Hand and Foot Psoriasis, Dermatitis, and Other Inflammatory Dermatoses

Robert Bissonnette, MD, MSc, FAAD, interviewed by Steven Chen, MD, MPH, FAAD

STEVEN CHEN, MD, MPH, FAAD: Hello and welcome to another episode of *Dialogues in Dermatology*. My name is Steven Chen. I am a board-certified dermatologist and internist. And I am thrilled to be hosting today's session on Hand and Foot Dermatoses. We are joined today by expert, Dr. Robert Bissonnette, who is the CEO and Medical Director of Innovaderm, a company that he founded in 2007 for the purpose of enabling better and more streamlined clinical trials research in the field of dermatology.—

--Most importantly though, Dr. Bissonnette has a longstanding interest in inflammatory hand and foot dermatoses and is excited to share all of his expertise in the care of our patients. Thanks again for joining us today, Dr. Bissonnette, and welcome.

ROBERT BISSONNETTE, MD, MSc, FAAD: Thank you very much for the invitation.

STEVEN CHEN, MD, MPH, FAAD: I'm going to jump right in, since we only have about 20 to 25 minutes. I want to make this as salient and as applicable to our practicing dermatologists who might be listening. I'm curious, as a dermatologist, when a patient comes into you with a hand and foot rash, what's the differential for you? What do you gravitate toward? Because for me, I think of things like psoriasis, tinea, contact dermatitis, maybe in a rare case PRP. But what am I missing, what else should I be thinking about?

ROBERT BISSONNETTE, MD, MSc, FAAD: So we're thinking about the same things. So most patients who will consult a dermatologist for an erythematous eruption, with scaling, maybe pruritus on hands and feet, will probably have either a form of psoriasis or a form of dermatitis. However, what I try to do is I try to make an effort to think about other things. To think about things that are less common and things that, as a dermatologist, you don't want to miss.—

--So I force myself to think about infections, for example, and cancer. Most patients don't have an infectious disease or a cancer but I force myself to think about syphilis, scabies, and then we extend it as something that is more common. Acral necrolytic erythema, very rare. Very rarely, we can have a form of MF, for example, that would involve hands or feet. So I try to think about this. But in practice, most patients have either psoriasis or a form of eczema.—

--And that's where we need to make some effort, in order to try to differentiate psoriasis from dermatitis. And then if you think it's dermatitis, one needs to make an effort trying to differentiate between the various forms of dermatitis.

STEVEN CHEN, MD, MPH, FAAD: So I think that's a great differential diagnosis. And I think that that's also how we all try to approach our differential, what are the do not miss diagnoses. Dr. Bissonnette, are there any tricks on your physical exam or when you're evaluating a patient that might push you one way or another in terms of your differential?

ROBERT BISSONNETTE, MD, MSc, FAAD: So what I do, if I'm hesitant between psoriasis and dermatitis, which is something I see much more often when I see patients with hand involvement and when I see patients with psoriasis vulgaris or atopic dermatitis with typical lesions on the trunk or the limbs, we do see patients and I do see patients in which I am not sure and I'm hesitant, but I would say it's infrequent. However, for patients with hand involvement, it's much more frequent.—

--So what I tend to do is I tend to do a good physical exam elsewhere. So I look at scalp, I look at nails. I ask the patients to put on a gown, so that I can have a look at their skin elsewhere. I'm asking if they have something in the genitals, it's always very important with any genital involvement to ask. Because if you ask patients, "Do you have lesions elsewhere?," if it's on the genitals chances are they won't say they have anything. But if you open the door, usually they

say, “Oh, I have something.” Then you can have a look at it and sometimes that really helps in terms of making the diagnosis.—

--That’s between psoriasis and quote, unquote, dermatitis or eczema. Then for eczema, we need to make an effort. It’s unfortunately, there are no well-accepted classification of chronic hand eczema. That is probably because a fair number of patients have a form of dermatitis that involves a combination of factors. So we have those atopics, for example, who do a lot of wet work and have a combination of atopic hand eczema and irritant contact dermatitis.—

