Import Settings:

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Information Field: Complexity

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Information Field: Objective

Highest Answer Letter: D

Multiple Keywords in Same Paragraph: No

**Chapter: Principles of Pharmacology - Principles of Pharmacology- TBNK**

**Multiple Choice**

1. Which of the following statements regarding pharmacology is correct?

A) The selection and administration of most medications are based largely on anecdotal research.

B) The action of the human body in response to a particular medication is called pharmacology.

C) Evidence-based guidelines, while helpful, are not the primary factor that drives medication administration.

D) Despite the advanced science of pharmacology, adverse reactions are commonplace.

Ans: D

Complexity: Moderate

Ahead: Historical Perspective on Medication Administration

Subject: Principles of Pharmacology

Page: 622

Feedback: Historical Perspective on Medication Administration, page 622

2. Which of the following medications is derived from a plant source?

A) Lithium

B) Insulin

C) Heparin

D) Atropine

Ans: D

Complexity: Moderate

Ahead: Medication and Drug Regulation

Subject: Principles of Pharmacology

Page: 624

Feedback: Medication and Drug Regulation, page 624

3. A medication is used “off-label.” This means that it:

A) is used for a purpose not approved by the FDA, at doses different from the recommended doses, or by a route of administration not approved by the FDA.

B) has been determined to be safe by a physician, and is used to treat a patient's illness before the medication has been approved by the FDA for any purpose.

C) is administered in clinical trials while the manufacturer conducts further research and before the FDA has approved the medication for use.

D) is administered in an extreme emergency situation, but only if initial clinical trials have determined that the medication will not cause harm to the patient.

Ans: A

Complexity: Moderate

Ahead: Medication and Drug Regulation

Subject: Principles of Pharmacology

Page: 623

Feedback: Medication and Drug Regulation, page 623

4. A(n) \_\_\_\_\_\_\_\_\_ medication typically includes a “stem” that links it to other medications in the same class.

A) trade

B) official

C) brand

D) generic

Ans: D

Complexity: Easy

Ahead: Medication Management for Paramedics

Subject: Principles of Pharmacology

Page: 625

Feedback: Medication Management for Paramedics, page 625

5. All of the following medications fall in the same classification, EXCEPT:

A) captopril.

B) enalapril.

C) diazepam.

D) lisinopril.

Ans: C

Complexity: Moderate

Ahead: Medication Management for Paramedics

Subject: Principles of Pharmacology

Page: 625

Feedback: Medication Management for Paramedics, page 625

6. Metoprolol has the brand name \_\_\_\_\_\_\_\_\_\_\_\_\_, which may be a subtle reference to lowering the blood pressure.

A) Cordarone

B) Lopressor

C) Vasotec

D) Norpramin

Ans: B

Complexity: Difficult

Ahead: Medication Management for Paramedics

Subject: Principles of Pharmacology

Page: 625

Feedback: Medication Management for Paramedics, page 625

7. Common components of a medication profile include all of the following, EXCEPT:

A) pregnancy risk factors.

B) the weight of the drug.

C) potential incompatibility.

D) mechanism of action.

Ans: B

Complexity: Easy

Ahead: Medication Management for Paramedics

Subject: Principles of Pharmacology

Page: 626

Feedback: Medication Management for Paramedics, page 626

8. Medications that are manufactured synthetically:

A) do not use animal, mineral, or vegetable sources.

B) include insulin, digitalis, and thyroid medications.

C) are derived from certain plants and animal organs.

D) include calcium, iron, magnesium, and other minerals.

Ans: A

Complexity: Easy

Ahead: Medication and Drug Regulation

Subject: Principles of Pharmacology

Page: 623

Feedback: Medication and Drug Regulation, page 623

9. The Comprehensive Drug Abuse Prevention and Control Act of 1970:

A) regulated the import, manufacture, prescription, and sale of several nonnarcotic medications and cocaine, opium, and their derivatives.

B) was aimed at protecting the public from mislabeled, poisonous, or otherwise harmful food, medications, and alcoholic beverages.

C) increased the penalties for violation of the Harrison Narcotic Act, made the possession of heroin illegal, and outlawed the acquisition and transportation of marijuana.

D) was a legislative act dealing with narcotic and nonnarcotic medications that have a potential for abuse, and developed a drug classification system according to the abuse potential of the medications.

Ans: D

Complexity: Moderate

Ahead: Medication and Drug Regulation

Subject: Principles of Pharmacology

Page: 623

Feedback: Medication and Drug Regulation, page 623

10. Unlike Schedule I drugs, Schedule II drugs have:

A) accepted medical uses.

B) a higher abuse potential.

C) limited dependence potential.

D) no accepted medical application.

Ans: A

Complexity: Moderate

Ahead: Medication and Drug Regulation

Subject: Principles of Pharmacology

Page: 623

Feedback: Medication and Drug Regulation, page 623

11. Compared to Schedule III drugs, Schedule IV drugs:

A) include medications such as Vicodin and have a high potential for psychological dependence.

B) have a moderate potential for physical dependence and include cough syrups that contain codeine.

C) may lead to severe addiction and include short-acting barbiturates, amphetamines, and opiates.

D) have a lower abuse potential and include medications such as diazepam (Valium) and lorazepam (Ativan).

Ans: D

Complexity: Moderate

Ahead: Medication and Drug Regulation

Subject: Principles of Pharmacology

Page: 623

Feedback: Medication and Drug Regulation, page 623

12. All of the following are Schedule II substances, EXCEPT:

A) methylphenidate (Ritalin).

B) fentanyl (Sublimaze).

C) cocaine.

D) heroin.

Ans: D

Complexity: Easy

Ahead: Medication and Drug Regulation

Subject: Principles of Pharmacology

Page: 623

Feedback: Medication and Drug Regulation, page 623

13. The generic name of a medication:

A) does not require FDA approval.

B) is proposed by the manufacturer.

C) is proprietary and cannot be reproduced.

D) contains a string of letters and numbers.

Ans: B

Complexity: Easy

Ahead: Medication Management for Paramedics

Subject: Principles of Pharmacology

Page: 625

Feedback: Medication Management for Paramedics, page 625

14. The paramedic must use caution when referencing a medication in an American Medical Association (AMA) publication because:

A) the AMA publication only lists medications that are in human clinical trials.

B) not every medication listed in the compendium has received FDA approval.

C) medications listed in an AMA publication are typically not for prehospital use.

D) all medications in an AMA publication are listed by their chemical name only.

Ans: B

Complexity: Moderate

Ahead: Medication Management for Paramedics

Subject: Principles of Pharmacology

Page: 627

Feedback: Medication Management for Paramedics, page 627

15. The United States Pharmacopeia (USP) recommended temperature range for MOST medications in the prehospital setting is:

A) 40°F to 76°F (4°C to 24°C).

B) 45°F to 80°F (7°C to 27°C).

