ELEVATED CENTRAL VENOUS PRESSURE PREDICTS POOR SURVIVAL AMONG CRT RECIPIENTS WITH NONISCHEMIC CARDIOMYOPATHY AND MILD BASELINE RENAL INSUFFICIENCY

ACC Poster Contributions
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Background: Elevated central venous pressure (CVP) portends RV failure and worsening renal insufficiency (RI) in heart failure (HF) pts. CVP’s prognostic value in pts who receive cardiac resynchronization (CRT) is unknown.

Methods: We studied all non-dialysis pts implanted with CRT-defibrillators at our institution before 2010 with nonischemic cardiomyopathy (NICM) and glomerular filtration rate (GFR) <90 mL/min (≥ stage 2 chronic kidney disease) at the time of pre-CRT right heart catheterization (n=114). Endpoints included GFR change at 3-6 mos, LVEF and dimension changes at ≥6 mos, and survival.

Results: ROC analysis demonstrated that CVP >10 mmHg best predicted 1-yr post-CRT mortality (AUC=0.79; p=0.001). Pts with CVP >10 had shorter overall survival than those with CVP ≤10 (log rank p<0.001). There was no difference in gender, age, diabetes, QRS duration, LVEF, LV dimensions, medical therapy, or GFR between pts with CVP ≤10 and >10. Pts with CVP >10 had more AF (62% vs. 29%; p=0.001) and NYHA class 4 HF (22% vs. 7%; p=0.03); however, the survival difference persisted after correcting for these differences and other comorbidities (HR 0.24, 0.12-0.48, p<0.001). Median GFR improved (p=0.02) in those with CVP ≤10 (+5.5) but declined in pts with CVP >10 (-0.4), whereas median changes in LVEF (5 vs. 5%) and LVESD (-5 vs. -4 mm) were similar.

Conclusions: Among HF pts with NICM and at least mild RI, CVP >10 mmHg portends further renal function decline and poor survival despite significant LVEF and LVESD improvements.