ECG Manifestations of Intentional Ingestions
Zareba W et al. Electrocardiographic Findings in Patients with Diphenhydramine Overdose.
Am J Cardiol 1997 80: 1168-73.

Key Points:
- A huge number of medications can cause a prolonged QT—when in doubt, look it up!
- When faced with an unknown ingestion causing a prolonged QRS and/or QT, consider empiric sodium bicarbonate
- Most patients with a Benadryl overdose do have QT prolongation but most do not have a significant ventricular tachyarrhythmia as a result

1. Which drugs that are commonly taken as intentional ingestions have arrhythmogenic potential?
   - Bradycardia/AV blockade: beta blockers, calcium-channel blockers, digoxin, clonidine, lithium, opiates, benzos
   - SVT: sympathomimetics, antihistamines, TCA’s, phenothiazines, clozapine
   - VT: cocaine, amphetamines, TCA’s, phenothiazines
   - QRS/QT prolongation: TCA’s, phenothiazines, antihistamines, organophosphates

2. Which of these medications have specific antidotes?
   - Anticholinergics: Physostigmine
   - Benzos: Flumazenil
   - Betablockers: Glucagon, calcium, insulin/D50
   - CCB: Calcium, glucagons, insulin/D50
   - Digoxin: Digibind
   - Opiates: Narcan
   - Organophosphates: Atropine, Pralidoxime (aka 2-PAM)
   - TCA’s: Sodium bicarbonate

3. What medications most commonly cause a long QT?
   - Antiarrhythmics: Class 1A (quinidine, procainamide), amiodarone, sotalol, dofetilide, ibutilide
   - Antihistamines
   - Psychotropic meds: Phenothiazines, TCAs, Haldol, SSRI’s, Risperidone
   - Antibiotics: Macrolides, fluoroquinolones, TMP/SMX, ketoconazole, itraconazole, ampicillin, chloroquine
   - Diuretics: Thiazides, Lasix
   - Off the market: Cisapride

4. What is the usual outcome of Benadryl overdose?
   - A study of 126 patients with significant, mostly suicidal, Benadryl overdoses found significant QT prolongation (mean QTc 453 msec vs. 416 msec) but only one episode of monomorphic VT and no episodes of torsades
   - This study found no difference in ECGs between men and women, although previous studies have reported an increased incidence of QT prolongation and torsades in women with Benadryl OD