T-wave/QRS complex amplitude correlations with myocardial edema in patients with takotsubo syndrome

John E. Madias^{1,2}

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To the Editor,

I enjoyed reading the review by Dastidar et al. [1] published online ahead of print on April 21, 2015, in the *Journal*, about the contributions of cardiac magnetic resonance imaging (cMRI) in the diagnosis of Takotsubo syndrome (TTS) in general and its predictive role in the emergence of lethal ventricular arrhythmias in particular. The authors delve into the relationship between the electrocardiogram (ECG) T-wave inversion and QT interval prolongation [2], and cMRI-based characterization of myocardial edema (ME), and specifically its intracardiac apicobasal ME gradient [3, 4]. Indeed, repolarization times increased from the basal to the apical sites in both the epicardium and the endocardium [4] with correlation with the increasing intensity of ME from the base to the apex. While amplitude of the inverted T-waves and duration of the corrected QT interval have been correlated with ME [3, 4], another feature of the ECG attributed to ME (i.e., attenuated amplitude of the QRS complexes) [5] has not been evaluated heretofore. Accordingly, it would be contributory to our knowledge about TTS, and its relationship to ME and ventricular arrhythmic consequences to correlate ME and amplitude of ECG QRS complexes employed various sets of the ECG leads, as done previously [5]. Intuitively, what appears to be a promising possibility is comparison of ME gradient with *change* of the amplitude of the QRS complexes between the admission ECG and the

subsequent ECG with the lowest amplitude of QRS complexes [5]. Indeed, comparison of the latter ECG with a previous ECG acquired prior to the admission with TTS may be the ideal comparison change to be correlated with indices of cMRI-derived ME.

Conflict of interest None.

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✉ John E. Madias
madiasj@nychhc.org

¹ Icahn School of Medicine at Mount Sinai, New York, NY, USA

² Division of Cardiology, Elmhurst Hospital Center, 79-01 Broadway, Elmhurst, NY 11373, USA