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Announcer: Welcome to *Let's Clear the Air!*, a podcast sponsored by The Allergy, Asthma & Sinus Center, dedicated to educating listeners about allergies, asthma, and immunology.

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Marcella Feathers: Welcome to this episode of *Let's Clear the Air!* This is your host, Marcella Feathers, and I have the pleasure of being here today with Melanie Gettys. Hello, Melanie!

Melanie Gettys: Hi, Marcella. Thank you for having me today.

Marcella Feathers: I'm excited. We're going to talk about something that we feel will really help a lot of folks out there. It's something called biologics. And we are—that's kind of centered around, and Melanie, you're going to have to help me, and hopefully by helping me, we can help educate a lot of other folks about biologics, and specifically—and correct me if I'm wrong—like primary immune disease or deficiency, correct?

Melanie Gettys: Yes, ma'am. There are hundreds of diseases out there that they are using biologic medications to treat now. We might want to talk about what is a biologic. I know patients out there are seeing commercials every day for these really acutely named medications out there for every disease type that you can think of. But patients, I'm not sure understand what a biologic is.

Marcella Feathers: Well, let's start, like, if the biologics treat a primary immune deficiency or primary immune disease, what does it mean by *primary immune*?

Melanie Gettys: A primary immune deficiency is an immune deficiency that is either genetic—so a patient might be born with it, it may run in family history—or it is a disease that affects a humoral primary immune deficiency. So, the patient's immune system is either not working correctly, or it is deficient in some of the complement levels that it's making. So, the patient may not make enough of something to treat the infections, or if their body is making an adequate supply of like the IgG, but it's not working correctly. Those are things that we can treat and we can give the patient a replacement of IgG that could help them fend off and fight infections.

Marcella Feathers: So, what are examples of a PID or a primary immune disease or deficiency?

Melanie Gettys: Well, I'll give you an example. Most patients with primary immune deficiency, they have spent 25 years without being diagnosed. So, the typical patient will have multiple infections. These can be rare infections, these can be chronic sinusitis. If a patient has more than two sinus infections in a year, someone needs to

check some labs on that patient and check their immune system. This could be a patient that has pneumonia and they have a rare infection is what I'm trying to say. So, a rare infection that a typical person would never never get, there may be a reason, an underlying reason why that person is susceptible to those rare infections.

Marcella Feathers: I imagine these people are pretty frustrated if they've 25 years of having a consistent or a chronic kind of infection or problems.

Melanie Gettys: A classic patient we see is a female close to 50 years of age who's had chronic infections. It might have been urinary tract infections, it could have been sinus infections. We because of we're in the allergy business, you need to rule out whether the patient has underlying allergies. So, if a patient is having multiple sinus infections, but their allergy testing is negative, their immune system needs to be checked. And chronic infections, so a chronic infection is it lasts more than a year. By that, I mean you've had multiple antibiotics. So, you you're given an antibiotic for sinuses or bronchitis and a month later you're back in the doctor's office and you're having to get another antibiotic. And then a month after that, you're back in the doctor's office. At that point, someone really needs to check your immune system.

Marcella Feathers: Because it's not good for you to be continuously on antibiotics or steroids or those type of things anyway, right?

Melanie Gettys: There's a lot of evidence out there that antibiotic therapy chronically is not good for good for you. And steroids are wonderful to get inflammation down at the time, but long-term, there's some some bad side effects to steroid use.

Marcella Feathers: Just explain to us, I guess in a in a very elementary way, what a biologic is.

Melanie Gettys: Biologics have been around a long time. Biologic simply means that it's coming from living organic tissue. So, whether it's coming from an animal or a living organism otherwise, that's what a biologic is. So, biologics can be blood products, which is what we use human plasma to treat primary immune deficiencies. It could be vaccines. So, diphtheria, tetanus vaccines back in the 1890s were derived from animals, so it could be vaccines. And all-inclusive monoclonal antibodies that are very heavily saturated in the market right now for biologics.

