SAUNDERS

9 EDITION

COMPREHENSIVE REVIEW *for the*

NCLEX-RN®

EXAMINATION

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Contents

❑ 4. Late decelerations of the fetal heart rate
❑ 5. Early decelerations of the fetal heart rate

2. A pregnant client is receiving magnesium sulfate for the management of preeclampsia. The nurse determines that the client is experiencing toxicity from the medication if which findings are noted on assessment? **Select all that apply.**
❑ 1. Proteinuria of 3+
❑ 2. Respirations of 10 breaths per minute
❑ 3. Presence of deep tendon reflexes
❑ 4. Urine output of 20 mL in an hour
❑ 5. Serum magnesium level of 4 mEq/L (2 mmol/L)

3. The nurse asks a nursing student to describe the procedure for administering erythromycin ointment to the eyes of a newborn. Which student statement indicates that **further teaching is needed** about administration of the eye medication?
1. "I will flush the eyes after instilling the ointment."
2. "I will clean the newborn's eyes before instilling ointment."
3. "I need to administer the eye ointment within 1 hour after delivery."
4. "I will instill the eye ointment into each of the newborn's conjunctival sacs."

4. A client in preterm labor (31 weeks) who is dilated to 4 cm has been started on magnesium sulfate, and contractions have stopped. If the client's labor can be inhibited for the next 48 hours, the nurse anticipates a prescription for which medication?
1. Nalbuphine
2. Betamethasone
3. Rh_o(D) immune globulin
4. Dinoprostone vaginal insert

5. Methylergonovine is prescribed for a client to treat postpartum hemorrhage. Before administration of methylergonovine, what is the **priority** assessment?
1. Uterine tone
2. Blood pressure
3. Amount of lochia
4. Deep tendon reflexes

6. The nurse is preparing to administer exogenous surfactant to a premature infant who has respiratory distress syndrome. The nurse prepares to administer the medication by which route?
1. Intradermal
2. Intratracheal
3. Subcutaneous
4. Intramuscular

7. An opioid analgesic is administered to a client in labor. The nurse assigned to care for the client ensures that which medication is readily accessible in the event that respiratory depression occurs?
1. Naloxone
2. Morphine sulfate
3. Betamethasone
4. Hydromorphone hydrochloride

8. Rh_o(D) immune globulin is prescribed for a client after delivery, and the nurse provides information to the client about the purpose of the medication. The nurse determines that the client understands the purpose if the client states that it will protect the next baby from which condition?
1. Having Rh-positive blood
2. Developing a rubella infection
3. Developing physiological jaundice
4. Being affected by Rh incompatibility

9. Methylergonovine is prescribed for a client with postpartum hemorrhage. Before administering the medication, the nurse would contact the obstetrician who prescribed the medication if which condition is documented in the client's medical history?
1. Hypotension
2. Hypothyroidism
3. Diabetes mellitus
4. Peripheral vascular disease

10. The nurse is monitoring a client in preterm labor who is receiving intravenous magnesium sulfate. The nurse would monitor for which adverse effects of this medication? **Select all that apply.**
❑ 1. Flushing
❑ 2. Hypertension
❑ 3. Increased urine output
❑ 4. Depressed respirations
❑ 5. Extreme muscle weakness
❑ 6. Hyperactive deep tendon reflexes

between the diagnosis, *respiratory distress syndrome*, and the correct option, *intratracheal*.
Reference: Lowdermilk, D., Perry, S., Cashion, K., Alden, K., & Olshansky, E. (2020). *Maternity & women's health care.* (12th ed.). St. Louis: Elsevier. pp. 739-740.

7. *Answer:* 1
Rationale: Opioid analgesics may be prescribed to relieve moderate to severe pain associated with labor. Opioid toxicity can occur and cause respiratory depression. Naloxone is an opioid antagonist, which reverses the effects of opioids and is given for respiratory depression. Morphine sulfate and hydromorphone hydrochloride are opioid analgesics. Betamethasone is a corticosteroid administered to enhance fetal lung maturity.
Test-Taking Strategy: Focus on the subject, the antidote for respiratory depression. Eliminate options 2 and 4 first because they are comparable or alike and are opioid analgesics. Next, eliminate option 3, knowing that this medication is a corticosteroid.
Reference: Lowdermilk, D., Perry, S., Cashion, K., Alden, K., & Olshansky, E. (2020). *Maternity & women's health care.* (12th ed.). St. Louis: Elsevier. p. 345.

