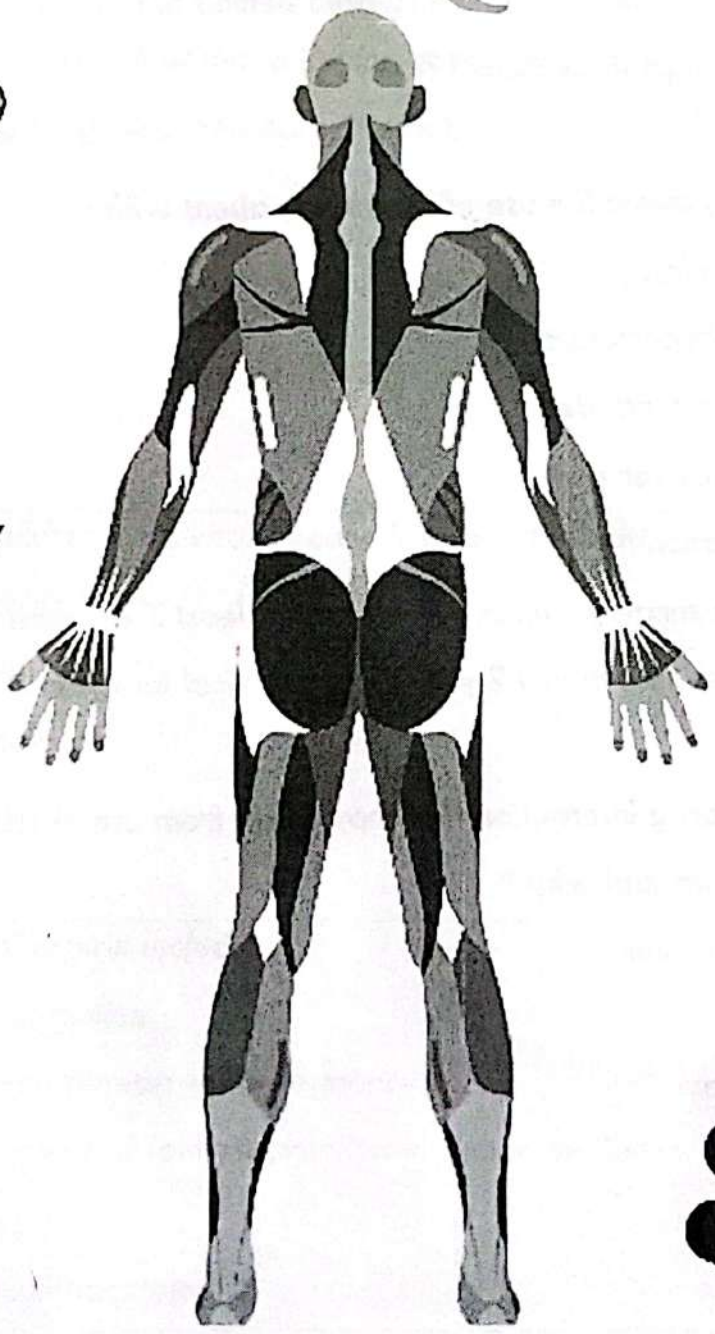
LEVEL 1 - SEMESTER 2

PHARMACOLOGY

MSK

MCQ 1

5 L.E



Dr. M. M.

Pharma written MSK 1

1. Mention MOA of aspirin ?
2. Enumerate 4 side effects of aspirin ?
3. Enumerate 4 contraindication of aspirin ?
4. Compare between non selective and selective COX inhibitors or compare between aspirin and celecoxib ?
5. Mention MOA and side effects of paracetamol and acetaminophen ?
6. Explain the pharmacodynamic principle behind the use of sodium bicarbonate in treatment of aspirin overdose ?

7. Give reason , avoid the use of aspirin in patient with :
   - A. Peptic ulcer
   - B. Sever hypertension
   - C. Chronic renal dse
   - D. Chronic liver dse
   - E. Pregnancy
   - F. Before surgery , must be stopped at least 7 days before surgery
   - G. Children less than 12 years and has viral infection

8. Mention the drug interaction that may result from use of aspirin with the following drugs and why ?
   - a. Beta blocker
   - b. Warfarin
   - c. antacids

1. All of the following are undesirable effects of aspirin EXCEPT: a) Gastritis with focal erosions b) Tolerance and physical addiction c) Bleeding due to a decrease of platelet aggregation d) Reversible renal insufficiency e) Rye syndrome	**B**
2. A 52-year-old man with chronic low back pain. He is complaining from severe hyperacidity. Which of the following agents may improve his pain without worsening his gastrointestinal symptoms? (A) Aspirin (B) Celecoxib (C) Ketorolac (D) diclofenac (E) Indomethacin	**B**
3. Use of aspirin in children with viral disease is associated with: A. Metabolic acidosis B. Reye's syndrome C. Renal tubular acidosis D. Fixed drug eruption E. Ototoxicity	**B**
4. Therapeutic uses of aspirin include: A. Prophylaxis of migraine. B. Treatment of hypertension with pregnancy. C. Prevent the progress of joint destruction in rheumatic fever. D. Delayed labour E. Treatment of thrombocytopenia	**C**

5. As regards selective COX-II inhibitors, which of the following is TRUE. *A. May decrease incidence of thrombosis.* *B. Has less anti-inflammatory effect than the non-selective COX inhibitors.* *C. Are relatively safer than non-selective.* *D. Produce similar gastric mucosal damage.* *E. Has greater antipyretic effect*	C
6. What is the mechanism of action of ibuprofen? *A. Non selective of COX enzyme inhibitor* *B. Selective Cox -2 inhibitor* *C. Phospholipase A2 inhibitor* *D. Lipooxygenase enzyme inhibitor* *E. Kallikrein system inhibitor*	A
7. Which of the following property combinations is peculiar to the majority of NSAIDs? *A. Antihistaminic, antipyretic, analgesic* *B. Analgesic, immunodepressive, anti-inflammatory,* *C. Antipyretic, analgesic, anti-inflammatory* *D. Anti-inflammatory, immunodepressive, antihistaminic* *E. Narcotic, analgesic, anti-inflammatory*	C
8. Which of the following NSAIDs is a selective COX-2 inhibitor? *A. Piroxicam* *B. Indomethacin* *C. Celecoxib* *D. Diclofenac* *E. Morphine*	C

9. One of the following is not a side effect shared by NSAIDs: *A. Physical dependence* *B. Gastrointestinal ulceration* *C. Hypersensitivity* *D. Nephropathy* *E. Nausea and vomiting*	**A**
10. Ibuprofen does not reduce the synthesis of one of the following eicosanoids: *A. TXA2* *B. PGE2* *C. PGF2a* *D. LTB4* *E. PGI2*	**D**
11. Which one of the following statements concerning Cox-2 inhibitors is correct: *A. They show greater analgesic activity than traditional NSAIDS* *B. They show anti-inflammatory activity greater than traditional NSAIDs* *C. They decrease platelet aggregation* *D. They harm the stomach less than non-selective COX inhibitors* *E. They are cardio protective.*	**D**
12. NSAID proposed to be acting via inhibition of COX-3 is: *A. Nimesulide* *B. Paracetamol* *C. Ketorolac* *D. Rofecoxib* *E. Aspirin*	**B**

13. Among NSAIDs aspirin is unique because it: A. Irreversibly inhibits its target enzyme B. Reduces the risk of colon cancer C. Reduces fever D. Selectively inhibits COX-2 enzyme E. Analgesic	A
14. Aspirin is used in the prophylaxis of myocardial infarction because it results in: A. Inhibition of thromboxane synthetase B. Inhibition of cyclooxygenase in platelets C. Decreased serum lipids D. Coronary steal phenomenon E. Coronary vasodilator	B
15. Which of the following patient characteristics is a possible reason for the use of celecoxib in the treatment of arthritis? A. History of severe rash after treatment with a sulfonamide antibiotic B. History of gout C. History of peptic ulcer disease D. History of type 2 DM E. History of myocardial infarction	C
16. Which of the following drugs inhibit platelet cyclooxygenase irreversibly? A. Alprostadil B. Aspirin C. Ibuprofen D. Prednisolone E. Acetaminophen	B

17. Which of the following statements is not true about NSAIDs? A. Acetyl salicylic acid is an irreversible inhibitor of COX enzyme. B. Acetyl salicylic acid reduces in vivo synthesis of prostaglandins. C. Its clearance is independent of plasma concentration D. Antiplatelet effect of low dose aspirin is related to pre-systemic COX inhibition E. Alkalization of urine increases aspirin excretion	**D**
18. The therapeutic efficacy of antihypertensive drugs is blunted by NSAIDS because they: A. Cause sodium excretion B. Increase the clearance of antihypertensive drugs C. Decrease the absorption of antihypertensive drugs D. Decrease the synthesis of vascular prostacyclin E. Cause nephropathy	**D**
19. Aspirin inhibits which of the following enzymes? A. Lipoprotein lipase B. Lipoxygenase C. Cyclooxygenase D. Phospholipase D E. Phospholipase A2	**C**
20. Which one of the following analgesic agents inhibits mainly COX in CNS? a) Morphine b) Paracetamol c) Ketorolac d) Acetylsalicylic acid e) Ibuprofen	**B**

21. The effect of aspirin on Cox enzyme is: a) Reversible b) Irreversible c) Selective d) Nonselective e) Irreversible & nonselective	**E**
22. The effect of indomethacin on Cox enzyme is: a) Reversible b) Irreversible c) Selective d) Irreversible & nonselective	**A**
23. Aspirin could be used prophylactically in: a) pulmonary edema b) heart failure c) peptic ulcers d) thrombotic disorder e. metabolic acidosis	**D**
24. The effect of Ketoprofen on Cox enzyme is: a) Reversible b) Irreversible c) Selective d) Irreversible & nonselective	**A**
25. Which of the following analgesic is contraindicated to be taken in children with chickenpox or influenza? a) Meperidine b) Indomethacin c) Paracetamol d) Pentazocine e) Aspirin	**E**

26. The following statements concerning aspirin is FALSE: *a) Aspirin irreversibly inhibits COX enzymes* *b) Aspirin in toxic dose leading to Hyperthermia.* *c) Aspirin inhibits phospholipase A2.* *d) Aspirin inhibits thromboxane A2 formation.*	**C**
27. Which one of the following statements concerning Cox-2 inhibitors is correct? *a) They show greater analgesic activity than traditional NSAIDs* *b) They show anti-inflammatory activity greater than traditional NSAIDs* *c) They increase platelet aggregation* *d) They don't harm kidney as do non-selective Cox inhibitors* *e) They are cardio protective athways.no COX-1*	**C**
28. The cyclooxygenase isoenzymes COX-1 and COX-2 differ from each other in that: *a) They catalyse different pathways in prostanoid* *b) COX-1 is inhibited by aspirin but not COX-2* *c) COX-2 is inhibited by ibuprofen but not COX-1* *d) COX-1 is constitutive while COX-2 is largely inducible* *e) Cox-1 is inhibited by celecoxib but not COX-2*	**D**
29. One of the following is an example of acetic acid derivatives of NSAIDs: *a) Ibuprofen* *b) Acetaminophen* *c) Piroxicam* *d) Celecoxib* *e) Diclofenac*	**E**

30. One of the following is selective inhibitor of COX3 enzyme: a) *Meloxicam.* b) *Acetaminophen.* c) *Piroxicam.* d) *Sulindac.* e) *Celecoxib.*	**B**
31. As regards selective COX-2 Inhibitor: a) *May increase incidence of thrombosis.* b) *Has less anti-inflammatory effect than the non-selective COX inhibitors.* c) *Are relatively safer than non-selective.* d) *Produce similar gastric mucosal damage.* e) *Has greater antipyretic effect*	**A**
32. Which of the following is an analgesic and antipyretic drug that lacks an anti-inflammatory action? a) *Acetaminophen* b) *Celecoxib* c) *Colchicine* d) *Indomethacin* e) *Probenecid*	**A**
33. Inflammation is a complex tissue reaction that includes the release of cytokines, leukotrienes, prostaglandins, and peptides. Prostaglandins involved in inflammatory processes are typically produced from arachidonic acid by which of the following enzymes? *(A) Cyclooxygenase-1* *(B) Cyclooxygenase-2* *(C) Glutathione-S-transferase* *(D) Lipoxygenase* *(E) Phospholipase A2*	**B**

34. The pharmacologic effects of acetylsalicylic acid include: *a. Reduction of high body temperature* *b. Promotion of platelet aggregation* *c. Reduction of pain by stimulation of PGs synthesis* *d. Less gastric irritation than other NSAIDS* *e. Promotion of diuretic effect of furosemide*	**A**
35. One of the following is an example of acetic acid derivatives of NSAIDs: *a. Ibuprofen* *b. Acetaminophen* *c. Piroxicam* *d. Celecoxib* *e. Indomethacin*	**E**
36. Non-steroidal anti-inflammatory drugs reduce the diuretic action of furosemide by: *a. Preventing prostaglandin mediated internal hemodynamic actions* *b. Blocking its action in ascending limb of loop of Henle.* *c. Enhancing salt and water reabsorption in distal tubule.* *d. Increasing aldosterone secretion.* *channel in the distal tubule +e. Blocking Na*	**A**
37. A 17-year-old patient complains of wheezing and severe dyspnea whenever he takes aspirin for headache. Which of the following agents may be responsible for this complains? *a. Prostaglandins.* *b. Thromboxanes.* *c. Leukotrienes.* *d. Endothelins* *e. Kinins.*	**C**

38. Aspirin overdose is characterized by a syndrome of: a) Bone marrow suppression and possibly aplastic anemia. b) Fever, hepatic dysfunction, and encephalopathy. c) Hyperthermia, tachypnea, metabolic acidosis, and coma. d) Rapid, fulminant hepatic failure. e) Rash, interstitial nephritis and acute renal failure.	C
39. Which one of the following can increase platelet aggregation? a) Ketanerine b) Meloxicam. c) Sulphinpyrazone. d) Aspirin. e) Epoprostenol.	B
40. When aspirin is given concomitantly with other drug the following interaction may occur: a. Potentiating the diuretic effect of furosemide. b. Potentiating of anticoagulation effect of warfarin. c. Increase uricosuric effect of probenecid d. Increase antihypertensive effect of B-blockers. e. Decrease free plasma level of phenytoin.	B
41. Which statement below is accurate regarding aspirin overdose? A. N-acetylcysteine should be given immediately B. The metabolism rate of aspirin is first-order C. Elimination rate is directly proportional to plasma concentration. D. Increasing urinary pH would be beneficial E. Plasma concentrations decrease exponentially with time	D

42. The distinctive feature of the isoenzyme cyclooxygenase-2 is: A. It is not inhibited by indomethacin B. It is inducible C. It generates cytoprotective prostaglandins in gastric mucosa D. It is found only in fetal tissues	**B**
43. Selective COX-2 inhibitors differ from nonselective COX-1/COX-2 inhibitors in that they: A. Are anti-inflammatory but not analgesic B. Do not bring down fever C. Have no renal effects D. Do not inhibit platelet aggregation	**D**
44. Aspirin is contraindicated in children suffering from influenza or similar viral infection because of increased risk of: A. Gastric bleeding B. Thrombocytopenia C. Fancony syndrome D. Reye's syndrome	**D**
45. Choose the action for which the dose of aspirin required is the lowest: A. Analgesic B. Antipyretic C. Anti-inflammatory D. Antiplatelet aggregatory	**D**
46. The constellation of adverse effects associated with nonsteroidal anti-inflammatory drugs include the following except: A. Sedation B. Gastric irritation C. Fluid retention D. Rashes	**A**

47. The following nonsteroidal anti-inflammatory drug is a preferential cyclooxygenase-2 (COX-2) inhibitor: A. Tenoxicam B. Meloxicam C. Diclofenac sod. D. Ketoprofen	**B**
48. The selective COX-2 inhibitors have the following advantage(s) over the nonselective NSAIDs: A. They are less likely to cause gastric ulcers and their complications B. They are likely to be more effective in rheumatoid arthritis C. They are not likely to produce renal complications D. All of the above	**A**
49. Indication for aspirin administration are the following, EXCEPT: a) Inflammatory conditions b) Decreasing the incidence of transient ischemic attack, unstable angina, coronary artery thrombosis with myocardial infarction, and thrombosis after coronary artery bypass. grafting c) Relieving severe visceral pain (myocardial infarction, cancer pain condition, renal or biliary colic) d) Reducing elevated body temperature	**C**
50. The following statements about aspirin are correct EXCEPT: A. May cause GIT hemorrhage after a single dose B. Enteric-coated tablets cause less gastric bleeding C. May cause metabolic alkalosis in high doses D. May cause Rye's syndrome in children E. Its toxicity may require treatment with hemodialysis	**C**

51. The toxicity spectrum of aspirin does not include: A. Increased risk of encephalopathy in children with viral infections B. Increased risk of peptic ulcers C. Hyperprothrombinemia D. Metabolic acidosis E. Respiratory alkalosis	**C**
52. The action of aspirin that results in its greater efficacy as an antithrombotic (anti-platelet) drug is its ability to: A. Inhibit lipoxygenase as well as cyclooxygenase B. Selectively inhibit cyclooxygenase I C. Inhibit leukocyte migration D. Promote uric acid excretion E. Acetylate cyclooxygenase	**E**
53. Potential adverse effects associated with aspirin include all of the following EXCEPT: A. Gastrointestinal ulceration B. Renal dysfunction C. Enhanced methotrexate toxicity D. Cardiac arrhythmias E. Hypersensitivity asthma	**D**
54. What is the mechanism of action of ibuprofen? a) Kallikrein system inhibitor b) Lipooxygenase enzyme inhibitor c) Nonselective COX enzyme inhibitor d) Phospholipase A2 inhibitor e) Selective Cox-2 inhibitor	**C**

55. Which of the following NSAIDs is a selective COX-2 inhibitor? *a. Morphine* *B. Celecoxib* *C. Piroxicam* *D. Diciofenac* *E. Indomethacin*	***B***
56. Which of the following Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) is a nonselective Cyclooxygenase (COX) inhibitor? *a) Celecoxib* *b) Diclofenac* *c) Methadone* *d) Morphine* *e) Rofecoxib*	***B***

Level 1 Semester 2

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2024

MSS module

PHARMACOLOGY

Lecture 1 MCQ

DR. ELSAWY

MCQ

1. About Cox-2 inhibitors, Which is correct? a) They show greater analgesic activity than traditional NSAIDs b) They show anti-inflammatory activity greater than traditional NSAIDs c) They increase platelet aggregation d) They don't harm kidney as do non-selective Cox inhibitors	**C**
2. COX-1 and COX-2 differ from each other in that: a) They catalyse different pathways in prostanoid b) COX-1 is inhibited by aspirin but not COX-2 c) COX-2 is inhibited by ibuprofen but not COX-1 d) COX-1 is constitutive while COX-2 is largely inducible	**D**
3. One of the following is not a side effect shared by NSAIDs: A: Physical dependence B: *Gastrointestinal ulceration* C: Hypersensitivity D: Nephropathy	**A**
4. Which analgesic agents inhibits mainly COX in CNS? a) Morphine b) Paracetamol c) Ketorolac d) Acetylsalicylic acid	**B**
5. Which of the following agents is selective cox-2 inhibition? a) Aspirin b) Celecoxib c) Ketorolac d) Diclofenac	**B**

6. All of the following are undesirable effects of aspirin EXCEPT: a) Gastritis with focal erosions b) Tolerance and physical addiction c) Bleeding due to a decrease of platelet aggregation d) Reversible renal insufficiency e) Rye syndrome	**E**
7. Which one of the following analgesic agents inhibits mainly COX II? a) Morphine b) Celecoxib c) Ketorolac d) Acetylsalicylic acid	**B**
8. Aspirin could be used prophylactically in: a) pulmonary edema b) heart failure c) peptic ulcers d) thrombotic disorders	**D**
9. The effect of Ketoprofen on Cox enzyme is: a) Reversible b) Irreversible c) Selective d) Irreversible & nonselective	**A**
10.Which analgesic is contraindicated in children with influenza? a) Meperidine b) Indomethacin c) Paracetamol d) Aspirin	**D**

11.The following statements concerning aspirin is FALSE: a) Aspirin irreversibly inhibits COX enzymes b) Aspirin in toxic dose leading to Hyperthermia. c) Aspirin inhibits phospholipase A2. d) Aspirin inhibits thromboxane A2 formation.	C
12.One of the following is an example of acetic acid derivatives of NSAIDs: a) Ibuprofen b) Acetaminophen c) Diclofenac d) Celecoxib	C
13.aspirin is unique because it is: a) Irreversibly inhibits COX enzyme. b) Prevents episodes of gouty arthritis with long term use. c) Reduces fever. d) Reduces the risk of breast cancer	A
14.One of the following is selective inhibitor of COX3 enzyme: a) Meloxicam. b) Acetaminophen. c) Piroxicam. d) Sulindac.	B
15.NSAID which produces irreversible inactivation of COX enzymes is: a) Indomethacin b) Celecoxib c) Aspirin d) Diclofenac	C

16.selective COX-2 Inhibitor: a) May increase incidence of thrombosis. b) Has less anti-inflammatory effect than non-selective COX inhibitors. c) Are relatively safer than non-selective. d) Produce similar gastric mucosal damage.	**A**
17.NSAID proposed to be acting via inhibition of COX-3 is: A: Nimesulide B: Paracetamol C: Ketorolac D: Rofecoxib E: Aspirin	**B**
18.Among NSAIDs aspirin is unique because it: *A: Irreversibly inhibits its target enzyme* B: Reduces the risk of colon cancer C: Reduces fever D: Selectively inhibits COX-2 enzyme	**A**
19.Aspirin is used in the prophylaxis of myocardial infarction because it results in: A: Inhibition of thromboxane synthetase B: Inhibition of cyclooxygenase in platelets C: Decreased serum lipids D: Coronary steal phenomenon	**B**
20.Which of the following NSAIDs is a selective COX-2 inhibitor? A: Piroxicam B: Indomethacin C: Celecoxib D: Diclofenac	**C**

