

STUDY GUIDE
for
Anaphylaxis, Toxicology, and Substance Abuse

1. Anaphylaxis is defined as
 - A. an acute, generalized, violent reaction
 - B. an antigen/antibody process
 - C. a life-threatening emergency
 - D. all of the above

2. Any substance capable of producing an immune system response is a/an
 - A. antibody
 - B. antigen
 - C. receptor
 - D. idiosyncrasy

3. The antibody responsible for producing allergic and anaphylactic response is the
 - A. IgA
 - B. IgE
 - C. IgM
 - D. IgG

4. The antibody that has “memory” and recognizes repeat invasions of foreign substances are the
 - A. IgA
 - B. IgE
 - C. IgM
 - D. IgG

5. Which of the following is true regarding vaccines?
 - A. They stimulate antibody production
 - B. They are an inactivated version of the original infection
 - C. Some last a lifetime
 - D. All of the above

6. Histamine receptors are located in the
 - A. airways
 - B. peripheral blood vessels
 - C. digestive tract
 - D. all of the above

7. Histamine causes all of the following physiological reactions **EXCEPT**
- A. bronchodilation
 - B. increased peristalsis
 - C. capillary leaking
 - D. vasodilation
8. The person with anaphylaxis may exhibit all of the following signs and symptoms **EXCEPT**
- A. hypertension
 - B. stridor
 - C. urticaria
 - D. abdominal cramping
9. Angioedema is best described as
- A. facial swelling
 - B. third cranial nerve paralysis
 - C. generalized body hives
 - D. excema of the neck
10. The anaphylactic shock patient should be managed with
- A. aggressive airway management
 - B. epinephrine and diphenhydramine
 - C. oxygen 100%
 - D. all of the above
11. Epinephrine causes all of the following **EXCEPT**
- A. bronchodilation
 - B. peripheral blood vessel constriction
 - C. heart rate decrease
 - D. contractile force increase
12. Diphenhydramine is given in anaphylaxis because it
- A. blocks histamine receptor sites
 - B. enhances the effects of epinephrine
 - C. renders the antigen inactive
 - D. produces permanent immunity

13. In addition to epinephrine and diphenhydramine the medical control physician may order corticosteroids because they
- A. slow histamine release
 - B. reduce capillary leakage
 - C. reduce edema and swelling
 - D. all of the above
14. The most common route of entry for toxic exposure is
- A. inhalation
 - B. ingestion
 - C. surface absorption
 - D. injection
15. Toxic gases such as methyl chloride, chlorine, and carbon monoxide enter the bloodstream through the
- A. blood brain barrier
 - B. skin
 - C. alveolar-capillary membrane
 - D. intestinal tract
16. Hymenoptera deliver their poisonous substances through the
- A. blood brain barrier
 - B. skin
 - C. alveolar-capillary membrane
 - D. intestinal tract
17. Which of the following is an advantage of having a poison control center?
- A. It is staffed by poison control specialists
 - B. It is available 24 hours a day
 - C. It offers the most current information
 - D. All of the above
18. The poison antidote that works by absorbing large amounts of poisonous molecules in the stomach is
- A. syrup of ipecac
 - B. naloxone
 - C. activated charcoal
 - D. amyl nitrate

19. An agent that causes emesis is
- A. syrup of ipecac
 - B. naloxone
 - C. activated charcoal
 - D. amyl nitrate
20. In which of the following circumstances should you induce vomiting?
- A. Patients who have ingested strong acids or alkalis
 - B. Patients with a decreased level of consciousness
 - C. Pregnant patients
 - D. Patients who have ingested aspirin and acetaminophen
21. The “coma cocktail” consists of
- A. 5% dextrose and 0.45% NS
 - B. Naloxone, thiamine, 50% dextrose
 - C. 50% dextrose and diazepam
 - D. Naloxone, thiamine, Narcan
22. Patients exhibiting extrapyramidal effects from taking phenothiazines should receive
- A. diazepam
 - B. a “coma cocktail”
 - C. syrup of ipecac
 - D. diphenhydramine
23. A lethal type of food poisoning caused by improper food storage methods is
- A. clostridium botulinum
 - B. salmonella
 - C. E coli
 - D. scomboid
24. Which of the following describes the pathophysiology of cyanide poisoning?
- A. Cyanide binds with hemoglobin, preventing oxygen transport
 - B. Cyanide paralyzes the central nervous system
 - C. Cyanide prevents cellular use of oxygen
 - D. Cyanide can only be inhaled

