



PHARMACOLOGY TEST BANK 2021

DONE BY:

ALZAHRA ABU-ZAHRA & HEBA SHUBEIR

4TH WEEK

1) Which of the following parameters is used to indicate the ability of a drug to produce the desired therapeutic effect relative to a toxic effect?

- (A) Potency
- (B) Intrinsic activity
- (C) Bioavailability
- (D) Efficacy
- (E) Therapeutic Index

2) The therapeutic index of a drug is a measure of its

- a. Dose variability
- b. Additive
- c. Potency
- d. Safety
- e. Efficacy

3) EC50 mainly reflects a drug's:

- A) maximal effect
- B) safety
- C) lethality
- D) ease of elimination
- E) potency

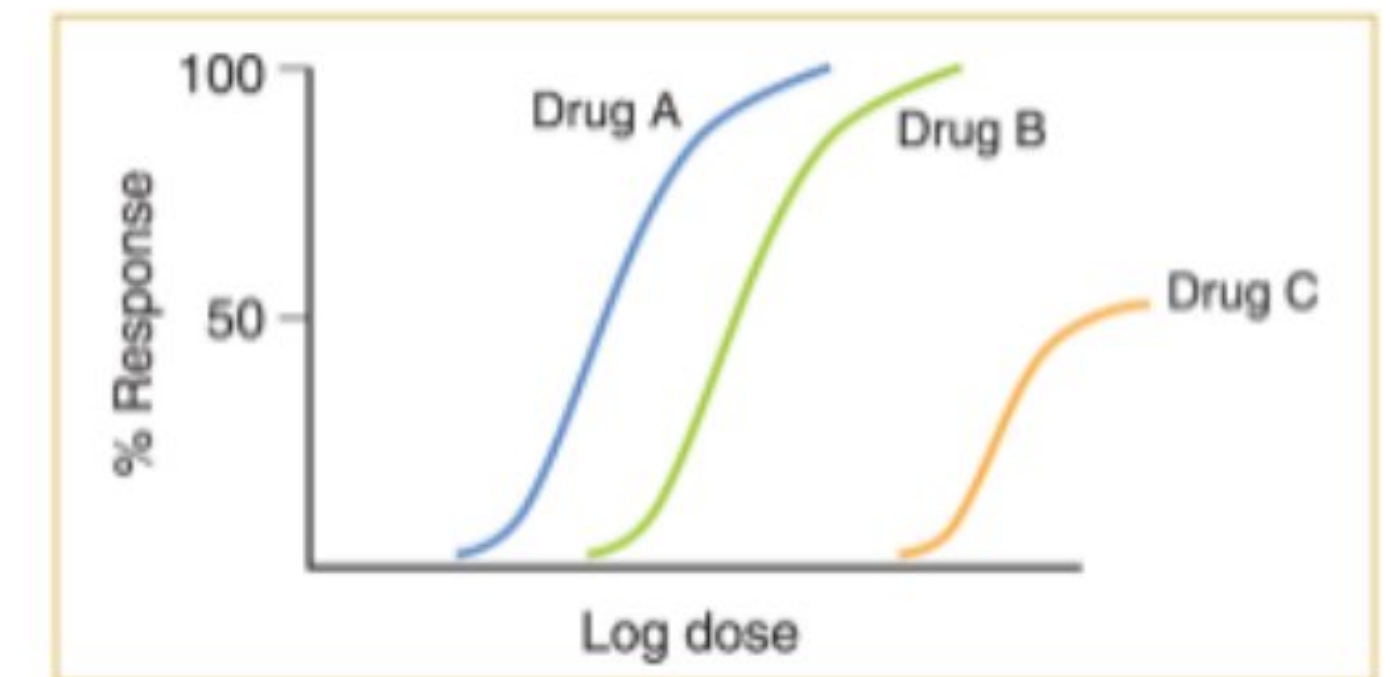
4) True statement(s) concerning competitive inhibition:

- A) with competitive inhibition, the dose-effects curve the shifted to the right
- B) competitive in addition is based on reversible drug/antagonist binding at receptor sites
- C) with competitive inhibition, maximal drug effect cannot be obtained, even at high agonist concentrations
- D) all the above

1:E 2:D 3:E 4:A

5) The data presented in the figure below show that:

- A. Drugs A and B have equal potency
- B. Drug B and C have equal efficacy
- C. Drug B is a partial agonist
- D. Drugs A and C have the same affinity and efficacy
- E. Drugs A and B have equal efficacy



6) Drug effects are thought to be proportional to the number of occupied receptors

- A) true
- B) false

7) Concerning competitive antagonism, which of the following sentence is correct?

- a. Competitive antagonism is produced by antagonists that have the ability to activate receptors
- b. With competitive antagonism, maximal drug effect cannot be obtained, even at high agonist concentrations
- c. Competitive antagonism is based on reversible drug/antagonist binding at receptor sites
- d. With competitive antagonism, the dose-effects curve is shifted to the right.
- e. All of the above.

5:E 6:A 7:D

8) Which of the following statements is correct?

- a. hypersensitivity reactions is classified as augmented (dose dependent) drug reaction.
- b. Variation in response to a drug among different individuals is most likely to occur with a drug showing narrow therapeutic index.
- c. If the TD50 is much higher than the ED50 then the drug is described as a narrow therapeutic drug
- d. Potency is indicated by the height of the log dose response
- e. It is safe to consume as much as you want from the OTC drugs.

9) Amer was poisoned with a drug that antagonize receptor A irreversibly, which of the following is an appropriate pharmacological intervention?

