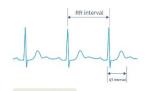
Dr. Ahmad Jaafar Updated: 8<sup>th</sup> June 2021

# **QTc and Medications**

Antimicrobials	Antidepressants	Antipsychotics	Anticonvulsants	Other Drugs
Atazanavir Azithromycin Bactrim Ciprofloxacin	Amitriptyline Citalopram Clomipramine Desipramine	Chlorpromazine Clozapine Haldol Mesoridazine Paliperidone Pimozide Quetiapine Risperidone Sertindole Thioridazine Ziprasidone	Felbamate Fosphenytoin Phenytoin	Moexipril Nilotinib Octreotide Oxytocin Probucol Ranolazine Sunitinib Tacrolimus Tamoxifen Terfenadine Tizanidine Vandetanib Vardenafil
Chloroquine	Doxepin		Other Drugs	
Clarithromycin Erythromycin Fluconazole Foscarnet Gatifloxacin Gemifloxacin Halofantrine	Escitalopram Fluoxetine Nortriptyline Paroxetine Protriptyline Sertraline Trazodone Trimipramine Venlafaxine		Alfuzosin Astemizole Amantadine Bepridil Cisapride Diphenhydramine Eribulin Famotidine Fingolimod Galantamine Indapamide Lapatinib Levomethadyl Lithium Methadone	
Imipramine Itraconazole Ketoconazole		Antiarrhythmics  Amiodarone Disopyramide Dofetilide Dronedarone Flecainide Ibutilide Nicardipine Procainamide Quinidine Sotalol		
Levofloxacin	Antiemetics			
Moxifloxacin Ofloxacin Pentamidine Ritonavir Sparfloxacin Telithromycin Voriconazole	Dolasetron Domperidone Droperidol Granisetron Odansetron			

## Measurement of QTc (Bazett formula):



- **Best leads:** II and V1 (as T waves are well-defined in these leads).
- If patient has sinus arrhythmia:
  - o Use the QT interval immediately after the shortest RR interval.
  - Measurement may NOT be reliable.

### **Upper limits of normal:**

- < 15 Y/O: 450 msec in boys and 460 msec in girls.
- > 15 Y/O: 440 msec in boys and 450 msec in girls.

**Useful rule of thumb:** Normal QT is less than half the proceeding RR interval.

#### What are the red flags on the ECG with prolonged QTc?

Extremely long QTc interval (> 0.6 second), bradycardia (sinus, 2nd degree AV block), T wave alternans, PVCs, documented ventricular arrhythmia.

# It is safe to practice the following with QTc-prolonging medications in children:

- Baseline ECG, and to avoid the medication in children with prolonged QTc.
- Repeat ECG in 3-7 days after starting the medication in children with other risk factors:
  - o Low K, Mg or Ca.
  - o Disorders of heart rate or rhythm (mainly bradycardia).
  - o Structural heart abnormalities.
  - $\circ$   $\;$  Co-use of other medications prolonging QTc.
  - o Dose > recommended range.
- To D/C the medication in case significant prolongation noted (> 60 msec increase or QTc > 440 msec).

#### Refernces:

- 1. Domperidone-Associated QT Interval Prolongation in Non-oncologic Pediatric Patients: A Review of the Literature. Amy D Morris, et al. Can J Hosp Pharm. May-Jun 2016;69(3):224-30. doi: 10.4212/cjhp.v69i3.1560.
- 2. Tisdale, J. E. (2016). Drug-Induced QT Interval Prolongation in Children: Are the Kids Alright? The Canadian Journal of Hospital Pharmacy, 69(3), 183–184.