25. A cyanide antidote kit should contain
- A. amyl nitrate ampules
 - B. sodium nitrate solution
 - C. a sodium thiosulfate solution
 - D. all of the above
26. Freon gas primarily affects the
- A. central nervous system
 - B. respiratory system
 - C. heart
 - D. digestive system
27. Hymenoptera is a class of insects that includes all of the following **EXCEPT**
- A. spiders
 - B. ants
 - C. bees
 - D. wasps

SCENARIO

Your patient is a 63-year-old homeless male who is a habitual ambulance customer. This evening you find him slumped against a tree in the park, seemingly unconscious. He is alive, but responds neither to voice or deep pain. Next to him you find a jar labeled "wood alcohol". His BP is 150/90, pulse 90, respirations 40. He lies in a pool of vomit and reeks of alcohol.

28. This patient is most likely suffering from
- A. alcohol intoxication
 - B. acute methanol poisoning
 - C. cyanide poisoning
 - D. none of the above
29. Treatment of this patient may include all of the following **EXCEPT**
- A. contacting poison control
 - B. 30-60 ml of 86 proof whiskey
 - C. 50 mEq sodium bicarbonate
 - D. 100 mg thiamine

SCENARIO

Your patient is a 26-year-old male who was barbecuing in his garage with the overhead door half closed. His wife called 911 because he began acting strangely and vomited. you find his walking around the house, disoriented, complaining of a severe headache and nausea.

30. This man is most likely suffering from
- A. carbon monoxide poisoning
 - B. acute methanol intoxication
 - C. cyanide poisoning
 - D. organophosphate poisoning
31. Management of this patient includes
- A. removal from the toxic environment
 - B. oxygen administration
 - C. transport to a hyperbaric chamber
 - D. all of the above

SCENARIO

Your patient is a 25-year-old rock climber who was bitten by a rattlesnake and walked to call for help (1 mile). She presents on the ground complaining of weakness, dizziness, and pain at the injection site. She has fang marks on her left leg with oozing. She is nauseated and has vomited twice. Her BP is 80/50, pulse is 120 and weak, skin cool, pale, and clammy to the touch.

32. Rattlesnakes are members of what class of snakes?
- A. Hymenoptera
 - B. Pit vipers (crotalidae)
 - C. Elapidae
 - D. Coral
33. Which of the following statements is true regarding rattlesnakes?
- A. Their bite can result in death within 30 minutes
 - B. Their bites seldom cause systemic reactions
 - C. All rattlesnakes have rattles
 - D. All rattlesnake bites inject poisonous venom
34. Management of a rattlesnake bite may include all of the following **EXCEPT**
- A. application of a constricting band proximal to the wound
 - B. keeping the patient calm
 - C. application of ice, compression, and elevation to the wound
 - D. immobilizing the extremity

SCENARIO

Your patient is a 49-year-old female who was working in her garden trying to apply an insect killer to her roses. She was not wearing gloves and got much of the insecticide on her skin. She presents on the ground, disoriented, with vomit and drool on her shirt. She is incontinent of urine. Her BP is 100/60, pulse rate 55, respirations are 20, skin is pale and wet, pupils constricted.

35. This patient should be suspected of having
- A. cyanide poisoning
 - B. organophosphate poisoning
 - C. snake bite reaction
 - D. bee sting reaction
36. The best explanation for her vital signs is a/an
- A. sympathetic nervous system response
 - B. parasympathetic nervous system response
 - C. compensatory shock mechanism
 - D. antigen/antibody response
37. Treatment for this patient should include all of the following **EXCEPT**
- A. inducing vomiting
 - B. vigorous airway suctioning
 - C. atropine IV
 - D. contacting poison control

SCENARIO

Your patient is a 35-year-old confirmed alcoholic who calls you 2 days after leaving the detox unit. He presents with general weakness, tremors of the hands, sweating, and very anxious. He complains of nausea and vomiting and that he cannot sleep. His skin is cool and clammy, BP-140/70, pulse 90, respirations 20. He claims he sees pink elephants behind you and generally acts very strangely.