--Often, there is an allergic contact dermatitis phenomenon that is added in those patients. So we need to think about the various causes. But usually, it’s irritant contact dermatitis, I would say, chronic atopic hand dermatitis, allergic contact dermatitis. And there are some patients without any wet work, they don’t do more than the others. They’re not atopics, they don’t have allergic contact dermatitis, you refer them to patch testing. And people try and try and it’s not really the history of allergic contact dermatitis.—

--They have some kind of an idiopathic chronic hand eczema. And among that type of morphology, you have patients who have lots of vesicles. Then you have patients who have more a hyperkeratotic form. In terms of allergic contact dermatitis, as most dermatologists are aware, if it’s oozing, if it’s very itchy, if it’s related to a certain type of activities, that’s usually where I tend to think about it. But I think it’s a good practice, when it’s available where you practice, to refer patients with hand eczema for patch testing.—

--Look for an allergic cause. And even re-refer to patch testing. So sometimes, I see patients and I ask, “Have you had patch tests?” “Yeah, yeah, yeah.” “How long ago?” “Ten years ago.” Well, ten years ago, you have a chronic eczema condition, that’s a portal of entry for allergens, it might be irritant. It might have been irritant ten years ago but you may have had some new contacts and you have a combination now. So I tend to re-refer for patch testing.

STEVEN CHEN, MD, MPH, FAAD: That's wonderful. I think that that's such a great way, obviously low hanging fruit first, to focus on the rest of the skin exam, the rest of the physical exam, to see if that can really steer you toward one diagnosis or another. I love the idea of the clinical pearl of really thinking about referring for patch testing and really emphasizing the re-referral for patch testing, especially if some time has passed.—

--I'm curious, beyond that, for the small percentage of patients where you really have trouble differentiating between different types of dermatidities, psoriasis, the other inflammatory conditions of the hands and the feet, how do you approach the rest of your workup? I'm always hesitant to biopsy these patients, because I worry about pain, infection, and healing. Maybe that worry is unfounded. What do you think about your workup and your approach to further narrowing in on your differential?

ROBERT BISSONNETTE, MD, MSc, FAAD: So I rarely biopsy hands and feet, specifically palms and soles. In my experience, if you're hesitant, for example, between psoriasis or a form of dermatitis, it's often not very helpful because the pathologist will come up with a descriptive report, without giving you a diagnosis, specifically if you look at it and it's in between. So I tend to avoid biopsying for these reasons.—

--If I suspect the rare MF that would involve hands or feet, then I would do a skin biopsy. And as everybody knows, it's not something that patients really look forward to. It's a painful, obviously, procedure. Patients are reluctant. There's increased risk of infections. I've seen more infections following hands and feet biopsies than I've seen following biopsies elsewhere on the body. But sometimes it's something you have to do.—

--If you're in doubt between psoriasis and atopic dermatitis, very often the best way is just to treat. Make your decision. If you think it's more psoriasis, then you try psoriasis drugs. And if it doesn't work, then you have to go atopic dermatitis drugs. One thing that is interesting is that

some of the treatments that are currently in development specifically for chronic hand dermatitis tend to be fairly broad. So they may eventually be used both for psoriasis and hand dermatitis.—

--One thing that is also interesting and that is currently under I would say fairly heavy investigation is tape stripping. And one day, this is right now used in research, specifically in atopic dermatitis. And the idea is you use tape strips to remove some of the viable cells of the skin. And then you look at gene expression using things like RNA-Seq. In doing this, you can have an idea of the inflammation that you have in the skin, so which pathways are involved.—

--And recently, I was involved in a study, not on palms and soles, but elsewhere in the body with Emma Guttman, where we were able to differentiate psoriasis from atopic dermatitis using tape stripping. So it remains to be seen if eventually this will come more as something we can use in our practice, specifically in areas like palms and soles where biopsy is an issue.

