What's New in the Pediatric Dermatology Toolbox

Lisa Swanson, MD, FAAD, interviewed by Brad Glick, DO, MPH, FAAD

BRAD GLICK, DO, MPH, FAAD: Welcome to *Dialogues in Dermatology*, I am Dr. Brad Glick and I'm a board-certified dermatologist and Clinical Assistant Professor of Dermatology at the Herbert Wertheim College of Medicine, in Miami, Florida, and I am your host. Today's topic is What's New in Pediatric Dermatology Toolbox. And I'm pleased to be virtually alongside board certified pediatric dermatology, Dr. Lisa Swanson.—

--Dr. Swanson is a board-certified dermatologist and pediatric dermatologist. She received her MD from Tulane University School of Medicine in New Orleans, her internship at the Mayo Clinic in Scottsdale, Arizona, dermatology residency at the Mayo Clinic in Rochester, Minnesota, and her fellowship in pediatric dermatology at the Phoenix Children's Hospital in Arizona. She was in private practice in Colorado for 11 years and served as Secretary-Treasurer of the Colorado Dermatological Society. Dr. Swanson moved this past year to Boise, Idaho, to become the first and only pediatric dermatologist in the State of Idaho, as part of ADA West Dermatology in Meridian, Idaho, and is currently on staff at the St. Luke's Health System.—

--Lisa, thank you so much for being here. And I really want to jump right in, because we have to talk a lot about What's New in the Pediatric Dermatology Toolbox. So I want to start off with pediatric psoriasis. Now traditionally, we've really not had that much for the kiddos to treat their psoriasis, except a bunch of creams. Tell us what happened in the last several years. I know there's one biologic that we got a while ago, but now we've had some others and an even newer one.

LISA SWANSON, MD, FAAD: Yes, the world has changed. The world as we know it has changed. I was at a pediatric dermatology meeting like five or six years ago, and the speaker said that the treatment of pediatric psoriasis is probably ten years behind the treatment of adult

psoriasis. And at that time, I think it was absolutely 100 percent true, but we are catching up, we are making good time. So we had the approval of Enbrel down to the age of 4 back in 2016. And then last summer, we had two exciting approvals that kind of got lost in the COVID shuffle.—

--We had the approval of Stelara down to age 6 and the approval of Taltz down to age 6. And then this summer, just really recently, we got the approval of Cosentyx down to age 6. So when I see kids and families dealing with pediatric psoriasis, I will commonly tell them this is a great time to have psoriasis. I have more tools in my toolbox than ever before. And there's a lot more stuff coming. Otezla is going for a pediatric indication. Skyrizi has some studies going on.—

--Tremfya has some studies going on and Ilumya has some studies going on. So really, the future is bright for pediatric psoriasis patients and their families, which is great.

BRAD GLICK, DO, MPH, FAAD: Here's a question here, before we move on. Now that the toolbox went to one biologic, okay, great, and it works very nicely. So now, how do we decide? And do we have the same conversations that we do with our adult patients? And to my knowledge, there are certain things we may worry a little bit more about in the pediatric population with psoriasis, like inflammatory bowel disease, so how do you decide?

LISA SWANSON, MD, FAAD: Yes. So I'm a big proponent of kind of giving patients the options and letting them play a major role in the treatment decision. I'll commonly tell them, "I'm the navigator, you're the captain. It's my job to tell you which routes we can take. It's your job to steer this ship." And so I will typically just kind of lay it out for them, the options that I think are appropriate. And up until recently, it's been kind of convenient having three systemic therapies approved for pediatric psoriasis, because I find if you include much more than three options, you lose people, it gets a little bit lost in the shuffle.—

--But I would typically tell them about Enbrel, tell them about Stelara, tell them about Taltz, tell them about the pros and cons of each. And help them, kind of educate them to make a good decision for what feels right to them. I think, especially before we started getting these official approvals, I always thought Stelara was a nice fit for the pediatric world. Its dosing schedule is really convenient for kids. The shots barely hurt at all. And the safety profile is really quite excellent.—

--But Stelara maybe isn't as effective as some of the newer medicines that we have, Taltz included. And so depending on severity of disease, depending on presence of challenging body areas being involved, the decision can be a tough one or it can be a straightforward one. But I really try to put that power in the hands of the patient and their families and just serve the role as educator and introducer to the options.

BRAD GLICK, DO, MPH, FAAD: So for you, for our audience, we have Etanercept for peds, we have ustekinumab for peds, and now we have ixekizumab. Wow, what a shift. It's interesting to me, not to get too far away from the subject, but it seems to me in 26 years of practice, the kiddos are always waiting for the adult trials. And I think moving forward, perhaps pray tell, it might even be better for there to be just direct pediatric trials. I guess we're always looking to have the adults be the guinea pigs.—

--And then like you said from that meeting you went to, one of your pediatric dermatology colleagues said we're ten years behind. Well, these little kids can't wait for ten years. And atopic dermatitis is the best example of that. And thank goodness we've stepped it up. But even still, three, four years later, it took to get dupilumab approved down to the age of 6 now, where I believe we have it right now.—

--And let's talk about atopic dermatitis. Dupilumab is a highly effective biologic therapy for AD. Tell us about where you're using it, how you're using it. There's a lot of questions here, Dr.

