KMCT COLLEGE OF ALLIED HEALTH SCIENCES
MUKKOM, KOZHIKODE, KERALA.
DEPARTMENT OF PHYSIOTHERAPY.
SECOND YEAR BPT

PHARMACOLOGY- QUESTION BANK

1. Classify peripherally acting SKMR. Explain the actions, uses and ADR of succinyl chloline.

2. Discuss factors modifying drug effects with examples

3. Define bioavailability. Describe factors modifying it

4. Classify drugs in angina. Describe the treatment of acute angina

5. Classify non-steroidal anti-inflammatory drugs. Write mechanism of action, uses of aspirin.

6. Enumerate various routes of drug administration with suitable example for each route. Discuss the important advantages and disadvantages of intravenous route.

7. Classify non steroidal anti- inflammatory drugs (NSAIDs). Describe the mechanism of action, pharmacological actions, usage,adverse effects of aspirin.

8. Classify drugs used in angina pectoris with examples for each group. Describe the pharmacological actions, therapeutic uses and adverse effects of any one group of drugs.

9. Classify peripherally acting Skeletal Muscle Relaxants (SKMR). Explain the actions, uses and Adverse Drug Reactions (ADR) of succinyl choline.

10. Discuss factors modifying drug effects with examples

11. Classify peripherally acting Skeletal Muscle Relaxants (SKMR). Explain the actions, uses and Adverse Drug Reactions (ADR) of succinyl choline.

12. Discuss factors modifying drug effects with examples

13. Classify non-steroidal anti-inflammatory drugs. Write mechanism of action, uses of aspirin.

14. Explain pharmacodynamics, write in detail about the various factors influencing the dosage, of drugs and their action.

15. Classify skeletal muscle relaxants. Discuss mechanism of action and therapeutic uses of succinyl choline

16. List the glucocorticoids. Explain briefly the actions, uses and adverse effects of glucocorticoids

17. Classify drugs used in peptic ulcer. Mention the therapeutic uses and adverse effects of ranitidine. Name two drugs used in treatment of constipation.

18. List four non-steroidal anti-inflammatory drugs. Explain their mechanism of action,uses and adverse effects.

19. List four opioid analgesics. Explain their mechanism of action, pharmacological actions, uses and adverse effects.

20. Explain the pharmacological basis for using angiotensin converting enzyme inhibitors (ACEIs) in hypertension and list their other uses.

21. 1List four other classes of antihypertensive drugs with examples for each. Enumerate uses and adverse effects of any one of the classes liste

22. Mention four glucocorticoids, list their uses and explain their adverse effects

23. Classify skeletal muscle relaxants with examples. Mention the mechanism of action, therapeutic uses and adverse effects of d- tubocurarine.

24. Classify glucocorticoids with examples. Describe the mechanism of action, adverse effects and uses of hydrocortisone.

25. List four glucocorticoids and explain their uses and adverse effects.

26. Classify cholinergic drugs. Describe the mechanism of action, uses and adverse effects of neostigmine

27. Classify cholinergic drugs. Describe the mechanism of action, uses and adverse effects of neostigmine

28. Explain pharmacological actions of aspirin and list its uses and adverse effects. List two selective COX-2 inhibitors and explain differences between aspirin and selective COX-2 inhibitors.

29. Discuss the pharmacokinetics and pharmacodynamics of nonsteroidal anti-inflammatory drugs (NSAIDs) commonly used in physiotherapy practice.

30. Explain the mechanism of action, therapeutic uses, and adverse effects of muscle relaxants in the management of musculoskeletal conditions.

31. Compare and contrast the different classes of analgesic drugs, including opioids, non-opioids, and adjuvant analgesics, in terms of their mechanisms of action, indications, and potential side effects.

32. Discuss the role of corticosteroids in the management of various inflammatory and autoimmune conditions encountered in physiotherapy practice.

33. Explain the pharmacological management of common respiratory conditions, such as asthma and chronic obstructive pulmonary disease (COPD), including the use of bronchodilators and anti-inflammatory agents.

34. Discuss the pharmacological management of cardiovascular diseases, including the use of antihypertensive agents, antiplatelet drugs, and anticoagulants.

35. Describe the pharmacology of drugs used in the treatment of neurological disorders, such as Parkinson's disease, multiple sclerosis, and neuropathic pain.

36. Discuss the role of pharmacotherapy in the management of gastrointestinal disorders, including the use of proton pump inhibitors, H2 blockers, and prokinetic agents.

37. Explain the pharmacological management of diabetes mellitus, including the use of oral hypoglycemic agents and insulin therapy.

38. Discuss the pharmacological treatment options for mental health disorders, such as depression, anxiety, and schizophrenia.

SHORT ESSAYS

1. Discuss antitussives, expectorants and mucolytics
2. Discuss the drugs used in rheumatoid arthritis
3. What is patient control analgesia. Mention the drugs used
4. Classify drugs used in peptic ulcer. Describe MOA, uses and ADR of proton pump inhibitors
5. Explain pharmacodynamics, write in detail about the various factors influencing the dosage, of drugs and their action.
6. Classify skeletal muscle relaxants. Discuss mechanism of action and therapeutic uses of succinyl choline
7. Explain uses and adverse effects of adrenaline
8. Write advantages and disadvantages of halothane.
9. Classify the drugs used in peptic ulcer. Mention the mechanisms of action and therapeutic uses of omeprazole.
10. Classify Inhalational glucocorticoids with examples. Explain their mechanism of action and uses.
11. Discuss antitussives, expectorants and mucolytics
12. Discuss the drugs used in rheumatoid arthritis
13. Discuss antitussives, expectorants and mucolytics
14. Discuss the drugs used in rheumatoid arthritis
15. Explain pharmacodynamics, write in detail about the various factors influencing the dosage, of drugs and their action.

16. Classify skeletal muscle relaxants. Discuss mechanism of action and therapeutic uses of succinyl choline

17. Classify nonsteroidal anti-inflammatory drugs. Explain the mechanism of action, adverse effects and uses of aspirin.

18. Name four skeletal muscle relaxants. Explain the mechanism of action and uses of skeletal muscle relaxants.

19. Classify drugs used in gout. Mention the uses and adverse effects of prednisolone.

20. Drugs used in treatment of diabetes mellitus and therapeutic uses and adverse effects of insulin.

21. Mention three groups of drugs with two examples for each used in ischemic heart disease and explain the mechanism of action of any two groups.

22. Mention two parenteral routes of drug administration and list two advantages and two disadvantages of each of these routes.

23. Classify neuromuscular blockers with examples. Explain the mechanism of action of any one of them and list its uses and adverse effects.

24. Mention three classes of drugs used in the treatment of bronchial asthma with examples for each. Explain the mechanism of action of any two classes and list their adverse effects.

25. Mention four groups of drugs with an example for each used in peptic ulcer. Explain the mechanism of action of any two groups.

26. Explain uses and adverse effects of nitrates.

27. Define the terms bioavailability of drugs. Describe the factors influencing the drug absorption and bioavailability by oral route.

28. Classify drugs used in treatment of bronchial asthma. Explain the mechanism of action, uses and adverse effects of sympathomimmetics

29. Explain five factors that modify drug actions.

30. Explain the mechanism of action of succinylcholine and list its uses and adverse effects.

31. List four angiotensin conversing enzyme inhibitors and mention their uses and adverse effects.

32. Explain the uses of adrenaline.

33. List four groups of drugs used in peptic ulcer and explain the mechanism of action of any two groups .

34. Carbamazepine

35. Barbiturates

36. Antidepressants in therapy

37. Levodopa

38. Drug synergism

39. Succinylcholine

40. Uses and adverse effects of diazepam

41. Anticholinergic drugs

42. Note on Skeletal Muscle relaxants

43. Uses and adverse effects of propranolol

44. Mention four groups of drugs with two examples for each used in hypertension.Explain the mechanism of action of any one of the groups.

