

## Are Fluoroquinolones Being Overprescribed for CAP?

BY DEEANNA FRANKLIN  
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WASHINGTON — Inconsistent and unclear guidelines may be contributing to overprescribing of fluoroquinolones to treat community-acquired pneumonia, Conan MacDougall, Pharm.D., and colleagues said in a poster presentation at the Interscience Conference on Antimicrobial Agents and Chemotherapy.

Treatment of community-acquired pneumonia (CAP) is one of the primary indications for fluoroquinolones for both inpatients and outpatients, according to guidelines issued by the Infectious Diseases Society of America (IDSA).

"[Fluoroquinolone] resistance, while generally low, appears to be increasing in *Streptococcus pneumoniae* as well as among gram-negative organisms. Thus, overuse and inappropriate use may compromise the future efficacy of this class of antibiotics," reported the research team led by Dr. MacDougall, who was formerly with the department of clinical pharmacy at the University of California, San Francisco, but

now is an infectious diseases fellow at Virginia Commonwealth University, Richmond. The researchers did a retrospective, observational database review of pharmacy claims from four managed care organizations in Colorado from March 2000 to March 2003. A total of 4,538 patients were studied; 35% were aged 18-44 years, 35% were aged 45-64 years, and 30% were aged 65 or older. More than half of the patients (54%) were women. All of the patients had a primary diagnosis of CAP with no significant comorbidity.

Overall, 72% of the patients were treated by a family physician and 26% were treated by an internist. The remaining 2% were seen by other specialists. Fluoroquinolone use in this population rose 62% from 2000 to 2002, while macrolide use dropped 25% in the same time period, Dr. MacDougall reported.

Internists tended to prescribe the drugs more often than did family physicians, and patients aged older than 65 years received fluoroquinolones more often than did younger patients. Also, the use of fluoroquinolones

increased across all age groups during the course of the study.

The rise in fluoroquinolone use among older patients may be appropriate since these patients are at higher risk of having drug-resistant *S. pneumoniae*.

But increased prescribing of fluoroquinolones for younger patients with no comorbidities who have a low risk of treatment failure is cause for concern.

In 2001, CAP treatment guidelines were issued by the American Thoracic Society, the Centers for Disease Control and Prevention, and the Canadian Thoracic and Infectious Diseases Societies, in addition to IDSA.

All four groups recommended macrolides and doxycycline as first-line therapy for CAP, but they differed on the indications for fluoroquinolone use.

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The CDC included beta-lactam antibiotics among first-line choices, while the IDSA included fluoroquinolones. Also, the CDC recommended use of fluoroquinolones or macrolides in addition to beta-lactams only for patients in intensive care, Dr. MacDougall noted.

The American Thoracic Society and the Canadian Thoracic and Infectious Diseases Societies recommend fluoroquinolones for all inpatients, with or without the addition of a beta-lactam. The Canadian group was the only one to recommend fluoroquinolones for nursing home patients.

In its 2003 update to "Guidelines for CAP in Adults," the IDSA recommended using a fluoroquinolone alone as first-line therapy only for adult outpatients who have had recent antibiotic therapy, all adult inpatients, and nursing home residents. For previously healthy adult outpatients, the guidelines now recommend first trying a macrolide or doxycycline.

Marketing may be driving greater demand for fluoroquinolones. However, guidelines issued by professional societies "are inconsistent and may be causing confusion," Dr. MacDougall said in an interview with this newspaper.

The researchers cautioned that overuse of fluoroquinolones might raise the risk of drug resistance in other organisms, such as *Escherichia coli*.

The conference was sponsored by the American Society for Microbiology.

## Bacterial Meningitis Triad Is Often Absent

BY MITCHEL L. ZOLER  
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WASHINGTON — Less than half of patients with bacterial meningitis have the classic symptom triad of fever, stiff neck, and a change in mental status, Diederick van de Beek, M.D., said while presenting a poster at the annual Interscience Conference on Antimicrobial Agents and Chemotherapy.

Dr. van de Beek, a neurologist at the Academic Medical Center in Amsterdam, reported that many patients present with just two classic symptoms, one of which may also be headache.

