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Chemotherapy.

Which of the following was discovered in the 1930s?

- A. Penicillin
- B. Streptomycin
- C. Arsenic
- D. Sulfonamides

Answer :  

- Which decade is often referred to as the "Golden age of antimicrobials"?
- A. 1800s
- B. 1900s
- C. 1950s
- D. 2000s
- **Answer: C. 1950s**
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- Which general manifestations are commonly associated with infections caused by bacteria?
- A. Coughing and sneezing
- B. Fever, chills, rigors
- C. Skin rashes
- D. Insomnia
- **Answer : B.**

What is the primary mode of transmission for bacteria causing infections in humans?

- A. Entering living cells
- B. Air, water, food, soil
- C. Nucleic acid replication
- D. Living on other organisms

Answer: B.

Which category of microorganisms most common,
hundred species can attack humans?

- A. Bacteria
- B. Viruses
- C. Fungi
- D. Parasites

Answer : A

What is the role of antiseptics?

- A. Inhibit microbial growth in tissues
- B. Kill microorganisms on nonliving objects
- C. Promote healing
- D. Provide immunity

Answer : a

What is the primary distinction between antibiotics and chemotherapeutic agents?

A. Synthetic vs. natural source

B. Antifungal vs. antibacterial

C. Mode of administration

D. Duration of action

Answer : A. Synthetic vs. natural source

What is the primary characteristic of a static agent?

- A. Irreversible inhibition of growth
- B. Reversible inhibition of growth
- C. Killing microorganisms
- D. Broad spectrum of activity

Answer : B. Reversible inhibition of growth

What is the significance of trough levels in antibiotic administration?

- A. They represent the highest antibiotic concentration in the blood
- B. Troughs indicate the onset of antibiotic action
- C. Trough levels may be at or below the Minimal Inhibitory Concentration (MIC)
- D. Trough levels are essential for post-antibiotic effect

Answer : C. Trough levels may be at or below the Minimal Inhibitory Concentration (MIC)

Which of the following antibiotics primarily inhibits cell wall synthesis?

A. Tetracycline

B. Rifampicin

C. Penicillin

D. Gentamicin

Answer C. Penicillin

What is the mechanism of action of antibiotics like Colistin, Nystatin, and Amphotericin B?

A. Inhibition of DNA synthesis

B. Inhibition of cell wall synthesis

C. Interference with plasma membrane permeability or function

D. Inhibition of RNA synthesis

Answer : C. Interference with plasma membrane permeability or function

What is a contributing factor to the occurrence of bacterial resistance?

- A. Optimal clinical condition of the host
- B. Thriving normal flora
- C. Interrupted or inadequate treatment
- D. Limited use of broad-spectrum antibiotics

Answer : C. Interrupted or inadequate treatment

Which type of bacteria exhibits resistance more frequently due to the presence of an outer membrane and cytoplasmic membrane?

- A. Gram-positive
- B. Gram-negative
- C. Aerobic
- D. Anaerobic

Answer : B. Gram-negative

How can bacterial resistance be overcome when it is related to the absence of a metabolic process or protein required for the action of the antimicrobial?

- A. Administration of the drug in small doses
- B. Administration of the drug in large doses
- C. Modification of the drug structure
- D. Decreasing the duration of treatment

Answer 44: B. Administration of the drug in large doses

What is a common cause of acquired resistance?

- A. Proper dose and duration of antibiotic use
- B. Misuse or abuse of antibiotics
- C. Limited bacterial adaptation
- D. Rx of viral infections with antibacterial agents

Answer : B. Misuse or abuse of antibiotics

What mechanism of acquired resistance involves the production of enzymes breaking down the antimicrobial?

A. Transduction

B. Transformation

C. Conjugation

D. Adaptation

Answer : D. Adaptation

What is the consequence of giving antimicrobial drugs in very large doses to overcome resistance related to the need for a large amount at the site of action?

- A. Decreased side effects
- B. Enhanced therapeutic effects
- C. Reduced bacterial resistance
- D. Increased risk of severe side effects

Answer : D. Increased risk of severe side effects

In which scenario would bacterial resistance be less likely to occur?

