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Practice Questions

Try all 30 first, then check the answer key at the back.

1. In a neonate diagnosed with respiratory distress syndrome (RDS), which of the following conditions would contribute to a decrease in surfactant production?

A. Increased oxygen levels
B. Decreased $$CO_{2}$$ levels
C. Term birth
D. Premature birth

2. For newborns experiencing transient tachypnea (TTN), what do grunting, nasal flaring, and chest retractions signify?

A. An attempt to maintain adequate lung expansion
B. An attempt to conserve energy
C. An attempt to decrease upper airway resistance
D. An attempt to overcome airway obstruction

3. Which of the following treatments is recommended for neonates with Respiratory Distress Syndrome (RDS) to improve lung function?

A. Vitamin K Supplementation
B. Exogenous Surfactant Therapy
C. Antibiotic Therapy
D. Corticosteroid Therapy

4. A nurse is caring for an infant receiving continuous positive airway pressure (CPAP) therapy and observes signs of nasal flaring and retractions. Which of the following is an appropriate nursing action?

A. Instill a bolus of sterile normal saline before adjusting the CPAP settings
B. Turn the infant's head from side to side during CPAP interface adjustment
C. Provide non-nutritive sucking with sucrose and swaddling during the adjustment of the CPAP interface
D. Increase the CPAP pressure without consulting the physician

5. Which gas is most commonly administered to newborns in respiratory distress?

A. Oxygen
B. Helium
C. Nitrous oxide
D. Carbon dioxide

6. While administering indomethacin to a newborn with patent ductus arteriosus, the nurse should closely monitor for which electrolyte imbalance?

A. Hypokalemia
B. Hypernatremia
C. Hyponatremia
D. Hyperkalemia

7. What is the MOST common hematological disorder in newborns?

A. Hemophilia
B. Thrombocytopenia
C. Leukemia
D. Anemia

8. A neonate is being treated for congenital heart disease with chronic administration of spironolactone. This infant is at an increased risk for all the following electrolyte disturbances, EXCEPT:

A. Hypercalcemia
B. Hypovolemia
C. Hyperkalemia
D. Hyponatremia

9. Neonatal congenital hypothyroidism is characterized by all the following, EXCEPT:

A. Constipation
B. Hyperglycemia
C. Prolonged jaundice
D. Large fontanelle

10. Which maternal-infant blood group combination is most likely to result in neonatal jaundice due to blood group incompatibility?

A. Mother with A-positive blood and infant with B-negative blood
B. Mother with B-negative blood and infant with B-positive blood
C. Mother with AB-negative blood and infant with A-positive blood
D. Mother with O-positive blood and infant with B-positive blood

11. A newborn is undergoing treatment for a skin burn injury. Which of the following is the MOST appropriate dressing to use to promote moisture-retentive healing and protect the wound from infection?

A. Hydrocolloid dressing
B. Petroleum gauze
C. Silver sulfadiazine
D. Polyurethane film

12. Which organism is MOST often responsible for causing neonatal meningitis?

A. Enterobacter species
B. Group B Streptococcus (GBS)
C. Escherichia coli
D. Listeria monocytogenes

13. In neonates, total body water content is higher compared to older infants. Which factor is responsible for the difference in water content between neonates and older infants?

A. Higher metabolic rate
B. Advanced organ development
C. Increased fat storage
D. High extracellular fluid

14. A single urine sample from a newborn for screening purposes can detect how many congenital renal abnormalities?

A. 15
B. 10
C. 25
D. 20

15. Which of the following statements is ACCURATE about a patent ductus arteriosus (PDA)?

A. PDA always closes on its own without treatment
B. PDA is more common in premature infants
C. PDA occurs more frequently in full-term infants
D. PDA can cause severe cyanosis in newborns without any other condition

16. Which commonly used intravenous fluid in neonates has been associated with alterations in electrolyte balance due to its components being rapidly absorbed in preterm infants?

