Conclusions: In patients with presumed AMI and new LBBB, the presence of concordant ST elevation or V1-3 ST depression is specific for AMI and independently predicts 30-day mortality. The absence of these ST changes predicts a better outcome even when compared to patients with normal intraventricular conduction.

Multivariable analysis (n=15,640)	Odds ratio	95% CI
LBBB with ST changes vs LBBB without ST changes	2.65	1.31-5.38
LBBB with ST changes vs normal conduction	1.37	0.78-2.42
LBBB without ST changes vs normal conduction	0.52	0.33-0.80

1164-17 Heart Rate Harmony Is Superior to Conventional Parameters of Heart Rate Variability

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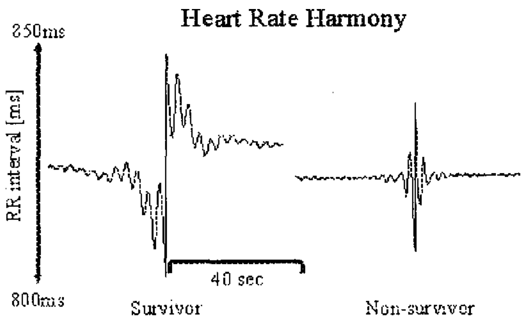
Introduction: Heart rate harmony visualizes the oscillations of heart rate by the use of a novel mathematical algorithm. It transforms the RR interval time series of a 24 h Holter recording into a short time series of RR intervals. The length of the transformed signal depends on the lowest frequency component to be visualized. In a blinded validation performed in the ATRAMI data set, the mean deceleration magnitude (MDM) was the strongest independent risk predictor after acute myocardial infarction. Aim of this study, was to compare the prognostic significance of MDM with other established parameters of heart rate variability (HRV).
Methods: This study enrolled 1,434 survivors after acute myocardial infarction, the primary endpoint was the composite rate of total mortality and serious arrhythmic events. During mean follow-up of 22 months, 77 patients reached the primary endpoint. Univariate and multivariate analyses included MDM, SDNN, SDANN, RMSSD, HRV index, VLF, LF, HF, LF/HF, total power, 1/f as continuous variables.
Results: All parameters tested were significantly associated with the primary endpoint. Univariately, MDM was the strongest predictor (p=3.0 * 10-11) and HRV index was the second strongest predictor (p=1.0 * 10-7). Multivariately, MDM and 1/f were significant predictors with MDM being the strongest (p=0.0003) and 1/f being the second strongest predictor (p=0.04).
Conclusion: MDM is superior to other established parameters of HRV in risk prediction after acute myocardial infarction.



1164-18 Nonlinear Dynamics Assessed by Fractal Analysis as a Predictor of Cardiovascular Events in Chronic Atrial Fibrillation

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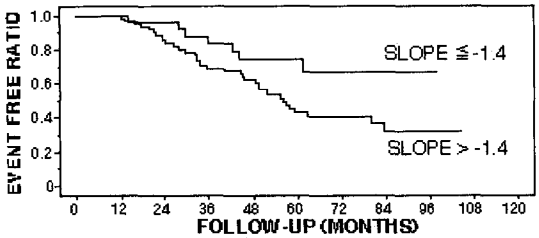
Background: Power spectrum of long-term HR fluctuation in chronic AF shows a power-law structure similar to that observed in sinus rhythm, however its clinical value in risk stratification is unknown. The purpose of this study is to evaluate nonlinear dynamics of long-term HR fluctuation is able to predict cardiovascular events in patients with chronic AF.
Methods: Ninety patients with chronic AF (age 70 }46, male 63, female 27) wore 24-hour ambulatory ECG monitor to assess the HR dynamics with power-law spectral exponent (slope) of log-log power spectrum between 0.0001 and 0.001 frequency.
Results: During a follow-up period of 51 }24 months, 43 patients (48%) had cardiovascular events. A significant association with cardiovascular events were found for left atrial diameter (relative risk, 1.05; 95% confidence interval [CI], 1.01 to 1.10, p<0.05) and the slope(relative risk, 11.7; 95% CI, 3.21 to 42.5, p-1.4) were significant predictors of cardiovascular events. A slower grade slope (>-1.4) was a significant predictor of cardiovascular events. Estimated cumulative rate aginst cardiovascular events over 8 years was 67% in patients with a slope>-1.4 and 32% in those with a slope>-1.4.
Conclusion: Nonlinear dynamics of long-term HR fluctuation is a powerful presdictor of cardiovascular events in chronic AF.



