excellent vector was programmed initially, this vector remained excellent (15/15). In pts programmed to an adequate vector at baseline, 10/12 patients were still adequate and 2 were programmed to a different vector.
Conclusions: Although posture dependent activity differences were observed, detection of physical exercise and appropriate rate response with intracardiac accelerometer in a TCP was demonstrated. A simple exercise test allows selection of the accelerometer vector with the greatest activity to rest ratio.
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Right ventricular lead placement in a pacemaker population: comparison of apical and septal positions. The right pace study

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Introduction: Chronic right ventricular (RV) apical pacing induces mechanical left ventricular (LV) dyssynchrony and may cause heart failure at long-term follow-up. Septal RV site could induce less variation in the temporal pattern of LV mechanical activation.
Methods: The RIGHT PACE study is a trial comparing pacing from RV apex and septal area. Patients with indications for cardiac pacing and no indications for implantable-defibrillator and/or resynchronization were enrolled in 14 centers. The primary objective was to acutely evaluate the pacing-induced LV dyssynchrony, calculated as the delay between septum and lateral wall contraction (SLD), as recorded with tissue-Doppler echocardiography.
Results: 437 patients were enrolled. 274 patients received an RV lead in the apex and 163 in the septal area (high-septum 21, mid-septum 111, low-septum 31). The two groups were similar in terms of ejection fraction (57±9% versus 58±9%), prevalence of coronary artery disease (24% versus 29%), QRS duration (98±25ms versus 92±24ms, all $p>0.05$). During spontaneous LV activation, SLD was comparable between groups (48±27ms versus 52±28ms) and the proportions of patients with spontaneous LV dyssynchrony (i.e. SLD>41ms) were 25% and 28%, respectively (all $p>0.05$). During RV pacing, SLD increased to 54±27ms in Apex group and 57±25ms in Septal group (p=0.281). The proportions of patients with pacing-induced LV dyssynchrony were 48% and 51% (p=0.579). Nonetheless, the QRS increased to 145±30ms versus 141±31ms in Apex and Septal groups, respectively (p=0.285). After X-rays central adjudication, the apical positioning was not confirmed in 56 (20%) patients of the Apex group. Similarly, in 21 (16%) patients of the Septal group the adjudicated pacing site was the apex. According to on-treatment analysis, the proportion of patients with pacing-induced LV dyssynchrony was 47% with apical and 52% (p=0.331) with septal pacing. The QRS increased to 146±31ms versus 139±29ms in Apex and Septal groups, respectively (p=0.041).
Conclusions: Although pacing at the RV septal area resulted in shorter QRS duration than the RV apex, it did not reduce the pacing-induced LV dyssynchrony.

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Minimized ventricular pacing delays first onset of AF in pacemaker patients without AF history

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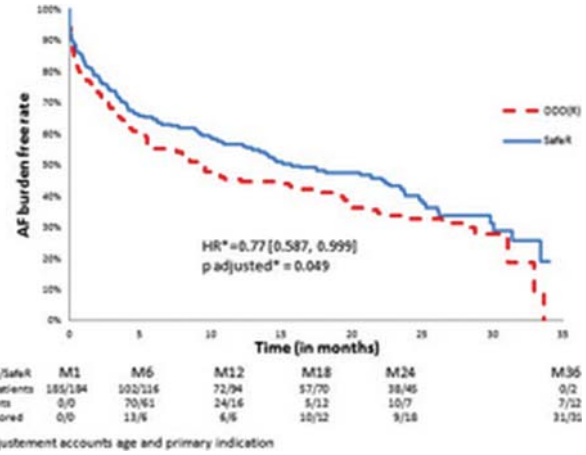
Introduction: Atrial fibrillation (AF) is a frequent comorbidity in the pacemaker (PM) population and has been associated with high risk of heart failure, stroke and death. ANSWER is a randomized (1:1), multicenter trial comparing the SafeR mode, designed to reduce unnecessary right ventricular pacing (Vp), with standard DDD in patients (pts) with sinus node disease (SND) or AV block (AVB), with or without atrial arrhythmia (AA). The aim of this post-hoc analysis was to (1) identify predictors of AF and (2) evaluate the incidence of first onset of AF according to the pacing mode, within 3 years after implantation in patients without AA history.
Methods: First onset of AF was ascertained from the PMs memories. Onset of AF according to the pacing mode was evaluated using Kaplan-Meier statistics. Predictors of AF were identified using a Cox model in pts without previous AA history among 13 parameters (age, indication, gender, NYHA class, LVEF, coronary disease, cardiomyopathy, valvular disease, HF history, diabetes, arterial hypertension and pacing mode).
Results: Out of the 650 pts enrolled in the ANSWER study, 380 pts (58.6%) were without history of AF at baseline (71.4±11.8 years, 61.5% males, 41% SND and 59% AVB). Among them, 369 pts were randomized (184 in SafeR and 185 in DDD). A 23% risk reduction in AF onset was associated with SafeR (HR=0.766, 95% [0.587, 0.999], adjusted p value=0.049) (Figure). Old age (p=0.035) and SND (p=0.004) were identified as predictors of AF onset.



