Antibiotic Exit Strategy Can Reduce Resistance

**By Betsy Bates**
Los Angeles Bureau

**Santa Barbara, Calif.** — Tetra-
cyclines may wind up being the safest, cheapest, easiest to tolerate nonintra-
avenous drugs available to treat future cas-
es of methicillin-resistant *Staphylococcus aureus*, and that should be reason enough to get on the bandwagon to preserve tetra-
cycline’s potency through wise use, ac-
cording to one dermatologist.

“I view the tetracyclines as the drugs I would like to save ... for the future,” Dr. Hilary Baldwin said at the annual meeting of the California Society of Dermatology and Dermatologic Surgery.

Dermatologic prescribing of antibiotics for acne and rosacea, as well as for skin in-
fections, may be driving resistance in un-
expected ways, said Dr. Baldwin of the State University of New York, Brooklyn. “The message is getting out to derma-
tologists and nondermatologists that an-
tibiotic resistance is here, it’s now, and we have to worry about it,” she said.

Her strategy has been “to utilize anti-
biotics when necessary, but devise an exit strategy on day 1.”

For example, she may prescribe a topi-
cal retinoid, hormonal therapy, or an an-
drogen receptor blocker alongside an anti-
biotic, so that the time clock will begin tick-
ing right away for nonantibiotic work-
horses that don’t necessarily act quickly.

By the time a topical retinoid really is be-
ginning to take hold—at about 12 weeks—the antibiotic will have produced quick, patient-pleasing results and can be dis-
continued. “On the day you stop topical or oral antibiotics [while continuing the al-
ternative medication], also start benzoyl peroxide,” she advised. Even though it is bac-
tericidal, no resistance develops in re-
sponse to benzoyl peroxide, she said.

“What I don’t think people worry about are topical antibiotics,” she said, noting that the timing of serious resistance prob-
lems coincides with the introduction of topical erythromycin and clindamycin.

More specific evidence arrived in 2003 with a disturbing study showing tetracy-
cline-resistant *Staphylococcus* pyogenes in the throats of 85% of long-term users of topical or oral antibiotics, compared with 20% of controls (Arch. Dermatol. 2003; 139:467-71).

Another study looked retrospectively at the charts of 118,496 patients, finding that patients who had received 6 weeks or more of topical or systemic antibiotics were at more than a twofold risk of upper respiratory infections (Arch. Dermatol. 2005;141:1132-6).

“Do we overprescribe antibiotics? Of course we do,” Dr. Baldwin said. Derma-
tologists write 8-9 million prescriptions a year for antibiotics and 40%-50% of all pre-
scriptions for tetracyclines.

The reasons are many: not wanting to miss infections, avoiding medicolegal prob-
s, and basically just wanting a quick response to inflammatory condi-
tions such as acne and rosacea. “Some-
times patients just wear us the heck down,” she admitted.

Dr. Baldwin disclosed ties with several pharmaceutical companies.

Vaccine Effect Might Depend on Needle Length, Not Site

**By Heidi Splete**
Senior Writer

**Washington** — Vaccine site has little impact on the vaccine’s effect, but using a 25-
mm needle instead of a 16-mm needle may be more effective in administering flu vac-

vaccine to older patients, based on results of a study conducted at the Mayo Clinic in Rochester, Minn.

The Centers for Disease Control and Prevention’s Advisory Committee on Im-
munization Practices currently recom-
mands influenza vaccination for all adults older than 50 years, but studies have shown that vaccine efficacy may be reduced in older adults, said Dr. Prikish Tosh, an in-
fec
dious disease fellow at the Mayo Clinic.

“We wondered whether vaccine site had any effect,” said Dr. Tosh, who pre-


tressed the study results at the joint an-
num-
ual meeting of the Interscience Confer-
ence on Antimicrobial Agents and Chemotherapy and the Infectious Dis-
eses Society of America.

He and his colleagues also examined whether a longer needle would increase penetra-
tion into the muscle and affect immu-

nogenicity and reactogenicity in older

patients. Flu vaccine manufacturers rec-

ommend 25-mm needles, but some single-
dose vials are currently packaged with 16-

mm needles, Dr. Tosh said.

In this study, Dr. Tosh and colleagues randomized 133 adults aged 48 years or older to receive the trivalent inactivated influenza vaccine in either the deltoid muscle or the deltoid fat pad. The groups were similar in terms of age, gender, weight, and other de-

mographic characteristics. Patients who were immunocompromised or had previ-

ously received the vaccine were excluded.

Antibody titers for each of the three strains of influenza in the vaccine were measured at baseline and at 4-6 weeks after vaccination.

The researchers found no significant differences in antibody response rates be-
tween the two groups. “The results ... were surprising,” Dr. Tosh said. “At base-
line, the antibody levels in the two groups were the same. However, after vaccina-
tion, we were expecting to see a substan-
tial difference between the two groups. But we didn’t see any difference for any of the three vaccine components.”

