Abstract: P2543

QTc interval during head-up tilt testing in patients with neurocardiogenic syncope versus patients with orthostatic hypotension

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Background: The QT interval reflects shifting from parasympathetic to sympathetic activity. During head-up tilt testing (HUTT) normal subjects show a QTc shortening, but during an abnormal response: 1) neurocardiogenic syncope or 2) orthostatic hypotension an altered balance between the parasympathetic to sympathetic is present and probably detected through changes in the QTc interval.

Objective: Compare dynamic changes of the QT, QTc intervals during head-up tilt test (HUTT) in patients with neurocardiogenic syncope (NCS) and with orthostatic hypotension due to autonomic failure (OH)

Methods: We studied 78 patients. 45 (51%) were female. All were symptomatic and had an abnormal HUTT according to each definition. We divided the population into two groups depending on the response, 1) NCS n =61 2) OH n =17. In all patients; heart rate, QT and QTc, were measured on a continuous 12-lead electrocardiogram

Results: NCS patients were significantly younger with female prevalence. The max HR and the SD of the HR were significantly higher. The QTc interval during positive HUTT was very different. In the NCS the QTc shortened from 407 ± 25 to 367 ± 49 (p = .001) and in OH group the QTc prolonged from baseline 427 ± 37 ms to HUTT 442 ± 52 ms; p = 0.001).

Conclusion:
HUTT revealed significant QTc differences in patients with OH and NCS. Patients with a NCS the QTc interval shortened; but in those with OH the QTc significantly prolonged. This finding is in accordance with the autonomic imbalance and could explain the increase in sudden death observed in the OH population.