Chipping Away at Antibiotic Resistance, Hideous Hospital Gowns, and Other Health Care Woes

Sonja Sherritze, Editor, P&T

It was early in 2001, seven months before 9/11, and long before the invention of the world’s greatest time-killer, the iPhone. I had been sitting alone in the oversized paper towel they called a “gown” for more than 15 minutes, with cold air blowing down from the vent strategically placed above my head. The part of the paper-towel gown that was under my legs was rubbing against the wax paper on the exam table, and I was mildly concerned that something would rip. Finally, the doc entered the room without any apology or explanation for the delay. I cut to the chase.

The nonstop burning was worse, I explained, than the pain I had experienced with an earlier bout of sciatica. The shooting pain from sciatica had at least subsided during the night, if I took the drugs.

The doc removed his skinny flashlight from inside my mouth and stepped back. “That is the worst-looking throat I have seen in a week,” he said. I half-expected men in hazmat suits to come barging through the door.

At least it was validation of a sort. He could see that I was not being a drama queen (not this time, anyway). I wondered how many throats he had seen in the past week, but my pain-induced fog prompted me to simply ask, “Strep?”

“We’ll have the cultures back within 48 hours, but yeah. It’s a good thing you came in.” I later read that untreated strep throat can lead to a weakened heart.

I replied. There was no anaphylactic reaction, no trip to the emergency department, no drama. He seemed almost disappointed.

He sighed and wrote out a script for a brand-new and, unbeknownst to me, hyper-expensive antibiotic. Surely this would do the trick, I thought (correctly), and fast (wrong!). He didn’t warn me about the cost; maybe he thought it would be covered by my insurance. It wasn’t—I was at a new job, working in what I later discovered was a “sick building” in an otherwise lovely town in northern New Jersey, and my health insurance didn’t kick in for 30 days.

I thought the pharmacist had made a mistake when he said the cost was more than $200. That’s a lot of money even today, but it seemed astronomical to a fledgling editor. It seemed to me that there ought to be more than just two options—the one that could kill me and the one that cost more than my phone and electric bills combined. Silly me.

Fast-forward to December 2014, at the meeting of the American Society of Health-System Pharmacists (ASHP) in Anaheim. I can always find good sessions on drugs in the pipeline at this conference. The first speaker gave a fascinating overview of the history of penicillin and antibiotic resistance, and explained that a lot of patients think they’re allergic to penicillin when they’re really not—they’re just having an adverse reaction. Light bulb! Fourteen years later, I had an explanation for Dr. Frownsigh’s demeanor.

Then I had a flashback to a phone conversation with a friend whose mother was a nurse. The nurse had seen patients who had had a mild reaction to penicillin the first time they took it—and the second time was a near-fatal event. I was warned: If you think there’s even a slight chance you might be allergic to penicillin, tell all your doctors, and don’t ever take it again.

Back to ASHP: For variety, I went from the antibiotic pipeline session to one on the latest drugs for cardiovascular disease. Guess what the speaker was talking about? Antibiotics! She was rolling her eyes, metaphorically speaking, about those pesky cardiac patients who claimed (eye roll) to have had a reaction to penicillin early in life, and whose “momma told them,” she said, to “never, ever, ever take penicillin again.” I saw sporadic head-shaking and snickering and nodding heads in the audience—friends of Dr. Frownsigh, no doubt. I wanted to throttle them. So if we (patients) are all as stupid as The Experts were insinuating, then why not educate us, instead of frowning and sighing and mocking us? Of course, that would require a five-minute conversation. Or how about if they told their researcher pals to hurry up and invent some new drugs? Oh wait, that takes decades and billions of dollars, and manufacturers have no financial incentives to develop them. Never mind!

OK, so I have learned that maybe I’m not truly allergic to penicillin. Then again, maybe I am—I don’t know for sure, and neither does Dr. Frownsigh. And how would YOU feel, Doc, if you were asked to be a human guinea pig? Turns out that while many people report having an allergy to penicillin, less than 10% of them have a true allergy to the drug—but it nevertheless kills approximately 300 people each year in the United States.1

I have learned over the past 14 years that drug development is formidable and expensive; that patients don’t always take the full course of their medicine, which leads to antibiotic resistance; and that bacteria have been around for billions of years, whereas antibiotics (as we know them today) have been around for less than a century. So it’s hardly a fair fight. But considering that we might all be just one methicillin-resistant Staphylococcus
**aureus** (MRSA) or strep strain away from a pandemic, you’d think this would be a higher national priority.

Apparently a lot of folks were listening to my internal rant. Just one month after the start of that ASHP meeting, Kim Lewis, PhD, of Northeastern University in Boston made national news with the discovery of a potentially resistance-free (or at least “resistance-light”) antibiotic named teixobactin, along with 24 other slightly less promising drug candidates. Although these potential superdrugs of the future are not totally resistance-free, they might be able to stave off resistance for decades instead of seemingly minutes. This discovery was made possible with a device called an iChip, which allows “unculturable” bacteria to develop in the ground (a natural setting) rather than in a petri dish.

Then President Barack Obama urged Congress to double the amount of funding allocated to combat antibiotic-resistant bacteria, and announced a new plan for a national strategy to attack the problem. As part of Executive Order 13676, issued last September, the plan calls for improved surveillance of outbreaks, better diagnostic tests, and new research on alternative drug therapies.

Researchers and infectious disease doctors, of course, have been warning about the problem for years. Some have said that if the current trend of antibiotic resistance continues, “the world could return to the time before antibiotics, when it was common for people to die from ordinary infections and for children not to survive ailments like strep throat.” I’d like to take this opportunity to point out that children are not the only ones who get strep throat (Exhibit A, me).

The story that has gotten the most attention lately, though, is the one that comes out of left field. It’s the revelation that a thousand-year-old Anglo-Saxon remedy, a medieval potion found in *Bald’s Leechbook*, has been found to kill MRSA. Researchers found that Bald’s eye salve killed the bacteria in up to 90% of MRSA-infected skin wounds in mice (but not guinea pigs [editor humor]) at Texas Tech University. I must say, it never would have occurred to me (or anybody I know) to mix wine, garlic, and onion or leek with bile from a cow’s stomach and brew it in a “brass vessel,” for any reason whatsoever, but hey, what do I know? I’m just a penicillin-phobic patient (a penicillinophobe?). As with Dr. Lewis’ discovery, further research is needed to investigate how and why the cow-bile recipe works, at least in Texas mice.

2015 marks 70 years since Sir Alexander Fleming received the Nobel Prize in Physiology or Medicine for his discovery of penicillin. I don’t know about you, but I’m excited about all of the developments that have occurred since then and especially in the 14 years since my memorable strep infection. (Far be it from me to dwell on my medical maladies.) My primary care doc is now (albeit grudgingly) entering information from my visits into an electronic medical record and sending my scripts electronically to my pharmacy. I now have excellent health care coverage thanks to a generous employer. Heck, it turns out people are even working to improve the hated hospital gowns, to make them less paper-towel-ish, warmer, and less humiliating. I am intrigued by this iChip thing and cautiously optimistic about the future of antibiotics. Now if we can just chip away at the wait times in the waiting and exam rooms … maybe in the next 14 years.

**REFERENCES**