Physician Assistant Clinical Knowledge Rating and Assessment Tool (PACKRAT) 5 Practice Test (Sample)

Study Guide

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Questions

1. **A 19-year-old female with a sore throat presents with fatigue and lymphadenopathy. What would be expected in her blood smear?**

   A. Atypical lymphocytes

   B. Hypersegmented neutrophils

   C. Hypochromic red blood cells

   D. Schistocytes

2. **Which pathophysiological process is associated with chronic bronchitis?**

   A. Destruction of the lung parenchyma

   B. Mucous gland enlargement and goblet cell hyperplasia

   C. Smooth muscle hypertrophy in the large airways

   D. Increased mucus adhesion due to reduction in the salt content of mucus

3. **A 60 year-old male presents with anemia and splenomegaly, along with a markedly elevated WBC count with a high percentage of mature lymphocytes. What is the most likely diagnosis?**

   A. Myelodysplastic syndrome

   B. Acute lymphocytic leukemia

   C. Chronic lymphocytic leukemia

   D. Chronic myelogenous leukemia

4. **Which is the correct treatment for Pediculosis pubis?**

   A. Permethrin (Nix) cream

   B. Clotrimazole (Gyne-Lotrimin)

   C. Podofilox (Condylox) solution

   D. Selenium sulfide (Selsun) suspension

5. **In a 23-year-old male experiencing syncope and a mid-systolic murmur, which diagnosis is most likely?**

   A. Hypertrophic Cardiomyopathy

   B. Aortic Stenosis

   C. Mitral Regurgitation

   D. Pulmonic Stenosis

6. A 24-year-old male presents with different blood pressures in upper and lower extremities, with a late systolic murmur. What is the likely diagnosis?

A. Hypertrophic obstructive cardiomyopathy

B. Patent foramen ovale

C. Coarctation of the aorta

D. Patent ductus arteriosus

7. A male patient presents with chronic dysuria, frequency, urgency, and perineal pain. What is the most likely diagnosis?

A. Cystitis

B. Gonococcal urethritis

C. Epididymitis

D. Prostatitis

8. Which medication is the first-line treatment for gestational diabetes?

A. Oral hypoglycemic agents

B. Regular insulin

C. Oral corticosteroids

D. Glucagon

9. If the fundal height of a pregnant patient is at the level of the umbilicus, what is the corresponding gestational age?

A. 16 weeks

B. 20 weeks

C. 24 weeks

D. 28 weeks

10. A patient presents with edema in the hands and face, proteinuria, hypoalbuminemia, and hyperlipidemia. What is the most likely diagnosis?

A. Congestive heart failure

B. End-stage liver disease

C. Nephrotic syndrome

D. Malnutrition

Answers

1. A
2. B
3. C
4. A
5. A
6. C
7. D
8. B
9. B
10. C

Explanations

1. A 19-year-old female with a sore throat presents with fatigue and lymphadenopathy. What would be expected in her blood smear?

A. Atypical lymphocytes

B. Hypersegmented neutrophils

C. Hypochromic red blood cells

D. Schistocytes

In the context of a 19-year-old female presenting with a sore throat, fatigue, and lymphadenopathy, the presence of atypical lymphocytes in the blood smear is expected, particularly if the underlying cause is infectious mononucleosis, commonly caused by Epstein-Barr virus (EBV). Atypical lymphocytes, which are large, irregularly shaped T cells, are often seen in viral infections and are indicative of the body's immune response to the virus. The presence of these atypical cells helps in supporting the diagnosis of Infectious Mononucleosis, characterized by these clinical features. Other blood smear findings would not typically align with the symptoms described. Hypersegmented neutrophils are often associated with vitamin B12 or folate deficiencies rather than viral infections. Hypochromic red blood cells suggest chronic blood loss or iron deficiency anemia, while schistocytes indicate hemolytic anemia, both of which do not correlate with the symptoms presented. Thus, the detection of atypical lymphocytes aligns with the clinical picture of a viral infection, making it the appropriate choice in this scenario.

2. Which pathophysiological process is associated with chronic bronchitis?

A. Destruction of the lung parenchyma

B. Mucous gland enlargement and goblet cell hyperplasia

C. Smooth muscle hypertrophy in the large airways

D. Increased mucus adhesion due to reduction in the salt content of mucus

Chronic bronchitis is primarily characterized by the persistent inflammation of the bronchi, which leads to marked changes in the airway structure. The correct choice highlights the pathophysiological process of mucous gland enlargement and goblet cell hyperplasia. In chronic bronchitis, prolonged exposure to irritants such as cigarette smoke or environmental pollutants leads to an increase in the size and number of mucus-secreting glands in the airways. This increase in mucus production, combined with goblet cell hyperplasia, results in excessive mucus secretion. This overproduction of mucus is a hallmark of chronic bronchitis and contributes to the symptoms of the disease, including chronic cough and sputum production. The enlarged mucus glands and hyperplastic goblet cells impede airflow and trap pathogens, which can exacerbate inflammation and lead to further airway obstruction. While other processes might occur in chronic respiratory conditions, the enlargement of the mucous glands and increased number of goblet cells directly correlate with the persistent cough and sputum that define chronic bronchitis.

