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Chapter 01: Concepts of Health and Disease

1. At an international nursing conference, many discussions and breakout sessions focused on the **World Health Organization (WHO)** views on health. Of the following comments made by nurses during a discussion session, which statements would be considered a good representation of the WHO definition? Select all that apply.

- A) Interests in keeping the elderly population engaged in such activities as book reviews and word games during social time
- B) Increase in the number of chair aerobics classes provided in the skilled care facilities
- C) Interventions geared toward keeping the elderly population diagnosed with diabetes mellitus under tight blood glucose control by providing in-home cooking classes
- D) Providing transportation for renal dialysis patients to and from their hemodialysis sessions
- E) Providing handwashing teaching sessions to a group of young children

Ans: A, B, C, E

Feedback:

The WHO definition of health is defined as “a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity.” Engaging in book reviews facilitates mental and social well-being; chair aerobics helps facilitate physical well-being; and assisting with tight control of diabetes helps with facilitating physical well-being even though the person has a chronic disease. Handwashing is vital in the prevention of disease and spread of germs.

2. A community health nurse is teaching a group of recent graduates about the large variety of factors that influence an individual's health or lack thereof. The nurse is referring to **the Healthy People 2020** report from the U.S. Department of Health and Human Services as a teaching example. Of the following aspects discussed, which would be considered a determinant of health that is outside the focus of this report?

- A) The client has a diverse background by being of Asian and Native American descent and practices various alternative therapies to minimize effects of stress.
- B) The client has a family history of cardiovascular disease related to hypercholesterolemia and remains noncompliant with the treatment regime.
- C) The client has a good career with exceptional preventative health care benefits.
- D) The client lives in an affluent, clean, suburban community with access to many health care facilities.

Ans: B

Feedback:

In Healthy People 2020, the focus is to promote good health to all (such as using alternative therapies to minimize effects of stress); achieving health equity and promoting health for all (which includes having good health care benefits); and

- A) "Some clients experience longer-term irritation of skin adjacent to the treatment site."
- B) "Sometimes you might find that your blood takes longer to clot than normal."
- C) "The changes that you might see are normally irreversible."
- D) "The unwanted effects will be limited to the exposed portions of your skin."

Ans: A

Feedback:

Chronic radiation dermatitis is a consequence of cancer treatment with ionizing radiation. Hypocoagulation is not an identified consequence of radiation exposure, and changes can be both reversible and deeper than the surface of the skin.

12. A young patient has just been diagnosed with xeroderma pigmentosum. When teaching the family about this disease, the nurse should emphasize which of the following points? Select all that apply.

- A) "Wash hands thoroughly when working in the garden to prevent infection."
- B) "Wear long sleeves, long pants, gloves, a hat, sunglasses with side shields, and sunscreen while outdoors."
- C) "Apply antibacterial ointment to any break in the skin, and cover wounds with bandages."
- D) "The best time to allow the child to play outside is in the evening hours after the sun goes down."
- E) "The best time for the family to go to the beach is in the fall/winter months."

Ans: B, D

Feedback:

Xeroderma pigmentosum is a genetic disorder where the enzyme needed to repair sunlight-induced DNA damage is lacking. While washing hands and applying antibacterial products to open wounds are important teaching for parents with children, they are not specific for this disease diagnosis.

13. A 7-year-old boy is admitted to the hospital with a suspected diagnosis of lead toxicity. Which of the following assessment findings is most congruent with the client's diagnosis?

- A) Decreased deep tendon reflexes
- B) Hemoglobin 9.9 g/dL
- C) Diffuse muscle pain
- D) White blood cells (WBC) 11,000/mm³

Ans: B

Feedback:

Anemia is the cardinal sign of lead toxicity. Muscle pain, decreased deep tendon

Ans: B

Feedback:

SIADH is the principal cause of hyponatremia in malignant disease. It may be caused by oat cell carcinoma of the lung and certain other malignant tumors or be due to the tumor producing vasopressin. The other lab values, K⁺, BUN, and hematocrit are all within normal adult ranges.

11. A 60-year-old man has presented to a clinic and is requesting screening for tumor markers after reading about them in a magazine. What can the clinician most accurately tell the man about the clinical use of tumor markers?

