The QT measurements after biventricular pacing, is it reliable?

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Dear Editor,

We read the article ‘Potential pro-arrhythmic effect of cardiac resynchronization therapy’ by Tayeh et al. with great interest [1]. The authors showed a significant decrease in QRS duration but significant prolongation in corrected QT interval after bi-ventricular pacing (CRT). This is a well-designed study but some comments therein require discussion.

Several studies have shown that an increased QT dispersion and/or QTc dispersion could be a marker for arrhythmic events and sudden death [2]. It is very difficult to measure QT duration and QT dispersion after CRT due to prolongation of QRS length, T wave variability, and prediction of arrhythmic events. As the authors have emphasized, the calculated corrected QT according to the heart rate is able to provide more accurate information. However, the authors also state that several patients in the study received digitalis, B-blokers and amiodarone. These drugs also affect the measurements of QT parameters especially QTc by diminishing the heart rate [3–5].

In addition, there is some confusion regarding precisely when these measurements were made after CRT.

The authors found that bi-ventricular pacing caused a significant decrease in QRS duration but that the corrected QT interval showed significant prolongation after CRT. Is there a paradox here? It is well-known that QT duration and QT dispersion measurements of distances must be very sensitive. While some centers do measure automatically, measurements are typically made manually. Therefore, analysis of intra-observer and inter-observer differences are important.

Conflict of interest

We have no conflict of interest to declare.

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