Module GH0922

Objectives

- Understand the physiology of temperature regulation in utero and the thermoregulation needs after birth
- Describe the mechanisms of heat production and loss and identify interventions to maintain thermoregulation and minimize risks
- Summarize how prematurity impacts thermoregulation and places the very low birth weight neonate at risk for hypothermia
- Outline the definition, causes, signs and symptoms, prevention and treatment of hypo and hyperthermia in the very low birth weight neonate

Thermoregulation

Content Outline

1. Temperature Regulation

2. Pathophysiology
   a. In utero
   b. After birth
      i. Neutral thermal state
      ii. Mechanisms of heat production
      iii. Monitoring temperature

3. Mechanisms of Heat Loss
   a. Convection
   b. Radiation
   c. Conduction
   d. Evaporation
   e. Respiratory

4. Neonatal Considerations: Limited Protective Mechanisms in VLBW Neonates
   a. Immature skin
   b. Diminished Barrier
      i. Trans-epidermal water loss
   c. Environment

5. Hypothermia
   a. Definition
   b. Causes
   c. Signs and symptoms
      i. Hypoxia
      ii. Hypoglycemia
      iii. Respiratory and metabolic acidosis
      iv. Cardiovascular compromise
      v. Neurological compromise
   d. Prevention and management
      i. Radiant warmers
      ii. Delivery room and stabilization area temperatures
      iii. Occlusive wraps
      iv. Hats
      v. Transwarmer mattress
   e. Transport and admission to NICU
   f. Management
   g. Severe hypothermia
   h. Surgery

Thermoregulation

6. Hypothermia
    a. Causes
    b. Signs and symptoms
    c. Consequences
    d. Prevention
    e. Management

7. Conclusion

Reading Material Resources

Module GH0922: Thermoregulation is based on the chapter listed below. A copy is included with the module.

Chapter 9, Golden Hours: Care of the Very Low Birth Weight Neonate, Bissinger, R.L., Annibale, D.J., and Fanning, B.A. The National Certification Corporation (NCC), Chicago, IL 2019.