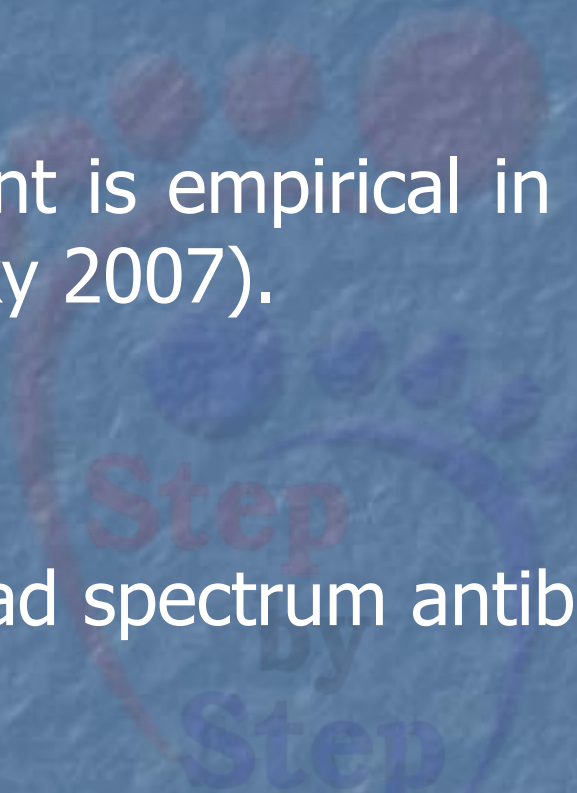


Empirical therapy for diabetic foot infections



Step
by
Step

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- Initial treatment is empirical in about two-thirds of cases (Lipsky 2007).
 - Narrow or broad spectrum antibiotic?

Some basic principles can provide
guidance

Step
by
Step

- Aerobic gram positive cocci (especially *Staphylococcus aureus*) are the predominant pathogens in acute diabetic foot infections.
- Patients who have chronic wounds or who have recently received antibiotic therapy may also be infected with gram negative bacilli.
- Patients with foot ischemia or gangrene may also have anaerobes.

Gram positive cocci are very important even in complicated infections

- The current thinking has likened the microbial flora of a diabetic infection to a snake in which the gram positive cocci represent the head of the snake and all the rest of the organisms comprise the body.
- Once one removes the head of the snake, the rest will die.



Does the predominant role of Gram positive cocci in DFI indicate that treatment will be easy ?

- Multidrug-resistant organisms (MDRO) are often present in DFI.
- As *S. aureus* is the predominant pathogen in DFI, MRSA become the biggest problem.

- **MRSA was once associated only with nosocomial infections but now community-acquired strains of MRSA have become common in DFI cases.**

Patients Are At High Risk For MRSA

1. Recent hospitalization (one to 24 months)
2. Recent outpatient visit (within 12 months)
3. Recent nursing home admission
4. Recent antibiotic exposure (one to 12 months)
5. Chronic illness (e.g. diabetes, ESRD, malignancy)
6. Injection drug use
7. Close contact with MRSA patient

Recommendations for empirical antibiotic therapy

Step
by
Step

- **1- For mild acute DFI: therapy should virtually always include coverage for aerobic Gram-positive cocci, especially Staphylococcus aureus.**
- **Examples: semi-synthetic penicillin, first-generation cephalosporin**

- 2- Whether or not empirical coverage for methicillin resistant *S. aureus* (MRSA) should be provided is a growing concern worldwide.
- This decision depends largely on the overall local prevalence of MRSA, and the presence or absence of risk-factors for MRSA infection
- Examples:
 - For community acquired infections: co-trimoxazole, doxycycline or clindamycin.
 - For hospital-acquired strains: Vancomycin, Linezolid, Tigecycline or Daptomycin.

- 3- Target aerobic Gram-negative bacilli in patients with chronic infection.
- The main issue with Gram-negative coverage is to decide when to specifically target *Pseudomonas aeruginosa*.
- Examples: Third generation cephalosporin; quinolones; Piperacillin/tazobactam (Tazocin vials):

- 4- A clinical clue to the presence of anaerobes is the feculent odour that they produce.
- Debriding necrotic material, and thereby removing many of the anaerobes and exposing those remaining to air, may be all that is needed to treat these potential pathogens.
- Examples: Clindamycin (\pm fluoroquinolone); metronidazole (+ fluoroquinolone); b-lactam, b-lactamase inhibitor; carbapenem

- 5- Route of administration
- Severe infections require parenteral therapy to achieve reliable blood levels quickly. The advent of highly bioavailable oral antimicrobial agents, e.g., fluoroquinolones and linezolid, has made oral therapy more acceptable.

Step

- 6- Duration of therapy:
 - For mild to moderate infections: a 1-2 week
 - For severe infections: treatment has usually been given for about 2-4 weeks.
 - For Bone infections: 2 - 6 months