Kevin's Review - 100 NCLEX Practice Questions

1. Before birth, which of the following structures connects the right and left auricles of the heart?

A. Umbilical vein

B. Foramen ovale

C. Ductus arteriosus

D. Ductus venosus

Correct Answer: B. Foramen ovale

The foramen ovale is an opening between the right and left auricles (atria) that should close shortly after birth so the newborn will not have a murmur or mixed-blood traveling through the vascular system.

- **Option A:** The umbilical vein carries oxygenated, nutrient-rich blood from the placenta to the fetus, and the umbilical arteries carry deoxygenated, nutrient-depleted blood from the fetus to the placenta. Any impairment in blood flow within the cord can be a catastrophic event for the fetus.
- **Option C:** At birth, the lungs fill with air with the first breaths, pulmonary vascular resistance drops, and blood flows from the right ventricle to the lungs for oxygenation. The increased arterial oxygen tension and the decreased flow through the ductus arteriosus allow the ductus to constrict.
- **Option D:** In utero, the ductus venosus connects the left portal vein to the inferior vena cava, allowing a portion of the venous blood to bypass the liver and return to the heart. After birth, the ductus venosus generally closes between days of life 2 to 18 in term infants

2. During a nursing immunology class, a seasoned instructor shares a poignant narrative of a 4-year-old child who was found to have a rare congenital immune disorder that impairs his innate immunity. The child suffered from multiple, severe infections since infancy, which were exacerbated by an inability to effectively curtail microbial invasions from common pathogens. The case unfurls a discussion about the pillars of the immune system, focusing on the dichotomy between innate and adaptive immunity. The students are prompted to reflect on the hallmark characteristics of innate immunity, which was compromised in this young patient, and how it fundamentally differs from adaptive immunity. Which statement encapsulates the quintessence of innate immunity?

A. The immunity to a substance is produced only after exposure to that substance and each time the body is exposed to a particular substance, the response is the same.

B. Immunity to a substance is produced only after exposure to that substance.

C. Each time the body is exposed to a particular substance, the response is the different.

D. The ability to recognize and remember a particular substance is important.

Correct Answer: A. The immunity to a substance is produced only after exposure to that substance and each time the body is exposed to a particular substance, the response is the same.
In innate immunity, the immunity to a substance is produced only after exposure to that substance and each time the body is exposed to a particular substance, the response is the same. For example, each time a bacterial cell is introduced into the body, it is phagocytized with the same speed and efficiency.

In adaptive immunity, the response to them improves each time the foreign substance is encountered. The response during the second exposure is faster and stronger than the response to the first exposure because the immune system exhibits memory for the bacteria from the first exposure.

- **Option B:** Innate immunity provides immediate, non-specific defense mechanisms against a wide range of pathogens and does not require prior exposure to a specific substance or pathogen for its functioning.
- **Option C:** Innate immunity provides immediate and consistent responses to pathogens or substances without variation upon repeated exposure. It is characterized by its non-specific nature and the absence of adaptation based on prior encounters with the same threat.
- **Option D:** Innate immunity does not rely on the ability to recognize and remember a particular substance. Instead, it provides immediate, non-specific defense mechanisms against a wide range of pathogens without the need for prior recognition or memory of specific substances.

3. Your patient is complaining of muscle cramps while undergoing hemodialysis. Which intervention is effective in relieving muscle cramps?

A. Increase the rate of dialysis.

B. Infuse normal saline solution.

C. Administer a 5% dextrose solution.

D. Encourage active ROM exercises.

Correct Answer: B. Infuse normal saline solution

Treatment includes administering normal saline or hypertonic normal saline solution because muscle cramps can occur when the sodium and water are removed too quickly during dialysis. Saline and/or dextrose solutions, electrolytes, and NaHCO3 may be infused in the venous side of continuous arteriovenous (CAV) hemofilter when high ultrafiltration rates are used for removal of extracellular fluid and toxic solutes. Volume expanders may be required during or following hemodialysis if sudden or marked hypotension occurs.

- **Option A:** Reducing the rate of dialysis, not increasing it, may alleviate muscle cramps. The central role of volume removal as the trigger for susceptible patients seems evident from the fact that intradialytic cramps are usually associated with hypotension and that prompt correction of hypotension by saline administration and discontinuation of ultrafiltration often improve the cramping.
- **Option C:** Most patients surveyed (76%) reported that fluid removal by dialysis was decreased, was stopped, and/or fluid was given back as the main intervention used to alleviate their cramps. When asked about all interventions to alleviate dialysis cramps, the most frequent response (29%) was a combination of decreasing fluid removal, raising the lower extremities, and massaging the extremities.
- **Option D:** Avoid trauma to shunt. Handle tubing gently, maintain cannula alignment. Limit activity of extremity. Avoid taking BP or drawing blood samples in shunt extremity. Instruct the patient not to sleep on the side with shunt or carry packages, books, purse on affected extremity.

4. A cyanotic client with an unknown diagnosis is admitted to the E.R. In relation to oxygen, the first nursing action would be to:

A. Wait until the client's lab work is done.

B. Not administer oxygen unless ordered by the physician.

C. Administer oxygen at 2 L flow per minute.

D. Administer oxygen at 10 L flow per minute and check the client's nail beds.

Correct Answer: C. Administer oxygen at 2 L flow per minute.

Administer oxygen at 2 L/minute and no more, for if the client is emphysemic and receives too high a level of oxygen, he will develop CO2 narcosis and the respiratory system will cease to function. With prolonged oxygen therapy there is an increase in blood oxygen level, which suppresses peripheral chemoreceptors; depresses ventilator drive and increase in PCO2. high blood oxygen level may also disrupt the ventilation: perfusion balance (V/Q) and cause an increase in dead space to tidal volume ratio and increase in PCO2.

- **Option A:** This is the 'gold standard' monitor of ventilation. Arterial blood gases are needed to obtain accurate data, in particular, evidence of hypoventilation (raised PaCO2) as a reason for hypoxemia. Arterial blood gases may also give an indication of the metabolic effects of clinically important hypoxemia.
- **Option B:** Although history taking and clinical examination may clarify the diagnosis, oxygen at 40%–60% should be continued until blood gas results are available unless the patient is drowsy or is known to have had previous episodes of Hypercapnic respiratory failure.
- **Option D:** Low intravascular volume either due to acute blood loss as in trauma can result in poor oxygen transport and tissue hypoxia. So, these patients should be given high concentration oxygen to maintain oxygen saturation above 90% until arrival at an emergency department. This can be achieved in most cases by the use of approximately 40%–60% oxygen via a medium concentration mask at a flow rate of 4–10 l/ min.

5. The physician has ordered dressings with Sulfamylon cream for a client with full-thickness burns of the hands and arms. Before dressing changes, the nurse should give priority to:

A. Administering pain medication

B. Checking the adequacy of urinary output

C. Requesting a daily complete blood count

D. Obtaining a blood glucose by finger stick

Correct Answer: A. Administering pain medication

- Option A: Sulfamylon produces a painful sensation when applied to the burn wound; therefore, the client should receive pain medication before dressing changes.
- Options B, C, and D: These do not pertain to dressing changes for the client with burns, so they are incorrect.

6. An autoclave is used to sterilize hospital supplies because:

A. More articles can be sterilized at a time.

B. Steam causes less damage to the materials.

C. A lower temperature can be obtained.

D. Pressurized steam penetrates the supplies better.

Correct Answer: D. Pressurized steam penetrates the supplies better.

An autoclave, an apparatus that sterilizes equipment by means of high-temperature pressurized steam, is used because it can destroy all forms of microorganisms, including spores. Autoclaves operate at high temperature and pressure in order to kill microorganisms and spores. They are used to decontaminate certain biological waste and sterilize media, instruments, and labware.

- **Option A:** Autoclaves provide a physical method for disinfection and sterilization. They work with a combination of steam, pressure, and time. Autoclaves operate at high temperature and pressure in order to kill microorganisms and spores. They are used to decontaminate certain biological waste and sterilize media, instruments and lab ware. Regulated medical waste that might contain bacteria, viruses and other biological material are recommended to be inactivated by autoclaving before disposal.
- **Option B:** The rate of exhaust will depend upon the nature of the load. Dry material can be treated in a fast exhaust cycle, while liquids and biological waste require slow exhaust to prevent boiling over of superheated liquids.
- **Option C:** To be effective, the autoclave must reach and maintain a temperature of 121° C for at least 30 minutes by using saturated steam under at least 15 psi of pressure. Increased cycle time may be necessary depending upon the make-up and volume of the load.

7. Nurse Roy is administering total parenteral nutrition (TPN) through a peripheral I.V. line to a school-age child. What is the smallest amount of glucose that is considered safe and not caustic to small veins, while also providing adequate TPN?

A. 5% glucose

B. 10% glucose

C. 15% glucose

D. 17% glucose

Correct Answer: B. 10% glucose

The amount of glucose that's considered safe for peripheral veins while still providing adequate parenteral nutrition is 10%. A dextrose solution of 10% is used initially; if it is tolerated and central access is present, a more concentrated dextrose solution of up to 30 to 35% can be used if needed.

- **Option A:** Five percent glucose isn't sufficient nutritional replacement, although it's safe for peripheral veins. Most patients receive dextrose concentrations of less than 20%. Once the fat and protein calories have been calculated, the balance of calories is provided as intravenous carbohydrate.
- **Option C:** 15% of glucose through the peripheral veins may put the veins at risk for extravasation. Parenteral nutrition solutions are typically given via central venous catheters due to their high osmolarity and risks with extravasation if delivered peripherally. However, central venous lines are not without risk and consequently, infants requiring them are cared for in intensive care settings.
- **Option D:** Any amount above 10% must be administered via central venous access. Hypertonic dextrose solutions (above approximately 600 mOsmol/liter) may cause thrombosis if infused via a

peripheral vein. It is, therefore, advisable to administer such solutions via an intravenous catheter placed in a large central vein, preferably the superior vena cava.

8. The nurse caring for a client with a pneumothorax and who has had a chest tube inserted notes continuous gentle bubbling in the suction control chamber. What action is most appropriate for the nurse?

A. Increase the suction pressure so that the bubbling becomes vigorous.

B. Do nothing since this is an expected finding.

C. Immediately clamp the chest tube and notify the physician.

D. Check for an air leak because the bubbling should be intermittent.

Correct Answer: B. Do nothing since this is an expected finding.

Continuous gentle bubbling should be noted in the suction control chamber. Bubbling should be continuous in the suction control chamber and not intermittent. The water level in the suction chamber should be at the prescribed level and gentle bubbling should be observed. The level may drop due to evaporation or over-vigorous bubbling, if this occurs top fluid level up as per manufacturer's instructions.

- **Option A:** Increasing the suction pressure only increases the rate of evaporation of water in the drainage system. and this is not done without any prescription of the physician. Suction is not always required and may lead to tissue trauma and prolongation of an air leak in some patients.
- **Option C:** Clamping should be done if there is accidental disconnection of the system. Clamp the drain tubing at the patient end. Clean ends of the drain and reconnect. Ensure all connections are cable tied. If a new drainage system is needed, cover the exposed patient end of the drain with sterile dressing while a new drain is set up. Ensure clamp is removed when the problem is resolved.
- **Option D:** Chest tubes should only be clamped to check for an air leak or when changing drainage devices. An air leak will be characterized by intermittent bubbling in the water seal chamber when the patient with a pneumothorax exhales or coughs. Continuous bubbling of this chamber indicates large air leak between the drain and the patient. Check drain for disconnection, dislodgement, and loose connection, and assess patient condition. Notify medical staff immediately if a problem cannot be remedied.

9. A client is admitted to the hospital with a temperature of 99.8°F, complaints of blood-tinged hemoptysis, fatigue, and night sweats. The client's symptoms are consistent with a diagnosis of:

A. Pneumonia

B. Reaction to antiviral medication

C. Tuberculosis

D. Superinfection due to low CD4 count

Correct Answer: C. Tuberculosis

A low-grade temperature, blood-tinged sputum, fatigue, and night sweats are symptoms consistent with tuberculosis. A chronic cough, hemoptysis, weight loss, low-grade fever, and night sweats are some of

the most common physical findings in pulmonary tuberculosis. Secondary tuberculosis differs in clinical presentation from the primary progressive disease. In secondary disease, the tissue reaction and hypersensitivity is more severe, and patients usually form cavities in the upper portion of the lungs.

- **Option A:** If the answer had said pneumocystis pneumonia, it would have been consistent with the symptoms given in the stem, but just saying pneumonia isn't specific enough to diagnose the problem. Tuberculosis (TB) is an ancient human disease caused by Mycobacterium tuberculosis which mainly affects the lungs, making pulmonary disease the most common presentation (K Zaman, 2010). However, TB is a multi-systemic disease with a protean presentation. The organ system most commonly affected include the respiratory system, the gastrointestinal (GI) system, the lymphoreticular system, the skin, the central nervous system, the musculoskeletal system, the reproductive system, and the liver
- **Option B:** M. tuberculosis causes tuberculosis. M. tuberculosis is an alcohol and acid-fast bacillus. It is part of a group of organisms classified as the M. tuberculosis complex. Other members of this group are Mycobacterium africanum, Mycobacterium bovis, and Mycobacterium microti. Most other mycobacteria organisms are classified as non-tuberculous or atypical mycobacterial organisms.
- **Option D:** They are not directly related to the stem. Pulmonary or systemic dissemination of the tubercles may be seen in active disease, and this may manifest as miliary tuberculosis characterized by millet-shaped lesions on chest x-ray. Disseminated tuberculosis may also be seen in the spine, the central nervous system, or the bowel.

10. In a transplant client, the action of cyclosporine is to:

A. Defend the body against foreign antigens.

B. Inhibit T cells in response to antigens.

C. Inhibit B cell immunoglobulin.

D. Intensify the production of T lymphocytes.

Correct Answer: B. Inhibit T cells in response to antigens.

The primary action of cyclosporine is to inhibit T-cell generation in response to transplant antigens. In solid organ transplantation, it has clinical use for the treatment of organ rejection in kidney, liver, and heart allogeneic transplants.

- **Option A:** The mechanism of action of cyclosporine is as a calcineurin inhibitor, a cytochrome P450 3A4 inhibitor, and a P-glycoprotein inhibitor. Cyclosporin A (CsA) inhibits the synthesis of interleukins (IL), including IL-2, which is essential for the self-activation of T lymphocytes (LT) and their differentiation.
- **Option C:** Cyclosporine works to suppress cell-mediated immune reactions. Research has detected no effects on phagocytic function in animals, and it does not cause bone marrow suppression in animal or human models.
- **Option D:** Cyclosporine is effective due to specific and reversible inhibition of immunocompetent lymphocytes in the G0 and G1-phase of the cell cycle. The T-helper cell is the primary target, although it may also suppress T-suppressor cells. The LT-B-lymphocyte (LB) cooperation is essential for activation of LB; the latter also gets inhibited. Research has demonstrated that CsA had an inhibiting effect on CD4+ CD25+ Tregs, which might block the host immune tolerance potentiality.

11. The client with suspected meningitis is admitted to the unit. The doctor is performing an assessment to determine meningeal irritation and spinal nerve root inflammation. A positive Kernig's sign is charted if the nurse notes:

A. Pain on flexion of the hip and knee

B. Nuchal rigidity on flexion of the neck

C. Pain when the head is turned to the left side

D. Dizziness when changing positions

Correct Answer: A. Pain on flexion of the hip and knee

Kernig's sign is positive if pain occurs on flexion of the hip and knee. Kernig's sign is one of the physically demonstrable symptoms of meningitis. Severe stiffness of the hamstrings causes an inability to straighten the leg when the hip is flexed to 90 degrees.

- **Option B:** The Brudzinski reflex is positive if pain occurs on flexion of the head and neck onto the chest. Brudzinski's sign is one of the physically demonstrable symptoms of meningitis. Severe neck stiffness causes a patient's hips and knees to flex when the neck is flexed. Brudzinski's sign is used to diagnose meningitis.
- **Option C:** A tension headache may cause pain on the left side and behind the eyes, and may be linked to stress. Tension headaches account for up to 42 percent of headaches worldwide. They may occur on one side so could be the cause of a headache on the left side.
- **Option D:** Benign paroxysmal positional vertigo (BPPV) is one of the most common causes of vertigo — the sudden sensation that you're spinning or that the inside of your head is spinning. BPPV causes brief episodes of mild to intense dizziness. It is usually triggered by specific changes in the head's position. This might occur when one tips their head up or down, when the client lies down, or when he turns over or sits up in bed.

12. Which of the following factors can cause hepatitis A?

A. Contact with infected blood.

B. Blood transfusions with infected blood.

C. Eating contaminated shellfish.

D. Sexual contact with an infected person.

Correct Answer: C. Eating contaminated shellfish.

Hepatitis A can be caused by consuming contaminated water, milk, or food — especially shellfish from contaminated water. The most common mode of transmission of hepatitis A is via the fecal-oral route from contact with food, water, or objects contaminated by fecal matter from an infected individual. It is more commonly encountered in developing countries where due to poverty and lack of sanitation, there is a higher chance of fecal-oral spread.

- **Option A:** Hepatitis B is caused by blood and sexual contact with an infected person. Transfusion of blood and blood products, injection drug use with shared needles, needlesticks, or wounds caused by other instruments in healthcare workers and hemodialysis are all examples of parenteral and percutaneous exposures, but parenteral mode remains the dominant mode of transmission both globally and in the United States.

- **Option B:** Hepatitis C is usually caused by contact with infected blood, including receiving blood transfusions. Transmission can be parenteral, perinatal, and sexual, with the most common mode being the sharing of contaminated needles among IV drug users. Also, other high-risk groups include people who require frequent blood transfusions and organ transplantation of organs from infected donors.
- **Option D:** Hepatitis B and C can be caused by sexual contact with an infected person. Intravenous drug users, men who have sex with men, healthcare workers with exposure to infected body fluids, patients who require frequent and multiple blood transfusions, people who have multiple sexual partners, prisoners, partners of hepatitis B virus carriers, and persons born in endemic areas are all at high risk for hepatitis B virus infection.

13. Nurse Reese is caring for a client hospitalized with acute exacerbation of chronic obstructive pulmonary disease. Which of the following would the nurse expect to note on assessment of this client?

A. Hypocapnia

B. A hyperinflated chest noted on the chest x-ray.

C. Increased oxygen saturation with exercise.

D. A widened diaphragm noted on the chest x-ray.

Correct Answer: B. A hyperinflated chest noted on the chest x-ray.

Clinical manifestations of chronic obstructive pulmonary disease (COPD) include hypoxemia, hypercapnia, dyspnea on exertion and at rest, oxygen desaturation with exercise, and the use of accessory muscles of respiration. Chest x-rays reveal a hyperinflated chest and a flattened diaphragm if the disease is advanced. Hyperinflation of the lungs is often seen on imaging studies and occurs due to air trapping from airway collapse during exhalation.

