Season 2, Episode 6: Antibiotics: To Take or Not to Take

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Syra: Welcome to the Healthier You Podcast. I'm Syra. I am a nurse practitioner at the Occupational Health Clinic here at VUMC, and I have here with me today, Dr. Milner Staub, who is an infectious disease physician here, and she's also the director for antimicrobial stewardship. So, we're going to be having a conversation and just talking about some important topics regarding antibiotic use and just some common questions or misconceptions that people have in regard to antibiotics. So, welcome.

MS: Thank you for having me.

Syra: Yes, thank you so much for coming. So, what are some general misconceptions that you have come across in your career in regards to the prescribing of antibiotics?

MS: I think there's the prescriber misconception, right, so the provider misconception, and then there's the patient misconception. And I think the biggest provider misconception is that every patient expects an antibiotic, so as the prescriber, you go in feeling already a little bit defensive about "if this ends up being viral, how am I going to justify this visit?" And then, I think, the biggest patient misconception is "if I didn't get an antibiotic I was 1) not appropriately treated, and 2) I didn't get any benefit from this visit." But what you got was reassurance, you got a physical exam, you got, you know, ruled out of really serious things.

So, I think people forget that. Those are the two biggest misconceptions I think we face when we're talking about upper respiratory tract infections.

Syra: How potentially harmful, because I know that you were just chatting about common patient and prescriber misconceptions about the use of antibiotics, how harmful is it to wrongfully prescribe, or say, over prescribe to someone that has a viral infection and give them an antibiotic?

MS: For me, it is really harmful, and it's because, of course, in infectious diseases, what we see is this cumulative effect. Right? So, you've gotten antibiotic after antibiotic for conditions that didn't need it, and then you end up hospitalized, and what we then have cultured is an infectious bacterial infection that now has resistance to a lot of antibiotics, right? Because we see this pattern of "I didn't get better with the antibiotic," and instead of someone reinforcing "that probably means this was viral," they're like "oh no, we chose the wrong antibiotic." So, then we'll have people that get two and three courses, and this happens, you know, one or two times a year. Well, that has a cumulative effect over many years where the bacteria that's naturally living in your body develops resistance. So then, when you do eventually get a bacterial infection, then it's resistant to a lot of the classes of drugs that we would be able to use formerly. So, that's the one thing. The second thing, which is much more interesting, in my opinion, because I never thought about it, was we're now seeing more evidence come out for the more antibiotic exposure you have, whether it's necessary or not, the more likely you are to have gut dysbiosis, and we're now finding that that actually has tons of systemic effects on that individual. So, it can be mood changes, you're more predisposed to diabetes. We now have studies showing that you're more likely to develop inflammatory bowel disease as an adult depending on how many antibiotics you've been exposed to. So, I think we're just now on the cusp of learning really how harmful this can be, not only for society where we're just breeding these, you know, drug-resistant organisms, but for the individual, who, when you're the provider looking at that individual, you're trying to do your best risk assessment of "I don't want to hurt the person in front of me, so the safe thing to do is give an antibiotic." Well, actually, it's not the safest thing, usually. So, I think just communicating that to providers and patients is really important.

Syra: Yeah, and I think that is such an important point. I think that a lot of times, we hear the term ‘superinfection’, right? And then we think of just resistance. But as you were mentioning, there's a lot of longstanding effects on an individual who takes an antibiotic far past just resistant organisms. So, I think that is important for people to know. What resources are out there and available for prescribers or patients who want to know more about antimicrobial stewardship who want to safely prescribe or safely take these antibiotic medications?

MS: So, I'll start with the prescriber, because there are definitely more resources for them, and interestingly, given the population that you treat, a lot of these patients actually are prescribers in another setting.

Syra: Yeah.