C) 59°F to 86°F (15°C to 30°C).

D) 60°F to 90°F (16°C to 32°C).

Ans: C

Complexity: Moderate

Ahead: Medication Management for Paramedics

Subject: Principles of Pharmacology

Page: 628

Feedback: Medication Management for Paramedics, page 628

16. The paramedic should be MOST suspicious that a controlled substance has been tampered with if:

A) repeated doses of the same drug are administered and the patient experiences an adverse reaction.

B) an appropriate dose of the drug seems ineffective, especially when patient tolerance is unlikely.

C) the box that the drug is stored in is torn, even if the drug cartridge itself is structurally intact.

D) there are any stray markings on the drug cartridge or vial, even if the contents are not discolored.

Ans: B

Complexity: Moderate

Ahead: Medication Management for Paramedics

Subject: Principles of Pharmacology

Page: 628

Feedback: Medication Management for Paramedics, page 628

17. The action of the body in response to a medication is called:

A) pharmacology.

B) biotransformation.

C) pharmacokinetics.

D) pharmacodynamics.

Ans: C

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 628

Feedback: The Physiology of Pharmacology, page 628

18. Newer medications are designed to target only specific receptor sites on certain cells in an attempt to:

A) treat more than one condition.

B) minimize the adverse effects.

C) reduce their therapeutic effect.

D) eliminate all side effects.

Ans: B

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 629

Feedback: The Physiology of Pharmacology, page 629

19. A medication that initiates or alters a cellular activity by attaching to receptor sites and prompting a cell response is said to be:

A) synergistic.

B) an agonist.

C) an antagonist.

D) a competitive binder.

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 629

Feedback: The Physiology of Pharmacology, page 629

20. The term affinity, as it applies to pharmacology, is MOST accurately defined as the:

A) ability of a medication to bind to a receptor.

B) process of a medication binding to a receptor.

C) blocking of a receptor site by a particular medication.

D) strength of the bond between a medication and its receptor.

Ans: A

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 630

Feedback: The Physiology of Pharmacology, page 630

21. A medication is called an antagonist if:

A) it has a higher affinity for the receptor site than the chemical mediator.

B) it stimulates a receptor site to cause the response that that receptor normally causes.

C) it attaches to a receptor site and produces an effect or series of effects.

D) the chemical mediator of a receptor has a higher affinity than the medication.

Ans: A

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Pages: 630–631

Feedback: The Physiology of Pharmacology, pages 630–631

22. The ability of a medication to initiate or alter cell activity in a therapeutic or desired manner is referred to as:

A) potency.

B) efficacy.

C) affinity.

D) the threshold level.

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 630

Feedback: The Physiology of Pharmacology, page 630

23. Stimulation of alpha-1 receptors results in:

A) insulin secretion.

B) vasoconstriction.

C) arterial dilation.

D) glucagon secretion.

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 630

Feedback: The Physiology of Pharmacology, page 630

24. Stimulation of beta-1 adrenergic receptors would produce all of the following effects, EXCEPT:

A) an increase in heart rate.

B) increased renin secretion.

C) increased cardiac electrical conduction.

D) decreased myocardial contractility.

Ans: D

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 630

Feedback: The Physiology of Pharmacology, page 630

25. In order to cause a negative inotropic effect on the heart, you would have to administer a(n):

A) beta-1 adrenergic antagonist.

B) alpha-2 adrenergic agonist.

C) beta-2 adrenergic agonist.

D) alpha-1 adrenergic antagonist.

Ans: A

Complexity: Difficult

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Pages: 629–630

Feedback: The Physiology of Pharmacology, pages 629–630

26. Stimulation of beta-2 receptors will cause:

A) bronchoconstriction.

B) the airway diameter to dilate.

C) vasoconstriction and hypertension.

D) a decreased release of norepinephrine.

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 630

Feedback: The Physiology of Pharmacology, page 630

27. A medication that possesses a negative chronotropic effect will:

A) cause a decrease in the heart rate.

B) cause an increase in blood pressure.

C) decrease myocardial contractile force.

D) increase cardiac electrical conduction velocity.

Ans: A

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 630

Feedback: The Physiology of Pharmacology, page 630

28. When a medication alters the velocity of the conduction of electricity through the heart, it is said to have a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_ effect.

A) inotropic

B) dromotropic

C) chronotropic

D) alpha agonistic

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 630

Feedback: The Physiology of Pharmacology, page 630

29. Which adrenergic receptor, when stimulated, inhibits norepinephrine release?

A) Beta-1

B) Alpha-1

C) Alpha-2

D) Beta-2

Ans: C

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 630

Feedback: The Physiology of Pharmacology, page 630

30. In order to relieve the bronchospasm associated with an acute asthma attack, the paramedic would give a(n):

A) alpha-1 agonist.

B) beta-2 agonist.

C) beta-1 agonist.

D) alpha-2 agonist.

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 630

Feedback: The Physiology of Pharmacology, page 630

31. Lipid-soluble medications require higher weight-based doses in elderly patients because:

A) there are fewer barriers to absorption in elderly patients.

B) elderly patients have a much faster basil metabolic rate.

C) elderly patients have a higher body fat percentage and fat distribution.

D) elderly patients have a higher overall percentage of body water.

Ans: C

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 632

Feedback: The Physiology of Pharmacology, page 632

32. What term is used to describe a situation in which a patient experiences clinical effects from a medication that are opposite from the intended effects?

A) Side effect

B) Subtherapeutic effect

C) Idiosyncrasy

D) Paradoxical reaction

Ans: D

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 632

Feedback: The Physiology of Pharmacology, page 632

33. The ideal body weight for a woman who is 5 ft 5 in tall is:

A) 52 kg.

B) 57 kg.

C) 62 kg.

D) 66 kg.

Ans: B

Complexity: Difficult

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 633

Feedback: The Physiology of Pharmacology, page 633

34. Patients with primary pulmonary hypertension may experience acute decompensation if they are given a:

A) salicylate.

B) vasopressor.

C) diuretic.

D) bronchodilator.

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 633

Feedback: The Physiology of Pharmacology, page 633

35. Which of the following factors would be the LEAST likely to affect a patient's response to a medication?

A) Body temperature

B) Pregnancy

C) Past medical history

D) Age and weight

Ans: C

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Pages: 632–633

Feedback: The Physiology of Pharmacology, pages 632–633

36. During a study, a patient experiences measurable clinical improvement or unexplained adverse effects after receiving a medication with no pharmacologic properties. This is referred to as:

A) an idiosyncrasy.

B) the placebo effect.

C) an untoward effect.

D) the therapeutic ratio.

Ans: B

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 635

Feedback: The Physiology of Pharmacology, page 635

37. A drug is assigned a pregnancy category “A” if:

A) there is evidence of fetal risk based on human experience, and the risk of using the drug in pregnant women clearly outweighs any possible benefit.

