

Title: Frequency of QT prolongation drug alerts within a community hospital setting

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Abstract Text:

Drug-induced QT prolongation is a common but rarely significant adverse effect of a wide range of cardiovascular and non-cardiovascular drugs. When a patient experiences a clinically significant drug-induced QT prolongation, it often occurs without warning and can rapidly progress to a fatal heart arrhythmia.

The medications associated with QT prolongation are numerous and vary in their QT-prolonging effects. Consequently, it is often difficult for clinicians to differentiate between patients who are at highest risk for fatal arrhythmia. Computerized physician ordering systems and pharmacist dispensing software include automated drug warnings or alerts but provide little guidance on risk stratification and corresponding therapeutic interventions. The purpose of this retrospective database study is to describe the number and type of drug warnings or alerts experienced at a community hospital.

This study will be a retrospective analysis of a data set tracking drug alerts to pharmacists at a community hospital licensed for 200 beds serving various patient populations with a high case mix index. The hospital's database is a commercially available clinical pharmacy surveillance system that alerts pharmacists to potential drug-drug interactions. The database will be queried for the number of QT prolongation alerts. The primary outcome of interest is to quantify the number of alerts and percentage of alerts with a pharmacist intervention between June 2016 – November 1, 2020 per adjusted patient days. "Pharmacist intervention" is defined as laboratory or clinical monitoring and change of medication (drug, dose, frequency and discontinuation), but doesn't include reviewing a patient chart. Secondly, we will quantify the percentage of QT prolongation alerts within the total number of alerts and describe the most frequent associated medications. Only activations that were alerted to the pharmacist will be included in our review. The primary outcome of interest will be reported with descriptive statistics and compared monthly ratios of all ratios with a one-way ANOVA for repeated measures.