- **Option A:** The inability to fully exhale also causes elevations in carbon dioxide (CO2) levels. As the disease progresses, impairment of gas exchange is often seen. The reduction in ventilation or increase in physiologic dead space leads to CO2 retention. Patients may have acute respiratory failure and physical findings of hypoxemia and hypercapnia.
- **Option C:** Acute exacerbations of COPD are common and usually occur due to a trigger (e.g., bacterial or viral pneumonia, environmental irritants). There is an increase in inflammation and air trapping often requiring corticosteroid and bronchodilator treatment. Acute exacerbations of COPD usually present with increased dyspnea, productive cough, and wheezing.
- **Option D:** Radiographic imaging includes a chest x-ray and computed tomography (CT). Chest x-rays may show hyperinflation, flattening of the diaphragm, and increased anterior-posterior diameter. In cases of chronic bronchitis, bronchial wall thickening may be present.

14. A patient is in her last trimester of pregnancy. Nurse Vickie should instruct her to notify her primary health care provider immediately if she notices:

A. Blurred vision

B. Hemorrhoids

C. Increased vaginal mucus

D. Shortness of breath on exertion

Correct Answer: A. Blurred vision

Blurred vision or other visual disturbance, excessive weight gain, edema, and increased blood pressure may signal severe preeclampsia. This condition may lead to eclampsia, which has potentially serious consequences for both the patient and fetus.

- **Option B:** Although hemorrhoids may be a problem during pregnancy, they do not require immediate attention. Hemorrhoids occur when the external hemorrhoidal veins become varicose (enlarged and swollen), which causes itching, burning, painful swellings at the anus, dyschezia (painful bowel movements), and bleeding.
- **Option C:** Almost all women have more vaginal discharge in pregnancy. This is normal, and helps prevent any infections travelling up from the vagina to the womb. Towards the end of pregnancy, the amount of discharge increases further. In the last week or so of pregnancy, it may contain streaks of sticky, jelly-like pink mucus.
- **Option D:** Dyspnea can begin before any upward displacement of the diaphragm, suggesting that factors other than mechanical pressure may be involved. It probably results from the subjective awareness of hyperventilation that is universally present in pregnancy. Hyperventilation in pregnancy is predominantly due to an increase in the depth of the tidal volume, with little change in the respiratory rate

15. A client with irritable bowel syndrome is being prepared for discharge. Which of the following meal plans should the nurse give the client?

A. Low fiber, low-fat

B. High fiber, low-fat

C. Low fiber, high-fat

D. High-fiber, high-fat

Correct Answer: B. High-fiber, low-fat

The client with irritable bowel syndrome needs to be on a diet that contains at least 25 grams of fiber per day. Fatty foods are to be avoided because they may precipitate symptoms. Fiber adds bulk to stools, which helps aid in movement. The average adult should eat 20 to 35 grams of fiber per day. While this seems simple enough, the National Institute of Diabetes and Digestive and Kidney Diseases estimates that most people only eat 5 to 14 grams per day.

- **Option A:** Fiber-rich foods, such as fruits, vegetables, and whole grains, are nutritious and help prevent constipation. However, if you experience bloating from increased fiber intake, try focusing solely on soluble fiber found in fruits and vegetables instead of grains.
- **Option C:** High-fat foods are generally low in fiber, which can be problematic for IBS-related constipation. According to the Cleveland Clinic, fatty foods are particularly bad for people with mixed IBS, which is characterized by a combination of constipation and diarrhea. Embarking on a low-fat diet is good for your heart and may improve uncomfortable bowel symptoms.
- **Option D:** Chronic consumption of high-fat foods is a known contributor to a variety of health issues, such as obesity. However, it can be especially hard on those with IBS by worsening symptoms. Instead of eating fried foods and animal fats, focus on lean meats, fruits, vegetables, grains, and low-fat dairy products.

16. A client with antisocial personality is trying to convince a nurse that he deserves special privileges and that an exception to the rules should be made for him. Which of the following responses is the most appropriate?

A. “I believe we need to sit down and talk about this.”

B. “Don’t you know better than to try to bend the rules?”

C. “What you’re asking me to do is unacceptable.”

D. “Why don’t you bring this request to the community meeting?”

Correct Answer: C. “What you’re asking me to do is unacceptable.”

These clients often try to manipulate the nurse to get special privileges or make exceptions to the rules on their behalf. By informing the client directly when actions are inappropriate, the nurse helps the client learn to control unacceptable behaviors by setting limits. The nurse must be quite clear about establishing the boundaries of the therapeutic relationship to ensure that neither the client’s nor the nurse’s boundaries are violated.

- **Option A:** By sitting down to talk about the request, the nurse is telling the client there’s room for negotiating when there is none. Be aware of flattery as an attempt to feed into your needs to feel special. Giving into the client’s thinking that you are “the best” or “the only one” can pit you against other staff and undermine the client’s need for limits.
- **Option B:** Regardless of the clinical setting, the nurse must provide structure and limit setting in the therapeutic relationship; in a clinic setting, this may mean seeing the client for scheduled appointments of a predetermined length rather than whenever the client appears and demands the nurse’s immediate attention.
- **Option D:** Be clear with the client as to the unit/hospital/clinic policies. Give brief concrete reasons for the rules, if asked, and then move on. Institutional policies provide structure and safety.

17. A client with Guillain-Barré syndrome develops respiratory acidosis as a result of reduced alveolar ventilation. Which combination of arterial blood gas (ABG) values confirms respiratory acidosis?

A. pH, 5.0; PaCO2 30 mm Hg

B. pH, 7.40; PaCO2 35 mm Hg

C. pH, 7.35; PaCO2 40 mm Hg

D. pH, 7.25; PaCO2 50 mm Hg

Correct Answer: D. pH, 7.25; PaCO2 50 mm Hg

In respiratory acidosis, ABG analysis reveals an arterial pH below 7.35 and partial pressure of arterial carbon dioxide (PaCO2) above 45 mm Hg. Therefore, the combination of a pH value of 7.25 and a PaCO2 value of 50 mm Hg confirms respiratory acidosis. The primary disturbance is an elevated arterial partial pressure of carbon dioxide (pCO2) and a decreased ratio of arterial bicarbonate to arterial pCO2, which results in a decrease in the pH of the blood. Options B and C represent normal ABG values, reflecting normal gas exchange in the lungs.

- **Option A:** A pH value of 5.0 with a PaCO2 value of 30 mm Hg indicates respiratory alkalosis. Respiratory alkalosis is 1 of the 4 basic classifications of blood pH imbalances. Normal human physiological pH is 7.35 to 7.45. A decrease in pH below this range is acidosis, an increase above

this range is alkalosis. Respiratory alkalosis is by definition a disease state where the body's pH is elevated to greater than 7.45 secondary to some respiratory or pulmonary process.

- **Option B:** In acute respiratory acidosis, there is a sudden elevation of PCO2 because of failure of ventilation. This may be due to cerebrovascular accidents, use of central nervous system (CNS) depressants such as opioids, or inability to use muscles of respiration because of disorders like myasthenia gravis, muscular dystrophy or Guillain-Barre Syndrome.
- **Option C:** On the contrary, chronic respiratory acidosis may be caused by COPD where there is a decreased responsiveness of the reflexes to states of hypoxia and hypercapnia. Other individuals who develop chronic respiratory acidosis may have fatigue of the diaphragm resulting from a muscular disorder.

18. Norepinephrine (Levophed) is contraindicated in which of the following conditions?

A. Hypovolemic shock.

B. Neurogenic shock.

C. Blood pressures above 80-100 mmHg (systolic).

D. Decreased renal perfusion.

Correct Answer: A. Hypovolemic shock.

Norepinephrine (Levophed) is contraindicated in hypovolemia. Norepinephrine use may be contraindicated to treat hypotension that is likely secondary to cardiogenic mechanisms. Additionally, for hypotension primarily related to hypovolemia, norepinephrine is probably not the best agent. The FDA does state that its use could be a consideration in low volume states, but only as an emergency measure for maintaining coronary or cerebral perfusion pressure while waiting for appropriate volume resuscitation.

- **Option B:** Neurogenic shock is an indication for norepinephrine use. Norepinephrine generally has more predictive pharmacologic properties than other alpha agonists. This predictive quality, in combination with some of its beta-agonism (which improves cardiac function relative to pure alpha agonists), makes norepinephrine a widely used vasoactive agent. It is commonly utilized in intensive care units to treat hypotension secondary to distributive shock.
- **Option C:** Norepinephrine is given to maintain a systolic blood pressure of 80-100 mmHg. Norepinephrine is a sympathomimetic amine derived from tyrosine. It is structurally identical to epinephrine but differs in that it lacks a methyl group on its nitrogen atom. This difference makes it primarily agonistic at alpha1 and beta1 receptors, with little-to-no beta2 or alpha2 activity. At low doses (less than 2 mcg/min), the beta1 effects may be more pronounced and potentially increase cardiac output.
- **Option D:** Decreased renal perfusion is an adverse reaction. The most common adverse effects of norepinephrine relate directly to the activation of alpha1 receptors. That is, excessive vasoconstriction can result in decreased end-organ perfusion, which is primarily caused by infusions of norepinephrine without appropriately treating hypovolemia; this can be detrimental as most patients require infusions of norepinephrine already have poor oxygen delivery or utilization.

19. Robert is diagnosed with varicella. He went to a clinic with a mild fever, loss of appetite, and rashes on the chest area. When he asked about the disease. Which statement describes the contagious stage of varicella?

A. The contagious stage is 1 day before the onset of the rash until all the lesions are crusted.

B. The contagious stage is 1 day before the onset of the rash until the appearance of vesicles.

C. The contagious stage lasts during the vesicular and crusting stages of the lesions.

D. The contagious stage is from the onset of the rash until the rash disappears.

Correct Answer: A. The contagious stage is 1 day before the onset of the rash until all the lesions are crusted.

- Option A: Varicella is a highly contagious disease caused by the varicella-zoster virus. A person is considered to be contagious 24 hours before the onset of the rash and lasts until all the lesions are crusted.

20. For a male client with hyperglycemia, which assessment finding best supports a nursing diagnosis of Deficient Fluid Volume?

A. Cool, clammy skin

B. Distended neck veins

C. Increased urine osmolarity

D. Decreased serum sodium level

Correct Answer: C. Increased urine osmolarity

In hyperglycemia, urine osmolarity (the measurement of dissolved particles in the urine) increases as glucose particles move into the urine. The client experiences glycosuria and polyuria, losing body fluids, and experiencing fluid volume deficit. Cool, clammy skin; distended neck veins; and a decreased serum sodium level are signs of fluid volume excess, the opposite imbalance.

- **Option A:** The physical examination can reveal signs of hypovolemia like hypotension, tachycardia, and dry mucous membranes. When evaluating a patient for hyperglycemia, the focus should be on the patient's cardiorespiratory status, mental status, and volume status.
- **Option B:** Patients with diabetic ketoacidosis may present with nausea, vomiting, and abdominal pain in addition to the above symptoms. They also may have a fruity odor to their breath and have rapid shallow respirations, reflecting compensatory hyperventilation for the acidosis.
- **Option D:** Symptoms of severe hyperglycemia include polyuria, polydipsia, and weight loss. As the patient's blood glucose increases, neurologic symptoms can develop. The patient may experience lethargy, focal neurologic deficits, or altered mental status. The patient can progress to a comatose state.

21. Which information is the most essential in the initial teaching session for the family of a young adult recently diagnosed with schizophrenia?

A. Symptoms of this disease imbalance in the brain.

B. Genetic history is an important factor related to the development of schizophrenia.

C. Schizophrenia is a serious disease affecting every aspect of a person's functioning.

D. The distressing symptoms of this disorder can respond to treatment with medications.

Correct Answer: D. The distressing symptoms of this disorder can respond to treatment with medications.

This statement provides accurate information and an element of hope for the family of a schizophrenic client. For the initial treatment of acute psychosis, it is recommended to commence an oral second-generation antipsychotic (SGA) such as aripiprazole, olanzapine, risperidone, quetiapine, asenapine, lurasidone, sertindole, ziprasidone, brexpiprazole, molindone, iloperidone, etc. Sometimes, if clinically needed, alongside a benzodiazepine such as diazepam, clonazepam, or lorazepam to control behavioral disturbances and non-acute anxiety. First-generation antipsychotics (FGA) like trifluoperazine, Fluphenazine, haloperidol, pimozide, sulpiride, flupentixol, chlorpromazine, etc. are not commonly used as the first line but can be used.

- **Option A:** There are also arguments that schizophrenia is a neurodevelopmental disorder based on abnormalities present in the cerebral structure, an absence of gliosis suggesting in utero changes, and the observation that motor and cognitive impairments in patients precede the illness onset.
- **Option B:** Several studies postulate that the development of schizophrenia results from abnormalities in multiple neurotransmitters, such as dopaminergic, serotonergic, and alpha-adrenergic hyperactivity or glutaminergic and GABA hypoactivity. Genetics also play a fundamental role – there is a 46% concordance rate in monozygotic twins and a 40% risk of developing schizophrenia if both parents are affected. The gene neuregulin (NGR1) which is involved in glutamate signaling and brain development has been implicated, alongside dysbindin (DTNBP1) which helps glutamate release, and catecholamine O-methyltransferase (COMT) polymorphism, which regulates dopamine function.
- **Option C:** Although the remaining statements are true, they do not provide the empathic response the family needs after just learning about the diagnosis. These facts can become part of the ongoing teaching. The first schizophrenic episode usually occurs during early adulthood or late adolescence. Individuals often lack insight at this stage; therefore few will present directly to seek help for their psychotic symptoms. Common presentations include a relative noticing social withdrawal, personality changes, or uncharacteristic behavior; deliberate self-harm or suicide attempts; calling the police to report their delusional symptoms, or referral via the criminal justice system.

22. A nurse is suctioning fluids from a client through an endotracheal tube. During the suctioning procedure, the nurse notes on the monitor that the heart rate decreases. Which of the following is the most appropriate nursing intervention?

A. Continue to suction.

B. Ensure that the suction is limited to 15 seconds.

C. Stop the procedure and reoxygenate the client.

D. Notify the physician immediately.

Correct Answer: C. Stop the procedure and reoxygenated the client

During suctioning, the nurse should monitor the client closely for side effects, including hypoxemia, cardiac irregularities such as a decrease in HR resulting from vagal stimulation, mucosal trauma, hypotension, and paroxysmal coughing. If side effects develop, especially cardiac irregularities, this procedure is stopped and the client is reoxygenated.

- **Option A:** Suction gently and intermittently, use proper catheter size and technique. Clears airway and pool of secretions without injury to the trachea, prolonged suctioning causes vagal stimulation and bradycardia and high pressure may damage the mucosa of the trachea.
- **Option B:** Brief, 10-second suction duration is usually recommended to avoid mucosal damage and prolonged hypoxia. Hypoxia can be profound from occlusion, interruption of oxygen supply, and prolonged suctioning.
- **Option D:** Monitor arterial blood gasses and oxygen saturation. Pulse oximetry is a useful tool to detect early changes in oxygen saturation. Oxygen saturation should be kept at 90% or greater. Increasing PaCo2 and decreasing PaO2 are signs of hypoxemia and respiratory acidosis.

23. A 6-month-old infant is brought to the pediatric clinic by concerned parents for a follow-up visit after being seen in the emergency department for moderate to severe atopic dermatitis. The emergency physician had recommended an over-the-counter (OTC) antihistamine for symptom relief. Since starting the medication, the parents have noticed unusual behavior changes in their child. Prior to medication, the infant was experiencing significant itching and discomfort, with frequent crying and difficulty sleeping. The prescribed medication was intended to alleviate these symptoms. However, the parents report that, instead of becoming more sedate and comfortable, the infant has become unusually irritable, with increased crying, less sleep than usual, and appears to be more agitated. Considering the infant's age and the type of medication used, which of the following side effects is the infant most likely experiencing from the first-generation OTC antihistamine, such as diphenhydramine (Benadryl) or hydroxyzine (Atarax)?

A. Reye's syndrome

B. Cholinergic effects

C. Paradoxical CNS stimulation

D. Nausea and diarrhea

Correct Answer: C. Paradoxical CNS stimulation.

Typically, first-generation OTC antihistamines have a sedating effect because of passage into the CNS. However, in some individuals, especially infants and children, paradoxical CNS stimulation occurs and is manifested by excitement, euphoria, restlessness, and confusion. For this reason, use of first generation OTC antihistamines has declined, and second generation product usage has increased.

- **Option B:** First generation OTC antihistamines do not exhibit a cholinergic effect. Although fexofenadine is devoid of CNS effects, many other second-generation H1-antihistamines still penetrate the brain to a small extent where they have the potential to cause some degree of drowsiness or somnolence, particularly when used in higher doses. For example, PET scanning of the human brain has shown that a single oral dose of 10 mg and 20 mg cetirizine caused 12.5% and 25.2% occupancy of the H1-receptors in prefrontal and cingulate cortices, respectively.
- **Option D:** Nausea and diarrhea are uncommon when first generation OTC antihistamines are taken. With regard to second-generation H1-antihistamines, there are many efficacious and safe drugs on the market for the treatment of allergic disease. Of the three drugs highlighted in this review, levocetirizine and fexofenadine are the most potent in humans in vivo. However, levocetirizine may cause somnolence in susceptible individuals, whereas fexofenadine has a

relatively short duration of action and may be required to be given twice daily for all-round daily protection. Although desloratadine is less potent, it has the advantage of rarely causing somnolence and having a long duration of action.

24. Which method would a nurse use to determine a client's potential risk for suicide?

A. Wait for the client to bring up the subject of suicide.

B. Observe the client's behavior for cues of suicide ideation.

C. Question the client directly about suicidal thoughts.

D. Question the client about future plans.

Correct Answer: C. Question the client directly about suicidal thoughts.

Directly questioning a client about suicide is important to determine suicide risk. A host of thoughts and behaviors are associated with self-destructive acts. Although many assume that people who talk about suicide will not follow through with it, the opposite is true; a threat of suicide can lead to the completed act, and suicidal ideation is highly correlated with suicidal behaviors. A clear and complete evaluation and clinical interview provide the information upon which to base a suicide intervention. Although risk factors offer major indications of the suicide danger, nothing can substitute for a focused patient inquiry. However, although all the answers a patient gives may be inclusive, a therapist often develops a visceral sense that his or her patient is going to commit suicide. The clinician's reaction counts and should be considered in the intervention.

- **Option A:** The client may not bring up this subject for several reasons, including guilt regarding suicide, wishing not to be discovered, and his lack of trust in staff. Determine whether the person has any thoughts of hurting him or herself. Suicidal ideation is highly linked to completed suicide. Some inexperienced clinicians have difficulty asking this question. They fear the inquiry may be too intrusive or that they may provide the person with an idea of suicide. In reality, patients appreciate the question as evidence of the clinician's concern. A positive response requires further inquiry.
- **Option B:** Behavioral cues are important, but direct questioning is essential to determine suicide risk. If suicidal ideation is present, the next question must be about any plans for suicidal acts. The general formula is that more specific plans indicate greater danger. Although vague threats, such as a threat to commit suicide sometime in the future, are the reason for concern, responses indicating that the person has purchased a gun, has ammunition, has made out a will, and plans to use the gun are more dangerous. The plan demands further questions. If the person envisions a gun-related death, determine whether he or she has the weapon or access to it.
- **Option D:** Indirect questions convey to the client that the nurse is not comfortable with the subject of suicide and, therefore, the client may be reluctant to discuss the topic. Determine what the patient believes his or her suicide would achieve. This suggests how seriously the person has been considering suicide and the reason for death. For example, some believe that their suicide would provide a way for family or friends to realize their emotional distress. Others see their death as a relief from their own psychic pain. Still others believe that their death would provide a heavenly reunion with a departed loved one. In any scenario, the clinician has another gauge of the seriousness of the planning.

