

Buprenorphine Toxicity in Pediatric Patients

Buprenorphine ingestions in pediatric patients are usually well tolerated, but can cause serious toxicity. The few published cases show conflicting outcomes. In one case report a 4-year-old girl who ingested 4 mg of buprenorphine experienced only miosis. In another published report, a 2-year-old boy experienced 1 episode of spontaneous emesis and became drowsy en route to the emergency department (ED) 30 minutes after an ingestion of up to 8 mg. He was observed in the ED, no interventions were necessary, and the child was discharged asymptomatic and stable 6 hours post ingestion. More serious toxicity developed in a small case series in which 5 children <2 years of age ingested buprenorphine doses estimated to be between 4 and 10 mg. All of them developed respiratory and CNS depression. Naloxone was administered in 4 patients, and the fifth patient required intubation with mechanical ventilation.

This month, a much larger case series out of the Maryland Poison Center was published (*Hayes BD, Klein-Schwartz W, Doyon S. Toxicity of buprenorphine overdoses in children. Pediatrics. 2008;121(4):e782-6*). This retrospective analysis of national poison center cases reported on 86 patients <6 years of age who unintentionally ingested buprenorphine. Thirty-two patients (37%) remained asymptomatic, 48 patients (56%) had a minor effect, and 6 patients (7%) developed severe effects (respiratory depression and significant CNS depression). There were no fatalities. The most common clinical effects in patients who developed toxicity were drowsiness/lethargy (55%), vomiting (21%), and miosis (21%). The study analyzed dose data and concluded that any child ingesting >2 mg (in the form of Suboxone® or Subutex®) or an unknown amount should be referred to the ED. Additionally, children <2 years of age ingesting more than a lick or taste should be referred to the ED. Pediatric patients with a suspected buprenorphine exposure should be monitored in an ED setting for a minimum of 6 hours. Naloxone can be used to reverse respiratory depression, although more than one dose may be required.

The Maryland Poison Center is available 24-7 to answer all questions and assist in the management of all poisoned patients. Please call 1-800-222-1222 to reach one of our certified specialists in poison information.

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DID YOU KNOW THAT... toxic levels of selenium have been found in some dietary supplements?

The FDA recently warned consumers not to use some flavors of "Total Body Formula" or "Total Body Mega Formula" due to high levels of selenium, in some cases more than 200 times the amount indicated on the label. There have been 43 reports in 9 states of adverse reactions including hair loss, muscle cramps, diarrhea, joint pain, fingernail changes and fatigue after 5-10 days of daily use. Health care providers should report suspected adverse events to these products to the FDA.



Post and share this edition of **tox^tidbits** with your colleagues. Send any comments or questions to: **tox^tidbits**, 410.706.7184 (fax) or Lbooze@rx.umaryland.edu.

If you do not wish to receive faxes or emails from the Maryland Poison Center, call 410.706.7604 or circle your fax number and fax this back to 410.706.7184. Supported by Maryland Department of Health and Mental Hygiene

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