CHAPTER 9

Self Assessment Review Questions

1. anticonvulsant
2. convulsions
3. epilepsy
4. grain
5. idiopathic epilepsy
6. status epilepticus
7. drug induced hepatopathy
8. ictus
9. polydipsia
10. partial seizure
11. induced
12. polyphagia
13. generalized seizures
14. preictal phase or aura
15. limbic system
16. antidepressants
17. anxiolytic
18. GABA (gamma amino butyric acid)
19. phenobarbital
20. SSRI (selective serotonin re-uptake inhibitor) antidepressant
21. potassium bromide (KBr)
22. primidone
23. diazepam
24. phenothiazine tranquilizers (acepromazine, etc.)
25. clomipramine (Clomicalm®)
26. phenytoin
27. selegiline (deprenyl) (Anipryl®)

28. A) False. Phenobarbital induces its own metabolism, thus the rate at which the drug is converted to a less active form is sped up. The concentrations of phenobarbital drop quicker with induced metabolism, thus more drug would have to be given to compensate. The dose would need to be increased, not decreased.
B) True. They metabolize phenobarbital slower than dogs so need a smaller "mg per pound" dose.
C) False. This is a normal side effect of phenobarbital with many dogs.
D) False. PO administered diazepam is largely removed by the liver before it gets a chance to reach systemic circulation (first pass effect), therefore, the PO route of administration is not very effective compared to the IV route of administration.
E) False. Potassium bromide has a very long half life of 21-24 days. Thus, the time to reach steady state for potassium bromide is around 3-4 months (steady state = five times the half life).
F) True. Phenothiazine tranquilizers may remove learned behaviors that control aggression allowing the natural aggressive behavior to show itself.
G) True.
H) False. Decreased dopamine is associated with senility-like syndrome in dogs and therefore drugs that increase the amount or effect of dopamine tend to reverse some of the signs associated with this syndrome.
I) True.
J) True. Behavior modification is a complex process for which drugs may help but typically are not the sole component of successful modification.

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CHAPTER 10

Self Assessment Review Questions

1. minimum inhibitory concentration (MIC)
2. thrombocytopenia
3. pathogens
4. spectrum of activity
5. bactericidal
6. residue
7. beta-lactam ring
8. hypersensitivity
9. chelate
10. nephrotoxicosis
11. crystalluria
12. dermatophyte
13. myelosuppression
14. DNA gyrase
15. Fanconi's syndrome
16. bacteriostatic
17. leukopenia
18. sensitive
19. superinfection, suprainfection
20. ototoxic
21. keratoconjunctivitis sicca (KCS)
22. culture and sensitivity
23. anaerobic
24. pyogenic
25. antibiotic
26. cross resistance
27. beta-lactamase
28. resistant
29. aerobic
30. aminoglycosides
31. doxycycline and minocycline
32. sulfonamides
33. amoxicillin, ampicillin
34. enrofloxacin
35. cloxacillin, dicloxacillin, oxacillin
36. tetracycline or oxytetracycline
37. penicillins
38. amphotericin B
39. tetracycline and oxytetracycline
40. procaine
41. chloramphenicol
42. cephalosporins
43. aminoglycosides
44. quinolones
45. carbenicillin, ticarcillin, piperacillin

46. tetracycline and oxytetracycline
47. aminoglycosides: amikacin, gentamicin, neomycin, kanamycin, tobramycin and netilmicin
48. quinolones – enrofloxacin (Baytril®)
49. penicillins and cephalosporins
50. sulfasalazine (Azulfidine®)
51. quinolones – enrofloxacin (Baytril®)
52. sulfonamides
53. tetracyclines
54. aminoglycosides
55. griseofulvin
56. neomycin
57. tetracycline and oxytetracycline
58. penicillins and cephalosporins
59. doxycycline
60. trimethoprim and ormetoprim
61. benzathine
62. sulfonamides
63. penicillin G
64. clindamycin (Antirobe®)
65. erythromycin
66. tilmicosin (Micotil®)
67. metronidazole (Flagyl®)
68. florfenicol (Nuflor®)
69. bacitracin
70. clavulanic acid or sulbactam
71. imidazoles: ketoconazole, itraconazole, fluconazole, miconazole, clotrimazole
72. penicillins

73. A) False. Although cloxacillin is effective against beta-lactamase producing bacteria, it's overall spectrum of activity is actually narrower (less organisms) than the aminopenicillins like ampicillin and amoxicillin.

B) False. Cross reactivity between all members of penicillin is too strong. A similar reaction is likely to occur with all members of the penicillin group.

C) True.

D) False. The key to safety with aminoglycosides is allowing enough time between doses for the drug concentration to drop well below the therapeutic range. Giving the drug in small doses frequently doesn't allow concentrations to get as high as a single dose once daily, and it doesn't allow for enough time between doses for the trough concentration (lowest concentration) to get very low before the next dose is given. Once daily doses of aminoglycosides have largely replaced the t.i.d. and even b.i.d. dosing of the drug.