- A) "Tumor markers are a very useful screening tool, but they only exist for a very few types of cancer."
- B) "Tests for the presence of tumor markers are limited by the fact that they are only accurate in the very early stages of cancer."
- C) "Tumor markers are an excellent screening tool, but it's only practical to test for those cancers that you're at risk of."
- D) "Tumor markers alone aren't enough to confirm whether you have cancer or not, so they're not a very useful screening tool."

Ans: D

Feedback:

As diagnostic tools, tumor markers have limitations. Nearly all markers can be elevated in benign conditions, and most are not elevated in the early stages of malignancy. Hence, tumor markers have limited value as screening tests. Furthermore, they are not in themselves specific enough to permit a diagnosis of a malignancy.

12. A 51-year-old female has been found to have a metastatic lesion in her lung, and her oncologist is unsure of the site of the primary tumor. Which of the following procedures is most likely to aid in this determination?

- A) Immunohistochemistry
- B) Tumor markers
- C) Microarray technology
- D) Tissue biopsy

Ans: A

Feedback:

Immunohistochemistry can be used to determine the site of origin of metastatic tumors. In cases in which the origin of the metastasis is obscure, immunochemical detection of tissue-specific or organ-specific antigens can often help to identify the tumor source. Tumor markers, microarray technology, and biopsy are less likely to aid in identifying the primary source.

binge eating

- D) A 33-year-old male patient who is on mechanical ventilation in the intensive care unit following a head injury
- E) A 58-year-old alcoholic male who has been foregoing food for several weeks while drinking heavily
- F) A 60-year-old female who has chronic renal failure secondary to hypertension

Ans: A, B, C

Feedback:

Ingestion of bicarbonate, gastric suction, and vomiting are causes of metabolic alkalosis. Patients on mechanical ventilation are at risk of respiratory alkalosis, while heavy alcohol use and renal failure are associated with acidosis.

34. A 55-year-old male client with a history of cardiovascular disease has been admitted to the intensive care unit after recovering from cardiogenic shock. In the hours since admission, the client's arterial blood gases indicate acidosis, most likely acute lactic acidosis. Which of the following signs, symptoms, and diagnostic findings might his care team anticipate before the acid-base balance is restored? Select all that apply.

- A) Decreased pH
- B) Cardiac dysrhythmias
- C) Decreased alertness and cognition
- D) Hypoventilation
- E) Nausea and vomiting

Ans: A, B, C, E

Feedback:

As with any form of acidosis, pH is apt to be lower than normal. Metabolic acidosis is also associated with dysrhythmias, decreased alertness, and nausea and vomiting. Respiration is likely to be increased in both rate and depth.

35. A nurse is providing care for a client who has been diagnosed with metabolic alkalosis after several days of antacid use. Which of the following treatments should the nurse prepare to give?

- A) Intravenous or oral administration of free hydrogen ions
- B) Intravenous administration of KCl solution
- C) Administration of oxygen and NaHCO₃ solution
- D) Supplementary oxygen and possible mechanical ventilation

Ans: B

Feedback:

KCl administration facilitates the renal retention of hydrogen ions, resulting in lowering of pH. It is not possible to administer free H⁺ ions, and sodium bicarbonate would

17. A client has a suspected infection by a particular microorganism in question that cannot be cultured. Which of the following processes listed below is most likely to result in an accurate diagnosis for the client?

- A) Observe directly for the presence or absence of specific antigens in the client's blood serum sample.
- B) Introduce cultured, marked antibodies to the client, and observe for a reaction with antigens in the client.
- C) Observe for a cytopathic effect on biopsy tissue samples from the client's mucosa.
- D) Release purified antigens into the client's circulation to observe whether the client has produced the relevant antibodies.

Ans: B

Feedback:

The process described is direct antigen detection, which can indirectly implicate a microorganism that is unable to be cultured. Answer D describes the same process in reverse, while answers A and C do not describe existing diagnostic processes.

18. A client has been diagnosed with herpes simplex virus. The client states that, "modern medicine produces more and more antivirals every year, and so the treatment should be simple." Which of the following statements listed below is the best response?

- A) "The recent rise of drug resistance has significantly hampered the elimination of viruses."
- B) "The cell coat of viruses is particularly resilient to the available synthetic antivirals."
- C) "The use of antivirals is severely limited by the unwanted adverse effects that they cause."
- D) "Treatment options for viruses are often limited because what destroys viruses often damages your own body cells."

