National trends show that skin and soft tissue infections are on the rise in the US. Data show that there was an increase in visits for abscesses and cellulitis between 2001 and 2004. In general, patients 18 and younger, black patients, and patients of lower socioeconomic status were particularly likely for infection. Sixty-five percent of patients with infections were treated with prescription antibiotics, and only seven to 28 percent for MRSA. Importantly, while skin and soft tissue infections appear to be increasing, the number of hospital admissions for these conditions remained unchanged.

Although infectious diseases are addressed and treated in other specialties, practicing dermatologists consistently encounter a variety of infectious diseases. Therefore, it is important to follow research and media reports about local and national trends, as well as pay attention to potential new therapies. At the 2009 Fall Clinical Dermatology Conference in Las Vegas, Kenneth J. Tomecki, MD, Vice Chairman of the Department of Dermatology at the Cleveland Clinic, shared insights on infectious diseases and dermatology. He discussed a range of infections and useful treatments that clinicians should be aware of.

**Skin and Soft Tissue Infections**

**MRSA.** One of the more hot-topic issues in media reports and in practice is MRSA. In 2005, there were 126,000 hospitalizations in the US for MRSA. Of these, 94,000 cases were deemed life-threatening, resulting 19,000 deaths. According to Dr. Tomecki, community-acquired MRSA (CAMRSA) is prominent in younger patients; populations most at-risk are athletes, inmates, kids in daycare, and category IV drug users.

### Take-Home Tips.

- Infections rates are rising in the US.
- New and established therapies, especially antibiotics, can be used to treat infectious diseases successfully.
- New treatments include the topical antibiotic Altabax 1% and Benzyl Alcohol Lotion 5%.
- Recent data show that corticosteroids can be safe and effective, as they have an anti-inflammatory effect.
The morphology of CAMRSA infections is approximately 70 percent abscess, 15 percent furunculosis/folliculitis, and five percent cellulitis. Antibiotics are usually not necessary, noted Dr. Tomecki, unless the patient has a large lesion (particularly in the central face), cellulitis, comorbidity, extremes of age, or previous treatment failures. Preferred antibiotics for MRSA infections are trimethoprim/sulfamethoxazole (TMP/SMZ), tetracyclines, especially doxycycline, vancomycin, lincomamides (clindamycin), linezolid, daptomycin, and quinupristin/Dalfopristin.

**Syphilis.** Syphilis has been on the rise in the US in the last decade, despite a major decrease in the preceding two decades. Since 2001, incidence has increased 57 percent, primarily in the setting of men having sex with men, explained Dr. Tomecki. In developed countries, syphilis is typically transmitted by sexual contact in individuals with multiple sexual partners. Unlike HIV, oral sex is the usual route of transmission, though it also can be transmitted via recreational drug use. Penicillin is still the drug of choice for primary, secondary, and latent syphilis. For patients allergic to penicillin, doxycycline 100 mgm two times per day for 14 days if the therapy of choice, Dr. Tomecki suggested.

**Rocky Mountain Spotted Fever.** Transmitted by American dog ticks or Rocky Mountain wood ticks, Rocky Mountain Spotted Fever (RMSF) occurs primarily in the Western Hemisphere, particularly in the US Carolinas and the Southern Central US. There have also been cases reported in Asia, Europe, Africa, and Australia. The number of cases of RMSF has increased four-fold within the last five years, its third phasic increase in the last 80 years. Treatment is straightforward: doxycycline, or chloramphenicol for children and pregnant women. Chloramphenicol is most effective when used within five days of having the disease.

**The Measles.** Surprisingly, measles is on the rise in the US and Europe. There have also been documented increases in Israel and Europe. Its resurgence is possibly related to decreasing vaccination rates in home-schooled children and some parents’ avoidance of vaccination on religious or moral grounds. Recent controversy over the purported link between vaccines and autism, some reports have suggested, may have also contributed to these decreasing vaccination rates.

**New Research and Therapies**

Regarding new therapies, a new topical antibiotic is now available — retapamulin ointment 1% (Altabax, GlaxoSmithKline), a pleuromutilin (pleuromutilus) approved for the treatment of impetigo. It is indicated for individuals as young as nine months, and treatment is twice daily for five days.

**Bacterial Infections in Biologic Therapy**

Biologic agents have been scrutinized more heavily recently regarding safety. Among the areas of concern are bacterial infections, which have long been known as potential adverse events resulting from biologic therapy. One recent study presented results from a nationwide survey of infectious disease consultants to identify mycobacterial and other serious infections in patients receiving anti-tumor necrosis factor compounds and other novel targeted therapies. Researchers found that nontuberculous mycobacterial infections, histoplasmosis, and invasive *Staphylococcus aureus* infection were all reported more frequently than tuberculosis.
Benzyl Alcohol Lotion 5% (Sciele Pharma) was also recently approved as an alternative treatment of head lice in adults and children aged six months and older. Benzyl alcohol coats the lice on the scalp and scalp hair. Application is 10 minutes, twice weekly, with a second treatment one week later. Studies have shown that Benzyl alcohol is safe and efficacious, with a 75 percent success rate. Side effects include irritation and possible numbness at the site of application.

Corticosteroids tend to be avoided for infectious diseases, according to Dr. Tomecki. But a 2008 publication examining over 190 studies involving corticosteroids vs. placebo in the setting of antimicrobial therapy revealed that corticosteroids generally improved survival rates for many infections, such as bacterial meningitis, TB meningitis and pericarditis, typhoid fever, tetanus, and PCP. Corticosteroids were beneficial and reduced long-term disability or some, e.g. those with bacterial arthritis, and relieved symptoms including HIV, zoster, and cellulitis for many others. Corticosteroid treatment should last no longer than three weeks.

Given the data, Dr. Tomecki concluded that systemic corticosteroids can be beneficial and safe for a wide variety of infectious diseases. Benefits typically depend on type, amount, and duration of treatment, but their main benefit is their anti-inflammatory effect.

At the Winter Clinical Dermatology Meeting in Hawaii in January, Ted Rosen, MD gave an antimicrobial update on MRSA. Among his observations, Dr. Rosen presented a list of newer MRSA drugs worth noting (Table 1). He also referenced data concerning percentages of MRSA susceptibility among various antibiotics (Table 2).^5

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>CA-MRSA</th>
<th>HA-MRSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erythromycin</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>Levofloxacin</td>
<td>5-90%</td>
<td>12%</td>
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<tr>
<td>Clindamycin</td>
<td>30-92%</td>
<td>38%</td>
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<tr>
<td>Doxycycline</td>
<td>86%</td>
<td>89%</td>
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<tr>
<td>TMP-SMX</td>
<td>98%</td>
<td>92%</td>
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<tr>
<td>Linezolid</td>
<td>99-100%</td>
<td>99-100%</td>
</tr>
<tr>
<td>Vancomycin</td>
<td>90-99%</td>
<td>90-100%</td>
</tr>
<tr>
<td>New IV Drugs*</td>
<td>-100%</td>
<td>-100%</td>
</tr>
</tbody>
</table>

*Daptomycin, Tigecycline, Quinupristin-Dalfopristin


Insect Info

It might be beneficial to explain to patients that certain bugs and insects carry toxins that may result in skin and infectious diseases. For example, imported fire ants can be either black (solenopsis richteri) or red (solenpsis invicta) and their venom contain heme factors and amines. One potential treatments for this venom, according to Dr. Tomecki, is ammonia.