



## LEFT VENTRICULAR LEAD POSITION AND THE RISK OF VENTRICULAR ARRHYTHMIAS IN THE MADIT-CRT STUDY

ACC Oral Contributions

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**Background:** Appropriate positioning of the left ventricular (LV) lead for cardiac resynchronization therapy (CRT) is of significant importance to increase the response to CRT. However, no data are available regarding the influence of LV lead position on the risk of ventricular tachycardia (VT) or ventricular fibrillation (VF).

**Methods:** The position of the LV lead was evaluated by means of biplane coronary venograms and chest X-rays (anterior and lateral view) at the time of CRT-device implantation in patients enrolled in the Multicenter Automatic Defibrillator Implantation Trial - Cardiac Resynchronization Therapy (MADIT-CRT).

**Results:** LV lead was evaluated in 799 patients and positioned at the LV-apex in 110 (14%) patients, in the anterior position in 146 (18%) patients, lateral position in 450 (56%) patients and posterior position in 93 (12%) patients. The lateral or posterior CRT lead location was associated with a significantly lower risk of VT/VF than the anterior lead location (Figure). Apical lead position was not arrhythmogenic although associated with increased mortality. After adjustment for clinical covariates (female, ischemic cardiomyopathy, QRS $\geq$ 150ms, LBBB, RBBB) the lateral or posterior LV lead location was associated with a hazard ratio for VT/VF = 0.57 (95% CI 0.38-0.85, p=0.007) compared to anterior LV lead location.

**Conclusions:** CRT therapy with posterior or lateral LV lead position is associated with a decreased risk of arrhythmic events in comparison to anterior lead location.

