

Heart Failure

REVISITING DIASTOLIC FILLING TIME AS MECHANISTIC INSIGHT FOR RESPONSE TO CARDIAC RESYNCHRONIZATION THERAPY

Poster Contributions

Poster Sessions, Expo North

Saturday, March 09, 2013, 10:00 a.m.-10:45 a.m.

Session Title: New Diagnostic and Imaging Strategies in Heart Failure

Abstract Category: 15. Heart Failure: Clinical

Presentation Number: 1136-306

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Background: Intra-ventricular dyssynchrony and often associated prolonged atrio-ventricular (AV) conduction both reduce diastolic filling time, which can be improved by cardiac resynchronization therapy (CRT). We investigated whether change in diastolic filling time corrected for RR interval (Δ DFTc) after CRT might serve to assess the mechanistic response to CRT.

Methods: Echocardiography data of consecutive CRT patients in sinus rhythm (n=130) were studied before and 6 months after implantation. Mortality and heart failure hospitalization data were collected.

Results: The programmed AV delay, percentage of biventricular pacing and change in PR-interval were similar irrespectively of Δ DFTc. DFTc increase after 6 months reflected favorable reverse left ventricular (LV) remodeling and was significantly associated with freedom from death or heart failure admission (P-value=0.008). Δ DFTc was superior to change in ejection time, LV diameters or QRS width, to predict event-free survival. In multivariate analysis including ischemic etiology, heart rate, QRS width and morphology, PR-interval, inter-ventricular mechanical delay, LV ejection fraction and baseline diastolic dysfunction stage, shorter DFTc before implantation was the only predictor of subsequent DFTc increase (P-value=0.001).

Conclusions: DFTc increase after CRT reflects favorable reverse remodeling and is associated with better clinical outcome. Baseline DFTc predicts subsequent increase after implantation.