25. A priority nursing diagnosis for the client who is being discharged home 3 days after a TURP would be:

A. Deficient fluid volume

B. Imbalanced Nutrition: Less than Body Requirements

C. Impaired Tissue Integrity

D. Ineffective Airway Clearance

Correct Answer: A. Deficient fluid volume

Deficient Fluid Volume is a priority diagnosis because the client needs to drink a large amount of fluid to keep the urine clear. The urine should be almost without color. About two (2) weeks after a TURP, when desiccated tissue is sloughed out, a secondary hemorrhage could occur. The client should be instructed to call the surgeon or go to the ED if at any time the urine turns bright red.

- **Option B:** The client is not specifically at risk for nutritional problems after a TURP. Encourage fluid intake to 3000 mL as tolerated. Limit fluids in the evening, once the catheter is removed. Maintains adequate hydration and renal perfusion for urinary flow. Reducing fluid intake at the right schedule decreases the need to void and interrupt sleep during the night.
- **Option C:** The client is not specifically at risk for impaired tissue integrity because there is no external incision. Maintain a sterile catheter system. Provide regular catheter and meatal care with soap and water. Apply antibiotic ointment around the catheter site. Measures to prevent the introduction of bacteria that may cause infection or sepsis.
- **Option D:** The client is not specifically at risk for airway problems because the procedure is done after spinal anesthesia. Monitor vital signs, noting low-grade fever, chills, rapid pulse and respiration, restlessness, irritability, disorientation. Patient who has had a cystoscopy and/or TURP is at increased risk for surgical or septic shock related to manipulation and instrumentation.

26. Spina bifida is one of the possible neural tube defects that can occur during early embryological development. Which of the following definitions most accurately describes meningocele?

A. Complete exposure of spinal cord and meninges

B. Herniation of the spinal cord and meninges into a sac

C. Sac formation containing meninges and spinal fluid

D. Spinal cord tumor containing nerve roots

Correct Answer: C. Sac formation containing meninges and spinal fluid.

Meningocele is a sac formation containing meninges and cerebrospinal fluid (CSF). Meningocele is the simplest form of open neural tube defects characterized by cystic dilatation of meninges containing cerebrospinal fluid without any neural tissue. A complex meningocele is associated with other spinal anomalies. Meningocele is a typically asymptomatic spinal anomaly and is not associated with acute neurologic conditions.

- **Option A:** Meningocele doesn’t involve complete exposure of the spinal cord and meninges; this is a massive defect that’s incompatible with life. A simple meningocele composed of meninges and CSF protruded into the subcutaneous tissue through a spinal defect. Skin overlying meningoceles are usually intact.
- **Option B:** Myelomeningocele is a herniation of the spinal cord, meninges, and CSF into a sac that protrudes through a defect in the vertebral arch. Myelomeningocele is the most common open neural tube defect. It is characterized by failure of the neural tube to close in the lumbosacral region

during embryonic development (fourth-week post-fertilization), leading to the herniation of the meninges and spinal cord through a vertebral defect.

- **Option D:** Tumor formation is not associated with this defect. Meningocele presents as a swelling over the back covered with skin, present at birth. Defects can present at thoracolumbar, lumbosacral, lumbar, thoracic, sacral, and cervical regions. Neurological involvement and deficits are rare in meningocele.

27. The nurse is caring for a severely depressed client who has just been admitted to the in-client psychiatric unit. Which of the following is a priority of care?

A. Nutrition

B. Elimination

C. Rest

D. Safety

Correct Answer: D. Safety

Safety is a priority of care for the depressed client. Precautions to prevent suicide must be a part of the plan. Identify the level of suicide precautions needed. If there is a high-risk, does a hospitalization require it? Or if there is a low risk, will the client be safe to go home with supervision from a family member or a friend? A client with a high-risk will require constant supervision and a safe environment.

- **Option A:** Encourage small, high-calorie, and high-protein snacks and fluids frequently throughout the day and evening if weight loss is noted. Minimize weight loss, constipation, and dehydration. Encourage eating with others. Increases socialization, decreases focus on the food. Weight the client weekly and observe the eating patterns of the client. Give the information needed for revising the intervention.
- **Option B:** Monitor intake and output, especially bowel movements. Most of the depressed clients are constipated. If this problem is not addressed, it can lead to fecal impaction. Encourage the intake of nonalcoholic and non-caffeinated fluids, 6 to 8 glasses a day. Fluids can help prevent constipation. Offer fiber-rich foods and periods of exercise. Roughage and exercise stimulate peristalsis and help evacuation of fecal material.
- **Option C:** Provide rest periods after activities. Fatigue can intensify feelings of depression. Encourage relaxation measures in the evening (e.g., drinking warm milk, back rub, or tepid bath). These measures induce sleep and relaxation. Encourage the client to get up and dress and to stay out of bed during the day. Minimizing sleep during the day increases the likelihood of sleep at night. Reduce environmental and physical stimulants in the evening; Provide decaffeinated coffee, soft music, soft lights, and quiet activities.

28. The nursing diagnosis that would be most appropriate for a 22-year old client who uses ritualistic behavior would be:

A. Ineffective coping

B. Impaired adjustment

C. Personal identity disturbance

D. Sensory/perceptual alterations

Correct Answer: A. Ineffective coping

Ineffective coping is the impairment of a person's adaptive behaviors and problem-solving abilities in meeting life's demands; ritualistic behavior fits under this category as a defining characteristic. During the beginning of treatment, allow plenty of time for rituals. Do not be judgmental or verbalize disapproval of the behavior. To deny the client this activity can precipitate panic level of anxiety.

- **Option B:** Gradually limit the amount of time allotted for ritualistic behavior as the client becomes more involved in unit activities. Anxiety is minimized when the client is able to replace ritualistic behaviors with more adaptive ones. Encourage independence and give positive reinforcement for independent behaviors. Positive reinforcement enhances self-esteem and encourages repetition of desired behaviors.
- **Option C:** Personal identity disturbance is not a priority diagnosis for the client. Assess client's level of anxiety. Investigate the types of situations that increase anxiety and result in ritualistic behaviors. Helping the client recognize the precipitating factors is the first step in teaching the client to interrupt the escalating anxiety. Initially meet the client's dependency needs as necessary. Sudden and complete elimination of avenues for dependency would create anxiety and will burden the client more.
- **Option D:** This nursing diagnosis is appropriate, but it is not the priority. Encourage the recognition of situations that provoke obsessive thoughts or ritualistic behaviors. Recognition of precipitating factors is the first step in teaching the client to interrupt escalation of anxiety. Provide positive reinforcement for non-ritualistic behaviors. Positive reinforcement enhances self-esteem and encourages repetition of desired behaviors.

29. A client is scheduled for an Intravenous Pyelogram (IVP). In order to prepare the client for this test, the nurse would:

A. Instruct the client to maintain a regular diet the day prior to the examination.

B. Restrict the client's fluid intake 4 hours prior to the examination.

C. Administer a laxative to the client the evening before the examination.

D. Inform the client that only 1 x-ray of his abdomen is necessary.

Correct Answer: C. Administer a laxative to the client the evening before the examination

Bowel prep is important because it will allow greater visualization of the bladder and ureters. Intravenous pyelogram (IVP) is an x-ray exam that uses an injection of contrast material to evaluate the kidneys, ureters, and bladder and help diagnose blood in the urine or pain in the side or lower back. An IVP may provide enough information to allow the doctor to treat with medication and avoid surgery.

- **Option A:** Eating and drinking the night before the exam should be avoided.
- **Option B:** Restriction of fluids on the night before the exam should be emphasized.
- **Option D:** An intravenous pyelogram is an x-ray of the kidneys, ureters, and urinary bladder that uses iodinated contrast material injected into veins.

30. According to the National Diabetes Statistics Report, diabetes remains one of the leading causes of death in the United States since 2010. Which of the following factors are risks for the development of diabetes mellitus? Select all that apply.

A. Age over 45 years

B. Overweight with a waist/hip ratio >1

C. Having a consistent HDL level above 40 mg/dl

D. Maintaining a sedentary lifestyle

E. Polycystic ovary syndrome

Correct Answer: A, B, D, & E.

Diabetes mellitus (DM) is a metabolic disease, involving inappropriately elevated blood glucose levels. The main subtypes of DM are Type 1 diabetes mellitus (T1DM) and Type 2 diabetes mellitus (T2DM), which classically result from defective insulin secretion (T1DM) and/or action (T2DM).

- **Option A:** Aging results in a reduced ability of beta cells to respond with insulin effectively. More than 25% of the U.S. population aged ?65 years has diabetes, and the aging of the overall population is a significant driver of the diabetes epidemic.
- **Option B:** Overweight with waist/hip ratio increase is part of the metabolic syndrome of DM II. T2DM involves a more insidious onset where an imbalance between insulin levels and insulin sensitivity causes a functional deficit of insulin. Insulin resistance is multifactorial but commonly develops from obesity and aging.
- **Option C:** The NCEP ATP III guidelines indicate that the ideal HDL levels should be between 40 and 60 mg/dL. The primary function of HDL is the transport of cholesterol from the peripheral tissues to the liver, playing a role in the biodistribution of lipids. HDL is known for its anti-atherogenic and anti-inflammatory properties, thanks to its uptake and return of the cholesterol stored in the foam cells of atherosclerotic plaques to the liver.
- **Option D:** There is an increase in atherosclerosis with DM due to metabolic syndrome and a sedentary lifestyle. Relatively high amounts of sedentary time (daily/weekly sitting time) have been associated with significantly greater risk for type 2 diabetes and metabolic syndrome in two meta-analyses.
- **Option E:** For women, having polycystic ovary syndrome — a common condition characterized by irregular menstrual periods, excess hair growth, and obesity — increases the risk of diabetes.

31. A male adult client is suspected of having a pulmonary embolism. A nurse assesses the client, knowing that which of the following is a common clinical manifestation of pulmonary embolism?

A. Dyspnea

B. Bradypnea

C. Bradycardia

D. Decreased respirations

Correct Answer: A. Dyspnea

The common clinical manifestations of pulmonary embolism are tachypnea, tachycardia, dyspnea, and chest pain. PE leads to impaired gas exchange due to obstruction of the pulmonary vascular bed leading to a mismatch in the ventilation to perfusion ratio because alveolar ventilation remains the same, but pulmonary capillary blood flow decreases, effectively leading to dead space ventilation and hypoxemia.

- **Option B:** The most common symptoms of PE include the following: dyspnea, pleuritic chest pain, cough, hemoptysis, presyncope, or syncope. Dyspnea may be acute and severe in central PE, whereas it is often mild and transient in small peripheral PE.
- **Option C:** If a patient with PE who has tachycardia on presentation develops sudden bradycardia or develops a new broad complex tachycardia (with right bundle branch block), providers should look for signs of right ventricular strain and possible impending shock.
- **Option D:** On examination, patients with PE might have tachypnea and tachycardia, which are common but nonspecific findings. Other examination findings include calf swelling, tenderness, erythema, palpable cords, pedal edema, rales, decreased breath sounds, signs of pulmonary hypertension such as elevated neck veins, loud P2 component of second heart sound, a right-sided gallop, and a right ventricular parasternal lift might be present on examination.

32. The nurse is giving medication teachings to a client receiving theophylline. The nurse instructed the client to limit the intake of which of the following?

A. Apple and banana

B. Yogurt and cheese

C. Tuna and oysters

D. Cola and chocolate

Correct Answer: D. Cola and chocolate

Theophylline is a methylxanthine bronchodilator. The nurse instructs the client to limit the intake of xanthine-containing foods such as chocolate, cola, and coffee.

- **Options A, B, & C:** These food items can be eaten by a client taking theophylline.

33. Drugs that lower intraocular pressure work by increasing:

A. The flow of aqueous humor through the anterior chamber.

B. Fluid volume in the eye's anterior chamber.

C. Pressure in the eye chambers.

D. Diameter of the eye chambers.

Correct Answer: A. The flow of aqueous humor through the anterior chamber.

Drugs that lower intraocular pressure increases the flow of aqueous humor through the eye’s anterior chamber. The goal of glaucoma treatment is to improve quality of life through the reduction of IOP to preserve visual function. In the process of IOP reduction, an ideal medication should have a schedule that is simple to follow, be least interrupting with a patient’s life, highly tolerable, and affordable.

- **Option B:** The primary mechanism of action of prostaglandins is believed to reduce IOP by increasing uveoscleral outflow. This is in contrast to other classes of antiglaucoma medications, which act by increasing aqueous humor outflow via the trabecular meshwork or by inhibiting aqueous production.
- **Option C:** There is some evidence suggesting that long-term therapy with bimatoprost increases both pressure-dependent trabecular outflow and pressure-independent uveoscleral outflow via remodeling of extracellular matrix in the trabecular meshwork and ciliary muscle, respectively.

- **Option D:** Systemic adverse events reported after treatment with bimatoprost 0.03% have included colds and upper respiratory tract infections occurring in approximately 10% of patients, and headaches, abnormal liver function tests, asthenia, and hirsutism. Bimatoprost 0.03% did not have any clinically significant effect on heart rate or blood pressure in patients with glaucoma or ocular hypertension in clinical trials.

34. Nurse Benjamin, who works at Little Stars Pediatric Hospital, has been assigned to care for 4-year-old Mia. Mia has been admitted for a corrective surgery related to her cleft palate. While reviewing Mia's medical history, Nurse Benjamin observes that Mia has had multiple instances of otitis media in the past year. Remembering his pediatric nursing training and understanding the interrelation between cleft palate and otitis media, Nurse Benjamin anticipates the potential reasons behind Mia's recurrent ear infections. He is preparing to discuss these with Mia's parents, to help them understand the risks and possible preventative measures. When assessing a child like Mia with a cleft palate, the nurse understands that the child is at risk for more frequent episodes of otitis media due to which of the following reasons?

A. Lowered resistance from malnutrition.

B. Ineffective functioning of the Eustachian tubes.

C. Plugging of the Eustachian tubes with food particles.

D. Associated congenital defects of the middle ear.

E. Nasal congestion leading to impaired drainage.

F. Chronic exposure to upper respiratory tract infections.

Correct Answer: B. Ineffective functioning of the Eustachian tubes.
Children with cleft palate often have altered muscle function which affects the Eustachian tube function. This can result in poor drainage of fluid from the middle ear, increasing the risk of otitis media. Understanding the link between cleft palate and ineffective functioning of the Eustachian tubes will help Nurse Benjamin educate Mia's parents about her increased risk and discuss preventative measures to reduce future occurrences.

- **Option A:** While children with cleft palate can face feeding difficulties which may lead to malnutrition, it isn't the direct cause of increased otitis media in these children.
- **Option C:** Food particles don't typically enter the Eustachian tubes. However, children with cleft palate are at risk of aspirating food into the airways, not the ears.
- **Option D:** Some children with cleft palate may have associated middle ear defects, but this isn't the primary reason for the increased risk of otitis media in most children with cleft palate.
- **Option E:** While nasal congestion can contribute to otitis media, it's not directly related to the presence of a cleft palate.
- **Option F:** Children with frequent respiratory infections can have an increased risk of otitis media, but this is not a direct correlation with having a cleft palate.

35. A group of nursing students at Nurseslabs University is currently learning about family violence. Which of the following is true about the topic mentioned?

A. Family violence affects every socioeconomic level.

B. Family violence is caused by drugs and alcohol abuse.

C. Family violence predominantly occurs in lower socioeconomic levels.

D. Family violence rarely occurs during pregnancy.

Correct Answer: A. Family violence affects every socioeconomic level.

Family violence occurs in all socioeconomic levels, races, religions, and cultural groups. Family and domestic violence (including child abuse, intimate partner abuse, and elder abuse) is a common problem in the United States. Family and domestic health violence are estimated to affect 10 million people in the United States every year. It is a national public health problem, and virtually all healthcare professionals will at some point evaluate or treat a patient who is a victim of some form of domestic or family violence.

- **Option B:** Although violence is associated with substance abuse, it is not the singular cause. The types of violence include stalking, economic, emotional or psychological, sexual, neglect, Munchausen by proxy, and physical. Domestic and family violence occurs in all races, ages, and sexes. It knows no cultural, socioeconomic, education, religious, or geographic limitation. It may occur in individuals with different sexual orientations.
- **Option C:** The statement that the family violence predominantly occurs in lower socioeconomic levels is false. Domestic and family violence has no boundaries. This violence occurs in intimate relationships regardless of culture, race, religion, or socioeconomic status. All healthcare professionals must understand that domestic violence, whether in the form of emotional, psychological, sexual, or physical violence, is common in our society and should develop the ability to recognize it and make the appropriate referral.
- **Option D:** Abuse often occurs during pregnancy; about 23% of all pregnant women seeking prenatal care are victims of abuse. Females who witness domestic violence as children are more likely to be victimized by their spouses. While females are often the victim of domestic violence, gender roles can be reversed. Domestic violence affects approximately 325,000 pregnant women each year. The average reported prevalence during pregnancy is approximately 30% emotional abuse, 15% physical abuse, and 8% sexual abuse.

36. Mr. Sharma, a 65-year-old software engineer, has been struggling with severe osteoarthritis in his right hip for the past ten years. Given the progressive nature of his pain and functional decline, and after exploring various conservative treatment options, it has been decided that he undergoes a right hip joint arthroplasty. As the surgery date approaches, Mr. Sharma expresses apprehension about the surgical procedure and postoperative period, especially in relation to mobility and pain management. Taking into consideration his specific concerns and the standard preoperative protocol for joint arthroplasty, which interventions should the nurse prioritize in the immediate preoperative period? Select all that apply.

A. Teaching deep breathing and coughing exercises

B. Administering prophylactic antibiotics as prescribed

C. Educating the patient on postoperative pain management strategies

D. Assisting with preoperative skin preparation

E. Instructing the patient on the use of continuous passive motion (CPM) machine

Correct Answers: A, B, C, and D.

Prophylactic antibiotics are given preoperatively to prevent infection. Educating the patient on postoperative pain management helps them prepare for pain control after surgery. Preoperative skin preparation reduces the risk of surgical site infection.

- **Option A:** These exercises are essential to prevent atelectasis (collapse of air sacs in the lungs) and pneumonia, common postoperative complications, especially in patients who are immobilized after surgery. By expanding the lungs and clearing secretions, the risk of these complications is reduced.
- **Option B:** Prophylactic antibiotics, usually given within an hour before surgical incision, can significantly reduce the risk of postoperative joint infections. These infections can be devastating and may require removal of the prosthetic joint if they occur.
- **Option C:** Effective pain management is crucial for early mobilization and rehabilitation after joint arthroplasty. By understanding his pain management options, Mr. Sharma can communicate his needs and concerns more effectively, leading to better pain control.
- **Option D:** Proper skin preparation, including cleaning and potentially shaving the surgical site, reduces the risk of introducing skin flora into the surgical wound, which can lead to infections.
- **Option E:** While CPM machines can be beneficial postoperatively for some joint surgeries, especially knee replacements, to promote joint mobility and decrease stiffness, it's not a standard preoperative intervention. Typically, instruction on the use of a CPM machine would be done postoperatively. Furthermore, CPM machines are not routinely used for hip arthroplasty patients.