Similarly, the researchers found no sig-
ificant differences in immuno
genicity be-
tween those who seroconverted and those who did not. “Injecting in the fat pad did increase reactogenicity,” Dr. Tosh noted. “The patients who received deltoid fat pad injections reported significantly more red-

ness and swelling, compared with those who had intramuscular injections (34% and 5%, respectively).

Community-acquired MRSA is increas-
ingly familiar to dermatologists, since it presents as skin and soft-tissue infections in 85% of cases. Abscesses often occur below the waist; pain is more severe than the clin-
ical appearance of lesions might suggest.

“The treatment is drainage, drainage, drainage,” she said, adding that it most of-
ten works in the sentinel patient. Contacts at home, especially siblings, may develop severe necrotizing pneumonia and death. When MRSA does get nasty, “tetracy-
clines are probably the easiest drugs that we have to treat,” she said. (See box.)

“In a subset analysis, 66 patients under-
went ultrasound before vaccination to as-
ex fat pad thickness. “Based on the ul-
trasound, a 25-mm needle would have worked for 97% of the subjects,” Dr. Tosh noted. A 25-mm needle would have pen-

etrated the muscle in all of the men and all but 3% of the women, but a 16-mm needle would have failed to penetrate the muscle in 26% of men and 51% of women, he said.

Based on these findings, the use of 25-

mm needles, compared with 16-mm nee-
dles, increases the likelihood of injection into the muscle, which reduces the reac-
togenicity of flu shots in the elderly. Dr. Tosh said. Dr. Tosh stated that he had no financial conflicts to report.

**Current Antibiotic Choices for MRSA**

**Currently Available Antibiotics**

Tetracyclines: Cover 80% of MRSA. Penicillins/cephalosporins: Ineffec-
tive against MRSA.

Trimethoprim-sulfamethoxazole: Reasonable, cheap; sufficient to cover most MRSA but not Strep. 

Tetracyclines: Inappropriate, only but efective for skin/soft tissue infections.

Tigecycline: The newest antibiotic is intravenous only, but very efective.

**Drugs on the Horizon**

Daptomycin: Pfizer Inc. withdrew the application for this injectable.

Telavancin: The application for this injectable was suspended.

Ceftobiprole: The application for this new cephalosporin was suspended.

Oral antibiotics in development for MRSA: None.

Sources: Baldwin, Paul Holton

**Oxazolidiones** (linezolid, etc.): Oral, but very expensive, with significant ad-
verse efects. Resistance is developing.

Streptogramins: Effective, but require intravenous dosing. They are very ex-
pensive and have major adverse efects.

**Fluoroquinolones** (levofloxacin, ciprofloxacin, ofloxacin, etc.): Effective, promote emergence of MRSA.

**Lincosamides** (clindamycin): Covers some MRSA, but resistance is growing.

**Glycopeptides** (vancomycin): Resistance is increasing. Not efective for many serious infections.

**Tetracyclines** (doxycycline): More specific evidence arrived in 2003 with a disturbing study showing tetracy-
cline-resistant *Staphylococcus* pyogenes in the throats of 85% of long-term users of topical or oral antibiotics, compared with 20% of controls (Arch. Dermatol. 2003; 139:467-71).

Another study looked retrospectively at the charts of 118,496 patients, finding that patients who had received 6 weeks or more of topical or systemic antibiotics were at more than a twofold risk of upper respiratory infections (Arch. Dermatol. 2005;141:1132-6).

“Do we overprescribe antibiotics? Of course we do,” Dr. Baldwin said. Derma-
tologists write 8-9 million prescriptions a year for antibiotics and 40%-50% of all pre-
scriptions for tetracyclines.

The reasons are many: not wanting to miss infections, avoiding medicolegal prob-
s, and basically just wanting a quick response to inflammatory condi-
tions such as acne and rosacea. “Some-
times patients just wear us the heck down,” she admitted.

Dr. Baldwin disclosed ties with several pharmaceutical companies.

---

**DATA WATCH**

**Influenza Vaccination Utilization Is Higher for People With Asthma**

<table>
<thead>
<tr>
<th>Group</th>
<th>With current asthma</th>
<th>Without current asthma</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aged 2-17 years</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current asthma</td>
<td>29.3%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Without current asthma</td>
<td>36.2%</td>
<td>23.9%</td>
</tr>
<tr>
<td><strong>All ages</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current asthma</td>
<td>29.3%</td>
<td>14.3%</td>
</tr>
<tr>
<td>Without current asthma</td>
<td>36.2%</td>
<td>23.9%</td>
</tr>
</tbody>
</table>

*Statistically significant compared with children who do not currently have asthma. Source: 2005-2006 data, Centers for Disease Control and Prevention*

---

All ages

---

---