

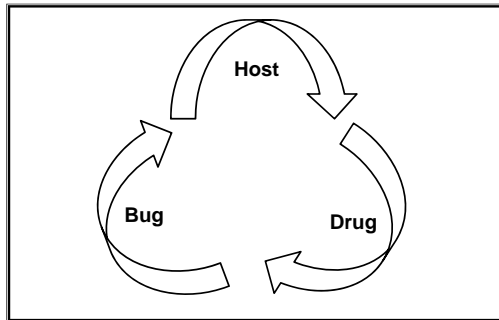
Antimicrobial Agents

Chonnamet Techasaensiri, MD
 Division of Pediatric Infectious Diseases
 Department of Pediatrics
 Faculty of Medicine, Ramathibodi Hospital
 Mahidol University

Steps in Decision Making for Use of Antimicrobial Agents

1. Determine diagnosis
2. Consider age and preexisting condition
3. Consider common organisms
4. Consider organism susceptibility
5. Obtain proper cultures
6. Initiate empiric therapy
7. Modify therapy based on culture results and patient response
8. Follow clinical response
9. Stop therapy

Factors Influencing Clinical Outcome



Selection of Antimicrobial Therapy: Host Factors

- ✦ Site of infection
- ✦ Immune status
- ✦ Pathophysiological conditions: Altering pharmacokinetics of antimicrobials
 - Edema: Increased volume of distribution
 - Burn: Enhanced renal clearance
 - Renal failure: Reduced renal clearance

Site of Infection and Antimicrobials

Site	Good/adequate penetration	Poor penetration
CNS	β -lactams, TMP/SMX, metronidazole, rifampin	Vancomycin, aminoglycosides, clindamycin
Intracellular pathogens	Tetracyclines, macrolides, fluoroquinolones	β -lactams
Respiratory	β -lactams, fluoroquinolones, linezolid	Daptomycin, vancomycin, aminoglycosides
Prostate	TMP/SMX, fluoroquinolones	β -lactams
Bone/joint	β -lactams, fluoroquinolones, clindamycin	Macrolides
Urinary	Ciprofloxacin, most β -lactams, amphotericin B, fluconazole	Moxifloxacin, itraconazole, voriconazole, echinocandins

Site of Infection

- ✦ Foreign bodies
 - Often necessary to remove the foreign material to cure an infection
 - Probably because of localized impairment of host defense mechanisms
 - Foreign body often serves as a nidus on which organisms can adhere and produce extracellular substances such as glycocalyx or biofilm, which may interfere with phagocytosis