

bipole but was found with another. Furthermore, differences in whether phrenic nerve stimulation (PNS) occurred were seen when using different LV lead bipoles within the same branch of the CS.

Conclusion Our data suggest that only a small difference in AHR is seen when pacing along the same branch of the CS compared to pacing within different branches of the CS within the same patient. This means that although the site of LV lead placement is important, a proximal or distal position within a CS branch is much less important than choosing the right branch in terms of acute haemodynamic response. A choice of bipoles on the LV lead may mean, however, that problems with capture thresholds or PNS can be overcome without the need to reposition the LV lead.

154 PATIENTS RECEIVING STANDARD PACEMAKER GENERATOR REPLACEMENTS FREQUENTLY HAVE IMPAIRED LEFT VENTRICULAR FUNCTION AND EXERCISE INTOLERANCE, RELATED TO THE PERCENTAGE OF RIGHT VENTRICULAR PACING

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Background Right ventricular (RV) pacing is an accepted treatment for symptomatic bradycardia. However, long-term RV pacing is increasingly recognised to be detrimental to left ventricular (LV) systolic function. We wanted to establish the prevalence, associated features and predictors of LV systolic dysfunction (LVSD) and outcome in a contemporary group of patients with long-term RV pacemakers.

Methods We prospectively recruited consecutive patients listed for PGR between 2008 and 2010 at Leeds General Infirmary. We performed echocardiography, exercise testing and recorded indications for pacing, pacing variables and duration of pacing, comorbidities, current medication and renal function.

Results Of 399 PGR procedures 342 subjects (86%), 184 men, attended. Non-attendees had similar pacing variables and were of similar age as attendees. Mean age (SE) was 76 (1), and mean duration of pacing was 10 (0.3) years. Comorbidities were common: diabetes mellitus in 11%, previous myocardial infarction in 15%, previous cardiac surgery in 26% and atrial fibrillation (AF) in 26%. Medical therapy included β -blockers in 60% and ACE inhibitors in 70%. Dual chamber devices were implanted in 77% (45% of all patients had rate responsive (RR) pacing programmed). Mean percentage of ventricular pacing (%VP) was 61 (2)%. Mean left ventricular ejection fraction (LVEF) was 49 (1)%, (44% had an LVEF <50%). Mean peak oxygen uptake (pV_{O_2}) (in 107 subjects) was 17 (1) ml/kg/min and mean creatinine was 108 (3) μ mol/l. There was an inverse relationship between LVEF and %VP (0.42; $p < 0.0001$), and years since first implanted ($p = 0.09$) but there was no effect on LVEF of age, the presence of AF and the pacing mode. In single chamber devices, RR pacing was associated with higher %VP ($p = 0.01$), and a trend to worse LVEF ($p = 0.09$). These differences were not seen in RR programmed dual chamber devices. There was a negative relationship between pV_{O_2} and %VP ($r = 0.21$; $p < 0.03$). Even with a short follow-up period of 16 (0.5) months, 23 (7%) patients are dead. Patients dead at the censor date were older at the time of the assessment ($p < 0.005$), had a higher %VP ($p < 0.03$) and worse renal function ($p < 0.001$), but did not have significantly worse LVEF or pV_{O_2} . The presence of a single chamber device was associated with a poorer outcome ($p < 0.002$) despite patients with a single chamber device being of similar age as those with a dual chamber device.

Conclusions Patients receiving standard pacemaker generator replacements frequently have cardiovascular comorbidities, left ventricular dysfunction and impaired pV_{O_2} and suffer a high

mortality rate. In an unselected population of patients with pacemakers, we have established that the amount of RV pacing is related not only to important surrogate measures of outcome such as exercise tolerance and LVEF but also mortality. Whether an aggressive policy of limiting RV pacing in patients at risk reduces mortality is unknown.

