

Neonatal Congenital Heart Disease – Early Detection and Management

Objectives

- Outline the steps of the critical congenital heart defect (CCHD) screening algorithm as endorsed by the American Academy of Pediatrics and the American Heart Association to support an increased rate of CCHD detection in newborns and identify findings that determine a failed CCHD screen
- Summarize the common clinical presentations seen in neonates with congenital heart defects (CHDs), both cyanotic and acyanotic, and include the immediate stabilization needs including use of PGE, as well as bedside evaluation/testing to assist in differentiating cardiac from pulmonary disorders
- Describe the pathophysiology, clinical presentation, immediate stabilization indicated, and nursing implications for preoperative management of the four examples of CHDs presented requiring surgical intervention
- State concerns presented regarding possible adverse neurodevelopmental issues in infants whose CHDs require cardiac surgery within the first year of life

Content Outline

1. A Review of Newborn Pulse Oximetry Screening
 - 1.1 Physiologic changes in transition supporting screening
 - 1.2 Scientific basis for how pulse oximetry screening works
 - 1.3 AAP/AHA CCHD screening algorithm and implications of findings
2. Diagnosis and Initial Management of Critical Congenital Heart Defects (CCHDs)
 - 2.1 Clinical signs suggestive of CHD in a newborn
 - 2.2 CHD classification-both duct and non-duct dependent
 - 2.3 Pathophysiology, presentation, and initial management of cyanotic CHDs
 - 2.4 Pathophysiology, presentation, and initial management of acyanotic CHDs
 - 2.5 Indications, dosage, desired response, and adverse effects of PGE
3. Preoperative Care of Four Common Types of Severe CHD Treated in NICUs
 - 3.1 Specific pathophysiology, clinical presentation, assessment findings, interventions, nursing implications, and potential long-term outcomes
 - 3.1.1 Hypoplastic left heart syndrome (HLHS)
 - 3.1.2 Dextro-transposition of the great arteries (D-TGA)
 - 3.1.3 Tetralogy of Fallot (TOF)
 - 3.1.4 Pulmonary atresia with intact ventricular septum (PA/IVS)

Reading Material Resources- Page 2

Module WB2524 Neonatal Congenital Heart Disease – Early Detection and Management

- is based on the resources listed on page
2. A copy of each resource is included with the module.

Reading Material Resources

Newborn pulse oximetry screening: A review, Kirk A et al., *Progress in Pediatric Cardiology*, 65 (2022), Article 101506, 1-5

Diagnosis and management of critical congenital heart defects in infants, Singh Y, *Paediatrics and Child Health* 32:9 (2022), 332-338

Preoperative Care of Neonates With Congenital Heart Disease, Tran N et al., *Neonatal Network*, 41:4 (2022), 200-210