

1. A 68-year-old male with benign prostatic hyperplasia (BPH) is started on a medication that reduces prostate size by inhibiting the conversion of testosterone to dihydrotestosterone (DHT). Which drug is most likely being prescribed?

- A. Oxybutynin
- B. Bethanechol
- C. Finasteride
- D. Nitrofurantoin

2. Which medication is a prodrug of acyclovir?

- A. Valacyclovir
- B. Ganciclovir
- C. Oseltamivir
- D. Terbinafine

3. Which of the following best describes the mechanism of action of sulfonamide antibiotics?

- A. Inhibit bacterial cell-wall synthesis
- B. Inhibit folic-acid synthesis by blocking dihydropteroate synthase
- C. Inhibit protein synthesis at the 30S ribosomal subunit
- D. Disrupt bacterial DNA gyrase

4. Which serious adverse effect is most commonly associated with amphotericin B therapy?

- A. Nephrotoxicity
- B. Hepatotoxicity
- C. Ototoxicity
- D. Cardiotoxicity

True or false: Oxybutynin is a muscarinic antagonist used to treat overactive bladder.

5. Which medication is a muscarinic agonist indicated for treating urinary retention?

- A. Oxybutynin
- B. Bethanechol
- C. Finasteride
- D. Nitrofurantoin

6. Finasteride belongs to which drug class?

- A. Muscarinic antagonist
- B. 5- α -reductase inhibitor
- C. Calcium-channel blocker
- D. Non-selective α_1 -blocker

7. Which of the following drugs is a neuraminidase inhibitor used to treat influenza?

- A. Oseltamivir
- B. Valacyclovir

C. Ganciclovir

D. Acyclovir

8. Aminoglycosides exert their bactericidal effect by binding to which part of the bacterial ribosome?

A. 50S ribosomal subunit

B. 30S ribosomal subunit

C. Peptidoglycan cell wall

D. DNA gyrase

9. Ganciclovir is primarily used to treat infections caused by which virus?

A. Herpes simplex virus (HSV)

B. Cytomegalovirus (CMV)

C. Varicella-zoster virus (VZV)

D. Human immunodeficiency virus (HIV)

10. Calcimimetics such as cinacalcet exert their effect by:

A. Blocking calcium channels in the renal tubules

B. Activating the calcium-sensing receptor on parathyroid cells

C. Inhibiting vitamin D synthesis in the kidneys

D. Increasing renal calcium reabsorption

11. What is the primary mechanism of action of penicillin antibiotics?

A. Inhibit bacterial cell-wall synthesis by binding to penicillin-binding proteins

B. Inhibit protein synthesis at the 30S ribosomal subunit

C. Inhibit folic-acid synthesis by blocking dihydropteroate synthase

D. Disrupt bacterial DNA gyrase

12. Which antifungal medication is most commonly associated with infusion-related reactions and nephrotoxicity?

A. Griseofulvin

B. Terbinafine

C. Amphotericin B

D. Fluconazole

13. Briefly describe the mechanism of action of albendazole

Albendazole is an anti-helminthic that works by inhibiting microtubule polymerization in parasites, which disrupts glucose uptake and leads to parasite death.

14. Which antifungal medication binds to ergosterol in the fungal cell membrane and creates pores that increase membrane permeability?

A. Amphotericin B

B. Fluconazole

C. Terbinafine

D. Nystatin

15. Which of the following best describes the primary mechanism of action of azole antifungal agents?

- A. Inhibit β -(1,3)-D-glucan synthesis in the fungal cell wall
- B. Inhibit squalene epoxidase, blocking ergosterol production
- C. Inhibit ergosterol synthesis by blocking the fungal cytochrome P450 enzyme lanosterol 14- α -demethylase
- D. Bind directly to ergosterol, forming pores in the cell membrane

16. Which of the following adverse effects is most commonly associated with azole antifungal therapy and requires routine monitoring?

- A. Nephrotoxicity
- B. Hepatotoxicity (elevated liver enzymes)
- C. Ototoxicity
- D. Hyperkalemia

17. Which antifungal class works by inhibiting β -(1,3)-D-glucan synthesis in the fungal cell wall?

- A. Azoles
- B. Polyenes
- C. Echinocandins
- D. Allylamines

18. Echinocandins are primarily indicated for which of the following infections?

- A. Cryptococcosis
- B. Dermatophyte infections (e.g., tinea)
- C. Candidiasis and Aspergillosis
- D. Systemic blastomycosis

19. Which of the following adverse effects is most commonly associated with echinocandin therapy?

- A. Nephrotoxicity
- B. Histamine-mediated reactions (e.g., rash, flushing, anaphylaxis)
- C. Ototoxicity
- D. Hyperkalemia

20. Which of the following best describes the mechanism of action of allylamine antifungal agents such as terbinafine?

- A. Inhibit β -(1,3)-D-glucan synthesis in the fungal cell wall
- B. Inhibit squalene epoxidase, blocking ergosterol production
- C. Bind directly to ergosterol, forming pores in the cell membrane
- D. Inhibit the fungal cytochrome P450 enzyme lanosterol 14- α -demethylase