45. Mention two advantages and disadvantages of following routes of drug administration: oral, intramuscular, intravenous, inhalational

46. Describe the mechanism of action, indications, and potential side effects of non-depolarizing neuromuscular blocking agents used in physiotherapy practice.

47. Discuss the role of anticoagulant and antiplatelet agents in the prevention and management of thromboembolic disorders in patients undergoing physiotherapy interventions.

48. Explain the pharmacological management of hypertension, focusing on the different classes of antihypertensive drugs and their mechanisms of action.

49. Describe the pharmacological management of diabetic neuropathy, including the use of medications to control pain and improve nerve function.

50. Discuss the role of pharmacotherapy in the management of osteoarthritis, including the use of non-steroidal anti-inflammatory drugs (NSAIDs) and disease-modifying agents.

51. Explain the mechanism of action and therapeutic uses of bronchodilators in the treatment of respiratory conditions.

52. Discuss the pharmacological management of acute and chronic pain, including the use of opioids, adjuvant analgesics, and non-pharmacological approaches.

53. Describe the pharmacology of drugs used in the management of inflammatory bowel disease, including aminosalicylates and immunosuppressants.

54. Discuss the role of pharmacotherapy in the management of osteoporosis, including the use of bisphosphonates and selective estrogen receptor modulators (SERMs).

55. Explain the pharmacological management of urinary incontinence, including the use of anticholinergic drugs and alpha-adrenergic agonists.

SHORT ANSWERS

1. Lithium

2. Levodopa

3. Budesonide

4. Diclofenac

5. Adrenaline

6. Lorazepam
7. Uses and adverse effects of α blockers
8. Name four anticholinesterases with therapeutic uses
9. Uses of corticosteroids
10. Salbutamol
11. Therapeutic uses and adverse effects of ACE inhibitors (Angiotensin Converting Enzyme Inhibitors)
12. Tizanidine
13. Antiplatelet drugs
14. Iontophoresis
15. Immunomodulators
16. List out drugs for hypertension
17. Drugs of abuse in sports
18. Azithromycin
19. Topical analgesic creams
20. Salbutamol
21. Metronidazole
22. Heparin
23. Methotrexate
24. Piroxicam
25. Dantrolene
26. Phenytoin

27. ACE Inhibitors (Angiotensin Converting Enzyme Inhibitors).
28. Classify skeletal muscle relaxants
29. Uses of corticosteroids
30. Mention Diseases Modifying Anti-rheumatoid Drugs (DMARDs)
31. Mechanism of action and uses of diazepam
32. Advantages and disadvantages of sublingual route of drug administration
33. Mention three atropine substitutes with one use of each.
34. Enumerate 3 drugs used for treatment of rheumatoid arthritis.
35. Mechanism of action and uses of ciprofloxacin
36. Dose of prednisolone is gradually tapered before it is discontinued. Why.
37. Name 2 drugs used in the treatment of epilepsy and explain mechanism of action of any one.
38. Examples, uses and adverse effects of β2 agonists
39. Newer insulins and their advantages.
40. Lithium
41. Levodopa
42. Budesonide
43. Diclofenac
44. Adrenaline
45. Lorazepam
46. Tizanidine
47. Antiplatelet drugs

48. Iontophoresis

49. Immunomodulators

50. Uses and adverse effects of α blockers

51. Name four anticholinesterases with therapeutic uses

52. Uses of corticosteroids

53. Salbutamol

54. Therapeutic uses and adverse effects of ACE inhibitors (Angiotensin Converting Enzyme Inhibitors)

55. Anti hypertensive drugs

56. Examples of Statins and their mechanism of action.

57. Uses and adverse effects of succinylcholine

58. Lithium

59. Levodopa

60. Budesonide

61. Diclofenac

62. Adrenaline

63. Lorazepam

64. Tizanidine

65. Antiplatelet drugs

66. Iontophoresis

67. Immunomodulators

68. Uses and adverse effects of α blockers

69. Name four anticholinesterases with therapeutic uses

70. Uses of corticosteroids

71. Salbutamol

72. Therapeutic uses and adverse effects of ACE inhibitors (Angiotensin Converting Enzyme Inhibitors)

73. Mention four antiepileptic drugs. Explain briefly on any one of them.

74. Explain briefly on metabolism of drugs

75. Bronchodilators used in bronchial asthma.

76. List four antihypertensives and mention one important adverse effect for each.

77. Uses and adverse effects of anticholinergic drugs

78. Antidepressants.

79. Therapeutic uses and contraindications of atropine.

80. Mention four calcium channel blockers and its therapeutic uses.

81. Drugs used in epilepsy.

82. Pharmacokinetics.

83. Examples, uses and adverse effects of anticholinesterases.

84. Mechanism of action and adverse effects of statins.

85. Classification of drugs used in Parkinson's disease.

86. Four examples of drugs used in bronchial asthma and mechanism of action of anyone of them.

87. Sulfonylureas.

88. Advantages and disadvantages of intravenous route of drug administration.

89. Pharmacological action of atropine on eye and exocrine glands

90. Two examples of antipsychotic drugs and mechanism of action of any one of them

91. Pharmacological actions of aspirin

92. Mechanism of action and uses of erythromycin

93. Adverse effects of levodopa

94. Factors affecting drug absorption

95. List two antidiabetic drugs and describe mechanism of action of any one of them

96. List two antifungal drugs and their uses

97. Examples and uses of H2 blockers

98. Classification of skeletal muscle relaxants.

99. Uses and adverse effects of atropine.

100. Any four factors modifying drug action with examples.

101. Mechanism of action and uses of acetaminophen.

102. Uses and adverse effects of diazepam

103. Name two ACE inhibitors. Mention one use and important side effect of ACE inhibitors.

104. General toxicities of anticancer drugs.

105. Uses of atropine.

106. Drugs used in Parkinsonism

107. Mechanism of action and uses of omeprazole.

108. Two examples of antiepileptic drugs and mechanism of action of any one. 11.Pharmacological actions of morphine

109. Drugs for Diabetes Mellitus

110. Mechanism of action and uses of Antidepressants

111. Mention two uses and one important adverse effect of aspirin.

112. Aspirin

113. Benzodiazepines

114. Calcium channel blockers

115. Lithium 11.Thiazide diuretics

116. Drugs for angina pectoris

117. Uses of mefenemic acid

118. d - Tubocurarine

119. Adrenaline

120. Proton pump inhibitors

121. Heparin

122. Bronchodilators

123. Omeprazole

124. Factors affecting bioavailability ofdrugs

125. Drugs used in diarrhoea

126. List uses and adverse effects of adrenaline.

127. Explain mechanism of action of benzodiazepines and list their uses.

128. Mention two drugs used in chronic gout and explain the mechanism of action of anyone of them.

129. List four insulin preparations and explain adverse effects of insulin.

130. Explain mechanism of action of heparin and list its uses.

131. Nonsteroidal anti-inflammatory drugs (NSAIDs): Mechanism of action, therapeutic uses, and potential side effects.

132. Beta-2 adrenergic agonists: Role in the management of bronchial asthma and chronic obstructive pulmonary disease (COPD).

