Module WB2453

Hemodynamically Speaking from a Neonatal Perspective

Objectives

- Identify clinical situations and the related physiology and pathophysiology that contribute to neonatal hemodynamic compromise especially during the early transitional period
- Describe the current and emerging monitoring and clinical approaches presented for bedside hemodynamic assessment and management of neonatal shock including the fluids and medications most commonly administered
- Discuss the challenges presented regarding clinical monitoring and management of cardiovascular status and hemodynamic compromise based on the unique physiology of the preterm neonate at less than 25 weeks gestation

Content Outline

1. Recognition and Management of Hemodynamic Compromise in the Neonate
   - 1.1 Neonatal hypotension by definition and incidence
   - 1.2 Recognizing and managing hemodynamic variables
     - 1.2.1 Cardiac output
     - 1.2.2 Preload
     - 1.2.3 Contractility
     - 1.2.4 Afterload
     - 1.2.5 Systemic vascular resistance
2. Hemodynamic Considerations For Infants Born at Less Than 25 Weeks Gestation
   - 2.1 Frequency and etiology of problems involving hemodynamic compromise
   - 2.2 Impact of unique characteristics of physiology in the periviable infant
   - 2.3 Assessment of cardiovascular status
     - 2.3.1 Clinical assessments, bedside monitoring, and lactate measurements
     - 2.3.2 Point of care echocardiography
     - 2.3.3 Non-invasive monitoring of cardiac output and cerebral oxygenation
   - 2.4 Approaches to treatment for extremely preterm infants

Reading Material Resources

Module WB2453: Hemodynamically Speaking from a Neonatal Perspective is based on the resources listed below. A copy of each resource is included with the module.

Recognition and management of neonatal hemodynamic compromise, Wu TW and Norri S, *Pediatrics and Neonatology* 62 (2021), S22-S29

Hemodynamic considerations in preterm infants born at less than 25 weeks gestation, Finn BP, et al., Seminars in Perinatology, 46 (2022), 1-8