- A. Optimal clinical condition of the host
- B. Widespread use of broad-spectrum antibiotics
- C. Proper dose and duration of antibiotic use
- D. Misuse or abuse of antibiotics

Answer : C. Proper dose and duration of antibiotic use

Why is Mycoplasma resistant to penicillins?

- A. Lack of a metabolic process
- B. Presence of a hard cell wall
- C. Overproduction of target enzymes
- D. Lack of a cell wall

Answer: D. Mycoplasma lacks a cell wall

How does bacterial resistance occur in response to antibiotics targeting PBP's (penicillins and aminoglycosides)?

- A. Changing the metabolic pathway
- B. Preventing cellular accumulation
- C. Altering outer membrane proteins
- D. Changing the structure of the target site

Answer : D. Changing the structure of the target site (e.g., PBP's)

What is a potential outcome of combined chemotherapy when the combined drugs neither enhance nor diminish each other's effects?

- A. Synergism
- B. Antagonism
- C. Indifference
- D. All of the above

Answer :d

What is a potential disadvantage of combined chemotherapy?

- A. Reduced cost
- B. Increased toxicity
- C. Antagonism
- D. Indifference

Answer : B. Increased toxicity

Why is combined therapy sometimes used to treat infections at different anatomical sites?

- A. To increase the risk of mixed infections
- B. To reduce the emergence of resistance
- C. To enhance synergism
- D. To treat infections at different anatomical sites

Answer : D. To treat infections at different anatomical sites

What is a key consideration for prophylactic use of antibacterial agents in terms of the dose required?

- A. The prophylactic dose should be greater than the therapeutic dose
- B. The prophylactic dose should be equal to the therapeutic dose
- C. The prophylactic dose should be less than the therapeutic dose
- D. The prophylactic dose is irrelevant

Answer: C. The prophylactic dose should be less than the therapeutic dose

Which of the following is NOT complication of antibiotic therapy?

- A. Hypersensitivity
- B. Superinfection
- C. Direct toxicity
- D. Secondary infection

Answer :d

In what scenario might prophylactic antibacterial agents be used to prevent secondary infections?

A. In patients with no risk of secondary infections

B. In healthy individuals

C. In very ill patients, e.g., AIDS patients, before major surgeries

D. In patients already diagnosed with secondary infections

Answer : C. In very ill patients, e.g., AIDS patients, before major surgeries

Which of the following is NOT a class of β -lactam antibiotics?

A. Penicillins

B. Cephalosporins

C. Aminoglycosides

D. Carbapenems

Answer : C. Aminoglycosides

What role does the R in the structure of β -lactam antibiotics play?

- A. Determines the site of attack by gastric acidity
- B. Determines the characteristic of the antimicrobial agent
- C. Enhances resistance to β -lactamases
- D. Is irrelevant to the antimicrobial activity

Answer : B. Determines the characteristic of the antimicrobial agent

Among the listed bacteria, which one is NOT known to produce β -lactamase?

A. *Staphylococcus aureus*

B. *Moraxella catarrhalis*

C. *Neisseria gonorrhoeae*

D. *Streptococcus pneumoniae*

Answer : D. *Streptococcus pneumoniae*

What is the consequence of the defective cell wall produced by Beta-Lactams?

- A. Enhanced bacterial growth
- B. Lysis of bacterial cells
- C. Increased cell wall strength
- D. Inhibition of ribosomal function

Answer 89: B. Lysis of bacterial cells

What is the prototype of natural penicillins?

A. Ampicillin

B. Cloxacillin

C. Benzylpenicillin (Penicillin G)

D. Amoxicillin

Answer : C. Benzylpenicillin (Penicillin G)

Which class of penicillins is considered as anti-Staph penicillins?

A. Natural penicillins

B. Narrow-spectrum penicillinase-resistant penicillins

C. Broad-spectrum penicillinase-sensitive penicillins (amino PNCs)

D. Antipseudomonal penicillins

Answer : B. Narrow-spectrum penicillinase-resistant penicillins

What is the primary complication associated with the use of natural penicillins?

