

Takotsubo Cardiomyopathy and QT Interval Prolongation: Who are the Patients at Risk for Torsades de Pointes?

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Objectives: QT interval prolongation is prevalent among patients with Takotsubo cardiomyopathy (TC), while Torsade de Pointes (TdP) has rarely been reported in these patients. We studied all reports on TC-associated QT interval prolongation and all reports on TC-associated TdP in order to characterize the clinical circumstances leading to TdP in patients with TC.

Methods: We studied 13 reports on TC-associated TdP and 86 reports on TC-associated QT interval prolongation. We systematically reviewed each report and recorded the risk factors for TdP other than female gender and systolic heart failure.

Results: The prevalence of the male gender was higher among patients with TC-associated TdP relative to patients with TC-associated QT interval prolongation (30.8% vs. 5.8%; $p=0.005$). There was a trend in the mean maximal corrected QT interval being longer among patients with TC-associated TdP relative to patients with TC-associated QT interval prolongation (646.2 ± 160.3 vs. 555.9 ± 63.8 msec; $p=0.08$). There were no differences between patients with TC-associated TdP and patients with TC-associated QT interval prolongation in terms of mean age, maximal Troponin levels, and lowest ejection fraction. Overall, 10 (76.9%) patients with TC-associated TdP had risk factors for TdP other than the female gender and systolic heart failure; including suspicion of congenital long QT syndrome, atrio-ventricular block, bradycardia, hypokalemia, recent conversion from atrial fibrillation to sinus rhythm, and using QT prolonging agents.

Conclusions: Men with TC-associated QT interval prolongation are at risk for TdP. Most patients with TC-associated TdP have risk factors for TdP other than the female gender and systolic heart failure.