B) there is positive evidence of human fetal risk, but the benefits from use in pregnant women may be acceptable despite the documented risk.

C) studies in animals have revealed adverse effects on the fetus and there are no controlled studies in women, or studies in women and animals are not available.

D) controlled studies in women fail to demonstrate a risk to the fetus in the first trimester, there is no evidence of risk in later trimesters, and the possibility of fetal harm appears remote.

Ans: D

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 634

38. If studies in animals or human beings have demonstrated fetal abnormalities, or if there is evidence of fetal risk based on human experience, a pregnancy category \_\_\_ is assigned to a medication.

A) B

B) C

C) D

D) X

Ans: D

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 634

Feedback: The Physiology of Pharmacology, page 634

39. A paramedic gives a woman with chronic pain an injection of sterile saline and tells her that it is a narcotic analgesic. The paramedic's action:

A) could result in criminal prosecution.

B) will likely be of therapeutic benefit.

C) is acceptable under the circumstances.

D) demonstrates compassion and empathy.

Ans: A

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 635

40. A drug that possesses the same desired clinical effect in several smaller doses as it does in a larger single dose has demonstrated:

A) an idiosyncratic reaction.

B) the placebo effect.

C) a cumulative action.

D) cross-tolerance.

Ans: C

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 636

41. An undesirable clinical change caused by a medication that causes some degree of harm or discomfort to the patient is called a(n):

A) side effect.

B) idiosyncrasy.

C) placebo effect.

D) adverse effect.

Ans: D

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 637

42. Which of the following conditions would make a patient the MOST susceptible to an adverse effect from a medication?

A) Hypertension

B) Renal failure

C) Minor trauma

D) Chronic pain

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 637

Feedback: The Physiology of Pharmacology, page 637

43. Certain antibiotics and antiseizure medications are known to cause Stevens-Johnson syndrome, which is a:

A) severe, possibly fatal reaction that mimics a burn.

B) rare condition characterized by painful neck spasms.

C) condition in which the renal system acutely fails.

D) nonfatal reaction characterized by a diffuse rash.

Ans: A

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 637

Feedback: The Physiology of Pharmacology, page 637

44. An abnormal susceptibility to a medication that is peculiar to an individual patient is called an:

A) untoward effect.

B) adverse reaction.

C) idiosyncratic reaction.

D) exaggerated therapeutic effect.

Ans: C

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 637

45. The therapeutic index of a medication is defined as the:

A) plasma level at which the medication begins to exert its effect.

B) period of time in which the medication is excreted from the body.

C) duration of therapeutic action for a given medication on the body.

D) difference between the median effective dose and the median toxic dose.

Ans: D

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 638

46. A medication that has a narrow therapeutic index:

A) can be given, but not without close patient monitoring.

B) should not be given to patients over 50 years of age.

C) is safe to give because the chance of toxicity is remote.

D) should not be given because its effects are too harmful.

Ans: A

Complexity: Moderate

Ahead: The Physiology of Pharmacology

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Feedback: The Physiology of Pharmacology, page 638

47. Patients who are genetically predisposed to an immune-mediated medication response:

A) typically have a history of more than one autoimmune disorder.

B) had an initial exposure and sensitization to a particular antigen.

C) should be given an antihistamine before receiving the medication.

D) will experience a minor reaction that is generally limited to hives.

Ans: B

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 638

Feedback: The Physiology of Pharmacology, page 638

48. Which of the following medications would MOST likely cause an immune-mediated medication response?

A) Ibuprofen

B) Penicillin

C) Fentanyl

D) Atropine

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 638

49. Decreased efficacy or potency of a medication when taken repeatedly by a patient is called:

A) addiction.

B) immunity.

C) tolerance.

D) habituation.

Ans: C

Complexity: Easy

Ahead: The Physiology of Pharmacology

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Feedback: The Physiology of Pharmacology, page 638

50. Cross-tolerance to a medication occurs when:

A) the body's metabolism increases, resulting in a decreased concentration of the medication present near receptor sites.

B) repeated doses of a medication within a short time rapidly cause tolerance, which renders the medication ineffective.

C) repeated exposure to a medication causes an abnormal tolerance to the adverse or therapeutic effects of the medication.

D) repeated exposure to a medication within a particular class causes tolerance to other medications in the same class.

Ans: D

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 638

51. A patient receives several doses of the same drug within a short period of time, after which point the medication does not relieve his symptoms. Which of the following has MOST likely occurred?

A) Tachyphylaxis

B) Cross-tolerance

C) Down-regulation

D) Dependence

Ans: A

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 638

Feedback: The Physiology of Pharmacology, page 638

52. The physical, emotional, or behavioral need for a medication in order to maintain a certain level of “normal” function is called:

A) withdrawal.

B) synergism.

C) dependence.

D) habituation.

Ans: C

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 639

Feedback: The Physiology of Pharmacology, page 639

53. Which of the following factors would have the LEAST influence on the duration and effectiveness of a medication?

A) Dose administered

B) Patient's dietary habits

C) Route of administration

D) Patient's clinical status

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 641

54. The peak of a medication's effect depends on \_\_\_\_\_\_\_\_\_\_\_\_\_, whereas the duration of effect depends on \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A) distribution, absorption

B) absorption, metabolism

C) elimination, absorption

D) metabolism, distribution

Ans: B

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 641

55. The percentage of an unchanged medication that reaches the systemic circulation is referred to as:

A) bioavailability.

B) drug interference.

C) peak plasma level.

D) pharmacodynamics.

Ans: A

Complexity: Easy

Ahead: The Physiology of Pharmacology

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Feedback: The Physiology of Pharmacology, page 641

56. Medications administered by the \_\_\_\_\_\_\_\_\_\_\_ route, by definition, have 100% bioavailability.

A) sublingual

B) intramuscular

C) endotracheal

D) intravenous

Ans: D

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 641

57. Medication X is given to increase the effects of medication Y, which provides more relief than if medication Y were given alone. This is an example of:

A) synergism.

B) summation.

C) potentiation.

D) antagonism.

Ans: C

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 640

58. A patient experiences profound sedation when an opioid, such as fentanyl, is given together with a benzodiazepine, such as midazolam. This is an example of:

A) synergism.

B) summation.

C) potentiation.

D) antagonism.

Ans: A

Complexity: Moderate

Ahead: The Physiology of Pharmacology

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Feedback: The Physiology of Pharmacology, page 639

59. Physiologic drug antagonism occurs when:

A) the action of one medication increases or decreases the ability of another medication to be absorbed by the body.

B) two medications, each producing opposite effects, are present simultaneously, resulting in minimal or no clinical changes.

C) the effect of one medication is enhanced by the presence of another medication, which does not have the ability to produce the same effect.

D) two medications, each producing identical effects, are present simultaneously, resulting in an enhanced physiologic response.

