

CARDIOLOGY ROTATION

Faculty:

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Goals:

1. Understand how to distinguish normal from abnormal cardiovascular signs and symptoms.
2. Understand how to diagnose and manage common cardiovascular conditions that generally do not require referral.
3. Understand how to recognize, provide initial management of, and refer cardiovascular conditions in children which generally require referral.
4. Understand key principles related to the use of cardiovascular drugs.
5. Understand the pediatrician's role in the prevention of cardiovascular disease.

Learning Objectives and Curriculum Content:

1. Describe the mechanisms of production of heart sounds and murmurs, with application to the differentiation between organic and innocent murmurs.
2. Explain the age-related changes in heart rate and blood pressure, and identify normal ranges from birth through adolescence.
3. Differentiate between physiologic and pathologic variations in cardiac rhythm.
4. Describe normal perinatal circulation, changes at birth, and their influence on the development of signs and symptoms of congenital heart disease in the neonate.
5. Describe the principles of electrocardiography and echocardiography, including the structures and physiologic processes which can be identified and/or measured using these diagnostic tools.
6. Identify, describe the pathophysiology of, and manage these conditions:
 - a. Peripheral pulmonic stenosis
 - b. Tachycardia related to fever
 - c. Functional heart murmur
 - d. Small VSD
 - e. Chest pain
 - f. Mild hypertension (labile)
7. Describe the differential diagnosis, provide the initial evaluation and management of, and provide appropriate referral for the child presenting with serious symptoms/signs related to the CV system:
 - a. Cyanosis
 - b. Severe hypertension
 - c. Supraventricular tachycardia
 - d. Bradycardia
 - e. Congestive heart failure
 - f. Cardiovascular collapse
 - g. Syncope
 - h. Chest pain indicative of myocardial ischemia
 - i. Pathologic heart murmurs
8. Describe the physical findings, pathophysiology, usual treatment, and prognosis for these conditions:

- a. Ventriculoseptal defect
 - b. Atrial septal defect
 - c. Tetralogy of Fallot
 - d. Patent ductus arteriosus
 - e. Coarctation of the aorta
 - f. Transposition of great vessels
 - g. Aortic stenosis
 - h. Pulmonic stenosis
 - i. Mitral valve prolapse
 - j. Total anomalous pulmonary venous return
 - k. Supraventricular tachycardia
 - l. Myocarditis/endocarditis/cardiomyopathy
 - m. Kawasaki's syndrome
 - n. Acute rheumatic fever
 - o. Bacterial endocarditis
 - p. Essential hypertension
9. Describe the physiology, the indications, and the contraindications of commonly used cardiovascular drugs (antiarrhythmic, chronotropes, inotropes, diuretics, vasodilator, vasopressors.)
 10. Recognize the risk factors and identify appropriate screening and prevention strategies for atherosclerotic heart disease and hypertension.
 11. Define the indications for prophylaxis of subacute bacterial endocarditis, and describe the appropriate antibiotic treatment regimes for prophylaxis.
 12. Demonstrate knowledge of appropriate antibiotic treatment regimes for prophylaxis of rheumatic fever.
 13. Recognize cardiac conditions which warrant influenza immunization, chemoprophylaxis, and/or antiviral treatment for respiratory viruses, (influenza, RSV).
 14. Recognize the role of exercise, gym classes, and sports for the child with cardiac disease.

Skills Acquisition:

1. Develop proficiency auscultating pediatric patients and recognizing normal heart sounds, functional murmurs and pathologic murmurs.
2. Become familiar with pediatric electrocardiograms and develop some skill at interpreting them.
3. Become competent in developing an evaluation plan for a child with a murmur.

Reading Materials:

1. Pediatric Cardiology Textbooks.
2. Divisional cardiology manual.
3. Articles from faculty files.

Rotation Requirements:

1. Residents will be expected to evaluate patients in the outpatient setting/clinics.
2. Residents will be expected to attend clinical conferences as determined by the attending faculty.