STEVEN CHEN, MD, MPH, FAAD: That's interesting and kind of a low morbidity procedure, just a tape stripping procedure to get at inflammatory patterns. That's fascinating. Hopefully, we'll see more of that in the future but obviously we'll see what comes down the pike. In terms of thinking, I think something that you bring up is something that we as dermatologists all think about so frequently, is if it's not going to change your management, just go ahead and start treating it with topical steroids. And obviously, if you're thinking about dermatitis, you're reaching more for a calcineurin inhibitor, perhaps.—

--If you're thinking more about psoriasis in general, we reach more for something like a vitamin D analog. And in thinking about those different treatment paradigms, I'm just curious, how do you think about how that treatment paradigm might be different for a hand and foot dermatitis, dermatoses, versus the kind of the psoriasis, psoriasis vulgaris of the body? Or atopic dermatitis of the body? Because I think we think about hand and foot phototherapy. We think about a lot of

ways that we've adapted our normal therapies for acral surfaces. I'm curious about your take on how that treatment ladder might change when we're talking about hands and feet specifically.

ROBERT BISSONNETTE, MD, MSc, FAAD: It depends if you look at a topical treatment, I would say, or a systemic treatment. So most patients with milder disease, and often even those with moderate disease, we tend to start topical. Steven, we're trying for some patients with more severe disease, if we look at topical agents, and in my experience and according to the literature, it's really the steroids that are the number one way, the mainstay way to go. It has not changed since I've started to practice dermatology, almost 30 years ago now.—

--And it works for psoriasis and atopic dermatitis. However, for chronic hand eczema and for palmoplantar psoriasis, it's often a bit disappointing. And it's a big, big issue with the topical drugs that we try, specifically on the palmar surface of hands or the plantar surface of feet, penetration is a major issue, specifically, patients who have a more hyperkeratotic form of eczema or psoriasis. And unless you use potent or super-potent steroids, with the issues of atrophy that are associated with it, it's a problem.—

--The calcineurin drugs have been studied in chronic hand eczema, they could help, there's some efficacy, but it's not stellar efficacy. PDE4 inhibitors could help some patients again with dermatitis but again, it's not very, very good. So I would say that from a topical perspective, it's mainly the steroids but we're in need to have more options topically to treat those patients. And there are things right now in clinical trials under development that could go there.—

--From a systemic treatment, some of the older treatments are nonspecific treatments, like methotrexate is approved for psoriasis, not approved for eczema, atopic dermatitis, but can work. Acitretin is a drug that I often use for hand and foot psoriasis. And it has been some series, I would say, we published a 10 patient series a few years ago with acitretin in patients with chronic hand eczema, and it can be effective, as well.---

--But it's more with biologics that we try to see a difference. So if you really think that you have active psoriasis, then you should use the biologics that you usually use in psoriasis, depending on which agent that you tend to favor or you tend to be more comfortable with. Some of them have been more studied in hand and foot psoriasis. For some, we have fewer good randomized placebo control studies. And for hand dermatitis, nowadays many people have tried and published again series and case reports of patients responding to dupilumab.—

--Interestingly, some of those patients are atopic patients, with atopic hand eczema, but some of those patients are not atopics, and they seem to work in some of those patients.

STEVEN CHEN, MD, MPH, FAAD: That's fascinating, I certainly want to talk more about that. If it's okay, I want to back up to something that you said a little bit earlier about topical therapy. And you specifically made the point about hyperkeratotic forms of dermatitis and how much harder it is to get absorption, especially on the palmar or plantar surfaces. So I myself specialize in the cutaneous lymphoma patients. And in those patients, especially in our MF and Sézary patients who have a lot of hyperkeratosis and keratoderma, one thing that I tend to do is actually mix urea, or some other super-potent keratolytic, with my topical steroids. Do you find that that's helpful or is that something that maybe I just anecdotally have had good luck with it? Or have you ever tried that before for your psoriasis or eczema patients on the hands and feet?

ROBERT BISSONNETTE, MD, MSc, FAAD: I've never tried mixing it together, so asking the pharmacy to mix it. I've prescribed it separately, a keratolytic agent and then a steroid, to try to decrease the keratotic component and increase the penetration. But usually when I see hyperkeratotic hand eczema, or very hyperkeratotic palmoplantar psoriasis, I think about systemic treatment. And being a dermatologist practicing in Canada, my go-to treatment for hyperkeratotic palmoplantar psoriasis is acitretin, unless it's a woman of childbearing potential.—

--And I usually start very, very low. So many patients, if you talk about hair loss, so many patients are afraid that they say, you can talk about sometimes it's very strange. So you talk about all the dangerous side effects that it could have: liver and CBC, talk about methotrexate. But then you say acitretin and hair loss and that's a no-no. So what I try to do is I try to start very, very, very low. And patients that are really scared, I would even start with 10 mg every 3 days.—

