HOSA Pharmacology Assessment Practice Test (Sample)

Study Guide

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Questions

1. Which medication form is known for having a shell that contains the drug?

A. Tablet

B. Caplet

C. Capsule

D. Powder

2. What is the meaning of "TID" when referring to medication administration?

A. Once a day

B. Twice a day

C. Three times a day

D. Every month

3. What does intramuscular administration imply?

A. Injected into the fatty layer under the skin

B. Injected into the muscle

C. Injected into the top layer of the skin

D. Injected into the vein

4. What defines a tablet in pharmacology?

A. A drug in liquid form

B. A drug compressed into a hard pellet

C. A drug in powder form only

D. A drug contained within a capsule

5. What does the letter "C" represent in Roman numerals?

A. 50

B. 10

C. 100

D. 5

6. Where is an epidural administered?

A. In the stomach

B. Around the heart

C. Into the dural matter of the spinal cord

D. In the upper arm

7. In which situation can a Schedule II prescription be faxed or called in?

A. For better convenience

B. In a valid emergency

C. For any patient

D. When a refill is needed

8. What is a characteristic of drugs classified under DEA Schedule I?

A. Have accepted medical use

B. Have a very low potential for abuse

C. Have high potential for psychological and physical dependency

D. Are available with a prescription

9. What is the function of medications classed as H2 Antagonists?

A. To reduce stomach acid production

B. To inhibit bacterial growth

C. To lower blood pressure

D. To increase heart rate

10. Which method is commonly used to prepare oral powders prior to administration?

A. Mixing with alcohol

B. Using hot water only

C. Combining with juice or water

D. Direct ingestion without fluid

Answers

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

Explanations

1. Which medication form is known for having a shell that contains the drug?

A. Tablet

B. Caplet

C. Capsule

D. Powder

The medication form known for having a shell that contains the drug is the capsule. Capsules are typically made from gelatin and are designed to encase powder or liquid medications. This shell allows for easier swallowing and can also protect the contents from exposure to air and moisture, which helps maintain the stability of the drug. Furthermore, capsules can be formulated to provide delayed or extended release of their contents, enhancing the effectiveness of the medication over time. In contrast, tablets are compressed solid forms of medication that do not have a shell; they may contain additional binders and fillers to hold the drug together. Caplets are a specific type of tablet with an oval shape that makes them easier to swallow, but like tablets, they do not have a shell. Powders consist of granules or fine particles of medication and are not enclosed within any form like a capsule or tablet. This distinction is essential for understanding how different dosage forms affect administration and absorption in the body.

2. What is the meaning of "TID" when referring to medication administration?

A. Once a day

B. Twice a day

C. Three times a day

D. Every month

The abbreviation "TID" stands for "ter in die," which is a Latin phrase that translates to "three times a day." When a medication is prescribed to be taken TID, it means the patient should take the medication three separate times within a 24-hour period. This dosage schedule is often used to maintain therapeutic levels of the medication in the body throughout the day, ensuring consistent effectiveness and minimizing gaps in treatment. It's essential for patients to adhere to this timing to achieve optimal results from their medication regimen.

3. What does intramuscular administration imply?

A. Injected into the fatty layer under the skin

B. Injected into the muscle

C. Injected into the top layer of the skin

D. Injected into the vein

Intramuscular administration is a method of delivering medication directly into the muscle tissue. This route allows for the medication to be absorbed quickly into the bloodstream due to the rich supply of blood vessels within the muscle. This is particularly advantageous for medications that need to act rapidly or for those that are irritating to the subcutaneous tissue. The effectiveness of intramuscular injections is influenced by several factors, including the muscle mass available, the vascularity of the tissue, and the physicochemical properties of the drug being administered. Common sites for intramuscular injections include the deltoid muscle in the upper arm, the vastus lateralis in the thigh, and the gluteus medius in the buttocks. In contrast, other methods of administration referenced in the choices do not describe intramuscular delivery. For example, injecting into the fatty layer under the skin refers to subcutaneous administration, while injecting into the top layer of the skin indicates an intradermal injection. Additionally, injecting into a vein describes intravenous administration, which involves a different route and method of drug distribution.

4. What defines a tablet in pharmacology?

A. A drug in liquid form

B. A drug compressed into a hard pellet

C. A drug in powder form only

D. A drug contained within a capsule

A tablet in pharmacology is defined as a drug that has been compressed into a solid form, specifically a hard pellet. This definition encompasses the characteristic structure and preparation of tablets, where the active pharmaceutical ingredient is combined with excipients and subjected to sufficient pressure to form a solid unit. Tablets are designed for oral administration and can vary in size, shape, and coating to improve taste, stability, and controlled release of the medication. The other options represent different forms of medication. A drug in liquid form refers to solutions or syrups that are not solidified but rather remain fluid for ingestion. A drug in powder form only indicates a state before compaction into tablets, where it lacks the solid structure that defines a tablet. Finally, a drug contained within a capsule refers to another form of oral dosage, where the medication is enclosed in a soluble shell rather than being compressed into a solid form like a tablet. Understanding these distinctions is crucial when discussing the various formulations of medications in pharmacology.

