Device Therapy - Cardiac Resynchronisation Therapy (CRT)

# Endocardial pacing is not haemodynamically superior to trans-coronary sinus epicardial pacing in cardiac resynchronization therapy: the Endo-Epi CRT study

Okafor O.[1]; Zegard A.[1]; Stegemann B.[1]; Arif S.[2]; De Bono J.[2]; Marshall H.[2]; Leyva F.[1]

[1]Aston University, Aston Medical Research Institute, Birmingham, United Kingdom of Great Britain & Northern Ireland
[2]Queen Elizabeth Hospital Birmingham, Department of Cardiology, Birmingham, United Kingdom of Great Britain & Northern Ireland

**Funding Acknowledgements:** Type of funding sources: Private grant(s) and/or Sponsorship. Main funding source(s): Medtronic

**Background:** Cardiac resynchronization therapy (CRT) conventionally involves trans-coronary sinus, epicardial left ventricular (LV) pacing. Some studies have suggested that endocardial LV pacing may be superior to epicardial LV pacing.

**Objectives:** To compare the acute haemodynamic effects of CRT when delivered from endocardial (Endo-CRT) and epicardial LV stimulation sites (Epi-CRT).

**Methods and results:** Sixteen CRT recipients (aged 70.4 ± 10.1 years [mean ± SD], 62.5% male, QRS: 156.5 ± 16.1 ms, LBBB in 13 [81.3%]) in sinus rhythm underwent intra-procedural measurements of the rate of rise of LV pressure (dP/dtmax) during Endo- and Epi-CRT (RADI pressure wire). Epi-CRT was delivered in basal, mid and apical positions. The Endo-CRT pacing site was chosen using iterative, biplane fluoroscopic views, to target the same position as the Epi-CRT site on the endocardium (see Figure A). Compared to AAI pacing (10 beats per minute above intrinsic rate), both Endo-CRT and Epi-CRT led to an increase in LV dP/dtmax (6.52 ± 8.90% and 6.15 ± 7.97% respectively, both p < 0.001). There were no significant differences in the change in LV dP/dtmax (ΔLV dP/dtmax) between Endo-CRT and Epi-CRT at basal (p = 0.54), mid (p = 0.78) or apical LV stimulation sites (p = 0.12) [Figure B].

**Conclusions:** Endo-CRT is not haemodynamically superior to Epi-CRT.

Abstract Figure.