Corrected QT interval and corrected QT interval dispersion is worthwhile when interpreted with other repolarization measurements

Intervalo QT corrigido e dispersão do intervalo QT corrigido são válidos quando interpretados com outras mensurações de repolarização

Dear Editor:

We read the article entitled ''The effect of esmolol on corrected-QT interval, corrected-QT interval dispersion changes seen during anesthesia induction in hypertensive patients taking an angiotensin-converting enzyme inhibitor'' by Ceker et al. with interest.[1] The authors investigated the effects of esmolol on the hemodynamic, corrected-QT (QTc) interval and corrected-QT interval dispersion (QTcD) changes during anesthesia induction in hypertensive patients. Finally, they concluded that prolonging effect of endotracheal intubation and anesthesia induction on QTc and QTcD can be prevented by esmolol administration. We would like to thank to the authors for their valuable contribution.

Electrical inhomogeneity of myocardium may lead potentially life threatening cardiac arrhythmias. There are some invasive and non-invasive methods to determine the myocardial inhomogenity. QTd and QTcd are well known non-invasive parameters and can be measured on surface ECG by manually or on digital platform. Unfortunately reproducibility of QT measurements is low both in manual and automatic measurements.[2,3] Additionally, in manuel measurements, inter- and intraobserver variability of QTd is very high.[3] In this study, it is unknown whether the measurements were done manually or in digital platform. It would have been better if the authors had mentioned the measurement type.

Transmural dispersion of repolarization (TDR) quantifies myocardial inhomogeneity in addition to QTd.[4] Isolated cells from different layers of the myocardium revealed that myocardium consists of three different myocyte types: (i) endocardial, (ii) epicardial, and (iii) midmyocardial M cells.[5] These myocyte structures have various electrophysiological characteristics. This heterogeneity may cause to electrical instability and are measurable on surface ECG. Epicardial repolarization phase ends at the peak of the T-wave, M cells repolarization continues until the end of the T wave.[5] Thus, the distance between the peak and end of the T wave is entitled as Tp-e interval, which reflects TDR. Previously, we presented that TDR was increased in patients with obstructive sleep apnea and chronic arsenic exposure via drinking water.[6,7] It has been also demonstrated that TDR is increased in ST-elevation myocardial infarction.[5] Adding TDR measurements would have been better for determining myocardial inhomogeneity.

We believe that the paper of Ceker et al. will lead to further studies concerning myocardial heterogeneity and instability. However, Tp-e interval assessment would make this study more precise.

Conflicts of interest

The authors declare no conflicts of interest.

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http://dx.doi.org/10.1016/j.bjane.2015.02.008