--And then I give it for a month or two. They come back, nothing much happens but no side effects. And then I increase progressively. And I've had some impressive results with acitretin as low as 10 mg every two days in patients who are hyperkeratotic. In patients with chronic hand eczema, if they have the hyperkeratotic variant, then what really works well is alitretinoin, which is a systemic retinoid approved for chronic hand eczema in Canada, Europe, many other countries, but unfortunately it's not available in the U.S. So when I see a lot of hyperkeratosis, my first reaction is we need to go systemic.

STEVEN CHEN, MD, MPH, FAAD: That's a good tip. I will clarify, I do not have the pharmacy mix topical steroids and urea together. The patient puts them on sequentially at home. But I think that's a really important differentiating factor. My patients are Sézary patients, they're on systemic therapy already, I'm really helping to palliate the symptoms that they feel. And so it's hard for me to sneak another systemic on board. Whereas I think if your whole goal is to treat the hands and feet or the dermatitis of the hands and feet, then reaching for a systemic when you see that type of morphology is really helpful.—

--Let's talk a little bit more about that. Let's talk about the systemic options. Because it sounds like when it's severe, when you have to reach for a systemic, you kind of have your go-to options. And so it sounds like for psoriasis, you reach for acitretin. Could you tell me more about

what your kind of your secret weapons are for psoriasis, for dermatitis, what do you like to reach for in your systemic bag of tricks?

ROBERT BISSONNETTE, MD, MSc, FAAD: For psoriasis, one needs to realize that according to all clinical studies that have been conducted with systemic agents in psoriasis, the efficacy on palmoplantar psoriasis is always lower than the efficacy on psoriasis vulgaris. Usually, it's often divided by two, so we have to have realistic expectations. There is something special about pustular psoriasis that is different from non-pustular palmoplantar psoriasis.—

--So we did a study in collaboration with Jim Krueger from Rockefeller University a few years ago, where we've shown, and we did biopsies in those studies, so we have shown that patients tend to have activation of both innate and adaptive immunity. So when you have pustular psoriasis, the activation is both innate and adaptive and it's not only an IL-17-, for example, driven disease. So in these patients, I really try to favor agents that have a broader action.—

--So acitretin is one, methotrexate is another. So I tend to favor acitretin but there has been a recent randomized controlled trial that was done in India, comparing methotrexate to acitretin. And what they found was both were efficacious but methotrexate was superior. And some dermatologists will tend to prefer to start with methotrexate. But I think in those patients, specifically the pustular psoriasis patient, the trick is I don't start with biologic, I really start with one of the typical agents.—

--For non-pustular psoriasis, we can go biologic. But in practice, many of my patients are in combination therapy. So one thing I do with palmoplantar psoriasis that I don't tend to do with psoriasis vulgaris is if I choose a biologic for a patient with non-pustular palmoplantar psoriasis, and after about four months, and I tend to be more patient than psoriasis vulgaris, so after four months, if I have some improvement, but it's not where I would like to be, I don't switch, I tend to

add another treatment. I tend to combine. Because many patients, in order to have a very good result, they need combination therapy.

STEVEN CHEN, MD, MPH, FAAD: That's great, that's a really helpful tip, especially for the different flavors of psoriasis that we see. And what about on the dermatitis side, the eczematous dermatitis side? What's your go-to on that side?

ROBERT BISSONNETTE, MD, MSc, FAAD: So maybe just to add something else about psoriasis that I have not used personally in palmoplantar psoriasis because the way the Canadian system works, I don't have access to that, but tofacitinib is a JAK inhibitor that has been studied in psoriasis. It went to phase 3 in psoriasis. I was involved in those studies. It worked fairly well but it was never approved by FDA for psoriasis, even though it's approved for rheumatoid arthritis.—

--There's been a number of case reports recently showing efficacy in palmoplantar pustulosis or palmoplantar pustular psoriasis. So an off-label option for dermatologists, when you've tried everything and you don't have the efficacy you want, you may consider that systemic JAK inhibitor. In terms of eczema, my go-treatment treatment, as I said, was alitretinoin. I think that's really the way to go because it's approved, it's the only drug that is approved for chronic eczema systemically in Canada. If you forget the systemic steroids, which I tend not to use, I tend to avoid.—