1164-19 Measurement of the QRS Width Predicts Epicardial Origin of Normal Heart Ventricular Tachycardia

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We recently reported cases of normal heart ventricular tachycardia (VT) which originated from the epicardial surface of the ventricle. We assess the power of QRS width to predict the origin of normal heart VT. **Methods and Results:** One hundred and seven patients (xx men; mean age 44±16 years) presenting for mapping and ablation of normal heart VT were included in this study. We analyzed retrospectively the QRS width and compared the difference in patients with endocardial (group 1), aortic cusp (group 2) and epicardial (group 3) ablation sites. The lead showing the widest QRS on the 12 lead ECG was chosen for analysis. Table demonstrates the results in the 3 study groups. **Conclusion:** In our preliminary experience normal heart VTs originating from the aortic cusp and/or an epicardial site have a longer QRS duration compared to normal heart VTs with an endocardial origin. This finding could be used to predict the site of origin of VTs before ablation procedures.

	Endocardial VT	Aortic cusp VT	Epicardial VT
Patients	50	46	11
Male/female	40/10	34/12	8/3
Ejection fraction	52±5	54±5	53±5
Mean QRS (widest) (ms)	132±14	142±12*	145±15*

*p<0.05 vs. endocardial VT

1164-20 Influence of Specific Sleep Stages and Autonomic Nervous System on QT Interval and Repolarization Dynamicity (QT/RR) in Healthy Volunteers

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Background: Changes in autonomic tone increase QT interval duration during sleep, independently of changes in RR interval (RR). The lack of QT duration adaptation to RR may favor ventricular arrhythmias. There is a well-established nychtemeral distribution of ventricular arrhythmias, but the specific influences of sleep stages on cardiac repolarization are still unknown. This study assessed QT interval duration (QT apex), repolarization dynamicity (QT/RR slope) and heart rate variability (HRV) during specific sleep stages in 9 healthy young men (age: 20.5 ±1.5 years).
Methods: Holter monitorings (3 channel, ELA medical, Synetec), together with polygraphic sleep recordings, allowed determination of the above-mentioned parameters during wake, rapid-eye-movement (REM) and non-REM sleep. The analysis was initiated 5 minutes after the beginning of a specific sleep stage, in order to obtain repolarization stabilisation. The low frequency (LF) (0.04-0.15Hz) and high frequency (HF) (0.15-0.40 Hz) variability and the LH/HF ratio of RR were determined by spectral analysis.
Results: Transition from wake to non-REM and REM sleep lenghtened RR, QT apex and corrected QT apex (all p<0.01 for non-REM and REM sleep vs. wake). The LF/HF ratio decreased only during non-REM sleep (2.28±0.6 vs 1.48±0.74 p<0.05 vs. wake). QT apex and corrected QT apex were lower in REM than in non-REM sleep (p<0.05). QT/RR slopes did not differ between wake (0.11±0.02) and non-REM sleep (0.10±0.03) but decreased markedly during REM sleep (0.06±0.01, p<0.01 vs. wake and non-REM sleep).
Conclusions: Sleep stages have specific influences on cardiac repolarisation: REM sleep alters the adaptation of QT interval to changes in RR, when compared to wake and non-REM sleep. REM-sleep also decreases QT interval duration as compared to non-REM sleep, and these changes may play an important role in the reported diurnal pattern of ventricular arrhythmias.