**IS CARDIAC RESYNCHRONIZATION THERAPY PROARRHYTHMIC?**

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Cardiac resynchronization therapy (CRT) is beneficial in the treatment of patients with systolic heart failure, New York Heart Association (NYHA) Class III-IV symptoms, left ventricular ejection fraction (EF) </=35%, and QRS duration

>/=120 ms. CRT leads to improvement in EF and functional capacity, reverse ventricular remodeling, and better survival. However, the effect of CRT on ventricular arrhythmias has been controversial. Epicardial left ventricular pacing reverses the normal direction of ventricular activation, causes dispersion of repolarization and QT interval prolongation, and creates the substrate for reentrant arrhythmias. Some clinical trials have shown new or worsening ventricular arrhythmias in CRT patients. However, other clinical studies have shown a reduction in ventricular arrhythmias and fewer appropriate shocks from implantable cardioverter defibrillators (ICDs). In a substudy of the MADIT-CRT trial, patients were enrolled with ischemic or nonischemic cardiomyopathy, EF </=30%, NYHA I-II, QRS >/=130 ms and randomized to CRT-defibrillator (CRT-D) or ICD alone. High responders to CRT were defined as >/=25% reduction in left ventricular end systolic volume (LVESV). The risk of first appropriate ICD therapy was 12% among high responders, 28% in low responders, and 21% in patients who received ICD therapy only (p=0.001). Every 10% reduction in LVESV led to a 20% reduction in ventricular arrhythmias. Thus, it appears that effective CRT leads to a reduction in ventricular arrhythmias, whereas ineffective CRT may be proarrhythmic. It is critical to select appropriate patients for CRT and place the leads in an optimal position to enhance the likelihood of optimal outcomes in follow-up.