

EDITORIAL

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Reducing “Unnecessary” Antibiotic Use in Primary Care: Hard Rules, Soft Calls

Now that we have emerged from another influenza season, a time when many outpatient departments were flooded with patients seeking relief from acute viral illness, it's time to think about what went on. One weekend morning in February, a resident and one of us (the pediatrician) saw almost 40 kids in our walk-in clinic. Over 90% of them had some combination of the following: fever, cough, sore throat, runny nose, headache, and malaise. While one or two had lobar pneumonia, the majority had uncomplicated viral illness. Most had family members with similar illnesses, some of whom were already taking their “five-pack” of azithromycin. This kind of casual use of broad-spectrum antibiotics (and the emergence of resistant *Streptococcus pneumoniae*) has been a frequent topic of discussion in our training program. But because of the high volume of patients, decisions had to be made swiftly without a lot of small talk. In some cases, parents seemed to expect antibiotics for what was clearly a viral illness. Would not giving antibiotics affect satisfaction?

In this issue of **e****c****p**, Gonzales and colleagues provide an answer. They report that a successful intervention to reduce antibiotic use for acute bronchitis in one clinic did not affect patient satisfaction with care.¹ The intervention was based on the educational approach taken by the Centers for Disease Control and Prevention (CDC) to reduce unnecessary demand for antibiotics. Compared with a control clinic, the intervention clinic had less antibiotic use but similar patient satisfaction. This information should reassure physicians who are reluctant not to give antibiotics for fear that patients will react negatively.

The basic elements in the CDC materials for physicians advocating careful antibiotic use are these: Teach patients about the real cause of their illness, explain that antibiotics do not treat the cause, offer symptomatic relief, explain why antibiotics can be harmful, and help patients be “glad” they have a mild condition. The assumption is that patients approached in this fashion will no longer insist on receiv-

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ing antibiotics. The shocker is that after a careful physician and patient education intervention based on these principles, the antibiotic prescription rate for a presumably viral illness remained over 60%. How can this be?

Perhaps the current model of antibiotic prescribing is oversimplified and the patient is not always to blame—physicians may also be part of the problem. Four factors may account for why physicians prescribe antibiotics “unnecessarily”: expediency, uncertainty about the diagnosis, the possibility that the benefits outweigh the risks, and marketing.

Expediency

Not giving antibiotics involves a greater investment of physician time; this issue is largely ignored in the current debate. It takes time to teach patients about the real cause of their illness, explain that antibiotics do not treat the cause, offer symptomatic relief, explain why antibiotics can be harmful, and help them be “glad” they have a mild condition. Moreover, our perceptions of expediency will change depending on our level of fatigue and how far behind schedule we are. As more emphasis is placed on maximizing patient flow, physicians will search for ways to shorten the visit while maintaining satisfaction and minimizing risk for a bad outcome. It may be sacrilegious to say, but giving antibiotics can do that.

Uncertainty about the Diagnosis

Most educational materials assume that the physician can be fairly certain about the cause of an illness. This may be true for bronchitis that presents within a week of illness onset. However, most patients handle the typical cold and cough without a doctor visit. The patients who come to their physician often have one or two factors that could suggest a bacterial component (e.g., prolonged symptoms, fever, or sinus tenderness). Moreover, patients who see physicians are more likely to have underlying factors that increase their susceptibility to bacterial infection (e.g., advanced or very young age or chronic obstructive pulmonary disease). In fact, there is often a lot of diagnostic uncertainty about the cause of the illness.

Because physicians are trained to be wary of missing serious treatable disease, any of these clinical factors, alone or combined, will tip the balance in favor of giving antibiotics. One of our mentors talked about the diagnosis of “acute reassuring otitis media”: “acute” because the doctor then had a reason to prescribe antibiotics and “reassuring” because he no longer had to worry about sending a kid with occult bacteremia home without coverage. Another way of looking at this is from the liability standpoint: While many physicians

know someone who has been sued for missing bacterial disease, no one has ever been sued because they contributed to antibiotic resistance.

The Benefits Might Outweigh the Risks

The current approach to restricting antibiotic use is paternalistic, ignoring the possibility that a patient might consider the risks and benefits of taking antibiotics and then opt to take them. Consider this example. A 17-year-old high school senior, captain of the hockey team, being recruited by four major colleges, comes in with his dad. There is a big tournament coming up next week; he has had symptoms of upper respiratory infection for 10 days, with a dry, hacking cough that doesn't seem to be getting better. His cough is impairing his ability to play. You diagnose bronchitis and explain that there is only a 5% or 10% probability that a bacterial infection is contributing to this illness. You explain that taking antibiotics is not free of risk and could result in an allergic reaction or emergence of resistant organisms. You offer a bronchodilator to take before games and a cough suppressant at night. The youth feels that, given the importance of the tournament, he is unwilling to risk even a 5% chance that there is a bacterial component that will not be treated. He (and his father) want an antibiotic to cover the small risk for bacterial infection. This seems to be a rational request for antibiotics, and there are many other scenarios that fall into the same category.

Marketing

Marketing undoubtedly affects physician prescribing of antibiotics. With the advent of direct-to-consumer advertising, marketing is also likely to affect patient demand. Pfizer's marketing plan for azithromycin is a case in point.² Using a strategy reminiscent of R.J. Reynolds Tobacco Company's Joe Camel, the company markets Zithromax using Max—a cartoon zebra mascot. And it appears to have worked: Zithromax is a billion-dollar drug and is encroaching on sales of its rival, amoxicillin. Last year, after federal officials stated that other antibiotics were both cheaper and more successful at treating children's ear infections, Pfizer responded by stepping up its advertising and promotion of Zithromax. Not content to limit themselves to the otitis media market, Pfizer has also devised the “five-pack,” a convenient 5-day treatment program for adults; this package is a favorite for the treatment of bronchitis. This example raises a more general question: Is there a sufficient public health interest in antibiotic use to restrict how these drugs are marketed?

In sum, although current efforts to reduce unwarranted antibiotic use focus on patients, physicians (and

pharmaceutical companies) are also part of the problem. Resistant bacteria are bad for everyone and, from the public health perspective, reducing antibiotic use is the right thing to do. Physicians can help (without spending a whole lot more time) by finding out what their patients want up front. Although we have tended to blame patients for indiscriminant antibiotic use, patient demand is probably much lower than we perceive. Gonzales and colleagues show that only around 10% of patients with bronchitis actually went to the doctor to obtain antibiotics, yet more than half left with a prescription. Why not ask what patients came for at the outset of the visit? Some will make it clear that they won't leave without antibiotics. Others may be willing to wait to a few more days if they can be assured follow-up by telephone. Many will simply want to be examined

and reassured or are simply seeking something to help them get a good night's sleep. Physicians who misread the patient's agenda will waste time explaining that antibiotics can be bad to patients who just want reassurance and a little codeine.

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