G69 Acute Fatal Propafenone Toxicity: Drug Concentration, Distribution, and Clinical Features in Two Suicides

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The goals of this presentation are to illustrate clinical and toxicological features of deaths due to acute propafenone toxicity.

Propafenone is a class 1C antiarrhythmic agent, an agent that reduces the upstroke velocity of the cardiac muscle cell action potential by inhibiting the fast inward sodium channel. Propafenone is indicated in the treatment of paroxysmal atrial fibrillation/flutter and supraventricular tachycardia in patients without structural heart disease, and nonsustained ventricular arrhythmias. Potential proarrhythmogenic effects of propafenone are recognized. However, few cases of fatal propafenone toxicity are reported in the literature. This presentation reports two autopsy cases of acute propafenone toxicity, including history, and postmortem propafenone concentration and distribution.

The first case is a 29-year-old white female with a long medical history of benign conditions including an ankle injury with multiple orthopedic surgeries and borderline diabetes mellitus. She had a complaint of cardiac palpitations; Holter monitor evaluation in 1999 demonstrated episodes of atrial fibrillation/flutter. No structural defects were identified by echocardiogram. Treatment with propafenone was begun. Her clinical course was uneventful with regard to cardiac complaints, until approximately 2 years later when she presented with a complaint of chest pain of four days duration. Evaluation at that time, including electrolytes, chest X-Ray, and V/Q scan were normal; an EKG had first degree atrioventricular block, and nonspecific T wave changes. Following spontaneous symptomatic relief she was discharged home. She returned to the same hospital approximately 16 hours later, with migration of pain to the epigastric region. Additional laboratory studies included a normal gallbladder ultrasound. An EKG at that time indicated a first-degree atrioventricular block with slight prolongation of the QRS interval. During a four-hour period of observation, she was administered lidocaine, compazine and ketorolac, with symptomatic relief and was discharged home. EKG prior to discharge revealed slight narrowing of the QRS interval compared to what was seen in the previous EKG. The QTc interval was not appreciably prolonged in any EKG. Propafenone is known to cause some prolongation of PR and QRS intervals, but has no effect on QTc intervals. She returned to the hospital by ambulance eight hours later, after collapsing with seizure-like activity at home. An agonal arrhythmia was documented during unsuccessful attempts at resuscitation. At autopsy, the mildly obese female had hesitation scars on the left wrist, and contusions and lacerations of the tongue. Her lungs were congested. The heart and brain had no structural anomalies. Complete toxicology analysis revealed blood temazepam (0.17 mg/L), lorazepam (0.01 mg/L), oxazepam (< 0.01 mg/L), venlafaxine (<0.25 mg/L), and nortriptyline (0.28 mg/L; liver nortriptyline 4.1 mg/Kg). Lidocaine was also detected. Unexpectedly, the postmortem blood level of propafenone was 5.4 mg/L. Total amount of propafenone in gastric contents was 70 mg. The blood level of propafenone indicated intentional overdose (the plasma therapeutic range of propafenone is 0.06 – 3.2 mg/L). Hesitation scars, and the presence of other psychiatric medications provided further support for a suicidal manner.

The second case is a 32-year-old Hispanic male with no previous medical history who checked into a motel room with a female companion. The female subsequently left the room; the male was discovered dead on the floor of the bathroom 13 hours later. A brief suicide note was under the body. A bottle of propafenone, 150 mg tablets, prescribed to the female companion, was in the room, with approximately 68 tablets missing. At autopsy, the lungs were edematous and congested. Blood and vitreous ethanol were 0.20 g/dL and 0.28 g/dL, respectively. Less than 0.1 mg/L cocaine and cocaethylene were detected in the blood, along with 0.65 mg/L benzoylecgonine. Blood propafenone was 9.1 mg/L, and liver propafenone was 230 mg/Kg. A total of 135 mg of propafenone was in the gastric contents.

These two cases provide data on suicidal intoxication with the antiarrhythmic drug propafenone, including data on drug distribution, and evolution of EKG changes.

Class 1C Arrhythmic Agents, Propafenone, Suicide

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