

Risk Level	Drug (Brand name)	Drug Class
High	Bepridil (Vascor)	Anti-anginal/heart pain
High	Amiodarone (Cordarone,Pacerone)	Anti-arrhythmic/abnormal heart rhythm
High	Disopyramide (Norpace)	Anti-arrhythmic/abnormal heart rhythm
High	Dofetilide (Tikosyn)	Anti-arrhythmic/abnormal heart rhythm
High	Flecainide(Tambocor)	Anti-arrhythmic/abnormal heart rhythm
High	Ibutilide (Corvert)	Anti-arrhythmic/abnormal heart rhythm
High	Procainamide (Procan, Pronestyl)	Anti-arrhythmic/abnormal heart rhythm
High	Propafenone	Anti-arrhythmic/abnormal heart rhythm
High	Quinidine (Cardioquin, Quiniglute)	Anti-arrhythmic/abnormal heart rhythm
High	Sotalol (Betapace)	Anti-arrhythmic/abnormal heart rhythm
High	Sparfloxacin (Zagam)	Antibiotic/bacterial infection
High	Ciprofloxacin	Antibiotic/Fluoroquinolone
High	Halofantrine (Halfan)	Antibiotic/malaria infection
High	Erythromycin (E.E.S.,Erythrocin)	Antibiotic;GI stimulant/bacterial infection; increase GI motility
High	Citalopram (Celexa)	Anti-depressant/depression
High	Amitriptyline	Anti-depressant/TCA
High	Amoxapine	Anti-depressant/TCA
High	Clomipramine	Anti-depressant/TCA
High	Desipramine	Anti-depressant/TCA
High	Doxepin	Anti-depressant/TCA
High	Imipramine	Anti-depressant/TCA
High	Maprotiline	Anti-depressant/TCA
High	Nortriptyline	Anti-depressant/TCA
High	Probucol	Anti-hyperlipidemia/no longer used
High	Perphenazine (Trilafon)	Anti-psychotic
High	Chlorpromazine (Thorazine)	Anti-psychotic/ Antiemetic/schizophrenia/ nausea
High	Mesoridazine (Serentil)	Anti-psychotic/schizophrenia
High	Thioridazine (Mellaril)	Anti-psychotic/schizophrenia
High	Ziprasidone (Geodon)	Anti-psychotic/schizophrenia
High	Pimozide (Orap)	Anti-psychotic/Tourette's tics
High	Boceprevir	Anti-viral/Hepatitis C infection

High	Telaprevir	Anti-viral/Hepatitis C infection
High	Amprenavir	Anti-viral/HIV infection
High	Atazanavir	Anti-viral/HIV infection
High	Darunavir	Anti-viral/HIV infection
High	Fosamprenavir	Anti-viral/HIV infection
High	Indinavir	Anti-viral/HIV infection
High	Lopinavir	Anti-viral/HIV infection
High	Nelfinavir	Anti-viral/HIV infection
High	Ritonavir	Anti-viral/HIV infection
High	Saquinavir	Anti-viral/HIV infection
High	Tipranavir	Anti-viral/HIV infection
High	Cisapride (Propulsid)	GI stimulant/heartburn
Low	Fluconazole	Antibiotic/Azole
Low	Clemastine	Antihistamine
Low	Diphenhydramine	Antihistamine
Low	Loratidine	Antihistamine
Low	Quetiapine (Seroquel)	Anti-psychotic/schizophrenia
Low	Risperidone (Risperdal)	Anti-psychotic/schizophrenia
Moderate	Amphetamine	ADHD agent
Moderate	Atomoxetine	ADHD agent
Moderate	Dextroamphetamine	ADHD agent
Moderate	Methylphenidate	ADHD agent
Moderate	Bretylium	Anti-arrhythmic/abnormal heart rhythm
Moderate	Dobutamine	Anti-arrhythmic/abnormal heart rhythm
Moderate	Dopamine	Anti-arrhythmic/abnormal heart rhythm
Moderate	Norepinephrine	Anti-arrhythmic/abnormal heart rhythm
Moderate	Cyclosporin	Antibiotic
Moderate	Cotrimoxazole	Antibiotic/Anti-fungal
Moderate	Terbinafine	Antibiotic/Anti-fungal
Moderate	Itraconazole	Antibiotic/Azole
Moderate	Ketoconazole	Antibiotic/Azole
Moderate	Voriconazole	Antibiotic/Azole