3. A 60 year-old male presents with anemia and splenomegaly, along with a markedly elevated WBC count with a high percentage of mature lymphocytes. What is the most likely diagnosis?

A. Myelodysplastic syndrome

B. Acute lymphocytic leukemia

C. Chronic lymphocytic leukemia

D. Chronic myelogenous leukemia

The presentation of a 60-year-old male with anemia, splenomegaly, and significantly elevated white blood cell (WBC) count characterized by a high percentage of mature lymphocytes is indicative of chronic lymphocytic leukemia (CLL). CLL predominantly affects older adults and is characterized by the accumulation of functionally incompetent, mature lymphocytes. Anemia and splenomegaly are common complications of CLL as the disease progresses, due to the infiltration of the bone marrow by malignant lymphocytes and the buildup of leukemic cells in the spleen. The elevated WBC count, particularly with a high lymphocyte component, further supports the diagnosis of CLL, as it is one of the hallmarks of this condition. In contrast, other conditions listed may present differently. Myelodysplastic syndromes often lead to cytopenias due to ineffective hematopoiesis and do not typically present with the high lymphocyte counts seen in CLL. Acute lymphocytic leukemia typically presents with a higher proportion of immature blast cells rather than mature lymphocytes and is more aggressive, also usually seen in younger populations. Chronic myelogenous leukemia may present with high WBC counts but is usually characterized by a significant presence of myeloid

4. Which is the correct treatment for Pediculosis pubis?

A. Permethrin (Nix) cream

B. Clotrimazole (Gyne-Lotrimin)

C. Podofilox (Condylox) solution

D. Selenium sulfide (Selsun) suspension

Permethrin cream is considered the first-line treatment for Pediculosis pubis, commonly known as pubic lice. This ectoparasitic infestation is effectively treated with this topical insecticide, which works by targeting the nervous system of the lice, leading to their death. Permethrin is widely recognized for its efficacy against both lice and scabies, making it a suitable choice for the treatment of pubic lice. Its application typically involves spreading the cream over the affected area and surrounding regions, usually left on for a specified duration before being washed off. In contrast, other options listed are not appropriate for this specific condition. Clotrimazole is an antifungal cream primarily used for fungal infections, making it ineffective against lice. Podofilox is used for treating genital warts, and selenium sulfide is primarily an antifungal treatment for seborrheic dermatitis and dandruff. As such, these alternatives do not have the necessary activity against pubic lice, reinforcing the choice of permethrin as the correct treatment.

5. In a 23-year-old male experiencing syncope and a mid-systolic murmur, which diagnosis is most likely?

A. Hypertrophic Cardiomyopathy

B. Aortic Stenosis

C. Mitral Regurgitation

D. Pulmonic Stenosis

Hypertrophic Cardiomyopathy is a condition that is often associated with syncope, particularly in young individuals, such as the 23-year-old male presented in the scenario. This condition involves abnormal thickening of the heart muscle, specifically the interventricular septum, which can lead to outflow obstruction and altered cardiac function. The mid-systolic murmur that is noted is commonly heard in patients with Hypertrophic Cardiomyopathy due to the dynamics of blood flow through the left ventricular outflow tract during systole, which is altered by the hypertrophied muscle. Syncope can occur in Hypertrophic Cardiomyopathy due to several factors, including exertion leading to reduced cardiac output or arrhythmias, both of which can precipitate fainting episodes. Recognizing the presentation of syncope in conjunction with a mid-systolic murmur is essential in identifying this diagnosis. While aortic stenosis also can present with a mid-systolic murmur and syncope, it is typically seen more often in older adults due to calcific degeneration of the aortic valve. Additionally, mitral regurgitation and pulmonic stenosis are less likely to be the primary considerations in this demographic and presentation. Mitral regurgitation

6. A 24-year-old male presents with different blood pressures in upper and lower extremities, with a late systolic murmur. What is the likely diagnosis?

A. Hypertrophic obstructive cardiomyopathy

B. Patent foramen ovale

C. Coarctation of the aorta

D. Patent ductus arteriosus

The presentation of differing blood pressures in the upper and lower extremities, combined with a late systolic murmur, suggests coarctation of the aorta. In this condition, there is a narrowing of the aorta, typically just distal to the left subclavian artery. This anatomical change leads to higher blood pressures in the arms (upper body) compared to the legs (lower body) because of the increased resistance to blood flow beyond the coarctation. The late systolic murmur that accompanies this condition is often due to collateral circulation that develops over time as the body compensates for the differential blood flow and pressures. These collaterals can create turbulent blood flow and lead to the characteristic murmur. Other conditions, while they may present with specific murmurs or differential blood pressures, do not typically account for the same pattern observed in coarctation of the aorta. Hypertrophic obstructive cardiomyopathy is primarily associated with dynamic obstruction to outflow and characteristic heart sounds but does not cause a systemic difference in blood pressures between extremities. Patent foramen ovale and patent ductus arteriosus are congenital heart conditions that primarily affect shunting of blood rather than creating upper and lower body blood pressure discrepancies.

