that CRT may also induce electrical remodeling but the impact on clinical outcome remains unknown.

**Objective:** We sought to determine 1) if chronic CRT induces a relevant shortening of the intrinsic QRS (iQRS), 2) whether changes in the native conduction system correlate with clinical or echocardiographic response to CRT and 3) to identify predictors of iQRS width shortening.

**Methods:** We prospectively included 85 consecutive patients with left bundle branch block who received a CRT device in 3 French centers. NYHA class, iQRS duration, LVEF and left ventricular volumes were assessed before and one year after CRT implantation. Clinical and echocardiographic were defined respectively as NYHA class improvement >1 class without heart failure hospitalization and an increase of LVEF by ≥10% and/or a decrease in LVESV by ≥15%. Electrocardiographic responders were defined as a decrease in iQRS duration by ≥20 ms.

**Results:** Baseline and 1-year follow-up mean iQRS durations were respectively 168.0±19.7 ms and 149.6±31.6 ms (p<0.0001). Electrocardiographic response, observed in 43/85 patients (51%), was associated with a greater rate of clinical (p=0.035) and echocardiographic (p=0.023) response. Younger age, male gender and longer baseline QRS width were independent predictors of electrocardiographic response.

**Conclusion:** CRT decreases iQRS duration. A reduction of at least 20 ms in iQRS duration is associated with better clinical and echocardiographic response.

**Remote monitoring follow-up of 533 ICD/CRT-D recipients: a very low rate of inappropriate shocks**

Pascal Defaye, Romain Cassagneau, Natacha Pellet, Charlotte Vandeyende, Alix Martin, Radu Moisei, Peggy Jacon

CHU Grenoble, Unité de rythmologie, Grenoble, France

Remote monitoring (RM) is now accepted as a safe alternative to standard follow-up (sFU) for ICD recipients (ICDr).

**Methods:** We analysed the long term outcomes of 533 ICD/CRT-Dr.

Patients were equipped with Boston Scientific Latitude (45%), Medtronic G (39%), St Jude Medical Merlin (9%) or Biotronik Home Monitoring (3%) RM systems. Automatic FU with RM was performed every 3 months, with at least one sFU /year. In emergency cases patients were invited visits.

ICD programming was done with 2 zones (VT zone>180 bpm / VF zone>220 bpm). All RM alerts and related EGMs as well as the reasons and therapies were reviewed by two physicians.

**Results:** We enrolled 533 pts (82% male, mean age 66±10 y.o.). 55% had ischemic cardiomyopathy, 69% were primary prevention. CRT-D (46%) and dual chamber (45%) devices were mainly represented. During a RM FU period of 15±8 months, we noted 8 automatic RM FU and 2 sFU visits/ patient. 23 deaths occurred. 19 patients had major alerts (5 for ICD lead dysfunction, 1 for ERI, 9 for electrical stress). 2672 non major alerts occurred and led to multiple diagnoses: in 22 pts early detection of unknown AF, in 41 CRT-Dr loss of biventricular pacing. 145 ICD discharges occurred in 52 pts. Within the 66 pts with diagnosed AF by RM, 24 were managed with rhythm control strategy (11 cardioversions, 10 AA drugs introductions, 3 PAF ablations) and 10 (CRT-D) had a rate control strategy (AV node ablations in 6 and beta blocker in 4). 91 appropriate (app) ICD discharges (ICDd) occurred in 35 pts (6.5%) of which 10 were in primary prevention.

A first inappropriate ICDd occurred in 3.1% of the population (17 pts) and were mostly due to AF (76%). 74 pts had 1205 app ATP (80% successful). 5 pts with high LV impedance detected by RM had lead dislodgement and underwent reintervention.

**Conclusion:** In a large monocentric observational study, RM has demonstrated to be an effective mode of FU for ICDr. Early diagnoses allow rapid management of pts and are associated with a very low rate of inappropriate shocks.

