

## Clenbuterol Overdoses

The Maryland Poison Center was notified recently that the states of New Jersey, Pennsylvania and Illinois are reporting cases of **clenbuterol contamination of heroin**.

Clenbuterol is a  $\beta_2$  receptor agonist (think Ventolin<sup>®</sup>) with rapid onset and long duration of action. It is approved for limited veterinary use in United States. Clenbuterol is also used illicitly as an alternative to anabolic steroids in humans and animals to increase muscle mass. A case series of 26 clenbuterol/heroin exposures on the east coast was reported in 2005. It remains unclear whether clenbuterol contaminated the heroin or was substituted for heroin in this 2005 case series.<sup>1</sup>

Clinical effects of clenbuterol intoxication include: agitation, tachycardia, hypotension, hyperglycemia, hypokalemia and venous hyperoxia. Management of clenbuterol exposures is symptom-driven. Decontamination is usually not required because the exposures have been parenteral. Benzodiazepines have occasionally been used to treat agitation and tachycardia. Fluids should be administered to treat hypotension. Mild and short-lived electrolyte abnormalities do not require correction unless they cause life-threatening changes. Hospitalization is recommended for symptomatic individuals because of the very long duration of action. Some patients were hospitalized for a total of 5 days following the 2005 epidemic. Clenbuterol cannot be detected in traditional substances of abuse screening tests.

**PLEASES NOTIFY THE MARYLAND POISON CENTER OF ANY SUSPECTED or KNOWN OPIOID OVERDOSE.**

Suzanne Doyon, MD  
Medical Director

1. *MMWR. Atypical reactions associated with heroin use—five states, January-April 2005. Aug 19, 2005/54 (32);793-796.*

### ***DID YOU KNOW THAT... Cyanokit was recently approved as an antidote for cyanide poisoning?***

Hydroxycobalamin injection (Cyanokit) was approved by the FDA on December 15, 2006 for the treatment of known or suspected cyanide poisoning. It has been used in Europe for many years and is an effective, safe and easy-to-administer alternative to the cyanide antidote kit currently marketed. Cyanokit is expected to be available in early 2007. Watch for a future ToxTidbits with more details about Cyanokit.



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

Read past issues of **toxtidbits** at [www.mdpoison.com](http://www.mdpoison.com)