Ans: D

Feedback:

Viruses are difficult to treat because interference with their replication often requires interference with the body's cell replication processes. Although they do exist with antiviral treatments, drug resistance and side effects are phenomena more closely associated with antibacterials. Antivirals act upon DNA or RNA synthesis, not the cell wall.

19. A client with a diagnosis of sepsis has received intravenous immune globulin (IVIG) as a partial treatment. The nurse knows which of the following client responses listed below would best suggest an accurate understanding of IVIG treatment?

- A) "These antibodies in the solution have been collected from individuals who have

participate in the sensory or motor components of the response.

13. A Tae Kwon Do (TKD) master is applying downward pressure just above the elbow joint on an attacker who immediately collapses to the ground. The TKD master knows the elbow joint can bend inward toward the body but not in the opposite direction. Which of the following reflexes is applicable to this example?

- A) Knife-clasp
- B) Withdrawal
- C) Myotatic
- D) Inverse myotatic

Ans: D

Feedback:

The inverse myotatic reflex is demonstrated in this example; when too much pressure is applied to the arm and tension reaches a certain level, the Golgi tendon “relaxes.” Since the arm bar is being held, the only way the body can “reflex” is by going down toward the ground, making the attacker fall downward. In persons with spastic paralysis, the inverse myotatic reflex becomes hyperactive and produces what is called the clasp-knife reaction. The withdrawal reflex is stimulated by a damaging (nociceptive) stimulus and quickly moves the body part away from the offending stimulus, usually by flexing a limb part. The myotatic or stretch reflex controls muscle tone and helps maintain posture.

14. During a clinical assessment of a 68-year-old client who has suffered a head injury, a neurologist suspects that a client has a sustained damage to her vagus (CN X) nerve. Which of the following assessment findings is most likely to lead the physician to this conclusion?

- A) The client has difficulty swallowing and has had recent constipation and hypoactive bowel sounds.
- B) The client is unable to turn her head from side to side, and her tongue is flaccid.
- C) The client has a unilateral facial droop, dry eyes, and decreased salivary production.
- D) The client is unable to perform any fine motor movements of her tongue.

Ans: A

Feedback:

Dysphagia and impaired GI motility are associated with damage to the vagus nerve. Lateral movement of the head is mediated by CN XI. Facial droop and dry eyes are associated with CN VII, the facial nerve, while abnormal tongue movement is a result of damage to CN XII, the hypoglossal nerve.

15. A 9-year-old girl has a diffuse collection of symptoms that are indicative of deficits in endocrine and autonomic nervous system control. She also suffers from persistent

contusion that the doctor classifies as a moderate brain injury. Which of the following manifestations will the nurse more than likely assess on this child that support this diagnosis? Select all that apply.

- A) Coma with total paralysis
- B) Periods of unconsciousness
- C) Aphasia at times
- D) Nuchal rigidity
- E) Weakness or slight paralysis affecting one side of the body

Ans: B, C, E

Feedback:

Moderate brain injury is characterized by a period of unconsciousness and may be associated with focal manifestations such as hemiparesis (weakness or slight paralysis affecting one side of the body), aphasia, and cranial nerve palsy. Coma with total paralysis is seen in severe brain injury. Nuchal rigidity is a classic sign of meningitis.

9. Following a collision while mountain biking, the diagnostic workup of a 22-year-old male has indicated the presence of an acute subdural hematoma. Which of the following pathophysiological processes most likely underlies his diagnosis?

- A) Blood has accumulated between the man's dura and subarachnoid space.
- B) Vessels have burst between the client's skull and his dura.
- C) A traumatic lesion in the frontal or temporal lobe has resulted in increased ICP.
- D) Blood has displaced CSF in the ventricles as a consequence of his coup–contrecoup injury.

Ans: A

Feedback:

A subdural hematoma develops in the area between the dura and the arachnoid space, while epidural hematomas exist between the skull and dura. Intracerebral hematomas are located most often in the frontal or temporal lobe, and the ventricles are not directly involved in a subdural hematoma.

10. A 20-year-old has been admitted to a rehabilitation center after hospital treatment for an ischemic stroke. Which of the following aspects of the client's history would be considered to have contributed to his stroke? Select all that apply. The client

- A) is an African American male.
- B) takes iron supplements for the treatment of chronic anemia.
- C) blood pressure has historically been in the range of 150s/90s.
- D) was diagnosed with type 2 diabetes 8 years ago.
- E) takes corticosteroids for the treatment of rheumatoid arthritis.

was a corneal rather than a conjunctival disease, which of the following would be the distinguishing symptom?