A. Dextrose 10% with electrolytes
B. Normal saline
C. Lactated Ringer's solution
D. Sterile water

17. Which of the following clinical findings suggests a potential endocrine disorder in a newborn?

A. Polyhydramnios prenatally
B. Sacral dimple
C. Ambiguous genitalia
D. Single umbilical artery

18. What is the normal range for blood glucose levels in a healthy term infant within the first 24 hours?

A. 20 to 40 mg/dL
B. 40 to 60 mg/dL
C. 30 to 50 mg/dL
D. 70 to 90 mg/dL

19. A three-day-old preterm infant born at 35 weeks of gestation is showing signs of abdominal distention, bile-stained vomiting, and bloody stools. The infant is receiving parenteral nutrition and antibiotic therapy for suspected sepsis. During a routine examination, the nurse notes lethargy and episodes of bradycardia. Which of the following physician orders should be carried out FIRST?

A. Draw a complete blood count and chemistry panel
B. Administer parenteral nutrition
C. Ensure the newborn's immunizations are up-to-date
D. Order an abdominal x-ray

20. Which of the following actions by the NICU nurse is LEAST likely to support a father-infant bonding process?

A. Involve the father in decision-making and developing the care plan
B. Restrict visits to certain hours
C. Encourage the father to provide skin-to-skin "kangaroo" care
D. Support the father in being present during routine care procedures

21. Which principle should guide neonatal nurses in making clinical decisions to ensure newborn safety and well-being?

A. Following hospital traditions
B. Parental wishes over clinical guidelines
C. Evidence-based practice
D. Intuitive judgment

22. All the following are ethical principles used to guide neonatal clinical nursing practice, EXCEPT:

A. Beneficence
B. Justice
C. Paternalism
D. Autonomy

23. A NICU nurse is preparing to administer a feeding to a neonate with a nasogastric tube. Which position is recommended to reduce the risk of aspiration?

A. Semi-fowler's position
B. Supine position
C. Prone position
D. Side-lying position

24. Ethical principles in neonatal care are essential for maintaining trust and professional integrity. In the context of a neonatal ICU, ethics contributes to decision-making in all the following areas, EXCEPT:

A. Ensuring informed consent from the parents or guardians
B. Balancing potential benefits and harm when considering treatment options
C. Respecting cultural values and beliefs in care practices
D. Providing definitive prognostic outcomes for every patient

25. All newborns should receive a metabolic screening before discharge from the neonatal unit. If an infant tests positive in the initial and secondary screenings for a metabolic disorder, a comprehensive diagnostic workup should be initiated by which age?

A. 2 weeks
B. 1 month
C. 3 months
D. 6 months

26. A neonatal infant in the NICU is experiencing hypoglycemia with a blood glucose level of 35 mg/dL. Which of the following methods is the PRIMARY way the body will respond to this condition?

A. Lipolysis and ketogenesis
B. Protein synthesis and glycolysis
C. Glycolysis and fermentation
D. Glycogenolysis and gluconeogenesis

27. In the immediate postnatal period, what is the BEST intervention to prevent hypothermia through conductive heat loss in a neonate?

A. Placing the neonate in an incubator immediately after birth.
B. Placing the neonate skin-to-skin with the mother and covering them with a warm blanket.
C. Drying the infant with prewarmed towels and wrapping them in warm blankets.
D. Ensuring the neonatal intensive care unit (NICU) is properly ventilated and free from drafts.

28. An infant presenting with a port-wine stain on the face may be evaluated for which of the following conditions?

A. Kawasaki disease
B. Patau syndrome
C. Rett syndrome
D. Sturge-Weber syndrome

29. Which of the following statements regarding perinatal asphyxia is ACCURATE?

A. Perinatal asphyxia occurs more frequently in infants with congenital heart defects.
B. Perinatal asphyxia is a condition where the infant's organs receive an excessive amount of oxygen.
C. The clinical history of the mother is key in diagnosing perinatal asphyxia.
D. Perinatal asphyxia can lead to significant neurological and systemic damage.

30. Which factors contribute to the development of neonatal hypoglycemia?

A. High stores of insulin and glucagon
B. Long-term use of antibiotics
C. Low stores of glycogen and glucose
D. Administration of epinephrine (Adrenaline) and norepinephrine (Levophed)

Answer Key & Explanations

1. D — Premature birth
Answer: Premature birth. In neonates, particularly those born prematurely, there is often a deficiency in surfactant production due to immature lungs. Surfactant reduces surface tension in the lungs and is crucial for keeping the alveoli open. Increased oxygen levels and decreased $$CO_{2}$$ levels do not directly reduce surfactant production. Term birth typically indicates adequate surfactant levels.

