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Rocky Mountain Poison Center Announces TELETOX™

By Mary Hilko RN, CSPI

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On 14 February 2011, Rocky Mountain Poison Center (RMPC) in conjunction with St. Alphonsus Regional Medical Center (SARMC) in Boise, ID launched TELETOX™ using telepresence robots to provide medical toxicology consultation. Alvin C. Bronstein MD, RMPC Medical Director, collaborated with Po Huang MD, Medical Director of the Telemedicine Emergency Specialist Program and Medical Director of the Nampa Saint Alphonsus Emergency Department, in the planning and launch of the nation's first application of telemedicine for poison center medical toxicology consultation. Dr. Huang recently visited RMPC and stated: "We are pleased to be able to provide this RMPC Toxicology service for Idaho."

SARMC is part of an eight hospital telehealth network (metropolitan hub with seven rural hospitals -bed range 10 – 361). RMPC medical toxicology fellows and attendings can use telepresence robots to converse with hospital emergency department and critical care unit staff in any of eight Idaho hospitals. TELETOX™ allows RMPC toxicologists to “see” poisoned patients with the treating health care staff in these hospitals. The treating health care provider remains in charge of the patient’s care with the toxicologist making recommendations as usual.

TELETOX™ may also have applicability for cross-town poison center consultation with multiple hospitals or during public health emergency events. RMPC is exploring ways to expand this service to its entire five state service region.

Carbon Monoxide (CO): The Silent Killer

By Joseph Maddry, MD - Medical Toxicology Fellow

As the winter months fall upon us, health care providers must remain ever vigilant of the threat of carbon monoxide. CO is a colorless, odorless gas produced by incomplete combustion. Exposures to house fires, poorly functioning heating systems and automobile exhaust are some of the most common sources of CO exposure. CO poison exposure calls from our Rocky Mountain Poison Center five state region during 2009 and 2010 total 695 and 794 respectively. From January through the end of November 2011 total calls are 612. There was one fatal outcome in 2010.

Clinical Presentation

CO symptoms can be vague and are often misconstrued as viral syndromes. Acute symptoms depend on the percentage of carboxyhemoglobin in the blood and the duration of exposure. Manifestations of toxicity involve the following body systems.

CNS: Headache, syncope, cerebellar ataxia, neurocognitive abnormalities and frank ischemia are all possible. Headache is often the initial symptom. As exposure continues, cerebellar deficits and difficulty with memory may ensue. Delayed effects can manifest as memory and basal ganglia deficits or other neurocognitive abnormalities.

Cardiovascular: Myocardial ischemia, CHF, myocardial depression, and hypotension may result. Patients with underlying cardiac disease are at risk of developing ischemia at lower carboxyhemoglobin concentrations than others. Dysrhythmias may occur secondary to ischemia.

Respiratory: Dyspnea secondary to CO induced hypoxia is possible. Direct lung damage from products of combustion or pulmonary edema is also seen.

GI: Early symptoms include nausea and vomiting.

Evaluation

Since symptoms can be vague and often confused with viral syndromes, one must have a high index of suspicion for CO toxicity. CO poisoning should be considered in patients that experience symptoms while at home or whose housemates have a similar illness beginning at about the same time. For patients with suspected CO poisoning symptoms, administer oxygen by a non-rebreather mask at 100%. A carboxyhemoglobin concentration can then be sent. Normal carboxyhemoglobin levels in non-smokers are less than 5% while 2 packs per day smokers may have baseline levels as high as 10%. The patient should be screened for end-organ effects. This evaluation requires a complete neurologic exam including full cerebellar testing, gait, and a mini-mental status examination. An ECG should be obtained and any evidence of cardiac damage should prompt laboratory evaluation for ischemia.

Treatment

The patient should be kept on 100% oxygen until the carboxyhemoglobin concentration is less than 5%. The half-life of CO on room air is approximately 270 minutes, on 100% oxygen approximately 90 minutes, and on hyperbaric oxygen it is approximately 20 minutes.

CO half-life	
RA	~270 min.
100% O ₂	~ 90 min.
HBO	~ 20 min.

Hyperbaric oxygen (HBO) should be considered for patients with syncope, myocardial ischemia, neurologic ischemia, neurologic deficits, cerebellar findings, or neurocognitive deficits regardless of carboxyhemoglobin concentration. Patients with carboxyhemoglobin concentrations above 20% or pregnant patients with concentrations above 15% should also be considered for HBO. While there is debate regarding the effectiveness of HBO, several studies indicate that HBO therapy prevents delayed neurocognitive effects from CO toxicity. In these cases, consultation with a hyperbaricist is recommended. Rocky Mountain Poison Center nurses and medical toxicologists are available to help you manage these patients.

Call the PoisonHelp line at 1-800-222-1222 - 24 hours a day for assistance.

Another Successful DEA National Pharmaceutical Take Back!

Nearly 200 tons collected on 29 October 2011

By Mary Hilko RN, CSPI

On 29 October, Denver Health's Rocky Mountain Poison & Drug Center participated in the Drug Enforcement Administration's (DEA) third National Prescription Drug Take-Back Day. A press conference and media event highlighting the dangers of prescription drug abuse was held at Denver Health with a collection site near the poison center. Amounts collected in the states served by Rocky Mountain Poison & Drug Center are:

Colorado	11,630 pounds
Hawaii	1,766 pounds

Idaho	3,732 pounds
Montana	1,027 pounds
Nevada	2,185 pounds

Nationwide, 188 tons of unwanted or expired medications were turned in during the October event. Since starting the initiative 13 months ago, almost 500 tons of unwanted medications have been taken out of circulation.



Helen Kaupang, of the regional DEA office stated that she was pleased by the results of the initiative. The project's results reinforce the need for a convenient way to rid homes of unwanted or expired prescription drugs. **The next National Take Back Initiative is scheduled to take place on 28 April 2012.**

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