Ans: B

Complexity: Moderate

Ahead: The Physiology of Pharmacology

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Feedback: The Physiology of Pharmacology, page 640

60. A medication undergoes first-pass metabolism in the:

A) liver.

B) spleen.

C) stomach.

D) bone marrow.

Ans: A

Complexity: Easy

Ahead: The Physiology of Pharmacology

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Feedback: The Physiology of Pharmacology, page 642

61. First-pass metabolism of a medication occurs when:

A) a medication's effects are greatly enhanced by digestive enzymes in the stomach.

B) a medication's bioavailability is immediately reduced when it enters the bloodstream.

C) the bioavailability of a medication is reduced before it reaches the systemic circulation.

D) the liver increases a medication's effects before it reaches the systemic circulation.

Ans: C

Complexity: Easy

Ahead: The Physiology of Pharmacology

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Feedback: The Physiology of Pharmacology, page 642

62. Which of the following statements regarding the endotracheal route of medication administration is correct?

A) If a medication must be given via the endotracheal route, five times the standard IV dose should be given.

B) Evidence has shown that medications given via the endotracheal route quickly achieve a peak plasma level.

C) Medications given via the endotracheal route should be flushed with 20 to 30 mL of sterile water.

D) The endotracheal route is no longer considered a reliable method of medication administration.

Ans: D

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 642

Feedback: The Physiology of Pharmacology, page 642

63. Which of the following medications can be administered via the intranasal route?

A) Atropine

B) Diazepam

C) Morphine

D) Midazolam

Ans: D

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 642

Feedback: The Physiology of Pharmacology, page 642

64. When the paramedic administers a medication via the IV route:

A) bioavailability of the medication is reduced by 50% as soon as it enters the systemic circulation.

B) he or she has the ability to titrate the medication carefully in a rapidly evolving clinical situation.

C) it is important for him or her to remember that the medication's onset of action is relatively slow.

D) first-pass metabolism significantly alters the medication's effects, thereby requiring frequent dosing.

Ans: B

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

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Feedback: The Physiology of Pharmacology, page 642

65. IO infusion rates are comparable to IV infusion rates:

A) when a pressure bag or mechanical infusion device is used.

B) only when the extremity with the IO needle inserted is elevated.

C) if the patient's systolic blood pressure is at least 100 mm Hg.

D) only if the IO needle is inserted in the proximal tibia.

Ans: A

Complexity: Easy

Ahead: The Physiology of Pharmacology

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66. All of the following are common sites for emergency IO cannulation, EXCEPT the:

A) proximal humerus.

B) iliac crest.

C) proximal tibia.

D) manubrium.

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 643

Feedback: The Physiology of Pharmacology, page 643

67. Which of the following statements regarding the IM route of medication administration is correct?

A) Medications have a bioavailability of 75% to 100% following IM administration.

B) Any medication given by the IV route can be given by the IM route.

C) IM-administered medications are subject to first-pass metabolism in the liver.

D) Muscle perfusion has minimal effect on the absorption of IM-administered drugs.

Ans: A

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 643

Feedback: The Physiology of Pharmacology, page 643

68. Transdermal medication patches:

A) deliver a fluctuating dose of a medication over a relatively short period of time.

B) should never be removed by the paramedic, even if she or he is administering a drug of the same type.

C) may alter a patient's clinical presentation or interfere with medications administered by the paramedic.

D) are a reliable medication delivery route because they are unaffected by the patient's perfusion status.

Ans: C

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 643

Feedback: The Physiology of Pharmacology, page 643

69. Which of the following statements regarding the sublingual administration of nitroglycerin is correct?

A) Large doses of IV nitroglycerin are required to achieve the same effect as a single sublingual nitroglycerin dose.

B) Sublingual nitroglycerin administration involves placing a tablet in between the patient's cheek and gum.

C) Sublingual nitroglycerin has a delayed onset of action, but nearly a 100% bioavailability.

D) Nitroglycerin given by the sublingual route has a rapid onset of action, but a low bioavailability.

Ans: D

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Pages: 643–644

Feedback: The Physiology of Pharmacology, pages 643–644

70. Medications commonly administered via a nebulizer include all of the following, EXCEPT:

A) albuterol.

B) lidocaine.

C) Xopenex.

D) racemic epinephrine.

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 644

Feedback: The Physiology of Pharmacology, page 644

71. The rectal route is preferred over the oral route for certain emergency medications because:

A) rectal medications are altered significantly by first-pass metabolism.

B) bioavailability of rectal medications does not exceed 50%.

C) the vasculature of the rectal mucosa allows for slow drug absorption.

D) rectal medications are usually not subject to first-pass metabolism.

Ans: D

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 644

Feedback: The Physiology of Pharmacology, page 644

72. In which of the following situations would the paramedic MOST likely administer a drug via the rectal route?

A) Seizure termination

B) Acute renal failure

C) Respiratory failure

D) Anaphylactic shock

Ans: A

Complexity: Difficult

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 644

Feedback: The Physiology of Pharmacology, page 644

73. Which of the following structures contains epithelial cells that create a continuous barrier to medication absorption?

A) Liver

B) Urinary tract

C) Bone marrow

D) Vascular system

Ans: B

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 645

Feedback: The Physiology of Pharmacology, page 645

74. The process that the cells of large medication molecules use to ingest intracellular fluids and their contents is called:

A) osmosis.

B) filtration.

C) pinocytosis.

D) phagocytosis.

Ans: C

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 645

Feedback: The Physiology of Pharmacology, page 645

75. Which of the following statements regarding plasma-protein binding is correct?

A) Plasma protein binding is an irreversible process that decreases the amount of medication necessary for a desired clinical effect.

B) Plasma protein binding releases medication as circulating levels of a particular medication begin to fall, leading to a longer duration of action.

C) If a patient has a safe level of a protein-bound medication, a second medication with a greater affinity greatly decreases the amount of the original medication.

D) As plasma protein levels decrease, the introduction of another protein-bound medication causes the concentration of the original medication to remain unchanged.

Ans: B

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 645

Feedback: The Physiology of Pharmacology, page 645

76. As a medication undergoes biotransformation, it becomes a(n):

A) compound.

B) molecule.

C) electrolyte.

D) metabolite.

Ans: D

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 646

Feedback: The Physiology of Pharmacology, page 646

77. Most medication biotransformation occurs in the:

A) liver.

B) kidneys.

C) lungs.

D) GI tract.

Ans: A

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 646

Feedback: The Physiology of Pharmacology, page 646

78. The paramedic should suspect altered medication metabolism in a patient with:

A) hypertension.

B) acute pancreatitis.

C) chronic alcoholism.

D) chronic renal failure.

Ans: C

Complexity: Easy

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Pages: 646–647

Feedback: The Physiology of Pharmacology, pages 646–647

79. Patients with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are at significant risk for toxic effects of medications or metabolic waste products in the body.

