Conclusions: Detection of T wave changes prior to VT/VF might be useful in predicting imminent arrhythmia occurrence. T wave amplitude is higher and T wave slopes are steeper before ventricular arrhythmia compared to baseline, without significant shortening of different repolarisation times.

	baseline	episodes	p=
T amplitude (mV)	1,6 +/- 0,9	2,2 +/- 0,7	0,04
R peak to T peak (ms)	314 +/- 54	296 +/- 54	0,06
T max ascending slope (mV/ms)	0,016 +/- 0,013	0,023 +/- 0,023	0,06
R peak to T max ascending slope (ms)	260 +/- 63	236 +/- 44	0,09
T max descending slope (mV/ms)	0,02 +/- 0,007	0,03 +/- 0,019	0,01
R peak to T max descending slope (ms)	326 +/- 45	324 +/- 59	0,7
T wave area (mV x ms)	6,5 +/- 5,1	8,3 +/- 7,8	0,2
T duration (between points of max slopes) (ms)	88 +/- 49	102 +/- 59	0,2
T duration (between crossing isoelectric line) (ms)	185 +/- 69	194 +/- 86	0,6
R peak to T end (ms)	428 +/- 86	409 +/- 102	0,3
T peak to T end (ms)	310 +/- 104	286 +/- 82	0,2

T wave parameters at baseline and before VT/VF

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Overdrive ventricular pacing in patients with permanent atrial arrhythmias and sleep apnea

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Background: In contrast to its efficacy in patients with heart failure (HF) and central (C) sleep apnea (SA), cardiac pacing is ineffective in obstructive SA. We examined whether overdrive ventricular pacing (OVP) has an effect on SA in pacemaker recipients with permanent atrial arrhythmias.

Methods: An apnea-hypopnea index (AHI) ≥ 15 was confirmed in 28 of 38 patients screened by finger oximetry during ventricular pacing at a backup rate of 40 bpm (BUV40). These 28 patients were randomly assigned in a crossover design to BUV40 versus OVP at 20 bpm above the mean heart rate measured during screening oximetry.

Results: AHI ≥ 30 and CSA were observed in 61% and 79% of patients, respectively. In 21 patients (19 with CSA) with a ≥ 5 OVP-induced decrease or no change in AHI, left ventricular ejection fraction (LVEF) was 40±16%, versus 55±18% (p=0.04) in 7 patients (3 with CSA, p=0.02) with a ≥ 5 OVP-induced increase in AHI. In 13 patients with histories of HF decompensation, AHI decreased from 32.8±12.9 during BUV40 to 24.9±16.5 during OVP, versus increased from 37.6±11.0 to 39.0±11.5 in 15 patients without histories of HF decompensation (p=0.02 vs. patients with histories of decompensated HF). In 9 patients with LVEF ≤ 35%, AHI decreased from 37.3±14.7 during BUV40 to 28.4±17.9 during OVP, versus from 34.5±10.7 to 34.4±14.3 in 19 patients with LVEF >35%, (p=0.04 vs. patients with LVEF ≤ 35%).

Conclusions: In patients with permanent atrial tachyarrhythmias, AHI decreased significantly during OVP in patients with a) histories of decompensated HF and CSA, or b) LVEF ≤ 35%, and increased or was unchanged by OVP in patients without these characteristics.

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ST segment changes after external cardioversion using direct current shock: incidence, characteristics and predeictive factors

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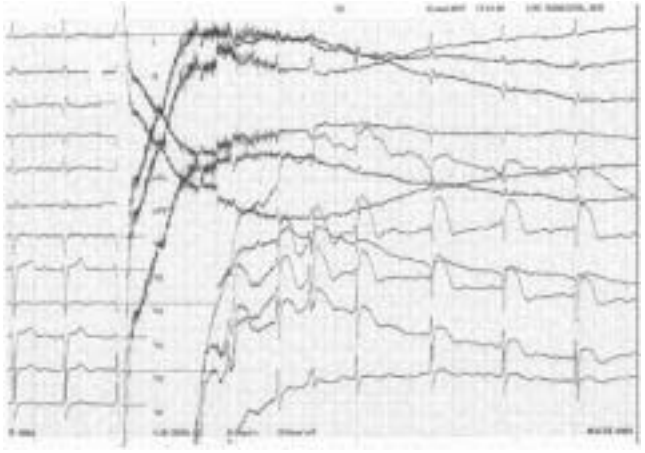
Introduction: DC shock is commonly used for external cardioversion of cardiac arrhythmias. Incidence, characteristics and predictive factors of transient ST-segment changes after DC shock are poorly known.

Methods: 91 consecutive pts referred for external cardioversion of atrial fibrillation (AFib) (61 men, 69 ± 10 yo) were prospectively included. Duration and amplitude of ST elevation or depression were quantified on12 lead-ECG immediately after the first DC shock. Correlations with DC shock characteristics clinical variables, underlying heart disease, echocardiographic parameters, biological parameters, medications, anesthesic drugs as well with morphological features were made.

Results: 18 and 20 pts underwent 200 J or 300 J monophasic and 53 pts 200 J biphasic DC shocks. Immediate success rate was 95%.We found an incidence of 48 % for ST segment changes: 35 % for ST elevation (0,81 ± 0,44 mV) and 13 % for ST depression (0,2 ± 0,07 mV, p<0,0001). ST changes were essentially seen in the right precordial leads. Major ST elevation was observed in 27 % which could sometimes display Brugada-like pattern. ST changes durations were similar for ST elevation and ST depression (60 ± 43 vs 50 ± 26 sec, p=ns) and were correlated to the amplitude of ST changes. ST changes did not induce significant cardiac events or alter immediate or late AFib recurrences. ST changes were not related to energy but ST elevation was significantly more often induced by monophasic (76 % vs 6 %, p<0,0001) and ST depression by biphasic DC shocks (26 % vs 3 %, p=0,01). Using multivariate analysis, independent predictors for ST elevation were the use of monophasic DC shocks, use of propofol and increased CRP, while a low ejection fraction and use of biphasic DC hocks were independent predictors of ST depression.

Conclusion: ST segment changes after external cardioversion with DC shock are common, short living and do not seem to carry clinical significance. They are related to the monophasic or biphasic configuration of DC shock, to the use of propofol, to the ejection fraction and to an increased CRP. Direct membrane injury by electroporation is suspected.



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The time course of new T-wave ECG descriptors following single and double dose administration of Sotalol in healthy subjects

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Introduction: The aim of the study was to assess the time course effect of IKr blockade on ECG biomarkers of ventricular repolarization and to