Prophecy/Relias RN Pharmacology A Practice Test (Sample)

Study Guide

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Questions

1. **Which statement indicates that a patient prescribed an oral antihyperglycemic agent understands the symptoms of hypoglycemia?**
   - **A. If my sugar levels rise, I need to take more medication**
   - **B. If I have sweating, shakes, nervousness, increased heart rate, or headache, my sugar might be low because of my new medicine**
   - **C. I should always wait for a doctor's advice before testing my sugar**
   - **D. If I feel fine, there is no need to check my blood sugar**

2. **The physician orders 0.5 mg/kg of a medication. The medication is supplied in a 10 mg/mL solution. The person you are caring for weighs 40 kg. How many mL of the drug would you administer?**
   - **A. 1 mL**
   - **B. 2 mL**
   - **C. 3 mL**
   - **D. 4 mL**

3. **How do beta-blockers work in the body?**
   - **A. They block the effects of adrenaline on beta-adrenergic receptors**
   - **B. They enhance the action of adrenaline**
   - **C. They increase heart rate and blood pressure**
   - **D. They stimulate beta-adrenergic receptors**

4. **Your patient presents with CHF and has a potassium level of 5.8. Which diuretic do you anticipate being ordered by the provider?**
   - **A. Spironolactone**
   - **B. Bumetanide (Bumex)**
   - **C. Hydrochlorothiazide**
   - **D. Furosemide (Lasix)**

5. Which class of medication is commonly used to treat hypertension?

A. Antibiotics

B. Beta-blockers

C. Antidepressants

D. Analgesics

6. Why is patient education critical when prescribing antibiotic therapy?

A. To ensure patients follow a strict diet

B. To avoid allergic reactions

C. To prevent antibiotic resistance

D. To minimize medication costs

7. What is a common use of PPIs in clinical settings?

A. To manage chronic pain

B. To treat infections

C. To reduce gastric acid secretion

D. To enhance blood cell production

8. What can occur when MAO inhibitors are combined with certain foods?

A. Decreased medication efficacy

B. Hypertensive crisis

C. Hypotensive episodes

D. Allergic reactions

9. What should a nurse do before administering any medication that can cause sedation?

A. Check liver function

B. Assess for allergies

C. Evaluate the patient's current level of consciousness

D. Monitor blood pressure

10. If a person has a penicillin allergy, which medication should be questioned if ordered?

A. Ceftriaxone

B. Amoxicillin

C. Doxycycline

D. Ciprofloxacin

Answers

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

Explanations

1. Which statement indicates that a patient prescribed an oral antihyperglycemic agent understands the symptoms of hypoglycemia?

A. If my sugar levels rise, I need to take more medication

B. If I have sweating, shakes, nervousness, increased heart rate, or headache, my sugar might be low because of my new medicine

C. I should always wait for a doctor's advice before testing my sugar

D. If I feel fine, there is no need to check my blood sugar

The statement highlighting the connection between symptoms such as sweating, shakes, nervousness, increased heart rate, or headache and low blood sugar indicates that the patient has a clear understanding of hypoglycemia, particularly in the context of being on oral antihyperglycemic agents. Recognizing these symptoms is crucial because they are typical indicators of hypoglycemia, which is a potential side effect of such medications. Patients on antihyperglycemic agents should be able to identify the signs of low blood sugar, as managing this condition is vital for their safety and overall health. By acknowledging these specific symptoms, the patient demonstrates awareness of the need for timely intervention, which may include consuming a fast-acting source of glucose to alleviate the hypoglycemic episode. This understanding is key to avoiding severe complications associated with low blood sugar levels.

2. The physician orders 0.5 mg/kg of a medication. The medication is supplied in a 10 mg/mL solution. The person you are caring for weighs 40 kg. How many mL of the drug would you administer?

A. 1 mL

B. 2 mL

C. 3 mL

D. 4 mL

To determine the correct volume of medication to administer, you first need to calculate the total dosage required based on the patient's weight. The physician ordered 0.5 mg of the medication for each kilogram of the person's weight. Given that the person weighs 40 kg, you perform the multiplication: 0.5 mg/kg × 40 kg = 20 mg. Next, since the medication is supplied as a 10 mg/mL solution, you need to figure out how many milliliters are needed to provide the 20 mg dosage. To do this, you calculate the volume using the concentration of the solution. Using the formula: Volume (mL) = Total Dose (mg) / Concentration (mg/mL) you substitute in the values: Volume (mL) = 20 mg / 10 mg/mL = 2 mL. Thus, the correct answer is 2 mL. This calculation is essential for ensuring the patient receives the correct amount of medication based on their weight and the concentration available.

