



# Holding during Therapeutic Hypothermia in the NICU

Rebecca Koerner RN, BSN

Neonatal ICU

Florida Hospital for Children

# Why hold while cooling?



# Holding is not appropriate:



- Severe PPHN
- High Frequency ventilators
- Active seizures
- Vasopressors –dopamine/dobutamine  
5mcg/kg/hr
- Peripheral arterial line
- During rewarming phase



# Parent Experience of HIE Infants



“Overriding an emotional rollercoaster”

Heringhaus, Blom, & Wigert, (2013).

# Parent Experience of HIE Infants



## “Chaos”

“Experiencing a traumatic delivery.”

“Emotional Chaos.”



“Understanding that something is wrong.”

“Alone.”


“Helpless.”



“Feeling abandoned.”

“No one to talk to.”


“Understanding the seriousness of the situation.”



# Parent Experience of HIE Infants



## *State of unreality*

- “It felt unreal and I felt like a robot doing what I should.”
  - “I don’t really understand...they explained a bit about what they were doing, but I couldn’t take it all in just then.”
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# Parent Experience of HIE Infants



## *State of unreality*



- “It was a tragic first night, and really horrible... I was alone, I thought I was going to take my life like I’m going to jump out of the window here.”

Heringhaus, Blom, & Wigert, (2013).



# Parent Experience of HIE Infants

## State of Uncertainty:

- “Waiting, not knowing, receiving information.”
- “Does not know about the NICU.”
- “Waiting for an MRI.”
- “What injuries will the child have?”

Heringhaus, Blom, & Wigert, (2013).



# Holding after Cooling



*"It was then that they felt they were parents."*

Heringhaus, Blom, & Wigert, (2013).

# Family Centered Care

- “The staff were very good because you became involved in the care. They said “Now you can do this and then you can feed A (the infant). Tube feeding, changing diapers and taking care of A. Yes it felt good to be of some use to A.”



Nassef, S. K., Blennow, M., & Jirwe, M. (2013).

# Maternal stress in NICU

- Alteration of the parental role.
- “Feeling helpless about how to help my baby during this time.”
- “Not feeding my baby myself.”
- “Not being able to hold my baby when I want.”

Chourasia, N., Surianarayanan, P., Adhisivam, B., & Vishnu Bhat, B. (2013).

# Maternal stress in NICU

- 25.5% of mothers faced depression
- 27.4% of mothers had moderate to severe anxiety
- 14% of mothers had both moderate to severe anxiety AND depression

Segre, L. S., McCabe, J. E., Chuffo-Siewert, R., & O'Hara, M. W. (2014).



# Long term implications

- Significant correlation between parental alteration stress and later child and language development.



Woodward, L. J., Bora, S., Clark, C. C., Montgomery-Hönger, A., Pritchard, V. E., Spencer, C., & Austin, N. C. (2014).

# Long term implications

- Mothers who experience depression are less likely to engage in developmentally enriching activities.
- Depression in mothers hinders them from understanding infant's signals and responding in a sensitive way.



# Nursing Care for Holding

- Standard Operating Procedure
- Checklist

## Holding during Hypothermia Checklist

- ☐ If the infant meets any of the following exclusion criteria, holding will have to be delayed until infant is stable.
  - o Exclusion criteria:
    - Severe PPHN-requiring significant oxygen requirements and/or iNO.
    - Patients on High Frequency ventilators, such as a Jet or oscillator.
    - Any patient with active seizures.
    - Patients on significant vasopressor therapy related to severe hypotension.
    - Any patients with a peripheral arterial line.
    - During the rewarming phase, due to the increased likelihood of seizures.
- ☐ Notify MD/ARNP for order to initiate holding.
- ☐ If infant is on respiratory support, notify respiratory therapist and discuss time availability. RT must be present if infant is ventilated.
- ☐ Notify EEG at this number: 303-7998. EEG must be notified prior to and after holding.
- ☐ Is PRN sedation needed?
- ☐ IF infant has a UAC/UVC:
  - o Document line placement
  - o Is line secure? (sutures/tegaderm)
- ☐ IF infant is intubated:
  - o ET tube location
  - o Is ET tube secured?
- ☐ Infant Temperature (prior to holding)
  - o Axillary, Core, and Blanket
  - o Did you document?
- ☐ Nurse in charge of infant\_\_\_\_\_. Nurse in charge of cooling equipment\_\_\_\_\_.
- ☐ Is mom/dad in a chair with wheels locked?
- ☐ Give pillow to mom/dad.
- ☐ Assess there are no kinks in cooling blanket connections.
- ☐ Parents can hold for a minimum of 1 hour. Maximum time allotted is 3 hours.
- ☐ Two nurses and if needed, respiratory therapist, must be present to put the infant back to the radiant warmer. Line placement and ET tube securement should be re-documented prior to putting infant back on warmer as well as once infant is stabilized on warmer.
- ☐ Holding will be discontinued if infant doesn't tolerate the procedure as evidenced by but not limited to:
  - o Seizures ,Increasing respiratory support, Desaturation episodes requiring increases in oxygen.
  - o Bradycardia, Increased irritability.