F) False. Aminoglycosides are ionized at body pH therefore they are not lipophilic and do not readily penetrate cellular membranes like the blood-brain barrier or prostate barrier.

G) True. This is why renal disease or poorly functioning kidneys results in a greater risk for aminoglycoside toxicosis.

H) False. Casts and protein reflect inflammation and injury to the renal tubules. BUN and creatinine do not begin to go up until at least 75% of the kidney function or renal tubule function has been eliminated.

I) False. The magnesium in antacids, the kaolin, or the bismuth in Pepto Bismol® will chelate with the orally administered tetracycline.

J) True. Systemic sulfonamides are absorbed into the body; orally administered enteric sulfonamides stay in the GI tract.

K) True.

L) False. Ultramicrosized is smaller and therefore better absorbed than the microsized formulation. Because of that, you would have to use a smaller dose when switching from the microsized to the smaller ultramicrosized.

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CHAPTER 11

Self Assessment Review Questions

1. Antiseptics
2. Sanitizers
3. Disinfectants
4. Sporicidal
5. Nosocomial infection.
6. Protozoacidal
7. Biofilm
8. Virucidal
9. Sterilizers
10. Cytotoxic
11. Naked virus. Enveloped viruses are easier to kill by disrupting the lipid envelope.
12. Fungicidal
13. Scrub
14. Tincture
15. Bactericidal
16. chlorhexidine
17. phenols
18. iodine
19. chlorine
20. quaternary ammonium compound
21. alcohol
22. iodine
23. chlorine
24. glutaraldehyde

25. A) False. Color-fast bleaches have no chlorine, despite the "bleach" designation. Color-fast bleaches tend to be peroxide-based compounds (like hydrogen peroxide).
B) False. "Static" agents only inhibit the pathogen or microorganism without actually killing it. To kill it requires the action of the immune system. Inanimate objects like a surgery table do not have an immune system, thus the disease-causing agents wouldn't be killed. Disinfectants need to be microbicidal.
C) True.
D) False. "Organic material", such as dirt, secretions, feces, blood, etc., often react with many antiseptic or disinfectants and reduce their effectiveness. Thus, it is much better to scrub a site with a soap or soap/antiseptic combination to reduce the amount of organic material present prior to applying the antiseptic agent itself. This is why at least three cleanings of a surgical site with a surgical scrub compound are recommended.
E) True. It takes several seconds or even a few minutes for the alcohol to produce a bactericidal effect. In addition, if there is dirt or organic debris at the site, most of the alcohol may be inactivated.

F) True for the use of phenols to control gram-positive bacteria (less effective against gram-negatives). But, because the phenol residue can irritate the animal's skin with prolonged contact, the bird perch or reptile cage would have to thoroughly rinsed of any phenol to avoid dermal irritation or ulceration.
G) False. These two terms are often confused because they both has "hex" and "chloro" in their names. Hexachlorophene is a phenol and has a history of neurotoxicity. Chlorhexidine is a biguanide and is widely and safely used in veterinary medicine as a disinfectant and antiseptic.
H) True. The longer acting effect of iodophors is due to slow release of iodine over time. This is less irritating, lasts longer, but won't achieve as high of concentration of iodine as the same amount of free iodine compounds because the iodophor stretches out its release of iodine over a longer period of time.

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CHAPTER 12

Self Assessment Review Questions

1. gamma amino butyric acid (GABA)
2. proglottids
3. nicotinic receptors
4. coccidiostats
5. mydriasis
6. antitrematodal
7. vermifuge
8. delayed neurotoxicity
9. muscarinic receptors
10. endectocides
11. acetylcholine
12. anthelmintic
13. P-glycoprotein
14. antinematodal
15. glutamate
16. emboli
17. adulticide
18. antiprotozoal
19. ectoparasites
20. hemoptysis
21. ovicidal
22. acetylcholinesterase
23. pruritus
24. anticestodal, cestocides, or taeniacides
25. microfilaricide
26. selective toxicity

27. A) imidacloprid
B) lufenuron
C) melarsomine
D) selamectin
E) milbemycin oxime
F) ivermectin
G) milbemycin oxime + lufenuron
H) fenbendazole
I) pyrantel

J) praziquantel
K) fipronil
L) nitenpyram

29. pyrethrins
30. macrolides (avermectins and milbemycins)
31. amitraz
32. ivermectin
33. piperazine
34. selamectin
35. amprolium
36. melarsomine (Immiticide®)
37. macrolides (avermectins and milbemycins)
38. organophosphates and carbamates
39. moxidectin (Cydectin® in cattle, Quest® in horses)
40. thiabendazole
41. ponazuril (Marquis®)
42. ivermectin
43. fenbendazole
44. pyrantel
45. organophosphate
46. praziquantel
47. ivermectin
48. milbemycin oxime
49. imidacloprid (Advantage®)
50. lufenuron
51. diethylcarbamazine (DEC)
52. milbemycin
53. metronidazole
54. doramectin
55. organophosphates and carbamates
56. piperonyl butoxide
57. fipronil (Frontline®, Top Spot®)
58. atropine
59. nitenpyram (Capstar®)
60. pyriproxyfen (Nylar®)
61. DEET (diethyltoluamide)

