Medscape EDUCATION

Understanding Treatment Goals for Patients With Onychomycosis CME/CE

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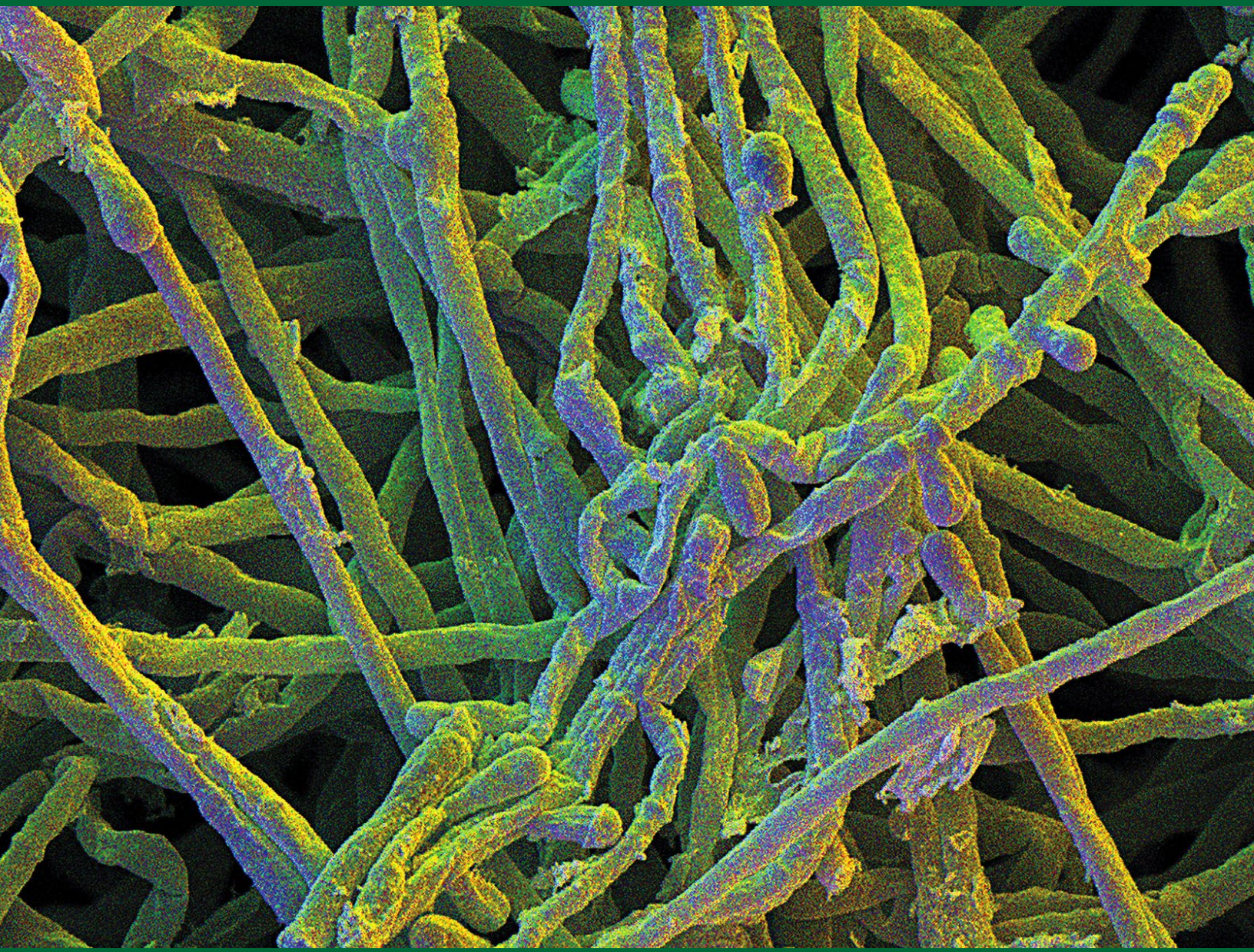

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Target Audience
This activity is intended for dermatologists, podiatrists, primary care physicians, nurses, nurse practitioners, and other clinicians who treat patients with onychomycosis.

Goal
The goal of this activity is to review the rationale, goals, and options for early, effective treatment of onychomycosis.

Learning Objectives
Upon completion of this activity, participants will be able to:

1. Interpret clinical trial results on the efficacy of topical solutions for the treatment of onychomycosis

2. Identify realistic treatment goals for patients with onychomycosis, for both oral and topical therapies, based on available clinical trial results and current clinical practices

3. Review the rationale for early, effective treatment of onychomycosis

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- Occasionally other additional software may be required such as PowerPoint or Adobe Acrobat Reader.