37. During the admission assessment on a client with chronic bilateral glaucoma, which statement by the client would the nurse anticipate since it is associated with this problem?

A. "I have constant blurred vision."

B. "I can't see on my left side."

C. "I have to turn my head to see my room."

D. "I have specks floating in my eyes."

Correct Answer: C. "I have to turn my head to see my room."

Intraocular pressure becomes elevated which slowly produces a progressive loss of the peripheral visual field in the affected eye along with rainbow halos around lights. Intraocular pressure becomes elevated from the microscopic obstruction of the trabecular meshwork. If left untreated or undetected blindness results in the affected eye.

- **Option A:** Central vision is one of the most common signs of glaucoma. The fluid inside the eye, called aqueous humor, usually flows out of the eye through a mesh-like channel. If this channel gets blocked, the liquid builds up. Sometimes, experts don't know what causes this blockage. But it can be inherited, meaning it's passed from parents to children.
- **Option B:** The peripheral field of vision is most often lost in a client with glaucoma. The increased pressure in the eye, called intraocular pressure, can damage the optic nerve, which sends images to the brain. If the damage worsens, glaucoma can cause permanent vision loss or even total

blindness within a few years.

- **Option D:** Patchy blind spots in the peripheral or central vision of both eyes is a symptom of open-angle glaucoma. It is caused by the drainage channels in the eye becoming gradually clogged over time.

38. A nurse is planning care for a client with hyperthyroidism. Which nursing interventions are appropriate? Select all that apply.

A. Instill isotonic eyedrops as necessary.

B. Provide several small, well-balanced meals.

C. Provide rest periods.

D. Keep the environment warm.

E. Encourage frequent visitors and conversation.

F. Weigh the client daily.

Correct Answer: A, B, C, & F.

Hyperthyroidism may manifest as weight loss despite an increased appetite, palpitation, nervousness, tremors, dyspnea, fatigability, diarrhea or increased GI motility, muscle weakness, heat intolerance, and diaphoresis. A patient with hyperthyroidism classically presents with signs and symptoms that reflect this state of increased metabolic activity.

- **Option A:** If the client has exophthalmos (a sign of hyperthyroidism), the conjunctivae should be moistened often with isotonic eye drops. This protects the exposed cornea if the patient is unable to close eyelids completely because of edema or fibrosis of fat pads and/or exophthalmos.
- **Option B:** Hyperthyroidism results in increased appetite, which can be satisfied by frequent, small, well-balanced meals. Encourage the client to eat and increase the number of meals and snacks. Give or suggest high-calorie foods that are easily digested.
- **Option C:** The nurse should provide the client with rest periods to reduce metabolic demands. The client should be weighed daily to check for weight loss, a possible consequence of hyperthyroidism.
- **Option D:** Because metabolism is increased in hyperthyroidism, heat intolerance may result. Therefore, the nurse should provide a cool environment, not a warm one, to promote client comfort.
- **Option E:** Because metabolism is increased in hyperthyroidism, excitability may result. The nurse should provide a quiet environment, not a busy one. Provide for a quiet environment; cool room, decreased sensory stimuli, soothing colors, quiet music.

39. A client is diagnosed with breast cancer. The tumor size is up to 5 cm with axillary and neck lymph node involvement. The client is in what stage of breast cancer?

A. Stage I

B. Stage II

C. Stage III

D. Stage IV

Correct Answer: B. Stage II

- **Option B:** The tumor in stage II measures between 2 cm to 5 cm or the cancer has extended to the nearby lymph nodes.
- **Option A:** Stage I – tumor size up to 2 cm. Stage II – tumor size up to 5 cm with axillary and neck lymph node involvement.
- **Option C:** Stage III – tumor size is more than 5 cm with axillary and neck lymph node involvement.
- **Option D:** Stage IV – metastasis to distant organs (liver, lungs, bone and brain).

40. The client is admitted to the chemical dependence unit with an order for continuous observation. The nurse is aware that the doctor has ordered continuous observation because:

A. Hallucinogenic drugs create both stimulant and depressant effects.

B. Hallucinogenic drugs induce a state of altered perception.

C. Hallucinogenic drugs produce severe respiratory depression.

D. Hallucinogenic drugs induce rapid physical dependence.

Correct Answer: B. Hallucinogenic drugs induce a state of altered perception.

Hallucinogenic drugs can cause hallucinations. Continuous observation is ordered to prevent the client from harming himself during withdrawal. Adverse effects are extremely subjective, with significant variability and unpredictability. One patient may experience a positive effect filled with bright hallucinations, sights and sensations, increased awareness owing to mind expansion, and marked euphoria. The positive spectrum of effects is colloquially called a “good trip.”

- **Option A:** Another patient may experience the total opposite that is filled with increased anxiety becoming panic, fear, depression, despair, and disappointment. The negative spectrum is colloquially called a “bad trip.” One patient can experience both the positive and negative spectrum at different times of use.
- **Option C:** Hallucinogenic drugs don’t create both stimulant and depressant effects or produce severe respiratory depression. One of the more disturbing side effects of LSD is the flashback. Flashbacks can be induced by stress or fatigue and by using other drugs. Often a flashback of a “bad trip” can occur without warning, even if the patient was not currently under the influence of LSD.
- **Option D:** They do produce psychological dependence rather than physical dependence. Daily ingestion is almost impossible because it produces an absurd “good trip” or high, making abuse of LSD difficult. The dependence on LSD, therefore, is not from physical effects or cravings but psychological dependence or need.

41. What is a characteristic of an intrinsic case study? It yields a better understanding of each case.

A. It yields a better understanding of each case.

B. It provides a foundation to challenge a generalization.

C. It does not include quantitative data.

D. It can scrutinize only uncomplicated phenomena.

Correct Answer: A. It yields a better understanding of each case.

An intrinsic case study is undertaken to have a better understanding of the case. An intrinsic case study is the study of a case (e.g., person, specific group, occupation, department, organization) where the case itself is of primary interest in the exploration.

- **Option B:** An intrinsic case study is typically undertaken to learn about a unique phenomenon. The researcher should define the uniqueness of the phenomenon, which distinguishes it from all others.
- **Option C:** The case study approach can offer additional insights into what gaps exist in its delivery or why one implementation strategy might be chosen over another. This in turn can help develop or refine theory.
- **Option D:** In an intrinsic case study, the case is selected on its own merits. The case is selected not because it is representative of other cases, but because of its uniqueness, which is of genuine interest to the researchers.

42. A nurse is providing instructions to a client regarding quinapril hydrochloride (Accupril). The nurse tells the client:

A. To take the medication with food only.

B. To rise slowly from a lying to a sitting position.

C. To discontinue the medication if nausea occurs.

D. That a therapeutic effect will be noted immediately.

Correct Answer: B. To rise slowly from a lying to a sitting position.

Accupril is an angiotensin-converting enzyme (ACE) inhibitor. It is used in the treatment of hypertension. The client should be instructed to rise slowly from a lying to sitting position and to permit the legs to dangle from the bed momentarily before standing to reduce the hypotensive effect. Quinapril is a non-sulfhydryl ACE inhibitor that acts by blocking the action of ACE, which plays a vital role in the renin-angiotensin-aldosterone system (RAAS). Quinapril is metabolized into quinaprilat in the liver, from where the drug enters the circulation. After conversion, the liver releases quinaprilat into the peripheral circulation where it inhibits ACE; the enzyme is responsible for the conversion of angiotensin I to angiotensin II. Angiotensin II is the hormone that promotes the stimulation of the hormone aldosterone, which is responsible for salt and water retention.

- **Option A:** The medication does not need to be taken with meals. It may be given without regard to food. The administration of quinapril is via the oral route. Plasma clearance of quinapril correlates to the creatinine clearance of a patient. Interestingly, twice daily dosing has been noted to achieve a more significant blood pressure trough effect in hypertensive patients as opposed to a similar total dose administered daily.
- **Option C:** If nausea occurs, the client should be instructed to take a non-cola carbonated beverage and salted crackers or dry toast. Angioedema is a rare but well-documented side effect of ACE inhibitors, which often presents as facial, tongue, and lip swelling. However, there may be unique instances when patients present with isolated swelling of the small bowel. This presentation, also called intestinal-type angioedema, may manifest in patients taking ACE inhibitors that present with abdominal pain, nausea, vomiting, and/or diarrhea.
- **Option D:** A full therapeutic effect may be noted in 1 to 2 weeks. Quinapril (and its metabolite quinaprilat) decreases systemic (peripheral and renal) vascular resistance, thereby decreasing

blood pressure. Distribution is widespread, except for brain tissue. The renal system clears the majority of quinapril, and the maximum observable effect of ACE inhibitors takes place at 5 hours.

43. When monitoring a female client recently admitted for treatment of cocaine addiction, nurse Aaron notes sudden increases in the arterial blood pressure and heart rate. To correct these problems, the nurse expects the physician to prescribe:

A. Norepinephrine (Levophed) and Lidocaine (Xylocaine)

B. Nifedipine (Procardia) and Lidocaine.

C. Nitroglycerin (Nitro-Bid IV) and Esmolol (Brevibloc)

D. Nifedipine and Esmolol

Correct Answer: D. Nifedipine and Esmolol

This client requires a vasodilator, such as nifedipine, to treat hypertension, and a beta-adrenergic blocker, such as esmolol, to reduce the heart rate. Nifedipine is a calcium channel blocker that belongs to the dihydropyridine subclass. It is primarily used as an antihypertensive and antianginal medication. Esmolol (esmolol hydrochloride) is an intravenous cardioselective beta-1 adrenergic antagonist. Esmolol is FDA-approved for short-term duration use in control of supraventricular tachycardia, such as a rapid ventricular rate in patients with atrial fibrillation or atrial flutter.

- **Option A:** Norepinephrine's predominant use is as a peripheral vasoconstrictor. Specifically, the FDA has approved its use for blood pressure control in specific acute hypotensive states, as well as being a potential adjunct in the treatment of cardiac arrest with profound hypotension.
- **Option B:** Lidocaine, an antiarrhythmic, isn't indicated because the client doesn't have an arrhythmia. The drug is commonly used for local anesthesia, often in combination with epinephrine (which acts as a vasopressor and extends its duration of action at a site by opposing the local vasodilatory effects of lidocaine).
- **Option C:** Although nitroglycerin may be used to treat coronary vasospasm, it isn't the drug of choice in hypertension. Nitroglycerin is a vasodilatory drug used primarily to provide relief from anginal chest pain. Nitroglycerin has been FDA approved since 2000 and was first sold by Pfizer under the brand name Nitrostat. It is currently FDA approved for the acute relief of an attack or acute prophylaxis of angina pectoris secondary to coronary artery disease.

44. Which of the following symptoms is the best indicator of imminent death?

A. A weak, slow pulse

B. Increased muscle tone

C. Fixed, dilated pupils

D. Slow, shallow respirations

Correct Answer: C. Fixed, dilated pupils

Fixed, dilated pupils are a sign of imminent death. Death is a part of natural life; however, society is notorious for being uncomfortable with death and dying as a topic on the whole. Many caregivers experience a level of burden from their duties during end-of-life care. This burden is multi-faceted and may include performing medical tasks, communicating with providers, decision-making and possibly

anticipating the grief of impending loss.

- **Option A:** Pulse becomes weak but rapid. It is important to identify how to know death has occurred and to educate the family of a patient who may be actively dying. This is especially important if the patient is choosing to die at home.
- **Option B:** Muscles become weak and atonic. It is imperative that patients and families have access to the care and support they require when entering a terminal phase of life. This phase is different for each patient, and the needs may differ for each patient and family, but it is vital for healthcare providers to provide care and support in a way that respects the patient's dignity and autonomous wishes.
- **Option D:** In the late stages, an altered respiratory pattern which can be periods of apnea alternated with hyperpnea or irregular breathing can be noticed.

45. In which phase of the nursing process does the nurse decide whether her actions have successfully treated the client's health problem?

A. Assessment

B. Diagnosis

C. Planning outcomes

D. Evaluation

Correct Answer: D. Evaluation

During the implementation phase, the nurse carries out the interventions or delegates them to other health care team members. During the evaluation phase, the nurse judges whether her actions have been successful in treating or preventing the identified client health problem. This final step of the nursing process is vital to a positive patient outcome. Whenever a healthcare provider intervenes or implements care, they must reassess or evaluate to ensure the desired outcome has been met. Reassessment may frequently be needed depending upon overall patient condition. The plan of care may be adapted based on new assessment data.

- **Option A:** In the assessment phase, the nurse gathers data from many sources for analysis in the diagnosis phase. Assessment is the first step and involves critical thinking skills and data collection; subjective and objective. Subjective data involves verbal statements from the patient or caregiver. Objective data is measurable, tangible data such as vital signs, intake and output, and height and weight.
- **Option B:** In the diagnosis phase, the nurse identifies the client's health status. The North American Nursing Diagnosis Association (NANDA) provides nurses with an up to date list of nursing diagnoses. A nursing diagnosis, according to NANDA, is defined as a clinical judgment about responses to actual or potential health problems on the part of the patient, family or community.
- **Option C:** In the planning outcomes phase, the nurse and client decide on goals they want to achieve. In the intervention planning phase, the nurse identifies specific interventions to help achieve the identified goal. The planning stage is where goals and outcomes are formulated that directly impact patient care based on EDP guidelines. These patient-specific goals and the attainment of such assist in ensuring a positive outcome.

46. The nurse is instructing the male client who has an inguinal hernia repair how to reduce postoperative swelling following the procedure. What should the

nurse tell the client?

A. Limit oral fluid

B. Elevate the scrotum

C. Apply heat to the abdomen

D. Remain in a low-fiber diet

Correct Answer: B. Elevate the scrotum.

Following inguinal hernia repair, the client should be instructed to elevate the scrotum and apply ice packs while in bed to decrease pain and swelling. The nurse also should instruct the client to apply a scrotal support when out of bed. In the beginning phases of healing, the body produces extra fluid that helps with the healing process. This fluid brings nutrients and cells that can help tissues repair themselves, and appears as swelling at the site where there was an injury to the tissues (similar to swelling after a sprained ankle). When this swelling sits in one area for a few days, it often turns hard and can feel like a firm lump.

- **Option A:** Limiting oral fluids can cause constipation. Sometimes the swelling is soft and does not seem to go away after surgery. Again, this is most likely due to the body's normal fluid pooling in the space the hernia used to be. If this swelling persists longer than three to six months after surgery, it should be re-evaluated by the surgical team to determine if hernia has recurred.
- **Option C:** Heat will increase swelling. While most swelling after hernia surgery is normal, it can rarely be an indicator of a complication, including infection and hernia recurrence. Swelling after hernia surgery is rarely a sign of infection. Since infection from hernia surgery occurs less than 1% of the time, swelling is normal the other 99% of the time.
- **Option D:** A low-fiber diet can cause constipation. Pain or swelling that continues to worsen after hernia surgery or pain and swelling accompanied by red discoloration of the skin are signs of infection and require attention by the surgical team.

47. Direct-acting vasodilators have which of the following effects on the heart rate?

A. Heart rate decreases.

B. Heart rate remains significantly unchanged.

C. Heart rate increases.

D. Heart rate becomes irregular.

Correct Answer: A. Heart rate decreases.

Heart rate decreases in response to decreased blood pressure caused by vasodilation. Hydralazine and minoxidil act by dilating resistance arterioles, thus reducing peripheral resistance, with no dilating effect on the venous side of the circulation. There is a baroreflex-mediated venoconstriction, resulting in an increase in venous return to the heart, along with a direct catecholamine-mediated positive inotropic and chronotropic stimulation of the heart.

- **Option B:** In general, Vasodilators dilate or prevent constriction of the blood vessels, which allow greater blood flow to various organs in the body. Many vasodilators bind to receptors on endothelial cells of the blood vessel, which stimulate calcium release.

- **Option C:** Anticholinergics are used to increase heart rate through vagolytic effects, causing increase in cardiac output. These agents are indicated when symptoms of hypoperfusion exist. They are thought to work centrally by suppressing conduction in the vestibular cerebellar pathways. They may have an inhibitory effect on the parasympathetic nervous system.
- **Option D:** Antiarrhythmic medications have several areas of concern. First and foremost, most agents also have some degree of proarrhythmic potential. Practically speaking, while trying to suppress arrhythmias with the medications, the medications themselves, can lead to other (potentially more dangerous) arrhythmias.

48. Jessie weighed 210 pounds on admission to the hospital. After 2 days of diuretic therapy, Jessie weighs 205.5 pounds. The nurse could estimate the amount of fluid Jessie has lost:

A. 0.3 L

B. 1.5 L

C. 2.0 L

D. 3.5 L

Correct Answer: C. 2.0 L

One liter of fluid approximately weighs 2.2 pounds. A 4.5-pound weight loss equals to approximately 2L. Diuresis is necessary for a variety of non-edematous and edematous conditions, which require clearing out excess water when the body abnormally sequesters fluid in third space in the form of edema.

- **Option A:** Option A has a very low amount of fluid loss and is incompatible with the weight that the client has lost. Diuretics are drugs that pharmacologically tilt the renal fluid regulation in favor of excretion of water and electrolytes. Thus, diuretics are substances that increase the production and volume of urine. This class of drugs achieves this objective primarily by suppressing receptors that aid in reabsorption of Na+, the most abundant extracellular cation, from the renal tubules, thereby increasing the osmolality of the renal tubules and consequently suppressing water reabsorption.
- **Option B:** 1.5 L is not an accurate amount of fluid loss based on the client's weight loss. The most common adverse effect for any diuretic is mild hypovolemia, which can lead to transient dehydration and increased thirst. When there is an over-treatment with a diuretic, this could lead to severe hypovolemia, causing hypotension, dizziness, and syncope.
- **Option D:** 3.5 L is more than the amount of fluid loss based on the client's amount of weight loss. Diuretic treatment calls for careful assessment of extracellular fluid volume, urine output, electrolyte levels in plasma and urine, body weight, acid-base status, serum glucose, and BP regularly with particular emphasis on patients with cardiovascular, hepatic, renal, or metabolic disorders and in elderly individuals.

49. When assessing the newborn's heart rate, which of the following ranges would be considered normal if the newborn were sleeping?

A. 80 beats per minute

B. 100 beats per minute

C. 120 beats per minute

D. 140 beats per minute

Correct Answer: B. 100 beats per minute

The normal heart rate for a newborn that is sleeping is approximately 100 beats per minute. If the newborn was awake, the normal heart rate would range from 120 to 160 beats per minute.

- **Option A:** 80 beats per minute is below the normal range of a newborn's heart rate. Neonatal bradycardia is defined as a decrease in heart by 30 bpm from baseline. Regarding neonatal resuscitation, bradycardia is concerning when the heart rate is less than 100 bpm. The primary cause of neonatal bradycardia is hypoxia. Other causes of bradycardia in this age group include hypothermia, hypovolemia, and pneumothorax, head injury, and medications.
- **Option C:** Newborns 0 to 1 month old has a normal range of 70 to 190 beats per minute
- **Option D:** 140 beats per minute is still within the normal range of a newborn's heart rate.

