

Global Survey Elucidates Antibiotic Compliance

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NICE, FRANCE — Although many people are concerned about antibiotic resistance, far fewer understand how their actions contribute to the problem, according to a global patient survey.

Results from the COMPLY (Compliance, Modalities by Population, Lifestyle and Geography) survey show that noncompliance is a global phenomenon that varies widely among countries, and is associated with patient age, dosage regimen, and patient attitudes toward their physicians.

A combination of telephone and in-person interviews were conducted in the fall of 2005 with 4,514 participants from 11 countries who were 18 years or older and had taken a self-administered antibiotic in the past 12 months. Noncompliance was defined as missing a dose or day, or having any drug left over. A total of 4,088 patients were included in the study, which was sponsored by Pfizer Inc.

The preliminary results, presented at the 16th European Congress of Clinical Microbiology and Infectious Diseases, included:

► Overall, 22% of respondents admitted to being noncompliant with their last antibiotic treatment. Noncompliance rates ranged from 10% in the Netherlands to 44% in China.

► Of those surveyed, 8 in 10 reported that antibiotic-resistant germs are a very serious problem, but only 6 in 10 believed that taking an antibiotic improperly might reduce its effectiveness the next time it is used.

► Half of respondents believed leftover antibiotics could be saved and used again.

► Among those with leftover antibiotics, 74% said they saved them, 18% threw them away,

5% gave them to someone else, and 3% dealt with them by other means.

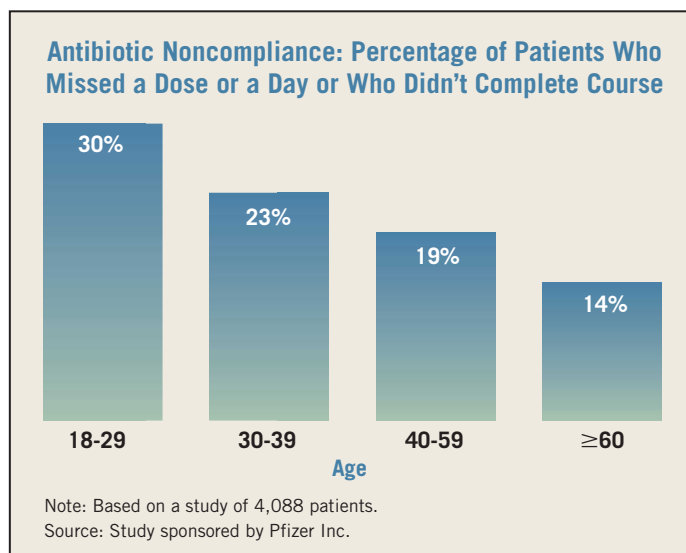
► Noncompliance among patients aged 18-29 years was twice as high (30%), compared with those 60 years and older (14%).

► Noncompliance was lower among patients taking one dose per day (15%), compared with those taking two doses per day (21%) or three or more doses daily (27%).

A patient's attitude toward his or her physician is another factor driving noncompliance, said Dr. Jean-Claude Pechère, who presented the results at the meeting. Patients who feel actively involved in decisions about the management of their condition are more likely to comply with an antibiotic regimen, compared with those who are critical of their physician's abilities or feel ignored.

Attitudes differ by country. For example, Americans tend to be more involved patients, whereas many Japanese patients feel ignored, said Dr. Pechère, COMPLY steering committee chair and professor emeritus, University of Geneva. Noncompliance was 19% in the United States, compared with 34% in Japan, according to the study.

He suggested that educational efforts be tailored to address intercountry variations and that physicians educate their patients about proper antibiotic use. ■



Prescribing Patterns of Oral Antibiotics Vary by Specialty

NICE, FRANCE — Family practitioners prescribe penicillins most often, whereas surgeons prescribe fluoroquinolones more frequently than any other specialty.

These are some of the findings from a 3-year study examining prescribing patterns of oral antibiotics by physician specialty in the United States. This is the first study to offer a national perspective on outpatient antimicrobial prescribing by physician specialty, Katie J. Suda, Pharm.D., and her associates reported at the 16th European Congress of Clinical Microbiology and Infectious Diseases. "Over the 3 years, prescribing patterns did vary significantly by physician specialty," she said.

Investigators evaluated outpatient antibiotic prescriptions dispensed in 2001-2003 from nine managed health care plans. Medications were stratified into classes and formulations as defined by the American Hospital Formulary Service. Diagnostic codes were defined according to Medicode (now Ingenix).

A total of 7,613 physicians wrote 48,182 antibiotic prescriptions for 26,875 patients. The average patient age was 34 years. The majority of patients were diagnosed with upper respiratory tract infection followed by sinusitis and genitourinary infections.

