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**Assessment of Performance of various QT correction formulae in Infants and Children**

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Introduction: several formulae have been used to correct QT interval for heart rate. These are however known to over- or under-correct the QT interval. The purpose of this study was to ascertain which formula best corrected for heart rate in children of all ages

Methods: we enrolled a cohort of 600 healthy children. While in a quiet state a digital 12 lead electrocardiogram (50 mm/second) was recorded and stored. Subsequently, the QT and RR intervals were measured digitally from lead 2. The QT interval was corrected for RR interval by applying 6 formulae, Bazett, Fridericia, Framingham, van de Water, Hodges and Tabo. Linear regression equations for the corrected QT (QTc) intervals against RR intervals were obtained by the method of least squares and the slope and R square (R2) of equations were calculated. When both the slope and R2 were close to zero, the formula was judged to eliminate the effect of heart rate on QT interval.

Results: Mean age: 2,1 years, SD + 3,5 (range 0 - 18 years). Mean QT 295 +29 ms, RR mean 514 + 121 ms; QTc Bazett 414 + 17 ms; QTc Fridericia 370 + 16 ms, QTc Tabo 384 + 15 ms; QTc Framingham 370 + 16 ms; QTc Hodges 403 + 20 ms, QTc Van De Water 337 + 20 ms.
Linear Regression plots of QTc against RR intervals: QTc Bazett slope – 0.06, R2 0.16; QTc Fridericia slope 0.053, R2 0.15; QTc Hodges slope -0.07, R2 0.193; Qtc Tabo slope 0.017, R2 0.019; QTc Framingham slope 0.065, R2 0.3; QTc Van de Water slope 0.13, R2 0.65.

Conclusion: the many QT correction formulae attests to the importance of adjusting QT interval for heart rate particularly in infants with increased basal heart rate. From linear regression analysis of the QTc interval against RR interval, this study illustrates that, of the published formulae, Tabo's formula best corrected the effect of RR on QT interval, even in infants, and showed superior dissociation of the QTc interval from RR interval (least slope and lowest R2). Further evaluation is in progress.