



ORANGE COUNTY EMERGENCY MEDICAL SERVICES
BASE HOSPITAL TREATMENT GUIDELINES
BURN (THERMAL, ELECTRICAL, CHEMICAL) (ADULT/ADOLESCENT)

#: BH-E-05
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Org. Date: 11/86
Revised Date: 04/01/2019

BASE GUIDELINES

1. Determine ALS Standing Order treatment/procedures rendered prior to base hospital contact. Use ALS standing order as guidelines for treatments/procedures not initiated prior to base hospital contact.

2. Consider routing patient to Emergency Receiving Center with Burn Unit if any of the following major burn criteria are met:

Mechanism of Injury:

- Suspected inhalation injury (patients in an enclosed space, patients with facial burns, hoarseness, dyspnea, soot in mouth, carbonaceous sputum, singed nasal hairs).
- High voltage/ electrical burns (including lightning injury).
- Chemical burns (including acids and bases).

Physiological alteration:

- Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
- Circumferential burns.
- Patients with a pre-existing medical condition that may complicate management or prolong recovery (e.g. diabetes, renal failure, cardiac or pulmonary disease).

Total Burn Surface Area (TBSA):

- Second or third degree burns > 10% total body surface area (TBSA) in any age group

3. Monitor cardiac rhythm in electrical burns for rhythm disturbances.

4. If pain continues, consider additional dosing of *Morphine Sulfate 5 mg IV/IM or Fentanyl 50 mcg IV/IM to relieve pain, may repeat once* (hold if BP less than or drops below 90 systolic). Consider IN Fentanyl for pain control if an IV cannot be established.

ALS STANDING ORDER

1. For any burn injury occurring in an enclosed space or with heavy smoke generated at the site:

- ▶ *High flow oxygen by mask as tolerated (Pulse oximetry may be inaccurate in this setting).*

2. Apply cooling measures if burn still "hot".

3. For wheezing or suspected smoke inhalation:

- ▶ *Albuterol continuous nebulization of 6 mL (5 mg) concentration as tolerated.*

4. For pain, if BP greater than 90 systolic (do not inject medication or establish IV through burned skin areas):

- ▶ *Morphine sulfate 5 mg (or 4 mg carpuject) IV/IM or IO (if already established for saline infusion), may repeat once in 3 minutes to control pain;*

OR

- ▶ *Fentanyl 50 mcg IV/IM or Fentanyl 100 mcg IN, may repeat once in 3 minutes to control pain.*

5. For blood pressure \leq 90 or signs of shock (do not establish IV through burned skin areas):

- ▶ *Establish IV access in non-burned area of skin*
- ▶ *Infuse 250 mL Normal Saline bolus, may repeat up to maximum 1 liter to maintain adequate perfusion.*

6. Contact Base Hospital for Burn Unit destination if major burn criteria are met.

Mechanism of Injury:

- Suspected inhalation injury (patients in an enclosed space, patients with facial burns, hoarseness, dyspnea, soot in mouth, carbonaceous sputum, singed nasal hairs).
- High voltage/ electrical burns (including lightning injury).
- Chemical burns (including acids and bases).

Approved:

Carl Schultz, MD

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BASE GUIDELINES

5. Inhalation of smoke generated from burning plastics or petroleum products may cause cyanide toxicity. If cyanide toxicity is known or suspected, and agency has supply, consider treatment with *Hydroxocobalamin 5g in 200 mL saline per PR-130.*

ALS STANDING ORDER

Physiological alteration:

- Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
- Circumferential burns.
- Patients with a pre-existing medical condition that may complicate management or prolong recovery (e.g. diabetes, renal failure, cardiac or pulmonary disease).

Total Burn Surface Area (TBSA):

- Second or third degree burns > 10% total body surface area (TBSA) in any age group

TREATMENT GUIDELINES:

Suspected carbon monoxide toxicity (closed space burn, smoke inhalation, chemical fires):

- Pulse oximetry O₂ saturation will be inaccurate due to inability of pulse oximeter to differentiate between carbon monoxide and oxygen molecule.

Chemical burns:

- Brush away any remaining dry chemical
- Irrigate burn wound and surrounding skin with copious and continuous water or saline flush to dilute and remove as much residual chemical as possible.
- **NOTE:** Some chemicals are activated by water and may worsen the burn or create hazardous fumes; e.g. sodium, phosphorus, acetyl bromide, aluminum carbide, silicon tetrachloride.

Electrical burns:

- Electrical burns may often appear insignificant while causing marked muscle and soft tissue damage. Cardiac irritability may occur with electrical burns.
- High voltage, greater than 110 volt, alternating current burn victims should be transported with ALS escort and cardiac rhythm monitoring. (contact Base Hospital for available Burn Unit).

Approved:

Carl S. Quilty, M.D.

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