ACH Guidelines for Preparing Therapeutic Hypothermia Candidates for Transport

Therapeutic hypothermia has been consistently shown to lower rates of death and neurodevelopmental impairment in term infants with hypoxic-ischemic encephalopathy (HIE) and has become standard of care for this condition. We offer the following guidelines to aid in this process for those transporting to an Advocate Children’s Hospital.

Evaluate if the infant meets criteria for cooling:

1. Infant must meet all the following criteria
   - Gestational age ≥ 35 weeks
   - Birth weight ≥ 1800 grams
   - Ability to initiate cooling within 6 hours of life

AND

2. Infant must meet one of the following criteria
   - pH ≤ 7.0 or base deficit ≥ 16 mmol/L in blood gas obtained within 1 hour of life (Arterial or Venous Cord gas, ABG, VBG or CBG)
   - If no blood gas available within 1 hour or pH 7.01 to 7.15 or base deficit 10 to 15.9 mmol/L (Arterial or Venous Cord gas, ABG, VBG or CBG), must meet both of the following
     - Apgar score ≤ 5 at 10 minutes or assisted ventilation (PPV with either Bag/Mask or ETT) initiated at birth and continued for at least 10 minutes
     - History of an acute perinatal event (Ex: Cord prolapse/rupture, placental abruption, uterine rupture, maternal trauma, maternal cardiorespiratory arrest, late/variable decelerations or any other event at risk for fetal hypoxia/asphyxia)

AND

3. Infant must meet one of the following criteria
   - Evidence of Seizures
   - Encephalopathy, with at least 1 finding in at least 3 categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>Moderate Encephalopathy</th>
<th>Severe Encephalopathy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Consciousness</td>
<td>□ Lethargic</td>
<td>□ Stupor or Coma</td>
</tr>
<tr>
<td>Spontaneous Activity</td>
<td>□ Decreased Activity</td>
<td>□ No Activity</td>
</tr>
<tr>
<td>Posture</td>
<td>□ Distal Flexion, complete extension</td>
<td>□ Decerebrate</td>
</tr>
<tr>
<td>Tone</td>
<td>□ Hypotonia</td>
<td>□ Flacid</td>
</tr>
<tr>
<td>Primitive Reflexes</td>
<td>□ Weak suck or incomplete Moro</td>
<td>□ Absent suck or Moro</td>
</tr>
<tr>
<td>Autonomic System</td>
<td>□ Constricted pupils, bradycardia, or periodic/irregular breathing</td>
<td>□ Deviated/dilated/nonreactive pupils, variable HR, or apnea</td>
</tr>
</tbody>
</table>

Consult ACH Neonatologist for consultation of borderline cases.

Call the ACH Transport Center Immediately!
1 (844) KIDS-ACH or 1 (844) 543-7224
## Pre-Transport Care

### Initiate Servo Controlled Mild Hypothermia Cooling

- Ensure infant is completely dried from post delivery fluids.
- Set radiant warmer to 35-36° C. Remove hat, diaper and blankets.
- Temperature monitoring
  - Place an axillary skin temperature probe for continuous monitoring and use thermometer to check axillary temperature every 15 minutes
- Maintain the patient temperature to a pre-transport goal of 35-36 °C. *Note: the referral center and transport team will cool to a goal of 33.5°C. Attaining or nearing 33.5°C without use of core temperature monitoring and cooling blanket has been associated with extreme hypothermia.*
  - If the patient temp is greater than 36°C, maintain warmer on servo control and monitor for downward trend in temperature.
  - If the temperature falls lower than 35.0 °C , consider increasing the radiant warmer servo control temperature to higher in the 35-36 °C range. Consider placing blankets and/or hat on patient
  - Notify provider if temperature is persistently outside of goal range of 35-36 C.

### Provide respiratory and ventilation support as appropriate

Determination for need for intubation will be made by Neonatal Provider at the referring hospital

### Fluid and glucose management

- Maintain infant NPO. (Encourage mother to pump if she wishes to provide human milk.)
- Obtain IV access, umbilical lines are preferred if possible. Do not delay transport for placing Umbilical lines.
- Initiate IV fluids (D10 with heparin if UVC is placed), with a goal of 60-80 ml/kg/day. Additional fluids may be needed to maintain MAPs within the normal range.
- Maintain MAP >35. Notify referral center if lower MAP is sustained.

### Lab Work

- Obtain cord blood gas
- Obtain blood gas with in 1 hour of birth if unable to obtain cord blood gas
- Obtain CBC with differential, Blood Glucose, Blood Culture, Newborn Screen
- If clinical picture warrants, send toxicology labs if possible

### Neurologic Monitoring

- Monitor for seizures (clinical signs) and shivering
- Neonatal Provider to perform full neurologic examination, noting any evolution of neurological symptoms

### Additional

- Referral hospital to send medical record including discharge summary, lab results, and images with the transport team
- Request placental pathology
- Initiate antibiotics if clinically indicated