--Cyclosporin has been shown efficacious, as well. It's not a drug I like to use for a chronic disease because of the known side effects: the kidney, hypertension, and everything. Dupilumab is interesting. So dupilumab, as I mentioned, more and more we have reports of efficacy. And strangely enough, we have reports of efficacy in patients that are not atopic patients. And this could be because, as I mentioned earlier, many of those patients with hand eczema have either a combination of various etiologies.—

--Or even if they have a single etiology, like an allergic contact dermatitis to something you can avoid, some of those patients, the pathophysiology of the allergic contact dermatitis is different from one patient to another. In some work published by Emma Guttman almost ten years ago now have shown that some patients with allergic contact dermatitis have mostly a Th1, Th17 driven disease. So specifically allergies to nickel, for example.—

--Whereas other patients have more Th2 or Th22 type of allergy disease, those that are allergic to either rubber or fragrance. So if you don't have atopic dermatitis and you have allergic contact dermatitis that is Th2-driven, you can respond to dupilumab. More studies are needed with dupilumab. There are ongoing studies, placebo-controlled studies, to really measure well the efficacy of this treatment, both in atopics and non-atopics.—

--But that's an option, if the patient and the physician has access to dupilumab, that's one option. What's interesting as well is that there are numerous treatments right now in clinical studies for chronic hand dermatitis. And I'm under the impression that probably within three to four years, maybe a little more, maybe a little less, we may have other drugs, both topical and systemic, for those patients.—

--Interestingly, there are two pan-JAKs, so JAKs that are not too specific, that are currently in clinical studies for hand eczema. One is a topical drug, delgocitinib. The other one is a systemic drug, which is gusacitinib. And they've both shown good efficacy in phase 2. And eventually, we need to see how safe and how effective they are in phase 3. These could be options, specifically for the U.S. dermatologists that don't have access to alitretinoin, you may have something eventually to be able to treat your patients with that is approved for hand eczema.

STEVEN CHEN, MD, MPH, FAAD: I was going to say, for those of us who don't have easy access to some drugs that Canadian dermatologists have access to, what's our next go-to. So it sounds like maybe for us, for the severe eczematous dermatitis, for those that have the atopic

variant or perhaps a more Th2 allergic contact dermatitis variant, that dupilumab is really an option to think about, if we can get it for our patient, but certainly more things that are coming, more things that are being developed.—

--I'm curious what else, let's say those standard go-to therapies are tried, but you've told me a little bit about for psoriasis adding therapy as opposed to substituting therapy. I'm just curious, for the patient that comes back after you've started your first line therapy and it's just not working or it's just not working well enough for that patient, how do you treat that recalcitrant hand and foot dermatitis?

ROBERT BISSONNETTE, MD, MSc, FAAD: So let's say, for example, that I've started somebody with dupilumab. And the patient comes back after three, four months with a partial response, which is something we often see. So the patient is better but the response is partial. Then I will try to add something topical first. If they're not already on a steroid, this is what I will think about, a calcineurin inhibitor, could be crisaborole. One thing we would be able to do probably fairly soon, I hope, is to offer other options, other systemic treatments that are approved for, that eventually will be approved for atopic dermatitis.—

--We know that there are three JAK inhibitors that have been studied in phase 3 for atopic dermatitis. One is approved in Europe, baricitinib. None yet are approved in Canada or the U.S. but when these will be available, these will be options that I will definitely consider in these patients. That should come fairly soon.

STEVEN CHEN, MD, MPH, FAAD: You've shared already more about the things that are in development, the topical, kind of less selective JAK inhibitors that we might be seeing coming soon. What else? I'm kind of hoping to tap into your knowledge and expertise, as the CEO of a clinical trials research company. What else can we expect? Any other tricks of the trade or any

other insight or tips that you can share with us, without breaking any laws, for us to know that we can look forward to?

