

Patho/Pharm II

Antimicrobials Review:

Bacteria:

1. What is the difference between cell walls and cell membranes? What is their spatial relationship?
2. What molecule forms the backbone of the cell wall structure?
3. What holds the backbone molecules together?
4. What do autolysins do?
5. What enzyme is needed for cell wall synthesis?
6. Where do these enzymes live?
7. What are the two kinds of cell walls, and how are they different?
8. Name four common bacteria in each classification (according to cell wall)?
9. What are the four basic bacteria shapes?

Cephalosporins:

1. What do Cephalosporins have in common with Penicillins? (two things)
2. What is the primary form of resistance to Cephalosporins?
3. How are cephalosporins classified; name the classes and four trends associated with the classes.
4. Name two drugs from each class:
5. How are the first 2 classes used in U.S. hospitals?
6. How many cephalosporins are available in the U.S.? How many can be given PO?
7. What is the usual route of elimination? What are the exceptions, and how are they eliminated?
8. What is the major adverse event common to all cephalosporins
9. Name the three cephalosporins that cause a special adverse event and their major drug interactions:
10. What adverse event is common to IV cephalosporins, and how can it be avoided?
11. What is special about Ceftriaxone (Rocephin)?

Carbapenems

1. What is the active chemical component of the carbapenems?
2. What is their claim to fame?
3. What are they used for?

Monobactam:

1. What is the active chemical component of the carbapenems?
2. What are the two defining characteristics of monobactam?

Vancomycin:

1. What is the action of Vancomycin?
2. What are the two primary uses of Vancomycin?
3. How is Vancomycin absorbed in the GI tract?
4. What are the two major adverse effects for Vancomycin.
5. What are the administration considerations?
6. Name two species of bacteria that have become resistant to Vancomycin.
7. Summarize the CDC's strategy for reducing Vancomycin resistance.

Teicoplanin

1. Summarize Teicoplanin's description.

Tetracyclines

1. What is the major difference between different Tetracycline agents? What are the three divisions?
2. What is the mechanism of action?
3. What are the mechanisms of resistance?
4. What are the tetracyclines used for?
5. What are the food considerations when taking tetracyclines?
6. How are tetracyclines eliminated?
7. Name six adverse events associated with tetracyclines.

Macrolides

1. What is the mechanism of action?
2. What adverse event is common to all macrolides?
3. What is a common off-label use for Erythromycin?
4. How many forms of PO erythromycin are there? Which can cause hepatotoxicity?
5. Which drugs does Erythromycin inhibit, and which does it potentiate?
6. Which macrolide has the least drug interactions?
7. What is special about Azithromycin?

Clindamycin

1. What is the spectrum?
2. Why is it not widely used anymore?
3. What are the routes it can be given?

Linzeolid (Zyvox)

1. What is linezolid used for?
2. What is its spectrum?
3. What are the adverse events?
4. What drugs and food should patients on Linezolid avoid?

Miscellaneous Antibiotics

1. What is the main problem with chloramphenicol?
2. When is Chloramphenicol used?
3. What are Dalfofpristin and Quinipristinthese used for?
4. What class does telithromycin belong to?
5. What is Mupirocin used for?
6. Why should Mupirocin be used sparingly?

Aminoglycosides

1. What are the three most common aminoglycosides in U.S. Hospitals?
2. What is the spectrum of Aminoglycosides?
3. What are the possible routes of aminoglycoside administration?
4. How are PO aminoglycosides used?
5. What properties make aminoglycosides potentially nephrotoxic?
6. What are the two kinds of ototoxicity, and what are their symptoms?
7. What is the main cause of ototoxicity?
8. What are the two dosing schedules? Which is better and why?
9. How should single daily dosing aminoglycosides be monitored?
10. What are the main drug interactions with aminoglycosides?
11. What makes tobramycin a drug of choice for cystic fibrosis?
12. What is the most common topical aminoglycoside?