- A. Nephropathy
- B. Hypertension
- C. Hypersensitivity
- D. Seizures

Answer: C. Hypersensitivity

Which penicillin has good activity against *Helicobacter pylori* and is often used in combination therapy?

- A. Ampicillin
- B. Cloxacillin
- C. Amoxicillin
- D. Piperacillin

Answer : C. Amoxicillin

Which type of penicillin is considered narrow-spectrum and penicillinase-sensitive?

A. Natural penicillins

B. Broad-spectrum penicillinase-sensitive penicillins (amino PNCs)

C. Narrow-spectrum penicillinase-resistant penicillins

D. Antipseudomonal penicillins

Answer : A. Natural penicillins

How do penicillins achieve their bactericidal effect?

A. Inhibiting DNA synthesis

B. Disrupting the synthesis of lipopolysaccharides

C. Inhibiting transpeptidases and disrupting peptidoglycan synthesis

D. Blocking protein synthesis

Answer : C. Inhibiting transpeptidases and disrupting peptidoglycan synthesis

What is an absolute contraindication to all penicillins in patients?

- A. Hypertension
- B. History of allergy
- C. Renal failure
- D. Hypotension

Answer : B. History of allergy

Neurotoxicity is more commonly associated with which specific penicillin?

A. Ampicillin

B. Cloxacillin

C. Oxacillin

D. Penicillin G

Answer : C. Oxacillin

Which type of infections are penicillins generally more effective in treating?

- A. Gram-negative infections
- B. Viral infections
- C. Gram-positive infections
- D. Fungal infections

Answer : C. Gram-positive infections

What is the main factor influencing the selection of penicillins for treatment?

A. Patient's age

B. Severity of the infection and the organism involved

C. Patient's weight

D. Previous antibiotic use

Answer : B. Severity of the infection and the organism involved

What is a common side effect of intravenous (IV) oxacillin?

A. Neurotoxicity

B. Hepatotoxicity

C. Nephrotoxicity

D. Bone marrow depression

Answer : B. Hepatotoxicity

Which generation of cephalosporins is primarily effective against Gram-positive microorganisms, less resistant to β -lactamases, and does not readily cross the blood-brain barrier (BBB)?

- A. First generation
- B. Second generation
- C. Third generation
- D. Fourth generation

Answer : A. First generation

Which cephalosporin from the second generation has the best activity against *Bacteroides fragilis*?

- A. Cefaclor
- B. Cephmetazole
- C. Cefoxitin
- D. Cefuroxime

Answer : C. Cefoxitin

Which cephalosporin is excreted by the liver, unlike the others that are primarily excreted by the kidney?

- A. Cefazolin
- B. Cefoperazone
- C. Cefuroxime
- D. Ceftriaxone

Answer : D. Ceftriaxone

What percentage of individuals with a penicillin allergy may experience cross-allergy with cephalosporins?

A. 5%

B. 10%

C. 15%

D. 20%

Answer : B. 10%

Which generation of cephalosporins has the best activity against *Pseudomonas aeruginosa* infections?

- A. First generation
- B. Second generation
- C. Third generation
- D. Fourth generation

Answer : C+D

What is a common side effect of cephalosporins that may occur with concomitant use of alcohol?

- A. Hepatotoxicity
- B. Nephrotoxicity
- C. Disulfiram-like reaction
- D. Hemolytic anemia

Answer : C. Disulfiram-like reaction

Which generation of cephalosporins is associated with the increased risk of nephrotoxicity, particularly when used with concomitant aminoglycosides?

- A. First generation
- B. Second generation
- C. Third generation
- D. Fourth generation

Answer : A. First generation

What is the major side effect associated with the use of imipenem?

A. Hepatotoxicity

B. Nephrotoxicity

C. Seizures

D. Allergic reactions

Answer : C. Seizures

In what situations might aztreonam be considered a substitute for aminoglycosides?