21.As regards selective COX-II inhibitors, which of the following is TRUE: **A:** May decrease incidence of thrombosis. **B:** Has less anti-inflammatory effect than the non-selective COX inhibitors. **C:** Are relatively safer than non-selective. **D:** Produce similar gastric mucosal damage. **E:** Has greater antipyretic effect	**C**
22.What is the mechanism of action of ibubrofen? A: Non selective of COX enzyme inhibitor B: b- Selective Cox -2 inhibitor C: c- Phospholipase A2 inhibitor D: d- Lipooxygenase enzyme inhibitor E: e- Kallikrein system inhibitor	**A**
23.Which of the following property combinations is peculiar to the majority of NSAIDs? A: Antihistaminic, antipyretic, analgesic B: Analgesic, immunodepressive, anti-inflammatory, C: Antipyretic, analgesic, anti-inflammatory D: Anti-inflammatory, immunodepressive, antihistaminic E: Narcotic, analgesic, anti-inflammatory	**C**
24.Ibuprofen does not reduce the synthesis of one of the following eicosanoids: **A:** TXA2 **B:** PGE2 **C:** PGF2α **D:** LTB4 **E:** PGI2	**D**

25.Which of the following statements is not true about NSAIDs? A: Acetyl salicylic acid is an irreversible inhibitor of COX enzyme. B: Acetyl salicylic acid reduces in vivo synthesis of prostaglandins. C: Its clearance is independent of plasma concentration D: Antiplatelet effect of low dose aspirin is related to pre-systemic COX inhibition E: Alkalization of urine increases aspirin excretion	**D**
26.A 52-year-old man with chronic low back pain. He is complaining from severe hyperacidity. Which of the following agents may improve his pain without worsening his gastrointestinal symptoms? a. Aspirin b. Celecoxib c. Ketorolac d. diclofenac e. Indomethacin	**B**
27.The effect of aspirin on Cox enzyme is: a) Reversible b) Irreversible c) Selective d) Irreversible & nonselective	**D**
28.The effect of indomethacin on Cox enzyme is: a) Reversible b) Irreversible c) Selective d) Irreversible & nonselective	**A**

29.The therapeutic efficacy of antihypertensive drugs is blunted by NSAIDs because they: A: Cause sodium excretion B: Increase the clearance of antihypertensive drugs C: Decrease the absorption of antihypertensive drugs D: Decrease the synthesis of vascular prostacyclin	**D**
30.A 65-year-old man had been recently diagnosed with osteoarthritis. Six months ago, the patient suffered from peptic ulcer disease that healed after triple antiulcer therapy. Which of the following nonsteroidal antiinflammatory drugs would be most appropriate for this patient? A: Ibuprofen B: Piroxicam C: Indomethacin D: Ketorolac **E:** Celecoxib	**E**
31.Aspirin inhibits which of the following enzymes? A: Lipoprotein lipase B: Lipoxygenase C: Cyclooxygenase D: Phospholipase D E: Phospholipase A2	**C**
32.Which one of the following statements concerning Cox-2 inhibitors is correct: A: They show greater analgesic activity than traditional NSAIDs B: They show anti-inflammatory activity greater than traditional NSAIDs C: They decrease platelet aggregation D: They harm the stomach less than non-selective COX inhibitors	**D**

33.One of the following is not adverse effect of aspirin: a) Gastritis with focal erosions b) Tolerance and physical addiction c) Bleeding d) Reversible renal insufficiency	**B**
34.A 52-year-old man with chronic low back pain. complaining from severe hyperacidity. Which of the following agents may improve his pain without worsening his gastrointestinal symptoms? a) Aspirin b) Celecoxib c) Ketorolac d) diclofenac	**B**
35.Which of the following patient characteristics is a possible reason for the use of celecoxib in the treatment of arthritis? A: History of severe rash after treatment with a sulfonamide antibiotic B: History of gout C: History of peptic ulcer disease D: History of type 2 DM *E: History of myocardial infaection*	**C**
36.Which of the following is an analgesic and antipyretic drug that lacks an anti-inflammatory action? a) Acetaminophen b) Celecoxib c) Colchicine d) Indomethacin	**A**

37.Use of aspirin in children with viral disease is associated with: A: Metabolic acidosis B: Reye's syndrome C: *Renal tubular acidosis* D: Fixed drug eruption	**B**
38.Therapeutic uses of aspirin include: **A:** Prophylaxis of migraine. **B:** Treatment of hypertension with pregnancy. **C:** Prevent the progress of joint destruction in rheumatic fever. **D:** Delayed labour **E:** Treatment of thrombocytopenia	**C**
39.Which of the following drugs inhibit platelet cyclooxygenase irreversibly? A: Alprostadil B: Aspirin C: Ibuprofen D: Prednisolone E: Acetaminophen	**B**

Pharma written MSK 1

1. ***Mention MOA of aspirin ?***
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4. ***Compare between non selective and selective COX inhibitors or compare between aspirin and celecoxib ?***
5. ***Mention MOA and side effects of paracetamol and acetaminophen ?***
6. ***Explain the pharmacodynamic principle behind the use of sodium bicarbonate in treatment of aspirin overdose ?***

7. ***Give reason , avoid the use of aspirin in patient with :***
   - *A. Peptic ulcer*
   - *B. Sever hypertension*
   - *C. Chronic renal dse*
   - *D. Chronic liver dse*
   - *E. Pregnancy*
   - *F. Before surgery , must be stopped at least 7 days before surgery*
   - *G. Children less than 12 years and has viral infection*

8. ***Mention the drug interaction that may result from use of aspirin with the following drugs and why ?***
   - *a. Beta blocker*
   - *b. Warfarin*
   - *c. antacids*

Pharma MCQ MSK 1

1. All of the following are undesirable effects of aspirin EXCEPT: *a) Gastritis with focal erosions* *b) Tolerance and physical addiction* *c) Bleeding due to a decrease of platelet aggregation* *d) Reversible renal insufficiency* *e) Rye syndrome*	**B**
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3. Use of aspirin in children with viral disease is associated with: *A. Metabolic acidosis* *B. Reye's syndrome* *C. Renal tubular acidosis* *D. Fixed drug eruption* *E. Ototoxicity*	**B**
4. Therapeutic uses of aspirin include: *A. Prophylaxis of migraine.* *B. Treatment of hypertension with pregnancy.* *C. Prevent the progress of joint destruction in rheumatic fever.* *D. Delayed labour* *E. Treatment of thrombocytopenia*	**C**

5. As regards selective COX-II inhibitors, which of the following is TRUE. *A. May decrease incidence of thrombosis.* *B. Has less anti-inflammatory effect than the non-selective COX inhibitors.* *C. Are relatively safer than non-selective.* *D. Produce similar gastric mucosal damage.* *E. Has greater antipyretic effect*	**C**
6. What is the mechanism of action of ibuprofen? *A. Non selective of COX enzyme inhibitor* *B. Selective Cox -2 inhibitor* *C. Phospholipase A2 inhibitor* *D. Lipooxygenase enzyme inhibitor* *E. Kallikrein system inhibitor*	**A**
7. Which of the following property combinations is peculiar to the majority of NSAIDs? *A. Antihistaminic, antipyretic, analgesic* *B. Analgesic, immunodepressive, anti-inflammatory,* *C. Antipyretic, analgesic, anti-inflammatory* *D. Anti-inflammatory, immunodepressive, antihistaminic* *E. Narcotic, analgesic, anti-inflammatory*	**C**
8. Which of the following NSAIDs is a selective COX-2 inhibitor? *A. Piroxicam* *B. Indomethacin* *C. Celecoxib* *D. Diclofenac* *E. Morphine*	**C**

9. One of the following is not a side effect shared by NSAIDs: *A. Physical dependence* *B. Gastrointestinal ulceration* *C. Hypersensitivity* *D. Nephropathy* *E. Nausea and vomiting*	**A**
10. Ibuprofen does not reduce the synthesis of one of the following eicosanoids: *A. TXA2* *B. PGE2* *C. PGF2a* *D. LTB4* *E. PGI2*	**D**
11. Which one of the following statements concerning Cox-2 inhibitors is correct: *A. They show greater analgesic activity than traditional NSAIDS* *B. They show anti-inflammatory activity greater than traditional NSAIDs* *C. They decrease platelet aggregation* *D. They harm the stomach less than non-selective COX inhibitors* *E. They are cardio protective.*	**D**
12. NSAID proposed to be acting via inhibition of COX-3 is: *A. Nimesulide* *B. Paracetamol* *C. Ketorolac* *D. Rofecoxib* *E. Aspirin*	**B**

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18. The therapeutic efficacy of antihypertensive drugs is blunted by NSAIDS because they: *A. Cause sodium excretion* *B. Increase the clearance of antihypertensive drugs* *C. Decrease the absorption of antihypertensive drugs* *D. Decrease the synthesis of vascular prostacyclin* *E. Cause nephropathy*	***D***
19. Aspirin inhibits which of the following enzymes? *A. Lipoprotein lipase* *B. Lipoxygenase* *C. Cyclooxygenase* *D. Phospholipase D* *E. Phospholipase A2*	***C***
20. Which one of the following analgesic agents inhibits mainly COX in CNS? *a) Morphine* *b) Paracetamol* *c) Ketorolac* *d) Acetylsalicylic acid* *e) Ibuprofen*	***B***

21. The effect of aspirin on Cox enzyme is: *a) Reversible* *b) Irreversible* *c) Selective* *d) Nonselective* *e) Irreversible & nonselective*	***E***
22. The effect of indomethacin on Cox enzyme is: *a) Reversible* *b) Irreversible* *c) Selective* *d) Irreversible & nonselective*	***A***
23. Aspirin could be used prophylactically in: *a) pulmonary edema* *b) heart failure* *c) peptic ulcers* *d) thrombotic disorder* *e. metabolic acidosis*	***D***
24. The effect of Ketoprofen on Cox enzyme is: *a) Reversible* *b) Irreversible* *c) Selective* *d) Irreversible & nonselective*	***A***
25. Which of the following analgesic is contraindicated to be taken in children with chickenpox or influenza? *a) Meperidine* *b) Indomethacin* *c) Paracetamol* *d) Pentazocine* *e) Aspirin*	***E***

27. Which one of the following statements concerning Cox-2 inhibitors is correct? *a) They show greater analgesic activity than traditional NSAIDs* *b) They show anti-inflammatory activity greater than traditional NSAIDs* *c) They increase platelet aggregation* *d) They don't harm kidney as do non-selective Cox inhibitors* *e) They are cardio protective athways.no COX-1*	***C***
28. The cyclooxygenase isoenzymes COX-1 and COX-2 differ from each other in that: *a) They catalyse different pathways in prostanoid* *b) COX-1 is inhibited by aspirin but not COX-2* *c) COX-2 is inhibited by ibuprofen but not COX-1* *d) COX-1 is constitutive while COX-2 is largely inducible* *e) Cox-1 is inhibited by celecoxib but not COX-2*	***D***
29. One of the following is an example of acetic acid derivatives of NSAIDs: *a) Ibuprofen* *b) Acetaminophen* *c) Piroxicam* *d) Celecoxib* *e) Diclofenac*	***E***

30. One of the following is selective inhibitor of COX3 enzyme: *a) Meloxicam.* *b) Acetaminophen.* *c) Piroxicam.* *d) Sulindac.* *e) Celecoxib.*	**B**
31. As regards selective COX-2 Inhibitor: *a) May increase incidence of thrombosis.* *b) Has less anti-inflammatory effect than the non-selective COX inhibitors.* *c) Are relatively safer than non-selective.* *d) Produce similar gastric mucosal damage.* *e) Has greater antipyretic effect*	**A**
32. Which of the following is an analgesic and antipyretic drug that lacks an anti-inflammatory action? *a) Acetaminophen* *b) Celecoxib* *c) Colchicine* *d) Indomethacin* *e) Probenecid*	**A**
33. Inflammation is a complex tissue reaction that includes the release of cytokines, leukotrienes, prostaglandins, and peptides. Prostaglandins involved in inflammatory processes are typically produced from arachidonic acid by which of the following enzymes? *(A) Cyclooxygenase-1* *(B) Cyclooxygenase-2* *(C) Glutathione-S-transferase* *(D) Lipoxygenase* *(E) Phospholipase A2*	**B**

34. The pharmacologic effects of acetylsalicylic acid include: *a. Reduction of high body temperature* *b. Promotion of platelet aggregation* *c. Reduction of pain by stimulation of PGs synthesis* *d. Less gastric irritation than other NSAIDS* *e. Promotion of diuretic effect of furosemide*	**A**
35. One of the following is an example of acetic acid derivatives of NSAIDs: *a. Ibuprofen* *b. Acetaminophen* *c. Piroxicam* *d. Celecoxib* *e. Indomethacin*	**E**
36. Non-steroidal anti-inflammatory drugs reduce the diuretic action of furosemide by: *a. Preventing prostaglandin mediated internal hemodynamic actions* *b. Blocking its action in ascending limb of loop of Henle.* *c. Enhancing salt and water reabsorption in distal tubule.* *d. Increasing aldosterone secretion.* *channel in the distal tubule +e. Blocking Na*	**A**
37. A 17-year-old patient complains of wheezing and severe dyspnea whenever he takes aspirin for headache. Which of the following agents may be responsible for this complains? *a. Prostaglandins.* *b. Thromboxanes.* *c. Leukotrienes.* *d. Endothelins* *e. Kinins.*	**C**

38. Aspirin overdose is characterized by a syndrome of: *a) Bone marrow suppression and possibly aplastic anemia.* *b) Fever, hepatic dysfunction, and encephalopathy.* *c) Hyperthermia, tachypnea, metabolic acidosis, and coma.* *d) Rapid, fulminant hepatic failure.* *e) Rash, interstitial nephritis and acute renal failure.*	***C***
39. Which one of the following can increase platelet aggregation? *a) Ketanerine* *b) Meloxicam.* *c) Sulphinpyrazone.* *d) Aspirin.* *e) Epoprostenol.*	***B***
40. When aspirin is given concomitantly with other drug the following interaction may occur: *a. Potentiating the diuretic effect of furosemide.* *b. Potentiating of anticoagulation effect of warfarin.* *c. Increase uricosuric effect of probenecid* *d. Increase antihypertensive effect of B-blockers.* *e. Decrease free plasma level of phenytoin.*	***B***
41. Which statement below is accurate regarding aspirin overdose? *A. N-acetylcysteine should be given immediately* *B. The metabolism rate of aspirin is first-order* *C. Elimination rate is directly proportional to plasma concentration.* *D. Increasing urinary pH would be beneficial* *E. Plasma concentrations decrease exponentially with time*	***D***

42. The distinctive feature of the isoenzyme cyclooxygenase-2 is: *A. It is not inhibited by indomethacin* *B. It is inducible* *C. It generates cytoprotective prostaglandins in gastric mucosa* *D. It is found only in fetal tissues*	**B**
43. Selective COX-2 inhibitors differ from nonselective COX-1/COX-2 inhibitors in that they: *A. Are anti-inflammatory but not analgesic* *B. Do not bring down fever* *C. Have no renal effects* *D. Do not inhibit platelet aggregation*	**D**
44. Aspirin is contraindicated in children suffering from influenza or similar viral infection because of increased risk of: *A. Gastric bleeding* *B. Thrombocytopenia* *C. Fancony syndrome* *D. Reye's syndrome*	**D**
45. Choose the action for which the dose of aspirin required is the lowest: *A. Analgesic* *B. Antipyretic* *C. Anti-inflammatory* *D. Antiplatelet aggregatory*	**D**
46. The constellation of adverse effects associated with nonsteroidal anti-inflammatory drugs include the following except: *A. Sedation* *B. Gastric irritation* *C. Fluid retention* *D. Rashes*	**A**

47. The following nonsteroidal anti-inflammatory drug is a preferential cyclooxygenase-2 (COX-2) inhibitor: *A. Tenoxicam* *B. Meloxicam* *C. Diclofenac sod.* *D. Ketoprofen*	**B**
48. The selective COX-2 inhibitors have the following advantage(s) over the nonselective NSAIDs: *A. They are less likely to cause gastric ulcers and their complications* *B. They are likely to be more effective in rheumatoid arthritis* *C. They are not likely to produce renal complications* *D. All of the above*	**A**
49. Indication for aspirin administration are the following, EXCEPT: *a) Inflammatory conditions* *b) Decreasing the incidence of transient ischemic attack, unstable angina, coronary artery thrombosis with myocardial infarction, and thrombosis after coronary artery bypass. grafting* *c) Relieving severe visceral pain (myocardial infarction, cancer pain condition, renal or biliary colic)* *d) Reducing elevated body temperature*	**C**
50. The following statements about aspirin are correct EXCEPT: *A. May cause GIT hemorrhage after a single dose* *B. Enteric-coated tablets cause less gastric bleeding* *C. May cause metabolic alkalosis in high doses* *D. May cause Rye's syndrome in children* *E. Its toxicity may require treatment with hemodialysis*	**C**

51. The toxicity spectrum of aspirin does not include: *A. Increased risk of encephalopathy in children with viral infections* *B. Increased risk of peptic ulcers* *C. Hyperprothrombinemia* *D. Metabolic acidosis* *E. Respiratory alkalosis*	**C**
52. The action of aspirin that results in its greater efficacy as an antithrombotic (anti-platelet) drug is its ability to: *A. Inhibit lipoxygenase as well as cyclooxygenase* *B. Selectively inhibit cyclooxygenase I* *C. Inhibit leukocyte migration* *D. Promote uric acid excretion* *E. Acetylate cyclooxygenase*	**E**
53. Potential adverse effects associated with aspirin include all of the following EXCEPT: *A. Gastrointestinal ulceration* *B. Renal dysfunction* *C. Enhanced methotrexate toxicity* *D. Cardiac arrhythmias* *E. Hypersensitivity asthma*	**D**
54. What is the mechanism of action of ibuprofen? *a) Kallikrein system inhibitor* *b) Lipooxygenase enzyme inhibitor* *c) Nonselective COX enzyme inhibitor* *d) Phospholipase A2 inhibitor* *e) Selective Cox-2 inhibitor*	**C**

55. Which of the following NSAIDs is a selective COX-2 inhibitor? *a. Morphine* *B. Celecoxib* *C. Piroxicam* *D. Diciofenac* *E. Indomethacin*	***B***
56. Which of the following Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) is a nonselective Cyclooxygenase (COX) inhibitor? *a) Celecoxib* *b) Diclofenac* *c) Methadone* *d) Morphine* *e) Rofecoxib*	***B***

1) The pharmacologic effects of acetylsalicylic acid include: A- Reduction of high body temperature B- Promotion of platelet aggregation C- Reduction of pain by stimulation of PGs synthesis D- Less gastric irritation than other NSAIDs	A
2) Which of the following statements concerning the anti□inflammatory effect of NSAIDs are TRUE? A. Anti-inflammatory effect of NSAIDs results from inhibition of cyclooxygenase B. Anti-inflammatory effect of NSAIDs results from inhibition of phospholipase A2 and reducing prostaglandin and leukotriene synthesis C. Anti-inflammatory effect of NSAIDs results from induction of cyclooxygenase II expression which results in reducing the amount of an enzyme available to produce prostoglandins D. All of the above	**A**
3) The following statements concerning aspirin are true, EXCEPT: A. In contrast to most other NSAIDs, aspirin irreversibly inhibits COX B. Aspirin interferes with the chemical mediators of the kallikrein system C. Aspirin inhibits phospholipase A2 D. Aspirin inhibits tromboxane A2 formation	C
4) Indication for aspirin administration are the following, EXCEPT: A. Inflammatory conditions B. Decreasing the incidence of transient ischemic attack, unstable angina, coronary artery thrombosis with myocardial infarction, and thrombosis after coronary artery bypass grafting C. Relieving severe visceral pain(myocardial infarction, cancer pain condition, renal or biliary colic) D. Reducing elevated body temperature	C
5) Use of aspirin in children with viral disease is associated with: A. Metabolic acidosis B. Reye's syndrome C. Renal tubular acidosis D. Fixed drug eruption E. Ototoxicity	B

6) Therapeutic uses of aspirin include: A. Prophylaxis of migraine. B. Treatment of hypertension with pregnancy. C. Prevent the progress of joint destruction in rheumatic fever. D. Delayed labour E. Treatment of thrombocytopenia	C
7) What is the mechanism of action of ibuprofen? A. Non selective of COX enzyme inhibitor B. Selective Cox -2 inhibitor C. Phospholipase A2 inhibitor D. Lipooxygenase enzyme inhibitor E. Kallikrein system inhibitor	A
8) A 52-year-old man with chronic low back pain. He is complaining from severe hyperacidity. Which of the following agents may improve his pain without worsening his gastrointestinal symptoms? (A) Aspirin b) Celecoxib (C) Ketorolac d) diclofenac (E) Indomethacin	B
9) As regards selective COX-II inhibitors, which of the following is TRUE. A. May decrease incidence of thrombosis. B. Has less anti-inflammatory effect than the non-selective COX inhibitors. C. Are relatively safer than non-selective. D. Produce similar gastric mucosal damage. E. Has greater antipyretic effect	C
10) All of the following are undesirable effects of aspirin EXCEPT: a) Gastritis with focal erosions b) Tolerance and physical addiction c) Bleeding due to a decrease of platelet aggregation d) Reversible renal insufficiency e) Rey's syndrome	B

11) Which of the following property combinations is peculiar to the majority of NSAIDs? A. Antihistaminic, antipyretic, analgesic B. Analgesic, immunosuppressive, anti-inflammatory, C. Antipyretic, analgesic, anti-inflammatory D. Anti-inflammatory, immunosuppressive, antihistaminic E. Narcotic, analgesic, anti-inflammatory	C
12) Ibuprofen does not reduce the synthesis of one of the following eicosanoids: A. TXA2 B. PGE2 C. PGF2a D. LTB4 E. PGI2	D
13) Which of the following NSAIDs is a selective COX-2 inhibitor? A. Piroxicam B. Indomethacin C. Celecoxib D. Diclofenac E. Morphine	**C**
14) One of the following is not a side effect shared by NSAIDs: A. Physical dependence B. Gastrointestinal ulceration C. Hypersensitivity D. Nephropathy E. Nausea and vomiting	A
15) Which of the following drugs inhibit platelet cyclooxygenase irreversibly? A. Alprostadil B. Aspirin C. Ibuprofen D. Prednisolone E. Acetaminophen	**B**

