Part 1: Microbial Control & Antibiotics

Vocabulary

Sterilization
Disinfect
Antisepsis
Sanitize
Degerm
Pasteurize
Bacteriostatic vs. bacteriocidal
Growth phases
Detergent
Surfactant
Heavy metals
Oxidizing agents

Halogens
Alcohols
Phenolics
Selective toxicity
Penicillium spp.
Cephalosporium spp.
Actinomyces spp.
Bacillus spp.
Beta-lactam
Sulfa drugs
Spectrum of activity
Superinfection
Drug resistant strains

1. What are the primary mechanisms by which antimicrobial agents work? What kinds of microbial structures/characteristics make organisms more resistant to killing? What are some other factors that affect how well antimicrobial agents work?

2. What is the difference between antimicrobial agents used topically or as “cleaning” agents and antibiotics that are ingested by patients?

3. List and describe the four general modes of antibiotic activity discussed in class. Which type of antibiotics work using each mode?

4. Describe how multidrug resistant strains of pathogens can develop. What are some ways of combating antimicrobial resistance?

Part 2: Epidemiology

Vocabulary

Reservoirs
Communicable
Chronic carriers
Intermittent carriers
Zoonoses
Clinical
Subclinical
Direct vs. indirect disease transmission
Horizontal vs. vertical transmission
Nosocomial

Fomites
Droplets
Airborne
Mechanical vs. Biological vectors
Incidence
Prevalence
Endemic
Epidemic
Sporadic
Pandemic
Common source vs. propagated epidemics
1. What are some common reservoirs (“micro” definition) of human infections with pathogenic organisms? What kinds of organisms are usually transmitted by each?

2. Describe the three primary factors involved in the spread of nosocomial infections discussed in class? What is the best way to avoid outbreaks of nosocomial infections?

Part 3: Pathogenicity

Vocabulary

Normal microbiota
Opportunistic pathogens
Obligate pathogens
Pathogenicity
Virulence
Skin
Mucous membranes
Respiratory tract
Transplacental infection
Adhesion
Virulence factors
Collagenase
Gas gangrene
Coagulase
Kinase
Leukocidins

Pus
Toxins
Intoxications
Toxemia
Exotoxins: neuro, entero, cyto
Botulin toxin
Tetanus toxin
Endotoxins
LPS
Incubation
Prodrome
Acme
Decline
Convalescence

1. What’s the difference between normal flora, opportunistic pathogens and obligate pathogens? How do opportunistic pathogens become infections?

2. What are the major portals of entry and exit for human pathogens? What kinds of mechanisms do pathogens use to adhere to and invade human tissues?


4. Describe how botulin toxin acts physiologically to prevent the contraction of muscles. (I.e. What happens at the synapse?) Also, how does tetanus toxin act on human neurons?