

Prospective analysis of clinical pharmacist interventions for QT drug-drug interactions alongside clinical decision support

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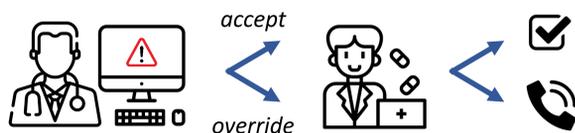
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4. Historical research

Background

- Drug-drug interactions leading to QT prolongation (QT-DDIs) are very common
- Clinical Decision Support (CDS) triggers alerts to warn physicians while prescribing
- Real-time follow-up by clinical pharmacists who can intervene by phone is an additional safeguard mechanism



Methods

In a tertiary hospital, QT-DDIs and pharmacist interventions were prospectively registered in a Microsoft Excel® database over a period of 5 years (2016-2020). All pharmacist interventions were analyzed. Chi square tests were used to compare frequencies.

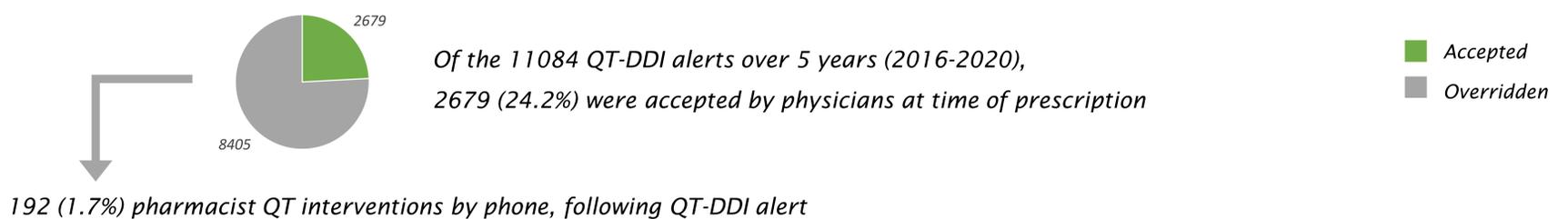
- Possible QT-related interventions were electrocardiogram (ECG) or electrolyte monitoring, therapy change (e.g. drug switch), the choice between monitoring or therapy change, and (re)initiation.
- Three types of acceptance were evaluated: CDS alert acceptance, phone acceptance (i.e. oral confirmation by physician), and true intervention acceptance verified in patient records.
- Measured risk factors were female sex, age >65 years, impaired renal function (creatinine clearance <60 mL/min), electrolyte disturbances (potassium, calcium or magnesium), structural heart disease, >2 QT-prolonging drugs, bradycardia, no recent ECG, recent prolonged QTc interval.

Objectives

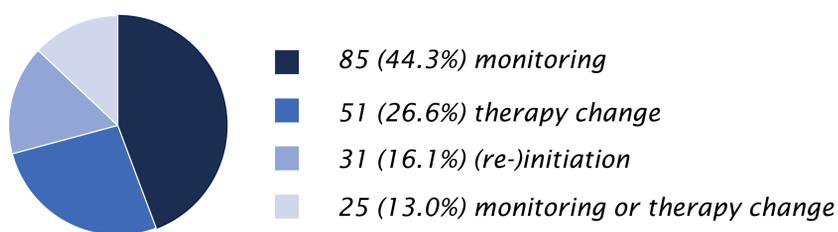
Evaluation of

1. Physician acceptance of QT-DDI alerts triggered by CDS
2. Physician acceptance of pharmacist interventions
3. Risk profile of patients with QT intervention

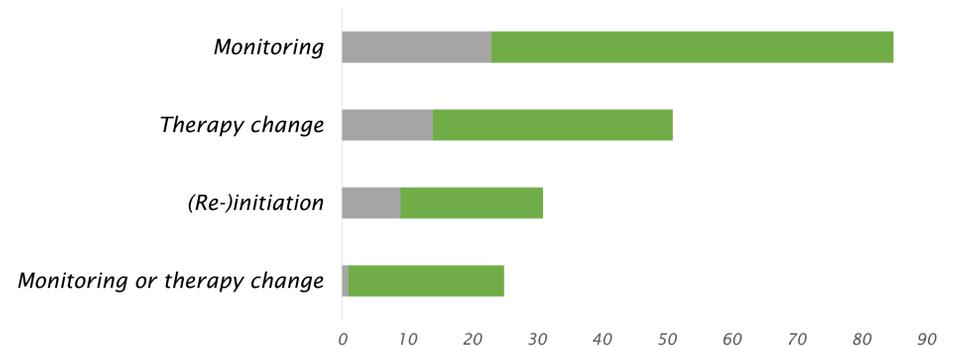
Results



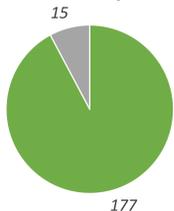
Types of QT intervention



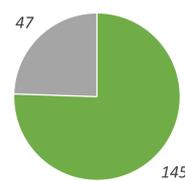
Type of QT interventions and their final acceptance



Phone acceptance



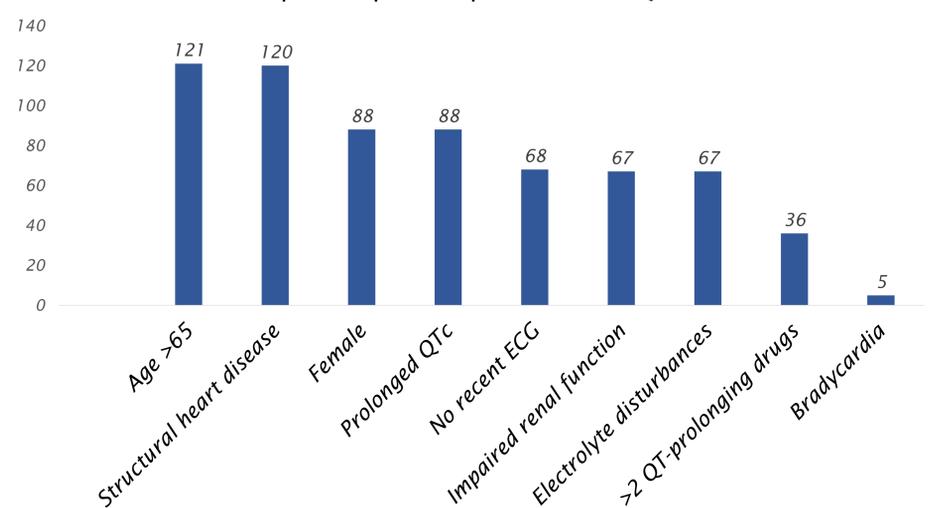
Final acceptance of QT intervention



Phone acceptance (92.2%) was significantly higher than final intervention acceptance verified in patient records (75.5%) ($p = 0.037$).

There was no significant difference in final intervention acceptance between the intervention types ($p = 0.087$).

Present risk factors for 192 patients with QT intervention



Conclusion

Phone acceptance was very high, which can be interpreted as the pharmacist interventions being highly appropriate and complementary to CDS alerts. Reasons for the difference between phone acceptance and final intervention acceptance need to be explored.