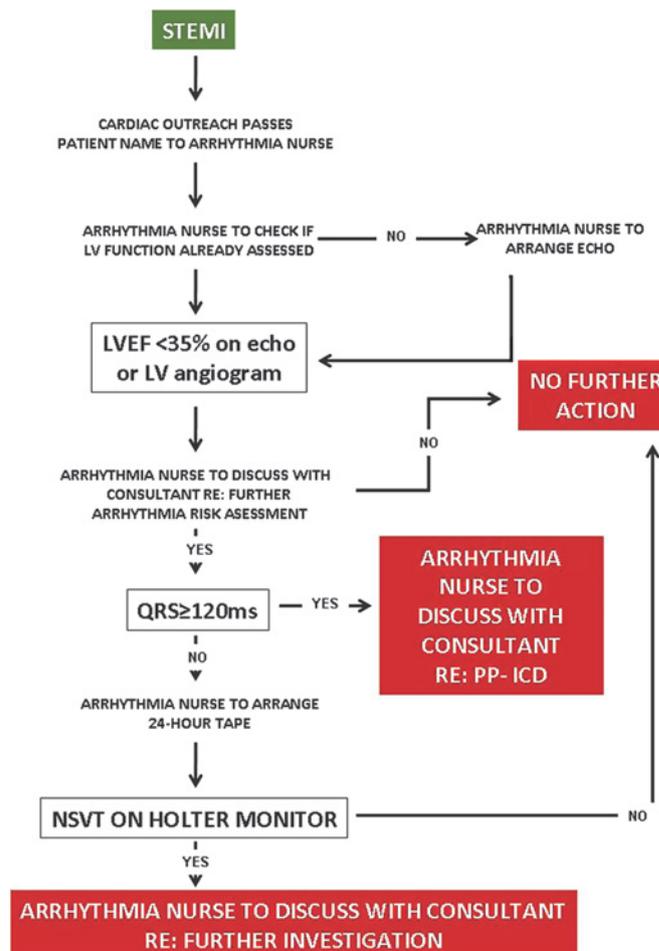
155 INCIDENCE SCREENING OF PATIENTS FOLLOWING ST ELEVATION MYOCARDIAL INFARCTION FOR PRIMARY PREVENTION IMPLANTABLE CARDIOVERTER DEFIBRILLATOR (ICD) IMPLANTATION HAS A LOW THERAPEUTIC YIELD

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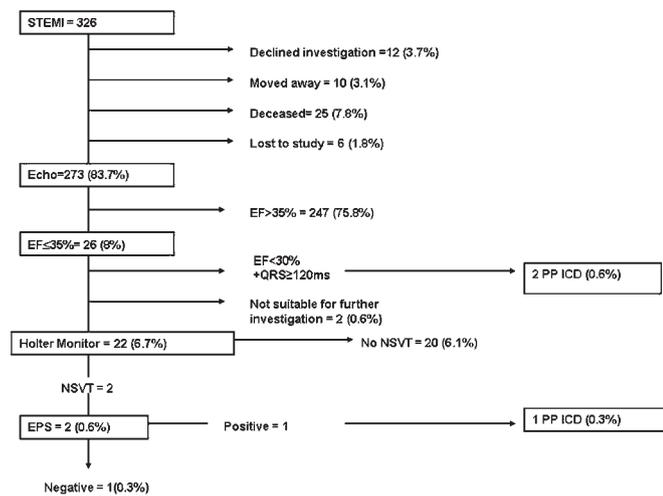
Introduction The ICD implant rate for the United Kingdom is low compared with the European Union and United States of America. National Institute of Clinical Excellence guidance TAO95 (NICE 2006) makes recommendations for primary prevention ICD implantation. Our study investigated the feasibility of systematically screening patients following an acute ST elevation myocardial infarction (STEMI) to improve local ICD implant rates.

Method A prospective single centre study was performed over 14-months, in tertiary centre setting. All patients with a diagnosis of an acute STEMI had an echocardiogram at 6 weeks to assess left ventricular ejection fraction (LVEF). Patients with impaired LVEF then underwent screening for primary prevention ICD as per TA095 recommendations (Abstract 155 figure 1).



Abstract 155 Figure 1

Results 326 STEMI patients were identified. Of these 12(3.7%) declined investigation. 25(7.8%) died during the investigation period (22 died during their initial acute event, 3 died of non cardiac causes following discharge). 10(3.1%) requested follow-up in another geographical area. 26(8%) patients were identified as LVEF<35%; 2(0.6%) patients were assessed as not clinically suitable for further investigation. 2(0.6%) had LVEF<30% and QRS>120ms, both proceeded to have a primary prevention ICD implanted. 24(7.4%) patients had Holter monitors; 2(0.6%) were identified as having episodes of NSVT. Both patients had EPS; 1(0.3%) had inducible VT and proceeded to have a primary prevention ICD implanted. 1 patient (0.3%) self presented with a cardiac arrest before completion of their screening tests and received a secondary prevention ICD. In total, 3(0.9%) primary prevention ICDs were implanted (Abstract 155 figure 2).



Abstract 155 Figure 2

Conclusion The yield from this study was low; 3 patients (0.9%) proceeded to primary prevention ICD. It should also be noted that the methodology resultant from TA095 guidelines was labour and resource intensive. An alternative approach of opportunistic screening in patient groups with a high prevalence of impaired LV function might give a higher yield than our approach looking at disease incidence.