- A) Burning
- B) Itching
- C) Photophobia
- D) Severe pain

Ans: D

Feedback:

While burning, itching, and photophobia are all important symptoms of conjunctivitis, severe pain suggests corneal rather than conjunctival disease.

4. A 30-year-old woman has sought care because of her recurrent photophobia, tearing, and eye irritation. During assessment, her care provider asks about any history of cold sores or genital herpes. What is the rationale for the care provider's line of questioning?

- A) Herpes simplex virus (HSV) conjunctivitis indicated a need for antiviral rather than antibacterial treatment.
- B) HSV infection of the cornea is a common cause of corneal ulceration and blindness.
- C) Chronic viral infection of the eyes can result in HSV autoinoculation of the mouth and labia.
- D) A history of HSV with eye irritation is suggestive of glaucoma.

Ans: B

Feedback:

Herpes simplex virus (HSV) keratitis (not conjunctivitis) with stromal scarring is the most common cause of corneal ulceration and blindness in the Western world. Autoinoculation from the eyes to other sites is not common, and glaucoma is not noted to be a consequence or symptom of HSV infection.

5. Which of the following preoperative teaching points related to corneal transplantation is most justified?

- A) "You should know that there is a significant risk that your body will reject the transplant."
- B) "The cornea is highly vascular, and therefore you will be at risk for hemorrhage."
- C) "Your new cornea would come from someone who has recently died."
- D) "You run a risk of developing a major inflammatory response post-op and will need frequent follow-up appointments."

Ans: C

Chapter 22: Disorders of Hemostasis

1. A hospital laboratory technologist is analyzing the complete blood count (CBC) of a patient. Which of the following statements best reflects an aspect of the platelets that would constitute part of the CBC?

- A) Platelets originate with granulocyte colony-forming units (CFU).
- B) The half-life of a platelet is typically around 8 to 12 days.
- C) The α -granules of platelets contribute primarily to vasoconstriction.
- D) New platelets are released from the bone marrow into circulation.

Ans: B

Feedback:

Platelets' half-life is typically around 8 to 12 days. They originate from megakaryocytes, and α -granules facilitate vasoconstriction. New platelets are released from the spleen into circulation.

2. A 71-year-old male patient with a history of myocardial infarction (MI) and peripheral vascular disease (PVD) has been advised by his family physician to begin taking 81 mg aspirin once daily. Which of the following statements best captures an aspect of the underlying rationale for the physician's suggestion?

- A) Platelet aggregation can be precluded through inhibition of prostaglandin production by aspirin.
- B) Aspirin helps to inhibit ADP action and minimizes platelet plug formation.
- C) Aspirin can reduce unwanted platelet adhesion by inhibiting TXA₂ synthesis.
- D) Aspirin inhibits the conversion of fibrinogen into fibrin and consequent platelet plug formation.

Ans: A

Feedback:

Aspirin prevents platelet plug formation by inhibiting synthesis of prostaglandins that mediate clot formation. Aspirin does not influence ADP, TXA₂ synthesis, or fibrinogen conversion.

3. A hospital client is receiving intravenous infusion of heparin for treatment of a pulmonary embolus. Which of the following phenomena is most likely to occur, resulting in the drug's therapeutic effect?

- A) Inhibition of vitamin K synthesis in the liver
- B) Suppression of fibrin formation
- C) Deactivation of the intrinsic clotting pathway
- D) Inhibition of ADP-induced platelet aggregation

Feedback:

The main sites involved in multiple myeloma are the bones and bone marrow. In addition to the abnormal proliferation of marrow plasma cells, there is proliferation and activation of osteoclasts that lead to bone resorption and destruction. This increased bone resorption predisposes the individual to pathologic fractures and hypercalcemia. Many patients also present with renal insufficiency. Leukostasis, susceptibility to infection, and disorders of granulocyte development are not hallmarks of multiple myeloma.

20. A 30-year-old male's blood work and biopsies indicate that he has proliferating osteoclasts that are producing large amounts of IgG. What is the man's most likely diagnosis?

- A) Acute myelogenous leukemia
- B) Multiple myeloma
- C) Acute lymphocytic leukemia
- D) Hodgkin lymphoma

Ans: B

Feedback:

One of the characteristics resulting from the proliferating osteoclasts in multiple myeloma is the unregulated production of a monoclonal antibody referred to as the M protein. In most cases, the M protein is either IgG or IgA. This phenomenon is not present in cases of CML, ALL, or Hodgkin lymphoma.