A) renal failure

B) diabetes mellitus

C) stomach cancer

D) heart failure

Ans: A

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 647

Feedback: The Physiology of Pharmacology, page 647

80. Which of the following describes first-order elimination?

A) The more of a substance that is in the plasma, the less the body works to eliminate it.

B) The rate of elimination is directly influenced by the plasma levels of the substance.

C) A fixed amount of a substance is removed, regardless of the total amount in the body.

D) Biotransformation in the liver converts a substance to an active or inactive metabolite.

Ans: B

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 647

Feedback: The Physiology of Pharmacology, page 647

81. A patient takes 500 mg of a medication that has a half-life of 2 hours. How much medication will be in the patient's body after 6 hours?

A) 250 mg

B) 125 mg

C) 62.5 mg

D) 31.25 mg

Ans: C

Complexity: Moderate

Ahead: The Physiology of Pharmacology

Subject: Principles of Pharmacology

Page: 647

Feedback: The Physiology of Pharmacology, page 647

82. The paramedic can avoid technical errors in medication administration by:

A) using a current, reliable medication reference source before administering the medication.

B) having a partner confirm the volume in a syringe or a weight-based medication calculation.

C) contacting medical control and confirming that the proposed dose is appropriate for the patient.

D) evaluating a patient for medication allergies or hypersensitivity before administering the medication.

Ans: B

Complexity: Moderate

Ahead: Reducing Medication Errors

Subject: Principles of Pharmacology

Pages: 647, 649

Feedback: Reducing Medication Errors, pages 647, 649

83. Etomidate is a medication that:

A) chemically paralyzes a patient prior to intubation.

B) requires multiple doses to provide adequate sedation.

C) has a duration of action of approximately 45 minutes.

D) induces profound sedation following a single dose.

Ans: D

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 657

Feedback: Important Medications in the Prehospital Setting, page 657

84. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ agent is used to increase the pH of the serum or urine.

A) antacid

B) alkalinizing

C) anticoagulant

D) antihistamine

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 654

Feedback: Important Medications in the Prehospital Setting, page 654

85. All of the following medications are used to reduce a patient's heart rate and blood pressure, EXCEPT:

A) lorazepam.

B) diltiazem.

C) metoprolol.

D) Tenormin.

Ans: A

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 655

Feedback: Important Medications in the Prehospital Setting, page 655

86. Which of the following medications possesses positive inotropic effects, allows the cellular uptake of glucose, and is used in the treatment of hyperkalemia?

A) Insulin

B) Osmitrol

C) Glucophage

D) Clopidogrel

Ans: A

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 656

Feedback: Important Medications in the Prehospital Setting, page 656

87. Which of the following statements regarding benzodiazepine medications is NOT correct?

A) Benzodiazepines have potent anxiolytic, antiseizure, and sedative properties.

B) A benzodiazepine may be used as the primary sedative for advanced airway care.

C) High doses of a benzodiazepine may be needed to maintain a patient's blood pressure.

D) Benzodiazepines are commonly used in the prehospital setting to terminate seizures.

Ans: C

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 658

Feedback: Important Medications in the Prehospital Setting, page 658

88. If seizures occur following the administration of flumazenil (Romazicon):

A) an opiate medication should be given immediately because of its potent antiseizure properties.

B) the patient should receive half the normal dose of a benzodiazepine in order to control the seizure.

C) the paramedic should give naloxone immediately in order to reverse the effects of the flumazenil.

D) benzodiazepine medications will be minimally effective or ineffective in controlling the seizure.

Ans: D

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 658

Feedback: Important Medications in the Prehospital Setting, page 658

89. Neuromuscular blocking agents achieve chemical paralysis by:

A) agonizing muscarinic receptor sites and increasing acetylcholine production.

B) binding to nicotinic receptor sites on muscle cells and antagonizing acetylcholine.

C) inhibiting cerebellar activity, thereby decreasing voluntary muscle movement.

D) blocking the action of the sodium-potassium pump, causing muscle paralysis.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Pages: 658–659

Feedback: Important Medications in the Prehospital Setting, pages 658–659

90. Succinylcholine should not be used in patients with:

A) a closed head injury.

B) known hyperkalemia.

C) a rapid heart rate.

D) suspected hypokalemia.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 658

Feedback: Important Medications in the Prehospital Setting, page 658

91. Unlike a nondepolarizing paralytic, a competitive depolarizing paralytic:

A) causes muscle fasciculations.

B) does not induce full paralysis.

C) causes profound sedation.

D) lowers serum potassium.

Ans: A

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 658

Feedback: Important Medications in the Prehospital Setting, page 658

92. Which of the following statements regarding succinylcholine is correct?

A) It has a rapid onset of action and long duration of action.

B) It causes tachycardia, especially in small children.

C) It has a rapid onset of action and short duration of action.

D) It may induce or exacerbate existing hypokalemia.

Ans: C

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 658

Feedback: Important Medications in the Prehospital Setting, page 658

93. Compared to succinylcholine, rocuronium:

A) has a rapid (30 to 60 seconds) onset of action and a relatively brief (3 to 8 minutes) duration of action.

B) binds with nicotinic receptors on muscles and causes a brief activation known as fasciculation.

C) has a rapid onset of action, a longer (15 to 60 minutes) duration of action, and fewer adverse effects.

D) does not bind with nicotinic receptor sites on muscle cells and does not antagonize acetylcholine.

Ans: C

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Pages: 658–659

Feedback: Important Medications in the Prehospital Setting, pages 658–659

94. The desired clinical effect after administering a beta-2 agonist medication is:

A) dilation of the systemic vasculature.

B) relaxation of bronchiole smooth muscle.

C) increased cardiac contractility

D) contraction of vascular smooth muscle.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Pages: 659–660

Feedback: Important Medications in the Prehospital Setting, pages 659–660

95. Which of the following medications promotes the cellular uptake of potassium, making it a potential temporary treatment for hyperkalemia?

A) Terbutaline

B) Ipratropium

C) Levalbuterol

D) Albuterol

Ans: D

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 659

Feedback: Important Medications in the Prehospital Setting, page 659

96. Ipratropium bromide (Atrovent) causes bronchodilation by:

A) antagonizing muscarinic receptors.

B) agonizing nicotinic receptors.

C) agonizing beta-2 receptors.

D) antagonizing beta-2 receptors.

Ans: A

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 660

Feedback: Important Medications in the Prehospital Setting, page 660

97. Which of the following occurs during phase 1 of the cardiac cellular action potential?

A) Sodium influx decreases while potassium slowly exits the cell.

B) Rapid influx of sodium ions through channels in the cardiac cell.

C) Calcium enters the cell while potassium continues to leave the cell.

D) Calcium movement ceases with continued outflow of potassium.

Ans: A

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Pages: 660–661

Feedback: Important Medications in the Prehospital Setting, pages 660–661

98. Repolarization and myocardial contraction are occurring through phases \_\_\_\_ of cardiac cellular action potential.

