Psychopharmacology
Chapter 2

1. Pharmacokinetics refers to the study of
a. mechanisms of drug action.
b. how drugs are developed and manufactured.
*c. drug administration, distribution, and fate.
d. how drugs interact.

2. *N*-methyl-3-phenyl-3-[4-(trifluoromethyl)phenoxy]-propan-1-amine is an example of a drug's _____ name.
a. generic
*b. chemical
c. brand
d. trade

3. Prozac is an example of a drug's _____ name.
a. generic
b. trade
c. brand
*d. Both b and c are correct

4. The administration of hormones via skin patches is an example of _____ administration.
a. subcutaneous
*b. transdermal
c. intraperitoneal
d. intramuscular

5. Which of the following methods is typically used to administer drugs for experimentation to small laboratory animals (e.g., mice and rats)?
a. Intravenous
b. Subcutaneous
c. Inhalation
*d. Intraperitoneal

6. The route of drug administration that results in the fastest peak plasma levels is
a. inhalation.
b. oral.
*c. intravenous.
d. intranasal.

7. The main advantage of administering drugs orally is
*a. it is relatively safe.
b. its reliable absorption.
c. it is easy to administer.
d. All of the above are correct

8. Cell membranes are made up of phospholipid molecules arranged in
*a. two layers with their negatively charged heads forming the inner and outer surfaces.
b. a single layer with their hydrophobic tails facing inward.
c. two layers with their positively charged heads forming the inner and outer surfaces.

d. two layers with their positively charged tails forming the inner and outer surfaces.

9. Glucose and other larger substances are transported across cell membranes
a. because of their fat solubility.
b. because they are hydrophilic.
*c. by transporter protein molecules imbedded within the cell membrane.
d. through gaps in the membrane surface.

10. In order for a drug to pass through cell membranes, it must be
a. water-soluble.
*b. lipid-soluble.
c. hydrophobic.
d. hydrophilic.

11. The blood brain barrier is constructed of
*a. tight junctions between astrocytic feet.
b. an extra phospholipid layer in the cell membrane.
c. negatively charged ions on the surface of the cell membrane.
d. protein molecules imbedded in the cell membrane.

12. The blood brain barrier
a. is impermeable to all substances.
b. is strongest in the area postrema of the medulla.
c. prevents blood from leaving the brain.
*d. protects the brain from toxic substances, including most viruses and bacteria.

13. The blood brain barrier is weakest in which of the following areas of the brain?
a. The subfornical area near the lateral ventricles
b. The area postrema of the medulla
c. The meninges surrounding the brain
*d. Both a and b are correct

14. When a drug binds to inactive sites throughout the body, this is referred to as
a. metabolism.
b. receptor binding.
*c. depot binding.
d. distribution.

15. A breathalyzer relies upon
*a. small amounts of alcohol being excreted through exhalation.
b. small amounts of alcohol being excreted through perspiration.
c. small amounts of alcohol remaining in the mouth after consumption.
d. the detection of alcohol metabolites.

16. A drug's half-life is
a. the amount of time it takes for a drug's peak plasma level to be metabolized by 50 percent.
*b. the amount of time it takes for a drug's initial blood level to be metabolized by 50 percent.
c. one-half of a drug's shelf life.
d. the amount of time it takes for a drug to be equally distributed to tissues throughout the body.

17. If a drug reaches tissue equilibrium one hour after administration and its plasma level decreases by one-half between hours 2 through 5 after administration, its half-life would be _____ hours.
a. 5
b. 4
*c. 3
d. 2

18. Which of the following statements is TRUE regarding the half-life of the antidepressant Prozac?
a. It has a half-life of about two days.
b. It has an active metabolite with a half-life of almost six days.
c. Because of its relatively long half-life, missing a daily dose may not be problematic.
*d. All of the above are correct.

19. A drug will have a longer duration of action if it
a. has a short half-life.
*b. has a long half-life.
c. has higher initial blood plasma levels.
d. doesn't have an active metabolite.

20. Dose response curves are typically
a. linear functions describing drug effects at different doses.
*b. "S"-shaped functions describing drug effects at different doses.
c. "S"-shaped functions describing how a single dose affects different people.
d. "S"-shaped functions describing how drug tolerance develops.