15. A 34-year-old man who is an intravenous drug user has presented to the emergency department with malaise, abdominal pain, and lethargy. The health care team wants to rule out endocarditis as a diagnosis. Staff of the department would most realistically anticipate which of the following sets of diagnostics?

- A) CT of the heart, chest x-ray, and ECG
- B) Echocardiogram, blood cultures, and temperature
- C) ECG, blood pressure, and stress test
- D) Cardiac catheterization, chest x-ray, electrolyte measurement, and white cell count

Ans: B

Feedback:

An echocardiogram would help visualize the heart, while blood cultures would confirm the presence or absence of microorganisms in circulation, and temperature would gauge the presence of infection. A chest x-ray, blood pressure measurement, and cardiac catheterization would be less likely to indicate infective endocarditis.

16. A 13-year-old boy has had a sore throat for at least a week and has been vomiting for 2 days. His glands are swollen, and he moves stiffly because his joints hurt. His parents, who believe in “natural remedies,” have been treating him with various herbal preparations without success and are now seeking antibiotic treatment. Throat cultures show infection with group A streptococci. This child is at high risk for

- A) myocarditis.
- B) mitral valve stenosis.
- C) infective endocarditis.
- D) vasculitis.

Ans: B

Feedback:

Group A streptococcal infection can be adequately treated with antibiotics, but this infection may have been present long enough to trigger an immune response—rheumatic fever—that will damage his heart valves, ultimately causing mitral valve stenosis. Group A streptococcal infection is not known to predispose to myocarditis, endocarditis, or vasculitis and aneurysm of coronary arteries.

17. On a routine physical exam visit, the physician mentions that he hears a new murmur. The patient gets worried and asks, “What does this mean?” The physician responds,

- A) “It would be caused by stress. Let's keep our eye on it and see if it goes away with your next visit.”
- B) “This could be caused by an infection. Have you been feeling well the past few weeks?”

145 mEq/L). Based on this assessment, the nurse suspects the patient has

- A) bronchopneumonia.
- B) Mycoplasma pneumonia.
- C) Legionella pneumonia.
- D) pneumococcal pneumonia.

Ans: C

Feedback:

Confusion, dry cough, diarrhea, and hyponatremia are associated with Legionnaire disease and less so with bronchopneumonia, Mycoplasma pneumonia, or pneumococcal pneumonia.

9. A health educator is performing a health promotion workshop with the staff of a large, urban homeless shelter, and a component of the teaching centers around tuberculosis. One of the staff members comments, "Anyone who's had contact with tuberculosis in the past can give it to any of the other residents of the shelter, even if they didn't get sick themselves." How could the educator best respond to this comment?

- A) "Many people do manage to fight off the infection, but you're right: they can still spread it by coughing or sneezing."
- B) "If someone has been previously exposed to tuberculosis, they are particularly infectious because they are often unaware of the disease."
- C) "Actually, people who have the latent form of the disease won't be sick and can't spread it either."
- D) "There isn't any real risk of them spreading it, but we would like to vaccinate everyone who's had any contact with it in the past."

Ans: C

Feedback:

Contact with M. tuberculosis without the development of progressive primary tuberculosis results in a latent infection that is not communicable. Vaccination is not a common intervention in the United States.

10. When educating a student who lives in a crowded apartment and diagnosed with tuberculosis, the college school nurse will emphasize,

- A) "Once your fever goes away, you can stop taking the streptomycin injection."
- B) "If isoniazid makes you nauseous, we can substitute something milder."
- C) "To destroy this bacterium, you must strictly adhere to a long-term drug regimen."
- D) "You will have to wear an N95 mask while on campus at all times."

Ans: C

- B) "It's important that you avoid high-calcium foods like milk, cheese, and yogurt."
- C) "We will come up with a plan to safely limit your fluid intake over the next few weeks."
- D) "Extracorporeal shock-wave lithotripsy treatment may be used to fragment larger stones."
- E) "Most likely your stones can be dissolved by medications over the next several days."