Swanson, I'm so sorry. And the thing is, what can we expect? This is a disease state that goes down to infancy. And so are we going to get it for those patients, too, and what else is coming? So let's start with dupilumab in your practice. Tell us about it. Has it impacted your practice and your patients? And we'll move on from there.

LISA SWANSON, MD, FAAD: I think the two single words to describe dupilumab and the impact it's had on my practice: life changer and revolutionary. It makes me so excited to be practicing medicine at a time that I got to live through this, that I got to practice medicine through this. Because it really has changed the whole game when it comes to the treatment of atopic dermatitis and it's such a great thing.—

--I use it in the classic moderate to severe atopic dermatitis patients. I also think that it's important to have a good discussion with your patients about the impact it's having in their lives. Because you can have a patient, I think the best example is with acne. You can have a mild acne patient but it's affecting them severely. And that happens in atopic dermatitis and it happens in psoriasis, too. And so it's more than just BSA. It's more than just EASI score. It's the whole patient and how they're dealing with this chronic, incredibly itchy skin disease.—

--Again, I'm big about the options. And I'll typically just throw it out there. Like, "Oh, and last option on the table is this medicine called Dupixent. And it works on the inside to treat the eczema on the outside." And it's very effective, it has a favorable side effect profile. It is not an immunosuppressant or a steroid. And it can really change peoples' lives who deal with chronic atopic dermatitis. It is a shot. It's either every two weeks or every four weeks, based on your weight. And I just kind of like put it out there and I see what comes flying back at me.—

--Because sometimes families are very interested. Sometimes going into it I'm like, "Oh, this family isn't going to want to talk about Dupixent," and I throw it out there and it turns out they really do. Because sometimes you don't know how much people are suffering until you kind of

throw them a rescue lifesaver. And they're like, "Oh, wait, there's something like that? I didn't even know that, I didn't even know that could be an option. I thought you were just going to give me more creams."—

--And then other families, it's clear that they aren't interested in it at that point in time. But it plants a seed and that seed can grow over time, as the child or the family continues to struggle. A lot of times, I'll have families come back in and say, "Okay, we're ready, we want to hear more about this." So I really throw it out there as an option for anybody suffering with bad atopic dermatitis or whose disease is something that with topical therapies and sensitive skin care, I either can't get it under control or can't keep it under control, and then I'll mention dupilumab as an option.—

--And it's really been a life changer for patients, their parents, me. It's been, like I said, a privilege to be in the practice of dermatology during these times.

BRAD GLICK, DO, MPH, FAAD: I think the impact is not just on the patient, the child, but when we're talking about the pediatric population, and let's just say the approval range, which is going to be from 6 up to 17, this is a group, especially the younger ones from 6 to 12 and even lower than that, they're not sleeping and their parents are not sleeping, either. So when they're coming back and they're doing better, I would presume that the sleeplessness for the parents is better, as well. So it's a very exciting time.—

--Just before we move onto other therapies though, on the flipside of it, a couple of things. Are there some differences in the dosing regimens? Like I know for the adults, we have a double dose of 300 mg twice on the first visitation, double dose with dupilumab, and then it's 300 mg every two weeks thereafter. Is it still a two week dosing regimen? And what happens with the pediatric population, you could maybe share it with the audience?

LISA SWANSON, MD, FAAD: So for adults and teenagers who weigh more than 60 kg, they get a 600 mg loading dose and then 300 mg every two weeks. For kids that weigh 30 to 60 kg, they get 200 mg every two weeks. And for kids that weigh less than 30 kg, they get 300 mg every four weeks. The one interesting thing is those little kids under 30 kg, they're getting 300 mg every four weeks as their maintenance dose, but they actually still get the two shot loading dose of 600 mg.

BRAD GLICK, DO, MPH, FAAD: That's really, really funny, because it's every two weeks in the more middle range, as you said 30 to 60, and they load with 400 mg. So two of the 200 mg, 200s. And I think soon, because recently for the adults we got the 300 mg auto injector, and I think literally as we speak, we've gotten a 200 mg auto injector for the kiddos, too. We'll see how they handle it. That is really something I think fairly new, that we've heard very recently.

LISA SWANSON, MD, FAAD: It was recently approved. I don't think it will be like officially available until the end of August. And again, I don't know how the kids will feel about it. I've had mixed messages from the teenage population with the 300 mg auto injector. Some of them like it because they don't see the needle and it probably makes it a little bit easier to give the shot to yourself. But some of them really don't like it and find it hurts a little bit more, just because they can't control the speed at which they're injecting. So it's nice to have options, different strokes for different folks. We'll see how they like it.