38. This patient is most likely suffering from
- A. acute psychosis
 - B. delusions
 - C. acute alcohol withdrawal
 - D. ethylene glycol poisoning

39. Which of the following statements regarding the pathophysiology of an antigen-antibody reaction is false?
- A. Upon introduction to the body, an antigen causes the production of antibodies.
 - B. Antibodies are produced to eliminate antigens from the body.
 - C. During sensitization, antibodies specific to the sensitizing antigen attach to mast cells.
 - D. The first time the antigen is introduced to the body it becomes attached to the corresponding antibody on the mast cells and can cause an anaphylactic reaction.
 - E. Antigen attachment to an antibody on a mast cell causes the mast cell to release histamine.
40. Antigens may be introduced to the body by way of
- A. injection or ingestion.
 - B. inhalation.
 - C. absorption.
 - D. Answers A and B only.
 - E. Answers A, B, and C.
41. Histamine causes constriction of
- A. arterioles.
 - B. capillaries.
 - C. bronchial muscles.
 - D. All of the above
 - E. None of the above
42. Interstitial edema occurs because histamine increases the permeability of
- A. arterioles.
 - B. capillaries.
 - C. bronchial muscles.
 - D. All of the above
 - E. None of the above
43. Anaphylaxis is a massive antigen-antibody reaction that may produce signs and symptoms that include all of the following, except
- A. dyspnea, sneezing, coughing, or stridor.
 - B. wheezing, rales, or total respiratory obstruction.
 - C. peripheral vasoconstriction and hypertension.
 - D. tachycardia.
 - E. abdominal cramping, nausea, vomiting, or diarrhea.

44. The medical term for the hives or wheals (raised areas of edema about the skin) associated with anaphylaxis is
- A. angioedema
 - B. urticaria.
 - C. hyphema.
 - D. polyps.
 - E. lesions.
45. Which of the following statements regarding airway management for an anaphylaxis patient is true?
- A. If the patient has a history of COPD, oxygenation must be limited to a nasal cannula or venturi mask to prevent further respiratory compromise.
 - B. IV medications to reverse the anaphylaxis should always be administered prior to any attempts at endotracheal intubation.
 - C. Endotracheal intubation is rarely required in anaphylactic shock, as it is excessively damaging to respiratory mucosa.
 - D. The presence or onset of stridor indicates impending total airway occlusion and is a valid clue that endotracheal intubation should be performed.
 - E. None of the above is false.
46. Which of the following solutions should be used when initiating IV access for the treatment of anaphylaxis?
- A. Lactated Ringers solution
 - B. Normal Saline (0.9% sodium chloride)
 - C. 5% Dextrose in water
 - D. Answers A or B only.
 - E. Either answer A, B, or C.
47. Place the following medications in order of their importance (rapidity of onset of action) when treating a *life-threatening* anaphylactic reaction (not all forms of epinephrine must be used).
- 1. epinephrine 1: 1000
 - 2. diphenhydramine
 - 3. dexamethasone, methylprednisolone, or hydrocortisone
 - 4. epinephrine 1: 10, 000
- A. 4,2,3
 - B. 1,2,3,4
 - C. 1,4,2,3
 - D. 4,3,1
 - E. 4,3,2