Ans: A, D

Feedback:

Individuals with calcium oxalate stones often need to avoid high-oxalate foods like nuts, cocoa, and chocolate. Extracorporeal shock-wave lithotripsy treatment may be used to fragment larger renal calculi. It would not be necessary to avoid calcium intake, and fluid intake should be encouraged, not curbed. Medications can reduce the potential for stone formation but are not a common treatment modality.

9. Which of the following individuals is at the highest risk of developing a urinary tract infection (UTI)?

- A) A 60-year-old man with a history of cardiovascular disease who is recovering in hospital from a coronary artery bypass graft
- B) A 66-year-old man undergoing dialysis for the treatment of chronic renal failure secondary to hypertension
- C) A 38-year-old man with high urine output due to antidiuretic hormone insufficiency
- D) A 30-year-old woman with poorly controlled diabetes mellitus

Ans: D

Feedback:

Young women as well as persons with diabetes are at high risk of UTIs. Neither postsurgical recovery nor renal failure is necessarily a direct risk for UTI development, and high urine output would prevent decrease rather than increase in UTI risk.

10. A 24-year-old college student has presented to the campus medical clinic with complaints of frequent, burning urination and has, subsequent to urinalysis, been diagnosed with an acute lower urinary tract infection (UTI) caused by *E. coli*. What teaching will the clinician most likely provide to the student?

- A) "This should likely resolve itself if you drink a lot of water and especially cranberry or blueberry juice."
- B) "Unfortunately, the bacteria causing your infection is no longer responsive to antibiotics, but there are alternative treatments that we can use."
- C) "Many of these bacteria are now resistant to some antibiotics, but I will take that into account when I choose which antibiotic to prescribe."
- D) "This likely shows that you have some sort of obstruction in your urinary system,

E) A cushioning to protect against injury from sports or car accidents

Ans: A, D

Feedback:

The first layer performs numerous functions. These include production of mucus that lubricates and protects the inner surface of the alimentary canal; secretion of digestive enzymes and substances that break down food; absorption of the breakdown products of digestion; and maintenance of a barrier to prevent the entry of noxious substances and pathogenic organism. The facilitation of movement of contents of the GI tract occurs in the third layer while holding the organs in place, and storage of fats occurs in the fourth layer.

4. The instructor asks a group of nursing students to explain the function of the omentum. The students will respond based on which pathophysiologic principle?

A) It holds organs in place.

B) It attaches the jejunum and ileum to the abdominal wall.

C) It has lots of mobility and moves around in the peritoneal cavity with peristaltic movements.

D) It is mainly there to prevent any noxious substance from inner into the gut.

Ans: C

Feedback:

The greater omentum has considerable mobility and moves around in the peritoneal cavity with the peristaltic movements of the intestines. It also cushions the abdominal organs against injury and provides insulation against the loss of body heat. The mesentery holds the organs in place and attaches the jejunum and ileum to the abdominal wall. The mucosal layer acts as a barrier to prevent the entry of noxious substances and pathogenic organisms.

5. When the sympathetic nervous system is stimulated, the interstitial cells of Cajal, pacemaker cells of the GI tract, react by

A) decreasing amplitude or abolishing the slow waves that control the spontaneous oscillations in membrane potentials.

B) increasing the peristaltic motion of the GI tract, thereby causing explosive diarrhea.

C) increasing the amount of secretions being entered into each segment of the intestinal tract.

D) signaling the vagus nerve to slow down motility and increase absorption of water from the large intestine.

Ans: A

Feedback:

The interstitial cells of Cajal that are found in groups between the layers of smooth muscle tissue are hypothesized to function as the pacemakers. These cells display

Ocetrotide, a long-acting synthetic analog of somatostatin, reduces splanchnic and hepatic blood flow and portal pressures in persons with cirrhosis. Bevacizumab was the first angiogenesis inhibitor that was shown to slow tumor growth and, more importantly, to extend the lives of patients with some cancers. Filgrastim rapidly reverses neutropenia and maintains normal ANC in patients with HIV infection. Diltiazem is used to treat a variety of conditions, such as high blood pressure, migraines, and Raynaud disease.

17. Which of the following clients in a hospital medical unit is most clearly demonstrating the signs and symptoms of liver failure? An adult with

- A) low hemoglobin levels, low platelet levels, and spider angiomas present.
- B) blood pressure of 189/103, jaundice, and multiple thromboses.
- C) sudden onset of confusion, a history of alcohol abuse, and low levels of serum AST and ALT.
- D) ascites, fever, and recent onset of atrial fibrillation.

