Results: 21 pts (9%) presented with type 1 in at least 1 peripheral leads: 16 pts (7%) in aVR lead, 5 pts in inferior leads and none in lateral leads. Type 1 in limb leads was associated with a type 1 in right precordial leads in each pt, and was spontaneous in 8 pts (38%) and induced by drug challenge in 13 pts (62%). 15 of them have results of genetic testing (7 had SCN5A mutation).

There was a trend toward longer PR interval in patients with type 1 ECG in limb leads (192±39 ms vs 176±35ms, p=0.09).

These patients present more frequently with arrhythmic events (57% vs 33%, p=0.009), with syncope (48% vs. 26%, p=0.0002), ICD appropriated therapies (24% vs. 6%, p<0.001) and a trend toward more frequent SD (10% vs 4%, p=0.1).

In multivariate analysis, type 1 ECG in limb leads was independently associated with arrhythmic events (OR 3.08, [1.17-8.1], p=0.022) or with SD or appropriate ICD therapy (OR 4.5 [1.32-15.3], p=0.016).

Conclusion: Type 1 Brugada pattern in peripheral limb ECG leads can be seen in around 10% in patients with BS, mostly in aVR lead but also in inferior leads. Type 1 ST elevation in limb leads is an independent predictive factor of arrhythmic event in BS patients. This simple ECG parameter could be used for further risk stratification.

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Heart rate variability during night in Brugada syndrome

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Introduction: Risk stratification in Brugada syndrome (BS) remains a key issue. Cardiac autonomic dysfunction has been proposed as a precipitating factor of arrhythmic events in BS. The aim of the present study was to assess cardiac response to autonomic innervation using heart rate variability (HRV), in symptomatic patients with a BS compared to asymptomatic patients.

Methods: Twenty-two patients with BS were studied. Group S (mean age=45.5±11 years, men: n=9) consisted of 10 symptomatic patients (3 cardiac arrest, 4 syncope, 1 nocturnal convulsions and 2 lipothymia) and group A (mean age=39.9±13.9 years, men: n=5) of 12 asymptomatic patients. HRV was obtained, using dedicated software, on 24 hours Holter recording. We studied time and frequency domains during a day-period (16h-20h) and a night-period (0h-4h), using mean values and variation coefficients for each period.

Results: In time and frequency domain, no difference was found between the 2 groups, during the whole recording, night or day period. During night period, patients from group S have higher variations than patients from group A for HFn.u. (45.9±10.5 vs 34.6±13%, p<0.05) and LF/HF (56.7±10.7 vs 44.2±18, p<0.05). No difference was found during day. This higher variation of frequency domain parameters during night in symptomatic patients relates a more variable sinusal node response to the cardiac autonomic innervation.

Conclusion: Symptomatic patients with BS have higher variations of cardiac response to the autonomic innervation during night resulting from either higher sinus node sensitivity to autonomic influx or higher variation of these influxes. The occurrence of symptoms in BS will be underlined by spontaneous higher variations of cardiac response to autonomic nervous system especially during night.

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Avoiding shocks by programming antitachycardia pacing for fast ventricular tachycardia: how many attempts are needed? A prospective study

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Introduction: Antitachycardia pacing (ATP) is a painless therapy reducing shocks in implantable cardioverter-defibrillator (ICD) recipients. One or 2 ATP attempts are usually programmed to terminate fast ventricular tachycardia (FVT) episodes without delaying successful shock if ATP fails. Programming more ATP attempts could probably reduce the occurrence of shocks.

Objective: We sought to analyze the long-term efficacy and safety of programming a high number of ATP attempts for FVT.

Methods: Patients receiving a first ICD for coronary artery disease and dilated cardiomyopathy in primary and secondary prevention indications between 2000 and 2009 were prospectively included. ICDs were programmed to deliver 10 ATP attempts for FVT cycle lengths (CL) of 250 to 300 ms (200 to 240 bpm) before shock delivery (5 bursts then 5 ramps; 10 pulses at 81 to 88% of the FVT CL; minimal pacing CL 180 ms).

Results: 770 patients were prospectively included and followed for 40±25 months. Among them, 137 patients (17.8%) had a total of 1839 episodes of FVT (rate 209±9 bpm). ATP terminated 1713 episodes of FVT (efficacy, 93.1%) and accelerated 5.8% of episodes. A majority of episodes were successfully treated (98.3%) by 1 or 2 ATP attempts. Conversely, the patient-based analysis showed that 17 (12.4%), 8 (5.8%) and 5 patients (2.1%) had one episode or more treated by at least 3, 4 or 5 ATP attempts, respectively. These patients would have been shocked with a conventional ICD programming. The benefit of this strategy was reduced for 6 to 10 attempts and only 10 patients were shocks for ATP failure (20 episodes, 1.1%). Despite the high number of attempts programmed, FVT episodes were mainly asymptomatic and found during device interrogation: syncope and pre-syncope occurred in 0.2% and 0.4% of episodes, respectively.

Conclusion: Programming a high number of ATP attempts (at least 4 or 5 ATP attempts) for FVT is both safe and useful. It could prevent painful shocks in a high proportion of ICD recipients.

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Assessment of the impact of myocardial infarction localization on heart rate variability, heart rate turbulence and QT intervals

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Introduction: the assessment of the arrhythmia risk is an important issue after myocardial infarction (MI). The role of autonomic nervous system in arrhythmia stratification risk is well validated. Holter parameters can reflect both components of the autonomic nervous system: the sympathic and the parasympathic. There is little data concerning the relation between risk stratification parameters and the MI localization.

Aim: Comparison of Holter parameters exploring the autonomic nervous system in patients having anterior and inferior myocardial infarction.

Methods: This prospective study included 90 patients (mean age 58±10 years) hospitalized for recent myocardial infarction who underwent 24 hour Holter monitoring. We analysed the number of premature beats(PB), heart rate variability (HRV) parameters (SDNN, RMSSD), QT intervals and heart rate turbulence (TO et TS)

Results: 50 patients had anterior MI and 40 patients had inferior MI. There was no significant difference between both groups regarding HRV and heart rate turbulence. Where as in patients having anterior MI the QT interval was significantly longer than in patients having inferior MI.

Table – Results

	Anterior MI (n=50)	Inferior MI (n=40)	p
Number PB/ 24H	46±8	52±8	NS
SDNN	92±39	104±34	NS
RMSSD	40±20	36±21	NS
QT apex	349±27	340±22	NS
QT end	431±33	416±24	0.03
TO	– 0.011	– 0.007	NS
TS	8.41	9.37	NS