2. A — An attempt to maintain adequate lung expansion
Answer: An attempt to maintain adequate lung expansion For newborns with TTN, the fluid in the lungs can lead to difficulty in breathing, resulting in reduced lung expansion. Grunting and nasal flaring are mechanisms to create positive end-expiratory pressure (PEEP) to keep alveoli open, while chest retractions indicate the effort needed to breathe effectively. Energy conservation is critical for sick newborns and is often shown by decreased activity. Upper airway resistance is due to nasal or pharyngeal structural factors, and airway obstruction is typically due to mucus or congenital issues, which are not alleviated by grunting or retracting.

3. B — Exogenous Surfactant Therapy
Answer: Exogenous Surfactant Therapy Surfactant is a substance that helps keep the air sacs in the lungs open. It's often deficient in premature infants with RDS. Administering exogenous surfactant improves lung function and reduces the risk of complications and mortality in these infants. Surfactant therapy should be administered early and infants should be continuously monitored for improvements in oxygenation and respiratory effort.

4. C — Provide non-nutritive sucking with sucrose and swaddling during the adjustment of the CPAP interface
Answer: Provide non-nutritive sucking with sucrose and swaddling during the adjustment of the CPAP interface Comfort measures (e.g., non-nutritive sucking, expressed breast milk, sucrose, and swaddling) are recommended during CPAP interface adjustments to provide pain relief and reduce stress responses. Increasing the CPAP pressure without consulting the physician can cause potential harm and is not recommended. Mucus is not miscible with saline solution, so a bolus of saline will not help in this situation. Additionally, bolus saline has no role in adjusting CPAP settings. Turning the infant's head during CPAP adjustment is not advised, as it could occlude the jugular vein, increase intracranial pressure, and pose other risks.

5. A — Oxygen
Answer: Oxygen Oxygen is most commonly administered to newborns experiencing respiratory distress to ensure they receive adequate oxygenation. Similarly to other drugs, it must be treated with caution and given only for specific indications. These include biochemical criteria (e.g., $$PaO_{2}$$ below 60 mm Hg) and clinical criteria such as respiratory distress, central cyanosis, apnea, asphyxia, hypotonia, and low oxygen saturations. While gases like helium, nitrous oxide, and carbon dioxide can have medical uses, they are not commonly used for respiratory distress in newborns.

6. C — Hyponatremia
Answer: Hyponatremia Indomethacin can cause hyponatremia due to its effect on kidney function. It leads to increased sodium and water excretion, resulting in a decrease in serum sodium levels. Indomethacin is often used to close a patent ductus arteriosus and should be used cautiously, especially in newborns with renal impairment.

7. D — Anemia
Answer: Anemia Anemia is the most common hematological disorder in newborns, characterized by a deficiency in the number or quality of red blood cells. This condition is often caused by inadequate iron stores or hemorrhage. Hemophilia is a rare disorder in which blood doesn't clot normally due to lack of sufficient blood-clotting proteins. Thrombocytopenia is characterized by a low platelet count and can be a concern but is not as common as anemia in newborns. Leukemia is a type of cancer of the blood-forming tissues, including the bone marrow and lymphatic system, and is extremely rare in newborns.

8. C — Hyperkalemia
Answer: Hyperkalemia Spironolactone is an aldosterone antagonist diuretic that is used to treat conditions such as edema and heart failure in neonates. It works by blocking aldosterone receptors, which prevents sodium reabsorption but increases potassium retention. Hyponatremia, hypercalcemia, and hypovolemia are potential risks with the chronic use of spironolactone. However, hyperkalemia is a less common risk associated with its use.

9. B — Hyperglycemia
Answer: Hyperglycemia Neonatal congenital hypothyroidism is a condition where the thyroid gland is underactive from birth, leading to a deficiency in thyroid hormones. This condition can impede normal growth and brain development if not treated promptly. Clinical signs include: - Prolonged jaundice - Large fontanelle - Constipation Other typical signs are poor feeding, hypothermia, and a hoarse cry. Hyperglycemia is not a common feature of neonatal congenital hypothyroidism.