133. Antiepileptic drugs: Mechanism of action and their use in the management of neuropathic pain.

134. Non-opioid analgesics: Commonly used drugs, their mechanisms of action, and potential side effects.

135. Antiplatelet agents: Role in the prevention of cardiovascular events and their potential side effects.

136. Antihypertensive drugs: Different classes, mechanisms of action, and potential side effects.

137. Antidepressant medications: Types, mechanisms of action, and their use in the management of depression.

138. Antipsychotic drugs: Mechanism of action, indications, and potential side effects.

139. Antidiabetic agents: Different classes, mechanisms of action, and their use in the management of diabetes mellitus.

140. Immunosuppressant drugs: Mechanism of action and their use in the management of autoimmune disorders.

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PHARMACOLOGY- ANSWER KEY

LONG ESSAY

1. Classify peripherally acting Skeletal Muscle Relaxants (SKMR) - Succinylcholine:

Action: Depolarizing neuromuscular blocker, acts as an agonist at nicotinic receptors.
Uses: Used for rapid muscle relaxation during intubation and short surgical procedures.
Adverse Drug Reactions (ADR): Hyperkalemia, malignant hyperthermia, bradycardia, muscle pain, fasciculations.

2. Factors Modifying Drug Effects:

Examples: Age, genetics, co-administration of other drugs, liver function, kidney function.
Explanation: Individual variations in drug metabolism, interactions, and susceptibility.

3. Bioavailability:

Definition: Proportion of a drug that enters the systemic circulation when introduced to the body.
Modifying Factors: Route of administration, drug formulation, gastrointestinal factors, first-pass metabolism.

4. Classification of Drugs in Angina and Treatment of Acute Angina:

Drugs: Organic nitrates, beta-blockers, calcium channel blockers.
Treatment: Nitroglycerin sublingually for quick relief, followed by aspirin and oxygen.

5. Classification of NSAIDs - Mechanism of Action and Uses of Aspirin:

Mechanism: Inhibition of COX enzymes, reducing prostaglandin synthesis.
Uses: Pain relief, anti-inflammatory, antipyretic, antiplatelet effects.

6. Routes of Drug Administration with Intravenous Advantages/Disadvantages:

Routes: Oral, intravenous, intramuscular, subcutaneous, transdermal, inhalation.

Intravenous (IV): Advantages - rapid onset, precise control. Disadvantages - potential for infection, embolism, irritation.

7. Classification of NSAIDs - Aspirin:

Mechanism: Irreversible COX-1 inhibition, reducing prostaglandin synthesis.
Pharmacological Actions: Analgesic, anti-inflammatory, antipyretic, antiplatelet effects.
Usage: Pain management, inflammation, antiplatelet therapy.
Adverse Effects: Gastric irritation, bleeding, tinnitus (high doses).

8. Drugs Used in Angina - Beta-blockers:

Pharmacological Actions: Block beta-adrenergic receptors, reduce heart rate and contractility.
Therapeutic Uses: Angina, hypertension, arrhythmias.
Adverse Effects: Bradycardia, fatigue, cold extremities.

9. Classify SKMR - Succinylcholine:

Actions: Depolarizing neuromuscular blocker, agonist at nicotinic receptors.
Uses: Muscle relaxation during intubation and surgery.
ADR: Hyperkalemia, malignant hyperthermia, bradycardia, muscle pain.

10. Factors Modifying Drug Effects:

Examples: Age, genetics, drug interactions, organ function, tolerance.
Explanation: Different responses due to variations in absorption, metabolism, and individual factors.

13. Classification of NSAIDs - Aspirin:

Mechanism: Irreversible COX-1 inhibition, reducing prostaglandin synthesis.
Uses: Pain relief, anti-inflammatory, antipyretic, antiplatelet effects.

14. Pharmacodynamics and Factors Influencing Drug Dosage:

Pharmacodynamics: Study of drug effects and mechanisms of action.
Influencing Factors: Age, weight, genetics, liver/kidney function, tolerance, disease state.

15. Classification of Skeletal Muscle Relaxants - Succinylcholine:

Mechanism: Depolarizing neuromuscular blocker, agonist at nicotinic receptors.
Therapeutic Uses: Rapid muscle relaxation during intubation and surgery.

16. Glucocorticoids:

Glucocorticoids: Prednisone, Dexamethasone, Hydrocortisone, Methylprednisolone.
Actions: Anti-inflammatory, immunosuppressive, metabolic effects.
Uses: Inflammatory conditions, autoimmune disorders, allergic reactions, asthma.
Adverse Effects: Cushing's syndrome, immunosuppression, osteoporosis, glucose intolerance.

17. Drugs for Peptic Ulcer:

Examples: Ranitidine, Omeprazole, Pantoprazole, Esomeprazole.
Therapeutic Uses of Ranitidine: Peptic ulcers, GERD.
Adverse Effects of Ranitidine: Headache, dizziness, diarrhea (rare).

18. Non-Steroidal Anti-Inflammatory Drugs (NSAIDs):

Examples: Ibuprofen, Naproxen, Diclofenac, Celecoxib.
Mechanism: Inhibit COX enzymes, reducing prostaglandin production.
Uses: Pain, inflammation, fever.
Adverse Effects: Gastric ulcers, renal dysfunction, increased cardiovascular risk.

19. Opioid Analgesics:

Examples: Morphine, Oxycodone, Codeine, Fentanyl.
Mechanism: Bind to opioid receptors, reducing pain perception.
Uses: Moderate to severe pain relief.
Adverse Effects: Respiratory depression, constipation, dependence.

20. ACE Inhibitors:

Mechanism: Inhibit angiotensin-converting enzyme, reducing angiotensin II production.
Uses: Hypertension, heart failure, diabetic nephropathy.
Other Uses: Preventing heart remodeling post-MI, reducing proteinuria.

21. Other Antihypertensive Classes:

Calcium Channel Blockers (e.g., Amlodipine): Relax blood vessels, lower BP.
Beta Blockers (e.g., Metoprolol): Reduce heart rate and contractility.
Diuretics (e.g., Hydrochlorothiazide): Increase urine output, lower BP.
Angiotensin II Receptor Blockers (ARBs, e.g., Losartan): Block angiotensin II effects.

22. Glucocorticoids:

Examples: Prednisone, Dexamethasone, Hydrocortisone, Methylprednisolone.

Uses: Inflammatory conditions, autoimmune disorders, allergies, asthma.

Adverse Effects: Osteoporosis, immunosuppression, Cushing's syndrome.

23. Skeletal Muscle Relaxants:

Example: D-tubocurarine.

Mechanism: Competitive antagonist at nicotinic receptors, causing muscle relaxation.

Uses: Surgical muscle relaxation, adjunct in anesthesia.

Adverse Effects: Hypotension, histamine release, respiratory depression.

24. Glucocorticoid (Hydrocortisone):

Mechanism: Anti-inflammatory, immunosuppressive.

Uses: Inflammatory disorders, adrenal insufficiency.

Adverse Effects: Cushing's syndrome, immunosuppression, osteoporosis.

25. Glucocorticoids:

Examples: Prednisone, Dexamethasone, Hydrocortisone, Methylprednisolone.

Uses: Inflammatory conditions, autoimmune disorders, allergies, asthma.

Adverse Effects: Osteoporosis, immunosuppression, Cushing's syndrome.

26. Cholinergic Drugs:

Mechanism: Inhibit acetylcholinesterase, increase acetylcholine at synapses.