**Prevalence of ventricular tachyarrhythmias clustering in ICD treated patients with ischemic cardiomyopathy**

Athanassios G Manolis, Kostas Kouvelas, George Manolis, Chris Maniotis, Theo Dragios

Hellenic Red Cross Hospital of Athens, Cardiology, Athens, Greece

**Objective:** Ventricular tachyarrhythmias clustering (occurrence of ≥3 separate episodes of VT/VF within a 24 h period, each separated by ≥5 min) in ICD population remains a serious problem, associated with adverse prognosis. Our aim was to retrospectively assess the prevalence of VT clustering in primary and secondary SCD prevention pts and in single, dual and triple chamber ICD device.

**Methods:** We studied 360 consecutive pts with ischemic cardiomyopathy who underwent ICD implantation for primary (20%) and secondary (80%) SCD prevention, over a mean follow-up period of 8 (3 years. Single, dual and triple chamber ICD was implanted in 29%, 61% and 10% respectively of pts. Stored endocardial electrograms were used to determine the causative rhythm disorders provoking ICD activation.

**Results:** VT arrhythmic clustering was recorded in 43pts (12%). Concerning primary and secondary prevention pts, the prevalence was 4% and 14% respectively (p<0.001). Concerning Single, Dual and Triple chamber device, the prevalence was 12.5%, 11.9% and 12.1% respectively (p=NS).

**Conclusions:** Clustering of VTachyarrhythmias occurs more often in secondary than in primary prevention ICD’s pts with coronary artery disease. No differences exist between single, dual or triple chamber device.

**Cardiac resynchronization device implantation procedure in real life. The French Electra survey**

Jerome Taieb (1), Maxime Guenoun (2), Arnaud Lazarus (3), Jacques Mansourati (4), Jean Pierre Cebron (5), Frederic Fossati (6), Marilou Larcimin (1)

(1) Centre hospitalier d’Aix en Provence, cardiology, Aix en Provence, France – (2) Clinique Bouchard, cardiology, Marseille, France – (3) Clinique du Val d’Or, Saint Cloud, France – (4) CHU Bret, Brest, France – (5) Nouvelle clinique nantaise, Nante, France – (6) Clinique Dubois, Lille, France

**Introduction:** Cardiac resynchronization therapy (CRT) has been a major breakthrough in cardiac failure management. However, implantation procedure is not standardized.

**Aim of the study:** To evaluate routine implantation procedure habits in french practice.

**Material and methods:** A survey was e-mailed to 100 French CRT implanters in November 2011. Physicians were interviewed on their own strategy in the center. Answers had to concern the most frequent routine attitude. If appropriate, physicians could answer “no standardized attitude” or “other”.

**Results:** Among the 62 physicians who answered, 45% practise in a university hospital, 24% in a non-university hospital and 23% in a private institution. The rate of physician implantations is <30/year, 30-50/year and >50/year in 42%, 25% and 33%, respectively. Implantations are performed by a single operator in 49%, and in 43% by two physicians, 16% of implants being done under general anaesthesia.

Default CRT-Pacemaker (CRT-P) implantations are right-sided in 18%, left-sided in 51%, unsettled in 20%, and for CRT-Defibrillator (CRT-D) 8%, 82 and 10% respectively.

The venous approach is “all cephalic” in 21%, “all subclavian” in 18% and combined in 62%.

First implanted lead is the right ventricular lead (RV) in 74%, and the coronary sinus (CS) lead in 23%. RV lead is placed in apical position in 26% and in septal position in 67%.
To catheterize the CS, a sheath issued in first intention in 81%. CS angiography is performed in 90%, with an inflated balloon in 59%.

In case of atrial fibrillation with CHA2DS2-VASc=2, 38% implant without VKA interruption, 5% stop VKA without substitution, and unfractionned heparin (UH) or low weight heparin (LWH) substitution is chosen in 5%, vs respectively 69% and 11% and 19% if CHA2DS2-VASc >4.

Conclusion: Most of implantations are performed under local anesthesia. Left sided is preferred, especially in case of CRT-D implantation. Most physicians combine the venous accesses, start with the RV septal lead, and perform a CS angiogram via an inflated balloon. In AF patient, VKA interruption is preferred in low risk patients but not in high risk ones. Few implanters choose VKA substitution.