5. What does the letter "C" represent in Roman numerals?

A. 50

B. 10

C. 100

D. 5

In Roman numerals, the letter "C" represents the value of 100. This symbol is derived from the Latin word "centum," which translates to "hundred." Roman numerals utilize specific letters from the Latin alphabet, where each letter corresponds to a particular value. For instance, "I" is 1, "V" is 5, "X" is 10, "L" is 50, and "C" is 100. Understanding this system is important for interpreting various historical texts and numeration systems. The value of 100 indicated by "C" serves as a foundational element in the Roman numeral system, allowing for the construction of larger numbers by combining letters in specific ways.

6. Where is an epidural administered?

A. In the stomach

B. Around the heart

C. Into the dural matter of the spinal cord

D. In the upper arm

An epidural is administered specifically into the epidural space surrounding the dura mater of the spinal cord. This procedure is commonly used for pain relief, particularly during childbirth or certain surgical procedures. By delivering anesthetics into this space, the nerves that transmit pain signals from below the site of injection are blocked, providing significant pain relief without affecting the patient's overall consciousness. The choice involving the stomach, heart, or upper arm does not relate to the site of epidural administration. The stomach and upper arm are not connected to the central nervous system in a way that would allow for effective pain management through an epidural. Administering medication around the heart does not target the nervous pathways involved in pain transmission for conditions typically treated with an epidural. Thus, the correct response highlights the specific anatomical target necessary to achieve the desired outcome of anesthesia and pain relief.

7. In which situation can a Schedule II prescription be faxed or called in?

A. For better convenience

B. In a valid emergency

C. For any patient

D. When a refill is needed

A Schedule II prescription can only be faxed or called in during a valid emergency situation, which is why this option is correct. In the context of federal regulations, emergencies are defined as situations where delaying treatment could pose a risk to the patient's health. For example, if a patient requires urgent medication, such as opioids for severe pain, a healthcare provider may call or fax the prescription while ensuring that the patient ultimately provides a hard copy of the prescription within a specified timeframe. The other options do not meet the legal requirements for handling Schedule II prescriptions. Convenience is not an acceptable reason for faxing or calling in a prescription; the law strictly regulates the transmission of these prescriptions due to their potential for abuse and addiction. Similarly, calling in or faxing prescriptions merely because it is needed for any patient or for refills is not permissible; Schedule II medications cannot have refills and require a new prescription for each course of treatment. Thus, the framework of regulatory compliance and patient safety is what legitimizes the emergency situation for the transmission of these prescriptions.

8. What is a characteristic of drugs classified under DEA Schedule I?

A. Have accepted medical use

B. Have a very low potential for abuse

C. Have high potential for psychological and physical dependency

D. Are available with a prescription

Drugs classified under DEA Schedule I are characterized by having a high potential for psychological and physical dependency. This classification reflects the strict regulatory stance taken by the Drug Enforcement Administration, as these substances are considered to pose significant risks to public health and safety. The lack of accepted medical use, coupled with the high likelihood of abuse, sets Schedule I drugs apart from those in lower schedules, which may be deemed useful in clinical settings or have lower abuse potential. This category includes substances like heroin and LSD, which are known for their strong psychoactive effects and potential for addiction, making them particularly dangerous if misused. Overall, the prominent feature of high dependency potential highlights the serious implications of using such drugs outside of a controlled research environment, which is often limited to studies aimed at understanding their effects and development of treatments.

9. What is the function of medications classed as H2 Antagonists?

A. To reduce stomach acid production

B. To inhibit bacterial growth

C. To lower blood pressure

D. To increase heart rate

Medications classified as H2 antagonists serve the primary function of reducing stomach acid production. These medications work by blocking histamine H2 receptors located on the parietal cells in the stomach lining, which play a crucial role in stimulating acid secretion. By inhibiting histamine's action, H2 antagonists effectively decrease both the volume and the concentration of gastric acid, providing relief from conditions associated with excessive acid such as peptic ulcers, gastroesophageal reflux disease (GERD), and Zollinger-Ellison syndrome. This reduction in stomach acid helps to alleviate symptoms like heartburn and promotes healing of the gastrointestinal tract. The other options do not align with the primary function of H2 antagonists. For instance, while some medications may have roles in inhibiting bacterial growth, lowering blood pressure, or affecting heart rate, these actions are characteristic of different classes of drugs, not H2 antagonists.

10. Which method is commonly used to prepare oral powders prior to administration?

A. Mixing with alcohol

B. Using hot water only

C. Combining with juice or water

D. Direct ingestion without fluid

The method commonly used to prepare oral powders prior to administration is combining them with juice or water. This practice is based on the necessity of dissolving or suspending the powder to ensure proper dosage and enhance palatability, as many oral powders can be difficult to swallow in their dry form. Mixing the powder with a liquid such as water or juice not only aids in achieving a more uniform consistency for easier ingestion but also encourages better absorption in the gastrointestinal tract. This method is particularly important for individuals who may have difficulty swallowing pills or powders directly. Using alcohol is generally not appropriate for most oral powders due to the potential adverse effects and the fact that many medications are not soluble in alcohol. Hot water might denature some ingredients or affect the stability of the active compounds, while direct ingestion without fluid can lead to choking hazards and insufficient absorption, as the powder may remain in the throat or esophagus. Combining oral powders with juice or water addresses these issues effectively.