Antibacterial Therapies and Mechanisms

Pharmacology · Practice Test · 21 Questions

1. Who observed the bacterial-killing effects of penicillin in 1928?

A) Sir Alexander Fleming
B) Louis Pasteur
C) Robert Koch
D) Joseph Lister

2. What year did large-scale production of penicillin start?

A) 1928
B) 1945
C) 1950
D) 1939

3. Which term describes antibiotics that kill microorganisms?

A) -static
B) -cid
C) -lytic
D) -genic

4. What does CMI stand for in relation to antibiotics?

A) Concentratia Minima de Inactivare
B) Concentratia Maxima Inhibitorie
C) Concentratia Minima Inhibitorie
D) Concentratia Minima de Cultivare

5. What is the minimum concentration of an antibiotic that kills 99.9% of bacteria called?

A) CMI
B) CMB
C) MIC
D) MBC

6. What is a likely outcome if bacteria are resistant to an antibiotic?

A) Therapeutic cure
B) Therapeutic failure
C) Increased bacterial growth
D) No effect on bacteria

7. Which of the following is NOT an ideal property of an antibiotic regarding its pharmacological aspects?

A) Lack of toxicity to the host organism
B) Good tissue distribution, including in CSF
C) Favoring the development of secondary resistance
D) Persistence in the organism for a sufficient time

8. Antibiotics that act only on Gram-positive bacteria, Gram-negative bacteria, or BAAR are classified as having a:

A) Broad spectrum
B) Narrow spectrum
C) Extended spectrum
D) Limited spectrum

9. Which class of antibiotics inhibits cell wall synthesis by targeting peptidoglycan synthesis?

A) Polymyxins
B) Aminoglycosides
C) Beta-lactams
D) Tetracyclines

10. Which is a common mechanism of resistance to beta-lactam antibiotics?

A) Increased permeability of the cell membrane
B) Synthesis of beta-lactamases
C) Enhanced efflux pumps
D) Modification of ribosomes

11. Penicillin G is a biosynthetic penicillin administered parenterally. What is its spectrum of activity?

A) Gram-negative bacilli only
B) Gram-positive cocci, Gram-positive bacilli, Gram-negative cocci, spirochetes
C) Anaerobes only
D) Mycoplasmas and Chlamydiae

12. Which type of semisynthetic penicillin is resistant to staphylococcal penicillinase?

A) Penicillin A
B) Ureidopenicillins
C) Penicillin M
D) Carboxypenicillins

13. Ampicillin and amoxicillin belong to which group of semisynthetic penicillins?

A) Penicillin M
B) Penicillin A (Aminopenicillins)
C) Ureidopenicillins
D) Carboxypenicillins

14. Which generation of cephalosporins includes representatives like cefotaxime and ceftriaxone?

A) Generation 1 (C1G)
B) Generation 2 (C2G)
C) Generation 3 (C3G)
D) Generation 4 (C4G)

15. Which generation of cephalosporins has activity against Pseudomonas aeruginosa and staphylococci?

A) Generation 2
B) Generation 3
C) Generation 4
D) Generation 5

16. Ceftaroline and ceftobiprol are representatives of which generation of cephalosporins, known for activity against MRSA?

A) Generation 3
B) Generation 4
C) Generation 5
D) Generation 2

17. What is the primary representative of Monobactam antibiotics?

A) Aztreonam
B) Imipenem
C) Meropenem
D) Ertapenem

18. Which carbapenem is inactive against Pseudomonas and Acinetobacter?

A) Imipenem
B) Meropenem
C) Ertapenem
D) Doripenem

19. What is the function of beta-lactamase inhibitors like clavulanic acid?

A) They have antimicrobial activity per se.
B) They prevent the inactivation of beta-lactams by blocking the active site of beta-lactamase.
C) They enhance the penetration of beta-lactams into bacterial cells.
D) They are beta-lactams themselves.

20. Vancomycin and teicoplanin are examples of which class of antibiotics that inhibit cell wall synthesis?

A) Beta-lactams
B) Glycopeptides
C) Fosfomycin
D) Bacitracin

21. Which antibiotic inhibits cell wall synthesis by binding to D-Ala-D-Ala of N-acetylmuramic acid and N-acetylglucosamine?

A) Fosfomycin
B) Bacitracin
C) Vancomycin
D) Isoniazid