BRAD GLICK, DO, MPH, FAAD: So let's move forward in the same category of atopic dermatitis. Tell us about the pediatric population and some new therapies. They may not be here yet but they may be in study, where we're talking about topical JAKs, topical PDE4 inhibitors. We've had topical calcineurin inhibitors, this kind of topical steroid-sparing agents when we're treating patients topically and as concurrent to systemic therapy. What's new on the horizon? What can we expect?

LISA SWANSON, MD, FAAD: Topically, we have a few things coming. We have tapinarof, which is an aryl hydrocarbon receptor modulator that's going for approval for both psoriasis and atopic dermatitis, so that will be neat to have another steroid-sparing option. We have roflumilast, which is a PDE4 topical that's coming. And then we have the topical JAKS: ruxolitinib will probably be the first one that comes out, and then delgocitinib later this year or 2022 that are the topical JAK inhibitors. Super excited to have those in my toolbox, just can't hardly wait.

BRAD GLICK, DO, MPH, FAAD: And I think particularly exciting, too, because there has been a little bit of pushback on the systemics for the adults, probably in the shadow of tofacitinib, I don't know if we know all the reasons just yet. But I think the topicals hopefully will at least come first, so that they're in our hands. So I'm equally as excited. Before we move on, what about mechanism? What's going to make that different than a topical calcineurin inhibitor? How and where does it work? And will it be able to be utilized, let's say first and foremost as monotherapy, which is probably how they'll come out.—

--Although many of the studies, even with the systemic therapies, are allowing for the use of corticosteroids because it's practical in the real world. Tell us about that and how you think it will be integrated into your practice.

LISA SWANSON, MD, FAAD: I think at least at the beginning, I'll probably use the new non-steroid topicals similar to the way I currently use topical calcineurin inhibitors. And I frequently will tell families that this can be used in one of two ways: we can use it instead of a topical steroid, with the knowledge that the TCIs work a little bit slower than a topical steroid would; or we could use it as part of a prevention or a maintenance routine. Clear things up with a topical steroid, use a TCI once or twice a day or Monday, Wednesday, Friday, if that works, to kind of keep it at bay and reduce the number of steroid-needing days.—

--And we have crisaborole in our toolbox, too, which might not pack as much of a punch from an efficacy steroid-sparing agent, but does have really good data to use it as a prevention and maintenance sort of thing. There was a great study by Dr. Larry Eichenfield about using Eucrisa twice a day and they found that the patients that used it twice a day for prevention and maintenance, 78 percent of them didn't need a topical steroid for a year.—

--And that's pretty cool. And the burning and stinging is less when you're using it for maintenance. So we have those tools already. It would be exciting to have these others. And it will be interesting to see if the topical JAKs get any sort of box warning on them. I don't know how that cookie is going to crumble. But hopefully, tapinarof and roflumilast don't. And so make my life easier a little bit with less box warnings to discuss.

BRAD GLICK, DO, MPH, FAAD: One of the things about the systemic effect, as we kind of were alluding to before with atopic dermatitis, the so-called inside/out, outside/in hypotheses, one of the unique things that we've learned, at least now in the trenches with dupilumab over several years and also from the science behind it, is that when you down-regulate the cytokines, you get the reparation of the skin barrier. And what's really, really interesting to me with a drug like tapinarof, now it's a ways away from being approved for atopic dermatitis and I think it's a really unique mechanism of action, but in the science of the agent, when you stimulate that aryl hydrocarbon receptor and you agonize, it's interesting that there is some reparation that occurs to the stratum corneum.—

--And I just think that this is all very exciting stuff, because I'm one of these believers and I like to talk a lot about barrier restoration, and I'm sure you've involved as well, too, about just making sure we really protect and seal those cracks in the skin barrier, because it has impact I think on that inflammatory burden. And is that what you see, as well?

LISA SWANSON, MD, FAAD: One hundred percent. And I think actually one of the best examples of that is with dupilumab. Because I've seen patients, with it being out as long as it has now, they go on dupilumab, their life is changed, they feel fixed, and they start to slack a little bit on the sensitive skincare and barrier recommendations. And they start shopping at Bath & Body Works and they're using Lever 2000 soap in the shower. And well and behold, they have some breakthrough atopic dermatitis.—

--And we know that dupilumab helps the barrier, we know it does. But still using those barrier protection strategies, it's still crucial, it's still part of the puzzle. And I think we're still discovering all the time just how the barrier defects and the inflammation are feeding off one another. And then where is dysbiosis in all of that? Is it causative, is it contributing to those things? Or is it occurring as a result? We still have to figure out which comes first, the chicken or the egg.—

--So I tell my patients the more we learn, the more questions we have. We can't just like solve it, we just have to keep diving in deeper.