Uses: Myasthenia gravis, reversal of neuromuscular blockade.

Adverse Effects: Bradycardia, GI distress, muscle cramps.

27. Cholinergic Drugs (Neostigmine):

Mechanism: Acetylcholinesterase inhibitor.

Uses: Myasthenia gravis, postoperative urinary retention.

Adverse Effects: Excessive salivation, bradycardia.

28. Aspirin:

Mechanism: Irreversible COX-1 and COX-2 inhibitor.

Uses: Analgesia, anti-inflammatory, antiplatelet (cardiovascular prevention).

Adverse Effects: Gastric ulcers, bleeding tendency.

29. NSAIDs in Physiotherapy:

Pharmacokinetics: Absorbed orally, metabolized in liver, excreted by kidneys.

Pharmacodynamics: Inhibit prostaglandin synthesis, reduce pain and inflammation.

30. Muscle Relaxants:

Mechanism: Central acting (GABA modulation) or peripheral acting (block acetylcholine).
Uses: Musculoskeletal conditions, muscle spasms.
Adverse Effects: Sedation, dizziness, muscle weakness.

31. Analgesic Classes:

Opioids: Activate opioid receptors, severe pain relief.
Non-opioids: NSAIDs, acetaminophen; inhibit pain pathways.
Adjuvant Analgesics: Antidepressants, anticonvulsants; enhance pain control.

32. Corticosteroids in Inflammation:

Mechanism: Immunosuppression, anti-inflammatory effects.
Uses: Inflammatory and autoimmune conditions.
Adverse Effects: Immunodeficiency, osteoporosis, adrenal suppression.

33. Respiratory Pharmacology:

Bronchodilators: Beta agonists, anticholinergics; relax airway smooth muscles.
Anti-Inflammatory Agents: Corticosteroids; reduce airway inflammation.

34. Cardiovascular Pharmacology:

Antihypertensives: ACE inhibitors, ARBs, beta blockers; lower blood pressure.
Antiplatelet Drugs: Aspirin, Clopidogrel; prevent clot formation.
Anticoagulants: Warfarin, Heparin; prevent blood clotting.

35. Neurological Disorders Pharmacology:

Parkinson's Disease: Levodopa, Dopamine agonists; increase dopamine levels.
Multiple Sclerosis: Interferons, Natalizumab; modulate immune response.
Neuropathic Pain: Gabapentin, Pregabalin; modulate pain signals.

36. Gastrointestinal Pharmacology:

Proton Pump Inhibitors: Omeprazole, Esomeprazole; reduce stomach acid.
H2 Blockers: Ranitidine, Famotidine; reduce gastric acid secretion.
Prokinetic Agents: Metoclopramide; enhance gastrointestinal motility.

37. Diabetes Pharmacology:

Oral Hypoglycemics: Metformin, Sulfonylureas; lower blood sugar.
Insulin Therapy: Injectable insulin; regulate blood glucose levels.

38. Mental Health Pharmacotherapy:

Depression: SSRIs (e.g., Fluoxetine); increase serotonin levels.
Anxiety: Benzodiazepines (e.g., Alprazolam); enhance GABA activity.
Schizophrenia: Antipsychotics (e.g., Risperidone); block dopamine receptors.

SHORT ESSAYS

1. Antitussives, Expectorants, and Mucolytics:

Antitussives:
Suppress cough reflex.
Examples: Codeine, Dextromethorphan.
Uses: Cough suppression.
Adverse Effects: Drowsiness, constipation.
Expectorants:
Increase mucus clearance.
Example: Guaifenesin.
Uses: Promote productive cough.
Adverse Effects: Nausea, vomiting.
Mucolytics:
Break down mucus.
Example: Acetylcysteine.
Uses: Respiratory conditions with thick mucus.
Adverse Effects: Nausea, vomiting.

2. Drugs Used in Rheumatoid Arthritis:

Nonsteroidal Anti-Inflammatory Drugs (NSAIDs):
Example: Ibuprofen.
Mechanism: Reduce inflammation and pain.
.Disease-Modifying Antirheumatic Drugs (DMARDs):
Example: Methotrexate.
Mechanism: Slow disease progression.

Biological DMARDs:

Example: Adalimumab.

Mechanism: Target specific immune responses.

.Corticosteroids:

Example: Prednisone.

Mechanism: Suppress immune response and reduce inflammation.

3. Patient-Controlled Analgesia (PCA):

Mechanism: Allows patients to self-administer pain relief medication via a pump.

Drugs Used: Often opioids like Morphine or Hydromorphone.

4. Peptic Ulcer Drugs:

Proton Pump Inhibitors (PPIs):

Mechanism: Inhibit gastric acid production by blocking proton pumps.

Uses: Peptic ulcers, GERD.

Adverse Effects: Headache, diarrhea.

H2 Receptor Antagonists:

Mechanism: Block histamine receptors, reducing acid production.

Uses: Peptic ulcers, GERD.

Adverse Effects: Cimetidine may interact with other drugs.

Antacids:

Mechanism: Neutralize gastric acid.

Uses: Temporary relief of symptoms.

Adverse Effects: Constipation, diarrhea.

5. Pharmacodynamics and Factors Influencing Dosage:

Pharmacodynamics: Study of drug effects on the body.

Factors Influencing Dosage:

Age, weight, and gender.

Liver and kidney function.

Genetics and metabolism.

Drug-drug interactions.

Tolerance and sensitization.

6. Skeletal Muscle Relaxants:

Succinylcholine:

Mechanism: Depolarizing neuromuscular blocker, causes muscle relaxation.

Uses: Rapid muscle relaxation for intubation during surgery.

Adverse Effects: Hyperkalemia, muscle pain.

7. Adrenaline (Epinephrine):

Uses: Anaphylaxis, cardiac arrest, bronchodilation.

Adverse Effects: Increased heart rate, anxiety, hypertension.

8. Advantages and Disadvantages of Halothane:

Advantages:

Rapid induction and recovery.

Smooth anesthesia maintenance.

Disadvantages:

Potential for arrhythmias.

Hepatotoxicity in some cases.

9. Omeprazole:

Mechanism: Proton Pump Inhibitor (PPI), reduces gastric acid production.

Uses: Peptic ulcers, GERD, Zollinger-Ellison syndrome.

Adverse Effects: Headache, nausea, diarrhea.

10. Inhalational Glucocorticoids:

Examples: Fluticasone, Budesonide.

Mechanism: Reduce airway inflammation in asthma and COPD.

Uses: Asthma, COPD.

11. Antitussives, Expectorants, and Mucolytics (Repeated for reference).
12. Drugs Used in Rheumatoid Arthritis (Repeated for reference).
13. Antitussives, Expectorants, and Mucolytics (Repeated for reference).
14. Drugs Used in Rheumatoid Arthritis (Repeated for reference).
15. Pharmacodynamics and Factors Influencing Dosage (Repeated for reference).
16. Skeletal Muscle Relaxants (Repeated for reference).
17. Nonsteroidal Anti-Inflammatory Drugs (NSAIDs):

Mechanism: Inhibit prostaglandin synthesis, reducing pain and inflammation.

Uses: Pain relief, anti-inflammatory.

Adverse Effects: GI bleeding, renal dysfunction.

18. Skeletal Muscle Relaxants:

Examples: Baclofen, Tizanidine.

Mechanism: Centrally acting to reduce muscle spasticity.

Uses: Muscle spasms, spasticity due to neurological conditions.

19. Drugs Used in Gout:

Prednisolone:

Uses: Acute gout attacks to reduce inflammation.

