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High-Risk Newborn and Neonatal Emergencies

Midwifery & Obstetrical Nursing

Prematurity, low birth weight, birth asphyxia, neonatal jaundice, neonatal sepsis, respiratory distress, hypothermia, hypoglycaemia and neonatal intensive care.

For educational purposes only.

CHAPTER 22 / MIDWIFERY AND OBSTETRICAL NURSING 22. High-Risk Newborn and Neonatal Emergencies

1. Risk categories and assessment

Preterm <37 weeks; LBW <2500 g, VLBW <1500 g, ELBW <1000 g. Assess gestation, birth complications, maternal infection/diabetes, size, breathing, glucose, temperature, feeding, jaundice and perfusion. Conditions may be subtle; poor feeding, lethargy, apnoea or temperature instability warrant prompt evaluation.

Prematurity and LBW

Definition and pathophysiology: Immature lung, immune, temperature, feeding and metabolic function.

Clinical features and investigations: Apnoea, RDS, hypothermia, hypoglycaemia, poor growth and infection risk.

Management and nursing care: Kangaroo mother care as early as appropriate with monitoring, breast milk support, incubator/warmer if indicated, respiratory and glucose care, neurodevelopmental/hearing/eye follow-up.

Birth asphyxia and neonatal resuscitation

Definition and pathophysiology: Inadequate gas exchange at birth may cause hypoxic-ischaemic encephalopathy.

Clinical features and investigations: Apnoea/gasping, bradycardia, reduced tone; assess HR and effective ventilation.

Management and nursing care: Trained neonatal algorithm: warm, position airway, dry/stimulate as indicated, start PPV promptly if apnoea/gasping or HR <100 after initial steps. Correct ventilation; if HR <60 despite 30 s effective PPV, coordinated 3:1 chest compressions/ventilation per protocol. Specialist postresuscitation monitoring; therapeutic hypothermia selected cases only.

Neonatal jaundice

Definition and pathophysiology: Unconjugated bilirubin accumulation due to physiological transition, haemolysis or other conditions; conjugated jaundice may indicate cholestasis.

Clinical features and investigations: Jaundice first 24 h or marked/progressive jaundice urgent; bilirubin age in hours and risk-specific assessment.

Management and nursing care: Feeding support, prescribed phototherapy with eye protection/temperature and hydration monitoring, selected exchange transfusion. Pale stools/dark urine need cholestasis evaluation; sunlight not substitute.

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B.SC. NURSING / CHAPTER-WISE STUDY NOTES

Neonatal sepsis and RDS

Definition and pathophysiology: Infection may be early/late; RDS commonly surfactant deficiency in premature lung.

Clinical features and investigations: Sepsis: poor feed, unstable temperature, lethargy, respiratory/apnoea; RDS: grunting, tachypnoea, retractions, hypoxaemia.

Management and nursing care: Prompt neonatal assessment/cultures and prescribed antibiotics when sepsis suspected; CPAP/oxygen/surfactant and ventilation as indicated for RDS; serial monitoring and asepsis.

Hypothermia and hypoglycaemia

Definition and pathophysiology: Heat loss and immature metabolic control common in small/sick newborns; maternal diabetes increases glucose risk.

Clinical features and investigations: Temperature <36.5 C indicates low temperature; hypoglycaemia may cause jitteriness, poor feeding, apnoea/seizure or no symptoms; thresholds depend on age/risk/protocol.

Management and nursing care: Warm safely and evaluate causes, monitor glucose in at-risk infants, early feeding when safe, prescribed dextrose gel/IV glucose where indicated. Symptomatic or persistent abnormalities urgent; do not delay care awaiting routine checks.

2. NICU responsibilities

Cardiorespiratory monitoring, prescribed oxygen targets and ventilation, incubator/skin-to-skin thermal care, accurately measured feeds/fluids and medications, infection prevention, pain assessment, developmental support and parents' involvement. Document trends, procedures and escalation. Maintain discharge readiness, feeding/growth plan and community/specialist follow-up.

3. Important Examination Questions

Long Answer Questions

1. 1. Discuss high-risk newborn care and neonatal resuscitation.

Short Answer Questions

1. 1. Explain jaundice/phototherapy
2. 2. discuss RDS, sepsis and hypoglycaemia
3. 3. define prematurity/LBW.

Very Short Answer Questions (with answers)

1. 1. Neonatal resuscitation compression:ventilation ratio? - 3:1 when indicated.
2. 2. Is normal newborn bilirubin threshold one fixed value? - No, age/gestation/risk specific.

4. Quick Revision

- Effective ventilation precedes compressions in neonatal algorithm.
- Heat and glucose are linked to feeding and illness.
- Urgent signs may be nonspecific.

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5. Conclusion

Effective ventilation precedes compressions in neonatal algorithm. Heat and glucose are linked to feeding and illness. Urgent signs may be nonspecific.

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Practice questions

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

1. Which jaundice-associated finding needs evaluation for cholestasis?

A. Normal stool colour with improving feeding

B. A strong suck and stable temperature

C. Pale stools and dark urine

D. Normal urine colour alone

2. Which group of findings is characteristic of neonatal respiratory distress syndrome?

A. Barking cough, hoarseness and inspiratory stridor

B. Paroxysmal cough with a whoop and vomiting

C. Mild coryza with normal oxygenation and feeding

D. Grunting, tachypnoea, retractions and hypoxaemia

3. Why should at-risk newborn glucose monitoring not rely on symptoms alone?

A. Hypoglycaemia may have no symptoms

B. Every affected newborn has obvious seizures

C. A normal temperature excludes low glucose

D. Poor feeding rules out glucose problems

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Answer key and explanations

1. C - Pale stools and dark urine

Pale stools and dark urine can indicate conjugated jaundice or cholestasis.

2. D - Grunting, tachypnoea, retractions and hypoxaemia

RDS causes respiratory effort and impaired oxygenation.

3. A - Hypoglycaemia may have no symptoms

Neonatal hypoglycaemia can be asymptomatic as well as causing nonspecific signs.

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