CLINICAL SIGNIFICANCE OF LEFT AXIS DEVIATION IN PATIENTS WITH CARDIAC RESYNCHRONIZATION THERAPY

ACC Poster Contributions
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Background: Prior data indicate that patients with LBBB derive more benefit from CRT than patients with RBBB or IVCD. However, there are limited data regarding whether left axis deviation (LAD) might influence CRT benefit and outcomes in heart failure patients.

Methods: We evaluated baseline ECGs of 1,705 patients from MADIT-CRT for LAD (quantitative QRS axis -30 to -90) in LBBB, RBBB, or IVCD. Primary endpoints included HF events or death. CRT-D benefit was evaluated by comparing CRT-D to ICD.

Results: LAD was identified in 445 (37%) patients with LBBB, 131 (63%) with RBBB, and 117 (41%) with IVCD. Among LBBB patients, those with LAD had a higher risk of primary events at 2 years than non-LAD patients (20% vs. 16%; p=0.024). The same was observed among RBBB patients (20% vs 10%; p=0.05) but not in IVCD patients (22% vs 23%; NS). When analyzing the benefit of CRT-D in the non-LBBB subgroups, there was no significant difference in HR’s for CRT-D vs. ICD. However, LBBB patients without LAD had a significantly lower probability of primary events than those with LAD (Figure). The HR’s comparing these two groups (0.38, 95% CI: 0.26-0.54 -LAD and 0.54, 95% CI: 0.36-0.79 +LAD) to ICD displayed a nonsignificant trend toward greater benefit from CRT therapy in LBBB patients without LAD.

Conclusions: LAD is associated with increased risk of cardiac events in heart failure patients. LAD does not appear to influence CRT-D benefits in non-LBBB patients. In LBBB patients, those without LAD seem to benefit more from CRT-D than those with LAD.