8. *Answer:* 4
Rationale: Rh incompatibility can occur when an Rh-negative birthing parent becomes sensitized to the Rh antigen. Sensitization may develop when an Rh-negative birthing parent becomes pregnant with a fetus that is Rh positive. During pregnancy and at delivery, some of the fetus's Rh-positive blood can enter the client's circulation, causing the client's immune system to form antibodies against Rh-positive blood. Administration of $Rh_o(D)$ immune globulin prevents the client from developing antibodies against Rh-positive blood by providing passive antibody protection against the Rh antigen.
Test-Taking Strategy: Note the subject, the purpose of $Rh_o(D)$ immune globulin. Noting the relationship between the name of the medication, $Rh_o(D)$ immune globulin, and the word *incompatibility* in the correct option will direct you to this option.
Reference: Murray, S., McKinney, E., Holub, K., & Jones, R. (2019). *Foundations of maternal-newborn and women's health nursing.* (7th ed.). St. Louis: Elsevier. pp. 231-232.

9. *Answer:* 4
Rationale: Methylergonovine is an ergot alkaloid used to treat postpartum hemorrhage. Ergot alkaloids are contraindicated in clients with significant cardiovascular disease, peripheral vascular disease, hypertension, preeclampsia, or eclampsia. These conditions are worsened by the vasoconstrictive effects of the ergot alkaloids. Options 1, 2, and 3 are not contraindications related to the use of ergot alkaloids.
Test-Taking Strategy: Focus on the subject, the purpose, action, and contraindications of methylergonovine. Recalling that ergot alkaloids produce vasoconstriction will direct you to the correct option.
Reference: Murray, S., McKinney, E., Holub, K., & Jones, R. (2019). *Foundations of maternal-newborn and women's health nursing.* (7th ed.). St. Louis: Elsevier. p. 498.

10. *Answer:* 1, 4, 5
Rationale: Magnesium sulfate is a central nervous system depressant and relaxes smooth muscle, including the uterus. It is used to halt preterm labor contractions and is used for preeclamptic clients to prevent seizures. Adverse effects include flushing, depressed respirations, depressed deep tendon reflexes, hypotension, extreme muscle weakness, decreased urine output, pulmonary edema, and elevated serum magnesium levels.
Test-Taking Strategy: Focus on the subject, adverse effects of magnesium sulfate. Recalling that this medication is a central nervous system depressant that relaxes smooth muscle will assist you in choosing the correct options.
Reference: Lowdermilk, D., Perry, S., Cashion, K., Alden, K., & Olshansky, E. (2020). *Maternity & women's health care.* (12th ed.). St. Louis: Elsevier. p. 687.

BOX 30.3 Assessment Findings: Scabies

- Pruritic papular rash
- Burrows into the skin (fine grayish red lines that may be difficult to see)

FIG. 30.2 Scabies rash on an infant. (From Calen et al. 1993. Courtesy Dr. Steve Estes.)

9. Anti-itch topical treatment may be necessary, and antibiotics may be prescribed if a secondary infection develops.

V. Burn Injuries (see Clinical Judgment: Take Action Box)

CLINICAL JUDGMENT: TAKE ACTION

A nurse is called to a neighbor's house when the neighbor frantically screams that their toddler climbed on a chair and spilled a bowl of hot soup on their chest. The actions that the nurse would take include the following:

- Protect the child from further harm and stop the burning process.
- Assess for a patent airway.
- Begin resuscitation measures if necessary using CAB—compressions, airway, and breathing.
- Remove burned clothing and other restrictive items if not stuck to the skin.
- Cool the burned area under cool (not cold) running water or apply a clean cool, wet compress until the pain eases.
- Cover the wound with a clean cloth (sterile dressings are used on arrival to the health care facility).
- Keep the child warm.
- Call emergency medical services as soon as possible for transporting the child to the emergency department.

A. Pediatric considerations

1. Very young children who have been burned severely have a higher mortality rate than older children and adults with comparable burns.
2. Lower burn temperatures and shorter exposure to heat can cause a more severe burn in a child than in an adult, because a child's skin is thinner.
3. The degree of pain experienced by the child and the ability to communicate it are different than in an adult with the same exposure.
4. Severely burned children are at increased risk for fluid and heat loss, dehydration, and metabolic acidosis compared with adults.
5. The higher proportion of body fluid to body mass in children increases the risk of cardiovascular problems.
6. Burns involving more than 10% of the total body surface area require some form of fluid resuscitation.
7. Infants and children are at increased risk for protein and calorie deficiency because they have smaller muscle mass and less body fat than adults.
8. Scarring is more severe in a child; disturbed body image is a distinct issue for a child or adolescent, especially as growth continues.
9. An immature immune system presents an increased risk of infection for infants and young children.
10. A delay in growth may occur after a burn.

