAL INSUFFICIENCY COHORT (CRIC)

Poster Contributions
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Background: Left ventricular hypertrophy (LVH) occurs frequently among blacks and those with chronic kidney disease (CKD). CKD is associated with increased cardiovascular morbidity and mortality, but limited insights exist about racial variation of outcomes in CKD. The diverse, prospective Chronic Renal Insufficiency Cohort (CRIC) Study provides a unique opportunity to better understand racial variation in left ventricular (LV) structure in CKD patients.

Methods: Using baseline CRIC echo data and clinical variables, we examined the association of race with LV structure measures and clinical correlates. We defined LVH as LV mass index (LVMI) ≥ 50 g/m^2.7 (men) or ≥ 47 g/m^2.7 (women), concentric hypertrophy as LVH with relative wall thickness ≥ 0.45, and eccentric hypertrophy as LVH with relative wall thickness < 0.45. We conducted multivariable logistic regression to identify independent correlates of LVH.

Results: Among 1461 black and 1514 white CRIC participants, black CRIC participants had higher prevalence of coronary disease, heart failure, peripheral arterial disease, and tobacco use (all p<0.0001). Blacks also had higher rates of uncontrolled hypertension (p<0.0001) despite a higher rate of anti-hypertensive therapy (p<0.0001). Of blacks (n=1208) and whites (n=1203) with measured LVMI, blacks had higher LVMI than whites (54.7±14.6 vs 47.6±12.3 g/m^2.7; p < 0.0001), higher rates of concentric LVH, diastolic dysfunction, and LV systolic dysfunction, and larger LV end diastolic volume (all p<0.05). In multivariable regression analysis, higher systolic blood pressure, body mass index, fibroblast growth factor 23 levels, and lower estimated glomerular filtration rate and hemoglobin were associated with higher LVMI (all p<0.05), but black race was not an independent correlate.

Conclusion: Among a large, diverse cohort with CKD, blacks had higher LVMI and prevalence of concentric LVH. Differences in LVMI between blacks and whites were explained by higher prevalence of risk factors in blacks. Based on these findings, future investigation in the CRIC will longitudinally examine the role of LVH, concentric hypertrophy, and race in disparate cardiovascular outcomes in CKD patients.