STRICTER CRITERIA FOR LEFT BUNDLE BRANCH BLOCK DIAGNOSIS DO NOT IMPROVE PATIENT SELECTION FOR CRT

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Purpose of the study: Cardiac resynchronization therapy (CRT) was proved to be effective in patients with heart failure and left bundle branch block (LBBB). Recently, new ECG criteria have been proposed for the diagnosis of LBBB. These criteria are stricter than the current American Heart Association (AHA) criteria and thus increase the specificity of LBBB diagnosis. We assessed the rate of echocardiographic response to CRT in patients who did and did not meet new criteria (Strict-LBBB).

Method: Consecutive patients who received CRT definitions were enrolled in the CRT MORE registry. Patients with no-LBBB QRS morphology according to AHA, atrial fibrillation, right bundle branch block and right ventricular pacing were excluded from the analysis. Strict-LBBB was defined as QRS ≥140ms for men and ≥130ms for women, Q5 or Q6 in V1–V2, mid-QRS notch or slurring in ≥2 leads. Patients showing a relative decrease of ≥15 in left ventricular end systolic volume (LVESV) at 12 months were defined as responders.

Summary of results: Among 335 patients with AHA LBBB, 131 (39%) had Strict-LBBB. Patients with and without Strict-LBBB showed comparable baseline characteristics except for QRS duration (166 ± 20ms vs 152 ± 25ms, p = 0.001). At 12-month evaluation responders were 205 (61%). 85 (65%) patients had Strict-LBBB and 120 (59%) had no Strict-LBBB (p = 0.267). On multivariate analysis, history of atrial fibrillation, larger LVESV, and presence of mid-QRS notch in ≥3 leads (OR 1.96, 95%CI 1.04 to 3.70, p = 0.038) were independently associated with the echocardiographic response.

Conclusion: Recently proposed stricter criteria for LBBB diagnosis did not improve the identification of CRT responders. Among ECG variables, only the presence of mid-QRS notch in ≥3 leads was associated with the echocardiographic response.

Conflict of interest: none

THE IMPACT OF LEFT VENTRICULAR SCAR ON THE ACUTE HEMODYNAMIC IMPROVEMENT WITH MULTISITE LEFT VENTRICULAR PACING

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Purpose: Multisite biventricular (BiV) pacing may offer additional acute hemodynamic benefits to traditional BiV pacing either through multisite pacing (MPP) or multipolar pacing (MPM) with a multisite left ventricular (LV) lead within one vein.

Our objective was to test whether the presence, amount and distribution of scar impacts the degree of acute hemodynamic response (AHR) with multisite pacing.

Method: Multi-center study, where patients underwent an acute hemodynamic study as part of their BiV procedure. LV dP/dt max, was measured using the difference between baseline AHR and the optimal BiV pacing. MPP and MPM was compared to the same patient. All patients had late gadolinium enhanced CMR imaging to assess scar burden and distribution.

Summary of results: Twenty-four LBBB patients completed the study (43±10 yrs, QRS width 171±20 ms, 38% NYHA class II/III, and 58 ischemics). Scar volume was 61±7% with 6/24 patients having a scar volume ≥40%. MPP and MPM displayed similar AHR when compared to best BiV site (BiV). There was a statistically significant difference in the AHR (MPP-BiV) versus scar volume (R = 0.46, p = 0.02), however the mean AHR benefit gained was only 3.9±1.8
cm H2O per 10% increase in scar burden.

Conclusion: Greater scar volume and the distribution of scar at the pacing site may increase the likelihood of AHR improvement with MPP but not MPM over BiV.

Conflict of interest: none

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