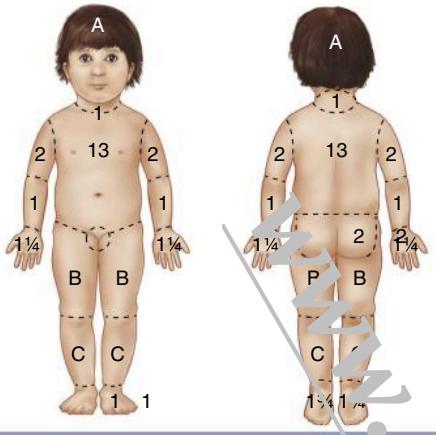
B. Extent of burn injury

1. The rule of nines, used for adults with burn injuries, gives an inaccurate estimate in children because of the difference in body proportions between children and adults.
2. In a pediatric client, the extent of the burn is expressed as a percentage of the total body surface area, using age-related charts (Fig. 30.3).

C. Fluid replacement therapy

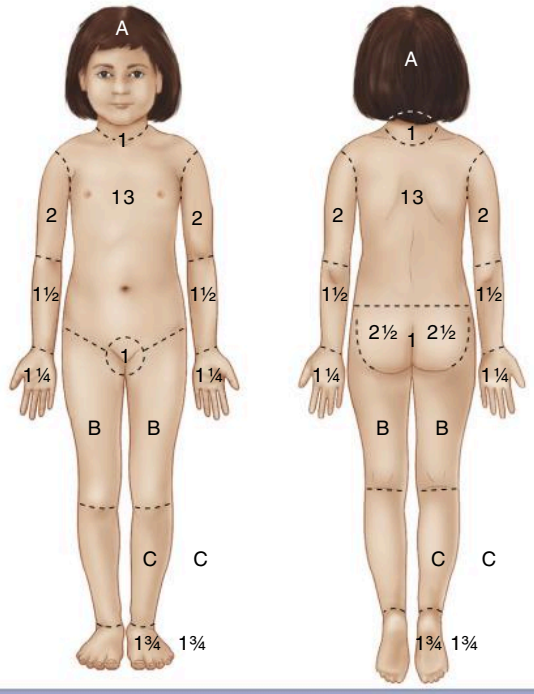
⚠ To determine the adequacy of fluid resuscitation, vital signs (especially heart rate), urine output, adequacy of capillary filling, and sensorium status are assessed.

1. Fluid replacement is necessary during the initial 24-hour period after burn injury because of the fluid shifts that occur as a result of the injury.
2. Several formulas are available to calculate the child's fluid needs, and the formula used depends on the primary health care provider's preference.
3. Crystalloid solutions are likely to be prescribed during the initial phase of therapy; colloid solutions such as albumin, Plasma-Lyte (combined electrolyte solution), or fresh-frozen plasma are useful in maintaining plasma volume.



A

RELATIVE PERCENTAGES OF AREAS AFFECTED BY GROWTH			
AREA	BIRTH	AGE 1 YR	AGE [illegible]
A = ½ of head	9½	8½	6½
B = ½ of one thigh	2¾	3¼	[illegible]
C = ½ of one leg	2½	2½	2¾



B

RELATIVE PERCENTAGES OF AREAS AFFECTED BY GROWTH			
AREA	AGE 10 YR	AGE 15 YR	YOUNG ADULT
A = ½ of head	5½	4½	3½
B = ½ of one thigh	4½	4½	4¾
C = ½ of one leg	3	3¼	3½

FIG. 30.3 Estimation of distribution of burns in chil[illegible] **A,** Children from birth to age 5 years. **B,** Older children.

PRACTICE QUESTIONS

1. The nurse is monitoring a child with burns during treatment. Which assessment provides the **most** accurate guide to determine the adequacy of fluid resuscitation?
1. Skin turgor
2. Level of edema at burn site
3. Adequacy of capillary filling
4. Amount of fluid tolerated in 24 hours

2. The parent of a 3-year-old child arrives at a clinic and tells the nurse that the child has been scratching the skin continuously and has developed a rash. The nurse assesses the child and suspects the presence of scabies. The nurse bases this suspicion on which finding noted on assessment of the child's skin?
1. Fine grayish red lines
2. Purple-colored lesions
3. Thick, honey-colored crusts
4. Clusters of fluid-filled vesicles

3. Permethrin is prescribed for a child with a diagnosis of scabies. The nurse would give which instruction to the parents regarding the use of this treatment?
1. Apply the lotion to areas of the rash only.
2. Apply the lotion and leave it on for 6 hours.
3. Avoid putting clothes on the child over the lotion.
4. Apply the lotion to cool, dry skin at least 30 minutes after bathing.