A) 0 and 1.

B) 1 and 2.

C) 2 and 3.

D) 3 and 4.

Ans: C

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Pages: 660–661

Feedback: Important Medications in the Prehospital Setting, pages 660–661

99. What phases of the cardiac cellular action potential comprise the absolute refractory period?

A) 1 and 2 only

B) 2 and 3 only

C) 0 through 3

D) 0 through 4

Ans: C

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Pages: 660–661

Feedback: Important Medications in the Prehospital Setting, pages 660–661

100. Lidocaine is an antidysrhythmic that works by:

A) antagonizing beta-adrenergic receptors in the myocardium.

B) blocking sodium channels in the Purkinje fibers and ventricle.

C) displacing calcium at certain receptor sites in the myocardium.

D) increasing the duration of phases 1, 2, and 3 of the cardiac cycle.

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 661

Feedback: Important Medications in the Prehospital Setting, page 661

101. Beta-blockers should be used with extreme caution in patients with reactive airway because:

A) beta-1 receptor antagonism will result in profound bronchoconstriction.

B) beta-2 receptors can potentially be antagonized, resulting in bronchospasm.

C) there are no beta-blockers that selectively target beta-1 receptors only.

D) they inhibit catecholamine release, potentially causing bronchoconstriction.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 661

Feedback: Important Medications in the Prehospital Setting, page 661

102. Toxic effects from beta-blockers include all of the following, EXCEPT:

A) hypotension.

B) bradycardia.

C) conduction delays.

D) tachycardia.

Ans: D

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 661

Feedback: Important Medications in the Prehospital Setting, page 661

103. Calcium chloride or calcium gluconate may mitigate hypotension or bradycardia following an overdose of:

A) diltiazem.

B) adenosine.

C) Cordarone.

D) metoprolol.

Ans: A

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 662

Feedback: Important Medications in the Prehospital Setting, page 662

104. What class of medication is typically used to control the heart rate in patients with atrial fibrillation or atrial flutter?

A) Sodium channel blocker

B) Potassium channel blocker

C) Beta-adrenergic blocker

D) Calcium channel blocker

Ans: D

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 662

Feedback: Important Medications in the Prehospital Setting, page 662

105. Which of the following statements regarding adenosine is correct?

A) Adenosine has a half-life of between 20 and 30 seconds and should be given slowly.

B) Adenosine increases conduction velocity and shortens the effective refractory period.

C) Adenosine is used to assess for P waves when slowing a supraventricular tachycardia.

D) Ventricular tachycardia is often terminated following the administration of adenosine.

Ans: C

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 662

Feedback: Important Medications in the Prehospital Setting, page 662

106. In general, alpha-adrenergic receptor antagonists:

A) decrease the heart rate.

B) lower the blood pressure.

C) are used for hypotension.

D) increase vascular resistance.

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 662

Feedback: Important Medications in the Prehospital Setting, page 662

107. Patients who take alpha-blocking medications at home are frequently prone to:

A) postural hypotension.

B) hypertensive crisis.

C) narrow-angle glaucoma.

D) vagal-induced bradycardia.

Ans: A

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 663

Feedback: Important Medications in the Prehospital Setting, page 663

108. Stimulation of alpha-2 receptors:

A) constricts the vascular smooth muscle.

B) suppresses the release of norepinephrine.

C) causes profound systemic hypertension.

D) increases the release of norepinephrine.

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 663

Feedback: Important Medications in the Prehospital Setting, page 663

109. ACE inhibitor medications lower blood pressure by:

A) selectively binding to alpha-1 and alpha-2 receptors.

B) blocking the conversion of angiotensin I to angiotensin II.

C) increasing cardiac afterload and reducing cardiac output.

D) blocking the release of angiotensin I from the renal system.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 663

Feedback: Important Medications in the Prehospital Setting, page 663

110. Under normal conditions, the renin-angiotensin system functions by:

A) dilating the systemic vasculature and reducing cardiac afterload when arterial blood pressure increases.

B) stimulating alpha-1 receptors, thereby increasing the blood pressure in response to acute blood loss.

C) blocking alpha-2 receptors, thereby increasing the release of norepinephrine and raising blood pressure.

D) promoting vasoconstriction and fluid retention in response to hypotension or hypoperfusion.

Ans: D

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 663

Feedback: Important Medications in the Prehospital Setting, page 663

111. Patients taking ACE inhibitor medications may experience:

A) immunosuppression.

B) thin and fragile skin.

C) a chronic, dry cough.

D) a reduced platelet count.

Ans: C

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 663

Feedback: Important Medications in the Prehospital Setting, page 663

112. The vagus nerve releases \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which acts on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ receptors.

A) acetylcholine, muscarinic-2

B) norepinephrine, alpha-1

C) epinephrine, beta-2

D) acetylcholinesterase, nicotinic

Ans: A

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 663

Feedback: Important Medications in the Prehospital Setting, page 663

113. Acetylcholinesterase is an enzyme that:

A) decreases the heart rate.

B) slows cardiac conduction.

C) breaks down acetylcholine.

D) promotes acetylcholine secretion.

Ans: C

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 664

Feedback: Important Medications in the Prehospital Setting, page 664

114. Massive doses of atropine may be required when:

A) a patient strains to defecate and stimulates muscarinic-2 receptors.

B) acetylcholine increases dramatically due to acetylcholinesterase inhibition.

C) severe bradycardia is the result of a block in the cardiac conduction system.

D) a patient's heart rate significantly increases and lowers the cardiac output.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 664

Feedback: Important Medications in the Prehospital Setting, page 664

115. Paradoxical bradycardia may occur if atropine is given:

A) too rapidly.

B) in doses greater than 2 mg.

C) for acetylcholinesterase inhibition.

D) in doses less than 0.1 to 0.2 mg.

Ans: D

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 664

Feedback: Important Medications in the Prehospital Setting, page 664

116. All of the following are endogenous catecholamines, EXCEPT:

A) dopamine.

B) atropine.

C) epinephrine.

D) norepinephrine.

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Pages: 664–665

Feedback: Important Medications in the Prehospital Setting, pages 664–665

117. Which of the following statements regarding sympathomimetic chemicals is correct?

A) They are not synthetically manufactured.

B) They block the release of acetylcholine.

C) They only stimulate alpha-1 receptors.

D) They are not found naturally in the body.

Ans: D

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 664

Feedback: Important Medications in the Prehospital Setting, page 664

118. Catecholamines and sympathomimetic medications should be administered with caution because they:

A) can increase cardiac workload and myocardial oxygen demand.

B) have an average duration of action of between 24 and 48 hours.

C) are associated with paradoxical bradycardia in younger patients.

D) have a tendency to cause a significant decrease in cardiac output.

Ans: A

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 664

Feedback: Important Medications in the Prehospital Setting, page 664

119. In contrast to epinephrine, norepinephrine:

A) specifically targets beta-1 receptors.

