HYPOTHERMIA POST CARDIAC ARREST (ARCTIC SUN HYPOTHERMIA DEVICE)

PATIENT INCLUSION CRITERIA:
- Resuscitated cardiac arrest > 18 years of age
- Comatose (GCS <8) after return of spontaneous circulation
- Endotracheal intubation with mechanical ventilation
- Mean Arterial Pressure > 60 mm Hg with or without vasopressors and volume

ORDERS
1. Insert Foley urinary catheter with temperature probe
2. Vital Signs - Record heart rate, blood pressure, cardiac rhythm and Foley and secondary (otympanic □ esophageal □ rectal) temperature at 15 minute intervals during active cooling, 30 minutes intervals during the first 2 hours of hypothermia maintenance and one hour intervals during maintenance, record temperatures at 30 minutes intervals during active rewarming
3. Maintain target temperature at 33°C for 24 hours
4. Check skin integrity every 8 hours
5. Continuous EEG monitoring for patients who have paralytics administered; STAT neurology consult to arrange EEG monitoring.
6. Cooling method: Arctic Sun Hypothermia Device
   a. USE ARCTIC SUN HYPOTHERMIA DEVICE:
      i. If time permits, turn the Arctic Sun to the ON position.
      ii. Press Manual Mode to begin pre-cooling the water to 4°C
      iii. Place the Arctic Sun Energy Transfer Pads. Ensure that all pads in a kit are used to cover the back, abdomen, and thighs
      iv. Connect the Arctic Sun Energy Transfer Pads to the fluid delivery line from the Arctic Sun. Connect the Foley catheter to the Arctic Sun temperature cable.
      v. Press Automatic Mode. Confirm the Patient Target Temperature displayed on the screen is set to 33°C
   b. REWARM PROTOCOL FOR ARCTIC SUN:
      i. Press the stop key
      ii. Press the down arrow to the Patient Target Temperature Screen and follow the directions to change Patient Target Temperature to 36°C
      iii. Press the down arrow again to 0.25° or 0.3°C/hour. Corresponding hours will be shown on the display screen.
      iv. Press Automatic to start.
7. **MEDICATIONS - Arctic Sun Hypothermia Device**
   a. **Analgesia** (Note: consider smaller doses in patients who are small or over 70 years of age)
      - Fentanyl infusion (concentration 1.25mg/250ml NS = 5mcg/mL)
        1. Loading dose: _____ mcg IV bolus (suggested 1-2 mcg/kg)
        2. Continuous dose: _____ mcg/hr (suggested 1-4 mcg/kg/hour)
        3. Bolus dose: _____ mcg IV bolus prior to each rate increase rate (suggested 1-2 mcg/kg)
        4. Titration: Increase infusion by 25 mcg/hr after bolus dose every 5-15 minutes if indicated
   b. **Sedation** - Titrate to achieve goal RASS (Richmond Agitation Sedation Scale)
      - Goal RASS= -5 (Note: Goal RASS of -5 required for patients requiring paralytics)
      - Midazolam infusion (standard concentration 100mg in 100 mL NS)
        1. Loading dose: _____ mg IV bolus (suggested 2-5 mg)
        2. Continuous dose: _____ mg/hr (suggested 0.5 mg/hour)
        3. Bolus dose: _____ mg IV bolus prior to each rate increase rate (suggested 1-2 mg IV)
        4. Titration: Increase infusion by 1-2 mg/hr after bolus dose every 10-30 minutes if indicated. Contact Physician for doses > 10 mg/hr: patients should be evaluated for cause of agitation
      - Propofol infusion (standard concentration 10mg/ml)
        1. Loading dose: none
        2. Continuous dose: _____ mcg/kg/min (suggested 5mcg/kg/min)= _____ mcg/min
        3. Titration: Increase infusion by 5-10mcg/kg/min every 5 minutes until at goal RASS
   c. **Paralytic** - Patients must have adequate analgesia and sedation prior to starting. If unable to obtain a RASS score -5 with analgesia and sedation use:
      - Cisatracurium (standard concentration 200mg in 500 mL D5W)
        1. Loading dose: 0.1mg/kg administered over one min= _____ mg of cisatracurium
        2. Continuous dose: start at 1 mcg/kg/min
        3. Titration: Increase infusion by 0.5-1mcg/kg/min to achieve 1-2 twitches out of four with train-of-four nerve stimulator monitoring

8. **Diagnostic Testing - All patients**
   a. EKG at baseline, 24 and 48 hours
   b. Chest radiograph at baseline, 24 and 48 hours
   c. ABG, whole blood Na, K, Ionized Calcium, CBC, Renal Profile, lactate, Ca, Mg, PT/PTT, Platelets and lactate at baseline, 4hrs, 8hrs, 12hrs, 16hrs, 20hrs, and 24hrs. Lipase and LDH at baseline, 12, 24, and 48 hours