QT INTERVAL AND CARDIAC EVENTS IN CANCER PATIENTS: AN ANALYSIS OF MD ANDERSON ECG DATABASE FROM 2009-2012

Moderated Poster Contributions
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Background: Cancer patients often miss the opportunity to participate in trials due to the exclusion of prolonged QTc on their ECG. Small studies suggest that QTc in cancer patients are likely to be longer than normal reported thresholds. Our retrospective study is the largest ECG analysis in cancer patients to date.

Methods: ECGs performed during 2009-2012 were reviewed. Patients with bundle-branch block and paced rhythms were excluded. The QT intervals were measured by the ECG machine and confirmed by a cardiologist. Heart rate variance was corrected using Bazett formula (QTc = QT/sqrt(RR)). ICD9 codes were used to identify sustained ventricular arrhythmias and cardiac deaths. Events that occurred during septic shock, hypovolemic shock, respiratory failure or pulseless electrical activity cardiac arrest were excluded.

Results: 181,053 ECGs was performed in 69,732 unique patients, 50.7% were men. The mean QTc interval was 437 ± 26 milliseconds (ms) in females and 434 ± 29 ms in males. 30.2% and 2.2% of patients had a QTc greater than 450 ms and 500 ms, respectively. At the 99th percentile, the QTc was 501 ms in males and 500 ms in females. Of the twenty-six events that were identified, the lowest QTc was 475 ms. 80.8% of events occurred in patients who had QTc greater than 495 ms.

Conclusion: The QTc interval in cancer patients may be longer than normal populations. The majority of cardiac events occurred when QTc were greater than 495 ms. Appropriate exclusion of patients based upon QTc requires further analysis.