

PAIN & DISABILITYSM

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Electrical Injuries - TREATMENT

Prehospital Care:

The first thing that must be done is to remove the patient from the circuit. Then, patients who are in arrest require Basic and Advanced Cardiac Life Support regimens. Remember, in electrically induced arrest, there is no underlying disease causing the arrest. Therefore, protracted efforts of resuscitation are met with success more often than usual. Patients who are unconscious but not in arrest, require careful ventilatory observation and assistance, if indicated. Patients with burns above the neck need supplemental oxygen because of the high probability of airway and lung damage.

- Secondary blunt trauma is often encountered due to falls caused by involuntary muscular contraction. It is dealt with identically to any other blunt trauma.

Emergency Department Care:

Patients with electrical burns should be stabilized and considered for immediate transfer to the nearest burn center. If such facilities are not available, physicians with experience in burns, preferably in electrical burns, should assume care of the patient.

- All patients with burns and no apparent CNS abnormality should be hydrated. Using the ordinary rule of thumb for treating the ordinary burn patient may result in significant dehydration. In CNS normal patients, administration of physiologic fluids such as Ringer's Lactate at a rates of 10 ml/kg/hour are reasonable during the initial resuscitation.
- In patients with CNS abnormality, hydration must be tempered with the possibility of worsening cerebral edema. There is no easy way to titrate this clinically difficult area.
- Patients who have elevated CPK's and/or myoglobinemia should have mannitol or furosemide added to their regimen to provide diuresis for the toxic myoglobin. This can help to prevent acute tubular necrosis and renal failure secondary to myoglobinuria.
- The lightning strike patient should be treated based on the CNS symptoms. If consciousness is present on admission or returns in the ED, in-patient therapy may not be required. If CNS abnormalities persist, hospitalization is indicated.
- The successfully resuscitated patient exposed to low voltage without significant burns may also be handled primarily on the basis of CNS symptoms and CPK results. If consciousness returns, the CPK is no more than two times normal with negative hemoglobin in the urine and the pulse is regular, hospitalization may be only for brief time periods.

Irregularities of pulse, electrocardiographic changes, myoglobinuria or CNS abnormalities all require hospitalization.

Consultations:

Patients with electrical burns require treatment by burn specialists. Prompt transfer to the care of such an individual is indicated. In high voltage electrical burns, early fasciotomy may be indicated to improve circulation. Thus, guidance, as rapidly as possible, should be sought concerning when to initiate this procedure in the emergency department.

- Trauma/Critical Care
- General Surgery
- Plastic/Burn Surgery