LETTER TO THE EDITOR

Racial and Ethnic Differences in Electrocardiographic Features of Takotsubo Cardiomyopathy

Federico Guerra, M.D., and Alessandro Capucci, M.D.

From the Cardiology and Arrhythmology Clinic, University Hospital "Ospedali Riuniti," Marche Polytechnic University, Ancona, Italy

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Dear Editor,

We read with much interest the article by Franco et al.¹ about the different electrocardiographic features found between African American (AA) and non-AA patients admitted for takotsubo cardiomyopathy.

The article should be studied carefully, as it expands the current idea that takotsubo cardiomyopathy could have different ECG patterns based on the patients ethnicity.

The first papers on electrocardiographic findings in takotsubo focused on the problem related to the differential diagnosis with anterior ST-segment elevated myocardial infarction (STEMI), as the vast majority of them reported (on all-Asian populations) an overwhelming prevalence of ST-segment elevation in the right precordial leads, up to 100% of cases.^{2,3} From those studies stemmed the common idea, still widely spread in literature and clinical practice, that ST-segment elevation in the anterior leads is somewhat mandatory in takotsubo cardiomyopathy, and that if a STEMI-like pattern is not seen at admission it is because the patient was referred too late. Of course, there are plenty of evidences available that clearly prove this assumption wrong and related to ethnic differences in ECG presentation. In fact, when Europe and North America registries started to flourish, it was soon evident that the ECG pattern at presentation of Caucasian patients was quite different, with a lower prevalence of ST-segment elevation and a higher prevalence of ST-segment depression and T-wave inversion, despite a very low time from

symptoms onset to ECG recording.^{4–6} Therefore, T-wave inversion or nonspecific ST changes, once thought to be secondary to delayed hospital referral, can now be considered a presenting feature in Caucasian patients.⁷ Franco et al.¹ have furtherly widened the spectrum of possible patterns at presentation, showing that T-wave inversion is even more diffuse, and QT prolongation is even higher in AA patients.¹

In addition to ECG presentation during the acute phase, it would be of great interest to know if even the changes in ECG pattern differ between AA and non-AA patients during the following days. As we have already demonstrated in Caucasian patients,⁸ ST-segment elevation drops suddenly after 48 hours after the acute event, QRS amplitude temporarily decreases, T-wave inversion persists and increases in magnitude until day 5, and QT interval is, more often than not, dangerously increased well after hospital discharge. Potential differences in ECG modifications between Asians, Caucasians, and AA with takotsubo could highlight potential differences in molecular pathways and ion channel expression, thus helping to explain the pathophysiology behind this complex and fascinating disease.

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Address for correspondence: Federico Guerra, MD, Cardiology and Arrhythmology Clinic, Marche Polytechnic University, University Hospital "Ospedali Riuniti," Via Conca 71, Ancona, Italy. Fax: +390715965624; E-mail: f.guerra@univpm.it

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