Prehospital Emergency Pharmacology, 8e **(Bledsoe/Clayden)**
Chapter 1 General Information

1) The study of natural drug sources that has been expanded to include chemicals developed and used in laboratory research most correctly describes:
A) Pharmacology.
B) Pharmacodynamics.
C) Pharmacognosy.
D) Pharmacokinetics.
Answer: C
Explanation: A) Pharmacology is the study of drugs and their actions on the body.
B) Pharmacodynamics refers to the mechanisms by which medications produce biochemical or physiological changes in the body.
C) Study of natural drug sources that has been expanded to include chemicals developed and used in lab research.
D) The study of how medications enter the body, reach their site of action and eventually become eliminated.
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2) Atropine is a powerful organic alkaloid that reacts with acid to form a salt that is readily soluble in body fluids. From which of the following sources is atropine derived?
A) Plant
B) Animal
C) Mineral
D) Synthetic
Answer: A
Explanation: A) Atropine is developed from the plant Atropa belladonna.
B) Animal sources are extracted from the body fluids of animals.
C) Mineral sources provide inorganic material not available from plants or animals.
D) Synthetic sources are created in the lab using processes such as recombinant DNA. They may be used in combination with natural sources.
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3) Examples of synthetically produced medications include:
A) Diazepam, fentanyl, and adenosine.
B) Pepsin, pancreatin, and oxytocin.
C) Atropine, morphine, and digitalis.
D) Magnesium, sodium bicarbonate, and calcium chloride.
Answer: A
Explanation: A) Diazepam, fentanyl, and adenosine are all produced synthetically.
B) Pepsin, pancreatin, and oxytocin are derived from animal sources.
C) Atropine, morphine, and digitalis are identified as plant sources.
D) Magnesium, sodium bicarbonate, and calcium chloride are identified as mineral sources of drugs.
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4) In order to obtain the MOST current information related to a medication, it is suggested that the prehospital provider:
A) Use only local protocol as your source.
B) Use multiple sources and compare information in conjunction with medical direction.
C) Rely on an EMS guide as the sole source of information.
D) Utilize the internet as a resource because it is most correct.
Answer: B
Explanation: A) Local protocols may not encompass the many medications currently available.
B) Using multiple sources as well as comparing information will provide the provider with the most current information. Medical direction is also imperative.
C) While EMS guides may provide some information, they may not include all relevant information.
D) Internet sources are sometimes difficult to determine validity of information present and should be verified.
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5) A tool that may be readily available and carried by the prehospital provider for field use when seeking information regarding an unknown medication is:
A) United States Pharmacopeia.
B) Physicians' Desk Reference.
C) Drug information/hospital formulary.
D) Smart phone.
Answer: D
Explanation: A) The United States Pharmacopeia contains all current drugs, but is not readily available.
B) The Physicians' Desk Reference, while useful, is not typically readily available or practical at the scene of an emergency.
C) The drug information/hospital formulary is generally not used in the prehospital setting.
D) Specific applications are available for most smart phones that contain readily available information related to both prescribed and non-prescription medications.
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6) The phase of drug testing that includes determining toxicity, pharmacokinetics, and determining a drug's "therapeutic index" occurs during:
A) Postmarketing surveillance.
B) New drug application.
C) Clinical research and development.
D) Preclinical testing, research, and development.
Answer: D
Explanation: A) Postmarketing surveillance occurs during phase four of testing. A new drug's therapeutic index must already be determined.
B) An investigational new drug may be applied for once the therapeutic index has been determined prior to the phase 1 of human drug testing.
C) Clinical research and development begins after the therapeutic index has been determined.
D) Preclinical testing, research, and development occurs prior to human testing and is concerned with the pharmacokinetics and pharmacodynamics of a new drug in order to discover its therapeutic index.
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7) The term "therapeutic index" refers to:
A) Ratio of a drug's lethal dose to its effective dose.
B) Amount of drug required to cause a side effect.