10. D — Mother with O-positive blood and infant with B-positive blood
Answer: Mother with O-positive blood and infant with B-positive blood. ABO incompatibility typically occurs when mothers with blood group O (absence of antigen) have infants with blood group A or B. This condition is the most frequent cause of hemolytic disease in newborns after the usage of RhoGAM to prevent Rh incompatibility. Mothers with blood group O have naturally occurring anti-A and anti-B (IgG) antibodies, which lead to neonatal jaundice (hyperbilirubinemia) in a variable and generally milder form compared to Rh incompatibility. Although 15% of all pregnancies involve possible ABO incompatibility, only a subset shows significant hemolysis and hyperbilirubinemia.

11. A — Hydrocolloid dressing
Answer: Hydrocolloid dressing Hydrocolloid dressings are effective for treating skin burn injuries in neonates by keeping the wound moist, promoting new epithelial tissue growth, and protecting the wound from infection and trauma. They help in preventing scarring and are gentle to the delicate neonatal skin due to their water-based composition.

12. B — Group B Streptococcus (GBS)
Answer: Group B Streptococcus (GBS) Neonatal meningitis is a severe infection that affects the membranes covering the brain and spinal cord. Group B Streptococcus (GBS) is the leading cause of neonatal meningitis, followed by Escherichia coli (E. coli). Other less common causes include Listeria monocytogenes and

Enterobacter species. Early recognition and prompt treatment are paramount to avoid long-term neurological complications.

13. A — Higher metabolic rate
Answer: Higher metabolic rate The higher metabolic rate in neonates leads to increased body water content compared to older infants. This metabolic rate affects fluid balance and distribution in the body. Other factors such as organ maturity and body composition also play roles, but the metabolic rate is the primary factor.

14. C — 25
Answer: 25 Recent advances in laboratory technologies and the implementation of specialized tests have enabled the detection of up to 25 congenital renal abnormalities from a single urine sample. Screening for these disorders is crucial in early diagnosis and management of conditions that can affect the renal system, ensuring the health and well-being of newborns.

15. B — PDA is more common in premature infants
Answer: PDA is more common in premature infants. A patent ductus arteriosus (PDA) is a persistent opening between the aorta and the pulmonary artery, a normal fetal blood vessel that usually closes shortly after birth. In premature infants, the ductus arteriosus often remains open (patent) longer than normal, leading to increased blood flow to the lungs and heart. This can cause respiratory and heart complications. PDA occurrence is linked to prematurity, low birth weight, and certain genetic conditions but is less commonly seen in full-term infants.

16. A — Dextrose 10% with electrolytes
Answer: Dextrose 10% with electrolytes Dextrose 10% with electrolytes has been shown to alter electrolyte balance in neonates. This is because of increased permeability and quicker absorption of the fluid components into the bloodstream in preterm infants.

17. C — Ambiguous genitalia
Ambiguous genitalia is a key indicator of potential congenital adrenal hyperplasia (CAH), an endocrine disorder. This condition can lead to an imbalance in the production of hormones, including cortisol and aldosterone. A single umbilical artery can signal renal anomalies rather than endocrine issues. Polyhydramnios is mainly associated with gastrointestinal or esophageal abnormalities. A sacral dimple often correlates with spinal issues rather than an endocrine disorder.

18. B — 40 to 60 mg/dL
The correct answer is 40 to 60 mg/dL. For most healthy term infants, the blood glucose level should be between 40 to 60 mg/dL within the first 24 hours after birth. Blood glucose levels can fluctuate, peaking shortly after birth and then stabilizing within this range.

19. D — Order an abdominal x-ray
Answer: Order an abdominal x-ray It is critical to perform an abdominal x-ray immediately to assess for signs of necrotizing enterocolitis (NEC), a serious intestinal disease that can occur in preterm infants. The symptoms of abdominal distention, bile-stained vomiting, and bloody stools, along with lethargy and bradycardia, are indicative of NEC. Other tests, such as a complete blood count and chemistry panel, are important but would follow the less-invasive imaging to confirm the diagnosis and guide further treatment. Administering parenteral nutrition is ongoing management but does not address the acute need for diagnostic imaging. Ensuring immunizations are up-to-date does not address the immediate clinical concerns.

20. B — Restrict visits to certain hours
Answer: Restrict visits to certain hours Fathers should be welcomed in the NICU at all times. Encouraging 24-hour open unit access for families supports bonding. Restricting access to specific hours can lead to stress, anxiety, and decreased involvement. Facilitating skin-to-skin care, helping during routine procedures, and involving fathers in decision-making are all important ways to support father-infant bonding.

