Hydrogen Cyanide Inhalation Hydroxocobalamin Treatment Guideline

Inclusion

Suspected hydrogen cyanide inhalation with severe signs & symptoms*

Exclusions

- Suspected hydrogen cyanide inhalation with mild signs & symptoms*
- Do not enter a confined space to rescue an unresponsive person without wearing an SCBA or testing to confirm there is a nontoxic atmosphere with sufficient oxygen.

BLS

Pre-Decon

- BVM ventilation, if needed

Decon

- Hydrogen cyanide is a gas above 78°F (26°C).
- Removing the victim from the source will usually be the only decon required.

ALS

Post-Decon

- High flow O_2 via non-rebreather reservoir mask, and if in severe respiratory distress or apneic, then support ventilation with BVM or airway management protocol.
- Vital signs, primary & secondary surveys, insert IV/IO, apply cardiac monitor
- Dysrhythmias: Treat per ACLS guidelines

Tox-Medic™

Age ≥ 10 Years

Hydroxocobalamin Antidote
- Reconstitute with normal saline
- Administer 5 g, using IV tubing included
- Repeat 1x, if initial response is inadequate

Tox-Medic™

Age < 10 Years

Hydroxocobalamin Antidote
- Reconstitute with normal saline
- Administer 70 mg/kg (maximum 5 g), using IV tubing included in kit
- Repeat 1x, if initial response is inadequate

- If needed, contact medical direction or poison control center for assistance.

Special Note:

- **Severe signs & symptoms*:** Respiratory distress, respiratory arrest, cardiac arrest, hypotension, dysrhythmias, ischemic EKG findings, altered mental status, seizure, coma, etc.
- Mild signs & symptoms**: Headache, nausea, tachypnea, etc.
- Hydroxocobalamin must be infused in a dedicated IV/IO line using the supplied tubing.
- If possible, obtain lab blood samples when placing IV because hydroxocobalamin interferes with many hospital laboratory tests.

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Hydrogen Cyanide Inhalation
Nitrites & Sodium Thiosulfate Treatment Guideline

Inclusion

Suspected hydrogen cyanide inhalation with severe signs & symptoms*

Exclusions

- Suspected hydrogen cyanide inhalation with mild signs & symptoms**
- Do not enter a confined space to rescue an unresponsive person without wearing an SCBA or testing to confirm there is a nontoxic atmosphere with sufficient oxygen.
- Do not use amyl nitrite or sodium nitrite in patients taking medications for erectile dysfunction, e.g., Viagra® (sildenafil) or Cialis® (tadalafil), because the drug interaction can cause fatal hypotension

BLS

Pre-Decon

Supportive Care
- BVM ventilation, if needed

Antidote
- Amyl nitrite ampule: Break & inhale 1 ampule for 15 seconds, alternating with O_2 for 15 seconds, until IV/IO is placed.

Decon

- Hydrogen cyanide is a gas above 78°F (26°C).
- Removing the victim from the source will usually be the only decon required.

ALS

Post-Decon

Supportive Care
- High flow O_2 via non-rebreather reservoir mask, and if in severe respiratory distress or apneic, then support ventilation with BVM or airway management protocol.
- Vital signs, primary & secondary surveys, insert IV/IO, apply cardiac monitor
- Dysrhythmias: Treat per ACLS guidelines

Tox-Medic™ — Age ≥ 10 Years

Antidotes
- Sodium nitrite, 300 mg, IV/IO, over 5 minutes
- Sodium thiosulfate, 12.5 g, IV/IO, over 10 minutes

Tox-Medic™ — Age < 10 Years

Antidotes
- Sodium nitrite, 6 mg/kg to a max of 300 mg, IV/IO, over 5 minutes
- Sodium thiosulfate, 250 mg/kg to a max of 12.5 g, IV/IO, over 10 minutes

Special Note:

- Severe signs & symptoms*: Respiratory distress, respiratory arrest, cardiac arrest, hypotension, dysrhythmias, ischemic EKG findings, altered mental status, seizure, coma, etc.
- Mild signs & symptoms**: Headache, nausea, tachypnea, etc.
- Amyl nitrite & sodium nitrite convert hemoglobin to methemoglobin. Because this impairs O_2 transport to tissue, avoid these antidotes in patients likely to have high levels of carbon monoxide, such as house fire victims.

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