C) Pharmacokinetics of a drug.
D) Efficacy of a drug.
Answer: A
Explanation: A) The ratio of a drug's lethal dose to its effective dose determines the therapeutic index.
B) Side effects are the undesired effects of a medication.
C) Pharmacokinetics refers to the drug's movement from introduction into the system until system elimination.
D) Efficacy refers to how well the drug works in terms of treatment effect.
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8) Which of the following statements regarding the use of abbreviations in pharmacology is TRUE?
A) Abbreviations vary depending upon the drug manufacture.
B) The abbreviation "mg" always will refer to the mineral, magnesium.
C) The USP in the only recognized source for determining abbreviations.
D) Abbreviations in pharmacology should be used carefully to avoid confusion and should be agreed upon in local systems.
Answer: D
Explanation: A) Abbreviations should be used with caution as they can lead to confusion. A standardized system is in place that makes charting and documentation more clear and concise.
B) Most sources recognize the abbreviation "mg" to indicate the unit of measure "milligram." Magnesium is an element with the designation of Mg.
C) The USP contains the formulary used in the United States.
D) Medical abbreviations should be used carefully to avoid confusion and should be agreed upon in local systems.
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9) Following the designation of a new drug as an "investigational new drug," there are _____ phases of testing on humans.
A) one
B) two
C) three
D) four
Answer: D
Explanation: A) There are three other phases of drug testing.
B) There are two other phases of drug testing.
C) There is another phase of drug testing.
D) There are four phases of drug testing that occur following the designation of a drug as an "investigational new drug."
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10) The phase of drug testing that determines the pharmacokinetics, toxicity, and safe dose in humans is:
A) Phase one.
B) Phase two.
C) Phase three.
D) Phase four.
Answer: A
Explanation: A) The primary purpose of phase one testing is to determine the pharmacokinetics, toxicity, and safe dose in humans.
B) The primary purpose of phase two testing is to find the therapeutic medication level and watch carefully for toxic and side effects.
C) The primary purpose of phase three testing is to refine the usual therapeutic dose and to collect relevant data on side effects.
D) The primary purpose of phase four testing involves postmarketing analysis during conditional approval.
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11) An example of a drug that may receive expedited medical approval would be:
A) A drug used to treat a rare disease that affects less than 200,000 people.
B) A placebo that is administered to provide psychological control of responses.
C) A drug that may help prevent a public health threat such as HIV.
D) A drug that is being evaluated in order to determine the therapeutic index.
Answer: C
Explanation: A) This Answer describes the definition of an orphan drug.
B) A placebo is used in testing and does not require expedited medical approval.
C) Expedited approval may be granted when a drug may be of use in treating a public health threat such as HIV.
D) The therapeutic index is obtained during preclinical phase of drug testing and does not require expedited approval.
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12) A drug in which potential tax credits or grants may provide incentives to assist in the research and development for a condition that affects a very small portion of the general population is known as a/an _____.
A) Orphan drug
B) Expedited drug
C) Investigational new drug
D) Phase 1 drug
Answer: A
Explanation: A) A company may receive incentives to encourage research and development of a drug that is meant for a small percentage of the general population.
B) An expedited drug is a drug that moves quickly through the normal phases of human testing when that drug may help in the prevention of a public health crisis.
C) A drug gains the status of investigational new drug when it has completed its preclinical testing phase and is ready for human testing.
D) Phase one refers to a drug testing and approval phase.
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13) The FDA may require the manufacture of a drug to post a prominent "black box" warning when:
A) The drug receives IND status (Investigational new drug).
B) Following phase one human testing.
C) Unlabeled uses of the drug occur.
D) A problem may arise that may lead to death or severe injury if the medication is used.
Answer: D
Explanation: A) A drug gains the status of investigational new drug when it has completed its preclinical testing phase and is ready for human testing.
B) The primary purpose of phase one testing is to determine the pharmacokinetics, toxicity, and safe dose in humans.
