

## Short QT syndrome

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**TO THE EDITOR:** We read with great interest the article by Drs. Al Maluli and Meshkov on short QT syndrome in the January 2013 issue.<sup>1</sup> We are wondering whether Holter monitoring and giving a beta-blocker can help in the diagnosis of this syndrome.

Compared with the normal population, patients with short QT syndrome have less variation of the QT interval in relation to the change in heart rate. This will result in misinterpretation of the corrected QT interval with a faster heart rate and subsequently false-negative diagnosis of this possibly fatal syndrome. Holter monitoring can be helpful in this situation because it allows measurement of the corrected QT interval during a period of slower heart rate, such as sleep.

Bjerregaard<sup>2</sup> mentioned the use of a beta-blocker to slow the heart rate when measuring the corrected QT interval. According to the diagnostic criteria, a shorter corrected QT interval correlates with a higher probability of short QT syndrome. Using the above measures may reveal the true corrected QT interval and improve the diagnostic accuracy of short QT syndrome in patients with a rapid heart rate.

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**IN REPLY:** We thank Dr. Ratanapo and colleagues for their interest in our article. As we mentioned in our paper, and as they emphasized, the QT interval response to heart

rate variation seems to be minimal. They wonder if using a beta-blockers in addition to Holter monitoring can provide a better estimate of the “true corrected QT interval” since it will allow the measurement of corrected QT with slower heart rates. While we agree that Holter monitoring may provide an opportunity to observe the lack of prolongation of the QT interval when the heart rate slows down naturally (eg, during sleep), we have reservations about the other points.

First, we prefer not to use the term “true corrected QT interval” because, as we mentioned in our article, the correction formulas do not perform well in short QT syndrome. A better thing would be to use the QT interval itself, no matter what the heart rate is.

Second, whether beta-blockers would alter the heart rate without altering the QT interval is something that deserves to be evaluated in patients with an established diagnosis of short QT syndrome. Since catecholamines can cause shortening of the QT interval,<sup>1</sup> could beta-blockers have a different effect on the QT interval in patients with and without short QT syndrome? To our knowledge, there are no data that specifically address this question.

The last point we would like to emphasize is the complexity of making the diagnosis of short QT syndrome. Electrocardiographic criteria, especially when equivocal, should probably not be the sole diagnostic basis for short QT syndrome. A personal or family history of arrhythmias, with or without genetic testing, has additive value as demonstrated by the excellent paper by Gollob et al.<sup>2</sup>

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