BRAD GLICK, DO, MPH, FAAD: Let's talk about a topic that is sometimes challenging for the general dermatologist, the medical dermatologist, maybe someone who sees some kids but is certainly not like you, a board certified pediatric dermatologist who sees a lot of this, and that is hemangiomas. There's been a lot of discussion, at a number of the meetings especially this last year and a half, whether it's VMX at the Academy, Innovations in Dermatology there was a lot about this as well. Talk to me about what we have in the toolbox, what we should be utilizing, all of us as dermatologists. Because I know there are some therapies that can really change the course of the hemangioma, and obviously it depends on the presentation. So tell us about hemangiomas, therapies, and new innovations.

LISA SWANSON, MD, FAAD: I have so much to say. So first of all, hemangiomas are near and dear to me. I had three hemangiomas when I was a baby. If you've seen any of my talks, at the

AOCD I will often show a picture of myself, because they were all on my face. And so my mom says I was just born to be a pediatric dermatologist. And again, so exciting to be practicing my career at a time when we have propranolol. I've been practicing, it will be 11 years this July, and propranolol had really started to be used maybe 2 or 3 years prior to that. So I was trained in the age of propranolol, which is just awesome.—

--And propranolol, it works. It's effective, it's safe. I've never had to stop propranolol in any baby, at any time. I would encourage those dermatologists out there that are nervous about it, haven't done it yet, I would encourage them to go ahead and do it. We all get more comfortable with therapies once we've treated a couple people with it. And I would encourage you to gain that comfort level with propranolol, because it's really, really wonderful.—

--When propranolol was new, I would ask pediatric cardiologists that I crossed paths with, "Hey, what do you think about this? Look at us in dermatology prescribing beta blockers. What do you think? Are we out of our minds?" And there was one pediatric cardiologist that I think said it best. He said, "In the doses you guys are using for hemangiomas in babies, I would prescribe propranolol over the phone for a baby I had never met, and I would never see them back for follow up." And so I think that really gives you a sense of comfort in this agent.—

--And when I'm giving lectures and things, I always encourage people to email me. And I'll walk them through the first one or two kiddos that they treat, so that they feel comfortable with the dosing and they feel comfortable with the side effect profile. And I will coach you through those first two or three, whatever that gets you comfortable. Because I think once you start, you will realize just how effective and how safe and how wonderful. Now, do all hemangiomas need to be treated? No, there are a lot of them that go away naturally and don't cause a problem.—

--But a lot of hemangiomas that need to be treated don't get treated. And pediatric dermatologists, we're short-staffed. We've got less than 300 pediatric dermatologists in the

entire country and all of us are trying our best to treat all those hemangiomas, but we can only stretch so far. And so having other providers in the dermatology world feel comfortable with this therapy is really so important. We know that it works the best if you use it in the first 9 to 12 months of life, that's the growth phase of the hemangioma.—

--It can still work after that. Like moving here to Idaho, I've been seeing a ton of hemangiomas that should have been treated and didn't get treated. And it still works after that, but less well, and the endpoint isn't as clear. So that first 9 to 12 months of life is really a window of opportunity. And I would just encourage everybody, get comfortable with it. Reach out to a peds derm, phone a friend. I'm happy to be that for anybody who can kind of guide you through it and get you comfortable with it.

BRAD GLICK, DO, MPH, FAAD: Two things. Can you, no pun intended, size up for us what the common scenarios are: where you use it, location where it is, where you're initiating this therapy, and what your dosing regimens are. You want it as early on as possible within that first year of life, so how do we dose it?

LISA SWANSON, MD, FAAD: Hemangiomas that need treatment, certain locations: the eyelids, the nose, the lip, the diaper area. The diaper area hemangioma is very prone to ulceration, so you really want to treat those so that they're not going to ulcerate, because that hurts really bad for the baby. And then any hemangioma that you didn't catch in time and is ulcerating, you want to treat those. Any hemangioma that's in a place that's going to be functionally difficult, and think of a crawling baby. So like the area underside the forearm, because they're going to be scooting that along carpet and everything like that, you don't want that to get irritated.—

--The knee, it might not seem high risk but they're going to be using their knees and crawling all over. And so areas that are going to be functionally important should be treated. And then

anything that's big, a big hemangioma should be treated, because even a big hemangioma, when it shrinks it's not going to go away completely, it's going to leave some fibrofatty tissue behind that then is going to need to be treated. So any big hemangioma or one that's threatening to get big should be treated.—

--And then I would also say the ones that are kind of like a mushroom on a stalk. Because even when those "go away," it just kind of is a shriveled mushroom on a stalk. And so if you can treated it before it gets too mushroomy, that would be good. And then in terms of dose, I typically start with 2 mg/kg per day. I divide it twice a day. It can be divided three times a day, which I used to do, but that's so much harder for people, so I do twice a day.—

--The most important thing about propranolol is that it should always be given with food. It can make babies go hypoglycemic, so if you're always giving it at the time that the baby is eating, that's the most important thing.

