



Section: **Adult Trauma**
Subject: **INHALATION OF HOT SMOKE AND GASES**
Section #: **341.12**
Issue Date: **March 21, 2011**
Revision Date: **December 1, 2017**
Approved By: 

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1. Basic ALS Treatments
 - a. Continuous capnography should be used if available, especially in severe cases.
2. ETCO₂, CO, and HbCO Monitoring.
3. **Albuterol:**
 - a. Nebulized **albuterol** 5 mg
 - b. May be repeated q20 minutes PRN
4. **Epinephrine:**
 - a. If unable to nebulize the patient or the patient is unresponsive to nebulized medication, then:
 - i. 0.3 mg of a 1:1,000 solution IM q 20 minutes PRN
 - ii. Use caution with severe tachycardia or hypertensive patients.
5. **CPAP** (primarily for COPD patients)
 - a. Indications: ¹
 - i. Moderate to severe respiratory distress
 - ii. Tachypnea (RR > 24 breaths/min)
 - iii. Accessory muscle use or abdominal breathing
 - b. Contraindications: ¹
 - i. Respiratory arrest
 - ii. Medically unstable
 - iii. Unable to protect airway
 - iv. Excessive secretions
 - v. Uncooperative or agitated
 - vi. Unable to fit mask
 - vii. Recent (< 30 days) upper airway or upper gastrointestinal surgery
 - c. Start at 5 cm H₂O
 - i. Increase as tolerated.
 - d. Use continuous waveform capnography, if available, to better monitor the clinical course.
6. Consider intubation if no response to any therapy and deterioration is noted
7. **CyanoKit™** (known or suspected cyanide poisoning)
 - a. Prior to the administration of hydroxocobalamin for injection (CyanoKit™) to known or suspected cyanide poisoning victims, **ALL four** of the following criteria must be present:
 - i. Exposure to fire smoke in an enclosed area.
 - ii. **Patient must be ≥ 16 years of age.**
 - iii. Soot in the mouth as well as sputum (indication of significant smoke exposure).
 - iv. Altered mental status.
 - b. If the patient is exhibiting life-threatening symptoms of suspected cyanide poisoning as indicated above with ALL four criteria present, administer **hydroxocobalamin (CyanoKit™)**.

¹ Adapted from Liesching T, Kwok H, Hill NS: Acute applications of noninvasive positive pressure ventilation. Chest 124:699-713, 2003.

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- i. Follow product directions for administration of **hydroxocobalamin (CyanoKit™)**, 5 gm IV over 15 minutes.
- ii. If symptoms persist, contact Medic-1 for a repeat dose of **hydroxocobalamin (CyanoKit™)**, 5 gm IV over 15 minutes to 2 hours, depending on the patient's condition
- iii. Remove contaminated clothing
- iv. Decontaminate skin to the best of your ability
- c. If all four criteria **not** met, monitor closely and transport via ALS
 - i. Remove contaminated clothing
 - ii. Decontaminate skin to the best of your ability
 - iii. Administer high flow oxygen
 - iv. Establish an IV
 - v. Continuously monitor for developing signs of HCN poisoning to include mental status, cardiac and respiratory status.

8. QA points

- a. Inhalation burns need to be followed vigilantly, but do not necessarily mean an automatic intubation. You need to follow the patient closely to determine if they are starting to deteriorate, or show signs of early airway obstruction. In those cases, you need to quickly move to capture the airway.
- b. Carboxyhemoglobin, produced by carbon monoxide poisoning, is misinterpreted by the pulse oximeter as oxyhemoglobin causing values to tend towards 100%. A pulse oximeter is extremely misleading in cases of carbon monoxide poisoning for this reason and should not be used as the sole method of monitoring the patient.
- c. The routine administration of corticosteroids does not appear to confer any benefit following smoke inhalation.