16) The therapeutic efficacy of antihypertensive drugs is blunted by NSAIDS because they: A. Cause sodium excretion B. Increase the clearance of antihypertensive drugs C. Decrease the absorption of antihypertensive drugs D. Decrease the synthesis of vascular prostacyclin e. Cause nephropathy	**D**
17) Aspirin is used in the prophylaxis of myocardial infarction because it results in: A. Inhibition of thromboxane synthetase B. Inhibition of cyclooxygenase in platelets C. Decreased serum lipids D. Coronary steal phenomenon E. Coronary vasodilator	B
18) Which of the following statements is not true about NSAIDs? A. Acetyl salicylic acid is an irreversible inhibitor of COX enzyme. B. Acetyl salicylic acid reduces in vivo synthesis of prostaglandins. C. Its clearance is independent of plasma concentration D. Antiplatelet effect of low dose aspirin is related to pre-systemic COX inhibition E. Alkalization of urine increases aspirin excretion	D
19) Among NSAIDs aspirin is unique because it: A. Irreversibly inhibits its target enzyme B. Reduces the risk of colon cancer C. Reduces fever D. Selectively inhibits COX-2 enzyme E. Analgesic	A
20) Which of the following patient characteristics is a possible reason for the use of celecoxib in the treatment of arthritis? A. History of severe rash after treatment with a sulfonamide antibiotic B. History of gout C. History of peptic ulcer disease D. History of type 2 DM E. History of myocardial infarction	C

21) Aspirin inhibits which of the following enzymes? A. Lipoprotein lipase B. Lipoxygenase C. Cyclooxygenase D. Phospholipase D E. Phospholipase A2	C
22) The effect of indomethacin on Cox enzyme is: a) Reversible b) Irreversible c) Selective d) Irreversible & nonselective	**A**
23) Aspirin could be used prophylactically in: a) pulmonary edema b) heart failure c) peptic ulcers d) thrombotic disorder e) metabolic acidosis	D
24) The effect of aspirin on Cox enzyme is: a) Reversible b) Irreversible c) Selective d) Irreversible & nonselective	**D**
25) The following statements about aspirin are correct EXCEPT: A. May cause GIT hemorrhage after a single dose B. Enteric-coated tablets cause less gastric bleeding C. May cause metabolic alkalosis in high doses D. May cause Rye's syndrome in children E. Its toxicity may require treatment with hemodialysis	C

26) Which one of the following can increase platelet aggregation? a) Ketanerine b) Meloxicam. c) Sulphinpyrazone. d) Aspirin. e) Epoprostenol.	B
27) Which statement below is accurate regarding aspirin overdose? A. N-acetylcysteine should be given immediately B. The metabolism rate of aspirin is first-order C. Elimination rate is directly proportional to plasma concentration. D. Increasing urinary pH would be beneficial E. Plasma concentrations decrease exponentially with time	D
28) **When aspirin is given concomitantly with other drug the following interaction may occur**: a. Potentiating the diuretic effect of furosemide. b. Potentiating of anticoagulation effect of warfarin. c. Increase uricosuric effect of probenecid d. Increase antihypertensive effect of B-blockers. e. Decrease free plasma level of phenytoin.	B
29) Inflammation is a complex tissue reaction that includes the release of cytokines, leukotrienes, prostaglandins, and peptides. Prostaglandins involved in inflammatory processes are typically produced from arachidonic acid by which of the following enzymes? A.Cyclooxygenase-1 B.Cyclooxygenase-2 C. Glutathione-S-transferase D.Lipoxygenase E. Phospholipase A2	B

30) One of the following is an example of acetic acid derivatives of NSAIDs: a. Ibuprofen b. Acetaminophen c. Piroxicam d. Celecoxib e. Indomethacin	E
31) One of the following is selective inhibitor of COX3 enzyme: a) Meloxicam. b) Acetaminophen. c) Piroxicam. d) Sulindac. e) Celecoxib.	B
32) As regards selective COX-2 Inhibitor: a) May increase incidence of thrombosis. b) Has less anti-inflammatory effect than the non-selective COX inhibitors c) Are relatively safer than non-selective. d) Produce similar gastric mucosal damage. e) Has greater antipyretic effect	**A**
33) Which of the following is an analgesic and antipyretic drug that lacks ananti-inflammatory action? a) Acetaminophen b) Celecoxib c) Colchicine d) Indomethacin e) Probenecid	A
34) Inflammation is a complex tissue reaction that includes the release of cytokines, leukotrienes, prostaglandins, and peptides. Prostaglandins involved in inflammatory processes are typically produced from arachidonic acid by which of the following enzymes? (A) Cyclooxygenase-1 (B) Cyclooxygenase-2 (C) Glutathione-S-transferase (D) Lipoxygenase (E) Phospholipase A2	B

35) A 17-year-old patient complains of wheezing and severe dyspnea whenever he takes aspirin for headache. Which of the following agents may be responsible for this complains? a. Prostaglandins. b. Thromboxanes c. Leukotrienes. d. Endothelins e. Kinins.	**C**

1) A 52-year-old man with chronic low back pain. He is complaining from severe hyperacidity. Which of the following agents may improve his pain without worsening his gastrointestinal symptoms? (A) Aspirin (B) Celecoxib (C) Ketorolac (D) diclofenac	B
2) Acetaminophen is a potent analgesic and antipyretic NSAID butdiffers from other agents in that it has no anti-inflammatory action.Which of the following reasons explains this unique aspect of acetaminophen? A. the distribution of acetaminophen does not reach peripheral sitesof inflammation B. acetaminophen is not an inhibitor of the COX enzyme C. antiinflammatory doses of acetaminophen are too high and toxic D. it is selective for a newly discovered isozyme of COX E. acetaminophen undergoes significant first-pass metabolism	D
3) Which of the following statements concerning the anti□inflammatory effect of NSAIDs are TRUE? A. Anti-inflammatory effect of NSAIDs results from inhibition of cyclooxygenase B. Anti-inflammatory effect of NSAIDs results from inhibition of phospholipase A2 and reducing prostaglandin and leukotriene synthesis C. Anti-inflammatory effect of NSAIDs results from induction of cyclooxygenase II expression which results in reducing the amount of an enzyme available to produce prostoglandins D. All of the above	**A**
4) The following statements concerning aspirin are true, EXCEPT: A. In contrast to most other NSAIDs, aspirin irreversibly inhibits COX B. Aspirin interferes with the chemical mediators of the kallikrein system C. Aspirin inhibits phospholipase A2 D. Aspirin inhibits tromboxane A2 formation	C

5) Which of the following NSAIDs is a selective COX-2 inhibitor? A. Piroxicam B. Indomethacin C. Celecoxib D. Diclofenac	C
6) Which of the following NSAIDs is a nonselective COX inhibitor A. Piroxicam B. Rofecoxib C. Celecoxib D. All of the above	A
7) Which one of the following analgesic agents inhibits mainly COX in CNS? a) Morphine b) Paracetamol b) Ketorolac d) Ibuprofen	B
8) The pharmacologic effects of acetylsalicylic acid include: A- Reduction of high body temperature B- Promotion of platelet aggregation C- Reduction of pain by stimulation of PGs synthesis D- Less gastric irritation than other NSAIDs	A
9) Acetaminophen a) is primarily used in ischemic heart diseases b) is an aspirin substitute for analgesia and antipyresis in children c) has no associated liver toxicity with chronic use of large doses d) is not given to children because it causes flu-like symptoms	B
10) Which one of the following non-narcotic agents inhibits mainly cyclooxygenase (COX) in CNS? a) Morphine b) Paracetamol c) Ketorolac d) Acetylsalicylic acid e) Ibuprofen	B

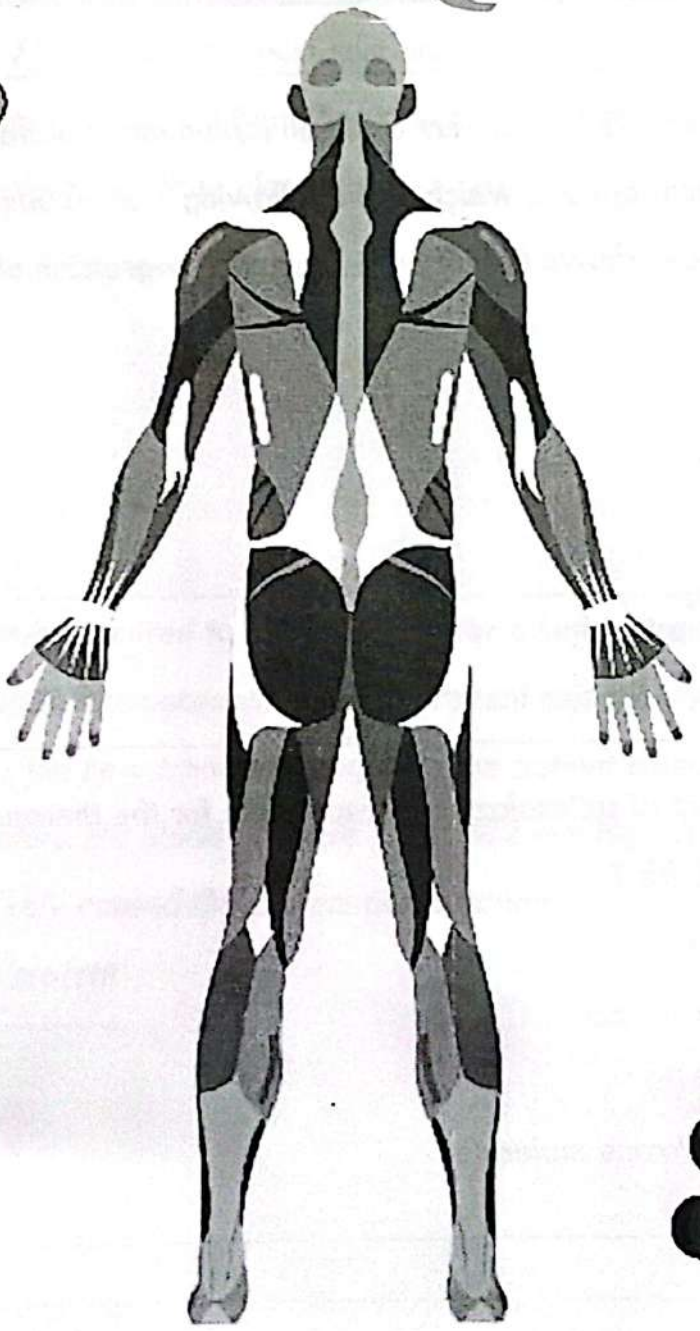
11) One of the following is selective inhibitor of COX3 enzyme: a) Meloxicam. b) Acetaminophen. c) Piroxicam. d) Sulindac. e) Celecoxib.	B
12) Which of the following is an analgesic and antipyretic drug that lacks an ant inflammatory action? a) Acetaminophen b) Celecoxib c) Colchicine d) Indomethacin e) Probenecid	A
13) Which treatment is critical to administer within 8 hours of acetaminophen overdose to prevent liver damage? A. Gastric lavage B. Hemodialysis C. Oral methionine D. N-acetylcysteine E. Activated charcoal	D
14) Which of the following is a therapeutic use of acetaminophen? A. Treatment of rheumatoid arthritis B. Analgesic in patients with peptic ulcer disease C. Prophylaxis for myocardial infarction D. Reduction of gout-related inflammation E. Management of hypertension	**B**
15) Indication for aspirin administration are the following, EXCEPT: A. Inflammatory conditions B. Decreasing the incidence of transient ischemic attack, unstable angina, coronary artery thrombosis with myocardial infarction, and thrombosis after coronary artery bypass grafting C. Relieving severe visceral pain(myocardial infarction, cancer pain condition, renal or biliary colic) D. Reducing elevated body temperature	**C**

LEVEL 1 · SEMESTER 2

PHARMACOLOGY

MSK

MCQ 3



3
L.E

Dr. M. M.

Written pharma MSK 3

1. Mention MOA and side effect of methotrexate ?
2. Mention MOA and side effects of cyclopsporin ?
3. Mention 4 side effects of TNF blocker ?
4. Mention 4 contraindication of TNF alpha blocker ?

MCQ pharma MSK 1

1. Rheumatoid arthritis is a relatively common autoimmune disease, with multiple treatment options. Which of the following is an example of a drug class that has been shown to halt or reverse the progression of this disease in most patients? a) aspirin b) azathioprine c) everolimus d) methotrexate e) prednisone	D
2. Which component of sulfasalazine is responsible for the therapeutic effect in rheumatoid arthritis ? a) Sulfapyridine b) 5–aminosalicylic acid c) Both (a) and (b) d) Intact sulfasalazine molecule	A

3. In a follow-up visit, JQ is still exhibiting significant signs of RA, and has not achieved her therapeutic goal. After some discussion about treatment options, adalimumab (s.c. every 2 weeks) is added to her treatment regimen. Major side effects with this class of medication include: *a) infections & malignancy* *b) mucosal ulcers* *c) osteoporosis* *d) renal impairment*	**A**
4. While TNF-alpha inhibitors are the most commonly used biologic DMARDs, an IL-6 receptor antagonist has also been found to be effective in treating arthritis. An example of this drug class is: *a) abatacept* *b) ankinra* *c) leflunomide* *d) rituximab* *e) tocilizumab*	**E**
5. A 24-year-old man is admitted to the hospital after a kidney transplant. He is placed on appropriate immunosuppression to prevent rejection. About 48 hours after starting the new treatment regimen, the patient complains of a headache and tremors. His blood pressure is 140/82 mm Hg. What medication most likely caused this patient presentation? *a. Mycophenolate mofetil* *b. Azithromycin* *c. Sirolimus* *d. Leflunomide* *e. Cyclosporine*	**E**

10. Which o... alpha?

6. Which of the following drugs is a recombinant form of an endogenous IL-1 antagonist? a. Abatacept b. Anakinra c. Methotrexate d. Hydroxychloroquine e. Rituximab	B
7. Which of the following is a reserve drug but not a disease modifying drug in rheumatoid arthritis: a) Chloroquine b) Sulfasalazine c) Prednisolone d) Methotrexate	C
8. Disease modifying anti-rheumatic drugs are indicated in rheumatoid arthritis: a. In place of NSAIDs in patients who do not tolerate the latter b. Along with NSAIDs in patients with progressive disease c. Only when NSAIDS fail to afford symptomatic relief d. In all patients irrespective of disease status/ concurrent medication	B
9. What is true of disease modifying anti-rheumatic drugs: a. Their beneficial effect is manifest only after1-3 months of therapy b. The disease does not recurr once they induce remission. c. They are to be used life long d. Concurrent use of more than one disease modifying drug is not recommended	A

10. Which one of the following drugs acts by blocking soluble receptors of TNF-alpha? a. Anakinra b. Sulfasalazine c. Methotrexate d. Etanercept e. Leflunomide.	**D**
11. The most common adverse effect of methotrexate is: a. Arrhythmia b. Hepatotoxicity c. Renal failure d. Convulsions e. Hair loss.	**B**
12. Which of the following is disease modifying drug for rheumatoid arthritis? a) Indomethacin b) Celecoxib c) Ibuprofen d) Diclofenac e) Etanercept	**E**
13. Which of the following best describes the mechanism of action of methotrexate? a) increases adenosine levels b) inhibits dihydrofolate reductase c) inhibits IL-6 signal transduction d) small molecule kinase inhibitor e) TNF-alpha receptor antagonist	**B**

14. Which agent of rheumatoid arthritis compete with CD 28 to prevent full T cell activation: a) Sarilumab b) Abatacept c) Golimumab d) Adalimumab e) Certolizomab	**B**
15. Which of the following is JAK inhibitor: a) Abatacept b) Tofacitinib c) Tocalizomab d) Anakinera e) Infliximab	**B**
16. Which one of the following drugs acts by blocking soluble receptors of TNF-α? a. Anakinra b. Sulfasalazine c. Methotrexate d. Etanercept e. Leflunomide.	**D**
17. Which of the following regarding Infliximab is WRONG: a. An important drug in treatment of rheumatoid arthritis b. Contraindicated in acute and chronic infections c. A recombinant protein that interferes with TNF-α d. Contraindicated in recent malignancies e. Monoclonal antibody	**C**

18. Which of the following DMARDs is recombinant protein that interferes with TNF-α by acting as a decoy receptor that binds to TNF and prevents it from binding to its receptors? a. Infliximab b. Etanercept c. Leflunomide. d. Sulfasalazine. c. Anakinra	**B**
19. Which of the following drug is used in bridging therapy in patient with arthritis? a) Leflunomide. b) Corticosteroids. c) Sulfasalazine d) Celecoxib. e) Anakinra	**B**
20. Which one of the following drugs acts as monoclonal antibodies for TNF-α? a) Anakinra. b) Sulfasalazine. c) Infliximab. d) Methotrexate. e) Etanercept.	**C**
21. Which of the following is disease modifying drug for rheumatoid arthritis? a) Indomethacin b) Celecoxib c) Ibuprofen d) Diclofenac e) Etanercept	**E**

22. Which one of the following anti-inflammatory drugs used in rheumatoid arthritis can bind directly tumor necrosis factor? A. Etanercept B. Sulfasalazine C. Prednisone D. Celecoxib E. Penicillamine	A
23. Which of the following patient characteristics is the most compelling reason for avoiding celecoxib in the treatment of rheumatoid arthritis? (A) History of alcohol abuse (B) History of gout (C) History of myocardial infarction (D) History of osteoporosis (E) History of peptic ulcer disease	C
24. Which of the following is a reserve drug but not a disease modifying drug in rheumatoid arthritis: A. Chloroquine B. Sulfasalazine C. Prednisolone D. Methotrexate	C
25. All the following drugs can be used in the treatment of rheumatoid arthritis EXCEPT: A. Methotrexate B. Gold C. Leflunomide D. Prednisolone E. Colchicine	E

26. TNF-α is an example of: A. Eicosanoids B. Interleukins C. Cytotoxic factors D. Interferons E. Colony stimulating factors	**C**
27. Which statement correctly represents the mechanism of action of Tofacitinib in treatment of RA? A. Dihydrofolate reductase inhibitor B. Janus kinase inhibitor C. IL-6 receptors blocker D. TNF-œ inhibitor E. IL-1 receptors blocker	**B**
28. Which of the following is an Interleukin-6 receptor antagonist that has also been found to be effective in treating Rheumatoid Arthritis? a) Abatacept b) Anakinra c) Leflunamide d) Rituximab e) Tocilizumab	**E**
29. Which of the following inhibit phagocytic function and stabilize lysosomes : a) Abatacept b) Anakinra c) Leflunamide d) cloroquine e) methotrexate	**D**