62. A) False. Microfilaria are not capable of developing into adult heartworms until they are picked up by the mosquito and molt within the mosquito. The infective larvae injected into another animal by the mosquito migrate through tissue and spend a relative small amount of time in the blood. Also, because there are very few migrating infective larvae in the body, the chances of the infective larvae being in the blood and being taken up in a transfusion are very, very slim.
B) False. Cats with adult heartworms are not treated with adulticides as the risk of fatal emboli and lung inflammatory reactions are too great. Thus, the adult heartworms are allowed to die naturally one at a time and any inflammatory reaction treated with corticosteroids or other medications.
C) False. Lacrimation (tear production).
D) False. It is an inhibitory neurotransmitter. Stimulation of the glutamate receptor inhibits the nervous system and blocking glutamate's effect allows domination of excitatory neurotransmitters.
E) True.

63. Collie

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CHAPTER 13

Self Assessment Review Questions

1. glucocorticoids
2. thromboxanes
3. alopecia
4. humoral immunity
5. renal papillary necrosis
6. leukotrienes
7. autoimmune reactions
8. neutrophilia
9. catabolic effects
10. B-lymphocytes
11. cortex
12. Cushing's syndrome
13. cyclooxygenase (COX)
14. eicosanoids
15. eosinopenia
16. Addison's disease
17. glycogenesis
18. corticotropin-releasing factor (CRF)
19. monocytopenia
20. atrophy
21. hyperadrenocorticism
22. hypoadrenocorticism
23. iatrogenic
24. aldosterone
25. lipoxygenase
26. mineralocorticoids
27. gluconeogenesis
28. lymphopenia
29. propionic acid
30. cell mediated immunity
31. prostaglandins
32. arachidonic acid pathway
33. T-lymphocytes
34. ACTH (adrenocorticotropic hormone)
35. tepoxalin (Zubrin®)
36. hyaluronic acid
37. triamcinolone
38. phenylbutazone
39. carprofen (Rimadyl®)
40. prednisolone, methylprednisolone, triamcinolone
41. DMSO
42. hydrocortisone
43. etodolac (EtoGesic®), deracoxib (Deramaxx®), and meloxicam (Metacam®)
44. dexamethasone
45. aspirin
46. ibuprofen, ketoprofen, naproxen

47. flunixin meglumine
48. polysulfated glycosaminoglycans (PSGAGs)
49. prednisone
50. glucosamine and chondroitin sulfate
51. acetaminophen

52. A) False. Acetate, diacetate, pivalate, or valerate extensions on drugs like dexamethasone identify it as suspension formulation. While an aqueous solution drug can be given IV, a suspension must never be given IV.
B) False. B-lymphocyte responses are not suppressed by normal doses of glucocorticoids. B-lymphocytes are responsible for producing antibodies.
C) False. Less blood protein means less protein for the NSAIDs to bind to in the blood. Thus, more of the NSAID molecules are available in the free form to distribute to the tissues. If anything, the dose would have to be decreased to compensate for a greater percentage of the drug being able to get to the target tissues. See the pharmacokinetic chapter of this text for more information on protein binding effects on distribution.
D) False. Kidney (renal papillary necrosis) and GI tract (ulcerations). Although the liver is listed as a target organ for some COX-2 selective toxicities, these are fairly rare incidences.
E) False. NSAIDs are not true analgesics in that they do not reduce the perception of pain at the brain level to any great degree. You would need to use an opioid analgesic for this type of procedure.

53. A) No. That would be a mineralocorticoid effect
B) Yes
C) Yes
D) Yes. This is why fungal diseases and other pathogens normally killed or suppressed by cell-mediated immunity can get worse when on glucocorticoid drugs.
E) Yes. Decreased fibroblasts decreases the amount of scar tissue laid down.
F) No. It affects primarily T-lymphocyte activity and cell mediated immunity; much less so antibody formation.
G) Lymphocytosis is an increased number of lymphocytes. Glucocorticoids cause a lymphopenia.
H) No. Glucocorticoids cause an eosinopenia and monocytopenia.
I) Yes.
J) Yes.

54. Prostaglandins increase mucus production, increase sodium bicarbonate secretion and increase the rate at which GI epithelial cells turnover and the GI tract wall repairs itself, thus NSAIDs that block these prostaglandins will DECREASE mucus and bicarbonate secretion and SLOW healing of the GI tract wall. This is what predisposes the GI tract to ulcers when non-selective COX inhibiting NSAIDs are used.