



## IMAGING AND DIAGNOSTIC TESTING

## CLINICAL AND ECHOCARDIOGRAPHIC CHARACTERISTICS OF HEART FAILURE PATIENTS WITH WIDE QRS BUT WITHOUT MECHANICAL DYSSYNCHRONY AND THEIR RESPONSE TO RESYNCHRONIZATION THERAPY

ACC Poster Contributions

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**Background:** The absence of mechanical dyssynchrony in heart failure (HF) patients with wide QRS has been associated with lack of response to resynchronization therapy (CRT).

**Methods:** We studied 298 HF patients with ejection fraction (EF)  $\leq 35\%$  and QRS  $\geq 120$ ms. Dyssynchrony was defined as tissue Doppler (TDI) velocity maximum opposing wall delay in 3 apical views; ( $\geq 65$  ms), speckle tracking radial strain antero-septal to posterior wall delay ( $\geq 130$  ms) and/or interventricular mechanical delay (IVMD) ( $\geq 40$  ms). EF follow up was available on 173 patients 7 $\pm$ 6 months after CRT. Response was defined as a  $\geq 15\%$  increase in EF.

**Results:** Of 298 patients, 24% had no dyssynchrony by TDI, 28% by radial strain, 54% by IVMD and only 9% had no dyssynchrony by any **Methods:** QRS in patients with and without TDI dyssynchrony were similar ( $160 \pm 26$  vs.  $158 \pm 30$ ms,  $p=NS$ ), but that was narrower in those with no radial dyssynchrony and IVMD ( $151 \pm 26$  vs.  $161 \pm 27$ ms and  $149 \pm 23$  vs.  $172 \pm 27$ ms, respectively,  $p < 0.01$ ). Patients without dyssynchrony more often had ischemic disease (74% vs. 53% by TDI and 77% vs. 50% by radial strain,  $p < 0.001$ ). Patients without dyssynchrony had a significantly lower EF response to CRT from  $23 \pm 5$  to  $26 \pm 6\%$  ( $p=NS$ ) vs.  $25 \pm 5$  to  $34 \pm 8\%$  in those with dyssynchrony ( $p < 0.001$ ).

**Conclusion:** HF patients with wide QRS but without mechanical dyssynchrony were characterized by having ischemic disease more often, a narrower QRS with no radial dyssynchrony, and a lower EF response to CRT overall. These observations may have clinical implications.