Moderate	Gatifloxacin (Tequin)	Antibiotic/Fluoroquinolone
Moderate	Gemifloxacin	Antibiotic/Fluoroquinolone
Moderate	Levofloxacin (Levaquin)	Antibiotic/Fluoroquinolone
Moderate	Moxifloxacin (Avelox)	Antibiotic/Fluoroquinolone
Moderate	Ofloxacin	Antibiotic/Fluoroquinolone
Moderate	Azithromycin	Antibiotic/Macrolide
Moderate	Clarithromycin (Biaxin)	Antibiotic/Macrolide
Moderate	Roxithromycin	Antibiotic/Macrolide
Moderate	Troleandomycin	Antibiotic/Macrolide
Moderate	Chloroquine	Antibiotic/malaria infection
Moderate	Mefloquine	Antibiotic/malaria infection
Moderate	Quinine	Antibiotic/malaria infection
Moderate	Pentamidine (NebuPent, Pentam)	Antibiotic/pneumocystis pneumonia
Moderate	Tamoxifen (Nolvadex)	Anti-cancer/breast cancer
Moderate	Arsenic trioxide (Trisenox)	Anti-cancer/Leukemia
Moderate	Felbamate (Felbatrol)	Anti-convulsant/seizure
Moderate	Fosphenytoin (Cerebyx)	Anti-convulsant/seizure
Moderate	Escitalopram (Lexapro)	Anti-depressant/depression
Moderate	Fluvoxamine	Anti-depressant/depression
Moderate	Nefazodone	Anti-depressant/depression
Moderate	Paroxetine (Paxil)	Anti-depressant/depression
Moderate	Sertraline(Zoloft)	Anti-depressant/depression
Moderate	Fluoxetine (Prozac,Sarafem)	Anti-depressant/depression
Moderate	Gepirone (Exxua)	Anti-depressant/depression
Moderate	Trazodone	Anti-depressant/depression
Moderate	Venlafaxine (Effexor)	Anti-depressant/depression
Moderate	Hydroxyzine	Antihistamine
Moderate	Midodrine	Anti-hypertensive/Alpha 1 agonist
Moderate	Beta Blockers	Anti-hypertensive/Beta Blockers
Moderate	Diltiazem	Anti-hypertensive/Calcium channel blocker
Moderate	Verapamil	Anti-hypertensive/Calcium channel blocker
Moderate	Isradipine (Dynacirc)	Anti-hypertensive/high blood pressure
Moderate	Moexipril/HCTZ (Uniretic)	Anti-hypertensive/high blood pressure