BRAD GLICK, DO, MPH, FAAD: So how is it administered? Is it in the tablet form? Are we crushing it up? Is it in a liquid form? Can you just tell us about that?

LISA SWANSON, MD, FAAD: It's a liquid form. The classic propranolol is available in a 20 mg per 5 mL suspension. There is even a brand name version called Hemangeol, which is 4.28 mg in 1 mL of fluid. And Hemangeol is designed to taste better for the baby. I usually start with the generic propranolol, because it's just so cheap and easy to access. But if the baby is spitting it up, doesn't like it, won't take it, hates the taste, then I can switch them to Hemangeol and it tastes better.—

BRAD GLICK, DO, MPH, FAAD: Last question on hemangiomas. Has the beta blockade obviated the need for laser ablation, such as pulsed dye laser, which I think has been part of the

gold standard in treating hemangiomas? And have you utilized pulsed dye laser or other lasers in combination with beta blockers? And have there been some studies?

LISA SWANSON, MD, FAAD: I think propranolol has really almost eliminated the use of laser for hemangioma. There are two clinical settings where we still use it. A lot of people will use pulsed dye laser in the situation of an ulcerating hemangioma. There's some data to suggest that that can be helpful. And typically, we're doing that in conjunction with the propranolol, too. And then the second clinical setting where we might do pulsed dye laser is in a residual telangiectasia from a hemangioma. So the hemangioma has gone away, either because we treated it or just because, and there's some residual vascular changes on the surface, and we do a little laser to clean that up.

BRAD GLICK, DO, MPH, FAAD: We've got two more hot topics in dermatology and the pediatric dermatology toolbox, hoping that there are new things that you can tell us about, so two more subjects. We've got to talk about acne, because kiddos get acne. Whether it's even precocious acne but certainly for our adolescents. And we've had a lot of the same stuff for a long time. Can you tell us about what's new in the toolbox for the adolescent population and how we should go about treating some of these patients? And maybe some of the things that are new exciting and what's coming.

LISA SWANSON, MD, FAAD: We've got a bunch of new stuff and new stuff on its way. I think one of the things that makes me so happy is we're starting to see these acne medicines get approved down to the age of 9, which is really, really, really important because we're noticing acne happening in younger and younger ages. I was seeing 9, 10, 11-year-olds with pretty darn significant acne and it was hard for me to get medicines covered, because their indications were 12 and up. And so to see these newer medicines come up with 9 and up indications makes my life so much easier and it's great for the patients.—

--What do we have that's new? Well, we have Seysara, so a new tetracycline antibiotic to treat acne. I think its main attributes are that it's one pill a day, which is always pretty great. It avoids a lot of the side effects of minocycline and doxycycline, none of the blue pigmentation change or dizziness of mino. None of the sun sensitivity and esophageal irritation of doxy. So very favorable side effect profile.—

--And it has studies showing that its impact on gut flora is minimal to none. And so that's pretty cool, too, and really a big selling feature of Seysara. I think the biggest downside to Seysara is cost and coverage, which I don't know how it is in Florida, but it wasn't super great in Colorado and I think it's even worse up here in Idaho. I would prescribe it all the time if coverage were better. Because I think from a safety, side effect perspective, it's really superior to the others.—

--And then we have new topicals. We have Aklief, we have Arazlo, both new retinoids, both approved down to age 9, which is fantastic. And both had better tolerability than you might expect from a retinoid.

BRAD GLICK, DO, MPH, FAAD: Can you include for us, even going back, just the pharmacological names of the products, too, for the audience in terms of like the new systemic therapy you mentioned down to the age of 9, which I think is sarecycline, I'll throw that one in there. But tell us about the other couple of products, as well. And I did want to make one comment, too. I love what you talked about, impact on the microbiome and really the gut where sarecycline is concerned.—

--But the other thing that I think is a big thing with that agent, it's one of the first times that we've taken a step back and we look especially in skin of color, where I think that we've had some populations of individuals with skin of color and are able to really look at the improvement of postinflammatory hyperpigmentation, where we haven't really seen that a lot of the time even, except with just the topical therapies it sometimes measures. And I think that especially our

patients that are darker skin types and African-American, our Asian patients, too, it's really frustrating, the postinflammatory hyperpigmentation.

LISA SWANSON, MD, FAAD: Often they're more frustrated with the postinflammatory hyperpigmentation than they are with their acne. I'll go through a whole spiel of how we're going to treat the acne. And they're like, "Yeah, yeah, that's fine. But what are we going to do about these brown spots?"

BRAD GLICK, DO, MPH, FAAD: So you mentioned Aklief. What's in that, and then the other product, as well?

