Poison Facts:

Low Chemicals: Hydrogen Iodide

Properties of the Chemical

Hydrogen iodide is a nonflammable, colorless, corrosive gas with a pungent, suffocating odor. It fumes in moist air and is decomposed by light into hydrogen and iodide. In the presence of moisture, it will corrode most common metals. It is very soluble in water and slightly soluble in lower alcohols at room temperature.

Uses of the Chemical

Hydrogen iodide is used as a reducing agent and an analytical reagent. It is also used in the manufacturing of pharmaceuticals, disinfectants and other chemicals. It is supplied as a compressed, liquefied gas.

Absorption, Distribution, Metabolism and Excretion (ADME)

Information regarding the pharmacology of the chemical cannot be found. Iodines are readily absorbed from the gastrointestinal tract and concentrated primarily in respiratory tract secretions. The iodide ion is excreted in part by the bronchial glands. Hydrogen iodide increases the output of thin respiratory tract fluid and helps liquefy thick, tenacious sputum.

Clinical Effects of Acute Exposure

- **Ocular exposures:** Hydrogen iodide may cause severe chemical burns to the cornea and can be corrosive and irritating to the eyes. Burns to the eyes result in lesions and possibly loss of vision or ulcerations.
- **Dermal exposures:** The chemical is corrosive and irritating to the skin and all living tissue. Toxic-level exposure to dermal tissue causes acid-like burns and skin lesions, resulting in early necrosis and scarring. Burns exhibit severe pain, redness and swelling. Hydrogen iodide's great affinity for water causes its contact with dermal tissue to be especially damaging.
- **Inhalation exposures:** Hydrogen iodide is corrosive and irritating to the upper and lower respiratory tracts and all mucosal tissue. Symptoms include lacrimation, cough, labored breathing, and excessive saliva and sputum formation. Excessive irritation of the lungs causes acute pneumonitis and pulmonary edema, which can be fatal. Chemical pneumonitis and pulmonary edema may result from exposure to the lower respiratory tract and deep lung.
- **Ingestion exposures:** Ingestion is not expected. Ingestion will burn the mouth, esophagus and stomach.

In-Field Treatment Prior to Arrival at a Health Care Facility

- **Ocular exposures:** PEOPLE AT RISK FOR POTENTIAL EXPOSURE SHOULD NOT WEAR CONTACT LENSES. Irrigate exposed eyes for 15 minutes with tepid water or saline.
- **Dermal exposures:** Remove contaminated clothing as rapidly as possible. Flush affected areas with copious quantities of water.
- **Inhalation exposures:** Prompt medical attention is mandatory in all cases of overexposure. All rescue personnel should wear a Self-Contained Breathing Apparatus (SCBA). Conscious patients should be helped to an uncontaminated area to inhale fresh air or supplemental oxygen if needed. Unconscious patients should be moved to an uncontaminated area and given artificial resuscitation and supplemental oxygen. Keep patients warm and quiet. Ensure that mucus or vomited material does not obstruct the airway by positional drainage.
- **Ingestion exposures:** Ingestion is not expected. If accidental ingestion occurs, rinse mouth with water. DO NOT INDUCE VOMITING. If no respiratory compromise is present, give 4 to 8 ounces of milk or water to the patient. NEVER give anything by mouth to a patient who is unconscious or who could rapidly become unconscious.

Special note to first responders:

- Wear a positive-pressure Self-Contained Breathing Apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Treatment of Exposures in a Health Care Facility

- **Ocular exposures:** Irrigate eyes with sterile 0.9 percent saline for at least one hour or until the cul-de-sacs are free of particulate matter and have returned to neutrality. The extent of eye injury may not be apparent for up to 72 hours.
- **Dermal exposures:** Remove contaminated clothing and jewelry, and wash exposed areas with copious amounts of water. Treat dermal burns with standard topical therapy.
- **Inhalation exposures:** Administer 100 percent humidified oxygen. Obtain a chest x-ray, and monitor pulse oximetry and/or blood gases. Treat bronchospasm with inhaled beta agonists. If acute lung injury develops, consider PEEP. Delayed pulmonary edema may occur. Keep the patient under medical observation for at least 24 hours.
- **Ingestion exposures:** If no respiratory compromise is present, give the patient 4 to 8 ounces of milk or water. Obtain consultation concerning endoscopy as soon as possible, and perform endoscopy within 24 hours. If burns are found, follow up 10 to 20 days later with a barium swallow. Corticosteroids are controversial. Consider use in patients who have second-degree burns within 48 hours of ingestion and who do not have gastrointestinal bleeding or evidence of perforation. Antibiotics are indicated for suspected perforation or infection and in patients receiving corticosteroids.

For more poison prevention and first aid information, call the

Poison Control Center

Serving the Residents of Kansas

Toll-free Hotline

1-800-222-1222

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