ROBERT BISSONNETTE, MD, MSc, FAAD: In terms of psoriasis, what is really needed I think are combination therapies. This is what we use often in our practice, but we don't have enough good quality data in terms of combination therapy. Unfortunately, when companies are thinking about this indication, they often do a placebo-controlled trial. We have very good placebo-controlled trials that have been published. We have two large placebo-controlled trials with secukinumab in patients with pustular and non-pustular palmoplantar psoriasis, showing efficacy but not up to the level we would like.—

--So I would urge pharma companies to invest on combination therapy trials. In terms of chronic hand eczema, what could eventually make a difference I think is better knowledge of the pathophysiology. So I've alluded to differences in terms of Th1, Th17, or Th2 for allergic contact dermatitis, but nobody really so far conducted a very thorough study in terms of which pathways are activated in this disease.—

--And is there a difference in patients who have mostly a vesicular type of hand eczema versus hyperkeratotic. So I think there we will gain with better understanding of the disease and maybe associating a specific morphology to a specific pathway would help physicians decide on which drug to use. And who knows, maybe some of those patients could be treated for with some of the psoriasis treatments that we have.

STEVEN CHEN, MD, MPH, FAAD: So that's great. I think everything that we've talked about in these last few minutes really is coming together, in terms of thinking about the future of how we might take care of hand and foot dermatitis. I can already imagine a patient comes in, a difficult-to-diagnose hand and foot dermatitis, you're able to do something as easy as tape stripping to try to figure out a little bit more about the immune profile, and really be able to tailor your

therapy to your patient's particular immune kind of milieu of the hand and foot dermatosis that you're treating.—

--We're coming up to the end of our time together. So before we completely log off, Dr. Bissonnette, I just want to give you a chance, is there anything else you want to make sure our listeners know before they sign off from this episode?

ROBERT BISSONNETTE, MD, MSc, FAAD: I would say be patient. In my experience, specifically with psoriasis, it takes more time to respond, so be patient. And I tell my patients, "Look, it takes four months." So within a month, don't be disappointed if you don't see clearance. Sometimes, we do see it earlier, but often it takes longer. So be patient and don't switch treatment too fast.

STEVEN CHEN, MD, MPH, FAAD: Wonderful. Well, thank you so much, Dr. Bissonnette, for sharing all of your expertise and really giving us a glimpse into the future of how we might be treating our patients with these recalcitrant hand and foot dermatoses. I really appreciate your time today and I am sure that all of our listeners today have learned something from tuning in to hear your take on this important topic. Thanks again, Dr. Bissonnette, and thank you to all of our listeners for tuning into another episode of *Dialogues in Dermatology*.

ROBERT BISSONNETTE, MD, MSc, FAAD: Thank you.

Commentary

Brian Wanner, DO with Todd Schlesinger, MD, FAAD (ed.)

Hand and foot dermatoses can have a broad differential and include common and uncommon conditions. Common diagnoses include psoriasis, eczema, tinea, and contact dermatitis. It is important for dermatologists to also include uncommon etiologies in the differential including scabies, syphilis, mycosis fungoides, pityriasis rubra pilaris, and necrolytic acral erythema. In this episode of *Dialogues in Dermatology* Drs. Steven Chen and Robert Bissonnette discuss management options for patients with hand and foot dermatitis including psoriasis and eczema. When presented with a hand dermatitis, Dr. Bissonnette recommends doing a thorough physical exam to look for clues to the diagnosis on other parts of the body. For example, nail pitting and erythematous plaques with a micaceous scale would point towards psoriasis. Asking if the patient has any lesions on the genitalia could also help with making the diagnosis as many patients aren't likely to disclose this information unless specifically asked.

Hand dermatitis can also be multifactorial or idiopathic in nature, which makes it difficult to establish a specific cause. For instance, patients with chronic hand eczema who do a lot of wet work may have a combination of atopic hand eczema and irritant contact dermatitis. Chronic hand dermatitis can also be caused by allergic contact dermatitis, albeit less frequently. If allergic contact dermatitis is a concern, Dr. Bissonnette will send patients for patch testing. He will even re-refer patients for patch testing if they've had a negative patch test in the past and it's been a significant amount of time since that test (e.g., 10 years). This is because chronic hand eczema can act as a portal of entry for allergens and subsequently lead to an allergy. Dr. Bissonnette then discusses how dupilumab can be beneficial for some patients with allergic contact dermatitis due to activation of the Th2/Th22 pathway by certain rubbers or fragrances. The Th1/Th17 pathway, however, is commonly promoted by other allergens which would decrease the efficacy of dupilumab. Thus, patients should be treated based on their unique allergen and the suspected immune pathway that's activated.[1]

