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Heart Failure and Cardiomyopathies

ECHO-GUIDED ATRIOVENTRICULAR DELAY OPTIMIZATION IN PATIENTS UNDERGOING CARDIAC RESYNCHRONIZATION THERAPY: SINGLE CENTER EXPERIENCE IN 2196 PATIENTS

Poster Contributions

Poster Hall B1

Sunday, March 15, 2015, 9:45 a.m.-10:30 a.m.

Session Title: Optimizing Device Therapy

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Background: The utility of Atrioventricular (AV) delay optimization following Cardiac Resynchronization Therapy (CRT) is unclear compared to empiric AV delay settings. We aim to determine the utility of evaluating and selectively optimizing AV synchrony using the Echocardiographic Doppler-Guided technique following CRT.

Methods: All patients undergoing CRT and an EchoDoppler-Guided AV delay-hemodynamic assessment at Cleveland Clinic were included from 2003 to 2013. AV delay timing was interrogated and optimized as indicated by sampling mitral inflow and diastolic dysfunction (DD) with pulsed Doppler echocardiography, such that the mitral valve closure most closely approximated the termination of the atrial contribution to filling.

Results: Of 2196 patients identified there were 69.4% men and 30.6% female with a mean age of 66.25. Following CRT implant and prior to AV optimization 1169 patients (53%) were stage -1 DD and therefore maintained at their out-of-the-box AV delay setting. Of the remaining 1027 patients who were in stage 2 or 3 DD, 131 (12.7%) patients showed improvement of > 1 diastolic functional stage after undergoing AV delay optimization.

Conclusion: Most patients (53%) undergoing CRT exhibit satisfactory diastolic filling by Doppler Echocardiography suggesting optimized AV synchrony at empiric AV delay settings. Of those exhibiting suboptimal diastolic filling, 12.7% improved diastolic function and lower atrial filling pressures with an Echo-Guided AV optimization. Echo-Guided AV delay-hemodynamic interrogation provides a rapid, simple and reliable method to assure optimal AV electrical-mechanical synchrony for a majority of patients undergoing CRT.