



## Pathology Biology Section – 2003

### G70 Flecainide: A Suicidal Pharmacist's Choice

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The goals of this presentation are to illustrate scene findings and toxicologic analysis of an unusual death of a pharmacist involving flecainide toxicity.

Flecainide is a class 1C antiarrhythmic agent that reduces upstroke velocity of the cardiac muscle cell action potential by inhibiting the fast inward sodium channel. Class 1C agents are approved for treatment of nonsustained ventricular arrhythmias. Proarrhythmogenic properties of flecainide and other class 1C agents are known. The authors report a case of suicidal ingestion of flecainide, with additional unusual toxicology findings and bizarre scene findings. The toxicologic findings and pharmacokinetic considerations are discussed in the context of the scene findings.

A 44-year-old black male pharmacist had no significant medical or psychiatric history. He was an avid diver; a dive logbook found in the apartment indicated over 255 dives. He had recently been depressed because of a busy work schedule, and having been denied vacation time for his annual dive trip. A coworker became concerned when he did not show for work for two days. On the third day, police were summoned and gained entry into the secure apartment where they found him deceased, supine in the bathtub. He was clad only in a pair of swim trunks. The tub was partially filled with water, the water was off, and the drain was plugged. At the time of discovery, water did not completely cover the face, and the nose and mouth were above water level. Two partially submerged, full, sealed 5-gallon water bottles were on the decedent's left abdomen and right chest. Several pieces of clear plastic wrap were adjacent to the decedent, on the edge of the tub, on the nearby toilet seat, and on the bathroom counter top. An open box of plastic wrap was on the floor just outside the tub. Complete toxicology analysis revealed flecainide with the following distribution: blood 11 mg/L, liver 324 mg/L, and gastric 367 mg. A large amount of flurazepam (1 g) was also in the stomach, although flurazepam was not detected in the blood. Blood and vitreous ethanol were 0.02 g/dL and 0.03 g/dL, respectively.

The high blood level of flecainide indicated a suicidal manner of death (the reported therapeutic serum concentration of flecainide is 0.2-1 mg/L.). Moreover, the decedent did not have a prescription for flecainide; in fact, he had no preexisting arrhythmia or other known cardiac problem, suggesting that he sought out a medication specifically for the purpose of ending his life. As a pharmacist, he had access to a variety of agents and had knowledge of pharmacologic mechanisms and pharmacokinetics. Perhaps flecainide was chosen because the mechanism of death was considered to be similar to a myocardial infarct, potentially less violent than other means. Perhaps he thought the unusual nature of the drug would preclude its detection on routine postmortem toxicology. The large amount of flurazepam in the gastric contents further supports a suicidal manner, and the lack of flurazepam in the blood indicates preterminal ingestion.

The complex scene findings and unusual toxicology suggest purposeful activity by this decedent; several aspects remain puzzling. For example: why would flurazepam have been added? What was he doing with the plastic wrap? Why was he holding bottles of water on his chest and abdomen? Is his extensive knowledge of diving relevant? These aspects will be discussed during the presentation.

#### **Class 1C arrhythmic Agents, Flecainide, Suicide**