

## Clinical Value of Tp-e/QTc Ratio in Patients Undergoing Coronary Angiography for Acute Coronary Syndrome

To the Editor,

We have recently read with great interest the article by Yayla et al entitled "Tp-e/QTc ratio, SYNTAX, and GRACE score in patients who underwent coronary angiography owing to acute coronary syndrome."<sup>1</sup> It is concluded that simple ECG parameters such as Tp-e interval and Tp-e/QT ratio may provide valuable information to clinicians during the evaluation of severe coronary artery disease assessed with SYNTAX score. On the other hand, we believe that there are several major drawbacks that need to be addressed.

First, the main problem in this study is that the clinical relevance of the study was not done. In recent years, it has been reported that these simple ECG parameters predict fatal ventricular arrhythmias in several cardiovascular diseases.<sup>2,3</sup> Particularly its association with ventricular tachycardia and fibrillation and sudden cardiac death has been reported.<sup>3</sup> The readers may wonder if the 421 acute coronary syndrome patients in the study had any adverse clinical outcomes, such as ventricular arrhythmias or sudden cardiac death.

Second, the readers would benefit from knowing how the T-end was measured for the sake of reproducibility. As is well recognized, the end of the T wave can be ambiguous for a variety of reasons such as low amplitudes, the presence of a U wave, or bifid T waves. Did the authors define the end of the T wave as the point where the T wave returned to the isoelectric baseline, or did they use the "tangent" method, as illustrated in Panicker et al's work "Intra- and interreader variability,"<sup>4</sup> or did they use an entirely different method? Could the authors talk about how they dealt with any varied T-wave morphologies they encountered such as bifid T waves? How about inverted T waves? What were exclusion criteria for varied morphologies, if any? A suggestion for dealing with varied morphologies would be to follow guidelines proposed by Emori and Antzelevitch in "Cellular Basis for Complex T Waves and Arrhythmic Activity."<sup>5</sup>

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### LETTER TO THE EDITOR

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