LISA SWANSON, MD, FAAD: So Aklief is trifarotene, an entirely new retinoid that binds a different retinoid receptor than the other retinoids currently on the market. I think it's the RAR-gamma or something, but I'm reaching in my brain for that information. And so an entirely new retinoid. And then Arazlo, which is a new version of tazarotene, but with good tolerability profiles and with some good truncal acne data, which is exciting. It's also available in a lotion, which is very spreadable for the chest and the back.—

--And so those are the retinoids I alluded to. And then we have Amzeeq, which is a topical minocycline foam, so it's minocycline in a foam. It's really quite yellow and some people complain about that. And the manufacturer says it washes out of clothes and fabrics and stuff but I've had a couple people who are a little bit miffed that it didn't wash out of their things, and so that is a little bit of a limiting factor. But nice to have a topical version of minocycline, that's pretty neat.—

--And then we have clascoterone coming. And I feel like I've been saying clascoterone is coming for the past year, because it has been coming for the past year. It was initially approved by the FDA in August of 2020 and we still have yet to see it. And I recently reached out to the

company and they said, “Soon, soon,” but they won’t give me any more detailed information. But clascoterone will be the first topical that works in an antiandrogen way and I’m very excited to use that. I have a lot of patients who are very excited about that.

BRAD GLICK, DO, MPH, FAAD: Can you tell us a little bit about the mechanism of action of that agent?

LISA SWANSON, MD, FAAD: What I know, and maybe I don’t understand the basic science of it all, is that basically it’s antiandrogen receptors in the skin, and you can correct me if you know better than me. Because again, I learned a lot about clascoterone last summer and then it didn’t come out, so that knowledge has waned. But a lot of people are referring to it as kind of like the topical spironolactone, which isn’t exactly scientifically true but is, I think, okay to think of it that way.—

--And so I think that will be really helpful. And it was studied and approved in both girls and boys, whereas spironolactone we can only use in females. The topical clascoterone approved in both girls and boys.

BRAD GLICK, DO, MPH, FAAD: And from what I do know, which is probably way less than yourself, Dr. Swanson, to me you talk about revolutionary, if it really plays out the way it looked pretty good in the clinical studies as I have seen, we really want it in our toolbox. This has to be one of the longest delays, however, that I recall personally. And it’s a little frustrating because it’s been talked about for the last two or three years. And, in fact, I had some opportunity to learn a little bit more about the preliminary data on the product well back, well, the 2019 Washington, DC American Academy of Dermatology meeting, which was our last one, strangely enough.—

--And then really not that much since. And then the phase 3 clinical trials were actually completed as of that time and so there really has been a little delay. So hopefully soon, I know you want that in your toolbox for your pediatric patients and so do I. And I really think it is great to kind of close out the acne discussion that we do have drugs that are down to the age of 9, because we always worry about going below the age of 12, especially with systemic therapies, and that's what makes sarecycline so unique, as well, because we always worry about the tetracyclines and staining of the teeth, and growth, and what have you.—

--So I want to close this out, this has been incredible, so we're going to have to bring you back again and go over more detail in the future. But I do want to close with a topic that I sometimes shiver when I see on the little Post-It when I'm going into the room. Yes, we still have some paper every once in a while. And I know I'm going into a room and the child has molluscum. And they don't just have one, they have like 21 or more and it's really, really hard to treat molluscum contagiosum.—

--Sometimes it's hard because we're dealing with a very young child or sometimes we have a parent who wants all 142 removed at that time, in that one visit, and they're not coming back. I know these are dynamics you deal with every day. So talk to us about molluscum, anything new that's coming in that regard, too. And maybe even warts, if there's anything new, and we will close it out there.

LISA SWANSON, MD, FAAD: Sounds great, close it out with the cooties part of dermatology. So for molluscum, molluscum are tough, because really every mom wants them gone yesterday. But they don't want the treatment to hurt, or be expensive, or potentially cause some discoloration. They're very specific in their guidelines for what they expect from a molluscum treatment and it can be really challenging. I tend to present several options. I will commonly talk about ZymaDerm, which is an over-the-counter natural product.—

--Interestingly enough, in the world of atopic dermatitis, all the families want is something natural. In the world of molluscum, they don't want anything to do with it. They want like the biggest, strongest, atom bomb, nuclear sort of treatment for their child's molluscum. And so I always present ZymaDerm as a choice but they rarely choose it.

BRAD GLICK, DO, MPH, FAAD: Can I ask you what's in that? Because I'm not familiar with ZymaDerm, can you tell us?

LISA SWANSON, MD, FAAD: They're not very open about it. If you look at the bottle and their ingredients, it says "mixture of oils." And I know there's tea tree oil in it, because it smells like tea tree oil, but I don't know what else is in there. But it's $26, you can get it on Amazon. You apply it twice a day, it's pretty easy and appealing to those that want a more natural remedy.

BRAD GLICK, DO, MPH, FAAD: So Dr. Swanson, you just know that it works?