Moderate	Nicardipine (Cardene)	Anti-hypertensive/high blood pressure
Moderate	Droperidol (Inapsine)	Anti-nausea/anesthesia/sedative
Moderate	Dolasetron (Anzemet)	Anti-nausea/nausea, vomiting
Moderate	Domperidone	Anti-nausea/nausea, vomiting
Moderate	Granisetron	Anti-nausea/nausea, vomiting
Moderate	Ondansetron	Anti-nausea/nausea, vomiting
Moderate	Clozapine (Clozaril)	Anti-psychotic
Moderate	Haloperidol (Haldol)	Anti-psychotic/schizophrenia
Moderate	Thioxanthenes	Anti-psychotic/schizophrenia
Moderate	Foscarnet (Foscavir)	Anti-viral/HIV infection
Moderate	Ephedrine	Appetite suppressant
Moderate	Fenfluramine	Appetite suppressant
Moderate	Phentermine	Appetite suppressant
Moderate	Sibutramine	Appetite suppressant
Moderate	Lithium	Bipolar agent
Moderate	Alfuzosin	BPH/Alpha1 antagonist
Moderate	Albuterol	Bronchodilator
Moderate	Epinephrine	Bronchodilator
Moderate	Isoproterenol	Bronchodilator
Moderate	Levalbuterol	Bronchodilator
Moderate	Metaproterenol	Bronchodilator
Moderate	Salbutamol	Bronchodilator
Moderate	Terbutaline	Bronchodilator
Moderate	Salmeterol (Serevent)	Bronchodilator/Sympathomimetic/asthma, COPD
Moderate	Pseudoephedrine	Bronchodilator/Sympathomimetic/decongestant
Moderate	Phenylephrine	Decongestant/Alpha1 agonist
Moderate	Indapamide (Lozol)	Diuretic/stimulate urine & salt loss
Moderate	Octreotide (Sandostatin)	Endocrine/acromegaly, carcinoid diarrhea
Moderate	Vardenafil (Levitra)	Erectile dysfunction
Moderate	Cimetidine (Tagamet)	H2 antagonist
Moderate	Tacrolimus (Prograf)	Immunosuppressant/Immune suppression
Moderate	Tizanidine (Zanaflex)	Muscle relaxant
Moderate	Levomethadyl (Orlaam)	Opiate agonist/pain control, narcotic dependence

Moderate	Methadone	Opiate agonist/pain control, narcotic dependence
Moderate	Amantidine	Parkinsons
Moderate	Chloral Hydrate	Sedative
Moderate	Cocaine	Stimulant
Moderate	Ritodrine	Tocolytic/no longer used
Moderate	Grapefruit juice	
Recently off list	Zolmitriptan (Zomig)	Migraine treatment
Recently off list	Naratriptan (Amerge)	Migraine treatment/Serotonin receptor agonist
Recently off list	Sumatriptan (Imitrex)	Migraine treatment/Serotonin receptor agonist

Risk factors for Torsades de Pointes		
Non-Modifiable	Possibly Modifiable	Drug-induced
Congenital long QT syndromes	Bradycardia (pulse < 50 b/m)	Anti-arrhythmics
Elderly (> 65 yo)	Electrolyte DOs (hypokal, hypomag, hypocal)	Antibiotics
Fam hx of sudden cardiac death (< 50 yo)	Eating disorders	Antidepressants
Female sex	Heart failure	Antipsychotics
History of arrhythmias	Hypoglycemia	Methadone
Myocardial infarction	Hypertension	
Structural brain disease	Hypothyroidism	
	Drug interactions that increase levels	
	Acute Hepatic Failure	
	Alcohol Use	
	Myocardial ischemia	

Guidance when combining agents

QT Prolongation Management	
ECG indicated? (See Algorithm)	
>440ms (men) or >460ms (women)?	No -> Continue therapy, Repeat EKG annually/dose change
Hypo-kalemia/magnesemia/calceemia?	Yes -> Correct
Medication induced?	No -> Consider Long QT Syndrome
>500ms or >60ms increase above baseline? Or *High Risk features? Or Syncope present?	No -> Change med or continue if indicated and continue monitoring EKGs
Admit to hospital Discontinue or reduce med	

Continuous Telemetry Treat arrhythmia if necessary	
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*High Risk features:
Torsades
Ventricular ectopy
T-wave Alternans
AV Block
Widened QRS

When to obtain EKG Algorithm	
IV Haldol or Pimozide	
Methadone \geq 120mg/day	
AP, TCA, Li, Methadone, Celexa, Stimulant	AND any of the following:
	Bradycardia
	Structural heart disease
	Cardiac arrhythmias
	Known prolonged QTc
	Hepatic Dysfunction
	Hx of Syncope
	Fam Hx of sudden unexplained deaths
	Fam Hx of congenital Long QT Syndrome
	On other QT prolongating drugs
	On P450 inhibitors
	Risk of Electrolyte abnormalities (eating disorder, diuretic, etc)
	Hypokalemia, hypomagnesemia, hypocalcemia
Concern for acute ingestion -> AMS, Delirium -> Acute cardiac symptoms ->	Acute Medical Eval which may include EKG