Delivery Room (DR) Temperature at 23°C (74°F) can achieve the Normothermia in extremely low birth weight infants: Multidisciplinary team efforts and continuous quality improvement project.

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Introduction

- Normothermia (36.5-37.5°C) in Extremely Low Birth Weight (ELBW) is associated with decreased morbidity and mortality, length of stay, and costs. There is no consensus about DR/Operating Room (OR) temperature. WHO in 1997 recommended DR/OR temperature of 25°C (77°F). American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc., (ASHRAE) in 2011 recommended OR temperature range of 68-75°F. NRP in 2016 revised the recommended DR temperature range from 25°C to 26°C (77-79°F) to 23°C to 25°C (74-77°F).

Objective

- We report the incidence of normothermia over the last four years (2014-2017) while maintaining DR/OR temperature at 23°C (74°F).

Methods

- We designed a bundle approach that included: education of perinatal and neonatal staff, use of exothermic mattress, saran wrap, pre-heated radiant warmer, head cap, warm towels, and transport of ELBW infants in a servo controlled unit. Axillary temperature every 5 minutes in DR and first temperature within 15 minutes of admission to NICU were recorded. We studied **145 consecutive ELBW** cases. Nine infants were <500g and 33 were <24 weeks' GA. C-Section rate was 76%, and 45% were intubated in OR/DR, 41% were intubated in NICU, 14% did not need intubation, and 3 babies needed epinephrine in the OR/DR.

Results

- Normothermia (36.5-37.5°C) was achieved in **88%** (128/145) of the ELBW infants. Incidence of hypothermia (<36.5°C) was 3.4% (5/145) and hyperthermia (>37.5°C) was 8.3% (12/145). Vermont Oxford Network and CPQCC defined Hypothermia as <36.0°C. According to this definition, hypothermia rate in our study was 0%. **In the last 8 months of 2018, we achieved 100% Normothermia. No case of Hyperthermia.**

Conclusions:

- We were able to achieve very close to the target Normothermia rate in the last four consecutive years 2014 to 2017 with OR/DR temperature set at 23°C (74°F).
- We suggest OR/DR temperature of 23°C (74°F) as recommended by ASHRAE and NRP 2016 guidelines without compromising ELBW or VLBW infants' temperature during the transitional period.
- One has to be extremely careful to avoid hyperthermia also.