50. Barbara with bipolar disorder is being treated with lithium for the first time. Nurse Clint should observe the client for which common adverse effect of lithium?

A. Polyuria

B. Seizures

C. Constipation

D. Sexual dysfunction

Correct Answer: A. Polyuria

Polyuria commonly occurs early in the treatment with lithium and could result in fluid volume deficit. Before starting treatment with lithium, it is essential to get kidney function tests and thyroid function tests. Lithium is not recommended in patients with renal impairment. It is also not recommended in patients with cardiovascular disease. Avoid all diuretics. If the patient has severe renal dysfunction or failure, or severely altered mental status, then start with hemodialysis.

- **Option B:** Rarely, toxicity can cause pseudotumor cerebri and seizures. Lithium toxicity has no antidote. Treatment for lithium toxicity is primarily hydration and to stop the drug. Give hydration with normal saline, which will also enhance lithium excretion. 20 to 30 mg of propranolol given 2 to 3 times per day may help reduce tremors.
- **Option C:** It is also important to monitor patients for dehydration and lower the dose when there are signs of infection, excessive sweating, or diarrhea. Toxic levels are when the drug level is more than 2 mEq/L. Monitoring should be done every 1 to 2 weeks until reaching the desired therapeutic levels. Then, check lithium levels every 2 to 3 months for six months.
- **Option D:** Lithium has a very narrow therapeutic index, and toxic levels are when the drug is above 2 mEq/L, which is very close to its therapeutic range. Lithium toxicity can cause interstitial nephritis, arrhythmia, sick sinus syndrome, hypotension, T wave abnormalities, and bradycardia.

51. The mother of a 2-month-old infant brings the child to the clinic for a well-baby check. She is concerned because she feels only one testis in the scrotal sac. Which of the following statements about the undescended testis is the most accurate?

A. Normally, the testes are descended by birth.

B. The infant will likely require surgical intervention.

C. The infant probably has only one testis.

D. Normally, the testes descend by one year of age.

Correct Answer: D. Normally, the testes descend by one year of age.

Normally, the testes descend by one year of age. In young infants, it is common for the testes to retract into the inguinal canal when the environment is cold or the cremasteric reflex is stimulated. The exam should be done in a warm room with warm hands. It is most likely that both testes are present and will descend by a year. If not, a full assessment will determine the appropriate treatment.

- **Option A:** The testes usually descend by one year of age. Most of the time, a boy's testicles descend by the time he is 9 months old. Undescended testicles are common in infants who are born early. The problem occurs less in full-term infants.
- **Option B:** Surgical intervention is unnecessary; the testes descend by one year of age. The testicles will descend normally at puberty and surgery is not needed. Testicles that do not naturally descend into the scrotum are considered abnormal. An undescended testicle is more likely to develop cancer, even if it is brought into the scrotum with surgery. Cancer is also more likely in the other testicle.
- **Option C:** In young infants, it is common for the testes to retract into the inguinal canal when the environment is cold or the cremasteric reflex is stimulated.

52. The nurse is discussing electroconvulsive therapy (ECT) with a client who asks how long it will be before she feels better. The nurse explains that the beneficial effects of ECT usually occur within:

A. One week

B. Three weeks

C. Four weeks

D. Six weeks

Correct Answer: A. One (1) week

Beneficial effects of ECT usually are evident after the first several treatments. Since treatments are administered at intervals of 48 hours, these effects are apparent after one week of therapy. Beneficial effects of ECT therapy are usually seen before three weeks. It takes three to four weeks for tricyclic antidepressants to take effect. ECT is indicated in patients with treatment-resistant depression or severe major depression that impairs activities of daily living. The definition of treatment-resistant depression is depression that is unresponsive to multiple antidepressant medication trials.

- **Option B:** ECT is a relatively safe and low-risk procedure that is helpful in the treatment of depression, suicidality, severe psychosis, food refusal secondary to depression, and catatonia. It requires interprofessional care coordination among anesthesiologists, psychiatrists, and nurses. Most patients require several sessions to see a durable effect.
- **Option C:** ECT is indicated in patients with treatment-resistant depression or severe major depression that impairs activities of daily living. The definition of treatment-resistant depression is depression that is unresponsive to multiple antidepressant medication trials. There are also suggestions for ECT as a treatment for suicidality, severe psychosis, food refusal secondary to

depression, and catatonia. Bipolar depressive and manic patients can also receive treatment with ECT. ECT may have a safer profile than antidepressants or antipsychotics in debilitated, elderly, pregnant and breastfeeding patients.

- **Option D:** Today ECT is now frequently used to treat a variety of mental health disorders besides depression. The procedure is relatively safe, and does work. However, the delivery of ECT requires an interprofessional team that includes a nurse, anesthesiologist, psychiatrist and neurologist. The benefits of ECT are seen after several sessions and the results are durable. The key is to educate the patient and family about ECT because the procedure has been associated with many false and illogical beliefs.

53. Before feeding a client via NGT, the nurse checks for residual and obtains a residual amount of 90ml. What is the appropriate action for the nurse to take?

A. Discard the residual amount.

B. Hold the due feeding.

C. Skip the feeding and administer the next feeding due in 4 hours.

D. Reinstill the amount and continue with administering the feeding.

Correct Answer: D. Reinstill the amount and continue with administering the feeding.

If the residual feeding is less than 100ml, feeding is administered. Fasting volume of the normal stomach ranged from 0 to 98 mL in the study group. The researchers defined high as 100 mL for nasogastric (NG) tubes and 200 mL for gastrostomy (G) tubes and concluded that EN feedings should not be stopped for a single high GRV if there are no other physical examination or radiography findings to show actual gastrointestinal dysfunction.

- **Option A:** When interpreting Gastric Residual Volume (GRV), clinicians must keep in mind that the stomach has reservoir function and that the stomach fluid is a mixture of both the infused EN formula and normal gastric secretions. Chang and colleagues explained this concept in the article “Monitoring Bolus Nasogastric Tube Feeding by the Brix Value Determination and Residual Volume Measurement of Gastric Contents” published in the Journal of Parenteral and Enteral Nutrition (JPEN) in 2004.
- **Option B:** In a review article, “Measurement of Gastric Residual Volume: State of the Science,” published in 2000 in MEDSURG Nursing, Edwards and Metheny reported that the literature contained a variety of recommendations for what is considered a high GRV, ranging from 100 to 500 mL. Some sources have even (incorrectly) suggested holding tube feedings for a GRV of greater than 30 mL, or 1.5 times the flow rate, or even one-half of the hourly flow rate.
- **Option C:** Normal gastric emptying occurs within three hours and after a lag time of approximately one hour for a meal of solid foods. The process is slower for high-fat meals. Liquids empty more quickly (within one hour for a glucose solution and two hours for a protein solution).3 During fasting, the stomach secretes approximately 500 to 1,500 mL2; in the fed state, it secretes approximately 2,500 mL per day.

54. Dialysis allows for the exchange of particles across a semipermeable membrane by which of the following actions?

A. Osmosis and diffusion

B. Passage of fluid toward a solution with a lower solute concentration

C. Allowing the passage of blood cells and protein molecules through it.

D. Passage of solute particles toward a solution with a higher concentration.

Correct Answer: A. Osmosis and diffusion

Osmosis allows for the removal of fluid from the blood by allowing it to pass through the semipermeable membrane to an area of high concentrate (dialysate), and diffusion allows for passage of particles (electrolytes, urea, and creatinine) from an area of higher concentration to an area of lower concentration.

- **Option B:** Fluid passes to an area with a higher solute concentration. During osmosis, fluid moves from areas of high water concentration to lower water concentration across a semipermeable membrane until equilibrium.
- **Option C:** The pores of a semipermeable membrane are small, thus preventing the flow of blood cells and protein molecules through it. Dialysis removes the waste products and extra fluid from the blood by filtering them through a membrane/filter, similar to the way healthy kidneys would. During dialysis, blood is on one side of the membrane/filter and a special fluid called dialysate (containing water, electrolytes, and minerals) is on the other. Small waste products in the blood flow through the membrane/filter and into the dialysate.
- **Option D:** During diffusion, particles in the areas of high concentration move towards the area of low concentration. In dialysis, waste in the blood moves towards dialysate, which is a drug solution that has none (or very little waste). The amount of waste removed depends on the size of the waste, the size of the pores (holes) in the membrane, what the dialysate is made of, and, like a tea, the length of treatment.

55. A 64-year-old male client with a long history of cardiovascular problems including hypertension and angina is to be scheduled for cardiac catheterization. During pre-cardiac catheterization teaching, Nurse Cherry should inform the client that the primary purpose of the procedure is:

A. To determine the existence of CHD.

B. To visualize the disease process in the coronary arteries.

C. To obtain the heart chambers pressure.

D. To measure oxygen content of different heart chambers.

Correct Answer: B. To visualize the disease process in the coronary arteries.

The lumen of the arteries can be assessed by cardiac catheterization. Angina is usually caused by narrowing of the coronary arteries. Left heart catheterization has a diagnostic as well as therapeutic role. Although it is used for cardiac hemodynamics and assessment of valvular lesions, its main diagnostic role is the assessment of coronary artery disease. In the contemporary era, left heart catheterization, especially selective coronary angiogram, is considered the gold standard test for coronary artery disease diagnosis.

- **Option A:** Determining the existence of coronary heart disease includes tests and procedures such as echocardiogram, coronary angiography, blood tests, ECG, and MRI scans. Echocardiography is an ultrasound of the heart. It is a useful and non-invasive mode of testing that is performed in both acute and chronic and inpatient and outpatient settings. In acute settings, it could tell about wall motion, valvular regurgitation and stenosis, infective or autoimmune lesions, and chamber sizes.

- **Option C:** Heart chamber pressure can be checked through cardiac catheterization but it is not the primary purpose. In non ACS settings, patients with intermediate pretest probability for CAD are usually the right candidates for it. In the ACS setting, all STEMI patients and selected NSTEMI patients get an emergent cardiac catheterization. This procedure is done in a cardiac catheterization lab, is expertise dependent, and is done under moderate sedation. There is contrast exposure in the procedure which could cause serious allergic reactions and kidney injury.
- **Option D:** The oxygen saturation of the blood can be checked through a pulse oximeter. A pulse oximeter can measure oxygen saturation. It is a noninvasive device placed over a person's finger. It measures light wavelengths to determine the ratio of the current levels of oxygenated hemoglobin to deoxygenated hemoglobin. The use of pulse oximetry has become a standard of care in medicine. It is often regarded as a fifth vital sign.

56. Jomari is diagnosed with hyperosmolar hyperglycemic nonketotic syndrome (HHNS) is stabilized and prepared for discharge. When preparing the client for discharge and home management, which of the following statements indicates that the client understands her condition and how to control it?

A. "I can avoid getting sick by not becoming dehydrated and by paying attention to my need to urinate, drink, or eat more than usual."

B. "If I experience trembling, weakness, and headache, I should drink a glass of soda that contains sugar."

C. "I will have to monitor my blood glucose level closely and notify the physician if it's constantly elevated."

D. "If I begin to feel especially hungry and thirsty, I'll eat a snack high in carbohydrates."

Correct Answer: A. "I can avoid getting sick by not becoming dehydrated and by paying attention to my need to urinate, drink, or eat more than usual."

Inadequate fluid intake during hyperglycemic episodes often leads to HHNS. By recognizing the signs of hyperglycemia (polyuria, polydipsia, and polyphagia) and increasing fluid intake, the client may prevent HHNS.

- **Option B:** Drinking a glass of non-diet soda would be appropriate for hypoglycemia.
- **Option C:** A client whose diabetes is controlled with oral antidiabetic agents usually doesn't need to monitor blood glucose levels.
- **Option D:** A high carbohydrate diet would exacerbate the client's condition, particularly if fluid intake is low.

57. Which of the following assessment findings would the nurse expect if the client develops DVT?

A. Mid Calf pain, tenderness, and redness along the vein.

B. Chills, fever, malaise, occurring 2 weeks after delivery.

C. Muscle pain, the presence of Homans sign, and swelling in the affected limb.

D. Chills, fever, stiffness, and pain occurring 10 to 14 days after delivery.

Correct Answer: C. Muscle pain the presence of Homans sign, and swelling in the affected limb

Classic symptoms of DVT include muscle pain, the presence of Homans sign, and swelling of the affected limb.

- **Option A:** Midcalf pain, tenderness, and redness, along the vein reflect superficial thrombophlebitis. In the absence of a triggering event, neither venous stasis nor abnormal coagulability alone causes clinically important thrombosis, but vascular endothelial injury does reliably result in thrombus formation. The initiating injury triggers an inflammatory response that results in immediate platelet adhesion at the injury site. Further platelet aggregation is mediated by thromboxane A2 (TxA2) and by thrombin.
- **Option B:** Chills, fever, and malaise occurring 2 weeks after delivery reflect pelvic thrombophlebitis. The body naturally produces more clotting proteins during pregnancy. This ensures that the blood forms clots quickly after delivery to avoid excess bleeding. These natural changes are meant to protect you from complications during your pregnancy. But they also increase your risk of having a blood clot. Any medical procedure, including delivery of a baby, also carries a risk of infection. Septic pelvic vein thrombophlebitis is caused when a blood clot forms in the pelvic veins and becomes infected by bacteria present in the uterus.
- **Option D:** Chills, fever, stiffness, and pain occurring 10 to 14 days after delivery suggest femoral thrombophlebitis. The femoral vein runs along the inside of the legs from the groin area downward. Femoral vein thrombosis refers to a blood clot present in those veins. These veins are superficial, or close to the surface of the skin, and are often more prone to blood clots than deeper veins.

58. A male client tells the nurse he was involved in a car accident while he was intoxicated. What would be the most therapeutic response from nurse Julia?

A. “Why didn’t you get someone else to drive you?”

B. “Tell me how you feel about the accident.”

C. “You should know better than to drink and drive.”

D. “I recommend that you attend an Alcoholics Anonymous meeting.”

Correct Answer: B. “Tell me how you feel about the accident.”

An open-ended statement or question is the most therapeutic response. It encourages the widest range of client responses, makes the client an active participant in the conversation, and shows the client that the nurse is interested in his feelings. mix open-ended questions with focus questions. Open-ended questions may allow the patient to express their thoughts and feelings, and focused questions allow the interviewer to obtain important details with yes or no answers in a more time-efficient manner.

- **Option A:** Asking the client why he drove while intoxicated can make him feel defensive and intimidated. The first question posed in the interview is often open-ended. For example, “What is the main reason you seek medical assistance today?” This provides an opportunity for the interviewer to allow the patient to share their concerns, and the interviewer can show he or she is actively listening. This includes listening without judgment and displaying concern for the patient during communication.
- **Option C:** A judgmental approach isn’t therapeutic. During the interview, meaningful questions inquired positively will reduce defensiveness from the patient. Often this can be accomplished by suggesting or sharing a common behavior associated with the actions of the patient. For example, the interviewer may convey the commonality for people to consume alcohol when under stress. It then becomes acceptable to inquire if this is also occurring with the patient. The patient may feel a sense of trust and therefore share pertinent information.

- **Option D:** By giving advice, the nurse suggests that the client isn't capable of making decisions, thus fostering dependency. At the conclusion of the patient interview, an appropriate transition statement to begin the physical exam may be, "Is there anything else that you would like to share with me before I start the physical examination?" This statement serves 2 purposes. First, it elicits any additional information the patient deems necessary, and second, it signals a transition to the physical exam. Lastly, before concluding the interview, it is important to discuss the probable follow-up plan and further treatment. In the outpatient setting, this may include admission to the hospital or going home and returning for a follow-up appointment at a designated time.

59. Following a tonsillectomy procedure, a 25-year-old female client, Amelia, is transitioned back to the medical-surgical unit from the post-anesthesia care unit (PACU). Amelia has a history of chronic tonsillitis, which prompted the tonsillectomy. On arrival to the unit, Amelia appears lethargic due to the residual effects of anesthesia and reports a sore throat, a common complaint post-tonsillectomy. The surgical protocol for post-tonsillectomy care underlines the importance of maintaining a patent airway and monitoring for hemorrhage, which could emanate from the surgical site. The medical-surgical nurse, in alignment with these priorities and the assessment of Amelia's level of consciousness and discomfort, needs to determine the most therapeutic position for Amelia to ensure airway patency, comfort, and minimize the risk of postoperative complications such as aspiration or hemorrhage. Which of the following positions should the nurse place Amelia in?

A. Semi-Fowler's

B. Supine

C. High-Fowler's

D. Side-lying

E. Prone

F. Sims'

G. Trendelenburg

Correct Answer: D. Side-lying
Side-lying position is the most therapeutic position for Amelia as it promotes airway patency and allows for drainage from the surgical site, minimizing the risk of aspiration especially given her lethargic state.

- **Option A:** Semi-Fowler's position, with the head of the bed elevated to about 30 to 45 degrees, can assist in maintaining airway patency but may not provide optimal drainage from the surgical site, especially in a lethargic client, which could increase the risk of aspiration.
- **Option B:** Supine position is not ideal for Amelia post-tonsillectomy as it could predispose her to airway obstruction and does not promote drainage from the surgical site, increasing the risk of aspiration.
- **Option C:** High-Fowler's position, with the head of the bed elevated to about 90 degrees, could also assist in maintaining airway patency but may be uncomfortable for Amelia who is lethargic, and it may not provide the necessary drainage to prevent aspiration.
- **Option E:** Prone position could potentially obstruct Amelia's airway and is not traditionally used following a tonsillectomy due to the risk of increasing pressure on the surgical site, which could lead

to hemorrhage.

- **Option F:** Sims' position might promote drainage but may not be as effective in keeping the airway open as the side-lying position.
- **Option G:** Trendelenburg position is used to increase venous return to the heart and is not suitable for post-tonsillectomy positioning as it does not promote airway patency or drainage and could potentially exacerbate Amelia's sore throat.

60. Which of the following may happen if the uterus becomes overstimulated by oxytocin during the induction of labor?

A. Weak contraction prolonged to more than 70 seconds.

B. Tetanic contractions prolonged to more than 90 seconds.

C. Increased pain with bright red vaginal bleeding.

D. Increased restlessness and anxiety.

Correct Answer: B. Tetanic contractions prolonged to more than 90 seconds

Hyperstimulation of the uterus such as with oxytocin during the induction of labor may result in tetanic contractions prolonged to more than 90seconds, which could lead to such complications as fetal distress, abruptio placentae, amniotic fluid embolism, laceration of the cervix, and uterine rupture.

- **Option A:** With some methods, the uterus can be overstimulated, causing it to contract too frequently. Too many contractions may lead to changes in the fetal heart rate, umbilical cord problems, and other problems.
- **Option C:** Painless vaginal bleeding during the second or third trimester of pregnancy is the usual presentation in placenta previa. The bleeding may be provoked from intercourse, vaginal examinations, labor, and at times there may be no identifiable cause. On speculum examination, there may be minimal bleeding to active bleeding.
- **Option D:** Synthetic oxytocin, also known as Pitocin, is frequently administered during delivery for the purpose of inducing labor and preventing excessive post-delivery bleeding. One might hypothesize, based on the role that natural oxytocin plays, that women receiving oxytocin might receive some degree of benefit from the peri-partum use of Pitocin; however, a recent study calls this hypothesis into question. This study used population-based data available through the Massachusetts Integrated Clinical Academic Research Database (MiCARD) in order to retrospectively examine the relationship between peripartum synthetic oxytocin administration and the development of depressive and anxiety disorders within the first year postpartum. While the authors expected to observe that women exposed to synthetic oxytocin in this cohort would have a reduced risk of postpartum depressive and/or anxiety disorders than those without any exposure, they actually found the opposite.

