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PREDICTORS OF DYSSYNCHRONY IMPROVEMENT AND ITS ROLE IN SUBSEQUENT OUTCOME IN CRT-D PATIENTS: RESULTS FROM THE LONG-TERM FOLLOW-UP OF MADIT-CRT

Poster Contributions
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Authors: *Valentina Kutyifa, William Jackson Hall, Scott Solomon, Dorit Knappe, Anne-Catherine Pouleur, Scott McNitt, Wojciech Zareba, Arthur Moss, University of Rochester Medical Center Heart Research Follow-Up Program, Rochester, NY, USA*

Background: Reduction in dyssynchrony has been shown to be an important prognostic factor of outcome in cardiac resynchronization therapy (CRT) patients. However, predictors of dyssynchrony improvement have been less investigated.

Methods: Predictors of dyssynchrony reduction were assessed in 435 CRT-D patients with dyssynchrony data available, enrolled in MADIT-CRT (Multicenter Automatic Defibrillator Implantation Trial-Cardiac Resynchronization Therapy), with crossovers censored (n=45). We evaluated the effects of dyssynchrony improvement at 1-year, dichotomized at 75th percentile on subsequent heart failure (HF) or death.

Results: Baseline dyssynchrony (0.45,p<0.001), LVESV index (-0.44,p<0.001), previous myocardial infarction (-13.6,p=0.003), age (-0.53,p=0.006), systolic blood pressure (0.33,0.01), LBBB (11.62p=0.03) and QRS duration (0.28,p=0.03) predicted greater reduction in dyssynchrony. In LBBB patients, baseline QRS duration did not remain a significant prognostic factor. During the median total follow-up of 40 months, patients with dyssynchrony improvement (≥48% decrease) had significantly lower incidence (Figure), and risk of HF/Death (HR=0.43, 95% CI:0.19-0.94, p=0.036). In LBBB patients, effects were even more pronounced (HR=0.27, 95% CI:0.08-0.89, p=0.032).

Conclusions: CRT-induced improvement in dyssynchrony is predicted by baseline clinical factors, and is associated with significant clinical benefit, especially in patients with LBBB.