48. The dosage of epinephrine 1: 1000 when one is treating allergic reactions is
- A. 0.3 to 0.5 mg SQ.
 - B. 0.3 to 0.5 mg IV.
 - C. 3 to 5 ml IV.
 - D. Either answer A or B.
 - E. Either answer B or C.
49. The dosage of epinephrine 1: 10,000 when one is treating allergic reactions is
- A. 0.3 to 0.5 mg SQ.
 - B. 0.3 to 0.5 mg IV.
 - C. 3 to 5 ml IV.
 - D. Either answer A or B.
 - E. Either answer B or C.
50. The most common type of poisoning occurs via
- A. inhalation.
 - B. injection.
 - C. ingestion.
 - D. absorption.
 - E. None of the above.
51. Both immediate and delayed effects may be encountered when a poisoning occurs via
- A. inhalation.
 - B. injection.
 - C. ingestion.
 - D. absorption.
 - E. None of the above.
52. Situations when vomiting should not be induced include all of the following, except when
- A. non-organophosphate pesticides were ingested.
 - B. petroleum products were ingested.
 - C. the patient is pregnant.
 - D. the patient has had a seizure.
 - E. the patient has signs and symptoms of AMI.
53. Your 4-year-old patient is alert (has an intact gag reflex) and has ingested approximately 6 oz. of unleaded gasoline. You should consider administration of
- A. ipecac to induce vomiting.
 - B. activated charcoal (without ipecac) or transport with supportive treatment only.
 - C. an acidic substance to neutralize the ingested alkaline substance.
 - D. an alkaline substance to neutralize the ingested acidic substance.
 - E. copious amounts of milk to dilute the ingested substance.

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54. The adult dose of activated charcoal is _____ mixed with water.
- A. 50-100 grams
 - B. 100-200 grams
 - C. 20-50 grams
 - D. 100 mg/kg
 - E. 200 mg/kg
55. The pediatric dose of activated charcoal is _____ mixed with water.
- A. 50-100 grams
 - B. 100-200 grams
 - C. 20-50 grams
 - D. 100 mg/kg
 - E. 200 mg/kg
56. Your 4-year-old patient is alert (has an intact gag reflex) and has ingested approximately six ounces of bleach. You should consider administration of
- A. ipecac to induce vomiting.
 - B. activated charcoal (without ipecac) or transport with supportive treatment only.
 - C. an acidic substance to neutralize the ingested alkaline substance.
 - D. an alkaline substance to neutralize the ingested acidic substance.
 - E. copious amounts of milk to dilute the ingested substance.
57. The dosage of syrup of ipecac for a child over the age of one is
- A. 10 cc, followed by 1 cup of water.
 - B. 15 cc, followed by 1 to 2 glasses of water.
 - C. 20 cc, followed by 2 to 3 glasses of water.
 - D. 30 cc, followed by 2 to 3 glasses of water.
 - E. 40 cc, followed by 3 to 4 glasses of water.
58. The dosage of syrup of ipecac for an adult is
- A. 10 cc, followed by 1 cup of water.
 - B. 15 cc, followed by 1 to 2 glasses of water.
 - C. 20 cc, followed by 2 to 3 glasses of water.
 - D. 30 cc, followed by 2 to 3 glasses of water.
 - E. 40 cc, followed by 3 to 4 glasses of water.

59. When managing the victim of a toxic inhalation, your highest priority should be to
- A. intubate and hyperventilate the unconscious patient.
 - B. remove contaminated clothing.
 - C. perform the usual primary and secondary exam.
 - D. remove the patient from the toxic environment
 - E. ensure personal safety prior to access of the unconscious patient.
60. Which of the following statements regarding treatment of insect bites and stings is true?
- A. Remove the stinger by using forceps or tweezers (not your fingers) and squeezing the area below the venom sac.
 - B. Apply ice directly to the injection/bite site.
 - C. Be alert for allergic reactions and anaphylactic shock.
 - D. Both answers A and C are true.
 - E. All of the above answers are true.
61. Observation of a spider with a violin-shaped marking is associated with the identification of
- A. a black widow spider.
 - B. a brown recluse spider.
 - C. a scorpion.
 - D. Answers A and B only.
 - E. Answers A, B, and C.
62. Observation of a spider with a yellow-orange-or red-colored hourglass marking is associated with the identification of
- A. a black widow spider.
 - B. a brown recluse spider.
 - C. a scorpion.
 - D. Answers A and B only.
 - E. Answers A, B, and C.
63. There is no specific antivenin or antiserum for
- A. a black widow spider bite.
 - B. a brown recluse spider bite.
 - C. a scorpion sting.
 - D. Answers A and B only.
 - E. Answers A, B, and C.