LISA SWANSON, MD, FAAD: Well, I don't even know about that. But a lot of people will appreciate an over-the-counter option that's pretty safe. And I rarely see significant irritation from it, so I think it's fine if people want to try it. And then beetle juice, of course. So beetle juice can be very effective but it can also be a big deal. I don't treat the armpits or the underwear area with beetle juice, you're guaranteed to get huge blisters and an angry phone call, so I don't treat those zones with beetle juice.—

--And it's not like it's one and done. I tell families a reasonable goal is 50 percent of them disappear with each treatment. We see the kiddo back every three to four weeks and we keep treating the spots. There is an official FDA approved version of cantharidin on the horizon, by Verrica Pharmaceuticals, and so that's coming and will be nice. Because actually there's no currently FDA approved treatments for molluscum, everything we use is off-label for molluscum.—

--And then I use quite a bit of Candida for molluscum because it's nice, you only have to treat one spot. I typically do 0.3 mL and we treat every three weeks. Typically, it takes three to five treatments to have them gone, works by triggering the immune system, and really a very tolerable treatment. And the kids are nervous at first, but the shot, it barely feels like a pinch, it's really very easy. So the first time, you usually kind of have to sweet talk your way through it but then it gets much easier, because they realize it's not so bad.—

--One thing that's kind of an oldie but a goodie that I'm kind of turning back around to is oral cimetidine. So my impression overall, however it was formed, is that oral cimetidine really doesn't work that well for molluscum and warts. I don't know where that came from, I don't know if it was my mentor or just my training, but my feelings were that it didn't really help. But I recently saw *Four Pillars of Pediatric Dermatology*, talking about cimetidine for molluscum.—

--And they were just raving about it. And I was like have I missed the boat on this? I need to get back in the world with cimetidine. And so I'm starting to include that in my option list. It's available as pills or a liquid. The liquid, there's like a huge nationwide shortage of the liquid cimetidine. I called around to local compounding pharmacies here in Idaho at least and they can compound a suspension of it, so for the younger kids.

BRAD GLICK, DO, MPH, FAAD: How do you decide on your dosing regimen? And I have used this many times over the years and I would say out of every ten times I use it, it works maybe two or three times out of ten. But it's better than zero.

LISA SWANSON, MD, FAAD: For kids who have molluscum on their face, the options are pretty limited there. You're not going to beetle juice their face. You're not going to do a shot of Candida in their face. I would even be a little bit reluctant to use ZymaDerm. So the cimetidine could be a very appealing thing. I think the biggest things about it, be cautious with any other

medicines that they're on. Cimetidine can have a lot of drug interactions and so just be cautious with that.—

--Typical dosing that I was trained with was 40 mg/kg, with a max of I think it's 800 mg a day. But I've heard people using as low as like 25 mg/kg per day. And it's divided twice a day.

BRAD GLICK, DO, MPH, FAAD: And I think that's for the kiddos, because I've even used it for adults. And when it's been used in adults or the adolescents that are of an adult weight, I've used even higher doses. And I think some of the older studies for verruca were even way higher than 800 mg. It's a challenging disease and the toolbox has been limited. It will be nice to have the new cantharidin topical and the special applicator.—

--I want to just close a couple of things here. ZymaDerm, which I was not familiar with, it is silver nitrate, echinacea angustifolia, Fucus vesiculosus, thuja occidentalis, with leafy twig liquid. So that is sure natural, very interesting to me.

LISA SWANSON, MD, FAAD: Very natural. So there's not even tea tree oil in it?

BRAD GLICK, DO, MPH, FAAD: Well, you know what? It doesn't say that here. It says, "This is a homeopathic product." I happened to look it up, sorry for *Dialogues in Dermatology*, but I had to do this, because I'm so not familiar with this. But I think it's actually really cool. And again, there's so much that doesn't work. And it's very hard to take a textbook and burn away a bunch of molluscum with liquid nitrogen, not happening. That's why Cantharone, at least in my toolbox, has been great over the years. And so I find that the new agent coming out, with an applicator, that we're going to do in the office, hopefully it's going to be a godsend for us, we'll see.—

--With that said, I really appreciate this opportunity to discuss some of the new therapies in the pediatric dermatology toolbox. We discussed psoriasis, and atopic dermatitis, and acne, and hemangiomas, and a little bit about molluscum and warts. And I think that's just really a nice

array of disease states that we can talk about that really exposé what therapies we have and also those that are on the horizon. So it's been great to discuss this with you, Dr. Swanson.—

--And I hope what we can do is bring you back and maybe actually discuss some of the more specific therapies and some of the clinical trial data, as these new drugs come into the toolbox, much we're seeing like with the systemic and topical therapy JAK inhibitors that are soon to come to market hopefully for our adult patients. So with that, I will close it out and I will thank our audience for listening to another *Dialogues in Dermatology*. And I wish everyone a good evening.

LISA SWANSON, MD, FAAD: Thanks, Brad.

BRAD GLICK, DO, MPH, FAAD: Thank you.

Commentary

Riana Dutt Sanyal, MD, MSc with Todd Schlesinger, MD, FAAD (ed.)