C) Unlabeled uses of a drug may occur when a physician or group of peers determines that a drug that has indications for one disorder inadvertently is beneficial for another disorder that it was not given an indication for during the human testing phases.
D) The FDA requires a prominent "black box" warning when the use of a prescribed drug may lead to death or injury as a result of its use.
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14) A physician has prescribed a drug normally used for hypertension to treat recurrent episodes of angina based on recommendations of colleagues and the most recent medical journals. Which of the following describes his actions?
A) The physician may do so legally based on the unlabeled use of medications.
B) The physician may do so legally if the uses are posted in the PDR.
C) The physician may do so legally if the uses are approved by the manufacturer of the drug.
D) It is illegal for the physician to prescribe a drug for anything other than the manufacturers intended, stated use as registered with the USP.
Answer: A
Explanation: A) A physician may utilize a medication for something other than its intended use if colleagues, or current medical journals, agree.
B) The *PDR* will only contain the manufactures approved indications.
C) The manufacture can only recommend a drug for its specific indications that are determined during human drug testing.
D) A physician may utilize a medication for something other than its intended use if colleagues, or current medical journals, agree.
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15) The use of standing orders and treatment protocols are BEST described as:
A) The emergency care provider following the orders and advise of an on-scene physician.
B) The administration of morphine following on-line medical consultation.
C) The independent authority granted to prehospital care providers a consequence of the Controlled Substance Act.
D) Treatments that are rendered to treat specific presenting signs and symptoms prior to contacting medical direction.
Answer: D
Explanation: A) This describes face-to-face transfer of orders from physician to paramedic.
B) This describes the function of on-line medical direction.
C) No such authority exists. The CSA regulated and controlled narcotics and other dangerous drugs by classifying them.
D) Treatments of specific presenting signs and symptoms may be treated when standing orders and protocols are in place and under the direction of off-line medical direction.
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16) The _____ included the truth in labeling clause which would require manufacturers to post a statement accurately describing a package's content.
A) Controlled Substance Act
B) Federal Food, Drug, and Cosmetic Act of 1938
C) Pure Food and Drug Act of 1906
D) Kefauver-Harris Amendment
Answer: B
Explanation: A) The Controlled Substance Act helped regulate and control narcotics and other dangerous substances by providing classifications related to the medications use.
B) The Federal Food, Drug, and Cosmetic Act required a statement that accurately described a package's content.
C) Established the FDA and prohibited the sale of medicinal preparations that had little or no use and restricted the sale of drugs with a potential of abuse. It was not as all-encompassing as its originators envisioned.
D) The Kefauer-Harris Amendment was an amendment to the Federal Food, Drug, and Cosmetic Act that required pharmaceutical manufacturers to provide proof of the safety and effectiveness of their drugs.
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17) Which of the following is TRUE of the Comprehensive Drug Abuse Prevention and Control Act of 1970?
A) It required labeling of all medications.
B) It required that manufactures provide proof of safety and effectiveness prior to production.
C) Controlled import, manufacture, and sale of the opium plant and derivatives.
D) Provided classifications of drugs into five different categories or "schedules."
Answer: D
Explanation: A) Labeling of medications was required by the Federal Food, Drug, and Cosmetic Act.
B) The Kefauer-Harris Amendment was an addition to the Federal Food, Drug, and Cosmetic Act.
C) The Harrison Narcotic Act of 1914 regulated the importation, manufacture, and sale of the opium and its derivatives.
D) The Controlled Substances Act of 1970, or the Comprehensive Drug Abuse Prevention and Control Act of 1970 classifies drugs used in medicine into five different categories, or schedules.
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18) Which of the following would be listed as a Schedule I drug?
A) Heroin
B) Hydromorphone
C) Codeine
D) Tramadol
Answer: A
Explanation: A) Heroin has no medical use and is scheduled as a Schedule I drug.
B) Hydromorphone is a Schedule II drug.
C) Codeine is a Schedule III drug.
D) Tramadol is a Schedule IV drug.
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