Preemie Hypothermia

Need to consent/randomize within 6 hours

If you definitely want to cool the infant, they should not be enrolled in this study. This is a randomized trial. Half of the infants will be cooled and half will only be monitored.

Inclusion Criteria

Infants 33 0/7 to 35 6/7 weeks GA (best obstetrical estimate) and ≥1500 grams birth weight (to minimize potential difficulties placing esophageal probe) who meet clinical, biochemical and neurologic criteria for moderate to severe NE in this GA range at ≤6 hours age:

As potential eligibility for randomization, infants must first meet the inclusion criteria in either Step 1 or 2:

**Step 1**
If BLOOD GAS IS AVAILABLE:
(cord or drawn < 60 minutes of age)

Cord pH or any postnatal blood gas pH ≤ 7.0

OR

Cord Base Deficit or any postnatal blood gas Base Deficit ≥16 mEq/L

If criteria in either Step 1 are met, skip Step 2 and continue eligibility assessment for presence of exclusion criteria. If criteria for Step 1 are not met, move on to Step 2.

**Step 2**
If BLOOD GAS IS NOT AVAILABLE, OR pH 7.01 -- 7.15, or Base Deficit 10 -- 15.9mEq/L
You need to have both:

Acute perinatal event (abruption placenta, cord prolapse, severe FHR abnormality: variable or late decelerations)

**AND**

An Apgar score ≤ 5 at 10 minutes or Continued need for ventilation initiated at birth and continued for at least 10 minutes

**Exclusion Criteria**

1) Receipt of paralytic agent or sufficient sedative or analgesic agent that is considered by the examiner to confound the qualifying neurologic exam
2) Etiology of NE not likely to be hypoxic-ischemic in origin
3) Major congenital anomaly that may confound outcome
4) Considered to be moribund and will not be receiving full intensive care
5) Equipment and/or appropriate staff not available
6) Infant was cooled prior to arrival at the NRN center and had a core temperature < 1hr of age) have a pH > 7.15 AND a base deficit < 10mEq/L
7) Unable to randomize infant by 6 hours of age
8) Infant needs ECMO
9) **All blood gases (cord and postnatal at < 1hr of age) have a pH > 7.15 AND a base deficit < 10mEq/L**

*If the infant meets these criteria, please page research (970-1425) and we will make sure you have a certified examiner to assist with the neuro exam portion.*

**Baby BAC II**

*Please find cord blood and put in research office. Keeping cord blood safe is essential. It does NOT need to be refrigerated. Just put it on our desk.*

**Inclusion Criteria**

**Infants > 36 weeks and cord blood is collected.**
As potential eligibility for randomization, infants must first meet the inclusion criteria in either Step 1 or 2:

**Step 1**
If BLOOD GAS IS AVAILABLE:
(cord or drawn < 60 minutes of age)

- Cord pH or any postnatal blood gas pH $\leq$ 7.0
- OR
- Cord Base Deficit or any postnatal blood gas Base Deficit $\geq$ 16 mEq/L

If criteria in either Step 1 are met, skip Step 2 and continue eligibility assessment for presence of exclusion criteria. If criteria for Step 1 are not met, move on to Step 2.

**Step 2**
If BLOOD GAS IS NOT AVAILABLE, OR pH 7.01 -- 7.15, or Base Deficit 10 -- 15.9mEq/L

You need to have both:

- Acute perinatal event (abruption placenta, cord prolapse, severe FHR abnormality: variable or late decelerations)

AND

- An Apgar score $\leq$ 5 at 10 minutes or Continued need for ventilation initiated at birth and continued for at least 10 minutes

**Exclusion Criteria**

1) Chromosomal abnormality
2) Major Congenital anomaly
3) Severe growth restriction (birth weight < 1800g)
4) Opinion of attending neonatologist that the study may interfere with treatment and safety of subject
5) Moribund neonate for whom no further treatment is planned
6) Mother known to be HIV, Hepatitis B, Hepatitis C, positive or has active syphilis or CMV infection in pregnancy
7) **Infant suspected of overwhelming sepsis**
8) ECMO initiated or likely in the first 48 hours of life
9) **Mother suspected to have chorio at time of birth**
10) Known Zika infection during this pregnancy
11) **ALL blood gases (cord, postnatal) done within the first 60 minutes had a pH >7.15 AND a base deficit < 10 mEq/L**?

*If the infant meets these criteria, please page research (970-1425) and we will make sure you have a certified examiner to assist with the neuro exam portion.*

**Darbepoetin**

*Need to consent within 24 hours*

**Inclusion Criteria**

- 23 0/7-28 6/7 weeks gestation
- < 24 hours postnatal age

**Exclusion Criteria**

- Hematocrit > 60%

- Infants with known congenital or chromosomal anomalies, including congenital heart disease and known brain anomalies
- Hemorrhagic or hemolytic disease
- EEG confirmed seizures
- Congenital thrombotic disease
- Systolic blood pressures >100 mm Hg while not on pressor support
- Receiving Epo or Darbe clinically, or planning to receive Epo or Darbe during hospitalization
- Infants in whom no aggressive therapy is planned
- Family will NOT be available for follow-up at 22-26 months
• Infant unlikely to survive • Infant enrolled in a conflicting trial

*We would appreciate a page about these potentials on weekends and holidays.*

**HIP Trial**

Let the research team know if you are aware of a child with a hernia. No need to page. Just if you see us in the hall or email.

**MILK Trial**

Let the research team know if you are aware of a mother who has decided not to pump. No need to page. Just if you see us in the hall or email.