Single center experience of Abbott Multipoint pacing devices

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Introduction: Cardiac Resynchronization therapy (CRT) with Multipoint pacing (MPP) is an advanced feature which helps to pace Left ventricle at dual-sites by using 2 different vectors with a programmable delay. This observation aims to evaluate impact of MPP on non-responder patients.

Methods: A total of consecutive 79 patients were implanted with Abbott CRT-pacemaker(P) or defibrillator(D) at Pushpawati Singhania Research Institute (PSRI) Hospital, India. Clinical, functional and hemodynamic parameters {Left Ventricular End Systolic Volume (LVESV)} were evaluated at pre-implant, 6th month and 12th month. Patients with LVESV reduction of less than 15% were classified as non-responders at 6th month.

Result: The CRT-D (n=58) and CRT-P (n=20) systems were successfully implanted in 78 of 79 attempted implants (99%). There were 26 (33%) Non-responder patients at 6th month who were followed up till 12th month. Out of 26 patients MPP was programmed on in 11 patients. Clinical, functional and hemodynamic parameters were evaluated at 12th month. Out of 11, 4 patients completed 12th month follow up, 3 were lost to follow-up, in 2 MPP could not be turned on due to lack of vectors and 2 patients are due for 12th month follow up. All 4 patients were responder at 12th month with reduction in LVESV of >15%. New York Heart Failure Association (NYHA) class improvement by 1 class was observed in all patients. QRS narrowed at 12months to 125±22 ms from 174±18 ms at baseline. Patient global assessment showed markedly better outcome for all patients in comparison to baseline. Out of 4 completed patients, 3 patients had MPP programmed with anatomical separation (AS) and 1 patient with other MPP programming.

Conclusion: Hence, MPP is beneficial to heart failure patients who do not respond to regular CRT. Further MPP programmed with anatomical separation yielded better results.