B) has minimal effect on blood pressure.

C) primarily stimulates alpha receptors.

D) stimulates beta-1 and beta-2 receptors.

Ans: C

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 664

Feedback: Important Medications in the Prehospital Setting, page 664

120. At 5 to 10 g/kg/min, dopamine:

A) activates beta-1 receptor sites, causing an increased heart rate and increased cardiac contractility.

B) activates dopaminergic receptor sites, causing renal and mesenteric artery vasodilation.

C) no longer activates dopaminergic receptor sites and predominately activates alpha-1 receptor sites.

D) has a negative chronotropic effect on the heart, but an increased inotropic effect.

Ans: A

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 665

Feedback: Important Medications in the Prehospital Setting, page 665

121. Dopamine is commonly used in the prehospital setting as the primary medication for:

A) right-sided heart failure.

B) nonhypovolemic hypotension.

C) severe intracranial hemorrhage.

D) vagal-induced bradycardia.

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 665

Feedback: Important Medications in the Prehospital Setting, page 665

122. At 15 mcg/kg/min, dopamine:

A) reduces cardiac contractility.

B) antagonizes alpha-1 receptors.

C) activates beta-2 receptor sites.

D) causes vigorous vasoconstriction.

Ans: D

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 665

Feedback: Important Medications in the Prehospital Setting, page 665

123. The primary physiologic effect of dobutamine is:

A) increased afterload.

B) increased inotropy.

C) profound vasoconstriction.

D) increased chronotropy.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 665

Feedback: Important Medications in the Prehospital Setting, page 665

124. Hypotension may occur following initiation of a dobutamine infusion because it:

A) is a direct vasodilator.

B) blocks alpha-1 receptors.

C) reduces cardiac afterload.

D) has negative inotropic effects.

Ans: C

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 665

Feedback: Important Medications in the Prehospital Setting, page 665

125. Which of the following medications has the ability to increase cardiac contractility while simultaneously causing dilation of systemic arteries and veins?

A) Dopamine (Intropin)

B) Milrinone (Primacor)

C) Nitroglycerin (Nitrostat)

D) Norepinephrine (Levophed)

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 665

Feedback: Important Medications in the Prehospital Setting, page 665

126. The physiologic effects of nitroglycerin when given to patients with cardiac-related chest pain include:

A) increased myocardial oxygen consumption.

B) decreased preload and coronary vasodilation.

C) coronary vasoconstriction and increased preload.

D) increased afterload and peripheral vasodilation.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Pages: 665–666

Feedback: Important Medications in the Prehospital Setting, pages 665–666

127. For which of the following conditions is sodium nitroprusside used?

A) Severe refractory hypotension

B) Vagal-induced bradycardia

C) Intracerebral hemorrhage

D) Unstable vascular aneurysm

Ans: D

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 666

Feedback: Important Medications in the Prehospital Setting, page 666

128. What type of medication is used to eliminate certain toxins from the body?

A) Inotrope

B) Diuretic

C) Vasopressor

D) Vasodilator

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 667

Feedback: Important Medications in the Prehospital Setting, page 667

129. For which of the following conditions may a patient be prescribed furosemide?

A) Kidney dysfunction

B) Chronic dehydration

C) Low serum potassium

D) Reactive airway disease

Ans: A

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 667

Feedback: Important Medications in the Prehospital Setting, page 667

130. In critical care settings, mannitol is used to:

A) treat hypothermia.

B) lower the blood pressure.

C) reduce cerebral edema.

D) treat anaphylaxis.

Ans: C

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 667

Feedback: Important Medications in the Prehospital Setting, page 667

131. If unmatched blood is administered in the prehospital setting, it will almost always be:

A) O, Rh-positive.

B) AB, Rh-negative.

C) O, Rh-negative.

D) AB, Rh-positive.

Ans: C

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 669

Feedback: Important Medications in the Prehospital Setting, page 669

132. The preferred IV fluid for Y-site tubing administration during a blood product transfusion is:

A) normal saline.

B) 5% dextrose in water.

C) lactated Ringer's.

D) 0.45% sodium chloride.

Ans: A

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 669

Feedback: Important Medications in the Prehospital Setting, page 669

133. Assuming no ongoing blood loss, one unit of packed red blood cells will increase the hematocrit by:

A) 0.5%.

B) 1.5%.

C) 3%.

D) 5%.

Ans: C

Complexity: Difficult

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 669

Feedback: Important Medications in the Prehospital Setting, page 669

134. Which of the following statements regarding packed red blood cells (PRBCs) is correct?

A) For every 3 mL of whole blood that is lost, the patient should be given 1 to 2 mL of PRBCs.

B) PRBCs should not be given to patients with hemolysis, as this will cause a transfusion reaction.

C) In a patient with ongoing RBC loss, one unit of PRBCs will increase the hematocrit by about 5%.

D) In general, the rate of administration of PRBCs should be proportional to the rate of blood cell loss.

Ans: D

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 669

Feedback: Important Medications in the Prehospital Setting, page 669

135. Fresh frozen plasma is used to:

A) increase the hematocrit.

B) increase circulating volume.

C) replace red blood cells.

D) replace critical clotting factors.

Ans: D

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 670

Feedback: Important Medications in the Prehospital Setting, page 670

136. Which of the following statements regarding fresh frozen plasma (FFP) is correct?

A) FFP is the ideal volume expander for critically injured patients whose blood type is not known.

B) FFP is contraindicated in patients with warfarin (Coumadin) toxicity due to the risk of hemolysis.

C) FFP must be compatible with the recipient's blood type, but does not have to be Rh compatible.

D) FFP should not be administered to patients who require large volumes of other blood products.

Ans: C

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 670

Feedback: Important Medications in the Prehospital Setting, page 670

137. The paramedic may be called upon to administer platelets to patients with:

A) thrombocytopenia.

B) hemolytic anemia.

C) a low hematocrit.

D) hypercoagulopathy.

Ans: A

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 670

Feedback: Important Medications in the Prehospital Setting, page 670

138. What is the mechanism of action of anticoagulant medications?

A) They dissolve existing clots, thereby restoring distal blood flow.

B) They prevent new clot formation and the growth of existing clots.

C) They inhibit platelet aggregation during acute coronary syndrome.

D) They promote hemostasis in patients with pulmonary emboli.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 670

Feedback: Important Medications in the Prehospital Setting, page 670

139. What specific abnormality does tranexamic acid (TXA) address in a trauma patient?

A) Red blood cell loss

B) Hyperfibrinolysis

C) Hypercoagulopathy

D) Systemic vasodilation

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 670

Feedback: Important Medications in the Prehospital Setting, page 670

140. Tranexamic acid (TXA) has been shown to significantly decrease patient mortality when administered:

A) as a rapid IV bolus.

B) to patients with a head injury.

