QTc and QTcd Measurements and Their Relationships with Left Ventricular Hypertrophy in Hemodialysis Patients

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Editor,

We read the publication on "QTc and QTcd Measurements and Their Relationships with Left Ventricular Hypertrophy in Hemodialysis Patients", which is very interesting.[1] Alonso et al.[1] concluded that "We found that QTc interval, in contrast to QTcd, is a reproducible and reliable measure and had a weak but positive correlation with LVMi in HD patients." This report used an unmatched control group; hence, the selection bias can be expected. In fact, the hypertrophy might be expected in a hemodialysis patient who might have underlying metabolic syndrome and vascular disease.[2] To test the reproducibility, the repeated analysis is needed and there is a need to assess the within-run and between-run precision. In the present report, one cannot conclude that the test has a good reproducibility.

Keywords

Hypertrophy, Left Ventricular; Renal Dialysis; Electrocardiography.

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Reply

Thank you for your comments regarding our paper.

Our report was a case-control study with hemodialysis patients recruited from a single dialysis center and a control group matched by gender and age without overt kidney disease. For evaluation of the reproducibility and reliability of QTc and QTcd measures, intra- and inter-observer correlation and concordance tests were performed employing Pearson´s correlation, Cohen's Kappa coefficient and Bland Altman diagram. Two observers (unaware of the results from each other) manually measured the QT interval and its dispersion in the same electrocardiographic tracing at two different times with a one-week interval between measurements. Most of the previous studies that considered the reproducibility of the QTc and QTcd measurements, used only one method of evaluation, especially the correlation coefficient test without contemplating concordance tests. We applied three different types of tests, with two different observers coming to a likely conclusion of good QTc reproducibility. In contrast, QTcd does not seem to be a reliable and reproducible measurement.

The present study carries some limitations such as the relatively small number of patients and the exclusion criteria. Further studies performed on larger patient populations are needed to determine the optimal time to measure these parameters (pre-dialysis, during dialysis, or after dialysis), as well as the standardization of cutoff points for these parameters, techniques of measurements and correction for heart rate.

Sincerely,

Maria Angélica Gonçalves Alonso
Valentine de Almeida Costa de Castro Lima
Maria Angela Magalhães de Queiroz Carreira
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