Marcella Feathers: Okay. And we had talked a little bit before the podcast about, you know, when you were explaining to me what a biologic is, I was like, "Is that safe? Is that is that okay? You get it from any kind of living organism." And you went you do explain to me the process, how long a process this is.

Melanie Gettys: It can take years and years of development. And believe it or not, at this point, we're seeing synthetic versions of these products coming onto market right now. So, biologics have been used to treat multiple diseases. One of the first ones I believe on the market was Humulin, and that was back in the early 80s, I believe. So,

that was, you know, used to treat patients then. But now today at the Allergy Asthma and Sinus Center, we treat patients with biologics for asthma, COPD, urticaria, food allergies, nasal polyps, eosinophilic esophagitis, and immune deficiency. So, they are very much integrated into medicine now.

Marcella Feathers: And you said they go through what, like a year cycle to be purified or or Oh, yes. As far as primary immune deficiency, the medication we use to treat primary immune deficiency is human immunoglobulin. So, it is made from human plasma. It is a donated product, plasma product. It's collected at donation sites. In the United States, they require this plasma to come from donation sites in the United States. So, in the United States, there's no plasma coming from another country. So that plasma from the time it is donated to the time it goes into a patient, it is 9 months to 2 year. So, from vein-to-vein as we say, it's about a year. But it goes through a very stringent cleansing process and they check it for every virus you can possibly imagine and think of, and the ones you wouldn't think of. Uh and they track the donors extensively. So, it's a very safe product, but it is a little intimidating when you think about you're getting a plasma that's made from human blood product, but um it's very efficient in replacing what the body is not making or giving the patient a pulled plasma product that has antibodies from a lot of different people that um can treat what their bodies not able to treat. So, it it's a miraculous thing, actually.

Marcella Feathers: Now, how are these products delivered? Or how is?

Melanie Gettys: Originally, I believe they were given it was given intramuscularly, so it was an injection. The product I would think would be very painful. We When I first started working here, we had a patient that would get it IM in the muscle in the buttocks and it was very thick, and I would He would have to sit on some uh like frozen peas and carrots for a while to help to help with that uh pain at the site. Then we have IV products. The IV products are given vein-to-vein. We can do that in one of our infusion offices. We have nine offices across the practice where we can do infusions. But the most common way that we do it here at the Allergy Asthma and Sinus Center is called subcutaneous immunoglobulin. So, that infusion actually goes into the fatty tissue. The subcutaneous, you know, we have patients that can do it themselves at home, oh wow, that don't have to come in the office. We have patients that choose to come to the office just to let our nurses do everything for them, and they don't have to worry about shipments and sticking themselves. Mhm. So, that has been a quality of life changer for a lot of our immunodeficient patients.

Marcella Feathers: Is that like a daily thing that they have to do or how often would it even have to be done?

Melanie Gettys: Typically, not daily. We can have it as frequently as once a week, every two weeks, and there's even a product out for subcutaneous once a month.

Marcella Feathers: You know, I mean it sounds kind of it could be, I guess, a little intimidating, the terminology and then the delivery system and everything, but but from

what I've gathered, it really makes a difference in these people's lives. Can you give us some examples of what you've seen? Because you've been doing this how long now?

Melanie Gettys: I've been um here at the Allergy Asthma and Sinus Center for 28 years, um but the last 10 years focus primarily on primary immune deficiency. So, we have patients that stay at home, they don't see their grandkids as much as they would like to, they don't get to go to church as often as they would like to because they're so susceptible to picking up infections. They are so susceptible to picking up any kind of infection. I jokingly call my grandkids my grand germs sometimes, because um I do catch their colds and things, but these patients they might catch that cold, but it may turn into bronchitis or something a little more severe if they're not being treated. So, once they're treated, they're actually getting human plasma, which is a pulled product from many different people who may have antibodies to this virus or that bacteria, and so they're getting the benefit of getting herd immunity, you might say, they're getting that pulled benefit. And so after they get started with the replacement therapy and after 3 or 4 months and they've been compliant, so they've kept up with their with their infusions, their immune system is going to be better than mine or yours. And that, you know, eliminates not being able to attend some functions that they really wanted to go to because there's so a crowd of people there. Oh. So, it's a quality of life changing treatment. You're not having to be so isolated.