21. Most drugs have
a. a single dose response curve representing all of its effects at different doses.
*b. multiple dose response curves representing all of its effects at different doses.
c. two dose response curves—one representing its initial effects and the other representing its effects after tolerance develops.
d. a single dose response curve that can shift depending on how long the drug has been used.

22. Drug tolerance can be defined as a
a. decrease in a drug's effectiveness after repeated administration.
b. decrease in the rate of a drug's metabolism.
c. shift to the right in a drug's dose response curve after repeated administration.
*d. Both a and c are correct

23. Cross-tolerance typically occurs when
a. tolerance to a drug is rapidly lost.
b. tolerance to a drug of one class, such as opiates, contributes to tolerance to a drug from a different class, such as barbiturates.
c. metabolizing enzymes for a drug of one class begin to metabolize a drug from a different class.
*d. tolerance to a drug contributes to tolerance to a similarly acting drug.

24. Metabolic tolerance could develop as a consequence of
a. Pavlovian conditioning to drug-associated cues.
b. downregulation of receptor sites for a drug.
*c. an increase in the synthesis of metabolizing enzymes.
d. a shift in the dose response curve.

25. Cellular tolerance is typically a consequence of
*a. downregulation of receptors.
b. an increase in the synthesis of metabolizing enzymes.
c. Pavlovian conditioning of drug-associated cues.
d. upregulation of receptor sites.

26. If an animal expressed tolerance to a drug in one context but not in another, you would suspect this was an example of _____ tolerance.
a. cellular
b. metabolic
c. behavioral
*d. associative

27. If after demonstrating associative tolerance to opiates in a specific context, you exposed an animal to the context repeatedly without the drug, you would see
a. upregulation of receptors.
b. downregulation of receptors.
*c. extinction of tolerance in that context.
d. habituation of tolerance.

28. The neural mechanism underlying associative tolerance is most likely
a. habituation to the drug.
b. cross-tolerance.
*c. downregulation of drug receptors.
d. metabolic tolerance.

29. Associative tolerance is a consequence of _____, whereas behavioral tolerance is a consequence of _____.
a. operant conditioning; Pavlovian conditioning
b. habituation; Pavlovian conditioning
c. Pavlovian conditioning; habituation
*d. Pavlovian conditioning; operant conditioning

30. If a laboratory animal is trained to perform a complex motor task under the influence of alcohol and later fails to perform the task without alcohol, this would demonstrate
a. associative tolerance.
b. cross-tolerance.
*c. state dependent learning.
d. upregulation.

31. The area of drug doses between a drug's dose response curve for analgesia and its dose response curve for respiratory depression is called the
a. LD50 dose.
b. LD100 dose.
*c. therapeutic index.
d. placebo effect.

32. When a patient responds positively to an inert substance, this is referred to as
a. tolerance.
b. upregulation.
*c. the placebo effect.

d. the pseudo effect.

33. Pharmacodynamics refers to the study of
*a. mechanisms of drug action.
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34. Drugs that increase or facilitate neurotransmission are called
a. antagonists.
b. partial antagonists.
c. psychoactive.
*d. agonists.

35. Drugs that decrease or interfere with neurotransmission are called
*a. antagonists.
b. partial agonists.
c. inactive.
d. agonists.

36. L -dopa, a drug used to treat Parkinson's disease, is classified as an _____ because it _____.
a. antagonist; disrupts dopamine release
*b. agonist; is a precursor for dopamine synthesis
c. antagonist; blocks dopamine receptors
d. None of the above is correct

37. A drug that blocks the reuptake of a neurotransmitter would be classified as a(n)
a. agonist.
b. antagonist.
c. reuptake inhibitor.
*d. Both a and c are correct

38. The degrading enzyme for the neurotransmitters dopamine and nonrepinephrine is
a. MAO
*b. acetylcholinesterase
c. acetyldehydrogenase
d. acetylaldehyde

39. The drug Narcan (naloxone) is classified as an _____ because it _____.
a. agonist; facilitates opiate binding to receptors
*b. antagonist; blocks opiate receptors
c. antagonist; disrupts opiate synthesis and release
d. Both b and c are correct

40. Botox is classified as an _____ because it _____.
*a. antagonist; inhibits the release of acetylcholine
b. agonist; blocks the reuptake of acetylcholine
c. agonist; blocks the degradation of acetylcholine
d. Both b and c are correct