Test Bank for Pharmacology Made Simple 1st Edition by Guerra

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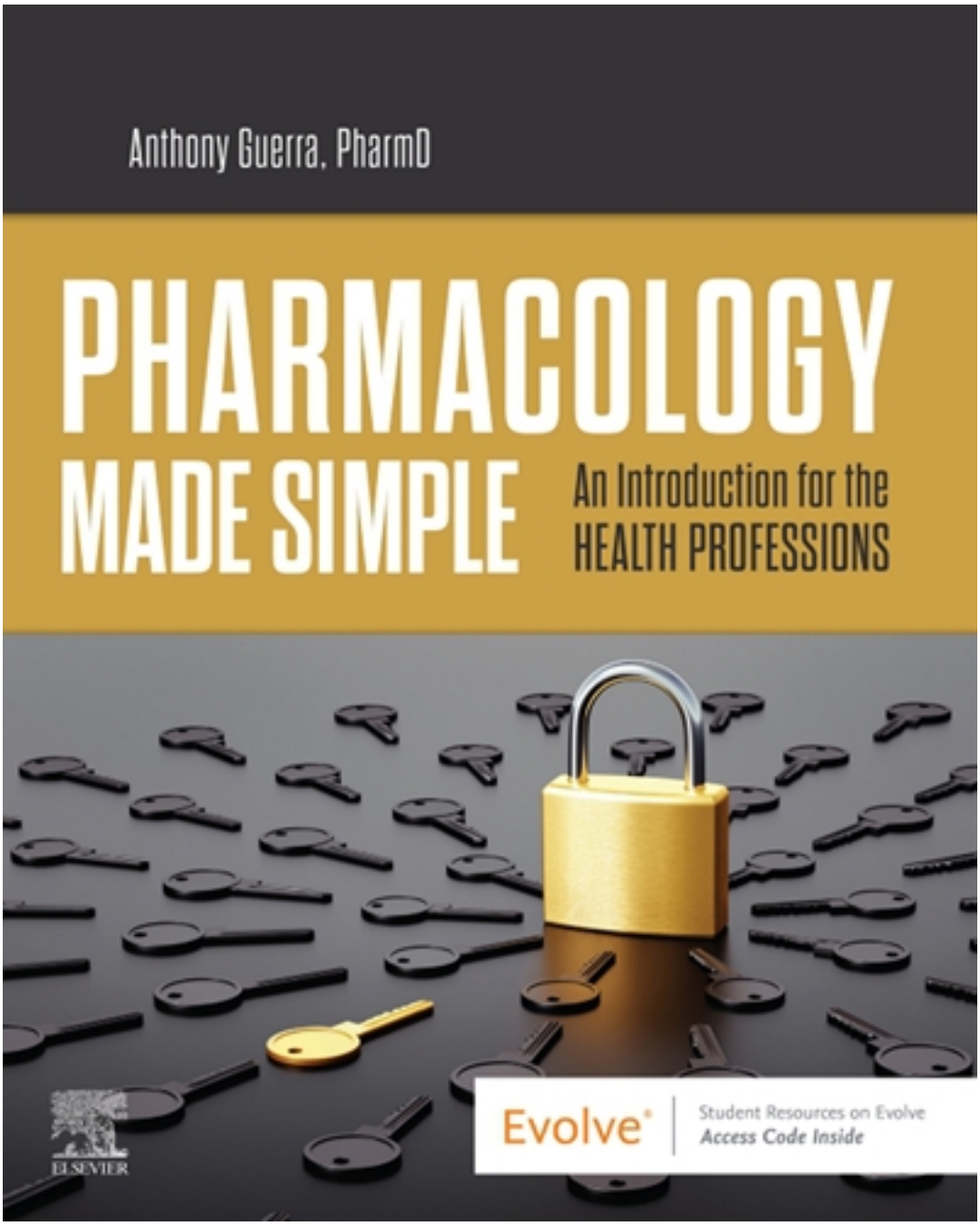

Test Bank

Chapter 02: Drug Actions (Pharmacodynamics)
Guerra: Pharmacology Made Simple, 1st Edition

MULTIPLE CHOICE

1. Which is a source for drugs?
   a. Animals
   b. Minerals
   c. Plants
   d. All of these are correct

   ANS: D
   Drugs may be derived from animals, minerals, and plants.

