

Wheter LV Lead Position and Distance between LV and RV Influence on Outcomes of Patients with CRT?

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Background: The aim of this study was to analyze the impact of the LV lead position and the distance between LV and RV electrodes on outcome in patients with cardiac resynchronization therapy (CRT).

Methods: A retrospective cohort analysis of 207 consecutive patients that were implanted CRT between January 2005 and January 2009. The location of the LV lead was assessed by chest x-rays at the time of device implantation. The LV lead location was classified along the lateral view into an anterior and a posterior position and along the antero-posterior view into a basal, midventricular, and inferior. The primary end point was two year mortality. Secondary end-point was complication rate after CRT implantation.

Results: Basal LV lead position on antero-posterior view was less common and found in 9.6% of patients while midventricular and inferior positions were noted in 45.2% of cases. Anterior lead position on lateral view was noted more frequently than posterior lead position 53.4 vs. 46.6% of cases. There were similar two year mortality rates in basal (21.4%), midventricular (22.4 %) and inferior (17.6 %) LV lead positions on antero-posterior view ($P=0.1$) and in anterior (22.5%) vs. posterior LV lead position (18.1%) on lateral view ($P=0.5$). Also we did not find any difference in complication rate among the groups. There was a moderate correlation ($r=0.5$) between the distance between LV and RV electrodes and two year mortality.

Conclusions: In our study we did not find any statistically significant differences in two year mortality in groups with diverse LV lead position. There was a moderate correlation between the distance between LV and RV electrodes and two year mortality in patient with CRT.