Burns Assessment

After the burning process has stopped, assessment of the burn is critical in determining treatment options and planned care. The treatment of burns is determined by the severity of the injury. The stage, extent, and depth of the burn should be assessed. The patient should be monitored for symptoms such as dyspnea, pain, changes in urinary output, paralytic ileus, and hypothermia. Monitor the patient's hydration status is important while assessing for shock and hypokalemia caused by cell integrity disruption.



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Stage and Extent of Burn
Stage and X-tent for Burns
Determining the stage and extent of the burn is critical for establishing a treatment plan. The depth, extent, and location of the burn should be assessed. Partial-thickness burns and full-thickness burns classifies the depth of skin destruction. The extent of burns may be measured by using the Lund-Browder chart or Rule of Nines (refer to the Picmonic on "Rule of 9's"). The location of the burn will determine the patient's risk of breathing issues, infection, and future rehabilitation. Keep your focus on the ABCs: airway, breathing, and circulation for large area thermal burns, and electrical or inhalation burns.

Dyspnea
Disc-P-lungs
Airway injury may occur in the absence of burn injury on the skin. The duration of toxic inhalation exposure determines the extent of tissue damage. The patient with lower airway burn injury may present with dyspnea. The patient with inhalation burns may not show initial symptoms of dyspnea. Maintaining an open airway is critical in caring the patient with burn injuries.

Singed Nasal Hairs
Singed Nose Hair
Singed nasal or facial hairs or sooty sputum in inhalation burns indicate tissue damage of the lungs. Lung damage may cause rapid tissue edema and compromise the patient's airway. Monitoring the patient's breathing status and maintaining an open airway is critical in patients with singed nasal hairs.

Pain
Pain-bolt
The burn patient may have nerve damage and experience pain. Assessing the pain's location, quality, and extent is critical in determining the severity of the burn. Patients with partial-thickness skin destruction will experience pain because of injury to the nerves. Administering an analgesic will help alleviate the pain. Patients with full-thickness skin burns will not experience pain because of nerve destruction caused by the burn.

Initial Decrease Urinary Output
Initial Down-arrow Urinal
During the first 72 hours of burn injury, there will be an initial decrease in urinary output caused by acute tissue necrosis (refer to the Picmonic on "Stages of Burn Care"). Blood flow to the kidneys decreases as the body shunts the blood to the core in an effort to maintain homeostasis.

Paralytic Ileus
Wheelchair Eels
The patient with a larger burn area may develop a paralytic ileus as the body shunts blood circulation away from the stomach and intestines and toward the heart and lungs. Noting absent or decreased bowel sounds while auscultation the abdomen indicates a paralytic ileus.

Signs of Inadequate Hydration
Signs of Needing Hydration
Burn injury to the skin allows fluid to leak out of the body (blisters in partial-thickness burns) and cause dehydration. Assess the patient for symptoms such as restlessness, disorientation, and increased urine specific gravity to determine hydration status. Establishing at least two large-bore IV access sites is critical for fluid resuscitation in the patient with burn injuries.

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Shock

Shocked

Hypovolemic shock is the greatest initial threat in the patient with burns and may happen within 20 minutes after injury. The increased capillary permeability causes massive fluid shifts out of the vasculature as water, sodium, and plasma proteins enter the interstitial spaces. Fluids leaking into the interstitium causes edema and decreased blood volume in the vasculature. Decreased blood volume and increased viscosity caused by increased hematocrit creates peripheral resistance leading to hypovolemic shock. Critical indicators of hypovolemic shock include a significantly low blood pressure and rapid pulse rate.

Hypothermia

Hippo-thermometer

Since the skin helps maintain body temperatures, burn injuries destroy skin tissue and cause the body to lose heat and develop hypothermia. Minimize cooling burned body parts to less than 10 minutes and do not submerge in cool water to prevent excessive heat loss. Never place ice on a burn, since it may cause vasoconstriction and decrease blood flow to the injured tissue.

Hyperkalemia

Hiker-banana

Burn injury results in increased capillary permeability and causes major electrolyte shifts. Potassium, an electrolyte normally found inside the cells, leaks into the bloodstream as cells are damaged and results in hyperkalemia (refer to the Picmonic on “Hyperkalemia”). If the patient develops renal failure, hyperkalemia may occur since potassium is not being excreted from the body. Monitor the patient for symptoms of muscle weakness, cramping, and paralysis that may cause cardiac dysrhythmias and ultimately death. The patient may develop hypokalemia as potassium is lost through the patient's burn wounds, vomiting, diarrhea, or gastrointestinal suctioning. Assess the patient for hypokalemic symptoms, such as fatigue, leg cramps, paresthesia, or decreased reflexes.

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