Ans: A

Feedback:

Anemia, thrombocytopenia, and the presence of spider angiomas are characteristic of liver failure. High blood pressure, excessive clotting, fever, and cardiac arrhythmias are not common symptoms of liver failure, and AST and ALT levels would rise, not fall.

18. Following several days of intermittent upper right quadrant pain, a 29-year-old obese, Native American woman has been diagnosed with cholelithiasis. The nurse at the clinic has taught the client about the pathophysiology and contributing factors to her health problem, as well as some of the likely treatment options. Which of the following statements by the client demonstrates a sound understanding of her diagnosis?

- A) "All in all, I guess this is a result of the fact that I've been eating a diet too high in cholesterol for too long."
- B) "Several factors like my genetics and gender may have contributed to this, but I'm glad that medications can cure it."
- C) "This explains why my skin was yellow-tinged lately and why I had those pains that spread to my upper back and right shoulder."
- D) "I suppose the fever and vomiting I had this week was probably a sign of my gallstones too."

Ans: C

Feedback:

Gallstones can be caused by abnormalities in the composition of bile (increased cholesterol) and stasis of bile. The formation of cholesterol stones is associated with obesity and occurs more frequently in women. These factors cause the liver to excrete more cholesterol into the bile. Estrogen reduces the synthesis of bile acid in

most likely anticipate providing for the client?

- A) β -Adrenergic–blocking medications to reduce sympathetic nervous stimulation
- B) Administration of levothyroxine to supplement thyroid function
- C) Calcium channel blocking medications to reduce heart rate and cardiac risks
- D) Administration of somatostatin analogs to inhibit GH production

Ans: A

Feedback:

The hyperthyroidism that constitutes Graves disease can often be mitigated by the administration of β -adrenergic–blocking medications. Levothyroxine would be used to address hypothyroidism, and calcium channel blockers are not an identified treatment modality for Graves disease. Somatostatin analogs are used to treat GH excess.

14. After receiving change-of-shift report about the following four patients, which patient should the nurse assess first?

- A) A 22-year-old admitted with SIADH who has a serum sodium level of 130 mEq/L
- B) A 31-year-old who has iatrogenic Cushing syndrome with a capillary blood glucose level of 204 mg/dL
- C) A 53-year-old who has Addison disease and is due for a scheduled dose of hydrocortisone (Solu-Cortef)
- D) A 70-year-old returning from PACU following partial thyroidectomy who is extremely agitated, has an irregular pulse rate of 134, and has an elevated temperature of 103.2°F

Ans: D

Feedback:

Manipulation of a hyperactive thyroid gland during thyroidectomy can cause thyroid storm. It is manifested by very high fever, extreme cardiovascular effects (tachycardia, HF, angina), and severe CNS effects (agitation, restlessness, and delirium). Answer choice A refers to normal sodium levels. Answer choice B refers to high blood glucose level but not critical level. Answer choice C refers to lower priority. It is always preferred to give medications in a timely manner; however, thyroid storm signs and symptoms are the priority for this group of patients.

15. Which of the following statements best captures the role of the adrenal cortex in maintaining homeostasis?

- A) The adrenal cortex is responsible for the production of epinephrine and norepinephrine that are part of the sympathetic nervous system.
- B) The adrenal cortical hormones are primarily steroids and sex hormones.
- C) Redundant, secondary production of adrenal cortical hormones can compensate

- C) High progesterone levels
- D) Low human chorionic gonadotropin levels

Ans: A

Feedback:

Cervical mucus that exhibits ferning and so-called spinnbarkeit occurs right around the time of ovulation (midcycle) due to increased water content and alteration in the concentration of inorganic salts. This is influenced by high serum levels of estrogen, which lead to the LH spike that promotes ovulation (bursting of the oocyte from the mature follicle). Progesterone levels increase only after ovulation during the luteal phase, at which point the cervical mucus “dries up” (becomes more scant).

12. After hearing daunting reports from her slightly older coworkers and friends, a 44-year-old woman has a number of questions for her physician about what to expect during perimenopause and why. Which of the following teaching points is most accurate?

- A) “The decrease in estrogen and most other hormones in your body do cause a lot of instability for most women around menopause.”
- B) “Hot flashes are a reality for most women in menopause, and the exact cause of them isn't known yet.”
- C) “The emotional swings that often accompany menopause result from changes to the limbic center in the brain, which governs emotion.”
- D) “There are a lot of changes to the gastrointestinal and respiratory systems that exist around menopause that ultimately result from estrogen deficiency.”

