Chlorine and Related Compounds

FORMS: Found in liquid and gaseous forms. Colorless to amber-colored liquid, and greenish-yellow gas with a characteristic odor. Some solid compounds may generate chlorine when in contact with water.

ROUTES OF EXPOSURE: Skin and eye, inhalation, ingestion

TARGET ORGANS: *Primary* - Skin, eyes, respiratory system
Secondary - Central nervous system, cardiovascular system, gastrointestinal system, renal, hepatic, metabolism

LIFE THREAT: Severe respiratory tract irritant that may cause pulmonary edema. Skin, eye and mucous membranes irritant.

SIGNS AND SYMPTOMS:

Cardiovascular: Cardiovascular collapse and possible ventricular arrhythmias.

Respiratory: Acute or delayed non cardiogenic pulmonary edema, dyspnea and tachypnea. Upper airway irritation and burns to the mucous membranes and lungs. Cough, choking sensation, rhinitis, sinusitis, rhinorrhea, pneumonitis and pneumonia.

CNS: Decreased level of consciousness to coma. Headache and dizziness.

Gastrointestinal: Nausea and vomiting

Eye: Chemical conjunctivitis with lacrimation. Severe and painful irritation and burns.

Skin: Irritation and chemical burns. Cyanosis. Possible frostbite secondary to exposure to expanding gas.

Renal: Kidney damage

Hepatic: Liver damage

Other: Metabolic acidosis

Thermal Decomposition Products include:
Reacts with water to form hydrochloric and hypochlorous acid. Reacts with carbon monoxide to form phosgene. Toxic substances are formed when combustibles burn in chlorine.

Procedure:

Pre-Radio Contact

1. Follow general HazMat treatment protocol.
2. Flush contaminated skin/eyes.
3. Monitor for pulmonary edema/shock.

Aggressive airway management may be necessary!

4. Oral tracheal or nasal tracheal intubation.
5. Start IV NS for hypotension.
6. Place patient on cardiac monitor according to protocol.
7. Treat hypotension according to Hypothermia Protocol.
8. Consider drug therapy for pulmonary edema.
9. Consider dopamine for hypotension and no signs of hypovolemia (5mcg/kg/min).
10. Follow HazMat Eye Irrigation protocol.

MCA Approved: 10/99; 11/04; 05/06
Implement: 11/99; 04/05; 05/07