ToolQit:

An Evidence-based Communication and Decision-guiding Tool to Evaluate the Complexities of QT Prolongation

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Objectives

- Current pharmacy practice management systems screen drug-drug interactions and generate alerts pertaining to potential QT prolongation. However, pharmacists have found these alerts to be unspecific for patient risk factors, causing confusion and alert fatigue.
- The objective of this study was to create ToolQit, an evidence-based communication and decision-guiding tool to:
  - Consolidate evidence-based risk factors of QT prolongation into a user-friendly and easily accessible medium
  - Educate pharmacists on evidence-based risk factors of QT prolongation
  - Facilitate interprofessional communication and collaboration between pharmacists and prescribers with respect to clinical decision-making on QT prolongation-related patient care concerns.

Methodology

- We performed a comprehensive literature review and prepared a draft version of ToolQit.
- We invited frontline pharmacists to try using ToolQit in practice and then participate in our in-person focus group sessions or complete an online questionnaire to provide us with their feedback and recommendations to ToolQit. Qualitative data, that is, focus group data, were de-identified, transcribed, coded, and analyzed for thematic analysis.

Results

- We hosted a total of 4 focus groups in fall 2017 with a total of 9 pharmacy professionals. In addition, 8 pharmacy professionals (who were not able to attend our focus groups in-person or via teleconference) responded to our online questionnaire and provided feedback and comments to our draft version of ToolQit.
- Distribution of the primary practice setting of the participants included community practice, long-term care, family health teams, and specialty hospital practice.
- Based on the feedback and commentary received from the focus group participants, ToolQit was revised and re-designed to further support the needs of pharmacists in different practice settings. The final version of ToolQit (Figure 1) is available upon request via email at qt@ismp-canada.org or from the ISMP Canada website at https://www.ismp-canada.org/ToolQit_QTprolongation/.

FIGURE 1: ToolQit

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Pharmacist Evaluation of QT Prolongation Risk and Recommendation

Patient Information			**Prescriber Information**	
Name	**Sex** M☐ F☐	**DOB**	**Name**	**CSPO**
Address	**Phone**		**Phone**	**Fax**
Other Relevant Information			**Date/Time of Communication**	

Current Medications that Prolong the QT Interval[1,2]

Medication	Dose/Frequency/Duration of therapy	Indication	Degree of prolongation

Patient-Specific Risk Factors for QT

Risk Factor(s) *check if applicable

- ☐ QTc Interval > 500 ms
- ☐ Advanced age (>65 years old)
- ☐ Female Sex
- ☐ Acute myocardial infarction
- ☐ Hypokalemia (<3.5 mmol/L)
- ☐ Hypomagnesemia (<0.7 mmol/L)
- ☐ Hypocalcemia (<1.1 mmol/L [ionized])
- ☐ Bradycardia (<60 bpm)
- ☐ Treatment with diuretics
- ☐ Concurrent administration of > 1 QT interval-prolonging drugs
- ☐ Elevated plasma concentrations of QT interval-prolonging drugs
  - Dose adjustment needed for renally-eliminated drug in patients with acute kidney injury or CKD
  - Drug Interaction(s)
- ☐ Possible genetic predisposition/genetic susceptibility

Pharmacist's Recommendations and Comments

Pharmacist Commentary on Applicable Risk Factors

Pharmacist Recommendation

☐ Baseline electrolytes (potassium, magnesium, calcium) ☐ Baseline ECG ☐ Other (specify below):

Pharmacist Signature:

Physician Response and Comments

- ☐ Rejected
- ☐ Approved

Physician Signature: **Date:**

Pharmacy Information

Name	Phone	Fax
Practice Setting ☐ Community ☐ Hospital ☐ LTC ☐ Other:	Other	

References:
1. Tisdale JE. Drug-induced QT interval prolongation and torsades de pointes: Role of the pharmacist in risk assessment, prevention, and management. Can Pharm (Ott) 2016; 149: 1 – 14.
2. Woosley RL, Romero KA. Welcome to CredibleMeds.Available: www.crediblemeds.org

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Conclusion

- ToolQit is a one-page fillable PDF form. It is designed to increase pharmacist and prescriber awareness of factors that may increase QT prolongation risk and facilitate a standardized information-gathering process when documenting QT-prolonging medications and/or drug-drug interactions.
- Our study participants enjoyed using ToolQit as a standardized supportive tool in pharmacy practice to assess individual patient risk factors for QT prolongation. They found that ToolQit was a "good self-check" even if it was not sent over to the prescriber. The evidence-based content of ToolQit was generally well received.
- Overall, participants did not report any significant challenges in incorporating ToolQit into their daily practice and workflow. They all stated that they would recommend ToolQit to their colleagues.
- Participants recommended the following future development or next steps for this project:
  - Integration of ToolQit into pharmacy practice management systems, so that it would be readily available when a QT prolongation interaction is flagged.
  - Development and validation of a stratification or risk score associated with the risk factors listed on ToolQit; this will be helpful for practitioners to determine the severity of risk upon completing the assessment.

REFERENCES: Available upon request

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DISCLOSURES: Authors of this poster have the following to disclose concerning possible personal or financial relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:

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