156 A SINGLE CENTRE EXPERIENCE OF IVABRADINE AND CLONIDINE FOR INAPPROPRIATE SINUS TACHYCARDIA

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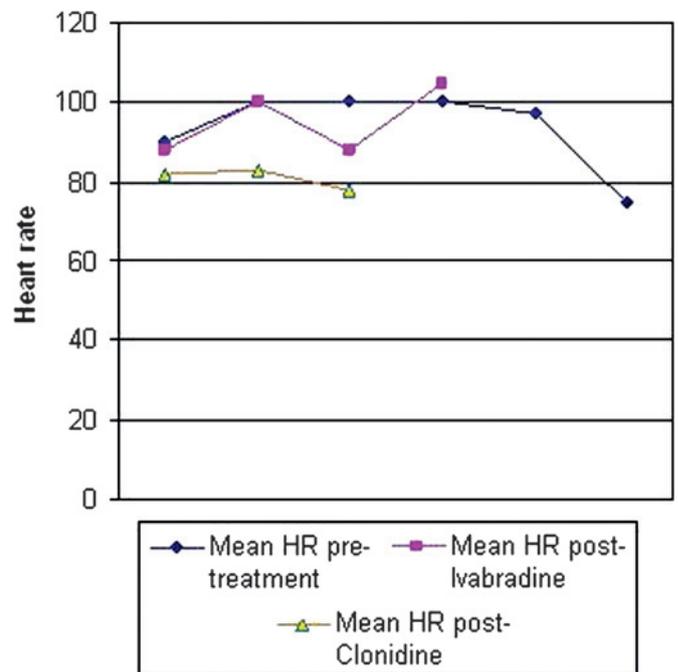
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Introduction Inappropriate sinus tachycardia (IST) is a relatively rare disease that manifests with resting tachycardia, a rapid increase in heart rate (HR) with minimal exertion, a normal ECG and absence of structural heart disease. Treatment options include β -blockade or sinus node modification which are not 100% successful. Newer agents like sinus node inhibitor (Ivabradine) or a centrally acting α -2 sympathomimetic (Clonidine) can be used but there is no success outcome data for either and there is also no evidence that one is better than the other. We present our experience of managing 6 patients with a diagnosis of IST with either Ivabradine or Clonidine or both.

Methods We identified 6 patients from 2005 to 2009 with a diagnosis of IST (according to accepted international guidelines) who had been treated with either Ivabradine or Clonidine or both. Medical case records were reviewed for each patient.

Results 5 out of 6 patients were women with a mean age of 27.5 years (range 16–40 years). All patients had been symptomatic for at least 6 months before presentation to our tertiary centre. 2

patients had associated symptoms of hyperadrenergic surges. Holter monitoring prior to treatment demonstrated sinus tachycardia. Resting pre-treatment mean 24 h HR was 94 ± 10 (range 75–100) and mean HR on minimal exertion was 157 ± 20 (range 130–176). All patients had a structurally normal heart on echocardiogram. Tilt table testing was considered in 3 patients due to their symptoms and it excluded postural orthostatic tachycardia syndrome. Pre-treatment with β -blockers had been unsuccessful in 5/6 patients. The remaining patient had symptomatic asthma and was therefore unable to tolerate β -blockers. Ivabradine was exclusively used in 3 patients and clonidine in 2. 1 patient was started with Ivabradine but later switched over to clonidine as it was ineffective. All 4 patients taking Ivabradine failed to gain symptom relief with no significant reduction in mean 24-h HR parameters. Mean resting HR after 3 months of Ivabradine therapy was 95 ± 9 (range 88–105) and mean HR on exertion was 159 ± 23 (range 128–180). 2/4 patients subsequently had complete sinus node ablation and AAIR pacemaker. In contrast, the 3 patients on clonidine had greater symptom resolution and fall in resting and exercise heart rates at 3 months follow-up. Resting mean HR was 81 ± 3 (range 78–83) and mean HR with exertion was 144 ± 18 (range 132–164). The HR variability pre and post treatment is shown in Abstract 156 figure 1.



Abstract 156 Figure 1

Discussion In our case series of 6 patients, Clonidine was more effective than Ivabradine both in terms of reducing heart rate and treating symptoms for patients with inappropriate sinus tachycardia. Patients with coexisting hyperadrenergic symptoms may benefit the most. A trial of Clonidine can be recommended before considering sinus node ablation. Formal randomised controlled trials are needed to confirm our findings.

157 AN INSIGHT INTO IMPLANTERS' PRACTICES OF ICD IMPLANTATION: A PHYSICIAN SURVEY

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Introduction The Implantable cardioverter defibrillator (ICD) is the mainstay of treatment for the prevention of sudden cardiac death (SCD) and the management of tachyarrhythmias. Informed patient