Induced Hypothermia After Cardiac Arrest Orders

Allergies: ___________________________________________________

Call MD for hypothermia orders: ______ Dr. George Lopez (713)605-0653 (713)513-7730

Exclusion/Inclusion Criteria for hypothermia must be completed prior to administration of therapy (check box):

Exclusion Criteria:
STOP! Do Not Proceed with treatment orders if patient has at least one of the exclusion criteria:

- Post CV surgery this admission
- Within 72 hours of other major operative procedure (cardiac catheterization is acceptable)
- Active bleeding or coagulopathy
- Cardiogenic shock
- Known or suspected sepsis
- Pregnancy; if not already confirmed, send urine HCG
- Continued arrhythmias
- Not to be initiated after 6 hours of return of spontaneous circulation (ROSC)
- Not to be initiated if ROSC was greater than 50 minutes
- Not a primary cardiac arrest (e.g. ventricular tachycardia/fibrillation, asystole, or PEA)
- Age < 18 years
- Glasgow Coma Scale > 5T
- Does not require mechanical ventilation

Inclusion Criteria: OK to proceed with treatment orders if no exclusions exist

- Start ASAP after return of spontaneous circulation (ROSC) *Not to be initiated after 6 hours of ROSC
- Primary cardiac arrest (e.g. ventricular tachycardia/fibrillation, asystole, or PEA)
- ROSC within 50 minutes
- Age ≥ 18 years
- Glasgow Coma Scale < 5T (see back of page for calculation of scale)
- Requires mechanical ventilation

Cooling Procedure: All IV medications/infusions should be mixed with normal saline unless otherwise ordered

1. Maintain HOB at 30 degrees.
2. Obtain bladder temperature Foley catheter (ordered from CSPD x-54188) and insert. Insert rectal temperature probe.
3. Initiate paralytics/sedation as ordered.

   Sedation
   Midazolam 0.125 mg/kg IV x 1, then continuous infusion of 50 mg in 250 mL normal saline at 0.1 mg/kg/hr.

   Paralysis (start sedation prior to initiation)
   Cisatracurium 0.15 mg/kg IVP then start 200 mg/100 mL IV infusion at 0.5 mcg/kg/min; titrate to abolish and prevent shivering.
   - Keep HOB at 30 degrees
   - Ocular lubricant ointment to both eyes q 8 hours while receiving paralytic
4. Place two large bore peripheral catheters and initiate iced (4 degrees C) normal saline (found in refrigerator PYXIS) 40 mL/kg total volume as rapidly as possible with a pressure bag.
5. Administer magnesium sulfate:
   - ≤ 60 kg 2 grams/50 mL D5W IVPB over 15 – 30 minutes x 2
   - > 60 kg 2 grams/50 mL D5W IVPB over 15 – 30 minutes x 3
6. Apply cooling device and cool patient to 33 degrees C.

Physician Signature: ___________________________ Date/Time: ___________________________
GLASGOW COMA SCALE

<table>
<thead>
<tr>
<th>Eye opening response:</th>
<th>4</th>
<th>Spontaneous</th>
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<tbody>
<tr>
<td></td>
<td>3</td>
<td>To voice</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>To pain</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>None</td>
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<tr>
<th>Best verbal response:</th>
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<tbody>
<tr>
<td></td>
<td>5</td>
<td>Oriented</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Confused</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Inappropriate words</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Incomprehensible sounds</td>
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<tr>
<td></td>
<td>1</td>
<td>None</td>
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<table>
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<th>Best motor response:</th>
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<th>Obeys commands</th>
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<tbody>
<tr>
<td></td>
<td>5</td>
<td>Localized</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Withdraw (pain)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Flexion (pain)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Extension (pain)</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>None</td>
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</tbody>
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**TOTAL:**

If total score < 5T (intubated), meets neurological criteria for induced hypothermia
Monitor
7. Vital signs every 15 minutes.
8. Temperature via bladder temperature Foley catheter. Insert rectal temperature probe and monitor
9. Baseline ABG, CBC, Chem 6, glucose; magnesium post ROSC, then 1 hour after initiation of hypothermia
    therapy.
10. Repeat ABG after paralysis/sedation achieved.
11. Chem 6, magnesium, glucose, and ABG every 4 hours and call MD with lab results

Blood pressure and Volume Management: All IV medications/infusions should be mixed with normal saline only
12. Maintain MAP ≥ 90 mm Hg.
13. If MAP < 90 mm Hg:
   _____ dopamine 800mg in 250 mL normal saline continuous IV infusion to a maximum of 20 mcg/kg/min.
   _____ Other: ____________________________________________________________________
14. If MAP < 90 mm Hg on maximum dose of first pressor, add/titrate norepinephrine 4 mg in 250 mL normal saline
    continuous IV infusion to maintain MAP ≥ 90 mm Hg, and call MD for further orders.
15. Maintain CVP ≥ 8 mm Hg or PCWP ≥ 12 mm Hg; monitor and record every hour.
16. If CVP < 8 mm Hg or PCWP < 12 mm Hg, administer 500 mL normal saline IV bolus; may repeat x 1, then call
    MD.

Ventilator Management
Goal: \( P_{O_2} = 100 \text{ mm Hg with normal PCO}_2 \) Titrante \( \text{FiO}_2 \) to maintain \( O_2 \) saturations ≥ 92 %
Ventilator Settings: IMV mode rate: _____ PS: _____ TV: _____ \( \text{FiO}_2 \) _____ Peep _____

DVT and Stress Ulcer Prophylaxis
Sequential Compression Device
Pantoprazole 40 mg IVPB daily

Other Medications and Fluids
Normal Saline IV infusion at 1 mL/kg/hr
Thiamine 100 mg IV daily

Glucose Control
Insulin Infusion Protocol

At 16 hours from the time cooling started, STOP all potassium administration (including any potassium
supplements in continuous IV fluids).

At 24 hours from the time 33 degrees C was achieved, rewarm slowly (goal: 36.5 degrees C) by resetting cooling
machine to increase temperature by 0.15 degree C every 1 hour.

Once temp of 36.5 degrees C has been achieved:
- Discontinue cisatracurium
- Discontinue midazolam when paralytic stopped and call MD if RASS < -3 or > +2.
- Meperidine 25 to 50 mg IV every 2 hours PRN shivering (pharmacist to adjust dose to 12.5 – 25 mg IV every 2 hours
  PRN shivering if estimated \( \text{CLcr} \) < 30 mL/min)
- Change labs to every AM
- Maintain temperature with cooling device at 36.5 degrees C for 24 hours

Stop cooling and notify MD:
- Ventricular tachycardia or fibrillation
- Asystole
- Sustained SVT
- Refractory hypotension (defined by the need for more than 2 vasopressors), call MD

Physician Signature: ___________________________ Date/Time: ___________________________