4. The school nurse has provided an instructional session about impetigo to parents of the children attending the school. Which statement, if made by a parent, indicates a **need for further instruction?**
1. "It is extremely contagious."
2. "It is most common in humid weather."
3. "Lesions most often are located on the arms and chest."
4. "It might show up in an area of broken skin, such as an insect bite."

5. The clinic nurse is reviewing the pediatrician's prescription for a child who has been diagnosed with lice. Lindane shampoo has been prescribed for the child. The nurse questions the prescription if which is noted in the child's record?
1. The child is 18 months old.
2. The child is being bottle-fed.
3. A sibling is using lindane for the treatment of lice.
4. The child has a history of frequent respiratory infections.

CHAPTER 31

Hematological Problems

Contributor: Necole Leland, DNP, RN, PNP, CPN

PRIORITY CONCEPTS Perfusion; Safety

I. Sickle Cell Anemia

A. Description

1. Sickle cell anemia constitutes a group of diseases termed *hemoglobinopathies*, in which hemoglobin A is partly or completely replaced by abnormal sickle hemoglobin S.
2. It is caused by the inheritance of a gene for a structurally abnormal portion of the hemoglobin chain.
3. Risk factors include having parents heterozygous for hemoglobin S or being of African American descent.
4. For screening purposes, the sickle turbidity test (Sickledex) is frequently used because it can be performed on blood from a fingerstick and yields accurate results in 3 minutes. However, if the test result is positive, hemoglobin (Hgb) electrophoresis is necessary to distinguish between children with the trait and those with the disease.
5. Hemoglobin S is sensitive to changes in the oxygen content of the red blood cell.
6. Insufficient oxygen causes the cells to assume a sickle shape, and the cells become rigid and clumped together, obstructing capillary blood flow (Fig. 31.1).
7. The clinical manifestations occur primarily as a result of obstruction caused by sickled red blood cells and increased red blood cell destruction.
8. Situations that precipitate sickling include fever, dehydration, and emotional or physical stress; any condition that increases the need for oxygen or alters the transport of oxygen can result in sickle cell crisis (acute exacerbation).
9. Sickle cell crises are acute exacerbations of the disease, which vary considerably in severity and frequency; these include vaso-occlusive crisis, splenic sequestration, hyperhemolytic crisis, and aplastic crisis.
10. The sickling response is reversible under conditions of adequate oxygenation and hydration; after repeated sickling, the cell becomes permanently sickled.
11. An interprofessional approach to care is needed, and care focuses on the prevention (preventing exposure to infection and maintaining normal hydration) and treatment (hydration, oxygen, pain management, and bed rest) of the crisis.

B. Assessment of the crisis (Box 31.1)

C. Interventions

1. Maintain adequate hydration and blood flow through oral and intravenously (IV) administered fluids. Electrolyte replacement is also provided as needed; without adequate hydration, pain will not be controlled.
2. Administer oxygen and blood transfusions as prescribed to increase tissue perfusion; exchange transfusions, which reduce the number of circulating sickle cells and the risk of complications, may also be prescribed.
3. Administer analgesics as prescribed (around the clock).
4. Assist the child to assume a comfortable position so that the child keeps the extremities extended to promote venous return; elevate the head of the bed no more than 30 degrees, avoid putting strain on painful joints, and do not raise the knee gatch of the bed.
5. Encourage consumption of a high-calorie, high-protein diet, with folic acid supplementation.
6. Administration of hydroxyurea, an antimetabolite, which helps to prevent the formation of

