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Cardiovascular Disorders in Children

Child Health Nursing

Congenital heart diseases, cyanotic and acyanotic heart defects, rheumatic heart disease, heart failure in children and nursing management of cardiac conditions.

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CHAPTER 10 / CHILD HEALTH NURSING 10. Cardiovascular Disorders in Children

1. Congenital heart disease

Structural cardiac defects present from birth alter circulation. Acyanotic lesions often cause left-to-right shunt (increased pulmonary flow) or obstruction; cyanotic lesions involve reduced pulmonary flow or mixing/right-to-left shunt. Some duct-dependent defects deteriorate when ductus arteriosus closes.

Defect	Pathophysiology and important findings
ASD	Interatrial communication; left-to-right shunt, often initially asymptomatic.
VSD	Interventricular communication; large shunt may cause tachypnoea, poor feeding and heart failure.
PDA	Persistent aorta-pulmonary connection; continuous murmur, excess pulmonary flow.
Coarctation	Aortic narrowing; weak femoral pulses and upper/lower limb BP difference.
Tetralogy of Fallot	VSD, RV outflow obstruction, overriding aorta, RV hypertrophy; cyanotic spells.
Transposition	Great arteries arise from wrong ventricles; parallel circulations need mixing; severe neonatal cyanosis.

2. Assessment and investigations

Assess feeding fatigue/sweating, growth, cyanosis, murmurs, pulses, saturation, respiratory effort and perfusion. Echocardiography defines anatomy; ECG, CXR and catheterization selected. Newborn pulse-ox screening helps detect some critical defects but does not exclude all.

Paediatric heart failure

Definition and pathophysiology: Pump dysfunction or excessive pulmonary flow from CHD, cardiomyopathy, myocarditis or other causes.

Clinical features and investigations: Tachypnoea, tachycardia, hepatomegaly, feeding fatigue, poor growth; oedema may be less prominent in infants.

Management and nursing care: Prescribed diuretics/heart-failure therapy, individualized fluid/calorie plan, small frequent safe feeds or tube feeding, daily weights and monitor perfusion/electrolytes.

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Rheumatic fever and RHD

Definition and pathophysiology: Immune complication after group A streptococcal pharyngitis; chronic valve damage.

Clinical features and investigations: Joint inflammation, carditis, chorea or other criteria; echo and evidence of preceding infection.

Management and nursing care: Prescribed antibiotics, anti-inflammatory and cardiac treatment; secondary prophylaxis and follow-up, education on adherence.

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B.SC. NURSING / CHAPTER-WISE STUDY NOTES

3. Nursing management

For cyanotic spell, keep child calm, knee-to-chest position when appropriate, oxygen and urgent protocol-based specialist care. Monitor after cardiac surgery for bleeding, rhythm, perfusion, drainage and respiratory status. Encourage family involvement, infection prevention, growth monitoring and individualized activity advice.

4. Important Examination Questions

Long Answer Questions

1. 1. Classify congenital heart diseases and describe nursing management of paediatric heart failure.

Short Answer Questions

1. 1. Explain TOF
2. 2. distinguish VSD/ASD/PDA
3. 3. discuss rheumatic fever prevention.

Very Short Answer Questions (with answers)

1. 1. How many abnormalities in TOF? - Four.
2. 2. Which test defines cardiac anatomy? - Echocardiography.

5. Quick Revision

- Infants may show heart failure during feeding.
- Not all CHD causes cyanosis.
- Weak femoral pulses need assessment.

6. Conclusion

Infants may show heart failure during feeding. Not all CHD causes cyanosis. Weak femoral pulses need assessment.

Practice questions

Choose one best answer. The answer key and explanations follow the questions.

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1. Which finding particularly suggests coarctation of the aorta?

A. Continuous murmur with excess pulmonary flow

B. Interatrial communication with few early symptoms

C. Severe cyanosis from parallel circulations

D. Weak femoral pulses with an upper/lower limb BP difference

2. Which investigation defines congenital cardiac anatomy?

A. Echocardiography

B. Pulse oximetry alone

C. Electrocardiography alone

D. Chest radiography alone

3. Which pattern may indicate heart failure in an infant?

A. Recurrent wheeze with exercise-related cough

B. Tachypnoea, feeding fatigue and poor growth

C. Barking cough with inspiratory stridor

D. Coryza with conjunctivitis and a descending rash

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Answer key and explanations

1. D - Weak femoral pulses with an upper/lower limb BP difference

Coarctation narrows the aorta and can reduce femoral pulses.

2. A - Echocardiography

Echocardiography defines the structural cardiac anatomy.

3. B - Tachypnoea, feeding fatigue and poor growth

Infant heart failure often becomes evident during feeding and growth assessment.

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