

AB17-05

WIRELESS LV ENDOCARDIAL STIMULATION FOR CRT, SELECT-LV STUDY: PERFORMANCE AND PRELIMINARY EFFICACY IN ISCHAEMIC PATIENTS

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Introduction: Pts implanted with conventional CRT do not always benefit. Inability to place the CS lead, lead instability, and lack of clinical response to CRT are a few causes. Left Ventricular (LV) endocardial pacing has been proposed as a potential solution. The SELECT-LV study assessed the safety and performance of the novel Wireless Stimulation of the Endocardium System, (WiSE), to provide endocardial LV stimulation. This substudy has looked at the outcomes for the ischaemic patients, a difficult group to treat effectively with CRT.

Methods: The SELECT-LV Study is a non-randomized EU study of CRT-indicated pts with either a failure of CRT, or requiring an upgrade but unsuitable for CRT. The WiSE System includes a leadless pacing electrode implanted on the LV free wall. The electrode is activated by a submuscular ultrasonic transmitter synchronized to the RV pacing pulse of a co-implanted pacer/ICD. The primary efficacy endpoint was successful BiV pacing (verified by EKG) at 1 m; secondary endpoints were performance at 6m together with preliminary efficacy assessment.

Results: Of 34 total pts, 15 had ischaemic cardiomyopathy; all were successfully implanted. Baseline data: age 68±7 yrs, 13 male, EF 24.1±5.6 %, NYHA 2.7±0.6 and baseline intrinsic QRS 168±32 ms. One pt had a revision of battery and transmitter, 1 pt had a CVA, which resolved, after failing to follow the prescribed anticoagulation regimen and another had a groin aneurysm. Consistent BiV pacing was demonstrated in 15 (100%) pts at 1 and 6 m. Reductions in QRS duration from intrinsic baseline at 1 and 6m were 44 and 39 ms, and from the baseline RV paced QRS were 54 and 42 ms. The increase in EF at 6m was 6.4±8.6% with 64.2% pts having ≥5% increase. NYHA class decreased to 1.8±0.8. LV end systolic volume decrease was 15.4±27.8 ml, with 45% and 55% of pts experiencing a 15% and 10% reduction respectively. Clinical composite score, including death, HF hospitalisation and global assessment, improved in 87% (13 pts), was unchanged in 6.6% (1 pt) and worsened in 6.6% (1 pt).

Conclusions: Difficult to treat ischaemic pts implanted in the SELECT-LV study showed promising clinical outcomes.

AB17-06

HIS BUNDLE PACING CAN REVERSE ADVERSE ELECTRICAL AND STRUCTURAL REMODELING INDUCED BY CHRONIC RIGHT VENTRICULAR PACING IN PATIENTS WITH LONGSTANDING COMPLETE HEART BLOCK

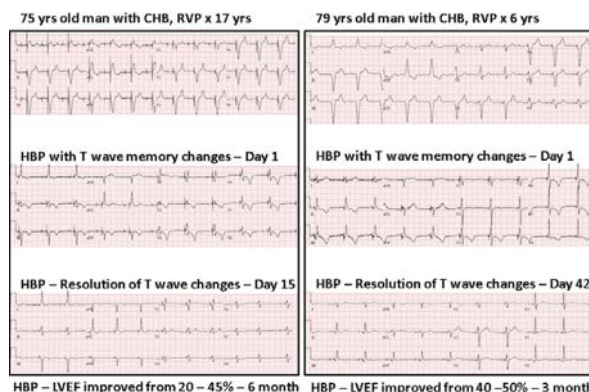
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Introduction: His bundle pacing is a physiological alternative to right ventricular pacing (RVP). Adverse electrical and structural remodeling is caused by chronic RVP. The aim of the study is to assess 1) the feasibility of HBP in pts with longstanding complete heart block (L-CHB); 2) reversal of remodeling induced by RVP.

Methods: HBP was attempted in 21 patients (age 74±13 yrs; men 13; HTN 15, DM 4, CAD 7, AF 8, AVR 1, MVR 2, AVN ablation 3) with L-CHB (mean duration 8±6 yrs, range 1-24 yrs) and chronic RVP. HBP was performed using Medtronic SelectSecure 3830 lead delivered via C315His sheath. Indications for HBP: pacing induced cardiomyopathy (PIC) 8, lead failure 8, infection 5.

Results: HBP was successful in all 21 pts. Thirteen patients had AV nodal block and 8 had HV block. Mean fluoroscopy duration 11±6 min. QRS duration significantly narrowed from 181±17 ms (152-222 ms, RVP) to 117±20 ms (85-144 ms, HBP, P<0.001). HBP threshold at implant was 1.8±1.2 V @ 0.5 ms; at last f/u (1.6±1 yr) was 1.75±0.9 V @ 0.5 ms. Ventricular sensing amplitude 4.6±4.4 mV (1.2 - 15 mV). LVEF improved from 32% (range 17-45%) at baseline to 49% (20-64%) during follow-up in the 8 pts with PIC (P=0.01). NYHA functional status improved by at least 1 class in 15 of 21 pts. All pts showed evidence for paradoxical acute T wave memory changes with HBP and normalized in 2-6 weeks.

Conclusions: Permanent HBP was successful in 21 pts with L-CHB and chronic RVP. Despite long duration of CHB (nodal and infra-nodal), conduction through distal HB and normalization of QRS could be achieved with HBP. Chronic RVP induced electrical (depolarization and repolarization) and structural (LV function) changes could be reversed with HBP.



HBP - LVEF improved from 20 - 45% - 6 month HBP - LVEF improved from 40 - 50% - 3 month