Letter by Madias Regarding Article, “Crescendo in Depolarization and Repolarization Heterogeneity Heralds Development of Ventricular Tachycardia in Hospitalized Patients With Decompensated Heart Failure”

To the Editor:

The study by Nearing et al, on the rise of R-wave heterogeneity (RWH), T-wave heterogeneity, and T-wave alternans (TWA) as predictors of ventricular arrhythmias (VA) in patients with heart failure (HF), published online ahead of print in the Journal on December 8, 2011, immediately brings to mind the work of Chinushi et al on the simultaneous presence of surface QRS complex alternans, TWA, and blood pressure waveform alternans in a canine model and the contribution of Selvaraj et al on the tandem TWA and microscopic systolic blood pressure alternans in humans with cardiomyopathy. Thus, it appears that QRS alternans and microscopic systolic blood pressure alternans may coincide with TWA, particularly under conditions of heightened arrhythmogenic risk. Nearing et al studied interlead RWH and TWH heterogeneity in leads V1, V5, and aVF and TWA from 24-hour ambulatory ECGs in hospitalized patients with HF of the Prospective Randomized Evaluation of Cardiac Ectopy with Dobutamine or Nesiritide Therapy (PRECEDENT) trial, as predictors of VA. TWA rose 15 to 30 minutes, and RWH and TWH rose 30 to 45 minutes before the VA, with the latter 2 showing an advantage in predicting VA 15 minutes earlier than the former. This reader will appreciate the response of the authors on the following: (1) Since the performance of RWH and TWH was assessed in predicting nonsustained VA consisting of bouts of 4 to 19 beats, these 2 arrhythmic indices need to be put to the test of predicting sustained VA, ventricular fibrillation, and sudden cardiac death. (2) In such studies, TWA also should be used along RWH and TWH. (3) Was there any relationship between RWH, TWH, and VA rise and the number of VA beats? (4) Taking into consideration the marked variation in the T-wave amplitude noted in 24-hour ambulatory ECGs of patients and normal subjects, it would be of interest to know whether the rise of TWH and TWA was associated with a rise in the T-wave amplitude. (5) Was there any relationship noted between the rise of TWH and TWA and any interlead (V1, V5, and aVF) change in the amplitude of the T-waves?

Disclosures

None.

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_Circ Arrhythm Electrophysiol._ 2012;5:e78
doi: 10.1161/CIRCEP.111.970020

_Circulation: Arrhythmia and Electrophysiology_ is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 1941-3149. Online ISSN: 1941-3084

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