3. How do beta-blockers work in the body?

A. They block the effects of adrenaline on beta-adrenergic receptors

B. They enhance the action of adrenaline

C. They increase heart rate and blood pressure

D. They stimulate beta-adrenergic receptors

Beta-blockers function by blocking the effects of adrenaline, also known as epinephrine, on beta-adrenergic receptors found in various tissues, including the heart, lungs, and blood vessels. By inhibiting adrenaline binding to these receptors, beta-blockers reduce heart rate, decrease force of contraction, and lower blood pressure. This makes them effective in treating conditions such as hypertension, heart failure, arrhythmias, and anxiety. In contrast, enhancing the action of adrenaline or stimulating beta-adrenergic receptors would lead to increased heart rate and blood pressure, which is contrary to the therapeutic effects of beta-blockers. Thus, the primary action of beta-blockers is to antagonize the effects of adrenaline, leading to a calming effect on the cardiovascular system and improving outcomes in various cardiovascular diseases.

4. Your patient presents with CHF and has a potassium level of 5.8. Which diuretic do you anticipate being ordered by the provider?

A. Spironolactone

B. Bumetanide (Bumex)

C. Hydrochlorothiazide

D. Furosemide (Lasix)

In the context of a patient with congestive heart failure (CHF) and a potassium level of 5.8, the ideal choice of diuretic must consider the potential impact on potassium levels. Bumetanide, as a loop diuretic, is effective in treating fluid overload associated with CHF. Loop diuretics, including Bumetanide, often lead to increased potassium loss, which can be beneficial in a situation where the patient has hyperkalemia (elevation of potassium levels). In this case, with a potassium level of 5.8, the use of Bumetanide may help lower the potassium level as it promotes the excretion of potassium through the kidneys. Other diuretics, such as Spironolactone, are potassium-sparing and could exacerbate the hyperkalemia, making them unsuitable in this situation. Hydrochlorothiazide and Furosemide could also potentially lead to doses that are either ineffective or insufficiently diuretic considering the hyperkalemic state of the patient. Therefore, Bumetanide stands out as the most appropriate choice due to its ability to effectively manage fluid overload while also addressing the elevated potassium levels.

5. Which class of medication is commonly used to treat hypertension?

A. Antibiotics

B. Beta-blockers

C. Antidepressants

D. Analgesics

Beta-blockers are a class of medications that are commonly used to treat hypertension, or high blood pressure. They work by blocking the action of certain chemicals in the body, notably epinephrine (also known as adrenaline), which leads to a decrease in heart rate and the force of contraction of the heart. This results in lower blood pressure and reduced strain on the heart. Beta-blockers also have other beneficial effects such as reducing anxiety and preventing migraines, but their primary role in hypertension management is significant. They are often used in combination with other antihypertensive agents to achieve optimal blood pressure control. Understanding the role of beta-blockers in the treatment of hypertension is crucial for nursing practice, as they are frequently prescribed for patients with cardiovascular conditions. Managing hypertension effectively can help prevent serious complications such as heart attack, stroke, and kidney damage.

6. Why is patient education critical when prescribing antibiotic therapy?

A. To ensure patients follow a strict diet

B. To avoid allergic reactions

C. To prevent antibiotic resistance

D. To minimize medication costs

Patient education is critical when prescribing antibiotic therapy primarily to prevent antibiotic resistance. When patients are well-informed about their medication regimen, they are more likely to understand the importance of completing the prescribed course of antibiotics, even if they start to feel better before finishing the treatment. Incomplete courses can lead to bacteria not being fully eradicated, allowing for some organisms to survive and develop resistance to the antibiotics. This resistance can result in the bacteria becoming harder to treat in the future, leading to longer illness durations, increased healthcare costs, and a higher risk of complications. Moreover, educating patients on the appropriate use of antibiotics, including when they are necessary and when they are not (such as for viral infections), further reduces the misuse of these medications. This collective understanding helps preserve the effectiveness of current antibiotics and contributes to overall public health.