7. A male patient presents with chronic dysuria, frequency, urgency, and perineal pain. What is the most likely diagnosis?

A. Cystitis

B. Gonococcal urethritis

C. Epididymitis

D. Prostatitis

The presentation of chronic dysuria, frequency, urgency, and perineal pain strongly suggests prostatitis as the most likely diagnosis. Prostatitis, particularly chronic prostatitis/chronic pelvic pain syndrome, commonly manifests with these symptoms due to inflammation of the prostate gland. Patients may experience pain in the perineum because the prostate is located in close proximity to this area, and inflammation can trigger discomfort that radiates to the perineum. Additionally, urinary symptoms such as dysuria, urgency, and frequency are frequent complaints due to the prostate's influence on the surrounding urinary structures. The other conditions listed might present with overlapping symptoms, but they typically have distinct characteristics or settings that differentiate them from prostatitis. For example, cystitis usually presents more acutely with a strong urge to urinate and often includes hematuria, but it does not typically cause perineal pain. Gonococcal urethritis would generally present with purulent discharge and is more commonly associated with acute onset urinary symptoms rather than chronic issues. Epididymitis can cause scrotal pain and swelling, and while it can have urinary symptoms, the perineal pain characteristic is not as prominent. Thus, the clinical picture provided aligns closely with prostatitis

8. Which medication is the first-line treatment for gestational diabetes?

A. Oral hypoglycemic agents

B. Regular insulin

C. Oral corticosteroids

D. Glucagon

The first-line treatment for gestational diabetes is regular insulin, which is significant for several reasons. Insulin is a hormone that helps regulate blood glucose levels, and during pregnancy, it becomes crucial to manage these levels to ensure both maternal and fetal health. Gestational diabetes can lead to complications such as macrosomia, preterm birth, and increased risk of cesarean delivery, making effective management essential. Regular insulin is favored because it does not cross the placenta, thereby minimizing potential adverse effects on the fetus. Additionally, insulin therapy can be easily monitored and adjusted to achieve target blood glucose levels. When lifestyle modifications alone are insufficient to control blood sugar in gestational diabetes, insulin provides a safe and effective means of maintaining glycemic control. While oral hypoglycemic agents may be used in some cases, they are not considered first-line treatment, particularly because some of these agents can cross the placenta and may pose risks to the developing fetus. Oral corticosteroids and glucagon do not play a role in treating gestational diabetes, as they are unrelated to glycemic control. Thus, regular insulin stands out as the most appropriate and safest option for managing gestational diabetes in pregnant individuals.

9. If the fundal height of a pregnant patient is at the level of the umbilicus, what is the corresponding gestational age?

A. 16 weeks

B. 20 weeks

C. 24 weeks

D. 28 weeks

The correlation between fundal height and gestational age is a key component of prenatal assessments. At approximately 20 weeks of gestation, the fundal height typically reaches the level of the umbilicus. This is a critical milestone in pregnancy as it indicates that the uterus has grown sufficiently to reach that anatomical landmark due to the expanding fetal size. Monitoring fundal height is essential for assessing fetal growth and development throughout pregnancy. By the second trimester, particularly around the 20-week mark, the growth of the uterus can be palpated at the umbilical level, which is a standard clinical finding. This understanding helps healthcare providers evaluate whether the pregnancy is progressing normally. In the case presented, when the fundal height is measured at the level of the umbilicus, it is most consistent with a gestational age of 20 weeks, making that the correct answer.

10. A patient presents with edema in the hands and face, proteinuria, hypoalbuminemia, and hyperlipidemia. What is the most likely diagnosis?

A. Congestive heart failure

B. End-stage liver disease

C. Nephrotic syndrome

D. Malnutrition

The presentation of edema in the hands and face, proteinuria, hypoalbuminemia, and hyperlipidemia points towards nephrotic syndrome as the most likely diagnosis. Nephrotic syndrome is characterized by significant proteinuria, which leads to lowered serum albumin levels (hypoalbuminemia). The decrease in plasma oncotic pressure due to low albumin results in edema, which can be generalized or localized, often affecting areas like the hands and face. Hyperlipidemia is also commonly associated with nephrotic syndrome due to compensatory mechanisms in response to low protein levels. In contrast, other conditions such as congestive heart failure and end-stage liver disease can present with edema but are typically accompanied by different laboratory findings and clinical features. Malnutrition could cause some of the edema and hypoalbuminemia but would not typically present with significant proteinuria or hyperlipidemia to the extent seen in nephrotic syndrome. Thus, the combination of symptoms makes nephrotic syndrome the clear diagnosis in this clinical scenario.