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ABSTRACT WITHDRAWN

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Prognostic value of Tpeak-Tend interval in patients with acute heart failure syndrome

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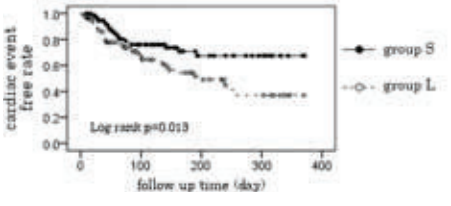
Purpose: Recently it has been reported that long Tpeak-Tend interval (Tp-e) is associated with the occurrence of life-threatening arrhythmias. However, little is known about whether Tp-e predicts prognosis in acute heart failure (HF) patients. We investigated the relation between Tp-e and prognosis in acute HF syndrome patients.
Methods: From January 2013 to November 2013, a total of 201 consecutive acute HF patients (86 males, mean age of 78.4 years) were enrolled. The patients were divided into two groups on the basis of the Tp-e on admission: group L (n=102, Tp-e $\geq$ median: 108ms) and group S (n=99, Tp-e $<$ median). We followed up all patients for the occurrence of cardiac events: cardiac deaths and re-hospitalizations for worsening HF. The mean follow up period was 161days.
Results: The mean of left ventricular ejection fraction (EF) was 43.6% and plasma brain natriuretic peptide (BNP) level was 1083pg/ml. There were no significant difference in age, sex or EF between group L and S. Plasma BNP level was significantly higher in group L than that in group S (p=0.037). During follow up periods, 30 patients in group L and 18 patients in group S experienced re-hospitalization for worsening HF. Cardiac death occurred in 14 patients in group L and 4 patients in group S. Three patients in group L and 2 patients in group S experienced life-threatening arrhythmias. The probability of cardiac event-free survival in group L was significantly lower than that in group S (Figure). Multivariate analysis identified Tp-e as an independent predictor of cardiac events (hazard ratio, 1.98; 95% confidence interval, 1.17 to 3.35; p=0.011).
Conclusion: The long Tpeak-Tend interval is a potentially useful indicator of poor prognosis in patients with acute HF syndrome.

Figure. Kaplan-meier analysis for cardiac events versus Tp-e groups



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Rapid shallow breathing worsens prior to heart failure decompensation

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Introduction: Respiratory distress is one of the primary drivers for heart failure (HF) hospitalization. Respiratory rate (RR) and minute ventilation (MV), as monitored by implanted devices, have demonstrated changes leading to admissions. Since patients often present with rapid shallow breathing, we hypothesize that a rapid shallow breathing index (RSBI) will better reflect respiratory distress than either RR or MV.
Method: Multisensor Chronic Evaluations in Ambulatory Heart Failure Patients Study (MultiSENSE) enrolled patients implanted with cardiac resynchronization therapy devices. The device was reprogrammed to trend RR and tidal volume (TV) derived from transthoracic impedance. MV and RSBI were calculated as MV = RR*TV, RSBI = RR/TV. HF events (HFEs) were defined as HF admissions or unscheduled visits with intravenous HF treatment. All HFEs were adjudicated. For each HFE, the average of a 7-day pre-event period (Evt) and a baseline period (BL, 35 to 63 days pre-event) were calculated. Percentage change (% chg = [Evt-BL]/BL) was determined for each event. The mean % chg was tested against 0 using paired t-test ($p<0.05$).
Results: Fifty-two of the 528 patients enrolled (age 66.4$\pm$10.8, 72.7% male, EF 29.3$\pm$11.5%) experienced 69 HFEs. Daily mean RR was elevated significantly prior to HFEs (3.4%, p=0.005) while daily mean TV and MV did not change significantly (-1.7% and 0.4% respectively). Daily RSBI showed the largest change among all respiratory parameters, and increased by 5.0% (p=0.012).

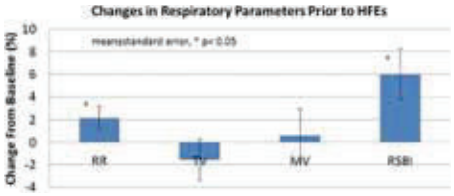

Figure 1. Respiratory signal changes prior to HFEs.

Conclusion: Data from MultiSENSE study showed that rapid shallow breathing measured by RR and RSBI changed significantly before HF events, suggesting that these measures might be useful in early identification of worsening heart failure status.

STRUGGLES WITH THE LIPID-GUIDELINES IN CLINICAL PRACTICE

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Is it really necessary to review the role of statin therapy in primary prevention? Application of the new ACC/AHA guidelines on blood cholesterol on a population registry

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Purpose: The new guidelines of the American College of Cardiology (ACC) and American Heart Association (AHA) on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular disease (ASCVD) risk significantly expand the indications for statin therapy in primary prevention. Our aim is to: (1) inquire, in a wide population registry, the percentage of individuals who should have been under statin therapy for primary prevention according to the novel ACC/AHA guidelines; (2) determine the relative risk reduction of 10-year ASCVD that could be obtained if these individuals had had optimal control of total cholesterol levels.
Methods: Employing our center's registry on acute coronary syndrome (ACS), we estimated the number of individuals who should have been previously put on statin therapy for primary prevention according to their risk factors. We stratified our population on the 3 groups established by the ACC/AHA guidelines for primary prevention: (group 1) any individual with $\geq$21 years of age and LDL $\geq$190mg/dL; (group 2) diabetic individuals aged between 40-75 years with LDL 70-189 mg/dL; (group 3) non-diabetic individuals aged between 40-75 years with