

Riot Control Agents

Aliases

CN (Mace[®]), CS, OC (pepper spray), tear gas, harassing agents, incapacitating agents, chemical crowd control agents, lacrimators

Patient Care Goals

1. Address side effects of exposed individuals.
2. Decontaminate affected individuals.
3. Minimize effect to provider.

Patient Presentation

Inclusion Criteria

1. Exposure to identifiable agents that are not intended to cause significant injury or fatality

Exclusion Criteria

1. Exposure to chlorine, phosgene, ammonia or other agents that are intended to cause significant injury or fatality
2. Exposure to an unknown agent

Patient Management

Assessment

1. Assess scene safety: Evaluate for hazards to EMS personnel, patient, and bystanders.
 - a. Determine riot control agent being used.
 - b. Don appropriate PPE.
 - c. Determine number of patients.
2. Note symptoms exhibited by the exposed individual.
3. Examine as appropriate to complaints.

Treatment and Interventions

1. Move affected individuals from contaminated environment into fresh air if possible.
2. Remove contaminated clothing as able.
3. Have patient remove contact lenses if appropriate.
4. Note that irrigation with water or saline may facilitate resolution of symptoms and is recommended for decontamination of dermal and ocular exposure.
5. If patient is in respiratory distress, go to Airway Management Guidelines.
6. If patient is wheezing, go to Bronchospasm guideline.
7. For persistent pain of the eye or skin, go to Topical Chemical Burn guideline.
8. Re-evaluate exposed individuals who are persistently symptomatic warrant further evaluation and treatment per local standards.

Patient Safety Considerations

- Toxicity is related to duration of exposure and concentration of agent used (exposure in non-ventilated space).
- Patients with pre-existing pulmonary conditions (e.g. asthma, COPD) may be prone to more severe respiratory effects.
- Traumatic injury may result when exposed individuals are in proximity to the device used to disperse the riot control agent (e.g. hose or stream under pressure, riot control agent projectile, grenade).

Notes and Educational Pearls Key Considerations

- CN, CS, and OC are the most commonly encountered riot control agents.
- CN, CS and OC have a high safety ratio. All three have a high median lethal concentration (LC₅₀) and a low median effective concentration (EC₅₀).
- Toxicity is related to time of exposure and concentration of agent used (exposure in non-ventilated space).
- Symptoms that may be experienced after exposure:
 - Eyes: tearing, pain, conjunctivitis, blurred vision
 - Nose, mouth, throat: rhinorrhea, burning or pain, trouble swallowing, drooling
 - Lungs: chest tightness, coughing, choking sensation, wheezing, dyspnea
 - Skin: burning, redness, dermatitis
 - GI: nausea and vomiting are rare and may be posttussive
- Symptoms begin within seconds of exposure, are self-limited and are best treated by removing patient from ongoing exposure.
- Symptoms frequently decrease over time (15–45 minutes) after exposure ends.

Pertinent Assessment Findings

- Riot control agent used
- Symptoms of exposed
- Lung sounds
- Evidence of other traumatic injuries

Quality Improvement

Key Documentation Elements

- Type of riot control agent if known
- Symptoms being treated
- Treatment provided
- Response to treatment

Performance Measures

- Riot control agent identified before making patient contact and providing treatment
- PPE used by responders
- Affected individuals removed from ongoing exposure
- Contaminated clothing and contact lenses removed as able

References

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