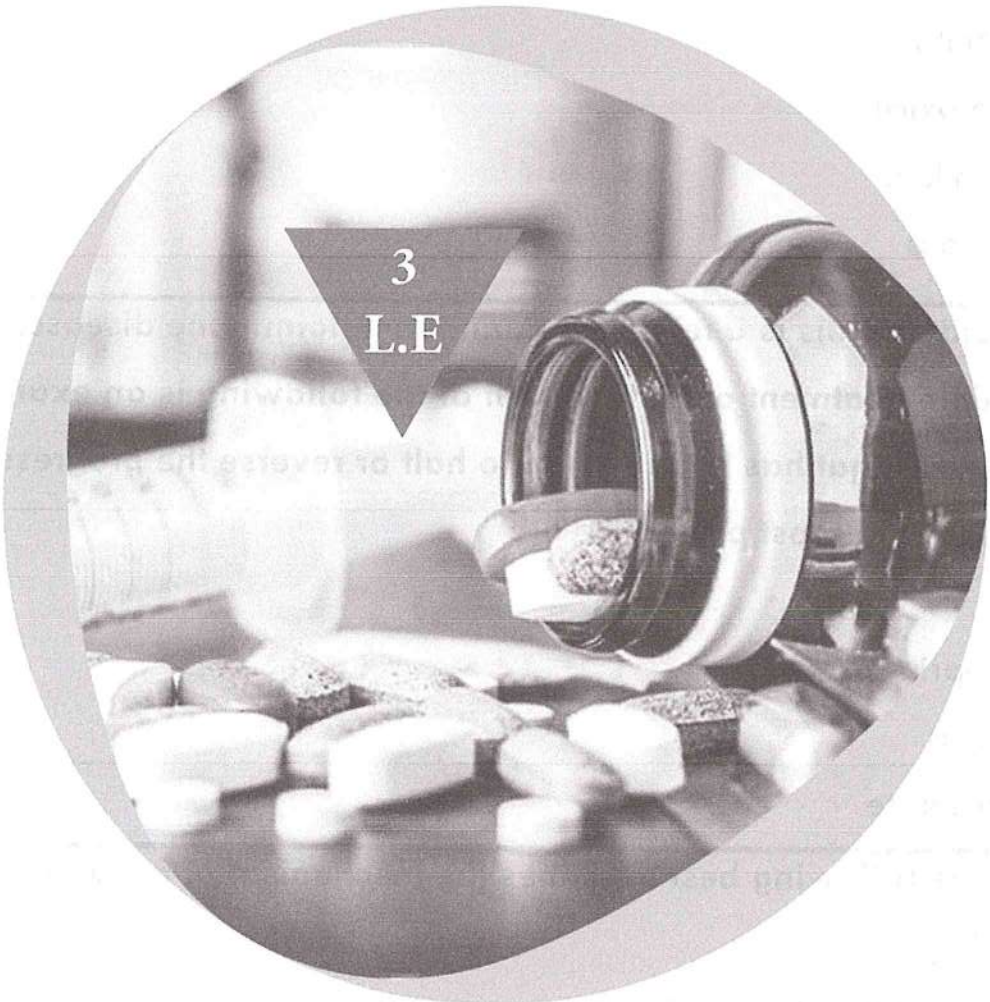
Level 1 Semester 2

scan me

2024

MSS module

PHARMACOLOGY



Lecture 3 MCQ

DR. ELSAWY

MCQ

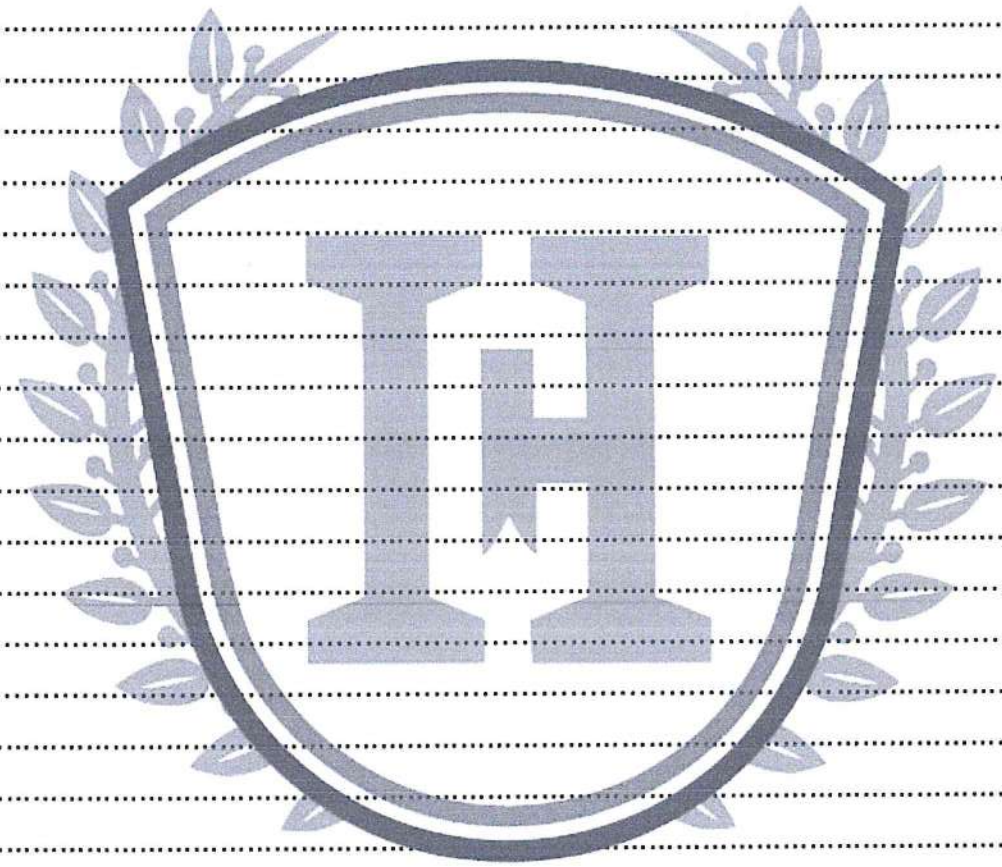
1. Which component of sulfasalazineis responsible for the therapeutic effect in rheumatoid arthritis ? a) Sulfapyridine b) 5–aminosalicylic acid c) Both (a) and (b) d) Intact sulfasalazinemolecule	**A**
2. The most common adverse effect of methotrexate is: (1/2019) a. Arrhythmia b. Hepatotoxicity c. Renal failure d. Convulsions	**B**
3. Rheumatoid arthritis is a relatively common autoimmune disease, with multiple treatment options. Which of the following is an example of a drug class that has been shown to halt or reverse the progression of this disease in most patients? a. Aspirin b. Azathioprine c. Everolimus d. Methotrexate	**D**
4. Which of the following best describes the mechanism of action of methotrexate ? a. increases adenosine levels b. inhibits dihydrofolate reductase c. inhibits IL-6 signal transduction d. small molecule kinase inhibitor	**B**

5. While TNF-alpha inhibitors are the most commonly used biologic DMARDs, an IL-6 receptor antagonist has also been found to be effective in treating arthritis. An example of this drug class is: a. tocilizumab b. ankinra c. leflunomide d. rituximab	A
6. Which of the following is disease modifying drug for rheumatoid arthritis? a. Indomethacin b. Celecoxib c. Ibuprofen d. Diclofenac e. Etanercept	E
7. Which of the following has been shown to reverse progression of rheumatoid arthritis in most patients? a) aspirin b) azathioprine c) everolimus d) methotrexate	D
8. What is true of disease modifying anti-rheumatic drugs: a. Their beneficial effect is manifest only after1-3 months of therapy b. The disease does not recurr once they induce remission. c. They are to be used life long d. Concurrent use of more than one disease modifying drug is not recommended	A

9. In a follow-up visit, Ahmed is still exhibiting significant signs of RA. After some discussion about treatment options, adalimumab (s.c. every 2 weeks) is added to treatment regimen. Major side effects with this class of medication include: a) infections & malignancy b) mucosal ulcers c) osteoporosis d) renal impairment	**A**
10.Which one of the following drugs INHIBT TNF-α? a. Anakinra b. Sulfasalazine c. Methotrexate d. Etanercept	**D**
11.Which of the following is a reserve drug but not a disease modifying drug in rheumatoid arthritis: a) Chloroquine b) Sulfasalazine c) Prednisolone d) Methotrexate	**C**
12.Disease modifying antirheumatic drugs are indicated in rheumatoid arthritis: a. In place of NSAIDs in patients who do not tolerate the latter b. Along with NSAIDs in patients with progressive disease c. Only when NSAIDS fail to afford symptomatic relief d. In all patients irrespective of disease status/ concurrent medication	**B**

13.A 24-year-old man is admitted to the hospital after a kidney transplant. He is placed on appropriate immunosuppression to prevent rejection. About 48 hours after starting the new treatment regimen, the patient complains of a headache and tremors. His blood pressure is 140/82 mm Hg. What medication most likely caused this patient presentation? a. Mycophenolate mofetil b. Azithromycin c. Sirolimus d. Cyclosporine	**D**

Notes



Written pharma MSK 3

1. **Mention MOA and side effect of methotrexate?**
2. **Mention MOA and side effects of cyclopsporin?**
3. **Mention 4 side effects of TNF blocker?**
4. **Mention 4 contraindication of TNF alpha blocker?**

MCQ pharma MSK 3

1. Doctor prescribed methotrexate. Which of the following best describes the mechanism of action of this drug? a) *increases adenosine levels.* b) *inhibits dihydrofolate reductase* c) *inhibits IL-6 signal transduction* d) *small molecule kinase inhibitor* e) *TNF-alpha receptor antagonist*	**B**
2. Which one of the following drugs is NOT used in the treatment of rheumatoid arthritis? a) *Methotrexate* b) *Sulfasalazine* c) *Leflunomide* d) *Prednisolone* e) *Colchicine*	**E**
3. Which one of following drugs acts by blocking soluble receptors of TNF-α? a) *Anakinra* b) *Sulfasalazine* c) *Gold saults.* d) *Methotrexate* e) *Etanercept*	**E**

4. Which agent for Rheumatoid Arthritis competes with CD28 to prevent full T cell activation? a) Abatacept b) Adalimumab c) Certolizumab d) Golimumab e) Sarilumab	**A**
5. The first drug of choice among disease modifying anti-rheumatic drugs (DMARDs) for rheumatoid arthritis is: a. Hydroxychloroquine. b. Gold salts. c. Methotrexate. d. Leflunomide. e. Salphasalazine.	**C**
6. Leflunomide is an immunosuppressive disease modifying anti-rheumatic drugs that inhibits de novo synthesis of pyrimidines by inhibiting: a. orotidylate decarboxylase. b. dihydroorotate dehydrogenase. c. orotate phosphoribosyl transferase. d. carbamoyl phosphate synthetase. e. aspartate trans-carbamylase.	**B**
7. Which statement is the mechanism of action of tofacitinib that used for treatment of rheumatoid arthritis? a) Inhibitor of TNFa. b) New JAK inhibitor. c) Inhibitor of IL-6. d) Inhibitor of IL-1. e) CD80/86 inhibitor.	**B**

8. Rheumatoid arthritis is a relatively common autoimmune disease, with multiple treatment options. Which of following is an example of a drug class that has been shown to halt or reverse progression of dse in most patients? *a) aspirin* *b) azathioprine* *c) everolimus* *d) methotrexate* *e) prednisone*	***D***
9. Which component of sulfasalazine is responsible for the therapeutic effect in rheumatoid arthritis? *a) Sulfapyridine* *b) 5-aminosalicylic acid* *c) Both (a) and (b)* *d) Intact sulfasalazine molecule*	***A***
10. While TNF-alpha inhibitors are the most commonly used biologic DMARDs, an IL-6 receptor antagonist has also been found to be effective in treating arthritis. An example of this drug class is: *a) abatacept* *b) ankinra* *c) leflunomide* *d) rituximab* *e) tocilizumab*	***E***
11. Which statement correctly represents the mechanism of action of Tofacitinib in treatment of RA? *A. Dihydrofolate reductase inhibitor* *B. Janus kinase inhibitor* *C. IL-6 receptors blocker* *D. TNF-α inhibitor* *E. IL-1 receptors blocker*	***B***

12. A 48-year-old woman with 2-year history of rheumatoid arthritis had not sufficient relief with methotrexate alone. Her physician prescribes a biologic TNF-α inhibitor that consists of a fusion protein against TNF-α. Which of the following is this drug? *a) Adalimumab* *b) Certolizumab* *c) Etanercept* *d) Golimumab e) Infliximab*	**C**
13. In a follow-up visit, JQ is still exhibiting significant signs of RA, and has not achieved her therapeutic goal. After some discussion about treatment options, adalimumab (s.c. every 2 weeks) is added to her treatment regimen. Major side effects with this class of medication include: *a) infections & malignancy* *b) mucosal ulcers* *c) osteoporosis* *d) renal impairment*	**A**
14. Sulfasalazine is used in the following disease(s): *a) Bacillary dysentery* *b) Ulcerative colitis* *c) Rheumatoid arthritis* *d) Bacillary dysentery and Ulcerative colitis* *e) Rheumatoid arthritis and Ulcerative colitis*	**E**
15. Which of following drugs is a recombinant aendogenous IL-1 antagonist? *a. Abatacept* *b. Anakinra* *c. Methotrexate* *d. Hydroxychloroquine* *e. Rituximab*	**B**

16. A 24-year-old man is admitted to the hospital after a kidney transplant. He is placed on appropriate immunosuppression to prevent rejection. About 48 hours after starting the new treatment regimen, the patient complains of a headache and tremors. His blood pressure is 140/82 mm Hg. What medication most likely caused this patient presentation? *a. Mycophenolate mofetil* *b. Azithromycin* *c. Sirolimus* *d. Leflunomide* *e. Cyclosporine*	***E***
17. Which of the following is a reserve drug but not a disease modifying drug in rheumatoid arthritis: *a) Chloroquine* *b) Sulfasalazine* *c) Prednisolone* *d) Methotrexate*	***C***
18. The most common adverse effect of methotrexate is: *a. Arrhythmia* *b. Hepatotoxicity* *c. Renal failure* *d. Convulsions* *e. Hair loss.*	***B***
19. Which of the following is disease modifying drug for rheumatoid arthritis? *a) Indomethacin* *b) Celecoxib* *c) Ibuprofen* *d) Diclofenac* *e) Etanercept*	***E***

20. Which of the following is JAK inhibitor: *a) Abatacept* *b) Tofacitinib* *c) Tocalizomab* *d) Anakinera* *e) Infliximab*	***B***
21. Which one of the following drugs acts by blocking soluble receptors of TNF-α? *a. Anakinra* *b. Sulfasalazine* *c. Methotrexate* *d. Etanercept* *e. Leflunomide.*	***D***
22. Which of the following regarding Infliximab is WRONG: *a. An important drug in treatment of rheumatoid arthritis* *b. Contraindicated in acute and chronic infections* *c. A recombinant protein that interferes with TNF-α* *d. Contraindicated in recent malignancies* *e. Monoclonal antibody*	***C***
23. Which of the following drug is used in bridging therapy in patient with arthritis? *a) Leflunomide.* *b) Corticosteroids.* *c) Sulfasalazine* *d) Celecoxib.* *e) Anakinra*	***B***

24. Which one of the following drugs acts as monoclonal antibodies for TNF-α? *a) Anakinra.* *b) Sulfasalazine.* *c) Infliximab.* *d) Methotrexate.* *e) Etanercept.*	**C**
25. Which of the following is disease modifying drug for rheumatoid arthritis? *a) Indomethacin* *b) Celecoxib* *c) Ibuprofen* *d) Diclofenac* *e) Etanercept*	**E**
26. Which one of the following anti-inflammatory drugs used in rheumatoid arthritis can bind directly tumor necrosis factor? *A. Etanercept* *B. Sulfasalazine* *C. Prednisone* *D. Celecoxib* *E. Penicillamine*	**A**
27. Which of the following patient characteristics is the most compelling reason for avoiding celecoxib in the treatment of rheumatoid arthritis? *(A) History of alcohol abuse* *(B) History of gout* *(C) History of myocardial infarction* *(D) History of osteoporosis* *(E) History of peptic ulcer disease*	**C**

28. Which of the following is a reserve drug but not a disease modifying drug in rheumatoid arthritis: *A. Chloroquine* *B. Sulfasalazine* *C. Prednisolone* *D. Methotrexate*	**C**
29. Which of the following inhibit phagocytic function and stabilize lysosomes: *a) Abatacept* *b) Anakinra* *c) Leflunamide* *d) cloroquine* *e) methotrexate*	**D**
30. Which of following agents is used to reverse toxic effects of methotrexate? *A. Hydrocortisone* *B. Aspirin* *C. Hydroxychloroquine* *D. Leucovorin* *E. Papaverine*	**D**
31. Which of the following statements is correct about sulfasalazine? *A. It is a calcineurin inhibitor* *B. It is a biological DMARD* *C. A prodrug cleaved by gut bacteria into 5-aminosalicylic acid & sulphapyridine.* *D. It is a folate antagonist* *E. Its main side effect is retinopathy*	**C**

32. Which of the following DMARDs is responsible for retinopathy? A. Sulfasalazine B. Leflunomide C. Hydroxychloroquine D. Cyclosporine E. Etanercept	**C**
33. Which of the following is the main role of anakinra in controlling rheumatoid activity? A. It inhibits calcineurin B. It inhibits IL-1 C. It inhibits IL-6 D. It inhibits TNF E. CD80/86 inhibitor	**B**
34. Which of the following sentences best explain immunosuppressant effect of leflunomide? A. Inhibits phospholipase A2 B. Inhibits binding of TNF α to its receptor C. Inhibits topoisomerase enzyme D. Inhibits calcineurin activity E. Inhibits pyrimidine base synthesis and suppresses T cell and B cell proliferation & activation	**E**
35. What is the rational of tapering prednisone therapy over 2 months? A. Better control of blood glucose B. Gradual ↓↓ of blood pressure C. Avoid Addisonian crises D. Gradual ↓↓ of body weight E. Avoid proteinuria	**C**

36. Which of the following statements is correct about rituximab? A. It is a chimeric antibody directed against CD20 B. It inhibits IL-1 C. It is a humanized antibody of IL-6 receptors. D. It inhibits TNFα E. It is a CD80/86 inhibitor	**A**

1) Corticosteroids such as hydrocortisone: a) May increase glycogen storage in liver. b) Prevent sodium retention and potassium loss. c) Interact with membrane-bound steroid receptor. d) Have an anti-inflammatory effect.	**D**
2) A 66-year-old woman with a history of Cushing's disease treated with oral glucocorticoids presents to her primary care physician for follow-up. She was recently hospitalized for a hip fracture following a fall. What is the most likely mechanism for hip fracture in this patient? a) Increased intestinal calcium absorption b) Increased sex hormone synthesis c) Inhibition of bone formation d) Osteoarthritis e) Osteochondroma	C
3) One of the following adverse effects is not due to prolonged therapy with corticosteroids? a) Suppression of pituitary-adrenal axis b) Increased susceptibility to infection c) Peptic ulceration d) Muscle hypertrophy e) Psychological disturbance	D
4) Glucocorticoids have not been proved to be effective in the treatment of: a) Acute lymphocytic leukemia. b) Chemotherapy-induced vomiting. c) Addison's disease. d) Osteoporosis e) Asthma.	**D**
5) An adrenocortical drug that is anti-inflammatory in pharmacologic doses is: a) Deoxy corticosterone b) Aldosterone. c) Cortisol d) Vasopressin	**C**

6) Oral prednisolone therapy is indicated in treatment of: a) Peptic Ulcer b) Systemic lupus erythematosus c) Osteoporosis d) Diabetes Miletus e) Cushing Syndrome	**B**
7) Which of the following synthetic steroids is given as mineralocorticoid replacement in adrenal insufficiency? a) Betamethasone. b) Triamcinolone. c) Dexamethasone. d) Methylprednisolone. e) Fludrocortisone.	E
8) The following has the highest mineralocorticoid effect: a) Dexamethasone b) Fludrocortisone c) Triamcinolone d) Hydrocortisone	B
9) Which of the following is a pharmacologic effect of exogenous glucocorticoids? A. Increased muscle mass B. Hypoglycemia C. Inhibition of leukotriene synthesis D. Improved wound healing E. Increased excretion of salt and water	C
10) A 34-year-old woman with ulcerative colitis has required long-term treatment with pharmacologic doses of a glucocorticoid agonist. Which of the following is a toxic effect associated with long-term glucocorticoid treatment? A. A lupus-like syndrome B. Adrenal gland neoplasm C. Hepatotoxicity D. Osteoporosis E. Precocious puberty in children	D

11) Glucocorticoids have proved useful in the treatment of which of the following medical conditions? A. Chemotherapy-induced vomiting B. Essential hypertension C. Hyperprolactinemia D. Parkinson's disease E. Type II diabetes	**A**
12) Hydrocortisone exerts the following actions: A. Increases both K+ and Ca2+ excretion B. Decreases both K+ and Ca2+ excretion C. Decreases K+ but increases Ca2+ excretion D. Increases K+ but decreases Ca2+ excretion	A
13) A patient presents with pain and stiffness in his wrists and knees. The stiffness is worse first thing in the morning. A blood test confirms rheumatoid arthritis. You advise a short course of steroids. Which one of the following is the most potent anti-inflammatory steroid? A. Cortisol B. Dexamethasone C. Fludrocortisone D. Prednisone E. Triamcinolone	B
14) A 37-year-old kidney transplant recipient presents to her primary care physician for follow-up. Among other immunosuppressant drugs, she has been taking daily prednisone for the past 2 months since her transplant. With only a few doses of prednisone left, she gets snowed into her house and cannot refill her prescription (but she has enough of the other medications to last a few more weeks). If she runs out of prednisone and cannot get it refilled, what is she most at risk for developing? A. Cardiovascular collapse (adrenal crisis) B. Osteoporosis C. Increased risk of infection D. Insomnia (short-term oral/parenteral) E. Nausea/vomiting (short-term oral/parenteral)	A

15) Corticosteroids are useful in the treatment of all of the following disorders except: A. Addison disease. B. Allergic rhinitis. C. Cushing syndrome. D. Inflammatory bowel disease. E. Rheumatoid arthritis.	C
16) A 67-year-old man injures his shoulder in an ATV accident. Over□the-counter and prescription ibuprofen are unable to control the pain and swelling satisfactorily. The patient asks about glucocorticoid injections, so his doctor begins to explain the myriad effects of glucocorticoids in the body. How might glucocorticoids help this patient? A. Enhance the immune system to protect against possible underlying infection B. Decrease activity of phospholipase A2 C. Improve healing by enhanced collagen production D. Increase blood flow by vasodilation E. Stabilize the joint by causing skeletal muscle hypertrophy	B
17) A patient with Addison disease is being treated with hydrocortisone but is still having problems with dehydration and hyponatremia. Which of the following drugs would be best to add to the patient's therapy? A. Dexamethasone. B. Fludrocortisone. C. Prednisone. D. Triamcinolone.	**B**
18) Which of the following corticosteroids is most appropriate to administer to a woman in preterm labor to accelerate fetal lung maturation? A. Betamethasone. B. Fludrocortisone. C. Hydrocortisone. D. Prednisone.	A
19) Adverse consequences of excess mineralocorticoid action include the following except: A. Na+ and water retention B. Acidosis C. Aggravation of CHF associated myocardial fibrosis D. Rise in blood pressure	B

20) The following glucocorticoid has significant mineralocorticoid activity also: A. Hydrocortisone B. Triamcinolone C. Dexamethasone D. Betamethasone A	A
21) The glucocorticoid receptor is located: A. On the outer surface of the cell membrane B. On the inner surface of the cell membrane C. In the cytoplasm D. Inside the nucleus	C
22) Corticosteroid therapy can aggravate the following disorders except: A. Congenital adrenal hyperplasia B. Diabetes mellitus C. Hypertension D. Peptic ulcer	A
23) All of the following statements about glucocorticoids are correct EXCEPT: a. They may produce peptic ulcers. b. They are useful in the treatment of refractory asthma. c. They are contraindicated in glaucoma. d. They are used in treatment of Addison's disease. e. They exert their effect by binding to receptors in the cell membrane.	E
24) Which of the following synthetic steroids shows predominantly mineralocorticoid action? a. Hydrocortisone b. Spironolactone. c. Dexamethazone. d. Fludrocortisone. e. Cortisone.	D

25) **The following measure can minimize pituitary-adrenal suppression during long-term corticosteroid therapy:** A. Use of betamethasone in place of prednisolone B. Use of prednisolone on alternate days C. Division of the daily dose in three equal 8 hourly doses D. Administration of the total daily dose at bed time	**B**
26) **The following adverse effect of corticosteroids is mainly due to their mineralo-corticoid action:** A. Osteoporosis B. Rise in blood pressure C. 'Moon face' D. Increased susceptibility to infection	B
27) **For limiting cerebral edema due to brain tumour, the preferred corticosteroids are betamethasone/dexamethasone because:** A. They do not cause Na+ and water retention B. They are more potent C. They can be administered intravenously D. They inhibit brain tumors	A
28) **The following are clinical indications of glucocorticoids, EXCEPT:** a. Addison's disease. b. SLE. c. ulcerative colitis. d. Viral infections.	D
29) **Prolonged therapy with glucocorticoids can lead to the following adverse effects, EXCEPT:** a. Increase susceptibility to infections. b. sodium retention and hypokalemia. c. Severe depression. d. Hypoglycemia.	D

