PROLONGED QT INTERVAL PREDICTS SUDDEN CARDIAC DEATH IN HIV-INFECTED INDIVIDUALS

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Background: A prolonged QT interval has been variably associated with sudden cardiac death (SCD). HIV-infected individuals have high rates of cardiovascular disease including SCD; the mechanisms likely include traditional risk factors, HIV medications, and inflammation. HIV-infected individuals are frequently prescribed QT prolonging medications, however, the association between QT and SCD in this population has not been evaluated.

Methods: We previously characterized all deaths in 2860 consecutive HIV patients from 2000 to 2009 in a public San Francisco clinic. All patients with ≥ 1 ECG during the study period were identified. The effect of Bazett-corrected QT (QTc) on SCD was evaluated with regression and Cox proportional hazard models.

Results: 18 SCDs were identified from 657 patients with ≥ 1 ECG. The median time between last ECG and SCD was 284 days. The mean QTc was longer in SCD victims compared to those without (434 vs 414ms, p=0.01). After adjustment for age, gender, race, HTN, DM, and baseline CD4, each 10ms increase in QTc was independently associated with a 13% increased risk of SCD (OR 1.13, 95% CI 1.01-1.26, p=0.027). A QTc >450ms was associated with SCD (OR 3.96, 95% CI 1.36-11.42, p=0.012) as well as all cause mortality (OR 2.19, 95% CI 1.26-3.82, p=0.005) but not AIDS death (p=0.53).

Conclusions: A prolonged QTc predicts SCD but not AIDS death in a large urban HIV cohort. Further work is needed to better define risk markers for SCD and the impact of QT-prolonging medications in this high-risk group.