Infection with *Streptococcus pneumoniae* is such a powerful predictor of poor outcome that it should also be a factor when physicians decide whether to do a lumbar puncture. Patients who only have a lower level of consciousness and infection with *S. pneumoniae* should also be assessed for bacterial meningitis by lumbar puncture, he told this newspaper.

In a review of 696 patients with community-acquired, acute bacterial meningitis, the classic symptom triad occurred in 44% of patients, Dr. van de Beek reported in his poster. (The data have been published: *N. Engl. J. Med.* 2004;351:1849-59).

In contrast, 95% of patients had at least two classic symptoms. The most common

classic symptom was headache in 87%, followed by neck stiffness in 83%, fever in 77%, and a change in mental status in 69% (defined as a Glasgow Coma Scale score of less than 14).

Of these patients, 21% died and 13% had other unfavorable outcomes including a vegetative state or severe or moderate disability. The likelihood that a patient would have an unfavorable outcome was sixfold higher among patients who were infected with *S. pneumoniae* than among those infected with *Neisseria meningitidis* when the incidence rates were adjusted for potential clinical confounders.

This study is the first report of a prospective, large-scale analysis of the clinical factors associated with bacterial meningitis and its outcomes, Dr. van de Beek said at the conference, sponsored by the American Society for Microbiology. The study data were drawn from information on all patients who were at least 16 years old and diagnosed with bacterial meningitis in the Netherlands Reference Laboratory database from October 1998 through April 2002.

Of 1,108 cases in the database, complete data were retrieved for 754 patients, of whom 58 were excluded either because their infection was nosocomial, they had had recent neurosurgery, or they had received a neurosurgical device. ■

## For Treating Strep Throat, 5-Day Cephalosporin Beats Penicillin

BY MITCHEL L. ZOLER  
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WASHINGTON — A short-course regimen with a cephalosporin was more effective than a 10-day regimen with penicillin for curing strep throat, based on a metaanalysis of 14 studies done in adults and children.

A short-course regimen, which usually lasts 5 days, runs counter to what most physicians were taught to use to treat tonsillopharyngitis caused by group A streptococci, Janet R. Casey, M.D., said in a poster presentation at the annual Interscience Conference on Antimicrobial Agents and Chemotherapy.

But physicians must realize that many patients won't take an antibiotic for 10 days, and so they should consider prescribing a 5-day course instead. The results from the metaanalysis "are a start toward changing physician behavior," said Dr. Casey, a pediatrician at the University of Rochester (N.Y.).

The metaanalysis included 14 studies that compared a short-course of a cephalosporin with a 10-day course of penicillin. These studies involved seven different cephalosporins. The most commonly used drug was cefpodoxime (Vantin), in four studies, followed by cefuroxime (Ceftin), in three studies. Cefixime (Suprax) and cefdinir (Omnicef) were each used in two studies, and cefadroxil (Duricef), cefotiam, and cefprozil (Cefzil) were each used in a single study. The 14 studies enrolled a total of 1,880 pa-

tients in the cephalosporin-treated groups and a total of 2,760 patients in the penicillin-treated groups.

Twelve of the studies involved a 5-day course of cephalosporin. The remaining two studies used a 4-day course; one 4-day regimen used cefuroxime, and the other used cefixime.

Overall, the results of these 14 studies showed that treatment with a short-course of a cephalosporin produced a 63% higher cure rate than a 10-day course with penicillin, a difference that was statistically significant.

The value of a short-course regimen was highlighted in an analysis of four studies that each compared a 5-day course of a cephalosporin with a 10-day course of the same drug. The results showed that compliance with the 5-day regimens was threefold greater than compliance with the 10-day regimens, Dr. Casey said at the conference, which was sponsored by the American Society for Microbiology.

The only short-course regimens currently approved by the Food and Drug Administration for treating strep throat are 5 days of treatment with azithromycin, cefdinir, or cefpodoxime, Dr. Casey told this newspaper.

The remainder of the 27 total studies in the metaanalysis included studies that compared short-course regimens that used penicillin, amoxicillin, or a macrolide against 10 days of treatment with penicillin or another comparator drug with similar or less efficacy. ■