Marcella Feathers: Right. What does insurance coverage look like for this kind of stuff? How does all of that work?

Melanie Gettys: Well, first of all, we we need to establish what the diagnosis is. So, that starts with some lab work. It starts with your medical history, most most importantly. Yeah, that's a good point, I mean, let's look at what, yeah, let's um let's start back at the at the beginning. So, what would it look like for someone who is thinking they might they might be a candidate for this, or this might be something that they've been struggling with for years? What What's the process? How do they get started?

Melanie Gettys: Well, I think uh in today's society, our primary care physicians are always your your best resource, and they should know their patients uh better than anyone. However, because of our busy society, we have walking clinics, urgent care clinics, and we have other specialists. So, sometimes our medical care gets hearted out to many different providers. So, you may see your primary care physician once a year, but they may not have known you've been into a walk-in clinic three times, four times this year for sinus infection. So, that's a conversation, you know, you need to have with someone to get some labs checked. It's simple lab work. You're going to need a CBC, which stands for? Uh complete blood count. Okay. And you're going to need to get quantitative immunoglobulin levels checked. That's an IgG, an IgM, and an IgA. That's a basic blood count. There are times that you may need to get antibody titers checked, and that would be to protein vaccine or to a polysaccharide vaccine. So, that would be your diphtheria tetanus titers and a pneumococcal titer uh just to challenge your immune system if those are needed.

Marcella Feathers: But your primary care, or even here at the Allergy Asthma and Sinus Center, they would know what kind of tests to run, of course. So, you could just go in and go, "I think I might have this PID," or "I've had so many infections." Well, I think I think the biggest thing is telling your provider how many infections you've had, or, you know, you may have had multiple urinary tract infections, or you may have had multiple sinus infections or bronchitis, or some weird skin infections that were really hard to heal and to fill for you to feel like you were uh completely over something and and you're not, you just keep lingering. If those infections keep lingering, those are all flags. So, talk to your provider about it. And like I said, medical care in this day and age can be with multiple providers, and you know, your primary care may not know, like I said, you've been to multiple walking clinics. Yeah. Or, you know, if you're coming in to see us, you know, tell your tell your provider, tell your nurse practitioner, tell your physician, "I've been treated since I saw you two more times." And um so hopefully we can get you headed down the right track and and get you checked for primary immune disease. It is considered a rare disease, but I think it's more prevalent than people realize, especially for our patient population we get to see at the Allergy Asthma Center because these patients historically have been sick a long time before they come to see us. Yeah. And you were saying what there are 300, 500 different types of PIDs?

Melanie Gettys: Well, it depends on what source you want to look at. But um there's the basic consensus is there's 400 plus different types of primary immune deficiency. So, those labs I mentioned earlier are just the basic labs, and that starts the process. But we we can take it from there.

Marcella Feathers: Well, very good. We appreciate you being here today and talking with us about it. We'll probably do some future episodes just to dive into some of the specifics. But um thank you, Melanie. We appreciate your time.

Melanie Gettys: No, thanks for having me.

Marcella Feathers: For anyone out there who might have questions that they would like answered about PID, you can email us at info@allergyasc.com with those questions and maybe we'll talk about some of them in a future podcast with you, Melanie, if you're up for it.

Melanie Gettys: Of course.

Marcella Feathers: You've always been helpful when it comes into this category, so we appreciate again your time. And that does it for this episode of *Let's Clear the Air!*

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Announcer: We hope you've enjoyed this episode of *Let's Clear the Air!* Please consider following this podcast and remember, if you want helpful and accurate information about allergies and asthma, our allergy experts are here to clear the air.

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