   OBJ: Identify the five sources of drugs MSC: Remembering

2. Which drug classification may be derived from animal glands or genetically engineered?
   a. Antibiotics
   b. Insulin
   c. Opioids
   d. Vaccines

   ANS: B
   Insulin may be derived animal glands be genetically engineered. Antibiotics may be made from fungi or made synthetically. Opioids may be synthetically manufactured. Vaccines are genetically engineered.

   OBJ: Identify the five sources of drugs MSC: Remembering

3. Which term refers to the dose required to maintain a therapeutic effect?
   a. Lethal dose
   b. Loading dose
   c. Maintenance dose
   d. Toxic dose

   ANS: C
   A maintenance dose is the dose required to keep a therapeutic level in the body. A lethal dose is one that causes death. A loading dose is one where a high dose is administered to raise drug levels quickly followed by lower doses. A toxic dose that causes harmful effects or poisons an individual.

   OBJ: Define drug, pharmacodynamics, therapeutic effect, and adverse effect
   MSC: Understanding

4. Which medication is administered with a loading dose?
   a. Amitriptyline
   b. Azithromycin
   c. Ibuprofen
   d. All of these are correct

   ANS: B

Azithromycin is an antibiotic where the patient will usually take a double dose the first day, then a single dose each day thereafter for four more days. Amitriptyline is a tricyclic antidepressant and after taking a few doses may result in significant adverse effects. Ibuprofen is an anti-inflammatory used to minimize the inflammation the patient will experience. The dosage needed to keep pain and inflammation at bay is the maintenance dose, or that dose required to keep the therapeutic level.

OBJ: Define drug, pharmacodynamics, therapeutic effect, and adverse effect
MSC: Understanding

5. Which is a true statement?
   a. A drug is a substance intended to affect the body's function or structure.
   b. A drug will not cause adverse effects if it is therapeutic.
   c. Adverse drug reactions occur when a medication is administered at extremely high doses.
   d. Pharmacodynamics is the study of drugs and their actions.

ANS: A
A drug is a substance intended to affect the body's function or structure. A drug may be therapeutic and still have adverse effects associated with it. At normal doses, a patient can experience adverse drug reactions. Pharmacodynamics is the study of drugs and their effects on the body.

OBJ: Define drug, pharmacodynamics, therapeutic effect, and adverse effect
MSC: Understanding

6. A dentist prescribes 4 capsules of amoxicillin 500 mg to be taken all at once one hour before the dental appointment. What type of dose is this?
   a. Lethal dose
   b. Loading dose
   c. Maintenance dose
   d. Toxic dose

ANS: B
Taking 4 capsules of amoxicillin one hour before a dental appointment is an example of a loading dose. A loading dose is one where a high dose is administered to raise drug levels quickly. This is not a lethal dose because a lethal dose is one that causes death. This is not an example of a maintenance dose; a maintenance dose is the dose required to keep a therapeutic level in the body. This is not a toxic dose because a toxic dose causes harmful effects or poisons an individual.

OBJ: Define drug, pharmacodynamics, therapeutic effect, and adverse effect
MSC: Understanding

7. Which term refers to a substance which binds to the same site as an agonist but does not activate it?
   a. Agonist
   b. Competitive antagonist
   c. Full agonist
   d. Irreversible antagonist

ANS: B

Competitive antagonist binds to the same site as an agonist but does not activate it. An agonist is a molecule that activates a receptor. A full agonist is molecule that causes a maximal response. An irreversible antagonist is a drug that stays with the receptor indefinitely.

