Module WB2358

PDA in Preterm Infants-Developmental Aspects, Diagnosis, Evaluation, Monitoring & Management

Objectives

- Recognize the challenges associated with diagnosis of a hemodynamically significant patent ductus arteriosus (hsPDA) in the very preterm infant and describe the potential wide-ranging effects of this cardiovascular abnormality on individual organs and entire body systems
- List clinically detectable signs of PDA which emerge as left-to-right ductal shunting persists and describe the advanced methods that can be used to monitor ongoing changes in ductal status
- Summarize the rationale and evidence supporting the trend toward use of conservative therapies for management of patent ductus arteriosus and include the reported efficacy of currently available PDA treatments, conservative approaches, and support care measures

Content Outline

1. Diagnosing, Evaluating and Monitoring of Patent Ductus Arteriosus (PDA) in Very Preterm Infants
   - 1.1 Fetal development of ductus arteriosus
   - 1.2 Regulation of ductal tone & constriction after birth
   - 1.3 Pathophysiology of PDA including systemic adaptations & effects
   - 1.4 PDA clinical and radiologic features supporting diagnosis
     - 1.4.1 Use of echocardiographic assessment
     - 1.4.2 Use of biomarker assessment
   - 1.5 Comprehensive appraisal of a PDA's hemodynamic significance

2. Evidence Related to Conservative Treatment of Patent Ductus Arteriosus
   - 2.1 Discussion of active treatment of PDA in the preterm vs. conservative care
   - 2.2 Efficacy of available pharmacological treatments
     - 2.2.1 NSAIDS
     - 2.2.2 Paracetamol (Acetaminophen)
   - 2.3 Conservative treatment based on limited use of drugs & surgical ligations
   - 2.4 Efficacy of medical treatment and supportive approaches to PDA care
     - 2.4.1 Fluid restriction
     - 2.4.2 Use of diuretics
     - 2.4.3 PDA shunt volume modification techniques
     - 2.4.4 Early & late postnatally administered steroids
     - 2.4.5 Targeted hematocrit levels & predictive value of platelet levels
   - 2.5 Recommended future directions in practice and research

Reading Material Resources

Module WB2358: PDA in Preterm Infants-Developmental Aspects, Diagnosis, Evaluation, Monitoring & Management is based on the resources listed on page 2. A copy of each resource is included with the module.

Reading Material Resources

Chapter 22 Diagnosis, Evaluation and Monitoring of Patent Ductus Arteriosus in the Very Preterm Infant, El Khuffash AF, McNamara PJ and Noon J in *Hemodynamics and Cardiology: Neonatology Questions and Controversies*, *Third Edition* (2019), Elsevier, 387-410

Patent ductus arteriosus management and the drift towards therapeutic nihilism- What is the evidence? Koert de Waal, et al., *Seminars in Fetal and Neonatal Medicine*, 26 (2021), Article 101219, 1-6