QUINOLONES

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I. CLASSIFICATION OF DRUGS
   A. Norfloxacin
   B. Ciprofloxacin [Cipro®]
   C. Ofloxacin [Floxin®]
   D. Temafloxacin [Omniflox®]
   E. Sparfloxacin
   F. Pefloxacin
   G. Difloxacin
   H. Amifloxacin
   I. Lomefloxacin
   J. Tosufloxacin
   K. Fleroxacin

II. MAIN INDICATIONS
   A. Serious gram-negative rod infections/osteomyelitis
   B. Mixed diabetic infections (combined w/clindamycin)
   C. *Pseudomonas aeruginosa* (potential emergent resistance)
   D. Methicillin-sensitive and methicillin-resistant staphylococcus (MSSA/MRSA)
      1. Ofloxacin better than ciprofloxacin
      2. Potential emergent resistance

III. MAIN PROPERTIES/ADVANTAGES
   A. Bactericidal
   B. Low toxicity
   C. Good distribution
   D. Good half-life
   E. Oral use
   F. Cost (i.e., if patient would otherwise require more expensive hospitalization)

IV. DISADVANTAGES
   A. Children/adolescents less than 18 years old (i.e., immature)
      1. Osteochondrosis in immature laboratory rats, therefore currently not recommended in this age group
      2. Studies in progress in human children/adolescents
   B. Drug interactions
      1. Theophylline
         a. Quinolones may inhibit theophylline metabolism and clearance, increasing blood levels of theophylline
         b. When quinolones must be used in patients taking theophylline, monitor theophylline levels and adjust dosage of theophylline to avoid theophylline-related adverse reactions
      2. Caffeine
         a. Quinolones may inhibit caffeine clearance increasing blood levels of caffeine
         b. Encourage patients taking quinolones to discontinue caffeinated beverages
      3. Antacids, iron supplements, and zinc supplements
         a. Quinolones form chelates with alkaline earth and transition metal cations (e.g., calcium, magnesium, aluminum, iron, zinc), lowering quinoline absorption and serum levels
         b. These agents should not be taken 2 hours before or 2 hours after quinoline administration
   C. Cost (i.e., if cheaper agent with effective spectrum is available)
   D. Potentially limited staphylococcal efficacy
      a. NOT recommended for elective surgical prophylaxis in the lower extremity
      b. NOT recommended for isolated staphylococcal infections
   E. No clinically useful activity against anaerobes or enterococci

V. DOSAGE SCHEDULE
   A. Ciprofloxacin
      1. Mild to moderate infections - 500 mg BID (i.e., 500 mg every 12 hours)

2. Severe infections/osteomyelitis - 750 mg BID (i.e., 750 mg every 12 hours)

B. Ofloxacin - 400 mg BID (i.e, 400 mg every 12 hours)

VI. THE FUTURE - "the oxacins are coming, the oxacins are coming..."