RELATIONSHIP BETWEEN 12-LEAD-ELECTROCARDIOGRAMS AND ELECTROGRAMS STORED IN IMPLANTABLE CARDIOVERTER DEFIBRILLATORS

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Background In the era of ICD primary prevention, an increasing proportion of patients have ICD electrograms (EGs) as the only documentation of VT.

Methods In 11 patients undergoing a LV electroanatomic map and having an ICD chronically implanted, we prospectively obtained 12-lead ECG from a mean of 18 LV pacing sites (range 8-36) while manually recording the ICD EG. Each ICD-EG was subsequently digitized and at least 3 beats per pacing site averaged for analysis.

Results EG quantitative parameters were compared with 12-lead ECG simple dicotomic variables (axis in the frontal plane, morphology in V1, see table) and correlated with quantitative parameters in aVL (a lead theoretically similar to EG).

	sup vs inf		right vs left		RBB vs LBB	
	sup	inf	right	left	RBB	LBB
Qvolt (mV) EG	0.579± 0.617	0.936± 0.632*	0.922± 0.659	0.327± 0.397*	0.846± 0.661	0.274± 0.327*
Rvolt (mV) EG	1.518± 0.678	1.229± 0.515*	1.349± 0.610	1.539± 0.677*	1.396± 0.634	1.477± 0.658
ratio Q/R EG	0.45± 0.47	0.79± 0.46*	0.75± 0.47	0.26± 0.36*	0.69± 0.49	0.2± 0.2*
S-SEG (ms)	51.8± 26.8	49.9± 29.6	50.7± 23.5	51.9± 33.9	48±24	58±34*
SEG-BEG (ms)	69.9± 32.7	74.1± 42.5	73.9± 37.1	66.6± 34.3	78±32	49±38*

Correlation Qvolt in aVL and EG: R2=0.001. Correlation Rvolt in aVL and EG: R2=0.08. Correlation ratio Q/R in aVL and EG: R2=0.005. *p<0.05; Q, R: first negative and first positive deflection; S-SEG: interval between stimulus and shock EG; SEG-BEG: interval between shock EG and bipolar EG.

Conclusions ICD-EG analysis can approximate some information as to 12-lead-ECG of VT (in case ECG is lacking). Lack of correlation between aVL and ICD_EG suggests substantial differences between these 2 recording sources despite their theoretical similarities.

EFFECTIVENESS AND FEASIBILITY OF A TRANSTELEPHONIC MONITORING PROGRAM

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Transtelephonic monitoring of pacemakers (TTM) has been established at our institution for several years, however, the program has not been systematically evaluated.

Aims To assess feasibility and effectiveness of the TTM program and to perform a cost-benefit analysis.

Methods Retrospective analysis of all patients in the TTM program from Jan 1st to Oct 30th, 2006. For cost-benefit analysis, a virtual model of in-office visits was created. A LifeSignsTM Receiving Center, Instromedix; was used for TTM decoding and recording.

Results 303 patients had 1468 encounters (4.7±2.8 encounters per patient), mean age 81.6±10.2 years old, 51.2% female. The reasons for a TTM strategy included anticipated impending battery failure (50%), immobility of the patient (50%), living far from the hospital (47%), device under "recall" (6%). 56% of the patients evaluated monthly and 44% evaluated every three months. Patients on a monthly schedule were more likely to be directed to attend the clinic in person (4.9% vs 2.1%; p<0.02). Reasons for direct the patient to the clinic were: Elective Replacement Indication 30%, technical difficulties 4%, regular annual visit 66%. Dual chamber pacemakers (p=0.004), battery longevity (p<0.03) and reduced mobility of the patient (p=0.02) were significantly associated with referrals to the pacemaker clinic. Twelve patients (4%) died during this period. Only age (80.5 vs 87.3 years old; p<0.02) and reduced mobility (p=0.001) were associated with death during follow-up. The cost of the TTM strategy was $11,744.00. A cost model calculated based on attendance of all TTM patients at the clinic at the same follow-up frequency resulted in an estimate of $88,230.00 - 8 times more costly than the TTM strategy.

Conclusion TTM for pacemaker follow-up is safe and permits follow-up for patients who have difficulty coming to the clinic. Large numbers of patients can be followed in a cost effective manner.

POOR QUALITY OF LIFE BEFORE, FOLLOWED BY IMPRESSIVE IMPROVEMENT DURING FIRST YEAR AFTER PACEMAKER IMPLANTATION FOR CONVENTIONAL INDICATIONS

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Aims This prospective study aimed to determine health related quality of life (HRQoL) of PM patients before 1st PM implantation, to compare the results with an age comparable sample of the general Dutch population (controls) and other patient groups, and to determine how QoL improves after PM implantation and whether subgroup lineair regression analysis could determine predictors of HRQoL one year after the implantation.

Methods and results Data of patient data with conventional pacing diagnosis are stored in the Dutch multicenter, longitudinal, PM registry (Followpace study) that prospectively documents patient prognosis, HRQoL (generic F-36 and PM specific Aquarel), and PM events after first implantation in 23 of the104 Dutch PM centers In 818 patients all pre-implant generic SF 36 subscales showed dramatic lower values than that in a sample of an age comparable general Dutch population (P<0.05) but comparable to patients with chronic rheumatic arthritis and chronic angina pectoris. After PM implantation, measured in 31 patients, all SF 36 scales except for "General Health perception" improved and all 3 subscales of the disease specific Aquarel QoL instrument and the EuroQol QoL also improved drastically. The HRQoL as measured with SF-36 at one year after implantation adjusted for the HRQoL at baseline was related to gender, age, cardiac history, presence of diabetes mellitus, indication for