7. What is a common use of PPIs in clinical settings?

A. To manage chronic pain

B. To treat infections

C. To reduce gastric acid secretion

D. To enhance blood cell production

Proton pump inhibitors (PPIs) are primarily utilized to reduce gastric acid secretion in clinical settings. They work by blocking the proton pump in the stomach lining, which is responsible for the final step in the production of gastric acid. This mechanism greatly decreases the acidity in the stomach, which is beneficial for treating various conditions linked to excessive stomach acid production. Common indications for PPIs include the management of gastroesophageal reflux disease (GERD), peptic ulcers, and conditions like Zollinger-Ellison syndrome, where there is excessive gastric acid secretion. By lowering the acidity, PPIs help alleviate symptoms such as heartburn and reduce the risk of developing complications from acid-related disorders, such as esophagitis or gastric ulcers. In contrast, the other options correspond to different therapeutic categories or actions. The management of chronic pain typically involves analgesics or anti-inflammatory medications, infections are usually treated with antibiotics, and enhancing blood cell production involves the use of growth factors or supplements like EPO (erythropoietin) for anemia, rather than medications that affect gastric acid secretion.

8. What can occur when MAO inhibitors are combined with certain foods?

A. Decreased medication efficacy

B. Hypertensive crisis

C. Hypotensive episodes

D. Allergic reactions

When MAO inhibitors are combined with certain foods, particularly those high in tyramine, a hypertensive crisis can occur. Tyramine is an amino acid that can lead to an increase in the release of norepinephrine, which interacts with the effects of MAO inhibitors. Normally, monoamine oxidase (MAO) breaks down tyramine in the body. However, when someone is taking an MAO inhibitor, this breakdown is inhibited, leading to an accumulation of tyramine. This accumulation can cause a sudden and severe increase in blood pressure, resulting in symptoms such as headache, palpitations, and hypertensive crisis. This situation is dangerous and can lead to serious complications if not addressed. While decreased medication efficacy, hypotensive episodes, and allergic reactions are concerns associated with other medications or interactions, they are not the primary concern when considering MAO inhibitors and their interaction with tyramine-rich foods. The critical aspect here is the significant risk of hypertensive crisis, which underscores the importance of dietary restrictions when on MAO inhibitor therapy.

9. What should a nurse do before administering any medication that can cause sedation?

A. Check liver function

B. Assess for allergies

C. Evaluate the patient's current level of consciousness

D. Monitor blood pressure

Before administering any medication that can cause sedation, it is critical to evaluate the patient's current level of consciousness. Sedative medications can significantly affect the central nervous system, leading to decreased alertness and potential respiratory depression. By assessing the patient's level of consciousness prior to administration, the nurse can ensure that the patient is in a baseline state and can better monitor any changes in their condition following medication administration. This evaluation helps to determine safe medication dosing as well as the need for further monitoring after the sedative is given. In this context, although other factors such as allergies, liver function, and blood pressure are important in the overall assessment of a patient's health and medication safety, they do not directly address immediate concerns associated with administering sedative medications. Monitoring these other parameters may be relevant under different circumstances, but assessing consciousness is paramount when sedation is a potential effect.

10. If a person has a penicillin allergy, which medication should be questioned if ordered?

A. Ceftriaxone

B. Amoxicillin

C. Doxycycline

D. Ciprofloxacin

Ceftriaxone, a cephalosporin antibiotic, should be questioned if a patient has a penicillin allergy. This is due to the structural similarities between penicillins and cephalosporins, which can lead to cross-reactivity in individuals who are allergic to penicillin. Although the majority of patients with a penicillin allergy do not show cross-reactivity to cephalosporins, there is still a significant percentage that may experience allergic reactions. Therefore, careful assessment and questioning are warranted when prescribing ceftriaxone for someone with a known penicillin allergy. In contrast, amoxicillin is a type of penicillin; therefore, it should not be prescribed to anyone with a penicillin allergy. Doxycycline and ciprofloxacin are both from different classes of antibiotics—tetracyclines and fluoroquinolones, respectively—and do not share structural properties with penicillins, making them safer alternatives for individuals with a penicillin allergy.