Conclusion: In ANSWER patients without history of AA, younger age and primary indication of AVB were independently associated with a reduced risk of first onset of AF. In addition, SafeR mode proved to be superior to standard DDD pacing to prevent the first onset of AF.

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Are DDD/AAI mode switch algorithms worthwhile to prevent unnecessary right ventricular pacing in sick sinus rhythm patients? Results from a randomized cross-over study

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Background: Two algorithms designed to prevent unnecessary right ventricular pacing (RVP) were tested in the "Ventricular Pace Suppression (VPS) Versus Intrinsic Rhythm Support (IRS)" enrolling patients with sick sinus syndrome (SSS) and investigating their effect on RVP percentage, arrhythmic burden and left ventricle (LV)/atrium size. The VPS algorithm automatically switches from a dual-chamber mode to a single-chamber atrial mode or vice versa, when stable atrio-ventricular (AV) conduction is detected (6 out 8 beats) or is no longer confirmed; the IRSplus algorithm simply prolongs the pacemaker AV interval up to 400ms at the first ventricular sensed event, spontaneously occurred or detected during periodic searches.
Methods: SSS patients with indication to cardiac pacing without evidence of II/III degree AV block were 1:1 randomized after pacemaker implant either to IRSplus or VPS algorithms crossing-over after 6 months. The study was designed with a 90% power to detect a least difference in RVP percentage of 3%. Data were collected at 6 and 12 months. Non-normal distributions were generally obtained and described with median (interquartile range). Wilcoxon signed-rank test was used for intra-individual comparisons.
Results: A total of 230 patients (62% males, age 75 (69–79) years) were enrolled: ejection fraction, 57 (50–60)%; NYHA class I 57%, II 40%; CHA2DS2VASc score, 2 (1–2). IRSplus and VpS were respectively associated to a RVP percentage of 1 (0–11)% and 3.5 (0–27)%, (p=0.001) with non-significantly different atrial pacing percentages of 58 (27–82) and 54 (34–78). At the end of respective 6-month periods, variation rate of LV end-diastolic (–22% vs. –18%, p=0.4), end-systolic (25% vs. 20%, p=0.1), atrium end-diastolic (4% vs. 2%, p=0.4) and atrium end-systolic (4% vs 0%, p=0.9) volumes were not significantly different between IRSplus and VPS. No difference in AF burden was observed. In the subgroup of patients with baseline with baseline AV interval >270ms, RVP percentage was lower during the IRSplus period (3 (0–20)%) than during VPS (23 (1–63)%, p=0.01))
Conclusions: Our data showed that automatically prolonging the pacemaker AV delay to 400ms (as with the IRSplus), is at least as effective as DDD/AAI switch algorithms in preventing unnecessary RVP, with no relevant effects on arrhythmic burden and cardiac volumes. IRSplus was even superior in patients with prolonged intrinsic AV conduction, likely including undocumented paroxysmal AV blocks.
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