OBJ: Contrast receptor, affinity, agonist, and antagonist MSC: Remembering

8. Which term refers to a drug that can move away and act at a later time?
   a. Antagonist
   b. Competitive antagonist
   c. Irreversible antagonist
   d. Reversible antagonist

   ANS: D
   A reversible antagonist refers to a drug that can move away and act at a later time. An antagonist is a molecule that blocks receptors. A competitive antagonist binds to the same site as an agonist but does not activate it. An irreversible antagonist is a drug that stays with the receptor indefinitely.

   OBJ: Contrast receptor, affinity, agonist, and antagonist MSC: Remembering

9. Which is a true statement regarding therapeutic index?
   a. Therapeutic index indicates the window of drug doses that are both efficacious and non-lethal.
   b. Therapeutic index is the difference between where a drug will help the patient or hurt the patient.
   c. The safest medicines have an ED50, or effective dose in half the population, that is much lower than the toxic dose.
   d. All of these are correct.

   ANS: D
   Therapeutic index is the window of drug doses that can be used in patients that are both efficacious and non-lethal. A therapeutic index is the difference between where a drug will help the patient (therapeutic effect) or hurt the patient (toxic effect). The safest medicines have an ED50, or effective dose in half the population, that is much lower than the toxic dose.

   OBJ: Describe a narrow and wide and high and low therapeutic index
   MSC: Understanding

10. How is therapeutic index calculated?
    a. TD_{50}-ED_{50}
    b. ED_{50}-TD_{50}
    c. TD50/ED50
    d. ED50/TD50

    ANS: C
    Therapeutic index can be expressed mathematically as TD50/ED50.

    OBJ: Describe a narrow and wide and high and low therapeutic index
    MSC: Remembering

11. Which therapeutic index requires the drug to be dosed carefully and monitored frequently?
    a. Therapeutic Index of 10

b. Therapeutic Index of 20
c. Therapeutic Index of 30
d. Therapeutic Index of 40

ANS: A
The smaller the value of the therapeutic index requires careful dosing and monitoring. A narrow therapeutic index means the medication has a small window of safe doses. Drugs with a narrow therapeutic index need to be dosed carefully and monitored frequently by pharmacists and physicians.

OBJ: Describe a narrow and wide and high and low therapeutic index
MSC: Understanding

12. A medication has a TD50 of 50 and an ED50 of 10. What is the therapeutic index of the medication?
a. –40
b. 40
c. 5
d. 1/5

ANS: C
Therapeutic index can be calculated using the following formula: TD50/ED50 where the TD50 is 50 and the ED50 is 10; 50/10 = 5.

OBJ: Describe a narrow and wide and high and low therapeutic index
MSC: Applying

13. Which mineral is used to prevent anemia?
a. Iron
b. Magnesium
c. Potassium
d. All of these are correct

ANS: A
Iron is a mineral indicated to prevent anemia. Magnesium is a mineral used as a dietary supplement to include hypomagnesemia.

OBJ: Identify the five sources of drugs MSC: Remembering

14. Which mineral may be prescribed with select diuretics to replace its loss from the body?
a. Iron
b. Magnesium
c. Potassium
d. Sulfur

ANS: C
Potassium is indicated to treat hypokalemia as a result of diuretic use. Iron is indicated to prevent anemia. Magnesium is a mineral used as a dietary supplement to include hypomagnesemia.

OBJ: Identify the five sources of drugs MSC: Remembering

15. A healthcare student is discussing pharmacodynamics among their peers in a class. Which statement requires correction by their instructor?
    a. A therapeutic index is the difference between at what points a medication produces its therapeutic effect and a toxic effect.
    b. Dilantin is a medication with a wide therapeutic index.
    c. ED50 is the effective dose for 50% of the population taking the medication.
    d. TD50 is the dose which will cause toxicity in 50% of the population taking the medication.

    ANS: B
    Dilantin is a medication with a narrow therapeutic index not a wide therapeutic index. A therapeutic index is the difference between at what points a medication produces its therapeutic effect and a toxic effect. ED50 is the effective dose for 50% of the population taking the medication. TD50 is the dose which will cause toxicity in 50% of the population taking the medication.

