Toxins and Environmental:
LIGHTNING/LIGHTNING STRIKE

Goal: To aid EMS Providers in the recognition and safe treatment of lightning strike victims, including high priority resuscitation for cardiac arrest victims, within limits of mass casualty care
Inclusion Criteria: All patients who have been victims of lightning strike injury
Exclusion Criteria: No specific exclusions
Refer to: Asystole/PEA, Burns, Cardiac Arrest, Trauma and VFib/Pulseless VTach CPGs

Background and Significance

1. Lightning strikes typically kill more people in the U.S. each year than any other natural disaster, except floods
2. Texas typically ranks in the top 5 states for lightning strike injury
    a. Most common: Spring/Summer, Afternoon/Evening, Outdoors (⅓ occur Indoors), Open Areas, Male
3. Without bystander observations or history, it may not be apparent that a patient has been struck by lightning*
4. Mortality 10-30%: 65% die in 1st hour, most often due to cardiac dysrhythmia/cardiac arrest
    a. Cardiac arrest resuscitation carries higher rate of success than general cardiac arrest statistics
5. Patient/Rescuer Safety:
    a. Repeat strike poses risk to victims and rescuers
    b. Lightning strike victims do NOT carry or discharge current – it is safe to touch and treat

Basic Level

1. Assess and support ABCs according to UNIVERSAL CARE – ADULT or UNIVERSAL CARE – PEDIATRIC
    a. A and B (Airway and Breathing): Isolated *respiratory* arrest or full cardiopulmonary arrest is possible
    b. C (Circulation): Initiate continuous ECG and SpO_2 monitoring
        i. *Cyanotic, cool, mottled extremities are suggestive of lightning strike
    c. D (Disability): Fixed and dilated pupils may be a sign of neurologic insult, not death/impending death
        i. Altered mental status and stroke-like findings are common
    d. E (Exposure/Environmental): *Fern-like, superficial skin burns ("Lichtenberg Figures") may be a clue
2. Treat respiratory/cardiorespiratory arrest according to Cardiac Arrest CPG
    a. NOTE: If multiple victims (common), cardiac arrest victims whose injury was witnessed or is likely recent should be treated first and aggressively ("reverse triage")
        i. Prolonged CPR may be justified because of generally favorable outcomes
3. Place the patient in a position of comfort
    a. If there is evidence of shock, position the patient supine with the feet elevated
    b. Closely monitor airway status and respiratory effort
4. Administer supplemental oxygen to maintain SpO_2 of at least 94% (continuous monitoring)
5. Once advanced level care arrives on scene, give report and transfer care

Advanced Level

1. Establish IV/IO access, preferably through unburned skin
    a. Lightning strike patients typically require less volume than patients with thermal burns
2. Monitor for and treat cardiac dysrhythmias
    a. Obtain 12-Lead ECG, if possible
3. Secondary Survey to exclude and treat other injuries or illness:
    a. Common: Blast, Brain, Skull, Spine, Eye, Extremities Trauma (extensive thermal burns uncommon)
    b. Consider other diagnoses: Acute Myocardial Infarction, Stroke, Seizure, other causes of altered LOC
4. Treat pain of burns or traumatic injuries according to the Pain Management CPG
5. Transport to a Level I or Level II Trauma Center
6. For additional patient care considerations not covered under standing orders, contact BioTel