

 **CARDIAC ARRHYTHMIAS**

ATRIAL PACING FREQUENCY AND MORTALITY IN CRT RECIPIENTS: RESULTS FROM THE ALTITUDE STUDY GROUP

ACC Poster Contributions

Ernest N. Morial Convention Center, Hall F

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Background: Few cardiac resynchronization therapy (CRT) trials have evaluated the relationship between atrial pacing (AP) and mortality outcomes in devices programmed to the DDD mode. We sought to evaluate the frequency of AP and the mortality impact of AP in CRT recipients with devices programmed to DDD mode and implanted across the U.S. who transmit device data using the Boston Scientific LATITUDE® remote monitoring system.

Methods: Data from CRT patients (pts) in DDD mode with lower rate limit (LRL) from 40 to 79 bpm were analyzed (n=15,703) by the ALTITUDE study group. All-cause mortality was determined from the Social Security Death Index. The association between % AP and mortality was analyzed by pacing groups using Cox proportional hazards regression models adjusting for age, gender, % biventricular pacing, estimated AF incidence, and year of implant.

Results: Pt characteristics (mean ± SD): age 68.6 ± 11.6 yrs, 67.57% male, LATITUDE remote follow-up duration was 24.4 ± 13.6 months. Baseline pacing values were collected over a median of 2.7 months (Inter-quartile range: 1.1 - 7.1). Most pts have atrial rate programming between 60-69 bpm (Table 1). The percent of AP is highest in patients programmed to LRL 70-79 bpm. A low burden of AP from 50-79 bpm was associated with up to a 52% reduction in mortality compared to no AP.

Conclusion: Atrial pacing compared to no atrial pacing is not associated with mortality risk and may be beneficial across a wide range of programmed atrial pacing rates in CRT recipients.

Lower Rate Limit (LRL):	40 - 49 BPM	50 - 59 BPM	60 - 69 BPM	70 - 79 BPM
N (patients)	2121	3699	8109	1774
age: mean ± std.	65.0 ± 11.7	66.2 ± 11.6	67.9 ± 11.4	70.0 ± 11.8
% male:	67.2%	67.3%	66.7%	72.0%
Median Biv pacing (pct):	98.7%	98.7%	98.7%	97.9%
AF (based on > 5% of atrial sensed beats above 180 bpm)	4.9%	5.9%	8.4%	21.5%
Atrial Pacing (%):				
No Atrial Pacing (< .5%)	2,022 (95.33%)	2,335 (63.13%)	1,865 (23.00%)	195 (10.99%)
1% - 49%	98 (4.62%)	1,321 (35.71%)	5,207 (64.21%)	747 (42.11%)
50% - 80%	0 (.00%)	32 (.87%)	722 (8.90%)	436 (24.58%)
>80%	1 (.05%)	11 (.30%)	315 (3.88%)	396 (22.32%)
Cox model Results: Hazard Ratio/p-value (compared to patients with No pacing):				
LRL:	40 - 49 BPM	50 - 59 BPM	60 - 69 BPM	70 - 79 BPM
1% - 49% Atrial Pacing vs no atrial pacing	HR = 1.13 p = NS	HR = .83 p = .023	HR = .65 p < .001	HR = .61 p = .006
50% - 80% Atrial Pacing vs no atrial pacing	N/A*	N/A*	HR = .78 p = .007	HR = .48 p = .001
Greater than 80% Atrial Pacing vs no atrial pacing	N/A*	N/A*	HR = 1.19 p = NS	HR = .75 p = NS