- a. To give drug that increase the metabolism of Drug A
- b. To give receptor A non-competitive antagonist
- c. To give receptor A non-competitive agonist
- d. To give another drug that is an agonist to a different receptor, such receptor has the same physiological function as receptor A
- e. To give another drug that is an agonist to a different receptor, such receptor has opposite physiological function to receptor A

10) Concerning drug receptor interactions, the constant K_d refers to:

- a. Maximal physiological effect
- b. Maximal binding
- c. Drug concentration that results in half-maximal physiological response
- d. The drug concentration required to occupy 50% of receptors.
- e. all of the above

8:B 9:D 10:D

STUDY QUESTIONS, PAGE: 36 (LIPPINCOTT, 6TH EDITION)

2.1 Isoproterenol produces maximal contraction of cardiac muscle in a manner similar to epinephrine. Which of the following best describes isoproterenol?

- A. Full agonist.
- B. Partial agonist.
- C. Competitive antagonist.
- D. Irreversible antagonist.
- E. Inverse agonist.

2.2 If 10 mg of naproxen produces the same analgesic response as 100 mg of ibuprofen, which of the following statements is correct?

- A. Naproxen is more efficacious than is ibuprofen.
- B. Naproxen is more potent than ibuprofen.
- C. Naproxen is a full agonist, and ibuprofen is a partial agonist.
- D. Naproxen is a competitive antagonist.
- E. Naproxen is a better drug to take for pain relief than is ibuprofen.

2.3 If 10 mg of morphine produces a greater analgesic response than can be achieved by ibuprofen at any dose, which of the following statements is correct?

- A. Morphine is less efficacious than is ibuprofen.
- B. Morphine is less potent than is ibuprofen.
- C. Morphine is a full agonist, and ibuprofen is a partial agonist.
- D. Ibuprofen is a competitive antagonist.
- E. Morphine is a better drug to take for pain relief than is ibuprofen.

2.4 In the presence of naloxone, a higher concentration of morphine is required to elicit full pain relief. Naloxone by itself has no effect. Which of the following is correct regarding these medications?

- A. Naloxone is a competitive antagonist.
- B. Morphine is a full agonist, and naloxone is a partial agonist.
- C. Morphine is less efficacious than is naloxone.
- D. Morphine is less potent than is naloxone.
- E. Naloxone is a noncompetitive antagonist.

2.5 In the presence of pentazocine, a higher concentration of morphine is required to elicit full pain relief. Pentazocine by itself has a smaller analgesic effect than does morphine, even at the highest dose. Which of the following is correct regarding these medications?

- A. Pentazocine is a competitive antagonist.
- B. Morphine is a full agonist, and pentazocine is a partial agonist.
- C. Morphine is less efficacious than is pentazocine.
- D. Morphine is less potent than is pentazocine.
- E. Pentazocine is a noncompetitive antagonist.

2.6 In the presence of picrotoxin, diazepam is less efficacious at causing sedation, regardless of the dose. Picrotoxin by itself has no sedative effect even at the highest dose. Which of the following is correct?

- A. Picrotoxin is a competitive antagonist.
- B. Diazepam is a full agonist, and picrotoxin is a partial agonist.
- C. Diazepam is less efficacious than is picrotoxin.
- D. Diazepam is less potent than is picrotoxin.

E. Picrotoxin is a noncompetitive antagonist.

2.7 Which of the following statements most accurately describes a system having spare receptors?

A. The number of spare receptors determines the maximum effect.

B. Spare receptors are sequestered in the cytosol.

C. A single drug–receptor interaction results in many cellular response elements being activated.

D. Spare receptors are active even in the absence of an agonist.

E. Agonist affinity for spare receptors is less than their affinity for “non-spare” receptors.

2.1

Correct answer = A. A full agonist has an E_{max} similar to the endogenous ligand. A partial agonist would only produce a partial effect. An antagonist would block the effects of an endogenous agonist. An inverse agonist would reverse the constitutive activity of receptors and exert the opposite pharmacological effect.

2.2

Correct answer = B. Without information about the maximal effect of these drugs, no conclusions can be made about efficacy or intrinsic activity. E is false because the maximal response obtained is often more important than the amount of drug needed to achieve it.

2.3

Correct answer = E. Based on the information presented here, since morphine is more efficacious than is ibuprofen, it is going to provide more pain relief. As long as the situation warrants the necessity of such efficacious pain relief and without any information about differences in side effects caused by the two drugs, morphine is the better choice. Choice C would only be true if both drugs bound to the same receptor population, and that is not the case. The other choices are incorrect statements.

2.4

Correct answer = A. Since naloxone has no effect by itself, B and C are incorrect. Since it decreases the effect of an agonist but this inhibition can be overcome by giving a higher dose of morphine, naloxone must be a competitive antagonist. No information is given about potency of either drug.

2.5

Correct answer = B. Pentazocine has a lower E_{max} value than does morphine but still has some efficacy. Thus, pentazocine is a partial agonist. Even though pentazocine blocks some of the actions of morphine, since it has some efficacy, it cannot be an antagonist. No information is given about the potency of either drug.

2.6

Correct answer = E. Picrotoxin has no efficacy alone, so B and C are false. Since it decreases the maximal effect of diazepam, it is a noncompetitive antagonist. No information is given about potency of either drug.

2.7

Correct answer = C. One explanation for the existence of spare receptors is that any one agonist-receptor binding event can lead to the activation of many more cellular response elements. Thus, only a small fraction of the total receptors need to be bound to elicit a maximum cellular response. The other choices do not accurately describe spare receptor systems.