Adverse Effects: Increased blood sugar, weight gain.

20. Drugs for Diabetes Mellitus:

Insulin:

Uses: Control blood sugar in diabetes.

Adverse Effects: Hypoglycemia, weight gain.

21. Drugs for Ischemic Heart Disease:

Antiplatelet Agents (e.g., Aspirin).

Beta-Blockers (e.g., Metoprolol).

Mechanisms: Platelet inhibition, reduced heart rate.

22. Parenteral Routes of Drug Administration:

Advantages:

Rapid onset of action (IV).

Avoids first-pass metabolism (IM).

Disadvantages:

Risk of infection (IV, IM).

Limited self-administration (IV).

23. Neuromuscular Blockers:

Example: Vecuronium.

Mechanism: Non-depolarizing blocker, paralyzes muscles for surgery.

Uses: Surgical muscle relaxation.

Adverse Effects: Respiratory depression, prolonged paralysis.

24. Drugs for Bronchial Asthma:

Beta-Agonists (e.g., Albuterol).
Corticosteroids (e.g., Fluticasone).
Mechanisms: Bronchodilation, reduce inflammation.

25. Drugs for Peptic Ulcer (Repeated for reference).
26. Nitrates:

Uses: Angina, heart failure.
Adverse Effects: Headache, hypotension.

27. Bioavailability of Drugs:

Definition: Fraction of a drug that reaches systemic circulation unchanged.
Factors: Absorption rate, first-pass metabolism, drug formulation.

28. Drugs for Bronchial Asthma:

Sympathomimetics:
Example: Albuterol.
Mechanism: Bronchodilation.
Uses: Acute asthma relief.

29. Factors Modifying Drug Actions:

Genetics, age, gender, disease state, drug interactions.

30. Succinylcholine (Repeated for reference).
31. Angiotensin-Converting Enzyme Inhibitors:

Examples: Lisinopril, Enalapril.
Uses: Hypertension, heart failure.
Adverse Effects: Cough, hyperkalemia.

32. Uses of Adrenaline (Repeated for reference).
33. Drugs for Peptic Ulcer (Repeated for reference).
34. Carbamazepine:

Uses: Epilepsy, bipolar disorder.
Adverse Effects: Dizziness, rash, liver toxicity.

35. Barbiturates:

Uses: Sedation, anesthesia.

Adverse Effects: Drowsiness, addiction.

36. Antidepressants in Therapy:

Types: SSRIs, TCAs, MAOIs.

Uses: Depression, anxiety.

Adverse Effects: Vary by class.

37. Levodopa:

Uses: Parkinson's disease.

Adverse Effects: Dyskinesias, fluctuations in motor response.

38. Drug Synergism:

Definition: Combined effect of two drugs is greater than the sum of their individual effects.

39. Succinylcholine (Repeated for reference).

40. Diazepam:

Uses: Anxiety, muscle spasms.

Adverse Effects: Sedation, dependence.

41. Anticholinergic Drugs:

Uses: Parkinson's, motion sickness.

Adverse Effects: Dry mouth, blurred vision.

42. Skeletal Muscle Relaxants (Repeated for reference).

43. Propranolol:

Uses: Hypertension, angina.

Adverse Effects: Bradycardia, bronchospasm.

44. Drugs for Hypertension:

Diuretics (e.g., Hydrochlorothiazide).

Calcium Channel Blockers (e.g., Amlodipine).

Mechanisms: Reduce fluid volume, vasodilation.

45. Advantages and Disadvantages of Routes of Drug Administration (Repeated for reference).

46. Non-Depolarizing Neuromuscular Blockers:

Example: Rocuronium.
Mechanism: Competitive inhibition of acetylcholine.
Indications: Surgical muscle relaxation.
Side Effects: Muscle weakness, prolonged paralysis.

47. Anticoagulants and Antiplatelet Agents:

Role: Prevent blood clot formation.
Examples: Heparin, Clopidogrel.

48. Pharmacological Management of Hypertension:

Various classes of antihypertensive drugs.
Mechanisms: Beta-blockers, ACE inhibitors, etc.

49. Pharmacological Management of Diabetic Neuropathy:

Medications for pain and nerve function improvement.

50. Pharmacotherapy in Osteoarthritis:

NSAIDs, disease-modifying agents.

51. Bronchodilators in Respiratory Conditions:

Mechanism: Expand airways, relieve bronchoconstriction.

52. Pharmacological Management of Pain:

Opioids, adjuvant analgesics, non-pharmacological approaches.

53. Pharmacology of Inflammatory Bowel Disease:

Aminosalicylates, immunosuppressants.

54. Pharmacotherapy in Osteoporosis:

Bisphosphonates, SERMs.

55. Pharmacological Management of Urinary Incontinence:

Anticholinergic drugs, alpha-adrenergic agonists.

SHORT ANSWERS

1. Lithium:

Uses: Mood stabilizer for bipolar disorder.
Adverse Effects: Tremors, renal dysfunction, thyroid dysfunction.

2. Levodopa:

Uses: Treatment of Parkinson's disease.
Adverse Effects: Dyskinesias, fluctuations in motor response.

3. Budesonide:

Uses: Inhaled corticosteroid for asthma and inflammatory conditions.
Adverse Effects: Thrush, adrenal suppression (with high doses).

4. Diclofenac:

Uses: Nonsteroidal anti-inflammatory drug (NSAID) for pain and inflammation.
Adverse Effects: GI bleeding, renal impairment.

5. Adrenaline (Epinephrine):

Uses: Emergency treatment for anaphylaxis and cardiac arrest.
Adverse Effects: Increased heart rate, hypertension, anxiety.

6. Lorazepam:

Uses: Benzodiazepine for anxiety, sedation, and seizures.
Adverse Effects: Sedation, tolerance, dependence.

7. α Blockers:

Uses: Treatment of hypertension, benign prostatic hyperplasia (BPH).
Adverse Effects: Orthostatic hypotension, dizziness.

8. Anticholinesterases:

Drugs that inhibit the breakdown of acetylcholine.
Examples: Donepezil (Alzheimer's), Pyridostigmine (Myasthenia Gravis).

9. Corticosteroids:

Uses: Immune suppression, anti-inflammatory, allergic reactions.
Adverse Effects: Osteoporosis, immunosuppression, weight gain.

10. Salbutamol (Albuterol):

Uses: Short-acting β2 agonist for asthma and bronchospasm.
Adverse Effects: Tremors, tachycardia.

11. ACE Inhibitors:

Uses: Hypertension, heart failure.
Adverse Effects: Cough, angioedema, hyperkalemia.

12.

13. Tizanidine:

Tizanidine is a muscle relaxant used to treat muscle spasms and spasticity.
Brand names include Zanaflex.

14. Antiplatelet drugs:

Antiplatelet drugs are medications that prevent the formation of blood clots by inhibiting platelet aggregation.
Examples include aspirin, clopidogrel (Plavix), and prasugrel (Effient).

15. Iontophoresis:

Iontophoresis is a medical technique that uses a small electric current to deliver medication through the skin.
It is commonly used for conditions like hyperhidrosis (excessive sweating).

16. Immunomodulators:

Immunomodulators are drugs that modify the activity of the immune system.
Examples include corticosteroids, methotrexate, and monoclonal antibodies like adalimumab (Humira).