21. C — Evidence-based practice
Answer: Evidence-based practice Evidence-based practice (EBP) is crucial in neonatal nursing as it ensures clinical decisions are made based on the best available, patient-centered, clinically relevant research integrated with clinical expertise. This approach supports the safety and well-being of newborns by integrating the most reliable research with the unique preferences and needs of each patient.

22. C — Paternalism
Answer: Paternalism The ethical principles guiding neonatal clinical nursing practice include: Autonomy: Newborns cannot make decisions for themselves, but healthcare decisions should involve the parents or guardians, ensuring they make an informed choice free of coercion. Beneficence: Actions should be taken in the best interest of the newborn. This means providing the best possible care and treatment to ensure the well-being of the infant. Justice: Providing fair and equitable treatment to all newborns, ensuring that no group of newborns is favored over another in terms of the quality and availability of care. Paternalism involves making decisions for someone without their consent or against their wishes, believing it is for their own good. While this may sometimes be necessary in healthcare, it is not a guiding ethical principle.

23. A — Semi-fowler's position
Answer: Semi-fowler's position Placing the neonate in a semi-fowler's position (head of the bed elevated to 30-45 degrees) while feeding reduces the risk of aspiration. Supine position without elevation, prone, and side-lying positions increase the risk of aspiration and are not recommended during feeding.

24. D — Providing definitive prognostic outcomes for every patient
Answer: Providing definitive prognostic outcomes for every patient Definitive prognostic outcomes cannot always be provided in a neonatal ICU due to the unpredictable and complex nature of neonates' health conditions. Ethical principles help in the decision-making process but do not guarantee outcomes. The other choices represent genuine ethical challenges and considerations in neonatal care.

25. A — 2 weeks
Answer: 2 weeks Metabolic disorders in newborns are rare but can have significant consequences if not treated promptly. Most screening programs recommend that if a newborn tests positive on both the initial and secondary screenings, a comprehensive diagnostic evaluation should be performed by 2 weeks of age. Early identification and intervention can prevent serious health issues or developmental delays.

26. D — Glycogenolysis and gluconeogenesis
Answer: Glycogenolysis and gluconeogenesis Glycogenolysis is the breakdown of glycogen to glucose, providing a rapid increase in blood glucose levels. Gluconeogenesis is the process of synthesizing glucose from non-carbohydrate sources, which helps maintain blood glucose levels over a longer period. In the case of neonatal hypoglycemia, these processes are crucial to restore and maintain normoglycemia.

27. B — Placing the neonate skin-to-skin with the mother and covering them with a warm blanket.
Answer: Placing the neonate skin-to-skin with the mother and covering them with a warm blanket. Conductive heat loss occurs when heat is transferred from the infant’s body to a cooler surface. Placing the neonate

skin-to-skin with the mother and covering them with a warm blanket helps prevent this type of heat loss by utilizing the mother's body warmth as a source of heat. In addition, pre-warming any contact surfaces, such as examination tables and scales, and ensuring medical instruments are warm before touching the infant, are essential measures to reduce conductive heat loss.

28. D — Sturge-Weber syndrome
Answer: Sturge-Weber syndrome A port-wine stain, also known as a nevus flammeus, appearing on the face, particularly in the distribution of the trigeminal nerve, is commonly associated with Sturge-Weber syndrome. This condition is a neurological disorder characterized by abnormal blood vessel growths, which can lead to complications such as seizures, developmental delays, and glaucoma. Sturge-Weber syndrome is a congenital condition often identifiable soon after birth by the presence of these distinctive port-wine stains.

29. D — Perinatal asphyxia can lead to significant neurological and systemic damage.
Answer: Perinatal asphyxia can lead to significant neurological and systemic damage. Perinatal asphyxia is a condition characterized by insufficient oxygen supply to a newborn, which can lead to significant neurological and systemic injuries. Understanding the severity and cause of asphyxia is critical for immediate and effective intervention to prevent long-term damage. Perinatal asphyxia should be managed carefully, addressing both the immediate and potential long-term impacts on the infant.

30. C — Low stores of glycogen and glucose
Answer: Low stores of glycogen and glucose. Hypoglycemia in neonates is often due to insufficient stores of glycogen and glucose. This condition can lead to insufficient energy reserves and result in symptoms like jitteriness, seizures, and even brain damage if untreated.

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