30) An adrenocortical drug that is anti-inflammatory in pharmacological doses is: a) Deoxycorticosterone b) Aldosterone c) Cortisol d) Vasopressin e) Oxytocin	C
31) One of the following adverse effect is NOT due to prolonged therapy with corticosteroids: a) Suppression of pituitary-adrenal axis b) increase susceptibility to infections c) Peptic ulceration d) Muscle hypertrophy e) psychological disturbance	**D**
32) All of the following adverse effects commonly occur with glucocorticoid therapy except: A. Glaucoma. B. Increased risk of infection. C. Hypotension. D. Emotional disturbances. E. Peripheral edema	C

MSS

5
Price

LEVEL 1
SEM 2

Phrmacology

DR.MM

L5 MCQ

Case Scenario

1. **A healthy 25-year-old man is undergoing a brief surgical procedure requiring general anesthesia. Intubation and induction of anesthesia using IV succinylcholine and inhaled halothane proceed unremarkably. During surgery the patient develops muscle rigidity and tachycardia, and his temperature rapidly rises.**

A. <u>What is the mechanism of action of succinylcholine?</u>

- *Depolarizing neuromuscular blocker that causes initial stimulation and contraction followed by maintained depolarization and relaxation.*

B. <u>What reaction is occurring in the patient?</u>

- *Malignant hyperthermia (a rare inherited life-threatening disorder that results in tachycardia, muscle rigidity, and high body temperatures caused by a release of calcium ions from the sarcoplasmic reticulum in muscle cells.*

C. <u>What drug should immediately be given to the patient, and what is its mechanism of action?</u>

- *Dantrolene, which acts by interfering with calcium release from the sarcoplasmic reticulum.*

2. **Classify sk ms relaxant ?**
3. **Enumerate peripheral sk ms relaxant with MOA of one of them**
4. **Enumerate central ms relaxant with MOA of one of them ?**
5. **As regard dantrolene , mention MOA , uses , SE**

MCQ pharma MSS 5

1. Which of the following drugs could produce hyperkalemia leading to cardiac arrest especially in patients with excessive burns? a) Baclofen b) Dantrolene c) Tubocurarine d) Succinylcholine	**D**
2. Which drug is most often associated with hypotension caused by histamine release? a) Diazepam b) Tubocurarine c) Pancuronium d) Vecuronium	**B**
3. Post-operative muscle pain may be a side effect of the following neuromuscular blockers: a) Tubocurarine b) Mivacurium c) Atracurium d) Vecuronium e) succinylcholine	**E**
4. Concerning skeletal muscle relaxants, which of the following is INCORRECT: a. Atracurium is a competitive neuromuscular blocker b. Succinylcholine is a depolarizing neuromuscular blocker c. Neostigmine can reverse the action of succinylcholine. d. Benzodiazepines are central muscle relaxants.	**C**

5. Prolonged apnea is sometimes seen in patients who have undergone an operation. Which of the following muscle relaxants could be the cause? a- Tubocurarine b- Succinylcholine c- Mivacurium d- Vecuronium	**B**
6. The underlying cause of the prolonged apnea resulting from succinylcholine is: a- Cardiac arrest b- A mutation in acetyl cholinesterase c- Increased release of nicotine at MEP d- Decreased levels of plasma cholinesterase	**D**
7. When succinylcholine is used to provide muscle relaxation during delivery by cesarean section, the following is true: A. It can cause fetal hypotonia and even fetal paralysis B. It can relax the uterus and aggravate postpartum hemorrhage C. It can cause acute hyperkalemia and arrest the heart of the fetus D. It can cause maternal tachycardia E. It can decrease the effect of general anesthetics	**C**
8. A patient was administered NMB prior to a surgical procedure. This NMB drug caused initial skeletal muscle fasciculations before the onset of paralysis. Its effect could not be reversed with neostigmine. Which of the following neuromuscular blockers was administered to this patient? A. Cisatracurium. B. Succinylcholine. C. Diazepam. D. Tubocurarine. E. Vecuronium	**B**

9. A patient underwent a surgical procedure of 2 h. Anaesthesia was provided by isoflurane, supplemented by intravenous midazolam and a non-depolarizing muscle relaxant. At the end of the procedure, a low dose of atropine was administered followed by pyridostigmine. The main reason for administering atropine was to: A) Block cardiac muscarinic receptors B) Enhance the action of pyridostigmine C) Prevent spasm of gastrointestinal smooth muscle D) Provide postoperative analgesia E) Reverse the effects of the muscle relaxant	**A**
10. Which of the following skeletal muscle relaxants is preferred for endotracheal intubation? A. Botulinum toxin. B. Succinylcholine. C. Diazepam. D. Dantrolene	**B**
11. Which of the following drugs is a non- depolarizing neuromuscular blocker? (a) Succinylcholine (b) Vecuronium (c) Decamethonium (d) Dantrolene sodium	**B**
12. Succinylcholine action when used as an adjunct to general anesthetics during surgery is based on its ability to: a) Block the action of acetylcholine at the motor end plate b) Increase release of acetylcholine from autonomic ganglia c) Increase release of histamine from mast cell d) Inhibit cholinesterase enzyme at the motor end plate e) Enhance sensitivity of the motor end plate to acetylcholine	**A**

13. Which of the following drugs is the most effective in the emergency management of malignant hyperthermia? (A) Atropine (B) Dantrolene (C) Haloperidol (D) Succinylcholine (E) Vecuronium	B
14. Regarding the spasmolytic drugs, which of following is not accurate? A. Baclofen acts on GABA receptors in the spinal cord to increase chloride ion conductance B. Dantrolene has no significant effect on the release of calcium from cardiac muscle C. Diazepam causes sedation at doses commonly used to reduce ms spasms D. Intrathecal use of baclofen is effective in refractory muscle spasticity	A
15. In review of the benzodiazepine class, which of the following agents has the longest duration of action and may be useful in the treatment of a 39-year-old patient with spinal cord injury and with skeletal muscle spasticity? (A) Diazepam (B) Lorazepam (C) Oxazepam (D) Temazepam (E) Triazolam	A
16. Which of the following is used in cosmotic reduction of facial wrinkles, cervical dystonia, blepharospasm: (A) botulinium toxin (B) dantroline (C) succinylecholine (D) baclophen	A

17. Which of the following inhibit release of acetylcholine from nerve terminal leading to s kms paralysis: (A) botulinium toxin (B) dantroline (C) succinylecholine (D) baclofen	A
18. Dantrolene may cause: (A) nephrotoxcicty (B) hepatotoxcicty (C) neurotoxcicity (D) myelotoxcicty	B
19. A 29-year-old woman who has been diagnosed with multiple sclerosis presents to her primary care physician with muscle rigidity and spasms. She also complains of difficulty sleeping, heartburn, and muscle pain. One of the drugs her physician prescribes is baclofen. Which of the following will baclofen do for this patient? (A) Anti-inflammatory to decrease muscle pain (B) Decrease heartburn (C) Relieve muscle spasms (D) Reverse the progression of MS (E) Sleep aid	C
20. At the muscle end-plate, d-tubocurarine reduces the: (a) Number of Na+ Channels (b) Duration for which the Na+ channels remain open (c) Iron conductance of the open Na+ channels (d) Frequency of Na+ channel opening	D

21. Which of the following is applicable to mivacurium? (a) It undergoes Hofmann elimination (b) It is the shortest acting nondepolarizing neuromuscular blocker (c) It is excreted unchanged by kidney (d) It does not cause histamine release	B
22. Baclofen acts as: (a) GABAA receptor agonist (b) GABAB receptor agonist (c) GABAA receptor antagonist (d) GABAB kit receptor antagonist	B
23. Following drug inhibits release of calcium from sarcoplasmic reticulum: (a) Dantrolene (b) Rocuronium (c) Caffeine (d) Succinylcholine	A
24. Dantrolene sodium reduces skeletal muscle tone by: (a) Reducing acetylcholine release from motor nerve ending (b) Suppressing spinal polysynaptic of reflexes (c) Inhibiting the generation of muscle action potential (d) Reducing Ca2+ release from sarcoplasmic reticulum in the muscle fiber	D
25. The following is a skeletal muscle relaxant that acts as a central α2 adrenergic agonist: (a) Tizanidine (b) Brimonidine (c) Chlormezanone (d) Quinine	A

26. Which of the following is NOT true for tizanidine? (a) It is a clonidine congener used in spasticity due to stroke or spinal injury (b) It reduces muscle tone by activating GABAB receptors (c) It inhibits release of excitatory amino acids in spinal interneurons (d) It reduces muscle spasms without producing weakness	B
27. Which of the following is a peripherally acting skeletal muscle relaxant? (a) Pancuronium (b) Baclofen (c) Chlorzoxazone (d) Diazepam	A
28. One of the following is a centrally acting skeletal muscle relaxant: (a) Tizanidine (b) Pipecuronium (c) Atracurium (d) Succinylcholine	A
29. Neuromuscular blocking drugs do not produce central actions because: a) They do not cross the blood-brain barrier (BBB) b) Nicotinic receptors are not present in the brain c) They are sequestrated in the periphery by tight binding to the skeletal muscles d) They do not ionize at the brain pH	A
30. Shortest acting muscle relaxant: (a) Pancuronium (b) Atracurium (c) Mivacurium (d) Vecuronium	C

31. Which one is Depolarizing blocker: (a) Mivacurium (b) Doxacurium (c) Succinyl choline (d) Quinine	C
32. Baclofen is: A. Centrally acting muscle relaxant B. Peripherally acting muscle relaxant C. Both centrally and peripherally acting muscle relaxant D. Direct-acting muscle relaxant	A
33. Which of the following drugs is a nondepolarizing neuromuscular blocker? A. Succinylcholine B. Vecuronium, C. Decamethonium D. Dantrolene sodium	B
34. d-Tubocurarine acts by: A. Inhibiting nicotinic receptors at myoneural junction B. Inhibiting nicotinic receptors at autonomic ganglion C. Producing depolarizing block D. By inhibiting reuptake of acetylcholine	A
35. Which alpha adrenergic agonist act as centrally acting muscle relaxant? A. Tizanidine B. Prazosin C. Tamsulosin D. Phentolamine	A

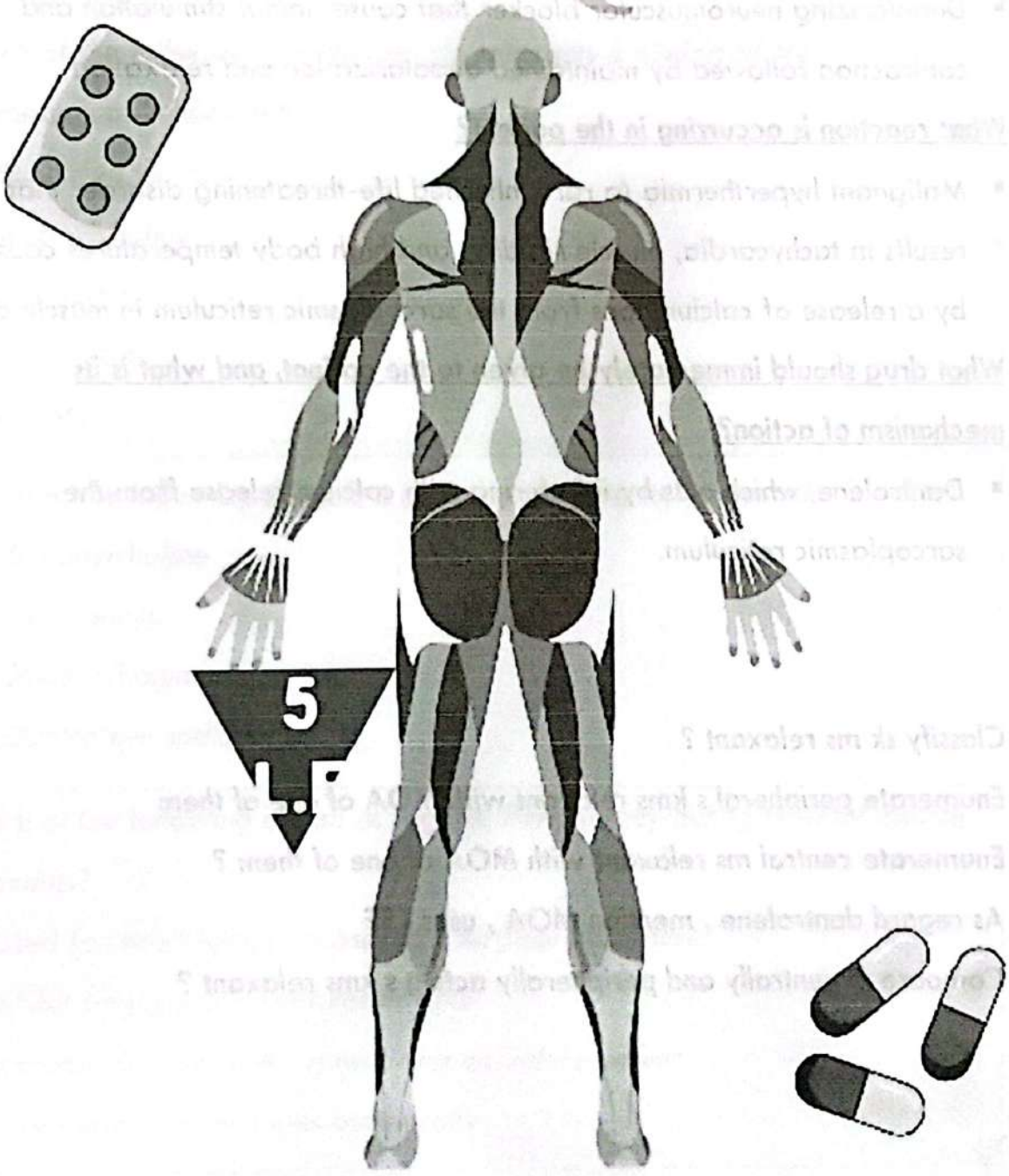
36. Succinylcholine: a. Is used mainly for tracheal intubation. b. Effects can be reversed by neostigmine. c. Has a long duration of action. d. Is a non-depolarizing neuromuscular blocker	A
37. Release of calcium from sarcoplasmic reticulum of skeletal muscle is prevented by: a. Dantarolene b. Tubocurarine c. Baclofen d. Succinylcholine	A
38. A 30 year-old female is being prepared for anesthesia before exploratory surgery for a mass in her neck. In addition to using an inhalation anesthetic, which one of the following drugs is given to cause complete paralysis of the skeletal muscles? a- Baclofen b- Dantrolene c- Atracurium d- Diazepam	C
39. A 22 year-old patient having normal hepatic & renal functions was given a bolus I.V. dose of a neuromuscular blocker with duration of action should have lasted only for 5-10 min. Instead, the patient required mechanical ventilation for over 8 hours. Which statement about this problem is correct? a- The agent administered was atracurium b- This is an example of genetic variation in drug metabolism c- The agent was tubocurarine d- It is due to rapid distribution of the drug into the brain	B

LEVEL 1 - SEMESTER 2

PHARMACOLOGY

MSK

MCQ 5



Dr. M. M.

Case Scenario

1. A healthy 25-year-old man is undergoing a brief surgical procedure requiring general anesthesia. Intubation and induction of anesthesia using IV succinylcholine and inhaled halothane proceed unremarkably. During surgery the patient develops muscle rigidity and tachycardia, and his temperature rapidly rises.

A. **<u>What is the mechanism of action of succinylcholine?</u>**

- *Depolarizing neuromuscular blocker that causes initial stimulation and contraction followed by maintained depolarization and relaxation .*

B. **<u>What reaction is occurring in the patient?</u>**

- *Malignant hyperthermia (a rare inherited life-threatening disorder that results in tachycardia, muscle rigidity, and high body temperatures caused by a release of calcium ions from the sarcoplasmic reticulum in muscle cells.*

C. **<u>What drug should immediately be given to the patient, and what is its mechanism of action?</u>**

- *Dantrolene, which acts by interfering with calcium release from the sarcoplasmic reticulum.*

2. Classify sk ms relaxant ?

3. Enumerate peripheral s kms relaxant with MOA of one of them

4. Enumerate central ms relaxant with MOA of one of them ?

5. As regard dantrolene , mention MOA , uses , SE

6. Compare () centrally and peripherally acting s kms relaxant ?

1. Which of the following is true as regards centrally acting skeletal muscle relaxants? *A. Used for short term purposes like surgical operations* *B. Inhibit polysynaptic reflexes in CNS* *C. Block neuromuscular transmission* *D. Cause muscle paralysis and voluntary movement loss* *E. Practically always given IV*	**B**
2. Which of the following skeletal muscle relaxants is preferred for endotracheal intubation? *A. Botulinum toxin.* *B. Succinylcholine.* *C. Diazepam.* *D. Dantrolene* *E. Baclofen*	**B**
3. Which of the following drugs is a non- depolarizing neuromuscular blocker? *(a) Succinylcholine* *(b) Vecuronium* *(c) Decamethonium* *(d) Dantrolene sodium*	**B**
4. Which of the following is true as regards Peripherally acting skeletal muscle relaxants? *A. Used for short term purposes like surgical operations* *B. Inhibit polysynaptic reflexes in CNS* *c. decrease ms tone without reducing voluntary power* *D. given orally , sometimes parentrally*	**A**

5. Succinylcholine action when used as an adjunct to general anesthetics during surgery is based on its ability to: a) Block the action of acetylcholine at the motor end plate b) Increase release of acetylcholine from autonomic ganglia c) Increase release of histamine from mast cell d) Inhibit cholinesterase enzyme at the motor end plate e) Enhance sensitivity of the motor end plate to acetylcholine	**A**
6. Which of the following drugs is the most effective in the emergency management of malignant hyperthermia? (A) Atropine (B) Dantrolene (C) Haloperidol (D) Succinylcholine (E) Vecuronium	**B**
7. Regarding the spasmolytic drugs, which of following is not accurate? A. Baclofen acts on GABA receptors in the spinal cord to increase chloride ion conductance B. Cyclobenzaprine decreases both oropharyngeal secretions and gut motility C. Dantrolene has no significant effect on the release of calcium from cardiac muscle D. Diazepam causes sedation at doses commonly used to reduce ms spasms E. Intrathecal use of baclofen is effective in refractory cases of muscle spasticity	**A**

8. In review of the benzodiazepine class, which of the following agents has the longest duration of action and may be useful in the treatment of a 39-year-old patient with spinal cord injury and with skeletal muscle spasticity? *(A) Diazepam* *(B) Lorazepam* *(C) Oxazepam* *(D) Temazepam* *(E) Triazolam*	**A**
9. Which of the following is used in cosmotic reduction of facial wrinkles , cervical dystonia , blepharospasm : *(A) botulinium toxin* *(B) dantroline* *(C) succinylecholine* *(D) baclophen*	**A**
10. Which of the following inhibit release of acetylcholine from nerve terminal leading to s kms paralysis : *(A) botulinium toxin* *(B) dantroline* *(C) succinylecholine* *(D) baclofen*	**A**
11. Dantrolene may cause : *(A) nephrotoxcicty* *(B) hepatotoxcicty* *(C) neurotoxcicity* *(D) myelotoxcicty*	**B**

12. Which of the following effective in acute spasm from ms injury and ineffective in cerebral palsy and used in caution in cardiac dse : *(A) baclofen* *(B) dantrolene* *(C) diazepam* *(D) cyclobenzaprine*	**D**
13. A 29-year-old woman who has been diagnosed with multiple sclerosis presents to her primary care physician with muscle rigidity and spasms. She also complains of difficulty sleeping, heartburn, and muscle pain. One of the drugs her physician prescribes is baclofen. Which of the following will baclofen do for this patient? *(A) Anti-inflammatory to decrease muscle pain* *(B) Decrease heartburn* *(C) Relieve muscle spasms* *(D) Reverse the progression of MS* *(E) Sleep aid*	**C**
14. At the muscle end-plate, d-tubocurarine reduces the: *(a) Number of Na+ Channels* *(b) Duration for which the Na+ channels remain open* *(c) Iron conductance of the open Na+ channels* *(d) Frequency of Na+ channel opening*	**D**
15. Which of the following is applicable to mivacurium? *(a) It undergoes Hofmann elimination* *(b) It is the shortest acting nondepolarizing neuromuscular blocker* *(c) It is excreted unchanged by kidney* *(d) It does not cause histamine release*	**B**

16. Baclofen acts as: (a) GABAA receptor agonist (b) GABAB receptor agonist (c) GABAA receptor antagonist (d) GABAB kit receptor antagonist	**B**
17. Following drug inhibits release of calcium from sarcoplasmic reticulum: (a) Dantrolene (b) Rocuronium (c) Caffeine (d) Succinylcholine	**A**
18. Which of the following is a centrally acting skeletal muscle relaxant? (a) Carisoprodol (b) Dantrolene sodium (c) Quinine (d) Decamethonium	**A**
19. Dantrolene sodium reduces skeletal muscle tone by: (a) Reducing acetylcholine release from motor nerve ending (b) Suppressing spinal polysynaptic of reflexes (c) Inhibiting the generation of muscle action potential (d) Reducing Ca2+ release from sarcoplasmic reticulum in the muscle fiber	**D**
20. The following is a skeletal muscle relaxant that acts as a central α2 adrenergic agonist: (a) Tizanidine (b) Brimonidine (c) Chlormezanone (d) Quinine	**A**