17. List of drugs for hypertension (please note that there are many options, and this is not an exhaustive list):

Thiazide diuretics (e.g., hydrochlorothiazide)
ACE inhibitors (e.g., enalapril)
Angiotensin II receptor blockers (e.g., losartan)
Calcium channel blockers (e.g., amlodipine)
Beta-blockers (e.g., metoprolol)
Alpha-blockers (e.g., doxazosin)

Diuretics (e.g., furosemide)

Direct renin inhibitors (e.g., aliskiren)

18. Drugs of abuse in sports:

It's important to note that the use of drugs of abuse in sports is prohibited and unethical. Athletes are subject to strict anti-doping regulations, and using these substances can result in severe penalties. Some drugs of abuse that are commonly banned in sports include:

Anabolic steroids

Stimulants (e.g., amphetamines)

Narcotic painkillers (e.g., opioids)

Cannabis (marijuana)

Cocaine

Human growth hormone (HGH)

Erythropoietin (EPO)

Beta-2 agonists (when not used for legitimate medical reasons)

19. Azithromycin:

Antibiotic used to treat bacterial infections.

20. Topical analgesic creams:

Used for localized pain relief on the skin, muscles, or joints.

21. Salbutamol:

A bronchodilator used to relieve bronchospasm in conditions like asthma and COPD.

22. Metronidazole:

An antibiotic used to treat various bacterial and parasitic infections.

23. Heparin:

An anticoagulant medication used to prevent and treat blood clots.

24. Methotrexate:

A medication used to treat cancer, autoimmune diseases, and severe psoriasis.

25. Piroxicam:

A non-steroidal anti-inflammatory drug (NSAID) used to relieve pain and inflammation.

26. Dantrolene:

A skeletal muscle relaxant used to treat muscle spasticity and malignant hyperthermia.

27. Phenytoin:

An anticonvulsant medication used to control seizures in epilepsy.

28. ACE Inhibitors (Angiotensin Converting Enzyme Inhibitors):

Medications used to treat hypertension and heart failure by blocking the action of angiotensin-converting enzyme.

29. Classification of skeletal muscle relaxants:

Skeletal muscle relaxants can be classified into two main categories: neuromuscular blockers and spasmolytics.

30. Uses of corticosteroids:

Corticosteroids are used to reduce inflammation and suppress the immune system. They are used to treat various conditions, including asthma, allergies, autoimmune diseases, and skin disorders.

31. Diseases Modifying Anti-rheumatoid Drugs (DMARDs):

DMARDs are a class of medications used to treat rheumatoid arthritis and modify the course of the disease. Examples include methotrexate, sulfasalazine, and hydroxychloroquine.

32. Mechanism of action and uses of diazepam:

Diazepam is a benzodiazepine medication that acts as a central nervous system depressant. It is used to treat anxiety, muscle spasms, and as an adjunct in the management of seizures and alcohol withdrawal.

33. Advantages and disadvantages of sublingual route of drug administration:

Advantages:
Rapid onset of action.
Bypasses the gastrointestinal tract and liver.
Convenient for patients who have difficulty swallowing.
Disadvantages:
Limited to drugs that can be absorbed through the oral mucosa.
Dosing may be challenging.

The taste of the drug may be unpleasant.

34. Three atropine substitutes with one use of each:

Scopolamine (used to prevent motion sickness and nausea).
Ipratropium (used for bronchodilation in respiratory conditions like COPD).
Glycopyrrolate (used to reduce excessive salivation and as a preoperative medication).

35. Three drugs used for the treatment of rheumatoid arthritis:

Methotrexate
Adalimumab
Rituximab

36. Mechanism of action and uses of ciprofloxacin:

Mechanism of action: Ciprofloxacin is a fluoroquinolone antibiotic that inhibits bacterial DNA synthesis by targeting DNA gyrase and topoisomerase IV enzymes.
Uses: It is used to treat various bacterial infections, including urinary tract infections, respiratory tract infections, skin and soft tissue infections, and certain sexually transmitted diseases.

37. Dose of prednisolone is gradually tapered before it is discontinued. Why:

Gradual tapering of prednisolone is necessary to allow the body's adrenal glands to recover and resume normal cortisol production. Sudden discontinuation can lead to adrenal insufficiency and withdrawal symptoms.

38. Two drugs used in the treatment of epilepsy and explanation of the mechanism of action of one:

Phenobarbital (mechanism: enhances inhibitory GABA neurotransmission).
Levetiracetam (mechanism: modulates synaptic vesicle protein SV2A, reducing neurotransmitter release and neuronal excitability).

39. Examples, uses, and adverse effects of β2 agonists:

Examples: Albuterol, Salbutamol, Formoterol.
Uses: Bronchodilation in asthma and COPD.
Adverse effects: Tachycardia, tremors, hypokalemia, and potential for tolerance with frequent use.

40. Newer insulins and their advantages:

Insulin Glargine (Advantage: Long-acting, provides stable basal insulin levels).
Insulin Lispro (Advantage: Rapid onset, mimics post-meal insulin release).
Insulin Degludec (Advantage: Ultra-long-acting, with flexibility in dosing time).

41. Lithium:

Lithium is a mood stabilizer used primarily to treat bipolar disorder by reducing the frequency and severity of manic episodes.

42. Levodopa:

Levodopa is used to treat Parkinson's disease. It is a precursor to dopamine and helps replenish dopamine levels in the brain.

43. Budesonide:

Budesonide is a corticosteroid used to treat various inflammatory conditions, including asthma and inflammatory bowel disease (IBD).

44. Diclofenac:

Diclofenac is a nonsteroidal anti-inflammatory drug (NSAID) used to relieve pain and reduce inflammation in conditions like arthritis and musculoskeletal injuries.

45. Adrenaline (Epinephrine):

Adrenaline is a hormone and neurotransmitter that is used to treat severe allergic reactions (anaphylaxis), cardiac arrest, and certain types of shock.

46. Lorazepam:

Lorazepam is a benzodiazepine used to treat anxiety disorders, insomnia, and as a sedative before surgery.

47. Tizanidine:

Tizanidine is a muscle relaxant used to manage muscle spasms and spasticity associated with conditions like multiple sclerosis and spinal cord injuries.

48. Antiplatelet drugs:

Antiplatelet drugs, like aspirin and clopidogrel, are used to prevent blood clot formation and reduce the risk of heart attacks and strokes.

49. Iontophoresis:

Iontophoresis is a physical therapy technique that uses a low electrical current to deliver medication through the skin, often used for conditions like hyperhidrosis (excessive sweating).

50. Immunomodulators:

Immunomodulators are drugs that modify or regulate the immune response and are used in the treatment of autoimmune diseases like rheumatoid arthritis and Crohn's disease.

51. Uses and adverse effects of α blockers:

Uses: Alpha blockers like doxazosin are used to treat conditions like hypertension and benign prostatic hyperplasia (BPH).

Adverse effects: Hypotension, dizziness, and fatigue.

52. Four anticholinesterases with therapeutic uses:

Donepezil (used for Alzheimer's disease).

Pyridostigmine (used for myasthenia gravis).

Rivastigmine (used for dementia).

Neostigmine (used to reverse neuromuscular blockade).

53. Uses of corticosteroids:

Corticosteroids are used to reduce inflammation and treat a wide range of conditions, including allergies, autoimmune diseases, and inflammatory disorders.

54. Salbutamol (Albuterol):

Salbutamol is a β2 agonist used to relieve bronchospasm in conditions like asthma and COPD.

55. Therapeutic uses and adverse effects of ACE inhibitors (Angiotensin Converting Enzyme Inhibitors):

Uses: ACE inhibitors like lisinopril are used to treat hypertension, heart failure, and diabetic nephropathy.

