Cardiac Resynchronization Therapy for Heart Failure: Here to Stay

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In this issue of *Heart Drug*, Piepoli et al. review data concerning the role of atrial-synchronized biventricular pacing, or cardiac resynchronization therapy, for the treatment of heart failure and pose the question: 'Is it here to stay?' As they point out, results from mechanistic studies of cardiac resynchronization have demonstrated improved cardiac function and enhanced hemodynamics determined either echocardiographically or by invasive techniques. In addition, observational clinical studies have shown improvements in quality of life, functional status, and exercise capacity in heart failure patients treated with resynchronization therapy. Of course, such data alone cannot support the broad application of such a therapy in clinical practice. Thus, a series of randomized controlled trials of resynchronization therapy including more than 4,000 patients have been completed, and the weight of evidence supporting the routine use of cardiac resynchronization for patients with moderate-to-severe chronic systolic heart failure and ventricular dyssynchrony is now overwhelming.

Results from these trials have consistently demonstrated significant improvements in quality of life, functional status, and exercise capacity in NYHA class III and IV heart failure patients assigned to active resynchronization therapy [1–4]. In these patients, cardiac resynchronization has also been shown to improve cardiac structure

and function, while significantly reducing the risk of worsening heart failure [1, 2]. In 2001, the first resynchronization device became commercially available in the United States. The next year, two devices which combine biventricular pacing capability with implantable cardioverter defibrillators (ICDs) were approved for use by the US Food and Drug Administration. Recently updated ACC/AHA/NASPE Pacemaker and ICD Guidelines included cardiac resynchronization therapy as a Class IIA recommendation for pacing [5]. Since that time, preliminary results from another large-scale trial have suggested a significant reduction in the combined endpoint of all-cause mortality and all-cause hospitalization with cardiac resynchronization therapy in an advanced heart failure population [6]. Thus, cardiac resynchronization therapy not only makes heart failure patients feel better, it also helps them to live longer. Given these favorable effects on subjective as well as objective outcomes in heart failure patients, cardiac resynchronization therapy is here to stay.

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