182

Routine face-profile fluoroscopic screening may be useful for earlier detection, monitoring and management of externalized conductors in patients implanted with Riata leads

Maciej Kubala, S Traullé, Jean-Sylvain Hermida
CHU Amiens, rythmologie, Amiens, France

Increased rates of structural abnormalities have been reported in the Riata family of implantable cardioverter-defibrillator (ICD) leads. The reliability of defibrillation leads with insulation damage, or abraded cables that are not immediate cause of failure is unknown. The incidence of these defects can be underestimated due to the absence of abnormal electrical parameters detected by regular ICD interrogation. Little is known about the time lag for emergence of functional abnormalities in such leads.

Methods: Forty eight patients who received small-caliber leads of the Riata family (models 1570, 1572, 1580, 1582, 7000, 7002) in our institution between May 2002 and March 2008 were systematically called for an addi- tion to EP testing in a population of 44 Steinert disease pts and especially in men. Presence of type 1 ST elevation is unknown. It is not correlated to age, symptoms, PR interval, QRS QT or QTC durations, HV interval (at baseline or after atrial fibrillation), presence of bundle branch block, of late potentials at SA-ECG or inducibility of ventricular arrhythmias at EP study.

Nine pts were implanted with a pace maker and four with an ICD. Significant or symptomatic bradycardia did not happen in any non implanted pts, while only one pt presented with malignant ventricular tachycardia during the 6.3±2.6 years follow-up (ventricular fibrillation with hypokalemia in an atrao my in negative pt).

Conclusion: Brugada ECG pattern can be elicited by class 1 drug in 18% of Steinert disease pts and especially in men. Presence of type 1 ST elevation under class 1 drug in Steinert disease do not seem to have some significant clinical or ECG correlations.

184

A simple method to implant epicardial AICD using two separated coils

Françoise Hidden-Lucet, C D’Alessandro, G Dutloiit, C Himbet, N Badoers, Xavier Wantaub, Estelle Gandjibakhe, T Chastre, A Pavie, M Komajda
Hôpital Pitié-Salpêtrière, rythmologie/cardiology, Paris, France

Purpose: Surgical epicardial AICD implantation has been quite abandoned since development of endocardial leads and decrease in AICD size. Epicardial patches did not improve since 30 years, are rigid and need to be sewed to the epicard which favors bleeding. In some rare cases, epicardial AICD implantation remains indicated. Therefore we tested a new simple implant technique in patients undergoing open chest surgery through a median sternotomy.

Methods: In 3 cases surgery was performed for percutaneous infected lead extraction failure. The two other patients required surgical operation and AICD implant (one for mitral valve regurgitation, one for tricuspid repair). A screw-in bipolar pace/sense lead (St Jude MyocordTXM 1084T) was placed on the right ventricular free wall and two defibrillation leads (Medtronic Transven®6937) were respectively sewed on the pulmonary artery trunk and on the diaphragmatic wall of the right ventricle and then connected to an AICD (Biotronik Lumax 540) placed in an abdominal pocket.

Results: Best defibrillation configuration (31 J tested) was obtained with a shock delivered between the two coils (AICD passive), from the inferior one to the superior one. There were no major cardiovascular complications. Clinical and telemonitoring follow up (mean 10 months) showed stable ventricular stimulation and detection thresholds as well as lead and coil impedances. No arrhythmias occurred.

Conclusions: Epicardial AICD implantation is feasible in a simple way. Long term follow up is needed to confirm post operative results.

185

Pacemaker patients’ perception of daily life activities and medical follow-up: a french survey

Walid Amara (1), Hasna Salih (1), Said Chergour (2), Jerome Taieb (3), Ikram Benyoussef (1), Claude Gully (4), Pascal Sagnol (5), Pascal Milhem (6), Nacera Rabah (7), Aimé Bonny (8), Paul Bru (6)
(1) GHI Le Raincy-Montfermeil, Seé cardiologie, Montfermeil, France – (2) CH La Roche Sur Yon, La Roche Sur Yon, France – (3) CH Aix, Aix en Provence, France – (4) CH La Roche Sur Yon, La Roche Sur Yon, France – (5) CH Chalon, Chalon Sur Saone, France – (6) CH La Rochelle, La Rochelle, France – (7) CH Evreux, Evreux, France – (8) Hôpital Saint Camille, Bly Sur Merne, France