- A. Treatment of fungal infections
- B. Treatment of Gram-positive bacterial infections
- C. Treatment of Gram-negative bacterial infections
- D. Treatment of viral infections

Answer : C. Treatment of Gram-negative bacterial infections

What is the role of cilastatin when combined with imipenem?

A. Increases the risk of seizures

B. Enhances its activity against Gram-positive bacteria

C. Inhibits dehydropeptidase I to decrease rapid metabolic clearance of imipenem

D. Acts as a β -lactamase inhibitor

Answer : C. Inhibits dehydropeptidase I to decrease rapid metabolic clearance of imipenem

Which carbapenem has similar activity to imipenem but is resistant to metabolism by dehydropeptidase I, eliminating the need to combine it with cilastatin?

- A. Ertapenem
- B. Doripenem
- C. Meropenem
- D. Aztreonam

Answer: C. Meropenem

What is the route of administration for teicoplanin?

A. Intravenous (IV)

B. Oral

C. Intramuscular (IM)

D. Subcutaneous (SC)

Answer : C. Intramuscular (IM)

In the treatment of pseudomembranous colitis (Clostridium difficile colitis), what is the recommended combination therapy along with vancomycin?

- A. Aminoglycosides
- B. Metronidazole
- C. Cephalosporins
- D. Macrolides

Answer : B. Metronidazole

What is the main side effect associated with the rapid intravenous administration of vancomycin, characterized by flushing, tachycardia, decreased blood pressure, and skin rashes?

- A. Red man syndrome
- B. Ototoxicity
- C. Thrombophlebitis
- D. Circumoral paresthesia

Answer : A. Red man syndrome

What is the mechanism of action of glycopeptides such as vancomycin and teicoplanin?

- A. Inhibition of DNA replication
- B. Disruption of bacterial cell membranes
- C. Prevention of crosslinking of peptidoglycans
- D. Inhibition of protein synthesis

Answer: C. Prevention of crosslinking of peptidoglycans

Which aminoglycoside is considered the drug of choice to treat neonatal Gram-negative bacilli meningitis?

- A. Gentamicin
- B. Netilmicin
- C. Tobramycin
- D. Amikacin

Answer : A. Gentamicin

What is the common mechanism of action of aminoglycosides?

A. Inhibition of DNA replication

B. Disruption of bacterial cell membranes

C. Inhibition of protein synthesis by binding to the 50S subunit of the ribosome

D. Inhibition of protein synthesis by binding irreversibly to the 30S subunit of the ribosome

Answer : D. Inhibition of protein synthesis by binding irreversibly to the 30S subunit of the ribosome

Which aminoglycoside is the most nephrotoxic and is mainly used topically and orally for local gastrointestinal (GIT) infections?

- A. Gentamicin
- B. Netilmicin
- C. Tobramycin
- D. Neomycin

Answer : D. Neomycin

Which aminoglycoside is highly effective against tuberculosis (TB) and is used with penicillins to treat Streptococcus endocarditis?

- A. Streptomycin
- B. Gentamicin
- C. Tobramycin
- D. Amikacin

Answer : A. Streptomycin

In which clinical condition is dose adjustment of aminoglycosides necessary?

A. Old pts

B. Hypertension

C. Renal disease

D. pts on diuretics

E: all of the above

Answer : e

Which aminoglycoside is similar to gentamicin but less ototoxic and can be effective in infections resistant to gentamicin?

- A. Kanamycin
- B. Tobramycin
- C. Amikacin
- D. Netilmicin

Answer : D. Netilmicin

Which aminoglycoside is used for sterilizing the bowel before abdominal surgeries and is not given systemically due to its nephrotoxicity?

A. Gentamicin

B. Neomycin

C. Tobramycin

D. Amikacin

Answer : B. Neomycin

Which macrolide antibiotic is available in 250mg and 500mg tablet forms, as well as 125mg, 200mg, and 400mg/5ml suspension?

- A. Erythromycin
- B. Clarithromycin
- C. Azithromycin
- D. Telithromycin

Answer : A. Erythromycin

What is the recommended dosage for azithromycin for a 3-day therapy?