21. Which of the following is NOT true for tizanidine? (a) It is a clonidine congener used in spasticity due to stroke or spinal injury (b) It reduces muscle tone by activating GABAB receptors (c) It inhibits release of excitatory amino acids in spinal interneurons (d) It reduces muscle spasms without producing weakness	**B**
22. The mechanism by which central muscle relaxant act by is: (a) Decreasing nerve conduction (b) Inhibiting spinal polysynaptic reflexes (c) Blocking conduction across NM junction (d) Causing CNS depression	**B**
23. Which of the following is a peripherally acting skeletal muscle relaxant? (a) Pancuronium (b) Baclofen (c) Chlorzoxazone (d) Diazepam	**A**
24. One of the following is a centrally acting skeletal muscle relaxant: (a) Tizanidine (b) Pipecuronium (c) Atracurium (d) Succinylcholine	**A**
25. Neuromuscular blocking drugs do not produce central actions because: (a) They do not cross the blood-brain barrier (BBB) (b) Nicotinic receptors are not present in the brain (c) They are sequestrated in the periphery by tight binding to the skeletal muscles (d) They do not ionize at the brain pH	**A**

26. Shortest acting muscle relaxant: (a) Pancuronium (b) Atracurium (c) Mivacurium (d) Vecuronium	C
27. Which one is Depolarizing blocker: (a) Mivacurium (b) Doxacurium (c) Succinyl choline (d) Quinine	C
28. Baclofen is: A. Centrally acting muscle relaxant B. Peripherally acting muscle relaxant C. Both centrally and peripherally acting muscle relaxant D. Direct-acting muscle relaxant	A
29. Which of the following drugs is a nondepolarizing neuromuscular blocker? A. Succinylcholine B. Vecuronium, C. Decamethonium D. Dantrolene sodium	B
30. d-Tubocurarine acts by: A. Inhibiting nicotinic receptors at myoneural junction B. Inhibiting nicotinic receptors at autonomic ganglion C. Producing depolarizing block D. By inhibiting reuptake of acetylcholine	A

31. Which alpha adrenergic agonist act as centrally acting muscle relaxant? A. Tizanidine B. Prazosin C. Tamsulosin D. Phentolamine	A
32. Succinylcholine: a. Is used mainly for tracheal intubation. b. Effects can be reversed by neostigmine. c. Has a long duration of action. d. Is a non-depolarizing neuromuscular blocker.	A
33. Release of calcium from sarcoplasmic reticulum of skeletal muscle is prevented by: a. Dantarolene b. Tubocurarine c. Baclofen d. Succinylcholine	A
34. A 30 year-old female is being prepared for anesthesia before exploratory surgery for a mass in her neck. In addition to using an inhalation anesthetic, which one of the following drugs is given to cause complete paralysis of the skeletal muscles? a- Baclofen b- Dantrolene c- Atracurium d- Diazepam	C

35. A 22 year-old patient having normal hepatic & renal functions was given a bolus I.V. dose of a neuromuscular blocker with duration of action should have lasted only for 5-10 min. Instead, the patient required mechanical ventilation for over 8 hours. Which statement about this problem is correct? *a- The agent administered was atracurium* *b- This is an example of genetic variation in drug metabolism* *c- The agent was tubocurarine* *d- It is due to rapid distribution of the drug into the brain*	***B***

Other MCQ on succinylcholine + curare (practical)

1. Which of the following drugs could produce hyperkalemia leading to cardiac arrest especially in patients with excessive burns? *a- Baclofen* *b- Dantrolene* *c- Tubocurarine* *d- Succinylcholine*	***D***
2. Which drug is most often associated with hypotension caused by histamine release? *a- Diazepam* *B- Tubocurarine* *C- Pancuronium* *d- Vecuronium*	***B***
3. Post-operative muscle pain may be a side effect of the following neuromuscular blockers: *a) Tubocurarine* *b) Mivacurium*	***E***

c) Atracurium d) Vecuronium e) succinylcholine	
4. Which drug is most likely to cause hyperkalemia leading to cardiac arrest in patients with spinal cord injuries? (A) Baclofen (B) Dantrolene (C) Pancuronium (D) Succinylcholine (E) Vecuronium	**D**
5. Concerning skeletal muscle relaxants, which of the following is INCORRECT: a. Atracurium is a competitive neuromuscular blocker b. Succinylcholine is a depolarizing neuromuscular blocker c. Neostigmine can reverse the action of succinylcholine. d. Benzodiazepines are central muscle relaxants.	**C**
6. Prolonged apnea is sometimes seen in patients who have undergone an operation. Which of the following muscle relaxants could be the cause? a- Tubocurarine b- Succinylcholine c- Mivacurium d- Vecuronium	**B**
7. The underlying cause of the prolonged apnea resulting from succinylcholine is: a- Cardiac arrest b- A mutation in acetyl cholinesterase c- Increased release of nicotine at MEP d- Decreased levels of plasma cholinesterase	**D**

8. The following statements are true for neuromuscular blockers EXCEPT: A. Succinylcholine can cause postoperative muscle pain. B. Atracurium undergoes spontaneous plasma hydrolysis C. Vecuronium breakdown products may cause seizures. D. Neostigmine can reverse muscle block caused by competitive blockers E. Synthetic derivatives are generally preferred than d-tubocurarine	C
9. The metabolites of which of the following neuromuscular blockers can lead to seizures? A. d-tubocurarine B. Atracurium C. Mivacurium D. Vecuronium E. Succinylcholine	B
10. When succinylcholine is used to provide muscle relaxation during delivery by cesarean section, the following is true: A. It can cause fetal hypotonia and even fetal paralysis B. It can relax the uterus and aggravate postpartum hemorrhage C. It can cause acute hyperkalemia and arrest the heart of the fetus D. It can cause maternal tachycardia E. It can decrease the effect of general anesthetics	C
11. A patient was administered NMB prior to a surgical procedure. This NMB drug caused initial skeletal muscle fasciculations before the onset of paralysis. Its effect could not be reversed with neostigmine. Which of the following neuromuscular blockers was administered to this patient? A. Cisatracurium. B. Succinylcholine. C. Diazepam. D. Tubocurarine. E. Vecuronium	B

12. A patient underwent a surgical procedure of 2 h. Anaesthesia was provided by isoflurane, supplemented by intravenous midazolam and a nondepolarizing muscle relaxant. At the end of the procedure, a low dose of atropine was administered followed by pyridostigmine. The main reason for administering atropine was to: A) Block cardiac muscarinic receptors B) Enhance the action of pyridostigmine C) Prevent spasm of gastrointestinal smooth muscle D) Provide postoperative analgesia E) Reverse the effects of the muscle relaxant	**A**

1) **Sugammadex is a specific antagonist for which of the following neuromuscularblocker?** A-Vecuronium B-Pancuronium C-Succinylcholine D-Suxamethonium E-Diazepam	A
2) **Which of the following neuromuscular blockers is metabolized by pseudocholinesterase**? A. tubocurarine B. Atracurium C. Cis atracurium D. Vecuronium E. Succinylcholine	E
3) **Which of the following skeletal muscle relaxants is preferred for endotracheal intubation?** a) Botulinum toxin. b) Succinylcholine. c) Diazepam. d) Dantrolene e) Baclofen	B
4) **Which of the following is true as regards centrally acting skeletal muscle relaxants?** A. Used for short term purposes like surgical operations B. Inhibit polysynaptic reflexes in CNS C. Block neuromuscular transmission D. Cause muscle paralysis and voluntary movement loss E. Practically always given IV	B
5) **Which of the following drugs is a non- depolarizing neuromuscular blocker?** (a) Succinylcholine (b) Vecuronium (c) Decamethonium (d) Dantrolene sodium	B

6) Succinylcholine action when used as an adjunct to general anesthetics during surgery is based on its ability to: a) Block the action of acetylcholine at the motor end plate b) Increase release of acetylcholine from autonomic ganglia c) Increase release of histamine from mast cell d) Inhibit cholinesterase enzyme at the motor end plate e) Enhance sensitivity of the motor end plate to acetylcholine	A
7) Which of the following is true as regards Peripherally acting skeletal muscle relaxants? A. Used for short term purposes like surgical operations B. Inhibit polysynaptic reflexes in CNS c. decrease ms tone without reducing voluntary power D. given orally , sometimes parentrally	A
8) Following drug inhibits release of calcium from sarcoplasmic reticulum: a) Dantrolene b) Rocuronium c) Caffeine d) Succinylcholine	A
9) Baclofen acts as: a) GABAA receptor agonist b) GABAB receptor agonist c) GABAA receptor antagonist d) GABAB kit receptor antagonist	B
10) Which of the following drugs is the most effective in the emergency management of malignant hyperthermia? (A) Atropine (B) Dantrolene (C) Haloperidol (D) Succinylcholine (E) Vecuronium	B

11) Baclofen is: A. Centrally acting muscle relaxant B. Peripherally acting muscle relaxant C. Both centrally and peripherally acting muscle relaxant D. Direct-acting muscle relaxant	**A**
12) Which one is Depolarizing blocker: a) Mivacurium b) Doxacurium c) Succinyl choline d) Quinine	**C**
13) Shortest acting muscle relaxant: a) Pancuronium b) Atracurium c) Mivacurium d) Vecuronium	**C**
14) The following is a skeletal muscle relaxant that acts as a central α 2 adrenergic agonist: a) Tizanidine b) Brimonidine c) Chlormezanone d) Quinine	A
15) A 22 year-old patient having normal hepatic & renal functions was given a bolus I.V. dose of a neuromuscular blocker with duration of action should have lasted only for 5-10 min. Instead, the patient required mechanical ventilation for over 8 hours. Which statement about this problem is correct? a- The agent administered was atracurium b- This is an example of genetic variation in drug metabolism c- The agent was tubocurarine d- It is due to rapid distribution of the drug into the brain	**B**

16) **A patient was administered NMB prior to a surgical procedure. This NMB drug caused initial skeletal muscle fasciculations before the onset of paralysis. Its effect could not be reversed with neostigmine. Which of the following neuromuscular blockers was administered to this patient?** A. Cisatracurium. B. Succinylcholine. C. Diazepam. D. Tubocurarine. E. Vecuronium	B
17) **A patient underwent a surgical procedure of 2 h. Anaesthesia was provided by isoflurane, supplemented by intravenous midazolam and a nondepolarizing muscle relaxant. At the end of the procedure, a low dose of atropine was administered followed by pyridostigmine. The main reason for administering atropine was to:** A) Block cardiac muscarinic receptors B) Enhance the action of pyridostigmine C) Prevent spasm of gastrointestinal smooth muscle D) Provide postoperative analgesia E) Reverse the effects of the muscle relaxant	**A**
18) **Post-operative muscle pain may be a side effect of the following neuromuscular blockers:** a) Tubocurarine b) Mivacurium C) Atracurium d) Vecuronium e) succinylcholine	E
19) **Which drug is most often associated with hypotension caused by histamine release?** a- Diazepam B- Tubocurarine C- Pancuronium d- Vecuronium	B

20) The underlying cause of the prolonged apnea resulting from succinylcholine is: a- Cardiac arrest b- A mutation in acetyl cholinesterase c- Increased release of nicotine at MEP d- Decreased levels of plasma cholinesterase	**D**
21) In review of the benzodiazepine class, which of the following agents has the longest duration of action and may be useful in the treatment of a 39-year-old patient with spinal cord injury and with skeletal muscle spasticity? A) Diazepam B) Lorazepa C) Oxazepam D) Temazepam E) Triazolam	**A**
22) Which of the following is used in cosmotic reduction of facial wrinkles, cervical dystonia, blepharospasm : A) batulinium toxin B) dantroline C) succinylecholine D) baclophen	A
23) A 29-year-old woman who has been diagnosed with multiple sclerosis presents to her primary care physician with muscle rigidity and spasms. She also complains of difficulty sleeping, heartburn, and muscle pain. One of the drugs her physician prescribes is baclofen. Which of the following will baclofen do for this patient? A) Anti-inflammatory to decrease muscle pain B) Decrease heartburn C) Relieve muscle spasms D) Reverse the progression of MS E) Sleep aid	C

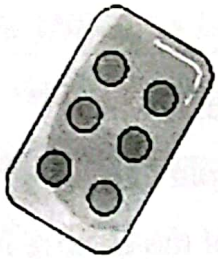
24) Which of the following inhibit release of acetylcholine from nerve terminal leading to s kms paralysis: A) botulinium toxin B) dantroline C) succinylecholine D) baclofen	A
25) Which drug is most likely to cause hyperkalemia leading to cardiac arrest in patients with spinal cord injuries? A) Baclofen B) Dantrolene C) Pancuronium D) Succinylcholine E) Vecuronium	D
26) Which of the following is applicable to mivacurium? a) It undergoes Hofmann elimination b) It is the shortest acting nondepolarizing neuromuscular blocker c) It is excreted unchanged by kidney d) It does not cause histamine release	B

LEVEL 1 · SEMESTER 2

PHARMACOLOGY

MSK

MCQ 3



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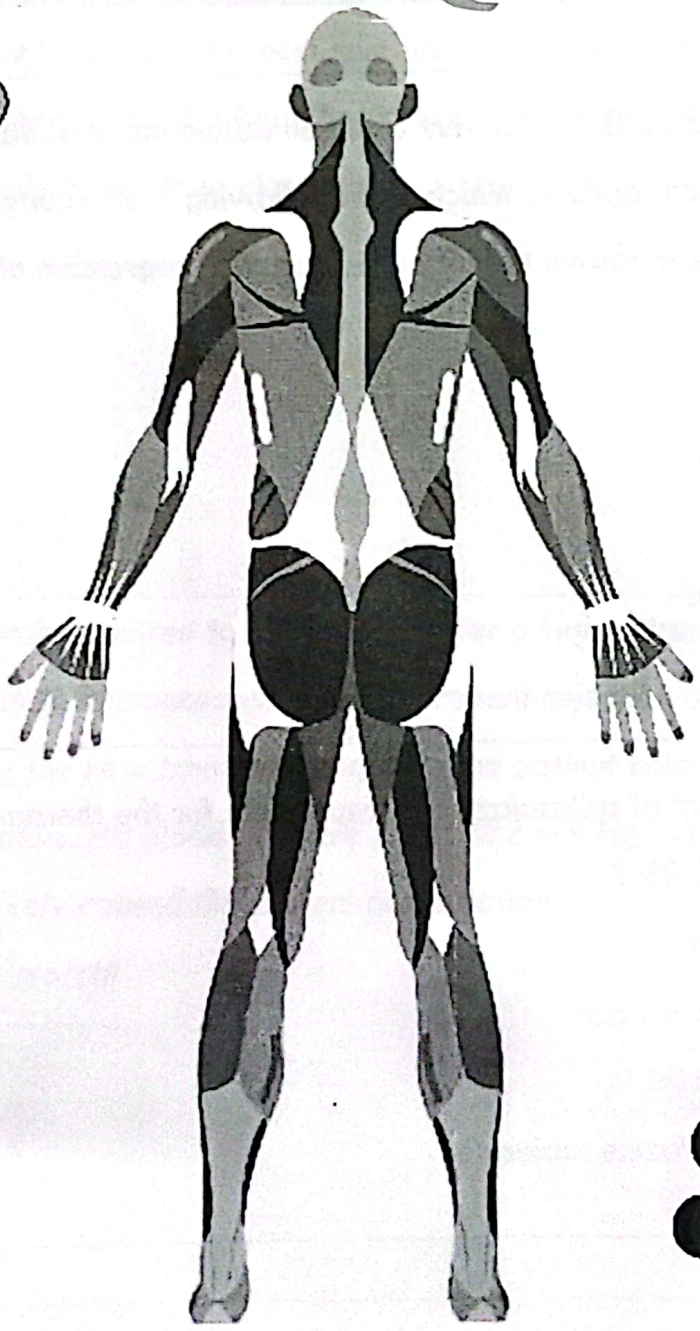

Dr. M. M.

Written pharma MSK 3

1. Mention MOA and side effect of methotrexate ?
2. Mention MOA and side effects of cyclopsporin ?
3. Mention 4 side effects of TNF blocker ?
4. Mention 4 contraindication of TNF alpha blocker ?

MCQ pharma MSK 1

1. Rheumatoid arthritis is a relatively common autoimmune disease, with multiple treatment options. Which of the following is an example of a drug class that has been shown to halt or reverse the progression of this disease in most patients? a) aspirin b) azathioprine c) everolimus d) methotrexate e) prednisone	D
2. Which component of sulfasalazine is responsible for the therapeutic effect in rheumatoid arthritis ? a) Sulfapyridine b) 5–aminosalicylic acid c) Both (a) and (b) d) Intact sulfasalazine molecule	A

3. In a follow-up visit, JQ is still exhibiting significant signs of RA, and has not achieved her therapeutic goal. After some discussion about treatment options, adalimumab (s.c. every 2 weeks) is added to her treatment regimen. Major side effects with this class of medication include: *a) infections & malignancy* *b) mucosal ulcers* *c) osteoporosis* *d) renal impairment*	**A**
4. While TNF-alpha inhibitors are the most commonly used biologic DMARDs, an IL-6 receptor antagonist has also been found to be effective in treating arthritis. An example of this drug class is: *a) abatacept* *b) ankinra* *c) leflunomide* *d) rituximab* *e) tocilizumab*	**E**
5. A 24-year-old man is admitted to the hospital after a kidney transplant. He is placed on appropriate immunosuppression to prevent rejection. About 48 hours after starting the new treatment regimen, the patient complains of a headache and tremors. His blood pressure is 140/82 mm Hg. What medication most likely caused this patient presentation? *a. Mycophenolate mofetil* *b. Azithromycin* *c. Sirolimus* *d. Leflunomide* *e. Cyclosporine*	**E**

6. Which of the following drugs is a recombinant form of an endogenous IL-1 antagonist? a. Abatacept b. Anakinra c. Methotrexate d. Hydroxychloroquine e. Rituximab	B
7. Which of the following is a reserve drug but not a disease modifying drug in rheumatoid arthritis: a) Chloroquine b) Sulfasalazine c) Prednisolone d) Methotrexate	C
8. Disease modifying anti-rheumatic drugs are indicated in rheumatoid arthritis: a. In place of NSAIDs in patients who do not tolerate the latter b. Along with NSAIDs in patients with progressive disease c. Only when NSAIDS fail to afford symptomatic relief d. In all patients irrespective of disease status/ concurrent medication	B
9. What is true of disease modifying anti-rheumatic drugs: a. Their beneficial effect is manifest only after1-3 months of therapy b. The disease does not recurr once they induce remission. c. They are to be used life long d. Concurrent use of more than one disease modifying drug is not recommended	A

10. Which o... alpha?

10. Which one of the following drugs acts by blocking soluble receptors of TNF-alpha? a. Anakinra b. Sulfasalazine c. Methotrexate d. Etanercept e. Leflunomide.	**D**
11. The most common adverse effect of methotrexate is: a. Arrhythmia b. Hepatotoxicity c. Renal failure d. Convulsions e. Hair loss.	**B**
12. Which of the following is disease modifying drug for rheumatoid arthritis? a) Indomethacin b) Celecoxib c) Ibuprofen d) Diclofenac e) Etanercept	**E**
13. Which of the following best describes the mechanism of action of methotrexate? a) increases adenosine levels b) inhibits dihydrofolate reductase c) inhibits IL-6 signal transduction d) small molecule kinase inhibitor e) TNF-alpha receptor antagonist	**B**

14. Which agent of rheumatoid arthritis compete with CD 28 to prevent full T cell activation: a) Sarilumab b) Abatacept c) Golimumab d) Adalimumab e) Certolizomab	**B**
15. Which of the following is JAK inhibitor: a) Abatacept b) Tofacitinib c) Tocalizomab d) Anakinera e) Infliximab	**B**
16. Which one of the following drugs acts by blocking soluble receptors of TNF-α? a. Anakinra b. Sulfasalazine c. Methotrexate d. Etanercept e. Leflunomide.	**D**
17. Which of the following regarding Infliximab is WRONG: a. An important drug in treatment of rheumatoid arthritis b. Contraindicated in acute and chronic infections c. A recombinant protein that interferes with TNF-α d. Contraindicated in recent malignancies e. Monoclonal antibody	**C**

18. Which of the following DMARDs is recombinant protein that interferes with TNF-α by acting as a decoy receptor that binds to TNF and prevents it from binding to its receptors? a. Infliximab b. Etanercept c. Leflunomide. d. Sulfasalazine. c. Anakinra	**B**
19. Which of the following drug is used in bridging therapy in patient with arthritis? a) Leflunomide. b) Corticosteroids. c) Sulfasalazine d) Celecoxib. e) Anakinra	**B**
20. Which one of the following drugs acts as monoclonal antibodies for TNF-α? a) Anakinra. b) Sulfasalazine. c) Infliximab. d) Methotrexate. e) Etanercept.	**C**
21. Which of the following is disease modifying drug for rheumatoid arthritis? a) Indomethacin b) Celecoxib c) Ibuprofen d) Diclofenac e) Etanercept	**E**

22. Which one of the following anti-inflammatory drugs used in rheumatoid arthritis can bind directly tumor necrosis factor? A. Etanercept B. Sulfasalazine C. Prednisone D. Celecoxib E. Penicillamine	**A**
23. Which of the following patient characteristics is the most compelling reason for avoiding celecoxib in the treatment of rheumatoid arthritis? (A) History of alcohol abuse (B) History of gout (C) History of myocardial infarction (D) History of osteoporosis (E) History of peptic ulcer disease	**C**
24. Which of the following is a reserve drug but not a disease modifying drug in rheumatoid arthritis: A. Chloroquine B. Sulfasalazine C. Prednisolone D. Methotrexate	**C**
25. All the following drugs can be used in the treatment of rheumatoid arthritis EXCEPT: A. Methotrexate B. Gold C. Leflunomide D. Prednisolone E. Colchicine	**E**

26. TNF-α is an example of: A. Eicosanoids B. Interleukins C. Cytotoxic factors D. Interferons E. Colony stimulating factors	**C**
27. Which statement correctly represents the mechanism of action of Tofacitinib in treatment of RA? A. Dihydrofolate reductase inhibitor B. Janus kinase inhibitor C. IL-6 receptors blocker D. TNF-œ inhibitor E. IL-1 receptors blocker	**B**
28. Which of the following is an Interleukin-6 receptor antagonist that has also been found to be effective in treating Rheumatoid Arthritis? a) Abatacept b) Anakinra c) Leflunamide d) Rituximab e) Tocilizumab	**E**
29. Which of the following inhibit phagocytic function and stabilize lysosomes : a) Abatacept b) Anakinra c) Leflunamide d) cloroquine e) methotrexate	**D**

1. mention mechanism of action of aspirin

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2. mention mechanism of antipyretic effect of NSAIDs

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3. mention mechanism of aspirin in antiplatelet action

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4. why small dose aspirin in antithrombotic action

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5. when we must stop aspirin & other NSAIDs before operation

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6. enumerate renal effects of NSAIDs

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7. Enumerate therapeutic uses of aspirin

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8. Enumerate one side effect of aspirin on the

1.GIT..... 2.Renal.....

