



Heart Failure and Cardiomyopathies

SUSTAINED CLINICAL BENEFIT OF CARDIAC RESYNCHRONIZATION THERAPY IN PATIENTS WITH RELATIVELY PRESERVED EJECTION FRACTION: A MADIT-CRT LONG-TERM FOLLOW-UP SUB-STUDY

Oral Contributions
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Background: We have previously reported benefit from cardiac resynchronization therapy with a defibrillator (CRT-D) in mild heart failure (HF) patients with left ventricular ejection fraction (LVEF>30%). However, long-term outcomes of CRT-D in patients LVEF>30% have not yet been investigated.

Methods: We analyzed the effects of CRT-D vs. an implantable cardioverter defibrillator (ICD) on long-term risk of all-cause mortality and HF/death in patients with LVEF≤30% (n=824) and LVEF>30% (n=450), with left bundle branch block (LBBB). Multivariate Cox proportional hazards regression models and Kaplan-Meier analyses were utilized.

Results: CRT-D was associated with a significant 46% reduction in the risk of long-term death in patients with LVEF>30% (HR=0.54, 95% CI: 0.31-0.95, p=0.032) and 31% risk reduction for LVEF≤30% (HR=0.69, 95% CI: 0.49-0.96, p=0.029, interaction p>0.05). Mortality benefit from CRT-D emerged after 3 years of CRT-D implantation in patients with LVEF<30%, while benefit was imminent in patients with LVEF>30% (Figure). Furthermore, CRT-D was associated with significant risk reduction of HF/death in patients with LVEF>30% (HR=0.46, 95% CI: 0.31-0.66, p<0.001), and LVEF≤30% (HR=0.52, 95% CI: 0.41-0.67, p<0.001, interaction p>0.05).

Conclusions: In MADIT-CRT, LBBB patients with LVEF>30% derive significant, sustained long-term benefit from CRT-D compared to ICD-only, with reduction in HF/death, accompanied by a significant reduction in long-term all-cause mortality.

Treatment Effect in LVEF≤30% and LVEF>30%