Adverse effects: Cough, hyperkalemia, and angioedema.

56. Anti-hypertensive drugs:

Examples: ACE inhibitors (e.g., Lisinopril), Beta-blockers (e.g., Atenolol), Diuretics (e.g., Hydrochlorothiazide), Calcium channel blockers (e.g., Amlodipine).

Mechanism of action: These drugs lower blood pressure through various mechanisms, such as reducing cardiac output, dilating blood vessels, or increasing fluid excretion by the kidneys.

57. Examples of Statins and their mechanism of action:

Examples: Atorvastatin, Simvastatin, Rosuvastatin.
Mechanism of action: Statins inhibit HMG-CoA reductase, an enzyme involved in cholesterol synthesis. By doing so, they lower LDL cholesterol levels in the blood.

58. Uses and adverse effects of succinylcholine:

Uses: Succinylcholine is a neuromuscular blocking agent used during surgery or other medical procedures to induce muscle relaxation.
Adverse effects: It can cause hyperkalemia, malignant hyperthermia, and muscle pain.

59. Lithium:

Lithium is used as a mood stabilizer in the treatment of bipolar disorder.
Adverse effects can include tremors, increased thirst/urination, weight gain, and in severe cases, toxicity with symptoms like confusion and seizures.

60. Levodopa:

Levodopa is used to treat Parkinson's disease.
Adverse effects can include dyskinesias (involuntary movements) and fluctuations in motor response.

61. Budesonide:

Budesonide is a corticosteroid used to treat inflammatory conditions like asthma and inflammatory bowel disease.
Adverse effects can include thrush, hoarseness, and systemic effects if used in high doses.

62. Diclofenac:

Diclofenac is a nonsteroidal anti-inflammatory drug (NSAID) used to relieve pain and inflammation.
Adverse effects can include gastrointestinal ulcers, kidney problems, and cardiovascular issues.

63. Adrenaline (Epinephrine):

Adrenaline is a hormone and neurotransmitter that can be used in emergency situations like anaphylaxis to treat severe allergic reactions or cardiac arrest to stimulate the heart.
Adverse effects can include increased heart rate, anxiety, and high blood pressure.

64. Lorazepam:

Lorazepam is a benzodiazepine used to treat anxiety and certain seizure disorders.
Adverse effects can include drowsiness, dizziness, and the risk of dependence.

65. Tizanidine:

Tizanidine is a muscle relaxant used to treat spasticity.
Adverse effects can include drowsiness, dry mouth, and low blood pressure.

66. Antiplatelet drugs:

Examples: Aspirin, Clopidogrel.
Mechanism of action: These drugs inhibit platelet aggregation, reducing the risk of blood clot formation.

67. Iontophoresis:

Iontophoresis is a technique that uses electrical currents to deliver drugs through the skin.

68. Immunomodulators:

Examples: Interferon-alpha, Tumor Necrosis Factor (TNF) inhibitors.
Mechanism of action: These drugs modulate the immune system and are used in the treatment of autoimmune diseases and certain cancers.

69. Uses and adverse effects of α blockers:

Uses: Alpha-blockers like Tamsulosin are used to treat benign prostatic hyperplasia (BPH).
Adverse effects can include dizziness, low blood pressure, and retrograde ejaculation.

70. Four anticholinesterases with therapeutic uses are:

    a. Neostigmine
    b. Pyridostigmine
    c. Donepezil
    d. Rivastigmine

71. Uses of corticosteroids include:

    a. Anti-inflammatory effects in conditions like arthritis and asthma.
    b. Immunosuppression in organ transplant recipients.
    c. Management of allergic reactions.
    d. Treatment of certain skin conditions like eczema and psoriasis.

72. Salbutamol is a bronchodilator used to treat conditions such as asthma and chronic obstructive pulmonary disease (COPD) by relaxing the smooth muscles in the airways and improving airflow.

73. ACE inhibitors (Angiotensin Converting Enzyme Inhibitors) have therapeutic uses such as:

    a. Hypertension management.
    b. Heart failure treatment.
    c. Reducing the risk of stroke and heart attack.
    d. Diabetic nephropathy prevention.

Adverse effects may include cough, hyperkalemia, and angioedema.

74. Four antiepileptic drugs are:

    a. Phenytoin
    b. Valproic acid
    c. Carbamazepine
    d. Lamotrigine

Brief explanation of one of them: Phenytoin works by stabilizing voltage-gated sodium channels in neurons, preventing excessive neuronal firing. Adverse effects can include gingival hyperplasia and neurological symptoms.

75. Metabolism of drugs involves their biotransformation within the body, typically in the liver. This process can involve oxidation, reduction, hydrolysis, and conjugation reactions, making drugs more water-soluble and easier to excrete. Metabolism can affect a drug's efficacy and safety.

76. Bronchodilators used in bronchial asthma include:

    a. Short-acting beta-agonists (e.g., albuterol).
    b. Long-acting beta-agonists (e.g., salmeterol).
    c. Anticholinergics (e.g., ipratropium bromide).
    d. Methylxanthines (e.g., theophylline).

77. Four antihypertensives and their important adverse effects:

    a. Diuretics (e.g., hydrochlorothiazide) - Electrolyte imbalances.
    b. Beta-blockers (e.g., propranolol) - Bradycardia and bronchoconstriction.
    c. ACE inhibitors (e.g., enalapril) - Cough and hyperkalemia.
    d. Calcium channel blockers (e.g., amlodipine) - Peripheral edema.

78. Anticholinergic drugs have uses in conditions like overactive bladder and Parkinson's disease but can cause adverse effects like dry mouth, constipation, blurred vision, and cognitive impairment.
79. Antidepressants are drugs used to treat depression and related conditions. They include SSRIs, SNRIs, tricyclic antidepressants, and MAOIs, each with its own mechanism of action and potential side effects.
80. Atropine is used for various therapeutic purposes, including dilating the pupil during eye examinations and treating bradycardia. Contraindications include glaucoma, tachycardia, and hypersensitivity.
81. Four calcium channel blockers and their therapeutic uses:
    a. Amlodipine - Hypertension and angina.
    b. Verapamil - Hypertension and arrhythmias.
    c. Diltiazem - Hypertension and angina.
    d. Nifedipine - Hypertension and Raynaud's phenomenon.

82. Drugs used in epilepsy include antiepileptic drugs like phenytoin, carbamazepine, valproic acid, and levetiracetam.
83. Pharmacokinetics involves the study of a drug's absorption, distribution, metabolism, and excretion in the body.
84. Examples of anticholinesterases include neostigmine and pyridostigmine, which are used to treat myasthenia gravis. Adverse effects can include muscle cramps and excessive salivation.
85. Statins lower cholesterol levels by inhibiting HMG-CoA reductase. Adverse effects may include muscle pain (myopathy) and, rarely, liver dysfunction.
86. Classification of drugs used in Parkinson's disease includes dopaminergic agents (e.g., levodopa), dopamine agonists (e.g., pramipexole), MAO-B inhibitors (e.g., selegiline), and anticholinergics (e.g., benztropine).