61. Which of the following information must be included for the family of a client diagnosed with a dependent personality disorder?

A. Promote exercise programs

B. Explore panic attacks

C. Address coping skills

D. Decrease aggressive outbursts

Correct Answer: C. Address coping skills.

The family needs information about coping skills to help the client learn to handle stress. When the client is ready and interested, teach the client coping skills to help defuse tension and trouble feelings (e.g., anxiety reduction, assertiveness skills). Increasing skills help the client use healthier ways to defuse tensions and get needs met.

- **Option A:** Exercise is a health promotion activity for all clients. Clients with a dependent personality disorder wouldn't need exercise promoted more than other people. Clients may benefit from coping skills training (e.g., anger management skills, emotional regulation skills, interpersonal skills). Provide referrals and/or involve professional experts.
- **Option B:** They don't tend to have panic attacks. Identify behavioral limits and behaviors that are expected. Client needs a clear structure. Expect frequent testing of limits initially. Maintaining limits can enhance feelings of safety in the client. Identify what the client sees as the behaviors and circumstances that lead to the hospitalization. Ascertain client's understanding of behaviors and responsibility for own actions.
- **Option D:** Clients with a dependent personality disorder don't have aggressive outbursts; they tend to be passive and submit to others. When appropriate, try to understand underlying feelings prompting inappropriate behaviors. Often acting out behaviors stem from underlying feelings of anger, fear, shame, insecurity, loneliness, etc. Talking about feelings can lead to problem-solving and growth for the client.

62. A community nurse conducts a primary prevention, home-visit assessment for a newborn and mother. Mrs. Smith has three other children, the oldest of whom is age 12. She tells the nurse that her 12-year-old daughter is expected to prepare family meals, to look after the young children, and to clean the house once a week. Which of the following is the most appropriate nursing diagnosis for this family situation?

A. Delayed growth and development, related to performance expectations of the child.

B. Anxiety (moderate), related to difficulty managing the home situation.

C. Impaired parenting, related to the role reversal of mother and child.

D. Social isolation, related to lack of extended family assistance.

Correct Answer: C. Impaired parenting, related to role reversal of mother and child.

The role of a 12-year-old child in a family should not be that of a parent. In this situation, the child and mother have reversed roles. Assess parents for the achievement of developmental tasks of self and understanding of child's growth and development; how they are bonded and attached to the child; how they interpret and respond to the child; how they accept and support the child; how they meet the child's social, psychological and physical needs. Provides information about parent-child relationship and parenting styles that may lead to child abuse; identifies parents at risk for violence or other abusive behavior.

- **Option A:** Teach parents developmental tasks for child and parents, difference in developmental level between child and parents, and appropriate tasks for age levels. Provides information that assists parents in responding realistically and appropriately to child's needs at different age levels.

- **Option B:** Assess the level of anxiety and fear in the child and how it is manifested; Determine the source of anxiety and note reactions to staff and parents at each contact. Provides information about the source and level of anxiety and what might relieve it and basis to judge improvement.
- **Option D:** There is no evidence that the child has delayed growth or development, the mother in this situation is not demonstrating signs of anxiety, and there is no evidence in this situation that the family is socially isolated. Discuss with parents methods to reduce conflict, to be consistent in approach to child's behavior and needs, to avoid siding with the child or other parents. Promotes a more positive child-parent relationship.

63. A nurse is monitoring a pregnant client with pregnancy induced hypertension who is at risk for preeclampsia. The nurse checks the client for which specific signs of preeclampsia? Select all that apply.

A. Elevated blood pressure

B. Negative urinary protein

C. Facial edema

D. Increased respirations

E. Polydipsia

Correct Answer: A & C. Elevated blood pressure and facial edema.

The three classic signs of preeclampsia are hypertension, generalized edema, and proteinuria. Increased respirations are not a sign of preeclampsia.

- **Option A:** Preeclampsia is defined as the presence of (1) a systolic blood pressure (SBP) greater than or equal to 140 mm Hg or a diastolic blood pressure (DBP) greater than or equal to 90 mm Hg or higher, on two occasions at least 4 hours apart in a previously normotensive patient, OR (2) an SBP greater than or equal to 160 mm Hg or a DBP greater than or equal to 110 mm Hg or higher.
- **Option B:** In addition to the blood pressure criteria, proteinuria of greater than or equal to 0.3 grams in a 24-hour urine specimen, a protein (mg/dL)/creatinine (mg/dL) ratio of 0.3 or higher, or a urine dipstick protein of 1+ (if a quantitative measurement is unavailable) is required to diagnose preeclampsia.
- **Option C:** Edema exists in many pregnant women, but a sudden increase in edema or facial edema is suggestive of preeclampsia. The edema of preeclampsia occurs by a distinct mechanism that is similar to that of angioneurotic edema.
- **Option D:** Shortness of breath, a racing pulse, mental confusion, a heightened sense of anxiety, and a sense of impending doom can be symptoms of preeclampsia. If these symptoms are new to you, they could indicate an elevated blood pressure, or more rarely, fluid collecting in your lungs (pulmonary edema).
- **Option E:** Primary polydipsia (PP) is a condition where there is excess consumption of fluids leading to polyuria with diluted urine and, ultimately, hyponatremia.

64. A 38-year-old patient is admitted to the emergency department with severe pain in the lower right quadrant of the abdomen, nausea, and a low-grade fever, raising concerns about possible appendicitis. The nurse is considering pain relief strategies. Which of the following actions should the nurse prioritize?

A. Encourage the patient to change positions frequently in bed.

B. Administer Demerol 50 mg IM q 4 hours and PRN, as prescribed.

C. Apply warmth to the abdomen with a heating pad.

D. Use comfort measures and pillows to position the patient comfortably.

E. Administer an antiemetic as prescribed for nausea relief.

Correct Answer: D. Use comfort measures and pillows to position the patient comfortably.

Using comfort measures and pillows to position the client is a non-pharmacological method of pain relief.

- **Option A:** Gentle position changes can help alleviate pain, but changing positions often might aggravate the pain felt by the client.
- **Option B:** Demerol may be given if prescribed by the physician.
- **Option C:** The client may be experiencing acute appendicitis; warm compresses may cause rupture of the inflamed appendix.
- **Option E:** Addressing associated symptoms like nausea can improve overall comfort but is not the priority as of the moment.

65. When interviewing the parents of an injured child, which of the following is the strongest indicator that child abuse may be a problem?

A. The injury isn't consistent with the history or the child's age.

B. The mother and father tell different stories regarding what happened.

C. The family is poor.

D. The parents are argumentative and demanding with emergency department personnel.

Correct Answer: A. The injury isn't consistent with the history or the child's age.

When the child's injuries are inconsistent with the history given or impossible because of the child's age and developmental stage, the emergency department nurse should be suspicious that child abuse is occurring. Physical indicators may include injuries to a child that are severe, occur in a pattern or occur frequently. These injuries range from bruises to broken bones to burns or unusual lacerations. The child may present for care unrelated to the abuse, and the abuse may be found incidentally.

- **Option B:** The parents may tell different stories because their perception may be different regarding what happened. If they change their story when different health care workers ask the same question, this is a clue that child abuse may be a problem. Physical abuse should be considered in the evaluation of all injuries of children. A thorough history of present illness is important to make a correct diagnosis. Important aspects of the history-taking involve gathering information about the child's behavior before, during, and after the injury occurred. History-taking should include the interview of each caretaker separately and the verbal child, as well. The parent or caretaker should be able to provide their history without interruptions in order not to be influenced by the physician's questions or interpretations.
- **Option C:** Child abuse occurs in all socioeconomic groups. All races, ethnicities, and socioeconomic groups are affected by child abuse with boys and adolescents more commonly affected. Infants tend to have increased morbidity and mortality with physical abuse. Multiple factors increase a child's risk of abuse. These include risks at an individual level (child's disability,

unmarried mother, maternal smoking or parent's depression); risks at a familial level (domestic violence at home, more than two siblings at home); risks at a community level (lack of recreational facilities); and societal factors (poverty).

- **Option D:** Parents may argue and be demanding because of the stress of having an injured child. To diagnose a patient with child maltreatment is difficult since the victim may be nonverbal or too frightened or severely injured to talk. Also, the perpetrator will rarely admit to the injury, and witnesses are uncommon. Physicians will see children of maltreatment in a range of ways that include the perpetrators may be concerned that the abuse is severe and bring in the patient for medical care.

66. Dave, a 6-year-old boy, was rushed to the hospital following her mother's complaint that her son has been vomiting, nauseated and has overall weakness. After a series of tests, the nurse notes the laboratory results: potassium: 2.9 mEq. Which primary acid-base imbalance is this boy at risk for if medical intervention is not carried out?

A. Respiratory Acidosis

B. Respiratory Alkalosis

C. Metabolic Acidosis

D. Metabolic Alkalosis

Correct Answer: D. Metabolic Alkalosis

Vomiting, hypokalemia, overdosage of $NaHCO_3$ and NGT suctioning are considered risk factors of metabolic alkalosis.

67. After administering bethanechol to a patient with urine retention, the nurse in charge monitors the patient for adverse effects. Which is most likely to occur?

A. Decreased peristalsis

B. Increase heart rate

C. Dry mucous membranes

D. Nausea and Vomiting

Correct Answer: D. Nausea and Vomiting

Bethanechol will increase GI motility, which may cause nausea, belching, vomiting, intestinal cramps, and diarrhea. Bethanechol directly stimulates cholinergic receptors in the parasympathetic nervous system while stimulating the ganglia to a lesser extent.

- **Option A:** Peristalsis is increased rather than decreased. Stimulation of muscarinic receptors in the GI tract restores peristalsis, increases motility, and increases the resting lower esophageal sphincter pressure.
- **Option B:** With high doses of bethanechol, cardiovascular responses may include vasodilation, decreased cardiac rate, and decreased the force of cardiac contraction, which may cause hypotension.

- **Option C:** Salivation or sweating may gently increase because of its cholinergic effects.

68. The nurse is preparing to discharge a patient with chronic low back pain. Which statement by the patient indicates that additional teaching is necessary?

A. “I will avoid exercise because the pain gets worse.”

B. “I will use heat or ice to help control the pain.”

C. “I will not wear high-heeled shoes at home or work.”

D. “I will purchase a firm mattress to replace my old one.”

Correct Answer: A. “I will avoid exercise because the pain gets worse.”

Exercises are used to strengthen the back, relieve pressure on compressed nerves and protect the back from re-injury. Doing exercises to strengthen the lower back can help alleviate and prevent lower back pain. It can also strengthen the core, leg, and arm muscles. According to researchers, exercise also increases blood flow to the lower back area, which may reduce stiffness and speed up the healing process.

- **Option B:** Ice and heat application are appropriate interventions for back pain. Applying ice or a reusable gel pack constricts blood vessels and reduces swelling around the injury. This is particularly useful for conditions, like a sprained ankle, that cause significant swelling. Heat has the opposite effect, increasing blood flow to the area. This relaxes muscle fibers, which can help when the client experiences spasms or stiffness.
- **Option C:** People with chronic back pain should avoid wearing high-heeled shoes at all times. The normal s-curve of the spine acts as a cushion or spring, reducing stress on the vertebrae. When wearing high heels, the shape of the spine is altered and the client doesn’t get that same shock absorption as she walks, which, over time, can lead to uneven wear on the cartilage discs, joints and ligaments of the back.
- **Option D:** A firm mattress prevents lower back pain. Sleeping on a mattress that is too firm can cause aches and pains on pressure points. A medium-firm mattress may be more comfortable because it allows the shoulder and hips to sink in slightly. Patients who want a firmer mattress for back support can get one with thicker padding for greater comfort.

69. She finds out that some managers have a benevolent-authoritative style of management. Which of the following behaviors will she exhibit most likely?

A. Have condescending trust and confidence in their subordinates.

B. Gives economic or ego awards.

C. Communicates downward to the staff.

D. Allows decision-making among subordinates.

Correct Answer: A. Have condescending trust and confidence in their subordinates.

Benevolent-authoritative managers pretentiously show their trust and confidence to their followers. In Benevolent-Autocratic Leadership Style, the manager has condescending confidence and trust in subordinates, motivates with rewards and some punishments, permits some upward communication, solicits some ideas and opinions from subordinates, and allows some delegation of decision making but with close policy control.

- **Option B:** The benevolent authoritative system uses less control over employees than the exploitative authoritative system, however, this system motivates employees through potential punishment and rewards.
- **Option C:** The responsibility lies at the managerial levels but not at the lower levels of the organizational hierarchy. The superior has condescending confidence and trust in subordinates (master-servant relationship).
- **Option D:** In participative leadership, the responsibility for achieving the organizational goals is widespread throughout the organizational hierarchy. There is a high level of confidence that the superior has in his subordinates. There is a high level of teamwork, communication, and participation.

70. A client is prescribed Colchicine. After taking three doses, the client complains of nausea, vomiting, and loose bowel stools. Which of the following should the client do?

A. Skip the next dose, and take the another dose.

B. Withhold the medication and the physician is notified.

C. Continue taking the medication as these symptoms will go away.

D. Cut in half the next dosage.

Correct Answer: B. Withhold the medication and the physician is notified.

- **Option B:** If gastrointestinal symptoms occur (nausea, vomiting, diarrhea and abdominal pain), the medication is withheld and the physician is notified.
- **Options A and D:** Cutting in half and skipping the next dose will not give the assurance of avoiding these symptoms.
- **Option C:** These side effects are signs of overdose that can be fatal.

71. The nurse can expect a 60-year old patient with ischemic bowel to report a history of:

A. Diabetes mellitus

B. Asthma

C. Addison's Disease

D. Cancer of the bowel

Correct Answer: A. Diabetes mellitus

Ischemic bowel occurs in patients over 50 with a history of diabetes mellitus. Diabetes mellitus is the most common endocrine disorder affecting multiple organs including the gastrointestinal (GI) tract where manifestations and/or complications relate to disordered gut motility possibly as a result of autonomic neuropathy.

- **Option B:** Asthma is not related to an ischemic bowel. An increased prevalence of GI symptoms or complications has been documented in diabetic patients compared with nondiabetic control subjects including symptoms from both the upper and lower GI tract such as gastroparesis, anorexia, vomiting, early satiety, intestinal enteropathy, diarrhea, constipation, or fecal

incontinence.

- **Option C:** Addison disease is an acquired primary adrenal insufficiency. A primary adrenal insufficiency is termed Addison disease when an autoimmune process causes the condition. It is a rare but potentially life-threatening emergency condition. It results from bilateral adrenal cortex destruction leading to decreased adrenocortical hormones, which may include cortisol, aldosterone, and androgens.
- **Option D:** Approximately 5% of patients with ischemic colitis have an obstructing lesion, usually in the distal colon. Half of these patients have colon cancer while the remainder has strictures caused by disorders such as diverticulitis, radiation, and previous surgery.

72. A 50-year-old gentleman comes into a specialist's office complaining of chronic nasal congestion and reduced sense of smell. He's been trying over-the-counter nasal sprays, but the relief has been transient. Upon detailed inspection using a nasal speculum and light, the healthcare provider observes swollen tissues but also takes note of the prominent bony ridges on the lateral walls of the nasal cavity. These structures are integral for warming and humidifying inhaled air, as well as trapping particulates. Intending to test the medical student accompanying her on the rounds, the healthcare provider inquires, "Given their importance in nasal physiology, can you identify what these bony ridges are called?"

A. Choane

B. Nasal septa

C. Adenoids

D. Turbinates

Correct Answer: D. Turbinates
The prominent bony ridges on the lateral walls of the nasal cavity that increase its surface area are called turbinates or nasal conchae. They play a crucial role in filtering, humidifying, and warming the inhaled air.

- **Option A:** The choane are the posterior nasal apertures that lead from the nasal cavity to the nasopharynx. They aren't the bony ridges observed on the lateral walls of the nasal cavity.
- **Option B:** The nasal septum refers to the structure, primarily the septum, that divides the nasal cavity into its two symmetrical halves. It doesn't refer to the bony ridges on the lateral walls.
- **Option C:** Adenoids, also known as the pharyngeal tonsils, adenoids are lymphatic tissues located in the high part of the throat, behind the nose. They aren't located in the nasal cavity and aren't the bony structures described.

73. A nurse caring for a client with an ileostomy understands that the client is most at risk for developing which acid-base disorder?

A. Respiratory acidosis

B. Respiratory alkalosis

C. Metabolic acidosis

D. Metabolic alkalosis

Correct Answer: C. Metabolic acidosis

Intestinal secretions are high in bicarbonate and may be lost through enteric drainage tubes or an ileostomy or with diarrhea. These conditions result in metabolic acidosis. Non-gap metabolic acidosis is primarily due to the loss of bicarbonate, and the main causes of this condition are diarrhea and renal tubular acidosis. Anion gap metabolic acidosis is frequently due to anaerobic metabolism and lactic acid accumulation. While lactate is part of many mnemonics for metabolic acidosis, it is important to distinguish it is not a separate etiology, but rather a consequence of a condition.

- **Option A:** In acute respiratory acidosis, there is a sudden elevation of PCO2 because of failure of ventilation. This may be due to cerebrovascular accidents, use of central nervous system (CNS) depressants such as opioids, or inability to use muscles of respiration because of disorders like myasthenia gravis, muscular dystrophy or Guillain-Barre Syndrome. Because of its acute nature, there is a slight compensation occurring minutes after the incidence.
- **Option B:** HCO3 functions as an alkalotic substance. CO2 (carbon dioxide) functions as an acidic substance. Therefore, Increases in HCO3 (bicarbonate) or decreases in CO2 will make blood more alkalotic. The opposite is also true where decreases in HCO3 or an increase in CO2 will make blood more acidic. CO2 levels are physiologically regulated by the pulmonary system through respiration, whereas the HCO3 levels are regulated through the renal system with reabsorption rates.
- **Option D:** Stomach fluids are highly acidic at a pH of approximately 1.5 to 3.5. Hydrogen secretion is accomplished via parietal cells in the gastric mucosa. Therefore, the large volume loss of gastric secretions will correlate as a loss of hydrogen chloride, an acidic substance, leading to a relative increase in bicarbonate in the blood, thus driving alkalosis. Losses can occur pathologically via vomitus or nasogastric suctioning.

74. The mother of a 2-month-old infant brings the child to the clinic for a well-baby check. She is concerned because she feels only one testis in the scrotal sac. Which of the following statements about the undescended testis is the most accurate?

A. Normally, the testes are descended by birth.

B. The infant will likely require surgical intervention.

C. The infant probably has only one testis.

D. Normally, the testes descend by one year of age.

Correct Answer: D. Normally, the testes descend by one year of age.