The expansion of the pediatric dermatology toolbox includes not only the newly approved biologics for pediatric psoriasis and atopic dermatitis, but also many new topical and systemic therapies for common conditions like infantile hemangiomas, acne vulgaris, and even molluscum contagiosum. In this episode of Dialogues in Dermatology, Drs. Brad Glick and Lisa Swanson discuss new developments in the management of pediatric dermatologic disease.

Previously, the mainstay of treatment for pediatric psoriasis included topical corticosteroids and calcipotriene for mild disease, narrow band ultraviolet B (NBUVB) treatment, or systemic immunosuppressive medications for more severe cases. Dr. Swanson discusses several recent, exciting developments in management of pediatric psoriasis, including the FDA approval of biologics such as ustekinumab (Stelara, targeting IL-12/23), ixekizumab (Taltz, targeted IL-23), and secukinumab (Consentyx, targeting IL-17) for children ages 6 and above.[1,2] In light of these new options, as well as several other biologics which are currently in trials for use in pediatric populations, Dr. Swanson addresses the importance of discussion of all available options with patients' families, followed by joint decision making with consideration of patient factors, dosing schedule, and efficacy to determine the most appropriate treatment on an individual basis.

In contrast to the various options for biologic medications approved for treatment of pediatric psoriasis, the conversation on immune targeted therapeutics for pediatric atopic dermatitis (AD) centers around dtapinupilumab (Dupixent), an inhibitor of the IL-4/IL-13 shared receptor which Dr. Swanson describes as a "life changer" and "revolutionary" for children with AD. Dupilumab was approved for pediatric patients ages 6 and above with moderate to severe AD in 2020.[3] There are differences in dosing regimens based on weight: children weighing under 30kg receive a 600mg loading dose followed by 300mg doses every four weeks, while children weighing 30-60kg receive a 400mg loading dose followed by 200mg every two weeks. A 200mg auto-injector was recently approved for this dosing schedule. Finally, adolescents weighing over 60kg will receive standard adult dosing. Drs. Glick and Swanson also discuss several topical AD medications on the horizon, including tapinarof, an aryl hydrocarbon receptor modulator which may be useful in both psoriasis and AD, roflumilast, which is a topical phosphodiesterase (PDE)-4 inhibitor, and finally topical JAK inhibitors like ruxolitinib and deglocitinib.[4] Dr. Swanson predicts that these agents may be used primarily for maintenance at first, in a similar manner to how calcineurin inhibitors or crisabarole (Eucrisa) are frequently utilized.

Infantile hemangiomas are the most common benign tumors of infancy, with a prevalence of 4-5%. While some hemangiomas may resolve on their own or with timolol, a topical beta blocker, Drs. Glick and Swanson focus on the indications and tolerability for oral propranolol for management of infantile hemangiomas in this episode. According to Dr. Swanson, important factors to consider when deciding whether a patient requires oral propranolol include location of the hemangioma, (such as eyelids, nose, lip, diaper area, and areas exposed to friction with crawling), size, and presence of a "stalk" or pedunculated shape. The first 9 to 12 months of life is a "window of opportunity" for the treatment of a hemangioma, as treatment within its proliferative phase will yield the best results. With more hemangiomas being appropriately treated with propranolol, the use of pulsed dye laser has become more limited to treating an ulcerated hemangioma, or a residual telangiectasia from a resolved hemangioma. Due to the shortage of pediatric dermatologists in the US, Dr. Swanson advocates for general dermatologists to become comfortable with using propranolol to treat infantile hemangiomas in their clinics.

Acne vulgaris is a common dermatologic complaint in adolescent patients, but Dr. Swanson notes that acne is often present in children as young as 9, so effective treatments are necessary that are approved for this age group. Topical retinoids and oral antibiotics are popular and effective treatments for acne vulgaris, but each come with side effects which may reduce tolerability in children and adolescents. Sarecycline (Seysara) is a new tetracycline antibiotic which has been shown to have minimal impact on gut microbiotia, and importantly does not share side effects of phototoxicity and esophageal irritation with doxycycline, or hyperpigmentation and dizziness with minocycline.[5] According to Dr. Swanson, more recently developed topical retinoids like Akilef (trifarotene) and Arazlo (a different formulation of tazarotene) have improved tolerability compared with other retinoids, and Arazlo has the added benefit of a lotion formulation which is spreadable for truncal acne. Clascoterone, a topical antiandrogen medication which was approved in August of 2020 for both male and female patients, will be the newest addition to the pediatric dermatology toolbox for acne when available.[6] It is currently still on the horizon and offers promise particularly for male patients for whom spironolactone is not an option.

Drs. Glick and Swanson close out the discussion with a condition often challenging to treat: molluscum contagiosum. Current treatment options include topical application of cantharidin, injection of Candida antigen, oral cimetidine, and ZymaDerm, which is a homeopathic combination of silver nitrate and various natural ingredients. Oral cimetidine was discussed as an option to treat molluscum in locations like the face, which cannot otherwise be treated with cantharidin or Candida antigen.

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