Sulfonamides and Trimethoprim

1. How do sulfonamides work?
2. Why has sulfonamide use decreased?
3. What is the primary indication for sulfonamides?
4. How are sulfonamides excreted?
5. What happens to sulfonamides in the liver?
6. What life threatening reaction can occur with sulfonamides? What precautions should be taken to prevent it?
7. A patient should not be given a sulfonamide if they are hypersensitive to what drugs?
8. What can happen to sulfonamides in the kidney, and how can it be prevented?
9. Why does Trimethoprim increase the action of Sulfamethoxazole
10. What is the main antibacterial effect of Silver Sulfadiazine (Silvadene)

Fluoroquinolones

1. Name four kinds of infections that Fluoroquinolones are used for:
2. Name the three most common Fluoroquinolones used in hospitals.
3. What are the PO administration considerations with Fluoroquinolones?

4. What side effect prevents Fluoroquinolones from being given to persons under the age of 18?
5. What are the two main drug interactions with Fluroquinolones?
6. What ECG change is possible with some Fluoroquinolones? Which one is most likely to cause it?

Metronidazole:

1. In addition to bacteria, what else does metronidazole kill?
2. Name four reasons that metronidazole is used.

UTI's

1. What are the four types of UTI? Which ones are considered lower, and which are considered upper?
2. What is the difference between complicated and uncomplicated UTIs?
3. What is the difference between a urinary tract antiseptic and systemic antibiotics? (Look in the book)
4. What is the drug of choice for prostatitis? (Look in the book)

Mycobacterium

1. What is a general term for mycobacterium?
2. What two factors caused a resurgence of tuberculosis in the United States?
3. Where does *M. tuberculae* reproduce in the body?
4. What cell is responsible for the destruction of *M. tuberculae*?

5. What is the treatment strategy for tuberculosis?
6. Why does tuberculosis therapy go so long? (Look in the book)
7. Why does Leprosy (Hansen's disease) cause disfigurement?
8. What drugs are used for *M. avium* complex infection?
9. Why is *M. avium* complex called a complex?

Antifungals

1. What is the difference between opportunistic and nonopportunistic mycoses? List at least one of each.
2. Why is Amphotericin B called Amphterrible?
3. What should be done to help reduce the reactions?
4. What kind of supplement may a patient need while taking Amphotericin B?
5. What should be done before giving the full dose of Amphotericin B?
6. Which of the –azole antifungals can be given systemically?
7. What two problems are associated with systemic –azole antifungals?

8. Which two –azole antifungals are most likely to cause hepatotoxicity?
9. What is the difference between dermaophytes and candidiasis?
10. List the four types of dermatophyte infections? Which is most difficult to treat?
11. What are the two main locations for candidiasis? What are their common names?
12. What systemic medication can be used for both?
13. What topical medication is used for both? (Brand and generic)
14. How should nystatin rinse be used orally?
15. What kind of therapy does onychomycosis warrant?
16. Why does griseofulvin take so long to work?

Antivirals

1. What is acyclovir used for?
2. What routes can it be given?
3. What kind of patients usually have resistant virus?
4. What is the relationship between Valacyclovir and Acyclovir?
5. What is ganciclovir used for?
6. Why is it used only in immunocompromised patients?

7. What kind of monitoring should be done for ganciclovir?
8. What is Famciclovir used for?
9. What is the only case Cidofovir will be used for?
10. How is Penciclovir used?
11. What is the best way to treat Hepatitis B?
12. What is Interferon A?
13. What are the two main side effects of Interferon A?
14. What must a patient obtain before starting Interferon therapy?
15. What is often given in combination with Interferon A in Hepatitis C patients?
16. What are the components of the influenza vaccine?
17. For whom is the influenza vaccine contraindicated?
18. Name three reasons why someone can get the flu after getting the vaccine.
19. What are the ways the vaccine can be given?
20. How many types of influenza are there? Which is more common in the United States?
21. What are the first two drugs approved for influenza?
22. What are the second two drugs approved for influenza?
23. Why do we care so much about influenza anyway?