

**A retrospective review of epinephrine exposures reported to a poison center**

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**Objectives:**

Epinephrine is a commonly used medication administered for life-threatening conditions. Unfortunately, drug delivery errors are common.

**Methods:**

We performed a retrospective review of a poison center's database for cases of single-substance epinephrine exposures evaluated in a health-care facility from 2006 until 2016. Data collected included: age, context, clinical effects, interventions, and outcome.

**Results:**

50 patients were identified with ages ranging from 8 months to 80 years. Unintentional exposure via auto-injectors occurred in 46 exposures. Three cases involved medical errors, and 1 case involved a suicide attempt. No therapy was required in 46% (n=23); there were no reported deaths.

In auto-injector exposures (n=46), the most common injection location was the finger (n=36, 78%). Reported clinical effects were: blanching/pallor (n=24, 52%), puncture (n=15, 32.6%), pain (n=9, 19.5%), numbness (n=8, 17.3%), and tachycardia (n=4, 8.7%). No effects were reported in 19.5% (n=9). Warm soaks alone were used in 11 (24%) cases. Pharmacologic treatment was used in 7 (15%) cases including topical nitroglycerin (n=3), local phentolamine injection (n=3), and local bupivacaine injection (n=1).

Three cases involved medical errors. 1) A 78-year-old man received 1 mg of epinephrine intravenously for contrast-induced anaphylaxis; no systemic effects were reported. 2) An 8-month-old boy received 2 mg of IV epinephrine instead of inhaled epinephrine. He required intubation after developing tachycardia and agitation. 3) A 60-year-old woman received 3 mg of IM epinephrine for an allergic reaction. She reported "jitteriness" but was later discharged home.

A 28-year-old woman broke into a code cart and injected 1 mg of epinephrine into her neck as a suicide attempt. She developed hypertension and tachycardia followed by hypotension, ischemic ECG changes, elevated troponin, pulmonary edema, and left ventricular dysfunction. She was admitted to the ICU and discharged 4 days later.

**Conclusion:**

In our series, the majority of exposures occurred via auto-injector misadministration. Significant adverse effects were uncommon, and nearly half of all cases required no treatment. Despite being a high-risk medication, epinephrine dosing errors still occur, often in the setting of anaphylaxis. Significant adverse effects were more commonly reported following medical errors or intentional overdose.