As far as a workup, Dr. Bissonnette tries to avoid performing a biopsy on the hands and feet. This is due to pain and discomfort for the patient as well as his frequent experience of receiving descriptive biopsy reports without a specific diagnosis. If in doubt between psoriasis and atopic dermatitis, Dr. Bissonnette recommends treating either one or the other based on your leading diagnosis. If it doesn't work, then switch management to the other diagnosis. From a topical therapy perspective, he recommends starting with topical steroids for dermatoses on the hands and feet. Systemically, therapies such as methotrexate can work for both psoriasis and eczema, and he often uses acitretin for hand and foot psoriasis. If there is a hyperkeratotic component to the hand dermatitis, he'll often consider systemic therapy.

Dr. Bissonnette will also use biologics when he strongly favors a diagnosis of psoriasis (for example, adalimumab) or eczema (for example, dupilumab). For palmoplantar psoriasis, he recommends being more patient with biologics and giving about 4 months to see if there's any improvement. After the four months, he will add an additional treatment if there's only slight improvement. He also feels many palmoplantar psoriasis patients need combination therapy to have a very good result and more studies are needed to investigate this approach.

Dr. Bissonnette points out treating psoriasis vulgaris is much different than treating palmoplantar psoriasis. Systemic therapies for palmoplantar psoriasis are always lower in efficacy compared to psoriasis vulgaris. For palmoplantar pustular psoriasis he will not start with a biologic and usually starts with acitretin (if the patient is not a female of reproductive potential). Recently,

there has been a randomized controlled trial in India that found methotrexate to have similar efficacy to acitretin.[2]

Tape stripping is a new diagnostic technique under investigation which could aid in discovering the causes of chronic hand dermatitis. It involves the removal of viable cells from the skin to exam their genetic expression. This would give an idea of which inflammatory pathways are involved in a patient's hand dermatitis and help lead to an accurate diagnosis.[3]

Dr. Bissonnette points out JAK inhibitors are another off-label option for dermatologists. Recent studies have also shown systemic JAK inhibitors to be beneficial for patients with palmoplantar pustular psoriasis.[4] There are two pan-JAK inhibitors, delgocitinib and gusacitinib, that are currently in phase 2 clinical studies for hand eczema.

In conclusion, treating recalcitrant hand and foot dermatitis can be challenging. After starting someone on biologic therapy for three or four months, Dr. Bissonnette will try to add a topical therapy such as a corticosteroid, calcineurin inhibitor, or phosphodiesterase inhibitor. He also advises to remain patient and avoid switching therapies too fast when treating palmoplantar dermatoses as it can frequently take 4 months to see any improvement.

References

1. Leonard A, Guttman-Yassky E. The Unique Molecular Signatures of Contact Dermatitis and Implications for Treatment. *Clin Rev Allergy Immunol.* 2019;56(1):1-8. URL: https://pubmed.ncbi.nlm.nih.gov/29754191/

2. Shah S, Nikam B, Kale M, Jamale V, Chavan D. Safety and efficacy profile of oral cyclosporine vs oral methotrexate vs oral acitretin in palmoplantar psoriasis: A hospital based prospective investigator blind randomized controlled comparative study. *Dermatol Ther.* 2021;34(1):e14650. URL: https://pubmed.ncbi.nlm.nih.gov/33296549/

3. Sølberg J, Jacobsen SB, Andersen JD, et al. The stratum corneum transcriptome in atopic dermatitis can be assessed by tape stripping. *J Dermatol Sci.* 2021;101(1):14-21. URL: https://pubmed.ncbi.nlm.nih.gov/33218696/

4. Valor-Méndez L, Sticherling M, Kleyer A, Schett G. Successful treatment of refractory palmoplantar psoriasis in a psoriatic arthritis patient with the JAK inhibitor tofacitinib. *Clin Exp Rheumatol.* 2021;39(1):228. URL: https://pubmed.ncbi.nlm.nih.gov/32828149/