



IMAGING AND DIAGNOSTIC TESTING

ECHOCARDIOGRAPHIC DYSSYNCHRONY PREDICTS SURVIVAL FOLLOWING CARDIAC RESYNCHRONIZATION THERAPY

ACC Poster Contributions

Georgia World Congress Center, Hall B5

Monday, March 15, 2010, 9:30 a.m.-10:30 a.m.

Session Title: MRI: Coronary Artery Disease - Diagnosis & Prognosis

Abstract Category: General Echocardiography: TTE

Presentation Number: 1151-248

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Background: Although the ability of echo dyssynchrony to predict response to cardiac resynchronization therapy (CRT) has been questioned recently, the important end-point of survival has not been well studied.

Methods: To test the hypothesis that dyssynchrony can predict survival after CRT, 222 consecutive Class III-IV heart failure patients, EF<35%, QRS>120ms for CRT were studied. Longitudinal dyssynchrony was assessed by tissue Doppler (TDI) velocity 12-site standard deviation (Yu Index); pre-defined cut-off >32ms, and radial dyssynchrony by speckle tracking strain anteroseptal-posterior wall delay; pre-defined cut-off >130ms. Survival free from transplant or left ventricular assist device (LVAD) after CRT was followed for 3.5 yrs.

Results: Overall, 210 (94%) patients had TDI and 207 (93%) had speckle tracking data. Age and EF were similar, but QRS was less wide in those without radial dyssynchrony (149±23 vs.160±26 ms p<0.05), and ischemic disease was more frequent in those without dyssynchrony (68-76% vs. 47-52%, p<0.05). There were 61 events: 45 deaths, 8 transplants, and 8 LVADs over 3.5 yrs. Significant dyssynchrony by Yu Index or radial strain was independently associated with a more favorable event-free survival after CRT (p<0.05 and p<0.01, respectively).

Conclusions: The absence of echo dyssynchrony was predictive of significantly less favorable event-free survival following CRT than the presence of dyssynchrony. These observations support the predictive value of dyssynchrony.

