

List of Drugs to be Avoided by Patients with Congenital Long QT Syndrome (LQTS)* updated Feb 2017

*This list is **not comprehensive** but is meant to be a practical list for those clinicians managing patients with LQTS in Canada. Patients with LQTS should discuss ALL new medications (prescription and over the counter) with a health care provider. The most up to date information is available on www.crediblemeds.org. There is also a mobile app free for iPhone/Android.

Drugs with ABSOLUTE CONTRAINDICATION	Drugs with RELATIVE/THEORETICAL CONTRAINDICATION	
PRESCRIPTION DRUGS	PRESCRIPTION DRUGS	
Amiodarone Amitriptyline (Elavil) Atomoxetine (Stattera) Azithromycin (Zithromax) Chloroquine (Aralen) Chlorpromazine Ciprofloxacin Citalopram (Celexa) Clarithromycin Disopyramide (Rythmodan) Dolasetron (Anzemet) Domperidone Doxepin Dronedarone (Multaq) Droperidol Erythromycin Escitalopram (Cipralex) Flecainide (Tambocor) Fluconazole Gatifloxacin (Tequin) Haloperidol (Haldol) Ibutilide (Corvert) Levomepromazine (Nosinan) Maprotiline Methadone (Metadol) Mexiletine Moxifloxacin (Avelox) Ondansetron (Zofran) Oxaliplatin (Eloxatin) Papaverine HCl Pentamidine Pimozide Procainamide Propafenone (Rythmol) Propoxyphene Propofol (Diprivan, Provoven) Quinidine Saquinavir (Invirase) Sotalol Trazodone Vandetanib (Caprelsa)	Alfuzosin (Xatrol) Amantadine Aripiprazole (Abilify) Atazanavir (Reyataz) Bretylium Buprenorphine (BuTrans 5, 10, 20 and in Suboxone) Capecitabine Chloral hydrate Clomipramine Clozapine Cyclobenzaprine, theoretical Cyclosporin (Neoral) Dasatinib (Sprycel) Degarelix (Firmagon) Desipramine Desvenlafaxine (Pristiq) Dextroamphetamine (Dexedrine and in Adderall) Dobutamine Donepezil (Aricept) Dopamine Ephedrine Fingolimod (Gilenya) Fluoxetine (Prozac) Formoterol (Oxeze Turbuhaler and in Symbicort) Furosemide (Lasix) Galantamine (Reminyl) Granisetron (Kytril) Hydroxychloroquine (Plaquenil) Hydroxyzine Imipramine Indapamide (Lozide and in Coversyl Plus) Isoproterenol Itraconazole (Sporanox) Ketoconazole (Nizoral) Lapatinib (Tykerb) Leuprolide (Lupron) Levofloxacin (Levaquin) Lisdexamfetamine (Vyvanse) Lithium (Carbolith) Loperamide (Imodium) Mefloquine (Larium) Methylphenidate (Ritalin, Concerta) Metoclopramide Midodrine Mirtazapine (Remeron)	Nilotinib (Tasigna) Norepinephrine Nortriptyline Norfloxacin Octreotide (Sandostatin) Olanzapine (Zyprexa) Ofloxacin Orciprenaline Orphenadrine (Norflex) Oxycodone (OxyNEO and in Oxycocet) Oxytocin Paliperidone (Invega) Paroxetine (Paxil) Pazopanib (Votrient) Perflutren lipid microspheres (Definity) Perphenazine Posaconazole (Posanol) Promethazine Quinine Quetiapine (Seroquel) Risperidone (Risperdal) Ritonavir (Norvir) Ritonavir / Lopinavir (Kaletra) Salbutamol (Ventolin) Salmeterol (Serevent and in Advair) Sertraline (Zoloft) Solifenacin (Vesicare) Sorafenib (Nexavar) Spiramycin (Rovamycine) Sunitinib (Sutent) Tacrolimus (Prograf, Protopic) Tamoxifen Terbutaline (Bricanyl Turbuhaler) Thiothixene (Navane) Tizanidine (Zanaflex) Tolterodine (Detrol) Torsemide (Demdex) Trimethoprim / Sulfamethoxazole (Septra) Trimipramine Vardenafil (Levitra) Venlafaxine (Effexor) Voriconazole (Vfend) Vorinostat (Zolinza) Ziprasidone (Geodon, Zeldox)
Drugs with <u>RELATIVE/THEORETICAL</u> CONTRAINDICATION (continued)		
OVER THE COUNTER DRUGS		
Cetirizine (Reactine), minor Diphenhydramine (Benadryl), minor Epinephrine (EpiPen, Twinject) Famotidine (Pepcid)	Ginseng (Cold – FX) Loratidine (Claritin), theoretical (no reports)	Phenylephrine (Sudafed PE and in combination Decongestants) Pseudoephedrine (Sudafed and in combination Decongestants)
STREET DRUGS		
Amphetamine (bennies, speed, uppers) Cocaine (blow, C, coke, crack, rock, snow) Methamphetamine (chalk, crystal meth, ice, meth),	Methylenedioxy-methamphetamine or MDMA (E, ecstasy, MDA, X) Oxycodone (killers, OCs, oxycotton, oxys) Quetiapine (baby heroin, Suzie-Q) [mixed with other drugs]	

QT Prolonging Drugs-Alternatives

Below is a list of alternatives to some QT prolonging drugs. All patients with Long QT syndrome should speak to a health care provider or pharmacist prior to taking any new over-the-counter or prescription drug. Any questions or concerns can be directed to the BC Inherited Arrhythmia Program during regular business hours, or to the Electrophysiologist on call at St. Paul's Hospital or Royal Jubilee Hospital after hours or on weekends. The most up to date information on QT prolonging drugs can be found at www.crediblemeds.org. A free mobile app is also available for iPhone/Android.

Drug Class	Examples of Common Contraindicated Drugs in LQTS	BCIAP Recommended Alternative(s)***
Anti-depressants	Citalopram	Mirtazapine
Antibiotics	Azithromycin, Floxacins, Clarithromycin	Penicilin based antibiotics (Penicillin, Amoxicillin, Ampicillin), Doxycycline, Tetracycline, Sulfa based antibiotics (Septra, Bactrim), Cephalosporins (Cephalexin, Cefuroxime, Ceftriaxone)
Anti-psychotics	Haldol, Quetiapine (Seroquel)	Refer to a specialist
Anesthetics	Propofol	Midazolam and/or Refer to a specialist
Analgesic/narcotic	Methadone	Refer to a specialist
Anti-arrhythmic	Sotalol	Refer to a specialist
Anti-histamines++	Diphenhydramine (Benadryl)	Loratadine, cetirizine

***** Always consult with a heart rhythm specialist or pharmacist if there are any questions or doubts about QT prolonging drugs or these suggested alternatives**

++ If a patient must take an antihistamine, certirizine (and perhaps loratadine) are likely the "safest" based on the current literature. If taking certirizine, no other current medications should be taken (eg. avoid any P450 inhibiting drugs). Renal and liver function should be normal

Monitoring Recommendations for Patients on QT Prolonging Drugs

- 12 lead resting ECG before starting the drug to obtain a baseline
- Repeat 12 lead resting ECG 7-14 days after drug start date and/or change in does
- If there is a 50 ms increase in QTc OR the QTc > 500 ms,
 - REDUCE dose and repeat ECG
 - AVOID drug and seek an alternative if at all possible
- ECGs can be sent to the BCIAP for review by heart rhythm specialist
- Goal is for patient to take the least amount/dose needed to achieve the target state