- A. 500mg once daily
- B. 250mg twice daily
- C. 1.5-2.5g total dose
- D. 500mg twice daily for 10-14 days

Answer : C. 1.5-2.5g total dose

What is the major and most frequent side effect associated with macrolide antibiotics?

- A. Allergy
- B. Hepatotoxicity
- C. Gastrointestinal irritation
- D. Nephrotoxicity

Answer : C. Gastrointestinal irritation

Which form of erythromycin is more likely to cause cholestatic hepatitis and is gastric acid-resistant?

- A. Estolate form
- B. Base form
- C. Ethylsuccinate form
- D. Lactobionate form

Answer : A. Estolate form

What is the primary mechanism of action of macrolide antibiotics?

- A. Inhibition of DNA synthesis
- B. Inhibition of RNA polymerase
- C. Inhibition of translocation during protein synthesis
- D. Disruption of bacterial cell membranes

Answer : C. Inhibition of translocation during protein synthesis

Which of the following infections is chloramphenicol considered the drug of choice for?

- A. Streptococcal pharyngitis
- B. Haemophilus influenzae meningitis
- C. Staphylococcal skin infections
- D. Escherichia coli urinary tract infections

Answer : B. Haemophilus influenzae meningitis

How does chloramphenicol primarily exert its bacteriostatic effect?

A. Inhibition of DNA gyrase

B. Inhibition of RNA polymerase

C. Inhibition of protein synthesis by binding to the 30S subunit

D. Inhibition of protein synthesis by binding to the 50S subunit

Answer : D. Inhibition of protein synthesis by binding to the 50S subunit

Which toxic reaction associated with chloramphenicol is characterized by symptoms such as abdominal distension, severe vomiting, cyanosis, and hypothermia?

- A. Aplastic anemia
- B. Gray-baby syndrome
- C. Optic neuritis
- D. Reversible bone marrow depression

Answer : B. Gray-baby syndrome

The best antibiotic that crosses BBB?

A- Chloramphenicol

B- Spectinomycin

C- Tetracyclines

D- Macrolide

Ans: A

Which tetracycline has the least risk of nephrotoxicity?

A. Doxycycline

B. Minocycline

C. Tetracycline

D. Demeclocycline

E. A+B

Answer: E

In which of the following infections are tetracyclines considered drugs of choice?

- A. Urinary tract infections
- B. Streptococcal infections
- C. Rickettsial infections
- D. Tuberculosis

Answer : C. Rickettsial infections

Which of the following is a mechanism of bacterial resistance to tetracyclines?

- A. Inhibition of bacterial permeability to tetracycline
- B. Inhibition of bacterial protein structure
- C. Increased efflux of tetracyclines by bacterial energy-dependent mechanism
- D. Inhibition of DNA synthesis

Answer : C. Increased efflux of tetracyclines by bacterial energy-dependent mechanism

What is a notable side effect associated with tetracyclines that may be irreversible?

- A. Photosensitivity
- B. Nephrotoxicity
- C. Dental staining
- D. Hepatotoxicity

Answer : C. Dental staining

Which bacterial ribosomal subunit does both lincomycin and clindamycin inhibit?

A. 30S subunit

B. 40S subunit

C. 50S subunit

D. 60S subunit

Answer : C. 50S subunit

What side effect is notably associated with the use of lincomycin and clindamycin?

- A. Photosensitivity
- B. Dental staining
- C. Skin rashes
- D. Nephrotoxicity

Answer : C. Skin rashes

What is the primary mechanism of action of polymyxins (e.g., Polymyxin B and Polymyxin E)?

- A. Inhibition of DNA synthesis
- B. Inhibition of cell wall synthesis
- C. Disruption of plasma membrane function
- D. Inhibition of protein synthesis

Answer : C. Disruption of plasma membrane function

Which enzyme do quinolones and fluoroquinolones inhibit to disrupt bacterial DNA replication?

A. DNA polymerase

B. DNA ligase

C. DNA helicase

D. DNA gyrase

Answer: D. DNA gyrase

Why are some quinolones not recommended in children or during pregnancy?

