

THE RELATIONSHIP BETWEEN THE PROXIMITY OF LEFT VENTRICULAR LEAD POSITIONS TO THE LATEST SITE OF ACTIVATION AND RESPONSE TO CARDIAC RESYNCHRONIZATION THERAPY: HOW CLOSE DO YOU NEED TO BE?

ACC Poster Contributions
Georgia World Congress Center, Hall B5
Sunday, March 14, 2010, 9:30 a.m.-10:30 a.m.

Session Title: Effect of Lead Placement on Cardiac Pacing
Abstract Category: Cardiac Pacing
Presentation Number: 1024-130

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Background: Left ventricular (LV) lead placement is an important determinant of response to cardiac resynchronization therapy (CRT). We aimed to investigate the relationship between LV lead proximity to the latest site of activation and CRT response.

Methods: Sixty seven patients (age 69 +/- 8 yrs, NYHA III 92%, EF 23 +/- 7%, QRS width 154 +/- 9 ms) were assessed before and 3 months after CRT. The latest site of activation was determined with speckle tracking radial strain prior to CRT and the LV lead position defined by biplane fluoroscopy as either anterior, lateral, posterior or inferior. Patients were classified into one of three groups according to the relation of the LV lead position to the latest site: Concordant (C - lead position at latest site), Adjacent (A - within one segment) or Remote (R - 2 or more segments away from latest site). CRT response was defined as a >15% reduction in LV end systolic volume (LVESV) at 3 months.

Results: The proportions of patients in group C, A and R were 42% (n=28), 31% (21) and 27% (18) respectively. The baseline characteristics between all three groups were similar. There were no differences in either the extent of LVESV reduction from baseline between groups C and A (23.1 vs 20.4%, p=0.49) or response rates (78.6 vs 61.9%, p=0.20). There were significant differences between groups C and R and groups A and R in both the extent of reduction of LVESV (C vs R: 23.1 vs 6.8%, p<0.01, A vs R: 20.4 vs 6.8%, p<0.01) and response rates (C vs R: 78.6 vs 20.1%, p<0.01, A vs R: 61.9 vs 20.1%, p<0.01).

Conclusions: Similar extents of LV reverse remodeling are seen in patients with an LV lead position either concordant or adjacent to the latest site of activation. This suggests that the target area for optimal LV lead placement is potentially quite large and requires further study in prospective trials.