3.Hepatic..... 4.reproductive.....

9. enumerate 4 contraindications of use of aspirin

10. Compare between selective and non selective COX (mechanism – gastric effects – renal effects – thrombotic effects)

11. Enumerate therapeutic uses of paracetamol.

12. Enumerate 4 lines of ttt of paracetamol toxicity

موجود في الكتاب والعمل

13. Enumerate anti inflammatory effects of glucocorticoid

14. Enumerate indication of use of glucorticoids

15. Mention features of cushing syndrome

16. Enumerate 6 side effects of cortisol

17. Enumerate aims of drug ttt in Rh arthritis.

18. Enumerate mechanism of methotrexate ?

19. Enumerate side effects of methotrexate?

20. Enumerate mechanism of action and 2 side effects of leflunamide?

21. Enumerate 3 side effects of hydroxycholoroquine?

22. Enumerate 2 side effects of sulphasalazine

23. Enumerate 3 side effects of cyclosporine

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24. Mention mechanism of the following

- Anakinra.....
  .....
- Infliximab.....
  .....
- Tocilizumab.....
  .....
- abatacept.....
  .....

25. enumerate side effects of TNF alpha inhibitors

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26. Enumerate contraindication of TNF alpha inhibitors

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Level 1 Semester 2

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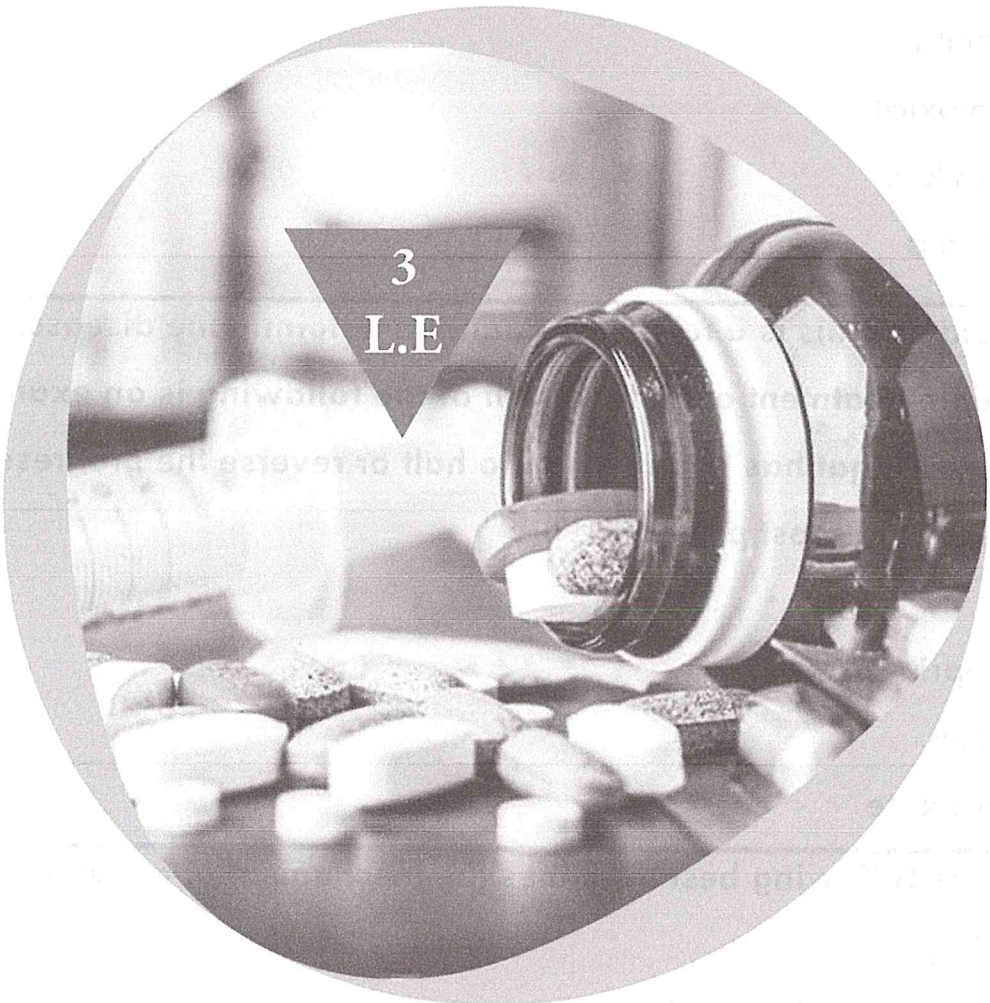
MSS module

PHARMACOLOGY



Lecture 3 MCQ

DR. ELSAWY

MCQ

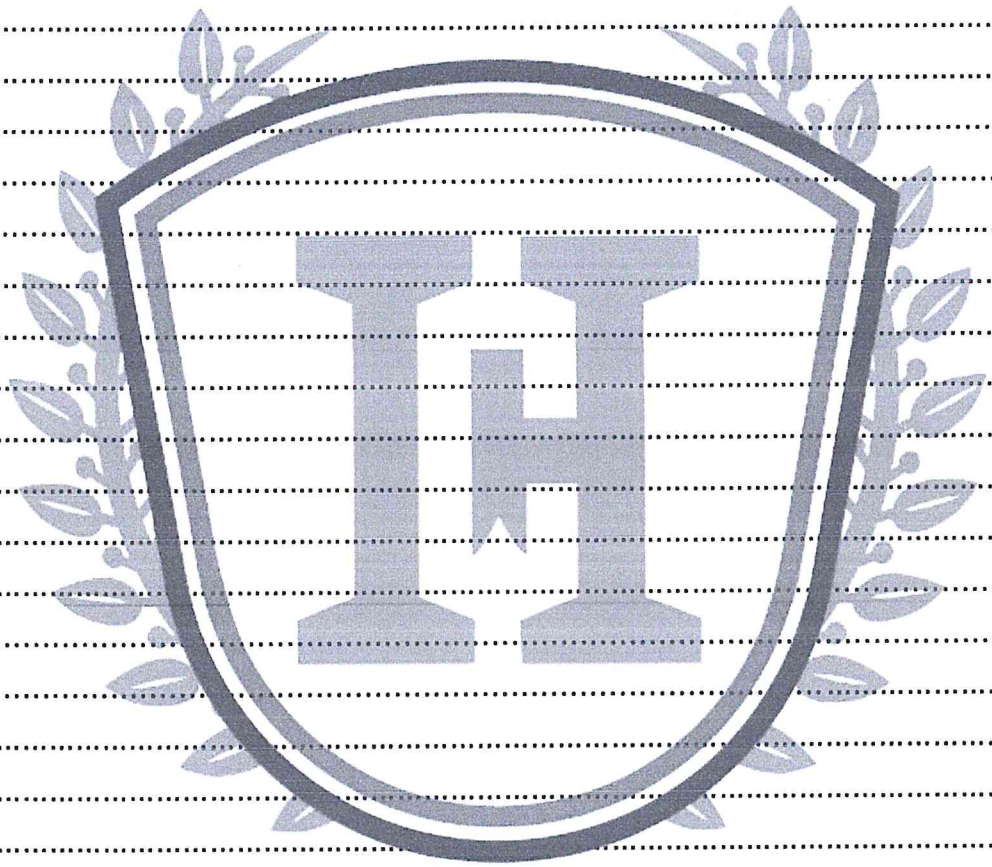
1. Which component of sulfasalazineis responsible for the therapeutic effect in rheumatoid arthritis ? a) Sulfapyridine b) 5–aminosalicylic acid c) Both (a) and (b) d) Intact sulfasalazinemolecule	**A**
2. The most common adverse effect of methotrexate is: (1/2019) a. Arrhythmia b. Hepatotoxicity c. Renal failure d. Convulsions	**B**
3. Rheumatoid arthritis is a relatively common autoimmune disease, with multiple treatment options. Which of the following is an example of a drug class that has been shown to halt or reverse the progression of this disease in most patients? a. Aspirin b. Azathioprine c. Everolimus d. Methotrexate	**D**
4. Which of the following best describes the mechanism of action of methotrexate ? a. increases adenosine levels b. inhibits dihydrofolate reductase c. inhibits IL-6 signal transduction d. small molecule kinase inhibitor	**B**

5. While TNF-alpha inhibitors are the most commonly used biologic DMARDs, an IL-6 receptor antagonist has also been found to be effective in treating arthritis. An example of this drug class is: a. tocilizumab b. ankinra c. leflunomide d. rituximab	A
6. Which of the following is disease modifying drug for rheumatoid arthritis? a. Indomethacin b. Celecoxib c. Ibuprofen d. Diclofenac e. Etanercept	E
7. Which of the following has been shown to reverse progression of rheumatoid arthritis in most patients? a) aspirin b) azathioprine c) everolimus d) methotrexate	D
8. What is true of disease modifying anti-rheumatic drugs: a. Their beneficial effect is manifest only after1-3 months of therapy b. The disease does not recurr once they induce remission. c. They are to be used life long d. Concurrent use of more than one disease modifying drug is not recommended	A

9. In a follow-up visit, Ahmed is still exhibiting significant signs of RA. After some discussion about treatment options, adalimumab (s.c. every 2 weeks) is added to treatment regimen. Major side effects with this class of medication include: a) infections & malignancy b) mucosal ulcers c) osteoporosis d) renal impairment	**A**
10.Which one of the following drugs INHIBT TNF-α? a. Anakinra b. Sulfasalazine c. Methotrexate d. Etanercept	**D**
11.Which of the following is a reserve drug but not a disease modifying drug in rheumatoid arthritis: a) Chloroquine b) Sulfasalazine c) Prednisolone d) Methotrexate	**C**
12.Disease modifying antirheumatic drugs are indicated in rheumatoid arthritis: a. In place of NSAIDs in patients who do not tolerate the latter b. Along with NSAIDs in patients with progressive disease c. Only when NSAIDS fail to afford symptomatic relief d. In all patients irrespective of disease status/ concurrent medication	**B**

13.A 24-year-old man is admitted to the hospital after a kidney transplant. He is placed on appropriate immunosuppression to prevent rejection. About 48 hours after starting the new treatment regimen, the patient complains of a headache and tremors. His blood pressure is 140/82 mm Hg. What medication most likely caused this patient presentation? a. Mycophenolate mofetil b. Azithromycin c. Sirolimus d. Cyclosporine	**D**

Notes



1) The pharmacologic effects of acetylsalicylic acid include: A- Reduction of high body temperature B- Promotion of platelet aggregation C- Reduction of pain by stimulation of PGs synthesis D- Less gastric irritation than other NSAIDs	A
2) Which of the following statements concerning the anti□inflammatory effect of NSAIDs are TRUE? A. Anti-inflammatory effect of NSAIDs results from inhibition of cyclooxygenase B. Anti-inflammatory effect of NSAIDs results from inhibition of phospholipase A2 and reducing prostaglandin and leukotriene synthesis C. Anti-inflammatory effect of NSAIDs results from induction of cyclooxygenase II expression which results in reducing the amount of an enzyme available to produce prostoglandins D. All of the above	**A**
3) The following statements concerning aspirin are true, EXCEPT: A. In contrast to most other NSAIDs, aspirin irreversibly inhibits COX B. Aspirin interferes with the chemical mediators of the kallikrein system C. Aspirin inhibits phospholipase A2 D. Aspirin inhibits tromboxane A2 formation	C
4) Indication for aspirin administration are the following, EXCEPT: A. Inflammatory conditions B. Decreasing the incidence of transient ischemic attack, unstable angina, coronary artery thrombosis with myocardial infarction, and thrombosis after coronary artery bypass grafting C. Relieving severe visceral pain(myocardial infarction, cancer pain condition, renal or biliary colic) D. Reducing elevated body temperature	C
5) **Use of aspirin in children with viral disease is associated with**: A. Metabolic acidosis B. Reye's syndrome C. Renal tubular acidosis D. Fixed drug eruption E. Ototoxicity	B

6) Therapeutic uses of aspirin include: A. Prophylaxis of migraine. B. Treatment of hypertension with pregnancy. C. Prevent the progress of joint destruction in rheumatic fever. D. Delayed labour E. Treatment of thrombocytopenia	C
7) What is the mechanism of action of ibuprofen? A. Non selective of COX enzyme inhibitor B. Selective Cox -2 inhibitor C. Phospholipase A2 inhibitor D. Lipooxygenase enzyme inhibitor E. Kallikrein system inhibitor	A
8) A 52-year-old man with chronic low back pain. He is complaining from severe hyperacidity. Which of the following agents may improve his pain without worsening his gastrointestinal symptoms? (A) Aspirin b) Celecoxib (C) Ketorolac d) diclofenac (E) Indomethacin	B
9) As regards selective COX-II inhibitors, which of the following is TRUE. A. May decrease incidence of thrombosis. B. Has less anti-inflammatory effect than the non-selective COX inhibitors. C. Are relatively safer than non-selective. D. Produce similar gastric mucosal damage. E. Has greater antipyretic effect	C
10) All of the following are undesirable effects of aspirin EXCEPT: a) Gastritis with focal erosions b) Tolerance and physical addiction c) Bleeding due to a decrease of platelet aggregation d) Reversible renal insufficiency e) Rey's syndrome	B

11) Which of the following property combinations is peculiar to the majority of NSAIDs? A. Antihistaminic, antipyretic, analgesic B. Analgesic, immunosuppressive, anti-inflammatory, C. Antipyretic, analgesic, anti-inflammatory D. Anti-inflammatory, immunosuppressive, antihistaminic E. Narcotic, analgesic, anti-inflammatory	C
12) Ibuprofen does not reduce the synthesis of one of the following eicosanoids: A. TXA2 B. PGE2 C. PGF2a D. LTB4 E. PGI2	D
13) Which of the following NSAIDs is a selective COX-2 inhibitor? A. Piroxicam B. Indomethacin C. Celecoxib D. Diclofenac E. Morphine	**C**
14) One of the following is not a side effect shared by NSAIDs: A. Physical dependence B. Gastrointestinal ulceration C. Hypersensitivity D. Nephropathy E. Nausea and vomiting	A
15) Which of the following drugs inhibit platelet cyclooxygenase irreversibly? A. Alprostadil B. Aspirin C. Ibuprofen D. Prednisolone E. Acetaminophen	**B**

16) The therapeutic efficacy of antihypertensive drugs is blunted by NSAIDS because they: A. Cause sodium excretion B. Increase the clearance of antihypertensive drugs C. Decrease the absorption of antihypertensive drugs D. Decrease the synthesis of vascular prostacyclin e. Cause nephropathy	**D**
17) Aspirin is used in the prophylaxis of myocardial infarction because it results in: A. Inhibition of thromboxane synthetase B. Inhibition of cyclooxygenase in platelets C. Decreased serum lipids D. Coronary steal phenomenon E. Coronary vasodilator	B
18) Which of the following statements is not true about NSAIDs? A. Acetyl salicylic acid is an irreversible inhibitor of COX enzyme. B. Acetyl salicylic acid reduces in vivo synthesis of prostaglandins. C. Its clearance is independent of plasma concentration D. Antiplatelet effect of low dose aspirin is related to pre-systemic COX inhibition E. Alkalization of urine increases aspirin excretion	D
19) Among NSAIDs aspirin is unique because it: A. Irreversibly inhibits its target enzyme B. Reduces the risk of colon cancer C. Reduces fever D. Selectively inhibits COX-2 enzyme E. Analgesic	A
20) Which of the following patient characteristics is a possible reason for the use of celecoxib in the treatment of arthritis? A. History of severe rash after treatment with a sulfonamide antibiotic B. History of gout C. History of peptic ulcer disease D. History of type 2 DM E. History of myocardial infarction	C

21) Aspirin inhibits which of the following enzymes? A. Lipoprotein lipase B. Lipoxygenase C. Cyclooxygenase D. Phospholipase D E. Phospholipase A2	C
22) The effect of indomethacin on Cox enzyme is: a) Reversible b) Irreversible c) Selective d) Irreversible & nonselective	**A**
23) Aspirin could be used prophylactically in: a) pulmonary edema b) heart failure c) peptic ulcers d) thrombotic disorder e) metabolic acidosis	D
24) The effect of aspirin on Cox enzyme is: a) Reversible b) Irreversible c) Selective d) Irreversible & nonselective	**D**
25) The following statements about aspirin are correct EXCEPT: A. May cause GIT hemorrhage after a single dose B. Enteric-coated tablets cause less gastric bleeding C. May cause metabolic alkalosis in high doses D. May cause Rye's syndrome in children E. Its toxicity may require treatment with hemodialysis	C

26) Which one of the following can increase platelet aggregation? a) Ketanerine b) Meloxicam. c) Sulphinpyrazone. d) Aspirin. e) Epoprostenol.	B
27) Which statement below is accurate regarding aspirin overdose? A. N-acetylcysteine should be given immediately B. The metabolism rate of aspirin is first-order C. Elimination rate is directly proportional to plasma concentration. D. Increasing urinary pH would be beneficial E. Plasma concentrations decrease exponentially with time	D
28) **When aspirin is given concomitantly with other drug the following interaction may occur**: a. Potentiating the diuretic effect of furosemide. b. Potentiating of anticoagulation effect of warfarin. c. Increase uricosuric effect of probenecid d. Increase antihypertensive effect of B-blockers. e. Decrease free plasma level of phenytoin.	B
29) Inflammation is a complex tissue reaction that includes the release of cytokines, leukotrienes, prostaglandins, and peptides. Prostaglandins involved in inflammatory processes are typically produced from arachidonic acid by which of the following enzymes? A.Cyclooxygenase-1 B.Cyclooxygenase-2 C. Glutathione-S-transferase D.Lipoxygenase E. Phospholipase A2	B

30) One of the following is an example of acetic acid derivatives of NSAIDs: a. Ibuprofen b. Acetaminophen c. Piroxicam d. Celecoxib e. Indomethacin	E
31) One of the following is selective inhibitor of COX3 enzyme: a) Meloxicam. b) Acetaminophen. c) Piroxicam. d) Sulindac. e) Celecoxib.	B
32) As regards selective COX-2 Inhibitor: a) May increase incidence of thrombosis. b) Has less anti-inflammatory effect than the non-selective COX inhibitors c) Are relatively safer than non-selective. d) Produce similar gastric mucosal damage. e) Has greater antipyretic effect	**A**
33) Which of the following is an analgesic and antipyretic drug that lacks ananti-inflammatory action? a) Acetaminophen b) Celecoxib c) Colchicine d) Indomethacin e) Probenecid	A
34) Inflammation is a complex tissue reaction that includes the release of cytokines, leukotrienes, prostaglandins, and peptides. Prostaglandins involved in inflammatory processes are typically produced from arachidonic acid by which of the following enzymes? (A) Cyclooxygenase-1 (B) Cyclooxygenase-2 (C) Glutathione-S-transferase (D) Lipoxygenase (E) Phospholipase A2	B

35) A 17-year-old patient complains of wheezing and severe dyspnea whenever he takes aspirin for headache. Which of the following agents may be responsible for this complains? a. Prostaglandins. b. Thromboxanes c. Leukotrienes. d. Endothelins e. Kinins.	**C**

1) A 52-year-old man with chronic low back pain. He is complaining from severe hyperacidity. Which of the following agents may improve his pain without worsening his gastrointestinal symptoms? (A) Aspirin (B) Celecoxib (C) Ketorolac (D) diclofenac	B
2) Acetaminophen is a potent analgesic and antipyretic NSAID butdiffers from other agents in that it has no anti-inflammatory action.Which of the following reasons explains this unique aspect of acetaminophen? A. the distribution of acetaminophen does not reach peripheral sitesof inflammation B. acetaminophen is not an inhibitor of the COX enzyme C. antiinflammatory doses of acetaminophen are too high and toxic D. it is selective for a newly discovered isozyme of COX E. acetaminophen undergoes significant first-pass metabolism	D
3) Which of the following statements concerning the anti□inflammatory effect of NSAIDs are TRUE? A. Anti-inflammatory effect of NSAIDs results from inhibition of cyclooxygenase B. Anti-inflammatory effect of NSAIDs results from inhibition of phospholipase A2 and reducing prostaglandin and leukotriene synthesis C. Anti-inflammatory effect of NSAIDs results from induction of cyclooxygenase II expression which results in reducing the amount of an enzyme available to produce prostoglandins D. All of the above	**A**
4) The following statements concerning aspirin are true, EXCEPT: A. In contrast to most other NSAIDs, aspirin irreversibly inhibits COX B. Aspirin interferes with the chemical mediators of the kallikrein system C. Aspirin inhibits phospholipase A2 D. Aspirin inhibits tromboxane A2 formation	C

5) Which of the following NSAIDs is a selective COX-2 inhibitor? A. Piroxicam B. Indomethacin C. Celecoxib D. Diclofenac	C
6) Which of the following NSAIDs is a nonselective COX inhibitor A. Piroxicam B. Rofecoxib C. Celecoxib D. All of the above	A
7) Which one of the following analgesic agents inhibits mainly COX in CNS? a) Morphine b) Paracetamol b) Ketorolac d) Ibuprofen	B
8) The pharmacologic effects of acetylsalicylic acid include: A- Reduction of high body temperature B- Promotion of platelet aggregation C- Reduction of pain by stimulation of PGs synthesis D- Less gastric irritation than other NSAIDs	A
9) Acetaminophen a) is primarily used in ischemic heart diseases b) is an aspirin substitute for analgesia and antipyresis in children c) has no associated liver toxicity with chronic use of large doses d) is not given to children because it causes flu-like symptoms	B
10) Which one of the following non-narcotic agents inhibits mainly cyclooxygenase (COX) in CNS? a) Morphine b) Paracetamol c) Ketorolac d) Acetylsalicylic acid e) Ibuprofen	B