- A. They have a high risk of photosensitivity.
- B. They can cause gastrointestinal irritation.
- C. They may interfere with cartilage development.
- D. They have a narrow spectrum of activity.

Answer : C. They may interfere with cartilage development.

Which of the following is a characteristic feature of the 1st generation quinolones, such as nalidixic acid?

- A. Effective against Pseudomonas
- B. Broad spectrum of activity
- C. Mainly used in complicated urinary tract infections
- D. Effective against Gram-negative bacteria

Answer : C. Mainly used in complicated urinary tract infections

What type of antibiotic is nitrofurantoin?

A. Bacteriostatic

B. Antifungal

C. Bactericidal

D. Antiviral

Answer : C. Bactericidal

In which type of infection is nitrofurantoin highly effective?

- A. Respiratory infections
- B. Gastrointestinal infections
- C. Urinary tract infections
- D. Skin infections

Answer : C. Urinary tract infections

What is the dosage form of fosfomycin commonly available for use?

A. Tablet

B. Capsule

C. Oral powder for reconstitution

D. Injectable solution

Answer : C. Oral powder for reconstitution

Why is the use of fosfomycin commonly restricted to a single dose?

- A. High toxicity
- B. Rapid microbial resistance
- C. Poor patient compliance
- D. Limited spectrum of activity

Answer : B. Rapid microbial resistance

What is a common side effect associated with fosfomycin?

A. Metallic taste

B. Rash

C. Headache

D. Joint pain

Answer : A. Metallic taste

In which condition is sulfasalazine commonly used?

- A. Upper respiratory tract infections
- B. Urinary tract infections
- C. Inflammatory bowel disease
- D. Eye infections

Answer : C. Inflammatory bowel disease

What is the rationale behind using combined sulfa drugs?

A. Increased antibacterial activity

B. Decreased metabolism of sulfa drugs

C. Lower doses and reduced precipitation in urine

D. Enhanced distribution in the central nervous system

Answer : C. Lower doses and reduced precipitation in urine

What is the primary pharmacokinetic consideration for preventing stone formation associated with sulfonamide use?

- A. Decrease fluid intake
- B. Increase urine acidity
- C. Use sulfonamides with good urine solubility
- D. Use sulfonamides with poor urine solubility

Answer : C. Use sulfonamides with good urine solubility

What is the combined name for the sulfamethoxazole and trimethoprim combination?

- A. Co-amoxiclav
- B. Co-trimoxazole
- C. Ampicillin/sulbactam
- D. Cephalexin/clavulanic acid

Answer : B. Co-trimoxazole

Which of the following bacterial species is NOT effectively targeted by trimethoprim?

- A. *Escherichia coli*
- B. *Haemophilus influenzae*
- C. *Pseudomonas aeruginosa*
- D. *Klebsiella pneumoniae*

Answer : C. *Pseudomonas aeruginosa*

What is a potential severe side effect associated with sulfonamides in individuals with G-6PD deficiency?

- A. Renal damage
- B. Kernicterus
- C. Blood dyscrasia and hemolysis
- D. Liver damage

Answer 280: C. Blood dyscrasia and hemolysis

Which condition is characterized by an inflammatory reaction of the skin and mucous membranes and is considered an uncommon side effect of sulfonamides?

A. Stevens-Johnson Syndrome

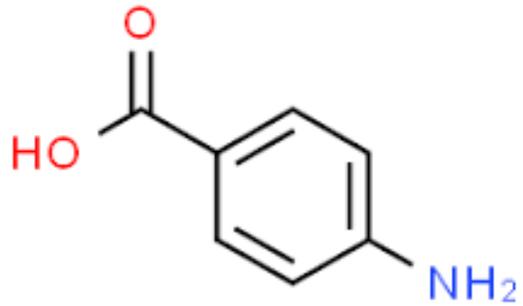
B. Toxic nephrosis

C. Kernicterus

D. Allergic nephritis

Answer : A. Stevens-Johnson Syndrome

The structure below represent:



Ans:PABA