87. Four drugs used in bronchial asthma are albuterol, salmeterol, ipratropium, and theophylline. The mechanism of action of albuterol involves beta-2 adrenergic receptor activation, leading to bronchodilation.
88. Sulfonylureas are a class of oral antidiabetic drugs that stimulate insulin release from pancreatic beta cells.
89. Advantages of the intravenous route of drug administration include rapid onset of action and precise control of drug dosage. Disadvantages include the potential for infection, vein irritation, and the need for healthcare professionals.
90. Atropine acts on the eye to dilate the pupil (mydriasis) and on exocrine glands to decrease secretion. It reduces salivary, bronchial, and gastric secretions.
92. Pharmacological Actions of Aspirin:

Analgesic (pain relief)
Anti-inflammatory
Antipyretic (fever reduction)
Antiplatelet (blood-thinning)

93. Erythromycin:

Mechanism of action: Inhibits bacterial protein synthesis by binding to the ribosome.
Uses: Treatment of bacterial infections, especially respiratory and skin infections.

94. Adverse Effects of Levodopa:

Nausea
Hallucinations
Dyskinesia (involuntary movements)

95. Factors Affecting Drug Absorption:

Route of administration
Drug formulation
Gastric emptying
pH of the gastrointestinal tract
Presence of food or other drugs

96. Antidiabetic Drugs:

Examples: Metformin, Insulin

Mechanism of action (for Metformin): Reduces hepatic glucose production and enhances peripheral glucose uptake.

97. Antifungal Drugs:

Examples: Fluconazole, Amphotericin B
Uses: Treatment of fungal infections, including Candidiasis and Aspergillosis.

98. H2 Blockers:

Examples: Ranitidine, Cimetidine
Uses: Treatment of gastroesophageal reflux disease (GERD) and peptic ulcers.

99. Classification of Skeletal Muscle Relaxants:

Neuromuscular blockers (e.g., d-tubocurarine)
Spasmolytics (e.g., Diazepam)

100. Atropine:

- Uses: Bradycardia treatment, dilation of pupils, antidote for certain poisonings.
- Adverse Effects: Dry mouth, blurred vision, tachycardia, urinary retention.

101. Factors Modifying Drug Action:

- Age (e.g., pediatric vs. geriatric dosing)
- Genetics (e.g., metabolism variations)
- Disease state (e.g., liver or kidney dysfunction)
- Drug interactions (e.g., drug-drug interactions)

102. Acetaminophen:

- Mechanism of action: Inhibits prostaglandin synthesis in the brain.
- Uses: Pain relief and fever reduction.

103. Diazepam:

- Uses: Anxiety, muscle spasms, seizure control.
- Adverse Effects: Sedation, dependence, respiratory depression.

104. ACE Inhibitors:

- Examples: Enalapril, Lisinopril
- Use: Hypertension, heart failure
- Side Effect: Cough

105. General Toxicities of Anticancer Drugs:

- Bone marrow suppression
- Gastrointestinal toxicity
- Cardiotoxicity
- Nephrotoxicity

106. Uses of Atropine:

- Bradycardia treatment
- Pupil dilation during eye exams
- Antispasmodic in gastrointestinal disorders

107. Drugs Used in Parkinsonism:

- Levodopa
- Dopamine agonists (e.g., Ropinirole)
- MAO-B inhibitors (e.g., Selegiline)

108. Omeprazole:

- Mechanism of action: Proton pump inhibitor, reduces gastric acid production.
- Uses: Gastroesophageal reflux disease (GERD), peptic ulcers.

109. Antiepileptic Drugs:

- Examples: Phenytoin, Gabapentin
- Mechanism of action (for Phenytoin): Blocks voltage-gated sodium channels, reducing neuronal excitability.

110. Drugs for Diabetes Mellitus:

- Insulin
- Oral hypoglycemic agents (e.g., Metformin, Sulfonylureas)

111. Antidepressants:

- mw, anxiety, OCD.

113. Aspirin:

Uses: Pain relief, fever reduction, antiplatelet (preventing blood clots)
Adverse Effect: Gastrointestinal bleeding

114. Benzodiazepines:

Mechanism of Action: Enhance the effects of gamma-aminobutyric acid (GABA) in the brain, leading to sedative and anxiolytic effects.
Uses: Anxiety disorders, insomnia, seizures.

115. Calcium Channel Blockers:

Mechanism of Action: Block calcium channels in the heart and blood vessels, leading to reduced heart rate and blood pressure.
Uses: Hypertension, angina, arrhythmias.

116. Lithium:

Use: Bipolar disorder
Adverse Effect: Toxicity (requires monitoring of blood levels)

118. Uses of Mefenamic Acid:

Pain relief
Anti-inflammatory

119. d-Tubocurarine:

Use: Neuromuscular blockade during surgery
Adverse Effect: Muscle weakness, respiratory depression

123. Bronchodilators:

Uses: Asthma, chronic obstructive pulmonary disease (COPD)
Examples: Albuterol, Salmeterol

125. Factors Affecting Bioavailability of Drugs:

Route of administration
Drug formulation
Gastric emptying
pH of the gastrointestinal tract
Presence of food or other drugs

126. Drugs Used in Diarrhea:

Examples: Loperamide, Bismuth subsalicylate (Pepto-Bismol)

127. Adrenaline:

Uses: Anaphylaxis, cardiac arrest, severe asthma

Adverse Effects: Tachycardia, hypertension, anxiety

128. Mechanism of Action of Benzodiazepines:

Enhance GABA neurotransmission, leading to CNS depression.

Uses: Anxiety disorders, panic attacks, muscle spasms.

129. Drugs for Chronic Gout:

Example: Allopurinol

Mechanism of Action: Inhibits uric acid production

131. Heparin:

Mechanism of Action: Anticoagulant, inhibits clot formation.

Uses: Deep vein thrombosis (DVT) prevention, treatment of pulmonary embolism.

132. NSAIDs:

Mechanism of Action: Inhibit prostaglandin synthesis.

Uses: Pain relief, anti-inflammatory, fever reduction.

Potential Side Effects: GI ulcers, renal toxicity, cardiovascular risk.

133. Beta-2 Adrenergic Agonists:

Role in Asthma and COPD: Bronchodilation, relieving airway constriction.

134. Antiepileptic Drugs:

Mechanism of Action: Varies by drug, generally reducing neuronal excitability.

Use in Neuropathic Pain: Management of pain associated with nerve damage.

Non-opioid Analgesics:

Examples: Acetaminophen, NSAIDs

Mechanisms of Action: Pain relief through various pathways.

Potential Side Effects: GI irritation (NSAIDs), liver toxicity (acetaminophen).

136. Antiplatelet Agents:

Role: Prevent blood clot formation to reduce cardiovascular events.

Examples: Aspirin, Clopidogrel.

137. Antihypertensive Drugs:

Classes: ACE inhibitors, Beta-blockers, Diuretics, Calcium channel blockers, ARBs.
Mechanisms of Action: Varies by class, targeting blood pressure regulation.
Potential Side Effects: Hypotension, electrolyte imbalances.

138. Antidepressant Medications:

Types: SSRIs, SNRIs, TCAs, MAOIs.
Mechanisms of Action: Influence neurotransmitters to alleviate depression.
Use in Depression Management.

139. Antipsychotic Drugs:

Mechanism of Action: Block dopamine receptors in the brain.
Indications: Schizophrenia, bipolar disorder.
Potential Side Effects: Extrapyramidal symptoms, weight gain.

140. Antidiabetic Agents:

Classes: Insulin, Metformin, Sulfonylureas, GLP-1 agonists.
Mechanisms of Action: Varies by class, regulating blood sugar levels.
Use in Diabetes Management.

141. Immunosuppressant Drugs:

Mechanism of Action: Suppress the immune system to treat autoimmune disorders.
Use in Autoimmune Disorder Management.