The value of consistent enteral temperature feedings and how to achieve them

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Objective & Disclosure

Discuss the importance of having a feeding at a consistent constant temperature.

I have received financial support from Acacia Neonatal to be here speaking with you. They have also agreed to pay the IRB costs for a research study at my facility.

Any pictures were obtained from the cloud in the sky or are personal pictures.

Breastmilk and the breastfeeding process are the “Gold” standard that we should work to achieve and/or copy

1. True, feedings should be breastfeeding or as close to that as possible
2. Hum, I have to think about what that really means
The breastfeeding experience

- Feeding while being held
- Skin to skin contact
- Nourishment is at body temperature
- Nourishment meets growth needs
- Engagement of dyad

In “my” unit we routinely warm

1. Breastmilk only
2. Breastmilk and formulas

In order to warm feedings we use

1. Hot water in a cup
2. A warming unit such as Guardian, Medela, or Penguin
3. Other method
With a prolonged gavage feeding (over 20 minutes)
1. We prewarm all the feedings using the unit warming method
2. We don’t prewarm any of the feedings as it will lose that heat while infusing
3. We prewarm the breastmilk but not the formulas so that everything is at least room temp by the time the baby gets it
4. We don’t have a gavage feeding exceed 20 minutes

What is the importance of the feeding temperature
- Minimal research on impact of feedings on infants and especially preterm infants
- Temperature
- Gastric residuals
- Weight gain
- Reaction to a cool/cold feeding

Feeding Guidelines
- Infant Feedings: Guidelines for Prep of Human Milk & Formula in HCF. 2nd ed., 2011, Academy of Nutrition and Dietetics
  - Chapter 4, pg 53. “It is not necessary to warm milk for tube feeding. Excessive warming can destroy components of milk that are heat sensitive.”
  - Chapter 6, pg 97, tube fed usually doesn’t need to be warmed as it will assume room or body temperature; full term infants feeding warming may not be necessary; bolus feeding warming for preterm is needed; some infants may show preference for warmed feedings
Concerns with cool or cold feedings
- The term versus the preterm infant
- We are feeding sooner and earlier
- We are feeding younger gestational ages

Additional question asked
- There is nursing time involved with heating of feedings
- If feedings don’t need to be heated then save nursing time
- Is there a way to save nursing time and heat feedings
- No waiting time to warm the feeding

Current heating methods available
- The cup
- Medela heating system
- Penguin heating system
Current heating methods available

- Guardian heating system

The difference between the systems

- The cup is variable in temperature, additionally temperature can change with the delivery method
- Medela and Penguin give controlled consistent temperature, temperature can change based on delivery method
- Guardian has controlled consistent temperature throughout the delivery process with a tube feeding

CVMC-NICU pilot study

- To look at comparison of 2 different warming methods and if there is an impact of gastric residual with a prolonged gavage feeding (>20 minutes) on a pump
- Use of Penguin warmer and preheat feeding prior to infusion
- Use of Guardian warmer and heat feeding during infusion
Lit Review:
(S. Sundquist-Beauman)

Lit review
- Gibson, J. Reaction of 150 infants to cold formulas. 1958. The journal of pediatrics. 52.

Lit review