C) to patients who take aspirin.

D) within 3 hours of a traumatic injury.

Ans: D

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 670

Feedback: Important Medications in the Prehospital Setting, page 670

141. When is aspirin indicated for the treatment of a stroke?

A) Within the first 15 minutes after the onset of symptoms

B) Only after an intracranial hemorrhage has been ruled out

C) Only if the patient is prescribed antiplatelet medications

D) Immediately upon arrival at the emergency department

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 671

Feedback: Important Medications in the Prehospital Setting, page 671

142. Which of the following is NOT an oral antiplatelet medication?

A) ReoPro

B) Plavix

C) Ticlid

D) Aspirin

Ans: A

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 671

Feedback: Important Medications in the Prehospital Setting, page 671

143. Which of the following is an influencing factor regarding the administration of a fibrinolytic drug to a patient experiencing an acute myocardial infarction?

A) Quality of the chest pain

B) History of unstable angina

C) Time of symptom onset

D) Concurrent use of aspirin

Ans: C

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 672

Feedback: Important Medications in the Prehospital Setting, page 672

144. Which of the following medications actually dissolves a clot?

A) Plavix

B) Aggrastat

C) Warfarin

D) Activase

Ans: D

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 672

Feedback: Important Medications in the Prehospital Setting, page 672

145. In contrast to morphine, fentanyl:

A) can only be administered via the intravenous route.

B) commonly causes pruritis, flushing, and diaphoresis.

C) has a lower risk of causing nausea and histamine release.

D) is more likely to cause a significant drop in blood pressure.

Ans: C

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 673

Feedback: Important Medications in the Prehospital Setting, page 673

146. Patients who receive opioid substances on a long-term basis:

A) are less likely to develop cross-tolerance than a non-opioid user.

B) often need higher doses of an opioid medication for pain relief.

C) are less likely to experience severe nervous system depression.

D) typically respond to lower doses of an opioid medication.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 673

Feedback: Important Medications in the Prehospital Setting, page 673

147. In up to 60% of all patients, morphine sulfate causes:

A) nausea and vomiting.

B) severe hypotension.

C) complete heart block.

D) a reflex tachycardia.

Ans: A

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 673

Feedback: Important Medications in the Prehospital Setting, page 673

148. Fentanyl (Sublimaze) is the preferred opioid analgesic for patients in critical or unstable condition because:

A) its effects last much longer than any other opioid.

B) it is not as prone to causing hypotension as morphine.

C) it only requires one small dose to achieve analgesia.

D) it hyperstimulates mu () opioid receptor sites.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 673

Feedback: Important Medications in the Prehospital Setting, page 673

149. When administering naloxone to a patient who overdosed on an opioid, it is important for the paramedic to remember that:

A) small doses of naloxone often cause severe withdrawal symptoms in long-term opioid users.

B) complete reversal of the opioid is essential if the patient receives opioids on a long-term basis.

C) an IV infusion of naloxone should be used for patients who are addicted to opioids.

D) the duration of action of naloxone in the body is less than that of many opioid chemicals.

Ans: D

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 673

Feedback: Important Medications in the Prehospital Setting, page 673

150. What type of medication is used to decrease gastric acid secretion?

A) Histamine-1 receptor antagonist

B) Alpha-2 receptor antagonist

C) Histamine-2 receptor antagonist

D) Phosphodiesterase-5 inhibitor

Ans: C

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 673

Feedback: Important Medications in the Prehospital Setting, page 673

151. Phenothiazine medications exert their antiemetic properties by:

A) promoting the secretion of hormones in the brain that depress the function of the medulla oblongata.

B) antagonizing dopaminergic receptor sites in the brain, which suppresses the function of the hypothalamus.

C) blocking histamine-2 receptors, which inhibits gastric acid production and slows peristalsis.

D) activating dopaminergic receptors in the brain and releasing hormones that depress the reticular activating system.

Ans: D

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 674

Feedback: Important Medications in the Prehospital Setting, page 674

152. The paramedic should administer promethazine (Phenergan) by:

A) diluting it in 50 mL of normal saline and administering it over 10 minutes.

B) rapid IV push undiluted, as this will minimize the risk of vascular injury.

C) mixing it with 25 mg of diphenhydramine in order to prevent dystonia.

D) diluting it in 50 to 100 mL of normal saline and giving it over 30 minutes.

Ans: A

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 674

Feedback: Important Medications in the Prehospital Setting, page 674

153. All of the following medications possess antiemetic properties, EXCEPT:

A) ondansetron.

B) dolasetron.

C) famotidine.

D) prochlorperazine.

Ans: C

Complexity: Difficult

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 674

Feedback: Important Medications in the Prehospital Setting, page 674

154. IV calcium is routinely used to treat:

A) cardiopulmonary arrest.

B) magnesium sulfate toxicity.

C) sulfuric acid exposure.

D) beta-blocker overdose.

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 675

Feedback: Important Medications in the Prehospital Setting, page 675

155. Glucagon is used in the treatment of beta-blocker overdose because it:

A) causes vasoconstriction and increases blood pressure.

B) produces positive inotropic and chronotropic effects.

C) activates beta-1 receptors and increases the heart rate.

D) blocks alpha-2 receptors and increases blood pressure.

Ans: B

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 676

Feedback: Important Medications in the Prehospital Setting, page 676

156. What classification of medication is ketorolac (Toradol)?

A) Opioid analgesic

B) Corticosteroid anti-inflammatory

C) Histamine-1 receptor antagonist

D) Non-steroidal anti-inflammatory

Ans: D

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 676

Feedback: Important Medications in the Prehospital Setting, page 676

157. Which of the following medications is used to provide cardiac cell membrane stabilization following tricyclic antidepressant overdose?

A) Sodium bicarbonate

B) Magnesium sulfate

C) Diphenhydramine

D) Calcium chloride

Ans: A

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 676

Feedback: Important Medications in the Prehospital Setting, page 676

158. A malnourished patient with a history of long-term alcohol abuse would MOST likely receive:

A) naloxone.

B) thiamine.

C) albuterol.

D) furosemide.

Ans: B

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Page: 677

Feedback: Important Medications in the Prehospital Setting, page 677

159. A patient who overdosed on acetaminophen is at greatest risk for:

A) liver failure.

B) bronchospasm.

C) gastric ulcers.

D) blood clots.

Ans: A

Complexity: Easy

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

Pages: 674–675

Feedback: Important Medications in the Prehospital Setting, pages 674–675

160. A patient recently began taking an antipsychotic medication and is experiencing a dystonic reaction. What drug is indicated?

A) Naloxone

B) Promethazine

C) Diphenhydramine

D) Prochlorperazine

Ans: C

Complexity: Moderate

Ahead: Important Medications in the Prehospital Setting

Subject: Principles of Pharmacology

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Feedback: Important Medications in the Prehospital Setting, page 674