Physician specialties included family practice (42%), internal medicine (14%), pediatrics (21%), emergency medicine (5%), specialists (5%), dermatologists (4%), obstetricians/gynecologists (3%), surgeons (3%), and others such as pathologists and psychiatrists (3%).

Overall, penicillins were dispensed most frequently, followed by macrolides, cephalosporins, and fluoroquinolones, said Dr. Suda, of the University of Tennessee Health Science Center in Memphis.

Dermatologists most often prescribed tetracyclines (75%); emergency medicine physicians, macrolides (42%); ob.gyns, nitrofurans (27%); pe-

diatrics, penicillins (38%); and surgeons, fluoroquinolones (25%). Family practitioners prescribed penicillins most often, while internists prescribed fluoroquinolones.

All physician groups prescribed β -lactamase inhibitors more frequently than any other agent for the treatment of skin and skin structure infections.

Internists prescribed broader-spectrum agents for the treatment of urinary tract infections, whereas ob.gyns prescribed narrower-spectrum agents, even though not all of their patients may be pregnant or lactating, she said. Fluoroquinolones were used most often for UTIs by family practitioners, internists, and emergency physicians, and nitrofurans by ob.gyns and surgeons.

β -Lactamase inhibitors were the treatment of choice for upper respiratory tract infections for family practitioners and specialists. But internists and emergency physicians were more likely to prescribe macrolides, which may be because these physicians see more patients with complicated conditions, she said. Pediatricians used penicillins most often, followed by macrolides and β -lactamase inhibitors.

Overall, lower respiratory tract infections were treated most often with macrolides, followed by fluoroquinolones.

Audience members questioned if the findings were representative of family care in the United States, particularly in light of the high fluoroquinolone use that was reported. Dr. Suda said she believed the findings were representative of a managed care population under the age of 65 years, but added that she was unable to validate the findings against data from other plans because most organizations won't release the information.

The most commonly prescribed fluoroquinolones were levofloxacin (>50%), followed by ciprofloxacin, moxifloxacin, and gatifloxacin, she said. ■

Pneumonia May Be Tamed Effectively by Short-Course Antibiotics

NICE, FRANCE — Clinicians should consider shorter, less burdensome regimens as part of an overall strategy to improve antibiotic compliance, Dr. Thomas File Jr. said at the 16th European Congress of Clinical Microbiology and Infectious Diseases.

High cure rates are possible with high-dose, short-course therapy when a potent, rapidly acting antibacterial agent is used, and pharmacodynamic principles are applied. Respiratory tract infections, such as pneumonia, are traditionally treated with a 7- to 14-day course of antibiotics. But findings from in vitro and in vivo studies suggest that pathogens can be eradicated in 24 to 48 hours with effective agents, Dr. File said.

Evaluations of shorter-course therapies include a study in which once-daily telithromycin 800 mg was shown to be equivalent to twice-daily clarithromycin 500 mg in a 10-day regimen for community-acquired pneumonia (Clin. Ther. 2004;26:48-62). Similarly, levofloxacin 750 mg for 5 days was as effective as 10 days of levofloxacin 500 mg in patients with mild to severe community-

acquired pneumonia (Clin. Infect. Dis. 2003;37:752-60).

More recently, phase III randomized trials have shown that a single 2-g oral dose of azithromycin microspheres (Zmax) was comparable to a 7-day regimen of levofloxacin 500 mg/day in patients with community-acquired pneumonia (Antimicrob. Agents Chemother. 2005; 49:4035-41) and comparable to 10 days of levofloxacin in patients with acute bacterial sinusitis (Otolaryngol. Head Neck Surg. 2005; 133:194-200).

Azithromycin's microsphere formulation releases the active drug in the small intestine rather than stomach, reducing gastrointestinal side effects, said Dr. File, who has received honoraria and clinical support from Pfizer Inc., which markets Zmax. Unpublished pharmacokinetic data suggest that five to eight times more drug is delivered to the site of infection, he said.



Clinicians should familiarize themselves with the pharmacokinetic and pharmacodynamic parameters of an individual agent and its minimum inhibitory concentration to improve bacterial eradication. Local resistance patterns also should be taken into consideration when choosing an antibiotic. For example, penicillin resistance in isolates of *Streptococcus pneumoniae* during 1998-2000 was just 4% in the Netherlands but a staggering 32% in Ireland (J. Antimicrob. Chemother. 2003;52:229-46).

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DR. FILE

Finally, Dr. File urged physicians to educate patients about proper antimicrobial use to reduce patient expectations. "Patient satisfaction is not compromised by the absence of an antibiotic prescription, provided the patient understands the reasons," said Dr. File, professor of internal medicine, Northeastern Ohio Universities College of Medicine, Rootstown, Ohio. ■