Normally, the testes descend by one year of age. In young infants, it is common for the testes to retract into the inguinal canal when the environment is cold or the cremasteric reflex is stimulated. About 3% of full-term and 30% of premature male infants are born with one or both testicles undescended. Approximately 80% of cryptorchid testes descend by the third month of life. This makes the true incidence around 1%.

- **Option A:** Normally, the testes descend by one year of age. One contributing mechanism for the reduced function of cryptorchid testes is temperature. It is also likely that transient hormone deficiencies may lead to a lack of testicular descent and impair the development of spermatogenic tissue.

- **Option B:** If it does not descend by a year, a full assessment will determine the appropriate treatment. The undescended testicle can usually be palpated in the inguinal canal. In a minority of patients, the missing testicle may be located in the abdomen or be nonexistent.
- **Option C:** It is most likely that both testes are present and will descend by a year. Without surgical correction, an undescended testicle is likely to descend during the first three months of life. If it remains undescended, to reduce risks and minimize infertility, the testis should be brought into the scrotum with an orchiopexy starting at age six months.

75. Which of the following is one of the advantages of the newer antipsychotic medication risperidone (Risperdal)?

A. The absence of anticholinergic effects.

B. A lower incidence of extrapyramidal effects.

C. Photosensitivity and sedation.

D. No incidence of neuroleptic malignant syndrome.

Correct Answer: B. A lower incidence of extrapyramidal effects

Risperdal has a lower incidence of extrapyramidal effects than the typical antipsychotics. SGAs have loose binding to D2 receptors and can quickly dissociate from the receptor, potentially accounting for the lower likelihood of causing extrapyramidal symptoms (EPS). Moreover, SGAs have agonism at the 5HT1A receptor. Serotonin and norepinephrine reuptake inhibition are potential mechanisms by which risperidone is postulated to produce antidepressant effects. The improvement of positive symptoms is thought to be accomplished through the blockade of D2 receptors specifically in the mesolimbic pathway.

- **Option A:** Risperdal does produce anticholinergic effects and neuroleptic malignant syndrome can occur. Of note, risperidone does not cause anticholinergic effects, which may be of benefit for patients in certain populations including the elderly with dementia.
- **Option C:** Photosensitivity isn't an advantage. Although there are no mandatory requirements for therapeutic drug monitoring (TDM) with risperidone, monitoring plasma concentrations for this medication is strongly recommended by European guidelines because of data that shows interdependent variability. Therapeutic monitoring can be of benefit to assess compliance and in identifying low drug concentrations that may be low resulting in therapeutic failure. Also, monitoring the drug level can aid in evaluating for potential drug interactions and side effects.
- **Option D:** Serious side effects of antipsychotic medications (like risperidone) can include neuroleptic malignant syndrome (NMS). Although the pathogenesis of NMS is not clear, it is a life-threatening condition that can manifest with altered mental status, fever, "lead pipe" rigidity, and autonomic instability including hypertension, tachypnea, and tachycardia.

76. When a husband takes out his work frustrations and anger by abusing his wife at home, the nurse will identify this crisis as which type?

A. Psychiatric emergency crisis

B. Developmental crisis

C. Anticipated life transition

D. Dispositional crisis

Correct Answer D. Dispositional crisis

A dispositional crisis is a response to an external situational crisis. External anger at work is the dispositional crisis displaced to his wife through abuse. These crises can ensue from a lack of information, such as not knowing which job to take, what type of medical referral to seek for a particular symptom, what one's options are about living arrangements, whom to ask for what.

- **Option A:** Psychiatric emergency crisis is when the individual's general functioning has been severely impaired, and the individual has been rendered incompetent. These are crisis situations in which one's general functioning is severely impaired and one is rendered incompetent or unable to maintain responsibility for oneself; in other words, one is dangerous to oneself and/or others.
- **Option B:** Developmental crisis occurs in response to triggering emotions related to unresolved conflict in one's life. This is called a developmental crisis based on Freudian psychology. These occur as part of the process of growing and developing through various periods of life. Sometimes a crisis is a predictable part of the life cycle, such as the crisis described in Erikson's stages of psychosocial development.
- **Option C:** An anticipated life transition crisis is a crisis that is normal in the life cycle; transitional is one over which the person has no control. These are normative, developmental crises that are fairly common in our society. They may result from midlife career changes, getting married, becoming a parent, divorce, the onset of chronic or terminal illness, or changing schools.

77. The statement, "The Holy Spirit Medical Center aims to provide patient-centered care in a total healing environment" refers to which of the following?

A. Vision

B. Goal

C. Philosophy

D. Mission

Correct Answer: B. Goal

Goals define the general intentions and ambitions of the business but can be difficult to measure. Setting goals is an important step of business planning, as a well-defined broad primary outcome will have an impact on areas including your mission statement, financial objectives, corporate culture, and marketing strategy.

- **Option A:** A vision refers to what the institution wants to become within a particular period of time. A vision statement looks forward and creates a mental image of the ideal state that the organization wishes to achieve. It is inspirational and aspirational and should challenge employees.
- **Option C:** In a conventional sense, company philosophy stands for the basic beliefs that people in the business are expected to hold and be guided by – informal unwritten guidelines on how people should perform and conduct themselves.
- **Option D:** A mission statement is a concise explanation of the organization's reason for existence. It describes the organization's purpose and its overall intention. The mission statement supports the vision and serves to communicate purpose and direction to employees, customers, vendors, and other stakeholders.

78. In the post-surgical unit, the nurse is attending to a client who had a total hip replacement seven (7) days ago. This client has a history of hypertension, mild asthma, and is on anticoagulant therapy. The client provides feedback about their current condition. Which of the following statements by the client is most concerning and necessitates the nurse's immediate intervention?

A. "I have bad muscle spasms in my lower leg of the affected extremity."

B. "I just can't 'catch my breath' over the past few minutes and I think I am in grave danger."

C. "I have to use the bedpan to pass my water at least every 1 to 2 hours. It's tiring."

D. "It seems that the pain medication is not working as well today. I'm scared."

Correct Answer: B. "I just can't 'catch my breath' over the past few minutes, and I think I am in grave danger."

The nurse would be concerned about all of these comments, however, the most life-threatening is **Option B**. Clients who had hip or knee surgery are at higher risk for the development of postoperative pulmonary embolism. Sudden dyspnea and tachycardia are classic findings of pulmonary embolism. Without prophylaxis (e.g., anticoagulation medications), deep vein thrombosis can develop within 7 to 14 days following the surgery and can lead to pulmonary embolism. The nurse should be aware of the other signs of DVT which include pain and tenderness at or below the area of the clot, skin discoloration, swelling, or tightness of the affected leg. Signs of pulmonary embolism include acute onset of dyspnea, tachycardia, confusion, and pleuritic chest pain.

- **Option A:** Muscle spasms occur after total hip replacements and acute pain is expected after a surgical procedure.
- **Option C:** This may indicate a urinary infection and needs further assessment by the nurse.
- **Option D:** This may require a reevaluation of pain and interventions to manage pain, though it does not need immediate action.

79. A female client comes into the emergency room complaining of SOB and pain in the lung area. She states that she started taking birth control pills 3 weeks ago and that she smokes. Her VS are: 140/80, P 110, R 40. The physician orders ABG's, results are as follows: pH: 7.50; PaCO2 29 mm Hg; PaO2 60 mm Hg; HCO3- 24 mEq/L; SaO2 86%. Considering these results, the first intervention is to:

A. Begin mechanical ventilation.

B. Place the client on oxygen.

C. Give the client sodium bicarbonate.

D. Monitor for pulmonary embolism.

Correct Answer: B. Place the client on oxygen

The pH (7.50) reflects alkalosis, and the low PaCO2 indicates the lungs are involved. The client should immediately be placed on oxygen via mask so that the SaO2 is brought up to 95%. Encourage slow, regular breathing to decrease the amount of CO2 she is losing.

- **Option A:** Mechanical ventilation may be ordered for acute respiratory acidosis. In patients who are not significantly encephalopathic and have no excessive secretions, noninvasive ventilation with CPAP or BIPAP can be a useful modality to support ventilation and avoid the need for anesthesia and sedation, as well as the risk of nosocomial infection with endotracheal intubation.
- **Option C:** Sodium bicarbonate would be given to reverse acidosis. Sodium bicarbonate infusion reduces plasma ionized calcium concentration in critically ill patients with metabolic acidosis. In vitro, bicarbonate concentration has a major effect reducing ionized calcium level in serum
- **Option D:** This client may have pulmonary embolism, so she should be monitored for this condition, but it is not the first intervention. A timely diagnosis of a pulmonary embolism (PE) is crucial because of the high associated mortality and morbidity, which may be prevented with early treatment. It is important to note that 30% of untreated patients with pulmonary embolism die, while only 8% die after timely therapy.

80. A female patient is receiving furosemide (Lasix), 40 mg P.O. b.i.D. in the plan of care, the nurse should emphasize teaching the patient about the importance of consuming:

A. Fresh, green vegetables

B. Bananas and oranges

C. Lean red meat

D. Creamed corn

Correct Answer: B. Bananas and oranges

Because furosemide is a potassium-wasting diuretic, the nurse should plan to teach the patient to increase intake of potassium-rich foods, such as bananas and oranges. Potassium is a mineral in the cells. It helps the nerves and muscles work as they should. The right balance of potassium also keeps the heart beating at a steady rate. Fresh, green vegetables; lean red meat; and creamed corn are not good sources of potassium.

- **Option A:** GLVs are considered as natural caches of nutrients for human beings as they are a rich source of vitamins, such as ascorbic acid, folic acid, tocopherols, ?-carotene, and riboflavin, as well as minerals such as iron, calcium, and phosphorous.
- **Option C:** Lean red meat is an excellent source of high biological value protein, vitamin B12, niacin, vitamin B6, iron, zinc, and phosphorus. It is a source of long?chain omega?3 polyunsaturated fats, riboflavin, pantothenic acid, selenium, and, possibly, also vitamin D. It is also relatively low in fat and sodium.
- **Option D:** Corn has several health benefits. Because of the high fiber content, it can aid with digestion. It also contains valuable B vitamins, which are important to your overall health. Corn also provides our bodies with essential minerals such as zinc, magnesium, copper, iron, and manganese.

81. When performing an assessment on a neonate, which assessment finding is most suggestive of hypothermia?

A. Bradycardia

B. Hyperglycemia

C. Metabolic alkalosis

D. Shivering

Correct Answer: A. Bradycardia.

- **Option A:** Hypothermic neonates become bradycardic proportional to the degree of core temperature. Hypoglycemia is seen in hypothermic neonates.

82. Nausea and vomiting are common adverse effects of radiation and chemotherapy. When should a nurse administer antiemetics?

A. When therapy is completed

B. Immediately after nausea begins

C. With the administration of therapy

D. 30 minutes before the initiation of therapy

Correct Answer: D. 30 minutes before the initiation of therapy

- **Option D:** Antiemetics are most beneficial when given before the onset of nausea and vomiting. To calculate the optimum time for administration, the first dose is given 30 minutes to 1 hour before nausea is expected, and then every 2, 4, or 6 hours for approximately 24 hours after chemotherapy.
- **Options A, B, and C:** If the antiemetic was given with the medication or after the medication, it could lose its maximum effectiveness when needed.

83. Which of the following best reflects the frequency of reported postpartum "blues"?

A. Between 10% and 40% of all new mothers report some form of postpartum blues.

B. Between 30% and 50% of all new mothers report some form of postpartum blues.

C. Between 50% and 80% of all new mothers report some form of postpartum blues.

D. Between 25% and 70% of all new mothers report some form of postpartum blues.

Correct Answer: C. According to statistical reports, between 50% and 80% of all new mothers report some form of postpartum blues.

The ranges of 10% to 40%, 30% to 50%, and 25% to 70% are incorrect. Postpartum blues, also known as "baby blues," affect approximately 50% to 80% of new mothers.

- **Option A:** Symptoms may include mood swings with times of feeling anxious, irritable, or tearful interspersed with times of feeling well. Sleeping difficulties may also occur. The symptoms usually begin 3-4 days after delivery, worsen by days 5-7, and tend to resolve by day 12.
- **Option B:** For symptoms that last longer than 2 weeks, it is important for the individual to seek medical attention since approximately 1 in 5 women with postpartum blues develops postpartum major depression.
- **Option D:** In developed countries, PPD occurs in about 12% to 13% of postpartum women. More recently, the rates in the United States have been reported as 10% to20%. Transculturally, the rates are estimated at 10% to 15%, with a higher rate in adolescent mothers.

84. The correct method for determining the vastus lateralis site for I.M. injection is to:

A. Locate the upper aspect of the upper outer quadrant of the buttock about 5 to 8 cm below the iliac crest.

B. Palpate the lower edge of the acromion process and the midpoint lateral aspect of the arm.

C. Palpate a 1” circular area anterior to the umbilicus.

D. Divide the area between the greater femoral trochanter and the lateral femoral condyle into thirds, and select the middle third on the anterior of the thigh.

Correct Answer: D. Divide the area between the greater femoral trochanter and the lateral femoral condyle into thirds, and select the middle third on the anterior of the thigh

The vastus lateralis, a long, thick muscle that extends the full length of the thigh, is viewed by many clinicians as the site of choice for I.M. injections because it has relatively few major nerves and blood vessels. The middle third of the muscle is recommended as the injection site. The patient can be in a supine or sitting position for an injection into this site.

- **Option A:** There are specific landmarks to be taken into consideration while giving IM injections so as to avoid any neurovascular complications. The heel of the opposing hand is placed in the greater trochanter, the index finger in the anterior superior iliac spine, and the middle finger below the iliac crest. The drug is injected in the triangle formed by the index, middle finger, and the iliac crest
- **Option B:** The deltoid area is 2.5 to 5 cm below the acromion process. Intramuscular injection is the method of installing medications into the depth of the bulk of specifically selected muscles. The basis of this process is that the bulky muscles have good vascularity, and therefore the injected drug quickly reaches the systemic circulation and thereafter into the specific region of action, bypassing the first-pass metabolism.
- **Option C:** The vastus lateralis is a common site for IM injection. The middle third of the line joining the greater trochanter of the femur and the lateral femoral condyle of the knee. It is one of the most common medical procedures to be performed on an annual basis. However, there is still a lack of uniform guidelines and an algorithm in giving IM among health professionals across the world.

85. Drugs that mimic sympathetic activity are known as: Drugs that mimic sympathetic activity are known as:

A. Cholinergics

B. Anticholinergics

C. Adrenergics

D. Antiadrenergics

Correct Answer: C. Adrenergics

Drugs that mimic the effects of sympathetic activity are known as adrenergics. Adrenergic drugs must be classified based on the specific receptors they bind. Direct-acting drugs, which are the primary focus of this article, include vasopressors, bronchodilators, and other drugs. Indirect acting adrenergic drugs increase norepinephrine and epinephrine through various mechanisms. Hence, their side effect profiles

are similar to those seen with vasopressors.

- **Option A:** Cholinergic medications are a category of pharmaceutical agents that act upon the neurotransmitter acetylcholine, the primary neurotransmitter within the parasympathetic nervous system (PNS). There are two broad categories of cholinergic drugs: direct-acting and indirect-acting. The direct-acting cholinergic agonists work by directly binding to and activating the muscarinic receptors. Indirect-acting cholinergic agents increase the availability of acetylcholine at the cholinergic receptors.
- **Option B:** Anticholinesterase medications are agents that inhibit cholinesterase, protect acetylcholine from hydrolysis, and produce cholinergic effects. Anticholinesterases further classify into reversible (carbamates) and irreversible agents (organophosphates).
- **Option D:** Centrally acting antiadrenergic agents inhibit the stimulation of the central nervous system alpha-adrenergic receptors and decrease sympathetic stimulation to the blood vessels and the heart. They block the release and action of catecholamines (epinephrine, norepinephrine, dopamine), which are released in response to stress.

86. A chest x-ray showed a client's lungs to be clear. His Mantoux test is positive, with a 10mm of induration. His previous test was negative. These test results are possible because:

A. He had TB in the past and no longer has it.

B. He was successfully treated for TB, but skin tests always stay positive.

C. He's a "seroconverter", meaning the TB has gotten to his bloodstream.

D. He's a "tuberculin converter," which means he has been infected with TB since his last skin test.

Correct Answer: D. He's a "tuberculin converter," which means he has been infected with TB since his last skin test.

A tuberculin converter's skin test will be positive, meaning he has been exposed to an infection with TB and now has a cell-mediated immune response to the skin test. Induration of 10 mm or greater indicates positivity in persons with above baseline risk of reactivation.

- **Option A:** The client's blood and x-ray results may stay negative. It doesn't mean the infection has advanced to the active stage. If the chest radiograph or clinical evaluation are suggestive of tuberculosis, then active infection needs to be excluded with further testing.
- **Option B:** Because his x-ray is negative, he should be monitored every 6 months to see if he develops changes in his x-ray or pulmonary examination. If there is no evidence of active disease is noted by history, physical or radiograph, the patient is deemed to have LTBI and should be treated.
- **Option C:** Being a seroconverter doesn't mean the TB has gotten into his bloodstream; it means it can be detected by a blood test. If there is a high risk of infection and progression, the test should not be repeated.

87. Which of the following statements should the nurse teach the neutropenic client and his family to avoid?

A. Performing oral hygiene after every meal

B. Using suppositories or enemas

C. Performing perineal hygiene after each bowel movement

D. Using a filter mask

Correct Answer: B. Using suppositories or enemas

Neutropenic clients are at risk for infection especially bacterial infection of the gastrointestinal and respiratory tract. An incorrectly administered enema can damage tissue in your rectum/colon, cause bowel perforation and, if the device is not sterile, infections.

- **Option A:** Performing oral hygiene consistently after meals could help prevent infection of the oral mucous membranes. Recommend the use of soft-bristled toothbrushes and stool softeners to protect mucous membranes. Hard-bristled toothbrushes can compromise the integrity of the mucous membrane and provide a port of entry for pathogens.
- **Option C:** Proper perineal hygiene helps prevent urinary tract infections. Wash hands or perform hand hygiene before having contact with the patient. Also impart these duties to the patient and their significant others. Friction and running water effectively remove microorganisms from hands. Washing between procedures reduces the risk of transmitting pathogens from one area of the body to another.
- **Option D:** Wearing a mask, especially in a crowded place, would help prevent contagious respiratory infections. Provide surgical masks to visitors who are coughing and provide rationale to enforce usage. Instruct visitors to cover mouth and nose (by using the elbows to cover) during coughing or sneezing; use of tissues to contain respiratory secretions with immediate disposal to a no-touch receptacle; perform hand hygiene afterward.

88. An 18-year-old client was hit in the head with a baseball during practice. When discharging him to the care of his mother, the nurse gives which of the following instructions?

A. “Watch him for a keyhole pupil the next 24 hours.”

B. “Expect profuse vomiting for 24 hours after the injury.”

C. “Wake him every hour and assess his orientation to person, time, and place.”

D. “Notify the physician immediately if he has a headache.”

Correct Answer: C. “Wake him every hour and assess his orientation to person, time, and place.”