11) One of the following is selective inhibitor of COX3 enzyme: a) Meloxicam. b) Acetaminophen. c) Piroxicam. d) Sulindac. e) Celecoxib.	B
12) Which of the following is an analgesic and antipyretic drug that lacks an ant inflammatory action? a) Acetaminophen b) Celecoxib c) Colchicine d) Indomethacin e) Probenecid	A
13) Which treatment is critical to administer within 8 hours of acetaminophen overdose to prevent liver damage? A. Gastric lavage B. Hemodialysis C. Oral methionine D. N-acetylcysteine E. Activated charcoal	D
14) Which of the following is a therapeutic use of acetaminophen? A. Treatment of rheumatoid arthritis B. Analgesic in patients with peptic ulcer disease C. Prophylaxis for myocardial infarction D. Reduction of gout-related inflammation E. Management of hypertension	**B**
15) Indication for aspirin administration are the following, EXCEPT: A. Inflammatory conditions B. Decreasing the incidence of transient ischemic attack, unstable angina, coronary artery thrombosis with myocardial infarction, and thrombosis after coronary artery bypass grafting C. Relieving severe visceral pain(myocardial infarction, cancer pain condition, renal or biliary colic) D. Reducing elevated body temperature	**C**

1) Corticosteroids such as hydrocortisone: a) May increase glycogen storage in liver. b) Prevent sodium retention and potassium loss. c) Interact with membrane-bound steroid receptor. d) Have an anti-inflammatory effect.	**D**
2) A 66-year-old woman with a history of Cushing's disease treated with oral glucocorticoids presents to her primary care physician for follow-up. She was recently hospitalized for a hip fracture following a fall. What is the most likely mechanism for hip fracture in this patient? a) Increased intestinal calcium absorption b) Increased sex hormone synthesis c) Inhibition of bone formation d) Osteoarthritis e) Osteochondroma	C
3) One of the following adverse effects is not due to prolonged therapy with corticosteroids? a) Suppression of pituitary-adrenal axis b) Increased susceptibility to infection c) Peptic ulceration d) Muscle hypertrophy e) Psychological disturbance	D
4) Glucocorticoids have not been proved to be effective in the treatment of: a) Acute lymphocytic leukemia. b) Chemotherapy-induced vomiting. c) Addison's disease. d) Osteoporosis e) Asthma.	**D**
5) An adrenocortical drug that is anti-inflammatory in pharmacologic doses is: a) Deoxy corticosterone b) Aldosterone. c) Cortisol d) Vasopressin	**C**

6) Oral prednisolone therapy is indicated in treatment of: a) Peptic Ulcer b) Systemic lupus erythematosus c) Osteoporosis d) Diabetes Miletus e) Cushing Syndrome	**B**
7) Which of the following synthetic steroids is given as mineralocorticoid replacement in adrenal insufficiency? a) Betamethasone. b) Triamcinolone. c) Dexamethasone. d) Methylprednisolone. e) Fludrocortisone.	E
8) The following has the highest mineralocorticoid effect: a) Dexamethasone b) Fludrocortisone c) Triamcinolone d) Hydrocortisone	B
9) Which of the following is a pharmacologic effect of exogenous glucocorticoids? A. Increased muscle mass B. Hypoglycemia C. Inhibition of leukotriene synthesis D. Improved wound healing E. Increased excretion of salt and water	C
10) A 34-year-old woman with ulcerative colitis has required long-term treatment with pharmacologic doses of a glucocorticoid agonist. Which of the following is a toxic effect associated with long-term glucocorticoid treatment? A. A lupus-like syndrome B. Adrenal gland neoplasm C. Hepatotoxicity D. Osteoporosis E. Precocious puberty in children	D

11) Glucocorticoids have proved useful in the treatment of which of the following medical conditions? A. Chemotherapy-induced vomiting B. Essential hypertension C. Hyperprolactinemia D. Parkinson's disease E. Type II diabetes	**A**
12) Hydrocortisone exerts the following actions: A. Increases both K+ and Ca2+ excretion B. Decreases both K+ and Ca2+ excretion C. Decreases K+ but increases Ca2+ excretion D. Increases K+ but decreases Ca2+ excretion	A
13) A patient presents with pain and stiffness in his wrists and knees. The stiffness is worse first thing in the morning. A blood test confirms rheumatoid arthritis. You advise a short course of steroids. Which one of the following is the most potent anti-inflammatory steroid? A. Cortisol B. Dexamethasone C. Fludrocortisone D. Prednisone E. Triamcinolone	B
14) A 37-year-old kidney transplant recipient presents to her primary care physician for follow-up. Among other immunosuppressant drugs, she has been taking daily prednisone for the past 2 months since her transplant. With only a few doses of prednisone left, she gets snowed into her house and cannot refill her prescription (but she has enough of the other medications to last a few more weeks). If she runs out of prednisone and cannot get it refilled, what is she most at risk for developing? A. Cardiovascular collapse (adrenal crisis) B. Osteoporosis C. Increased risk of infection D. Insomnia (short-term oral/parenteral) E. Nausea/vomiting (short-term oral/parenteral)	A

15) Corticosteroids are useful in the treatment of all of the following disorders except: A. Addison disease. B. Allergic rhinitis. C. Cushing syndrome. D. Inflammatory bowel disease. E. Rheumatoid arthritis.	C
16) A 67-year-old man injures his shoulder in an ATV accident. Over□the-counter and prescription ibuprofen are unable to control the pain and swelling satisfactorily. The patient asks about glucocorticoid injections, so his doctor begins to explain the myriad effects of glucocorticoids in the body. How might glucocorticoids help this patient? A. Enhance the immune system to protect against possible underlying infection B. Decrease activity of phospholipase A2 C. Improve healing by enhanced collagen production D. Increase blood flow by vasodilation E. Stabilize the joint by causing skeletal muscle hypertrophy	B
17) A patient with Addison disease is being treated with hydrocortisone but is still having problems with dehydration and hyponatremia. Which of the following drugs would be best to add to the patient's therapy? A. Dexamethasone. B. Fludrocortisone. C. Prednisone. D. Triamcinolone.	**B**
18) Which of the following corticosteroids is most appropriate to administer to a woman in preterm labor to accelerate fetal lung maturation? A. Betamethasone. B. Fludrocortisone. C. Hydrocortisone. D. Prednisone.	A
19) Adverse consequences of excess mineralocorticoid action include the following except: A. Na+ and water retention B. Acidosis C. Aggravation of CHF associated myocardial fibrosis D. Rise in blood pressure	B

20) The following glucocorticoid has significant mineralocorticoid activity also: A. Hydrocortisone B. Triamcinolone C. Dexamethasone D. Betamethasone A	A
21) The glucocorticoid receptor is located: A. On the outer surface of the cell membrane B. On the inner surface of the cell membrane C. In the cytoplasm D. Inside the nucleus	C
22) Corticosteroid therapy can aggravate the following disorders except: A. Congenital adrenal hyperplasia B. Diabetes mellitus C. Hypertension D. Peptic ulcer	A
23) All of the following statements about glucocorticoids are correct EXCEPT: a. They may produce peptic ulcers. b. They are useful in the treatment of refractory asthma. c. They are contraindicated in glaucoma. d. They are used in treatment of Addison's disease. e. They exert their effect by binding to receptors in the cell membrane.	E
24) Which of the following synthetic steroids shows predominantly mineralocorticoid action? a. Hydrocortisone b. Spironolactone. c. Dexamethazone. d. Fludrocortisone. e. Cortisone.	D

25) **The following measure can minimize pituitary-adrenal suppression during long-term corticosteroid therapy:** A. Use of betamethasone in place of prednisolone B. Use of prednisolone on alternate days C. Division of the daily dose in three equal 8 hourly doses D. Administration of the total daily dose at bed time	**B**
26) **The following adverse effect of corticosteroids is mainly due to their mineralo-corticoid action:** A. Osteoporosis B. Rise in blood pressure C. 'Moon face' D. Increased susceptibility to infection	B
27) **For limiting cerebral edema due to brain tumour, the preferred corticosteroids are betamethasone/dexamethasone because:** A. They do not cause Na+ and water retention B. They are more potent C. They can be administered intravenously D. They inhibit brain tumors	A
28) **The following are clinical indications of glucocorticoids, EXCEPT:** a. Addison's disease. b. SLE. c. ulcerative colitis. d. Viral infections.	D
29) **Prolonged therapy with glucocorticoids can lead to the following adverse effects, EXCEPT:** a. Increase susceptibility to infections. b. sodium retention and hypokalemia. c. Severe depression. d. Hypoglycemia.	D

30) An adrenocortical drug that is anti-inflammatory in pharmacological doses is: a) Deoxycorticosterone b) Aldosterone c) Cortisol d) Vasopressin e) Oxytocin	C
31) One of the following adverse effect is NOT due to prolonged therapy with corticosteroids: a) Suppression of pituitary-adrenal axis b) increase susceptibility to infections c) Peptic ulceration d) Muscle hypertrophy e) psychological disturbance	**D**
32) All of the following adverse effects commonly occur with glucocorticoid therapy except: A. Glaucoma. B. Increased risk of infection. C. Hypotension. D. Emotional disturbances. E. Peripheral edema	C

1) **Rheumatoid arthritis is a relatively common autoimmune disease, with multiple treatment options. Which of the following is an example of a drug class that has been shown to halt or reverse the progression of this disease in most patients?** a. Aspirin b. Azathioprine c. Everolimus d. Methotrexate e. Prednisone	**D**
2) **Which component of sulfasalazine is responsible for the therapeutic effect in rheumatoid arthritis ?** a. Sulfapyridine b. 5–aminosalicylic acid c. Both (a) and (b) d. Intact sulfasalazine molecule	**A**
3) **JQ is a 40-year-old golfer who has developed a progressively more painful stiffness in her arms and legs over the past year. During her most recent medical checkup, her lab results reveal an elevated rheumatoid factor level. X-ray imaging confirmed diagnosis of RA and she is prescribed methotrexate. Which of the following best describes the mechanism of action of this drug?** a. Increases adenosine levels b. Inhibits dihydrofolate reductase c. Inhibits IL-6 signal transduction d. Small molecule kinase inhibitor e. TNF-alpha receptor antagonist	B
4) **In a follow-up visit, JQ is still exhibiting significant signs of RA, and has not achieved her therapeutic goal. After some discussion about treatment options, adalimumab (s.c. every 2 weeks) is added to her treatment regimen. Major side effects with this class of medication include:** a) infections & malignancy b) mucosal ulcers c) osteoporosis d) renal impairment	A

5) While TNF-alpha inhibitors are the most commonly used biologic DMARDs, an IL-6 receptor antagonist has also been found to be effective in treating arthritis. An example of this drug class is: a) abatacept b) ankinra c) leflunomide d) rituximab e) tocilizumab	E
6) The most common adverse effect of methotrexate is a. Arrhythmia b. Hepatotoxicity c. Renal failure d. Convulsions e. Hair loss.	B
7) Which of the following is disease modifying drug for rheumatoid arthritis? a) Indomethacin b) Celecoxib c) Ibuprofen d) Diclofenac e) Etanercept	E
8) Which one of the following drugs acts by blocking soluble receptors of TNF-alpha? a. Anakinra b. Sulfasalazine c. Methotrexate d. Etanercept e. Leflunomide.	D
9) Which of the following is a reserve drug but not a disease modifying drug in rheumatoid arthritis: a) Chloroquine b) Sulfasalazine c) Prednisolone d) Methotrexate	**C**

10) Which agent of rheumatoid arthritis compete with CD 28 to prevent full T cell activation: a) Sarilumab b) Abatacept c) Golimumab d) Adalimumab e) Certolizomab	B
11) Which of the following is JAK inhibitor: a) Abatacept b) Tofacitinib c) Tocalizomab d) Anakinera e) Infliximab	B
12) Which of the following drug is used in bridging therapy in patient with arthritis? a) Leflunomide. b) Corticosteroids. c) Sulfasalazine d) Celecoxib. e) Anakinra	B
13) Which of the following regarding Infliximab is WRONG: a. An important drug in treatment of rheumatoid arthritis b. Contraindicated in acute and chronic infections c. A recombinant protein that interferes with TNF- α d. Contraindicated in recent malignancies e. Monoclonal antibody	C
14) Which one of the following drugs acts as monoclonal antibodies for TNF- α ? a) Anakinra. b) Sulfasalazine. c) Infliximab. d) Methotrexate. e) Etanercept.	C

15) Which statement correctly represents the mechanism of action of Tofacitinib in treatment of RA? A. Dihydrofolate reductase inhibitor B. Janus kinase inhibitor C. IL-6 receptors blocker D. TNF-æ inhibitor E. IL-1 receptors blocker	B
16) Which of the following patient characteristics is the most compelling reason for avoiding celecoxib in the treatment of rheumatoid arthritis? (A) History of alcohol abuse (B) History of gout (C) History of myocardial infarction (D) History of osteoporosis (E) History of peptic ulcer disease	C
17) Which one of the following anti-inflammatory drugs used in rheumatoid arthritis can bind directly tumor necrosis factor? A. Etanercept B. Sulfasalazine C. Prednisone D. Celecoxib E. Penicillamine	A
18) Which of the following agents is used to reverse toxic effects of methotrexate? A. Hydrocortisone B. Aspirin C. Hydroxychloroquine D. Leucovorin	**D**
19) Which of the following statements is correct about sulfasalazine? A. It is a calcineurin inhibitor B. It is a biological DMARD C. A prodrug cleaved by gut bacteria into 5-aminosalicylic acid & sulphapyridine. D. It is a folate antagonist E. Its main side effect is retinopathy	C

20) Which of the following DMARDs is responsible for retinopathy? A. Sulfasalazine B. Leflunomide C. Hydroxychloroquine D. Cyclosporine E. Etanercept	**C**
21) Which of the following statements is correct about rituximab? A. It is a chimeric antibody directed against CD20 B. It inhibits IL-1 C. It is a humanized antibody of IL-6 receptors. D. It inhibits TNF α E. It is a CD80/86 inhibitor	**A**
22) CWhich of the following is the main role of anakinra in controlling rheumatoid activity? A. It inhibits calcineurin B. It inhibits IL-1 C. It inhibits IL-6 D. It inhibits TNF E. CD80/86 inhibitor	**B**
23) Which of the following sentences best explain immunosuppressant effect of leflunomide? A. Inhibits phospholipase A2 B. Inhibits binding of TNF α to its receptor C. Inhibits topoisomerase enzyme D. Inhibits calcineurin activity E. Inhibits pyrimidine base synthesis and suppresses T cell and B cell proliferation	E
24) What is the rational of tapering prednisone therapy over 2 months? A. Better control of blood glucose B. Gradual $\downarrow\downarrow$ of blood pressure C. Gradual $\downarrow\downarrow$ of body weight D. Avoid Addisonian crises E. Avoid proteinuria	D

25) Which of the following inhibit phagocytic function and stabilize lysosomes: a) Abatacept b) Anakinra c) Leflunamide d) cloroquine e) methotrexate	**D**
26) All the following drugs can be used in the treatment of rheumatoid arthritis EXCEPT: A. Methotrexate B. Gold C. Leflunomide D. Prednisolone E. Colchicine	E
27) Which of the following is a reserve drug but not a disease modifying drug in rheumatoid arthritis: A. Chloroquine B. Sulfasalazine C. Prednisolone D. Methotrexate	C
28) 24-A48-year-old woman with 2-year history of rheumatoid arthritis had not sufficient relief with methotrexate alone. Her physician prescribes a biologic TNF-a inhibitor that consists of a fasion protein against TNF-a. Which of the following is this drug? a) Adalimumab b) Certolizumab c) Etanercept d) Golimumab e) Infliximab	C
29) Which of the following drugs is a recombinant form of an endogenous IL-1 antagonist? a. Abatacept b. Anakinra c. Methotrexate d. Hydroxychloroquine e. Rituximab	B

1) Sugammadex is a specific antagonist for which of the following neuromuscularblocker? A-Vecuronium B-Pancuronium C-Succinylcholine D-Suxamethonium E-Diazepam	A
2) **Which of the following neuromuscular blockers is metabolized by pseudocholinesterase**? A. tubocurarine B. Atracurium C. Cis atracurium D. Vecuronium E. Succinylcholine	E
3) Which of the following skeletal muscle relaxants is preferred for endotracheal intubation? a) Botulinum toxin. b) Succinylcholine. c) Diazepam. d) Dantrolene e) Baclofen	B
4) Which of the following is true as regards centrally acting skeletal muscle relaxants? A. Used for short term purposes like surgical operations B. Inhibit polysynaptic reflexes in CNS C. Block neuromuscular transmission D. Cause muscle paralysis and voluntary movement loss E. Practically always given IV	B
5) Which of the following drugs is a non- depolarizing neuromuscular blocker? (a) Succinylcholine (b) Vecuronium (c) Decamethonium (d) Dantrolene sodium	B

6) Succinylcholine action when used as an adjunct to general anesthetics during surgery is based on its ability to: a) Block the action of acetylcholine at the motor end plate b) Increase release of acetylcholine from autonomic ganglia c) Increase release of histamine from mast cell d) Inhibit cholinesterase enzyme at the motor end plate e) Enhance sensitivity of the motor end plate to acetylcholine	A
7) Which of the following is true as regards Peripherally acting skeletal muscle relaxants? A. Used for short term purposes like surgical operations B. Inhibit polysynaptic reflexes in CNS c. decrease ms tone without reducing voluntary power D. given orally , sometimes parentrally	A
8) Following drug inhibits release of calcium from sarcoplasmic reticulum: a) Dantrolene b) Rocuronium c) Caffeine d) Succinylcholine	A
9) Baclofen acts as: a) GABAA receptor agonist b) GABAB receptor agonist c) GABAA receptor antagonist d) GABAB kit receptor antagonist	B
10) Which of the following drugs is the most effective in the emergency management of malignant hyperthermia? (A) Atropine (B) Dantrolene (C) Haloperidol (D) Succinylcholine (E) Vecuronium	B

11) Baclofen is: A. Centrally acting muscle relaxant B. Peripherally acting muscle relaxant C. Both centrally and peripherally acting muscle relaxant D. Direct-acting muscle relaxant	**A**
12) Which one is Depolarizing blocker: a) Mivacurium b) Doxacurium c) Succinyl choline d) Quinine	**C**
13) Shortest acting muscle relaxant: a) Pancuronium b) Atracurium c) Mivacurium d) Vecuronium	**C**
14) The following is a skeletal muscle relaxant that acts as a central α 2 adrenergic agonist: a) Tizanidine b) Brimonidine c) Chlormezanone d) Quinine	A
15) A 22 year-old patient having normal hepatic & renal functions was given a bolus I.V. dose of a neuromuscular blocker with duration of action should have lasted only for 5-10 min. Instead, the patient required mechanical ventilation for over 8 hours. Which statement about this problem is correct? a- The agent administered was atracurium b- This is an example of genetic variation in drug metabolism c- The agent was tubocurarine d- It is due to rapid distribution of the drug into the brain	**B**

16) **A patient was administered NMB prior to a surgical procedure. This NMB drug caused initial skeletal muscle fasciculations before the onset of paralysis. Its effect could not be reversed with neostigmine. Which of the following neuromuscular blockers was administered to this patient?** A. Cisatracurium. B. Succinylcholine. C. Diazepam. D. Tubocurarine. E. Vecuronium	B
17) **A patient underwent a surgical procedure of 2 h. Anaesthesia was provided by isoflurane, supplemented by intravenous midazolam and a nondepolarizing muscle relaxant. At the end of the procedure, a low dose of atropine was administered followed by pyridostigmine. The main reason for administering atropine was to:** A) Block cardiac muscarinic receptors B) Enhance the action of pyridostigmine C) Prevent spasm of gastrointestinal smooth muscle D) Provide postoperative analgesia E) Reverse the effects of the muscle relaxant	**A**
18) **Post-operative muscle pain may be a side effect of the following neuromuscular blockers:** a) Tubocurarine b) Mivacurium C) Atracurium d) Vecuronium e) succinylcholine	E
19) **Which drug is most often associated with hypotension caused by histamine release?** a- Diazepam B- Tubocurarine C- Pancuronium d- Vecuronium	B

20) The underlying cause of the prolonged apnea resulting from succinylcholine is: a- Cardiac arrest b- A mutation in acetyl cholinesterase c- Increased release of nicotine at MEP d- Decreased levels of plasma cholinesterase	**D**
21) In review of the benzodiazepine class, which of the following agents has the longest duration of action and may be useful in the treatment of a 39-year-old patient with spinal cord injury and with skeletal muscle spasticity? A) Diazepam B) Lorazepa C) Oxazepam D) Temazepam E) Triazolam	**A**
22) Which of the following is used in cosmotic reduction of facial wrinkles, cervical dystonia, blepharospasm : A) batulinium toxin B) dantroline C) succinylecholine D) baclophen	A
23) A 29-year-old woman who has been diagnosed with multiple sclerosis presents to her primary care physician with muscle rigidity and spasms. She also complains of difficulty sleeping, heartburn, and muscle pain. One of the drugs her physician prescribes is baclofen. Which of the following will baclofen do for this patient? A) Anti-inflammatory to decrease muscle pain B) Decrease heartburn C) Relieve muscle spasms D) Reverse the progression of MS E) Sleep aid	C

24) Which of the following inhibit release of acetylcholine from nerve terminal leading to s kms paralysis: A) botulinium toxin B) dantroline C) succinylecholine D) baclofen	A
25) Which drug is most likely to cause hyperkalemia leading to cardiac arrest in patients with spinal cord injuries? A) Baclofen B) Dantrolene C) Pancuronium D) Succinylcholine E) Vecuronium	D
26) Which of the following is applicable to mivacurium? a) It undergoes Hofmann elimination b) It is the shortest acting nondepolarizing neuromuscular blocker c) It is excreted unchanged by kidney d) It does not cause histamine release	B