Skin Infection Type Dictates Antibiotic Choice

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MIAMI BEACH — There are many options for antibiotic treatment of uncomplicated and complicated skin infections, each with its own advantages and disadvantages, according to a presentation by Richard K. Scher, M.D., at a symposium sponsored by the Florida Society of Dermatology and Dermatologic Surgery.

Uncomplicated infections affect superficial skin tissue and include furuncles, cellulites, folliculitis, simple abscesses, and impetiginous lesions. Complicated infections affect deeper soft tissue or require significant surgery, such as infected ulcers, burns, or major abscesses. Infections are also complicated in the presence of significant underlying disease or if the affected site carries a higher risk for anaerobic or gram-negative infection, such as the rectal area.

Patients with severe atopic dermatitis, poorly controlled diabetes, or kidney failure may be predisposed to skin infections. Other risk factors include leukemia or lymphoma; malnutrition and low serum iron; alcohol abuse; intravenous drug use; and medications including systemic steroids, cytotoxic agents, and immunosuppressants.

Dr. Scher, professor of clinical dermatology at Columbia University, New York, discussed options for treatment of uncomplicated skin and skin structure infections:

► **Cephalosporins.** These drugs have good tolerability and good sensitivity. The risk of hypersensitivity is low, probably less than 2%, for a patient with a history of nonanaphylactic penicillin allergy.

First-generation drugs in this class include cephalexin and cefadroxil. They have good activity against *S. pyogenes* and methicillin-resistant *S. aureus*. Dosing is t.i.d. to q.i.d.

Second-generation agents include cefaclor and cefuroxime. These drugs feature expanded activity against gram-negative bacteria and have a longer half-life than the first-generation drugs. Dosing is b.i.d.

Third-generation cephalosporins include cefixime and ceftibuten. They are good for gram-negative organisms but not as effective for gram-positive bacteria, Dr. Scher noted. Dosing is once daily or b.i.d.

Extended-spectrum cephalosporins include cefdinir and cefpodoxime. These agents have good activity against both gram-negative and gram-positive bacteria. Cefdinir is administered b.i.d.

► **Penicillins.** *S. pyogenes* is always sensitive to treatment with penicillins, but because of cross resistance from MRSA, *S. aureus* is no longer sensitive. Drugs in this class that are β-lactamase stable exhibit good antistaphylococcal activity. Most dosing is t.i.d. or q.i.d.

► **Macrolides.** These medications include erythromycin, clarithromycin, and azithromycin. They are less likely to be used because of concerns about resistance, Dr. Scher said. Increasing resistance to *S. pyogenes* and *S. aureus* has been reported.

► **Tetracyclines.** The tetracyclines have some coverage for community-acquired MRSA. However, there are some resistance issues, and these agents can cause tooth discoloration in children and photosensitivity in some patients.

► **Fluoroquinolones.** Advantages of drugs in this class include a long half-life and the suggestion in early studies that fluoroquinolones are as efficacious as β-lactams for erysipelas, cellulites, impetigo, surgical wounds, and diabetic foot infections. However, resistance is increasing because of widespread use. Possible adverse effects include tendonitis and tendon rupture in adults. The fluoroquinolones are contraindicated in pediatric patients.

► **Lincosamides.** Clindamycin has good activity against *S. pyogenes* and methicillin-susceptible strains of *S. aureus*. It is also active against some MRSA strains. Resistance to erythromycin could signal inducible resistance to clindamycin, Dr. Scher said. There is an increased risk of pseudomembranous colitis associated with *Clostridium difficile*. Dosing is t.i.d.

► **Trimethoprim-sulfamethoxazole.** This drug combination covers some community-acquired MRSA infections. There is some resistance among staphylococci and no coverage for streptococci. Possible adverse reactions include rash and photosensitivity.

Factors that may alter antimicrobial decision making include emerging macrolide resistance among the β-hemolytic or viridans-group streptococci, Dr. Scher noted. He added that patients with community-acquired MRSA might also be resistant to β-lactams, macrolides, and quinolones, further limiting therapeutic choices. ■