

Neonatal Thermoregulation – Still A Heartwarming Topic

Objectives

- Recall the mechanisms of heat loss that potentially impact the newborn's thermoregulatory adaptation to the extrauterine environment
- Outline the underlying principles of neonatal thermal balance and describe the preventive measures presented for avoiding hypothermia and hyperthermia as well as the proper use of equipment and supplies to support thermal balance
- Summarize the methods, results, and implications for clinical practice in the 2017 quality improvement project presented with the purpose of decreasing admission hypothermia in neonates born at less than 32 weeks gestation or weighing less than 1500 g

Content Outline

1. Initial Approaches to Achieve Thermal Balance in Term Neonates
 - 1.1 Description of neonatal thermal balance
 - 1.1.1 Relationship of hypothermia to oxygen and glucose consumption
 - 1.2 Interaction of environmental factors on mechanisms of heat loss
 - 1.3 Clinical approaches to support thermal balance
 - 1.3.1 Detection of hypothermia and avoidance of hyperthermia
 - 1.3.2 Rewarming using radiant warmers or isolettes
 - 1.3.3 Recommendations for skin-to-skin care
 - 1.3.4 Axillary temperature assessment
2. Practice Improvement to Reduce Admission Hypothermia in Neonates Born at Less Than 32 Weeks Gestation or 1500 g
 - 2.1 Description of problem identified from 2016 QI Initiative results
 - 2.2 WHO definitions of hypothermia and hyperthermia (mild)
 - 2.3 Steps for implementing a modified thermoregulation bundle
 - 2.3.1 Use of chemical mattress, polyurethane bag, polyurethane hat, and temperature tracking form
 - 2.3.2 Resuscitation room signage
 - 2.3.3 Staff education and monitoring
 - 2.4 Results of project and comparison with results from previous years
 - 2.4.1 Findings of impact related to comorbidities
 - 2.4.2 Study strengths and limitations and future research suggestions

Reading Material Resources

Module WB2462: Neonatal Thermoregulation – Still A

Heartwarming Topic is based on the resources listed below. A copy of each resource is included with the module.

Early Interventions to Achieve Thermal Balance in Term Neonates, Bedwell S and Holtzclaw BJ, Nursing for Women's Health, (2022), 26(5), 389-396

Reducing Admission Hypothermia in Neonates Born at Less Than 32 Weeks or 1500 g, Frazer M et al., Advances in Neonatal Care, (2021), 22(2), 99-107