Ans: B

Feedback:

Hot flashes are a common accompaniment to menopause, and their exact etiology is not known. Menopause is caused by a gradual reduction in ovarian estrogen production, but decreases in other hormones do not commonly occur. Organic brain changes are not a noted component of menopause, and GI and respiratory symptoms are not prevalent.

13. The nurse knows that when combined continuous estrogen–progesterone therapy (CCEPT) is prescribed, the drug is considered effective if which of the following occurs?

- A) More regular periods for women with irregular menses
- B) Inhibited endometrial development resulting in no menses
- C) Relaxation of the myometrium, thereby limited painful cramps
- D) Shedding of the endometrial build-up on a more regular basis

Ans: B

Feedback:

of long bones.

6. A 30-year-old woman has just given birth to a boy. How will the mother's bone marrow differ from that of her son?

- A) Her bone marrow performs additional functions for the maintenance of homeostasis that her son is not able to yet perform.
- B) The son will have a greater proportion of adipose tissue in his bone marrow.
- C) Proportionately, the infant will have more red marrow and less yellow marrow than his mother.
- D) The amount of yellow marrow in the son's bones will decrease as he develops.

Ans: C

Feedback:

At birth, nearly all of the marrow is red and hematopoietically active. As the need for red blood cell production decreases during postnatal growth, red marrow is gradually replaced with yellow bone marrow in most of the bones.

7. While studying bones in pathophysiology class, the nursing students learn that the Haversian canals are composed of

- A) calcium salts.
- B) collagen.
- C) lymphatics.
- D) glycosaminoglycans.

Ans: C

Feedback:

Haversian canals are spaces in the bone of the cortex that move parallel through the long axis of the bone for a short distance and then branch and communicate with other, similar canals. Each canal carries one or two blood vessels, lymphatics, and some nerve fibers.

8. Bone is connective tissue, in which the intercellular matrix has been impregnated with inorganic calcium salts, that has great tensile and compressible strength but is light enough to be moved by coordinate muscle contractions. One third of the dry weight of bone is composed of which of the following?

- A) Bone cells, inorganic salts, and blood vessels
- B) Hydroxyapatite, calcium carbonate, and calcium fluoride
- C) Bone cells, blood vessels, and nerves
- D) Organic matter and inorganic salts

Ans: C

D) B-cell lymphocytes

Ans: A

Feedback:

Ninety-five percent of people with untreated SLE have high ANA levels. However, ANA is not specific for SLE. The anti-DNA antibody test is more specific for the diagnosis of SLE. Hemoglobin may be low if the patient has severe anemia, but it is not specific for SLE. C-reactive protein will show an inflammatory response but again not specific for SLE.

6. A 44-year-old woman who has a long-standing diagnosis of SLE has been able to control her symptoms with lifestyle modifications for several years, but has presented to her care provider due to recent exacerbation. Which of the following pharmacological treatment options is her care provider most likely to rule out first?

- A) Nonsteroidal anti-inflammatory drugs
- B) Corticosteroids
- C) Antiplatelet aggregators
- D) Immunosuppressive drugs

Ans: C

Feedback:

While NSAIDs, corticosteroids, and immunosuppressives are all noted treatment options for SLE, antiplatelet aggregators are unlikely to address the etiology or signs and symptoms of the disease. A new drug that has shown positive effects in decreasing inflammatory exacerbations for people with SLE is Belimumab, which is a monoclonal antibody that inhibits B-lymphocyte stimulator.

7. A 36-year-old female who has experienced diverse symptoms for several years has finally had her health problems attributed to scleroderma (systemic sclerosis) and has committed herself to learning as much about the disease as she can. Which of her following statements would her nurse want to correct or clarify?

- A) "I'm surprised that in this day and age, they still don't know what causes scleroderma."
- B) "I suppose this explains why I have such terrible circulation to my hands and feet."
- C) "I'm scared by the damage that this could cause to my heart and lungs."
- D) "The worst part of this so far has been learning that there aren't any treatments for scleroderma."

Ans: D

Feedback:

While the cause of scleroderma remains unknown, supportive treatments that address symptoms do exist. Reynaud phenomenon is a very common accompaniment to the disease, and cardiac and pulmonary involvement is common.