64. Administration of analgesics will increase the venom toxicity of
- A. a black widow spider bite.
 - B. a brown recluse spider bite.
 - C. a scorpion sting.
 - D. Answers A and B only.
 - E. Answers A, B, and C.
65. Consider administration of diazepam or calcium gluconate for treatment of severe muscle spasms secondary to
- A. a black widow spider bite.
 - B. a brown recluse spider bite.
 - C. a scorpion sting.
 - D. Answers A and B only.
 - E. Answers A, B, and C.
66. The venom of the _____ contains a neurotoxin that can produce slurred speech, excessive salivation, tongue or larynx paralysis, loss of consciousness, seizures, or respiratory arrest.
- A. Rattlesnake
 - B. Copperhead
 - C. Cottonmouth
 - D. coral snake
 - E. Water moccasin
67. Which of the following statements regarding treatment of snake bite is true?
- A. Apply an arterial tourniquet proximal to the bite and a venous tourniquet distal to the bite
 - B. Apply ice, a cold pack, or Freon spray to the wound
 - C. Immobilize the bitten limb to diminish edema
 - D. As soon as possible (regardless of proximity to the receiving hospital), make an "X" incision over each fang mark and apply suction, using a commercial snake bite suction cup
68. Surface exposure to _____ requires removal by gentle brushing prior to copious water lavage
- A. dry lime
 - B. phenol
 - C. sodium metal
 - D. All of the above
 - E. None of the above

69. Surface exposure to _____ requires immediate application of a neutralizing agent
- A. dry lime
 - B. phenol
 - C. sodium metal
 - D. All of the above
 - E. None of the above
70. Surface exposure to _____ requires first a thorough alcohol lavage, followed by a copious water lavage
- A. dry lime
 - B. phenol
 - C. sodium metal
 - D. All of the above
 - E. None of the above
71. Surface exposure to _____ requires removal by gentle brushing prior to application of an oil coverage
- A. dry lime
 - B. phenol
 - C. sodium metal
 - D. All of the above
 - E. None of the above
72. Surface exposure to organophosphate chemicals (used in insecticides and some chemical warfare agents) can be extremely toxic to both victim and responder. Organophosphate poisoning stimulates the parasympathetic nervous system, causing signs and symptoms that include all of the following, except
- A. excessive salivation
 - B. nausea/vomiting/diarrhea and diaphoresis
 - C. blurred vision and constricted pupils
 - D. tachycardia
 - E. hypotension
73. In addition to removal of clothing and decontamination with copious amounts of water, treatment of symptomatic organophosphate poisoning includes oxygen administration, IV access, cardiac monitoring, and
- A. epinephrine 1:1000, 0.3-0.5 mg IV
 - B. atropine IV in 0.5-1.0 mg increments every 3 to 5 minutes, to a maximum dose of 0.04 mg/kg IV
 - C. epinephrine 1;10,000 IV in 1.0 mg increments every 5 minutes, to a maximum dose of 10 mg IV
 - D. atropine IV, in 2-5 mg increments every 10 to 15 minutes as needed
 - E. transport only

74. Opium-based drugs are called opiates or narcotics. All of the following drugs are narcotics, except
- A. heroin
 - B. Demerol
 - C. codeine
 - D. Darvon
 - E. cocaine
75. Larger than average doses of naloxone will be required to manage an overdose of
- A. heroin
 - B. Demerol
 - C. codeine
 - D. Darvon
 - E. cocaine
76. Which of the following statements regarding alcohol withdrawal syndrome is false?
- A. Signs and symptoms of withdrawal can occur within several hours after sudden abstinence and can last several days
 - B. Signs and symptoms include an increase in sympathetic tone, producing bradycardia, sweating and hypotension
 - C. Delirium tremens (DTs) usually develops on the second or third day of withdrawal
 - D. Seizures (“rum fits”) may occur, usually within the first 24 to 36 hours of abstinence
 - E. Seizures of DTs are signs of a significant emergency and may require administration of IV diazepam