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GLOBAL LONGITUDINAL STRAIN AND LEFT VENTRICULAR MASS IN ESRD AND NON-ESRD

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Global Longitudinal Strain (GLS) is a sensitive echocardiographic measure of systolic function that overcomes many of the limitations of left ventricular ejection fraction (LVEF), including inter- and intra-observer variability and detection of systolic dysfunction in pathologically remodeled hearts (i.e., LV hypertrophy).

Among 78 patients (37 ESRD and 39 non-ESRD patients) who underwent speckle-tracking 2D-echocardiography in the UCI Heart Failure Program, we examined associations of LV mass and poor GLS, defined as GLS \geq -18% as the threshold for systolic dysfunction (i.e., more negative values indicate better systolic function) using logistic regression.

In the overall cohort, patients with LV mass values in the highest tertile had a higher risk of poor GLS in unadjusted and case-mix analyses (ref.: lowest two tertiles of LV mass): ORs (95% CI) 4.85 (1.29-18.3) and 7.22 (1.66-31.4), respectively. In a subanalysis of ESRD vs. non-ESRD patients matched on age and sex, ESRD patients had higher (worse) GLS vs. their non-ESRD counterparts: mean \pm SD -18.79 \pm 3.71% vs. -20.53 \pm 5.56%, respectively. ESRD patients also had greater (worse) LV mass vs. their non-ESRD counterparts: mean \pm SD 249.23 \pm 121.41g vs. 155.11 \pm 68.84g, respectively.

Further studies are needed to define the prognostic implications of GLS upon the cardiovascular health and survival of ESRD patients.

