Results: There was no significant difference between QT end interval, JT interval and TDR at baseline and after implant with different pacing modes.

Conclusion: In our study, we noticed no effect of pacing modes on repolarization in patients with heart failure. The high incidence of sudden death observed in CRT may be explained by competitiveness of modes of death rather than induced abnormal repolarization.

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Does continuous assessment of heart rate variability by devices provide prognostic information in cardiac resynchronization therapy patients?

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Background: Heart failure remains a severe disease with high mortality despite pharmacologic treatment and new successful therapy options such as cardiac resynchronization therapy (CRT). Heart rate variability (HRV), which reflects autonomic nervous system function, is a prognostic marker in chronic heart failure. It can be easily and continuously assessed by CRT devices but its prognostic value is not well known in these patients.

Methods: The relationship between HRV and morbimortality was examined in a retrospective study concerning 34 patients who received CRT devices between July 2002 and February 2008. HRV footprint and standard deviation of averaged normal R to R intervals (SDANN) was continuously measured by devices.

Results: The study showed an overall improvement in SDANN (71.8 ± 18.3 to 87.6 ± 29 ms, p<0.002) and HRV footprint (33.5 ± 9.2 to 37.5 ± 9%, p<0.013) after resynchronization. During a median of 17.7 months of follow up, 26% (9/34) patients died or were hospitalised for acute heart failure. SDANN and HRV footprint at the time of device implantation were not predictors of morbimortality. Improvement of SDANN > 5% after resynchronization was predictor of survival free from event (p<0.0001).

Conclusion: Continuous assessment of SDANN by devices may be a useful tool for risk stratification in CRT patients.

January 15th, Friday 2010

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Treatment of Atrial Fibrillation by Pulmonary Vein Isolation Using Cryotherapy Balloon Technique: feasibility, complications, and short-term outcome

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Background: Radiofrequency (RF) isolation of pulmonary veins (PVs) has emerged as an effective treatment for patients presenting drug refractory atrial fibrillation (AF). The objective of this study was to assess the feasibility, safety, and short-term outcome of pulmonary vein isolation (PVI) in paroxysmal and persistent AF patients with a new cryoballoon catheter technique (Arctic Front, Cryocath, Quebec, Canada).

Methods: Between December 2007 and April 2009, 37 patients (25 males, mean age 56 years old) with symptomatic, drug refractory, paroxysmal (n= 36) or persistent (n= 1) AF underwent circumferential atrial PVI using a double lumen 23 or 28 mm cryoballoon catheter. Before discharge, all patients were subjected to 24-hour Holter electrocardiograms, echocardiography, and esophageal endoscopy. In case of symptomatic recurrences, a second AF ablation aiming at PV isolation, was performed using RF catheter.

Results: Out of 148 treated veins, 140 were completely isolated (94.6%). All PVs were completely isolated in 28/37 patients (75.6%). The number of balloon applications per vein was 2.18 ± 0.69. The mean procedure and fluoroscopy time were 164.8 ± 39.3 and 32.4 ± 12.3 min respectively. Thirty-one patients were free of AF at hospital discharge (83.8%). No PV narrowing, atrio-esophageal fistula or thromboembolic event occurred. Three phrenic nerve palsy (8.1%) were observed after cryoapplication at the right superior PV. Two of them resolved immediately after cessation of cryoenergy, one resolved at 2 weeks. The most frequent complications were pericardial effusions (n=8) and groin hematoma (n=3) or ecchymosis (n=6), all spontaneously reversible. Among the 15 patients seen at 4 months follow-up, all were AF free after one (n = 11) or two procedures (n= 4) without any antiarythmic drugs.

Conclusion: Cryoballoon PVI appears as an effective and safe technique with a relatively high clinical success rate at short-term follow-up.

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Evaluation of Syncope in Brugada Syndrome: The Effect on Outcome Risk

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Evaluation of Syncope in Brugada Syndrome: The Effect on Outcome Risk stratification in pts with Brugada syndrome (BS) is difficult. The report from the 2nd Consensus Committee on BS suggests that all pts with syncope without a “clear extracardiac cause” should have an implantable cardioverter-defibrillator (ICD). However a clear cause for syncope may be difficult to prove.

Methods: All pts diagnosed with BS at Bordeaux CHU between 1999 and 2009 have been enrolled in a prospective registry. All patients with syncope were enrolled in the present study (Group 1 without and Group 2 with a “clear extracardiac cause” of syncope). Patients were followed in the clinic or by phone annually unless there was an event.

Results: Of 185 pts with BS, 49 (39 male, 47 ±12yo) had at least one syncope. All 27 pts in group 1 received an ICD. Of the 22 pts in group 2, 4 received an implantable loop recorder (MJW1) (ILR) and 1 patient received an ICD after positive EP study.

With a mean follow-up of 53 ±38 months, 19 pts were asymptomatic, 5 had appropriate ICD therapy, 2 patients had further syncopal events not associated with cardiac arrhythmia and 1 pt died of a non cardiac cause in group 1. In group 2, 14pts were asymptomatic, 5 had recurrent atypical syncopal events (without arrhythmia shown by ILR in 3 pts), 2 experienced atypical chest pain and 1 died of drug abuse.

Conclusions: Diagnosis of syncope is difficult, and 7% of BS pts presenting with syncope without a clear cardiac cause will have further events without cardiac arrhythmia. Better evaluation of syncope is required to spare pts unnecessary ICDs.

<table>
<thead>
<tr>
<th>group 1</th>
<th>group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>27 pts syncope without a clear extracardiac cause</td>
<td>22 pts syncope with a clear extracardiac cause</td>
</tr>
<tr>
<td>gender (male)</td>
<td>21 (80.8 %)</td>
</tr>
<tr>
<td>age (years old)</td>
<td>48 (+/- 12.2)</td>
</tr>
<tr>
<td>follow-up (months)</td>
<td>53 (+/- 36.1)</td>
</tr>
<tr>
<td>spontaneous type 1 ECG</td>
<td>21 (80.8 %)</td>
</tr>
</tbody>
</table>

EP Study:
- positive | 8 (29.7 %) | 1 (4.5 %) | 0.06 |
- negative | 13 (48 %) | 17 (77.3 %) |
- not done | 6 (22.3 %) | 4 (18.2 %) |

circumstances of diagnosis:
- unexpected finding | 4 (14.8 %) | 7 (31.8 %) | 0.43 |
- familial assessment | 2 (7.4 %) | 2 (9.1 %) |
- syncope | 21 (77.8 %) | 13 (59.1 %) |