Changes in LOC may indicate expanding lesions such as subdural hematoma; orientation and LOC are frequently assessed for 24 hours. Orient the patient to surroundings, staff, necessary activities as needed. Present reality concisely and briefly. Avoid challenging illogical thinking—defensive reactions may result. Increased orientation ensures greater degree of safety for the patient.

- **Option A:** A keyhole pupil is found after iridectomy. Colobomas may be present in one or both eyes and, depending on their size and location, can affect a person’s vision. Colobomas affecting the iris, which result in a “keyhole” appearance of the pupil, generally do not lead to vision loss.
- **Option B:** Profuse or projectile vomiting is a symptom of increased ICP and should be reported immediately. Projectile vomiting, particularly on arising from sleep, may be due to increased intracranial pressure. Generalized raised intracranial pressure itself causes few clinical changes except for headache, vomiting and papilledema, but tissue shifts at a distance from the mass produce the dramatic signs traditionally associated with raised ICP.

- **Option D:** A slight headache may last for several days after concussion; severe or worsening headaches should be reported. Of particular importance in a patient's history is whether the patient has a history of any prior concussions. "A greater number, severity, and duration of symptoms" with previous concussions can be predictive of longer recovery time. Finally, pre-existing mood disorders, learning disorders, sleep disturbances, and migraine headaches may also impact the management of a concussion.

89. The hormone responsible for the maturation of the Graafian follicle is:

A. Follicle-stimulating hormone

B. Progesterone

C. Estrogen

D. Luteinizing hormone

Correct Answer: A. Follicle-stimulating hormone

The hormone that stimulates the maturation of the Graafian follicle is the Follicle Stimulating Hormone which is released by the anterior pituitary gland.

- **Option B:** Progesterone prepares the endometrium for the potential of pregnancy after ovulation. It triggers the lining to thicken to accept a fertilized egg. It also prohibits the muscle contractions in the uterus that would cause the body to reject an egg.
- **Option C:** Estrogen helps control the menstrual cycle and is important for childbearing. Estrogen also has other functions: it keeps cholesterol in control and protects bone health for both women and men.
- **Option D:** Luteinizing hormone is crucial in regulating the function of the testes in men and ovaries in women. In men, luteinizing hormone stimulates Leydig cells in the testes to produce testosterone, which acts locally to support sperm production.

90. A 40-year-old male client has been hospitalized with peptic ulcer disease. He is being treated with a histamine receptor antagonist (cimetidine), antacids, and diet. The nurse doing discharge planning will teach him that the action of cimetidine is to:

A. Reduce gastric acid output.

B. Protect the ulcer surface.

C. Inhibit the production of hydrochloric acid (HCl).

D. Inhibit vagus nerve stimulation.

Correct Answer: A. Reduce gastric acid output.

These drugs inhibit the action of histamine on the H2 receptors of parietal cells, thus reducing gastric acid output. The H2-receptor antagonist cimetidine competitively blocks histamine from stimulating the H2-receptors located on the gastric parietal cells (these cells are responsible for hydrochloric acid secretion and secretion of the intrinsic factor). The effect results in reducing the volume of gastric acid secretion from stimuli, including histamine, food, caffeine, and insulin.

- **Option B:** Sucralfate exhibits its action by forming a protective layer, increasing bicarbonate production, exhibiting anti-peptic effects, promoting tissue growth, regeneration, and repair. Sucralfate is a medication used to treat duodenal ulcers, epithelial wounds, chemotherapy-induced mucositis, radiation proctitis, ulcers in Behcet disease, and burn wounds.
- **Option C:** Ultimately, PPIs function to decrease acid secretion in the stomach. The proximal small bowel absorbs these drugs, and once in circulation, affects the parietal cells of the stomach. The parietal cells contain the H+/K+ ATPase enzyme, the proton pump, that PPIs block. This enzyme serves as the final step of acid secretion into the stomach.
- **Option D:** Atropine is an antimuscarinic that works through competitive inhibition of postganglionic acetylcholine receptors and direct vagolytic action, which leads to parasympathetic inhibition of the acetylcholine receptors in smooth muscle. The end effect of increased parasympathetic inhibition allows for preexisting sympathetic stimulation to predominate, creating increased cardiac output and other associated antimuscarinic side effects as described herein.

91. When a client has peptic ulcer disease, the nurse would expect a priority intervention to be:

A. Assisting in inserting a Miller-Abbott tube.

B. Assisting in inserting an arterial pressure line.

C. Inserting a nasogastric tube.

D. Inserting an I.V.

Correct Answer: C. Inserting a nasogastric tube.

An NG tube insertion is the most appropriate intervention because it will determine the presence of active GI bleeding. Monitor the client's fluid intake and urine output. Assess for the signs of hematemesis or melena. The client with a bleeding ulcer may vomit bright red blood or coffee grounds emesis. Melena occurs when there is bleeding in the upper GI tract.

- **Option A:** A Miller-Abbott tube is a weighted, mercury-filled balloon tube used to resolve bowel obstructions. The modifications of lifestyle behaviors such as alcohol use, coffee, and other caffeinated beverages, and the overuse of aspirin or other nonsteroidal anti-inflammatory drugs is necessary to prevent recurrent ulcer development and prevent complications during the healing phase.
- **Option B:** There is no evidence of shock or fluid overload in the client; therefore, an arterial line is not appropriate at this time. Monitor the client's vital signs, and observe BP and HR for signs of orthostatic changes.
- **Option D:** An IV is optional. Administer IV fluids, volume expanders, and blood products as ordered. Isotonic fluids, volume expanders, and blood products can restore or expand intravascular volume.

92. Nurse Kate is providing dietary instructions to a male client with hypoglycemia. To control hypoglycemic episodes, the nurse should recommend:

A. Increasing saturated fat intake and fasting in the afternoon.

B. Increasing intake of vitamins B and D and taking iron supplements.

C. Eating a candy bar if lightheadedness occurs.

D. Consuming a low-carbohydrate, high protein diet and avoiding fasting.

Correct Answer: D. Consuming a low-carbohydrate, high protein diet and avoiding fasting.

To control hypoglycemic episodes, the nurse should instruct the client to consume a low-carbohydrate, high protein diet, avoid fasting and avoid simple sugars. Increasing saturated fat intake and increasing vitamin supplementation wouldn't help control hypoglycemia. A person experiencing a minor case of low blood sugar can consume 15–20 grams (g) of fast-acting carbohydrates, such as a small glass of fruit juice or a few crackers.

- **Option A:** Lunch should be a small meal but packed with protein, healthful fats, and complex carbohydrates that will continue to release energy slowly. It is necessary for a person with hypoglycemia to be aware of the glycemic index or GI of the foods they eat. Some foods that appear to be healthful may have a high GI. Fortunately, there is often an alternative that has a lower GI.
- **Option B:** People with hypoglycemia should try to include small, nutritious snacks in between meals to keep blood sugar levels constant and ensure they are having enough vitamins, minerals, healthy fats, proteins, and fibrous carbohydrates in their diet. It is important to remember that people who exercise regularly may need to eat more frequently, as strenuous or sustained physical activity can cause blood sugar levels to drop.
- **Option C:** It is advisable to limit intake of fruit juices in the morning and stick to juices that do not have added sugar, as these may cause blood sugar levels to become unstable. Cinnamon is thought to help reduce blood sugar levels and can be sprinkled on many breakfast foods.

93. The term "blue bloater" refers to which of the following conditions?

A. Adult respiratory distress syndrome (ARDS)

B. Asthma

C. Chronic obstructive bronchitis

D. Emphysema

Correct Answer: C. Chronic obstructive bronchitis

Clients with chronic obstructive bronchitis appear bloated; they have large barrel chests and peripheral edema, cyanotic nail beds, and, at times, circumoral cyanosis. People with chronic bronchitis are sometimes called "blue bloaters" because of their bluish-colored skin and lips. Blue bloaters often take deeper breaths but can't take in the right amount of oxygen.

- **Option A:** Clients with ARDS are acutely short of breath and frequently need intubation for mechanical ventilation and large amounts of oxygen. Clients with ARDS have acute symptoms and typically need large amounts of oxygen. Acute respiratory distress syndrome (ARDS) is a life-threatening condition characterized by poor oxygenation and non-compliant or "stiff" lungs. The disorder is associated with capillary endothelial injury and diffuse alveolar damage. Once ARDS develops, patients usually have varying degrees of pulmonary artery vasoconstriction and may subsequently develop pulmonary hypertension.
- **Option B:** Clients with asthma don't exhibit characteristics of chronic disease. Asthma is a common disease and has a range of severity, from a very mild, occasional wheeze to acute, life-threatening airway closure. It usually presents in childhood and is associated with other features of atopy, such as eczema and hayfever. Asthma is a condition of acute, fully reversible

airway inflammation, often following exposure to an environmental trigger.

- **Option D:** Clients with emphysema appear pink and cachectic (a state of ill health, malnutrition, and wasting). Emphysema comes on very gradually and is irreversible. People with emphysema are sometimes called “pink puffers” because they have difficulty catching their breath and their faces redden while gasping for air.

94. A client is admitted to the L & D suite at 36 weeks’ gestation. She has a history of C-section and complains of severe abdominal pain that started less than 1 hour earlier. When the nurse palpates tetanic contractions, the client again complains of severe pain. After the client vomits, she states that the pain is better and then passes out. Which is the probable cause of her signs and symptoms?

A. Hysteria compounded by the flu

B. Placental abruption

C. Uterine rupture

D. Dysfunctional labor

Correct Answer: C. Uterine rupture.

Uterine rupture is a medical emergency that may occur before or during labor. Signs and symptoms typically include abdominal pain that may ease after uterine rupture, vomiting, vaginal bleeding, hypovolemic shock, and fetal distress. With placental abruption, the client typically complains of vaginal bleeding and constant abdominal pain.

- **Option A:** The woman does not have hysteria. Uterine rupture in pregnancy is a rare and often catastrophic complication with a high incidence of fetal and maternal morbidity. Numerous factors are known to increase the risk of uterine rupture, but even in high-risk subgroups, the overall incidence of uterine rupture is low.
- **Option B:** Placental abruption occurs when the maternal vessels tear away from the placenta and bleeding occurs between the uterine lining and the maternal side of the placenta. As the blood accumulates, it pushes the uterine wall and placenta apart. The placenta is the fetus’ source of oxygen and nutrients as well as the way the fetus excretes waste products. Diffusion to and from the maternal circulatory system is essential to maintaining these life-sustaining functions of the placenta. When accumulating blood causes separation of the placenta from the maternal vascular network, these vital functions of the placenta are interrupted. If the fetus does not receive enough oxygen and nutrients, it dies.
- **Option D:** Dysfunctional or prolonged labor refers to prolongation in the duration of labor, typically in the first stage of labor. Diagnosis of delay in labor is dependent on careful monitoring of uterine contraction intensity, duration and frequency, cervical dilation, and descent of the fetus through the pelvis.

95. Your patient had surgery to form an arteriovenous fistula for hemodialysis. Which information is important for providing care for the patient?

A. The patient shouldn’t feel pain during initiation of dialysis.

B. The patient feels best immediately after the dialysis treatment.

C. Using a stethoscope for auscultating the fistula is contraindicated.

D. Taking a blood pressure reading on the affected arm can cause clotting of the fistula.

Correct Answer: D. Taking a blood pressure reading on the affected arm can cause clotting of the fistula.

Pressure on the fistula or the extremity can decrease blood flow and precipitate clotting, so avoid taking blood pressure on the affected arm. For the most effective hemodialysis, the patient needs good vascular access with an arteriovenous (AV) fistula or an AV graft that provides adequate blood flow. To prevent injuries, place an armband on the patient or a sign over the bed that says no BP measurements, venipunctures, or injections on the affected side. When blood flow through the vascular access is reduced, it can clot.

- **Option A:** Check the patient's circulation by palpating his pulses distal to the vascular access; observing capillary refill in his fingers; and assessing him for numbness, tingling, altered sensation, coldness, and pallor in the affected extremity.
- **Option B:** Auscultate the vascular access with a stethoscope to detect a bruit or "swishing" sound that indicates patency. Palpate the vascular access to feel for a thrill or vibration that indicates arterial and venous blood flow and patency.
- **Option C:** Assess the vascular access for signs and symptoms of infection such as redness, warmth, tenderness, purulent drainage, open sores, or swelling. Patients with end-stage kidney disease are at increased risk of infection.

96. Which factor is least important in the decision regarding whether a victim of family violence can safely remain in the home?

A. The availability of appropriate community shelters.

B. The non-abusing caretaker's ability to intervene on the client's behalf.

C. The client's possible response to relocation.

D. The family's socioeconomic status.

Correct Answer: D. The family's socioeconomic status

Socioeconomic status is not a reliable predictor of abuse in the home so that it would be the least important consideration in deciding issues of safety for the victim of family violence. Family and domestic violence (including child abuse, intimate partner abuse, and elder abuse) is a common problem in the United States. Family and domestic health violence are estimated to affect 10 million people in the United States every year. It is a national public health problem, and virtually all healthcare professionals will at some point evaluate or treat a patient who is a victim of some form of domestic or family violence.

- **Option A:** Unfortunately, each form of family violence begets interrelated forms of violence, and the "cycle of abuse" is often continued from exposed children into their adult relationships, and finally to the care of the elderly. Domestic and family violence includes a range of abuse including economic, physical, sexual, emotional, and psychological toward children, adults, and elders. If the patient elects to leave their current situation, information for referral to a local domestic violence shelter to assist the victim should be given.
- **Option B:** The ability of the non-abusing caretaker to intervene on the client's behalf are important factor when making safety decisions. Patients that have suffered domestic violence may or may not want a referral. Many are fearful of their lives and financial well-being and hence may be weighing

the tradeoff in leaving the abuser leading to loss of support and perhaps the responsibility of caring for children alone. The healthcare provider needs to assure the patient that the decision is voluntary and that the provider will help regardless of the decision. The goal is to make resources accessible, safe, and to enhance support.

- **Option C:** The client's response to possible relocation (if the client is a competent adult) would be the most important factor to consider; feelings of empowerment and being treated as a competent person can help a client feel less like a victim. If the patient does not want to go to a shelter, provide telephone numbers for domestic violence or crisis hotlines and support services for potential later use. Provide the patient with instructions but be mindful that written materials may pose a danger once the patient returns home.

97. ß blockers should be avoided in which of the following conditions?

A. Bronchoconstriction

B. Hypertension

C. Angina

D. Myocardial infarction

Correct Answer: A. Bronchoconstriction

ß blockers should be avoided in bronchoconstrictive disease. Traditionally, beta-blockers have been contraindicated in asthmatic patients. However, recommendations have aligned for allowing cardio-selective beta-blockers, also known as beta-1 selective, in asthmatics but not non-selective beta-blockers.

- **Option B:** Patients who have either acute or chronic bradycardia and/or hypotension have relatively contraindication to beta-blocker usage. The patient's heart rate and blood pressure require monitoring while using beta-blockers. Beta receptors are found all over the body and induce a broad range of physiologic effects. The blockade of these receptors with beta-blocker medications can lead to many adverse effects. Bradycardia and hypotension are two adverse effects that may commonly occur.
- **Option C:** All beta-blockers, especially in patients with cardiac risk factors, carry a risk of heart block. The negative chronotropic and inotropic effects lead to a decreased oxygen demand; that is how angina improves after beta-blocker usage. These medications also prolong the atrial refractory periods and have a potent antiarrhythmic effect.
- **Option D:** Once beta-blockers bind to the B1 and B2 receptors, they inhibit these effects. Therefore, the chronotropic and inotropic effects on the heart undergo inhibition, and the heart rate slows down as a result. Beta-blockers also decrease blood pressure via several mechanisms, including decreased renin and reduced cardiac output.

98. When a client is first admitted with hyperglycemic hyperosmolar nonketotic syndrome (HHNS), the nurse's priority is to provide:

A. Oxygen

B. Carbohydrates

C. Fluid replacement

D. Dietary instruction

Correct Answer: C. Fluid replacement

As a result of osmotic pressures created by increased serum glucose, the cells become dehydrated; the client must receive fluid and then insulin. Aggressive hydration with isotonic fluid with electrolyte replacement is the standard practice in the management of HHS. An initial fluid bolus of 15 to 20 ml/kg followed by an infusion rate of 200 to 250ml/hour is the recommended rate for adults.

- **Option A:** Appropriate resuscitation with attention to the principle of Airway, Breathing, Circulation (ABC) should be initiated. Patients with HHS can present with altered mental status as a result of significant fluid depletion and decreased cerebral perfusion. A good rule of thumb is to secure the airway if the Glasgow coma score is less than 8.
- **Option B:** Hydration with isotonic fluid has been shown to help in reducing the amount of counterregulatory hormones produced during HHS. The use of this alone can reduce serum glucose by about 75 to 100 mg/hour.
- **Option D:** The serum potassium in HHS is usually high, but the total body potassium is low as a result of the extracellular shift from lack of insulin. Potassium replacement should be started when the serum potassium is between 4 to 4.5 mmol/L.

99. During a hematology clinical rotation, a nursing student is assigned to care for a patient diagnosed with Chronic Lymphocytic Leukemia (CLL). The complexity of the case leads to a detailed exploration of the lymphocytic lineage, particularly B cells, which are implicated in this disease. The medical team discusses the pathological proliferation of B cells and the ensuing immunodeficiency that characterizes CLL. The nursing instructor later expounds on the origin, maturation, and function of B cells within the immune system during a supplementary immunology session. Given the clinical scenario and the theoretical elucidation, which of the following statements is TRUE about B cells?

A. are lymphocytes

B. become mature in the thymus

C. are responsible for cell-mediated immunity

D. are produced in the adult spleen

Correct Answer: A. are lymphocytes
B cells are indeed a type of white blood cell known as lymphocytes. They play a central role in the humoral immunity component of the adaptive immune system by producing antibodies.

- **Option B:** B cells mature in the bone marrow, whereas T cells mature in the thymus. This distinct maturation process is crucial for the functional divergence between B and T cells within the immune response.
- **Option C:** B cells are primarily involved in humoral immunity, which is antibody-driven. On the other hand, T cells are central to cell-mediated immunity, which is focused on the direct destruction of infected or malignant cells.
- **Option D:** B cells originate and mature in the bone marrow. The spleen acts as a secondary lymphoid organ where B cells can encounter antigens and become activated, but it is not the primary site of B cell production or maturation.

100. Which of these patients in the neurologic ICU will be best to assign to an RN who has floated from the medical unit?

A. A 26-year-old patient with a basilar skull structure who has clear drainage coming out of the nose.

B. A 42-year-old patient admitted several hours ago with a headache and diagnosed with a ruptured berry aneurysm.

C. A 46-year-old patient who was admitted 48 hours ago with bacterial meningitis and has an antibiotic dose due.

D. A 65-year-old patient with an astrocytoma who has just returned to the unit after having a craniotomy.

Correct Answer: C. A 46-year-old patient who was admitted 48 hours ago with bacterial meningitis and has an antibiotic dose due.

This patient is the most stable of the patients listed. An RN from the medical unit would be familiar with administration of IV antibiotics.

- **Option A:** This patient may need the attention of an experienced neurologic RN.
- **Option B:** A rupture of an aneurysm is fatal and should be assigned to a more experienced RN.
- **Option D:** This patient requires assessment and care from RNs more experienced in caring for patients with neurologic diagnoses.