



# Regions Hospital<sup>®</sup>

## *Burn Center*

HealthPartners<sup>®</sup>

## **BURN STABILIZATION PROTOCOL**

### **1. REMOVE ANY SOURCES OF HEAT**

- a. Remove any clothing that may be burned, covered with chemicals or are constricting.
- b. Cool any burns that are warm to the touch with tepid tap water and then dry patient.
- c. Cover patient with clean dry sheet or blanket to prevent hypothermia.

### **2. ASSESS AIRWAY/BREATHING**

- a. Carbon monoxide may present as restlessness, headache, nausea, poor coordination, memory impairment, disorientation, or coma. Administer 100% O<sub>2</sub> via non-rebreathing face mask.
- b. Intubation is generally only necessary for unconscious patients, hypoxic patients with severe smoke inhalation, or patients with flame or flash burns involving face and neck. Indications include: pharyngeal burns, air hunger, carbonaceous sputum with hoarseness.
- c. If breathing seems to be compromised by tight circumferential trunk burns, consult with

the burn center surgeons immediately.

### **3. ESTIMATE PERCENT TOTAL BODY SURFACE AREA BURNED (% TBSA)**

a. Using the Rule of Nines will give a fairly accurate TBSA percentage.

*Reminder: Remove as much soot as possible for a more accurate assessment; 1° burns are not included in estimation.*

### **4. OBTAIN IV ACCESS**

a. Burns <15% can be resuscitated orally (unless the patient has an electrical injury or associated trauma).

b. For burns 15-40%, secure on large bore IV line in upper extremity; add a second if the transport will be longer than 45 minutes.

c. Burns >40% require two large bore IV lines in upper extremities.

*Reminder: IVs may be placed through burn if necessary (suture to secure). Avoid saphenous vein and avoid*

*cut-downs through unburned skin if possible.*

### **5. INITIATE FLUID RESUSCITATION**

Parkland formula:

$(2 \text{ ml Ringers lactate}) \times (\text{kg of body weight}) \times (\% \text{ burn}) = \text{mls in first 24 hours, with half of this total given in the first 8 hours post injury. Children } <20 \text{ kg should have daily maintenance fluids including dextrose in addition to Parkland formula.}$

*Example: Patient weighing 70 kg with a 50% burn:  $(2 \times 70 \times 50) = 7,000 \text{ ml}$  needed in 24 hours. 3500 mls are needed in the first 8 hours so IVs are initially started at 437 ml/hour.*

*Reminders:*

*1. Fluids rarely need to be given faster than 1.5x the above rate.*

2. Do not give dextrose solutions (except for maintenance fluids in children) — they may cause an osmotic diuresis and confuse adequacy of resuscitation assessment.

## 6. ASSESS URINE OUTPUT

a. Insert foley catheter in patients with burns >15% TBSA.

*Reminder: Lasix and other diuretics are never given to improve urine output; fluid rates are adjusted to increase urine output.*

b. Observe urine for burgundy color (seen with massive injuries or electrical burns). There is a high incidence of renal failure associated with these injuries, requiring prompt and aggressive intervention.

*Reminder: If the urine is red or brown CONSULT BURN CENTER!*

## 7. INSERT NASOGASTRICTUBE

a. Insert nasogastric tubes in any intubated or unresponsive patient with burns.

b. Give an IV Proton pump inhibitor or H2 blocker if patient will not be transported within 12 hours.

## 8. ESCHAROTOMIES

Assess for circumferential full-thickness burns of extremities or trunk. Elevate burned extremities on pillows above level of the heart. If transfer will be delayed, check distal pulses hourly and call burn surgeons if pulses disappear.

## 9. MEDICATIONS

a. Give tetanus immunization.

b. After fluid resuscitation has been started, pain medication may be titrated in small doses.

Blood pressure, pulse, respiratory rate and state of consciousness should be assessed after each increment of IV Morphine.

c. Antibiotics are not indicated.

*Reminder: Even small degrees of hypovolemia may grossly exaggerate effects of all medications. If blood pressure or respiratory rate falls or pulse rises by more than 20% of baseline, do not give additional morphine without consulting the Burn Center.*

## **10. WOUND CARE**

a. Debridement and application of topical antimicrobials is usually unnecessary; transport patient wrapped in dry sheet and blanket, keeping patient warm.

b. Apply a thin layer of Silver Sulfadiazine to open areas if transport will be delayed longer than 12 hours.

## **11. GENERAL ITMES**

a. A history including details of the accident and pre-existing disease/allergies should be recorded and sent with the patient.

b. Copies of all medical records, including all fluids and medications given, urine outputs and vital signs must accompany the patient. These specific details may be recorded on the back of the burn size assessment sheet.

## **12. SPECIAL CONSIDERATION WITH CHEMICAL BURNS—**

### **CONSULT THE BURN CENTER!**

a. Remove ALL clothing.

b. Brush powdered chemicals off wound; then flush chemical burns for a minimum of 30 minutes with running water. Be careful to protect yourself.

*Reminder: Never neutralize an acid with a base or vice versa.*

- c. Irrigate burned eyes with a gentle stream of saline. Follow with an ophthalmology consult if transport is not imminent.
- d. Determine what chemical (and what concentration) caused the injury.

### **13. SPECIAL CONSIDERATIONS WITH ELECTRICAL INJURIES—**

#### **CONSULT THE BURN CENTER!**

- a. Attach cardiac monitor; treat life-threatening dysrhythmias.
- b. Assess for associated trauma; assess central and peripheral neurologic function.
- c. Administer Ringer's lactate; titrate fluids to maintain adequate urine output or to flush pigments through the urinary tract.

*Useful lab: ABG with acid/base balance.*

- d. Elevate burned extremities above the level of the heart on pillows. Monitor distal pulses.
- e. Spine precautions must be taken with high voltage electrical injuries.

### **Our Trained Burn Surgeons are Available 24/7 for Consultation**

For referrals or management questions call *The Burn Center* at Regions Hospital

1-800-922-BURN (2876)