MS: So they have access to this. But, I think the biggest thing is we actually have Vanderbilt-approved education for patients that providers can use. So, if you're seeing a patient, you can actually look up in Spanish, Arabic, and English. There is a, if you think they have a viral illness, it's a one-page handout you can put on their after-visit summary, and it has the checklist of all the supportive things that they can do, things they should think about before they take that supportive medication, if they have drug interactions, things like that, and then what to look for if things aren't going the right way, when to come back. So, it's all of that sort of condensed into a really patient-friendly, it's gone through our patient education department, one page. And it's, I think it's a really great resource for patients to understand that just because we say "this is viral and you don't need an antibiotic," doesn't mean we're saying this is a lesser infection, we just have less tools to immediately eradicate it, right?

Syra: Yeah.

MS: So, that's available for prescribers to give to patients. If you're in a clinic where people actually sign up, right, to come in, and they tell you why they're coming in, we actually also have a sheet that you can send to them that preps them for a viral, in case this is viral. It talks about the side effects of antibiotics, tells them that, you know, 9/10 times this is viral, and if you don't get an antibiotic, then it's probably actually what's best for you, or if you get an antibiotic, right, because a prescriber is feeling anxious or whatever, you should be asking your prescriber, "do you really think I need the antibiotic?"

Syra: Is this necessary?

MS: Right. You got it.

Syra: That is a big one. And I think, too, the misconception that antibiotics are completely harmless, that also is to be brought up. Because a lot of times people think, "Oh, I just need a Z-Pak," or "I just need amoxicillin," and they don't realize potentially that this might not be the best in their interest. Yeah.

MS: That's true.

Syra: That's very good to bring up. Do you have any other advice for prescribers in relation to some common antimicrobial stewardship practices?

MS: There is an online training module that was actually made for pediatricians, but it applies to adults. It's out of the University of Washington, it's free, and it's called "The Dialogue around Respiratory Tract Infections," and it gives you sort of four points about how to structure that conversation, and when you employ that, actually patient satisfaction goes up and prescribing goes down. And it's really because we as prescribers don't do a great job of communicating to a patient. We don't use the right language. We don't really get on somebody's level. So, this really talks about the way that you phrase it can be very important to how a patient accepts that information. So, that's one resource that I think everyone should do. It's great also just around anything. I've applied it to noninfectious things, as well.

And then, the other thing that I think prescribers should be aware of is that when we look back at our outpatient visits, only outpatient, and we look if you come back to VUMC, so it doesn't count anybody that maybe went to another healthcare system, 7% of patients that got an antibiotic came back and made a specific complaint about a side effect of the antibiotic, and that's a way underestimation, because most people just kind of tough it out, but this could range anywhere from rash, anaphylaxis, acute kidney injury, drug-induced liver injury, all the way to "I have terrible diarrhea, and now I'm dehydrated," or "it interacts with my other medications." So, to your point, these are not benign drugs, right? They are like carpet bombing your gut and all of the other bacteria, and that has massive consequences, but I think we've gotten so used to saying "Oh, it's only five days," or "Oh, it's only 10 days," that we've all become sort of numb to the fact that it actually can inflict real damage.

Syra: Yes, yeah. That is an amazing point. Do you have anything else that you would like to add about your role in antimicrobial stewardship here at VUMC.

MS: Yes. I'm very passionate about making sure that people know we're here, so we have both an inpatient, but also what I direct is the outpatient antimicrobial, so we only focus on outpatient clinics. I think people like to think about us as ‘we're policing’, but actually what we're trying to do is just optimize, so if you need an antibiotic, we want you to have it. They're great drugs when they're needed. But, we want it to be the right antibiotic, we want it to be the right duration so that we're not overtreating patients and causing adverse effects, and then we also want prescribers to feel confident when they're not giving the antibiotic that that is the right choice. Because, I think, when providers feel better about "gosh, I'm protecting my patient from side effects and potential harm, and it's because I feel more confident in my diagnosis." So, we're here to provide resources, to visit you in clinic if you want, and sort of, we've done some shadowing and given some, you know, input about "hey did you look at this," "well, what did you think about this physical exam finding." So,

we're here as a resource to really help prescribers feel more confident and have better interactions with their patients. That's really our goal.

Syra: That's amazing. Well, thank you so much for chatting with me, and hopefully, we have some good tips and tricks out there for prescribers and patients.

MS: Thank you so much for letting me come and talk!

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