The Compromised Fetus

Objectives

- Identify normal and abnormal fetal physiologic functions
- Review the factors that can occur with development of asphyxia and related conditions
- Explain the pattern of asphyxia development
- Discuss treatment, preventive measures and outcomes for perinatal asphyxia and related conditions
- Summarize antepartum, intrapartum and postpartum screening and diagnosis for perinatal asphyxia and related conditions
- Outline obstetric risks for perinatal asphyxia or other related conditions
- Describe interventions and their effectiveness to address perinatal asphyxia and related conditions

Content Outline

1. Fetal Physiology
   A. Blood supply
   B. Oxygenation in labor
   C. Energy supply and metabolism

2. Development of Asphyxia
   A. Maternal fetal oxygen exchange
   B. Oxyhemoglobin dissociation curve
   C. Fetal defenses against oxygen deficiency

3. Pattern of Asphyxia Development
   A. Regulation of fetal heart rate during hypoxia
   B. Effects of oxygen deficiency in the heart
   C. Mechanism of cell damage
   D. Type of injuries

4. Treatment Options and Outcomes

5. Antepartum Testing
   A. Ultrasound
   B. Doppler velocimetry
   C. Nonstress and contraction stress testing
   D. Biophysical profile
   E. Biochemical testing

6. Intrapartum and Postpartum Monitoring
   A. Electronic fetal monitoring
   B. Fetal scalp stimulation
   C. ST segment (STAN)
   D. Placental examination
   E. Umbilical blood gas analysis

7. Obstetric Risk Factors
   A. Pre-existing or chronic
   B. Pregnancy related
   C. Emergent Obstetric Complications

8. Interventions and Risk Reduction Strategies
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Reading Material Resources

Module WB1901: The Compromised Fetus is based on the resources listed below. A copy of each resource is included with the module.

Pathophysiology of Fetal Oxygenation and Cell Damage During Labor, Yli, et al., Best Practice & Research Clinical Obstetrics and Gynecology, 30 (2016), 9-21

Perinatal Asphyxia from the Obstetric Standpoint, Diagnosis and Intervention, Herrera, et al., Clinics in Perinatology, 43 (2016) 423-438