**\*\*Nurse MUST be present at bedside during time of holding. This is NOT time for break. If you need to break, another nurse MUST be present at the bedside.\*\***



# Future Implications for Research

- Florida Hospital for Children will be conducting a mixed methodology research study to analyze the effects of holding during hypothermia.
- Assess physiologic effects of holding on both mother and baby.



# Thank you!



# References

- Andrus, K. (2013, July 10). Huntington Memorial Hospital Becomes First in California to Use Wrap-Around Cooling Blankets in NICU. Retrieved July 28, 2016, from <http://www.businesswire.com/news/home/20130710006226/en/Huntington-Memorial-Hospital-California-Wrap-Around-Cooling-Blankets>
- Battin, M. R., Dezoete, J. A., Gunn, T. R., Gluckman, P. D., & Gunn, A. J. (2001). Neurodevelopmental Outcome of Infants Treated With Head Cooling and Mild Hypothermia After Perinatal Asphyxia. *Pediatrics*, 107(3), 480-484. doi:10.1542/peds.107.3.480
- Beck, C. T. (2004). Birth Trauma. *Nursing Research*, 53(1), 28-35. doi:10.1097/00006199-200401000-00005
- Chourasia, N., Surianarayanan, P., Adhisivam, B., & Vishnu Bhat, B. (2013). NICU Admissions and Maternal Stress Levels. *Indian Journal Of Pediatrics*, 80(5), 380-384 5p. doi:10.1007/s12098-012-0921-7
- Emotional Roller Coaster Ride. (n.d.). Retrieved July 28, 2016, from <http://www.asklatisha.com/emotional-roller-coaster-ride/>
- Fowler, S., & Porter, L. (2013, July 6). A mother's touch: Baptist program encourages 'skin to skin' contact. Retrieved July 28, 2016, from <http://www.cdipatch.com/news/article.asp?aid=25411>
- H, K. (2015, December 15). Cooling Blankets Help Save Babies' Lives in the NICU. Retrieved July 28, 2016, from <http://healthhub.brighamandwomens.org/cooling-blankets-help-save-babies-lives-in-the-nicu#sthash.A5nt0nms.tS7Se31a.dpbs>
- Heringhaus, A., Blom, M. D., & Wigert, H. (2013). Becoming a parent to a child with birth asphyxia--From a traumatic delivery to living with the experience at home. *International Journal Of Qualitative Studies On Health & Well-Being*, 8, 1-13. doi:10.3402/qhw.v8i0.20539.
- Nassef, S. K., Blennow, M., & Jirwe, M. (2013). Experiences of Parents Whose Newborns Undergo Hypothermia Treatment Following Perinatal Asphyxia. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 42(1), 38-47. doi:10.1111/j.1552-6909.2012.01429.x
- Paulson, J. F., Dauber, S., & Leiferman, J. A. (2006). Individual and Combined Effects of Postpartum Depression in Mothers and Fathers on Parenting Behavior. *Pediatrics*, 118(2), 659-668. doi:10.1542/peds.2005-2948
- Segre, L. S., McCabe, J. E., Chuffo-Siewert, R., & O'Hara, M. W. (2014). Depression and Anxiety Symptoms in Mothers of Newborns Hospitalized on the Neonatal Intensive Care Unit. *Nursing Research*, 63(5), 320-332 13p. doi:10.1097/NNR.0000000000000039
- Smyth, S. (2013). Freezing my baby saved her life: Little Lily was born weighing just 5lb13oz but survived after doctors put her in a cooling bag to stop her brain swelling. Retrieved July 28, 2016, from <http://www.dailymail.co.uk/news/article-2319786/Miracle-baby-wrapped-frozen-cooling-bag-save-life..html>
- Woodward, L. J., Bora, S., Clark, C. C., Montgomery-Hönger, A., Pritchard, V. E., Spencer, C., & Austin, N. C. (2014). Very preterm birth: maternal experiences of the neonatal intensive care environment. *Journal Of Perinatology*, 34(7), 555-561 7p. doi:10.1038/jp.2014.43