1175-170 Diastolic and Systolic Right Ventricular Dysfunction Precedes Left Ventricular Dysfunction in VVI-paced Patients

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Background: Long term ventricular (VVI) pacing is shown to produce left ventricular (LV) systolic dysfunction but diastolic properties of both the ventricles & the time course of changes are not studied. We evaluated diastolic and systolic functions of LV & RV by transthoracic echocardiography (2DE) and doppler in serial fashion in patients undergoing permanent VVI pacing.

Methods: Forty five consecutive patients (30 males, mean age 55.6 ± 11.8 years) undergoing VVI pacing were serially evaluated by 2DE and doppler at baseline, at discharge, one month and six months. Parameters noted were resting ventricular dimensions (LV & RV), LV ejection fraction (EF), LV & RV pre ejection period (PEP) and ejection time (ET), LV & RV diastolic function (mitral and tricuspid E & A wave, isovolumic relaxation time - IVRT, acceleration time - AT and deceleration time - DT) and cardiac output (CO-LV & RV) on each visit.

Results:

- Changes produced in parameters were independent of age, sex, pacing indication and prior LV function but regular pacing was associated with higher reduction in LVEF (p = 0.02), greater LV dysfunction (p = 0.024) and higher LA diameter (p = 0.003).

Conclusion: Present study shows that RV dysfunction occurs earlier than LV dysfunction in VVI-pacated patients and in both ventricles, diastolic dysfunction preceded systolic dysfunction.

1175-171 Pre-Implant Echocardiography to Predict Inappropriate Atrial Sensing in Single Lead VDD Pacing

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Background: To assess the value of pre-implant echocardiography to predict inappropriate atrial sensing in VDD pacing 21 consecutive patients were studied. All had symptomatic high degree heart block and normal sinus node function. Appropriate VDD pacing was assessed by the percentage of correct atrial synchronization (PAS = atrial triggered ventricular paced complexes/total number of ventricular paced complexes). Inappropriate atrial sensing (IAS) was defined as PAS < 95% during 24 hour Holter monitoring and/or < 97.5% during treadmill exercise. Echocardiographic variables included end-diastolic, end-systolic and right ventricular volumes and right ventricular cardiac output.

Results:

- Using RAVD = 85 ml as cut-off value all patients with or without IAS were correctly classified.

Conclusion: Right sided heart volumes, in particular the RAVD can accurately predict inappropriate atrial synchronization in single lead VDD pacing.

1176 Clinical Outcomes With Implantable Cardioverter Defibrillators

Wednesday, April 1, 1998, 9:00 a.m.–11:00 a.m.
Georgia World Congress Center, West Exhibit Hall Level
Presentation Hour: 10:00 a.m.–11:00 a.m.

1176-173 Multiple Attempts of Antitachycardia Pacing Are Useless in Implantable Cardioverter-Defibrillators

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We evaluated to what extent multiple attempts of antitachycardia pacing (ATP) are useful in patients with implantable cardioverter-defibrillators (ICD). Devices of 38 patients with frequent spontaneous ventricular tachycardias (VTs) were programmed with 6 attempts of ATP: First, 3 attempts of an autodecremental Ramp mode with 4, 6 and 8 pulses and than 3 attempts of a Scan mode with 4, 6 and 8 pulses were programmed to all patients. The ATP scheme was programmed to a rate of 81% of the VT cycle length and 8 ms decrement.

Results: Of 1994 spontaneous VTs during 11 months follow-up a total of 93% were terminated by the first three Ramp attempts (63%/11%/19% for the first, second and third Ramp attempt). The additional three Scan attempts were able to terminate 55 of 118 spontaneous VTs unchanged by previous delivered ATP Ramp modes. Therefore the second different ATP scheme was programmed and terminated 47% of spontaneous VTs that accounted only for 3% of the total VT number. No serious complications occurred due to multiple ATP attempts.

We conclude that multiple ATP attempts should be programmed in all patients since most of the spontaneous VTs are terminated with the first three attempts. Additional ATP attempts are seldom endangering patients but might offer chances for painless therapy.

1176-174 Unipolar Pacing in Patients With Transvenous Implantable Cardioverter Defibrillators

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Background: Unipolar bradycardic pacing systems (UPS) are strictly contraindicated with concomitant implantation of implantable cardioverter defibrillators (ICDs). To prove UPS can safely be used in patients with transvenous ICDs we prospectively investigated 21 pts with UPS and transvenous ICDs.

Methods: Testing was performed at implant and chronically at 3 mo post implant to assure no device-device interaction. Testing included ICD electrogram (EGM) measurements of R wave, atrial spike, and ventricular spike amplitudes at maximum output, asynchronous, unipolar pacing during base-line rhythm and with induction of ventricular fibrillation (VF). All 21 pts were prospectively followed clinically and any spontaneous arrhythmic events along with the stored EGMs were evaluated.

Results: All 21 pts had adequate sensing, pacing, and defibrillation thresholds at implant and chronic testing. No pt had failure to detect and correct