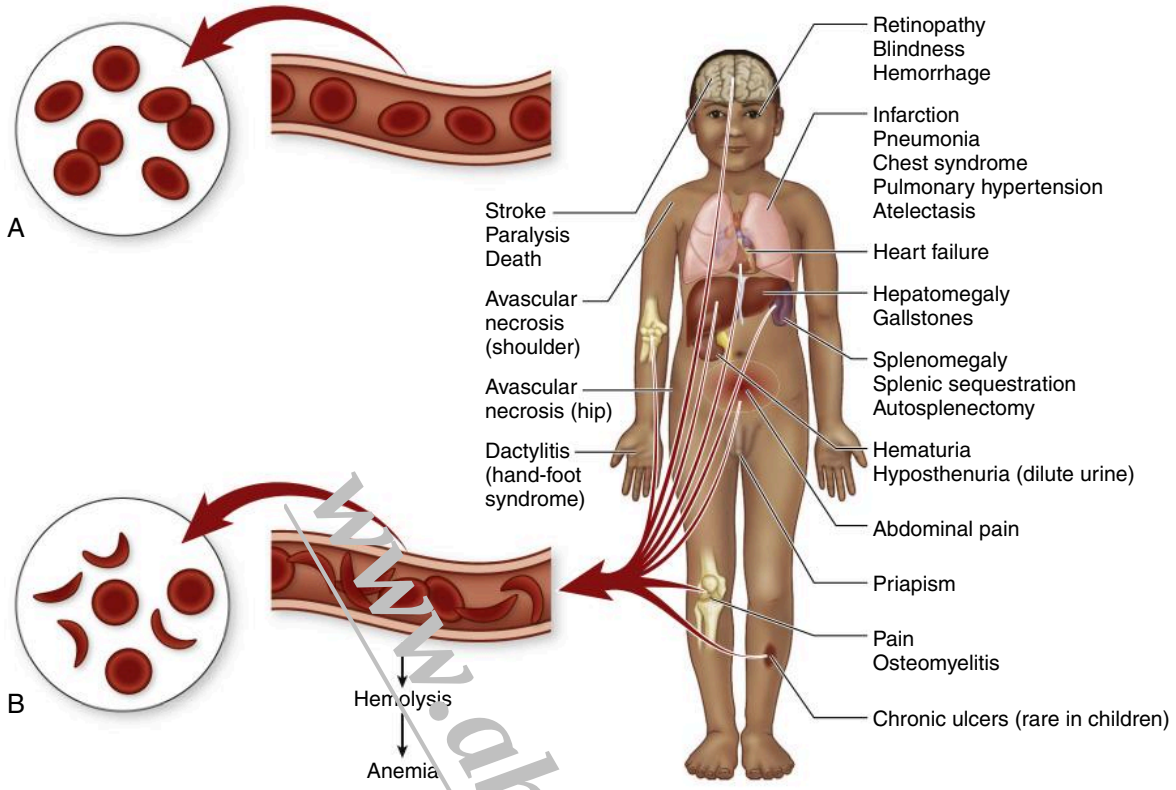


FIG. 31.1 Differences between effects of **(A)** normal red blood cells and **(B)** sickled red blood cells on circulation, with related complications.

BOX 31.1 Sickle Cell Crisis

Vaso-Occlusive Crisis

Caused by stasis of blood with clumping of cells in the microcirculation, ischemia, and infarction

Manifestations: Fever; painful swelling of hands, feet, joints, or affected area; and abdominal pain

Splenic Sequestration

Caused by pooling and clumping of blood in the spleen (hypersplenism)

Manifestations: Profound anemia, hypovolemia, and shock

Hyperhemolytic Crisis

Caused by an accelerated rate of red blood cell destruction over a short time

Manifestations: Anemia, jaundice, and reticulocytosis

Aplastic Crisis

Caused by diminished production and increased destruction of red blood cells, triggered by viral infection or depletion of folic acid

Manifestations: Profound anemia and pallor

sickle-shaped red blood cells and to decrease the incidence of vaso-occlusive events.

7. Administer antibiotics as prescribed to prevent infection.
8. Monitor for signs of complications, including increasing anemia, decreased perfusion, and shock (mental status changes, pallor, vital sign changes).
9. Instruct the child and parents about the early signs and symptoms of crisis and the measures to prevent crisis.
10. Ensure that the child receives pneumococcal and meningococcal **vaccines** and an annual influenza vaccine, because of susceptibility to infection secondary to functional asplenia.
11. A splenectomy may be necessary for clients who experience recurrent splenic sequestration.
12. Inform parents of the **hereditary** aspects of the disorder.

⚠ Administration of meperidine for pain is avoided because of the risk of normeperidine-induced seizures.

II. Hemophilia

A. Description

1. *Hemophilia* refers to a group of bleeding disorders resulting from a deficiency of specific coagulation proteins.
2. Identifying the specific coagulation deficiency is important so that definitive treatment with the specific replacement agent can be implemented; aggressive replacement therapy is initiated to prevent the chronic crippling effects from joint bleeding.
3. The most common types are factor VIII deficiency (hemophilia A or classic hemophilia) and factor IX deficiency (hemophilia B or Christmas disease).