sion, left ventricular dysfunction, unpaced heart rate, history of heart failure or AF.

Recent pacemakers with specific algorithms for minimal ventricular pacing, as compared to conventional dual-chamber pacemakers, did not reduce mortality or heart failure hospitalizations. It just moderately reduced the risk of persistent AF and the percentage of ventricular pacing.

Conclusions: HAS recommends generally implanting a single chamber pacemaker for the management of bradycardia. Dual-chamber pacemakers DDDR have to be reserved for 2 situations: (i) SSS with evidence of impaired atrioventricular conduction, (ii) permanent AVB without AF.

HAS will not recommend that pacemakers with specific algorithms for minimal ventricular pacing be systematically used instead of single-chamber pacemakers in patients presenting with SSS or paroxysmal AVB, unless more clinical trials are performed.

Early Repolarization Abnormalities following Resuscitation after Cardiac Arrest

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Background: Early repolarization abnormalities on electrocardiogram (ECG) are common immediately after cardiac arrest.

Methods: We studied 227 consecutive patients presenting with out-of-hospital cardiac arrest. All these patients had successful cardiac pulmonary resuscitation and acute coronary angiography. The first ECG recorded after successful resuscitation was analyzed by 2 independent cardiologists. Patients were categorized according to their repolarization pattern:

Pattern 1: No ST segment elevation nor early repolarization (ERep)
Pattern 2: ST segment elevation without EReP
Pattern 3: ST segment elevation and EReP
Pattern 4: EReP only

ERep was defined as elevation of the QRS–ST junction (J point) of at least 1 mm above the baseline as QRS slurring or notchin in at least two consecutive inferior and/or lateral leads.

Results: ST segment elevation was defined as an elevation 40 ms after the J point of at least 1 mm in 2 consecutive limb leads and/or 2 mm in 2 contiguous precordial leads.

Pattern 1, 2, 3, 4 were respectively found in 113 (50%), 74(33%), 19 (88) and 20 (9%) patients (table). Cardiac arrest was due to acute myocardial ischemia in 43%, 80%, 42%, 15% of patients in group 1, 2, 3, 4 respectively (p<0.0001). Sensitivity and specificity of pattern 2 was 50% and 86% respectively for acute coronary syndrome whereas isolated EReP pattern occurred in 9% of cases and was associated with normal coronary angiogram. These patients were mainly diagnosed as idiopathic cardiac arrest (80%). Among 41 survival patients (18%), 7% in pattern 1, 13% in pattern 2, 60% in pattern 3 and 88% in pattern 4 exhibited EReP on ECG during the follow-up.

Conclusion: In the context of cardiac resuscitation, an ECG with ST elevation is in favour of a myocardial infarction whereas the presence of EReP is a marker of an idiopathic event and future early repolarization syndrome.

Unipolar vs Bipolar pacing for ventricular tachycardia pace-mapping: Does it make a difference?

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Bipolar (BI) pacing is commonly used for pace-mapping during VT ablation although the potential for capture at the proximal ring electrode can reduce accuracy. BI pacing with 2 mm interelectrode spacing has not been compared to unipolar (UNI) pacing in scarred ventricular myocar-dium.

Methods: Nineteen pts (18 M, 63 ±10 yo, LVEF: 33 ±12%) referred for scar-related VT ablation were studied. Both UNI and BI pacing (random order) were performed at the same site; at normal ventricular voltage areas (>1.5mV), at areas with voltage between 1.5 and 0.5 mV and at low voltage (<0.5mV) areas. BI pacing was performed between the 2 distal electrodes of the ablation catheter. UNI pacing was performed between the distal electrode of the ablation catheter and an electrode in the IVC. Output was 10 mA for 2 ms and then decreased until threshold (TSD). QRS morphology, QRS duration and S-QRS duration were collected and analyzed off-line. To compare QRS morphology, we used the Template Matching software (Bard Electrophysiology).

Results: We performed pacing at 19 sites with voltage > 1.5 mV, 35 sites with voltage between 0.5 and 1.5 mV and 71 sites with voltage < 0.5mV. In voltage area > 1.5 mV, there was no statistical difference in term of S-QRS duration, QRS duration and morphology when pacing UNI vs BI or pacing at 10 mA and 2 msec vs threshold. Where voltage area were < 0.5 mV, S-QRS and QRS duration were shorter, when pacing at 10 mA compared to TSD in BI pacing as well as UNI pacing mode. But there was no difference comparing the 2 pacing modes at the same output. Differences in QRS morphology did occur when reducing the output to TSD (in both pacing mode). QRS morphologies were significantly different (<90% of similarity) in 29% of the sites <0.5 mV.

Conclusion: For mapping purposes in areas of scar, close spaced bipolar pacing produces similar findings to unipolar pacing. With either pacing mode, the stimulus strength does influence QRS morphology and S-QRS delays.

Clinical significance of atrial fibrillation occurrence during catheter ablation of the slow pathway

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Atrial fibrillation (AF) occurrence during electrophysiological study (EPS) for ablation of atrioventricular nodal re-entrant tachycardia (AVNRT) is not rare, but its significance is unknown. The purpose of the study was to evaluate the factors of risk of AF induction during AVNRT ablation and its prognostic significance.

Methods: 397 patients (pts), 115 men, 282 women aged from 14 to 88 years with recurrent AVNRT’s and indication of ablation were studied. AVNRT was initially induced by atrial stimulation. Radiofrequency (RF) ablation of the slow pathway was performed and atrial stimulation repeated. Clinical data of pts with AF induction during the procedure were collected.

Results: AF was noted in 68 pts (17 %), either induced by stimulation or spontaneous during the application of RF energy. The AF occurrence was significantly correlated with a history of hypertensive disease (HTD) (p<0.0005); of spontaneous AF before the ablation (p<0.001). There was no correlation with the sex, age and the presence of associated heart disease except the HTD. During the follow-up, 17 pts (4 %) developed spontaneous AF; 10 of them had presented AF during AVNRT ablation, which was significantly (p<0.0008) associated with a risk of AF after the procedure. Bivariate analysis indicated a significant correlation between AF occurrence and the female gender with HTD (p<0.00001) or history of AF before ablation (p<0.00001) and the development of AF after ablation (p<0.00001), a significant correlation between AF occurrence and an age > 50 years associated with HTD (p<0.00001), or AF before ablation (p<0.00001) and the development of AF after the procedure (p<0.00001). There was no significant correlation between AF occurrence in males and females.