    OBJ: Define drug, pharmacodynamics, therapeutic effect, and adverse effect
    MSC: Understanding

16. A student is discussing therapeutic index among their peers; which statement requires correction?
    a. Ibuprofen is an example of a medication with a wide therapeutic index.
    b. A drug with a narrow therapeutic index is not synonymous with a drug with a low therapeutic index.
    c. Therapeutic index can be calculated using a formula.
    d. Therapeutic index is the window of drug doses that can be used in patients that are both effective and non-lethal.

    ANS: B
    A drug with a narrow therapeutic index is synonymous with a drug with a low therapeutic index and a drug with a wide therapeutic index is synonymous with a drug with a high therapeutic index. Ibuprofen is an example of a medication with a wide therapeutic index. Therapeutic index can be calculated using a formula. Therapeutic index is the window of drug doses that can be used in patients that are both effective and non-lethal.

    OBJ: Describe a narrow and wide and high and low therapeutic index
    MSC: Understanding

17. What type of drug prevents the physiologic effect of another drug?
    a. Antagonist
    b. Full agonist
    c. Partial agonist
    d. Both Full agonist and Partial agonist

    ANS: A
    An antagonist is a drug that antagonizes or prevents the physiologic effect of another drug. An agonist is a substance that activates a receptor. A full agonist activates a receptor and causes a maximal response of the drug. A partial agonist activates a receptor but does not produce a maximal response of the drug.

    OBJ: Contrast receptor, affinity, agonist, and antagonist MSC: Remembering

18. Which student statement requires correction regarding receptors?
    a. A drug produces its effect by attaching to a receptor.
    b. A receptor is normally a carbohydrate.
    c. A receptor transmits a message resulting in a physiological effect.
    d. Affinity refers to the attraction between a drug and a receptor.

    ANS: B
    A receptor is normally a protein not a carbohydrate. A drug produces its effect by attaching to a receptor. A receptor transmits a message resulting in a physiological effect. Affinity refers to the attraction between a drug and a receptor.

    OBJ: Contrast receptor, affinity, agonist, and antagonist MSC: Understanding

19. What is the source for fox glove?
    a. Animals
    b. Minerals
    c. Plants
    d. Synthetic

    ANS: C
    Fox glove is derived from plants. Fox glove is not derived from animals, minerals or produced synthetically.

    OBJ: Identify the five sources of drugs MSC: Remembering

20. What is the source for poppy flowers?
    a. Animals
    b. Genetically engineered
    c. Minerals
    d. Plants

    ANS: D
    Poppy flowers are extracted from plants. Poppy flowers are not extracted from animals, minerals or genetically engineered.

    OBJ: Identify the five sources of drugs MSC: Remembering

21. What is the source for thyroid?
    a. Animals
    b. Genetically engineered
    c. Plants
    d. Synthetic

    ANS: A
    Thyroid is derived from the glands of animals. Thyroid is not genetically engineered, derived from plants or made in a laboratory synthetically.

    OBJ: Identify the five sources of drugs MSC: Remembering

22. From where are strong opioids derived?
    a. Animals

b. Genetically engineered
c. Minerals
d. Synthetic

ANS: D
Strong opioids are made synthetically in a laboratory. Strong opioids are not derived from animals, genetically engineered, or come from minerals.

OBJ: Identify the five sources of drugs MSC: Remembering

23. What is a source for monoclonal antibodies?
a. Animals
b. Genetically engineered
c. Minerals
d. Prepared synthetically

ANS: D
Monoclonal antibodies are genetically engineered. Monoclonal antibodies are not derived from animals, minerals or synthetically.

OBJ: Identify the five sources of drugs MSC: Remembering

24. A patient has been told to take magnesium 500 mg twice a day for their heart. What is the source for magnesium?
a. Fungi
b. Minerals
c. Plants
d. All of these are correct

ANS: B
Magnesium is derived from minerals. Magnesium is not derived from fungi or plants.

OBJ: Identify the five sources of drugs MSC: Remembering