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Title

Assessing the risk of QT prolongation in primary care

Priority 1 (Research Category)

Prescribing and pharmacotherapeutics

Presenters

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Abstract

Context: Drug induced QTc prolongation (QTP) may increase the risk of developing torsades de pointes (TdP). The Tisdale Risk Score has been validated in acute cardiac care for predicting risk of QTP but has not been evaluated in community based primary care practice. Objective: To assess the applicability of this tool in primary care to guide clinicians when prescribing QTc prolonging medications. Design: A retrospective chart audit with secondary data analysis applying the Tisdale Risk Score was completed. The study has received approval from the University of Calgary Conjoint Health Research Ethics Board. Setting: Patients of two University of Calgary Department of Family Medicine teaching clinics. Population Studied: Primary care patients prescribed one or more medication(s) with known or possible risk of QT prolongation who had pre- and post- pharmacotherapy ECGs on chart (85 qualifying patients based on ECG criteria of 486 patients who met medication criteria). A control group of 184 patients not on QTc prolonging medications were analyzed for comparison. Intervention/Instrument: The Tisdale Risk Score was used to categorize patients as low, moderate or high-risk for QTP. Outcome measures: To determine applicability of the Tisdale risk stratification, odds ratio of QTc prolongation in moderate and high-risk patients was compared to low-risk patients. Prescribing patterns of QTc prolonging medications were also reported. Results: The most commonly prescribed QTc prolonging medications were anti-depressants. The baseline QTc in cases and control group was similar (cases 428 ms and control 424 ms). In cases, there was higher frequency of low-risk Tisdale classification (69.4%) compared to moderate (25.9%) and high (4.7%) risk. There were 5/85 (5.9%) patients with QTP on post pharmacotherapy ECG in cases. Odds ratio of QTP in moderate risk category compared to low-risk category was 0.71 [95% CI – 0.07-6.98]. In comparison, majority of patients in the control population were at low risk (99.5%) of QTP. Conclusions: Although a correlation between QTP and Tisdale Risk Score could not be determined, the study shows that the majority of patients in outpatient setting are at low risk of QTP and the incidence of QTP is small. This study increases awareness of commonly prescribed QTc prolonging medications in primary care and may guide individualized risk assessment and a future prospective study.