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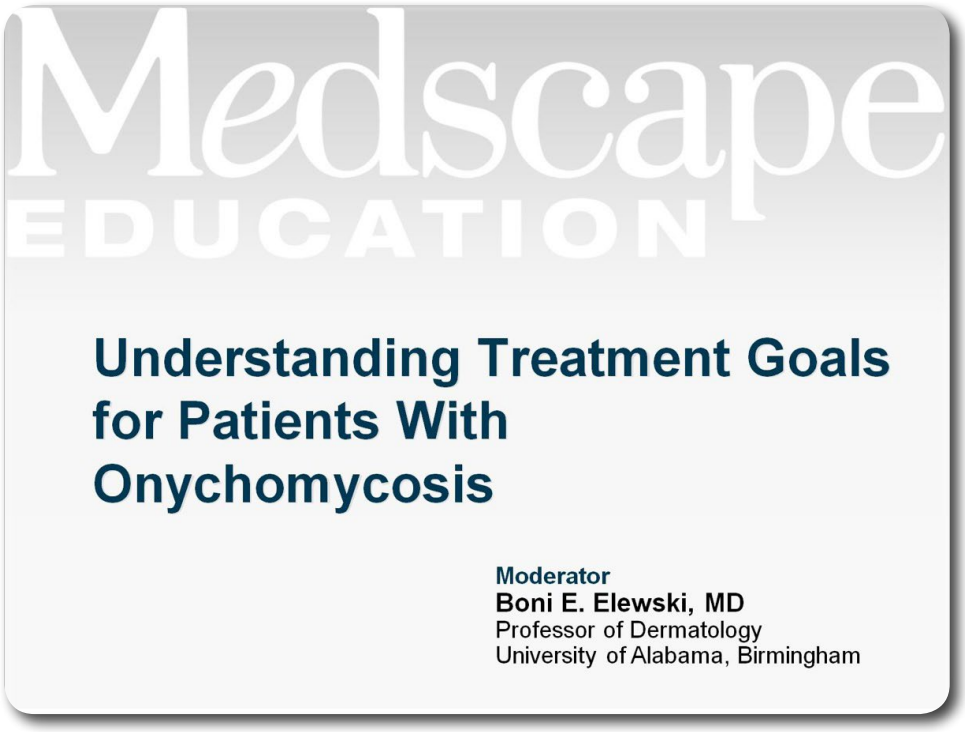
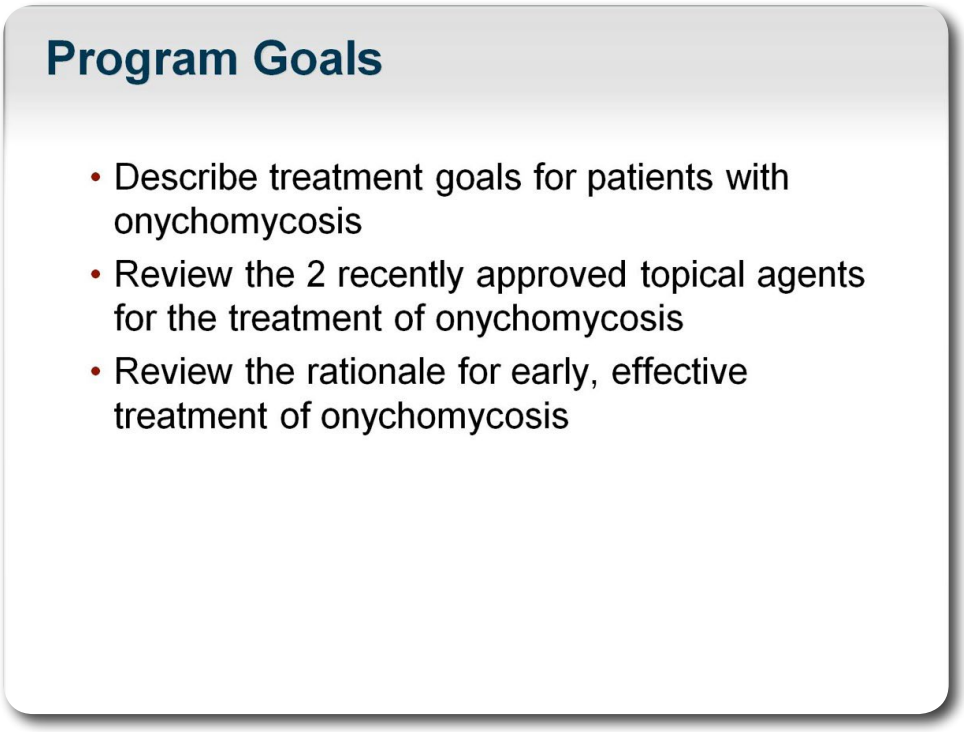
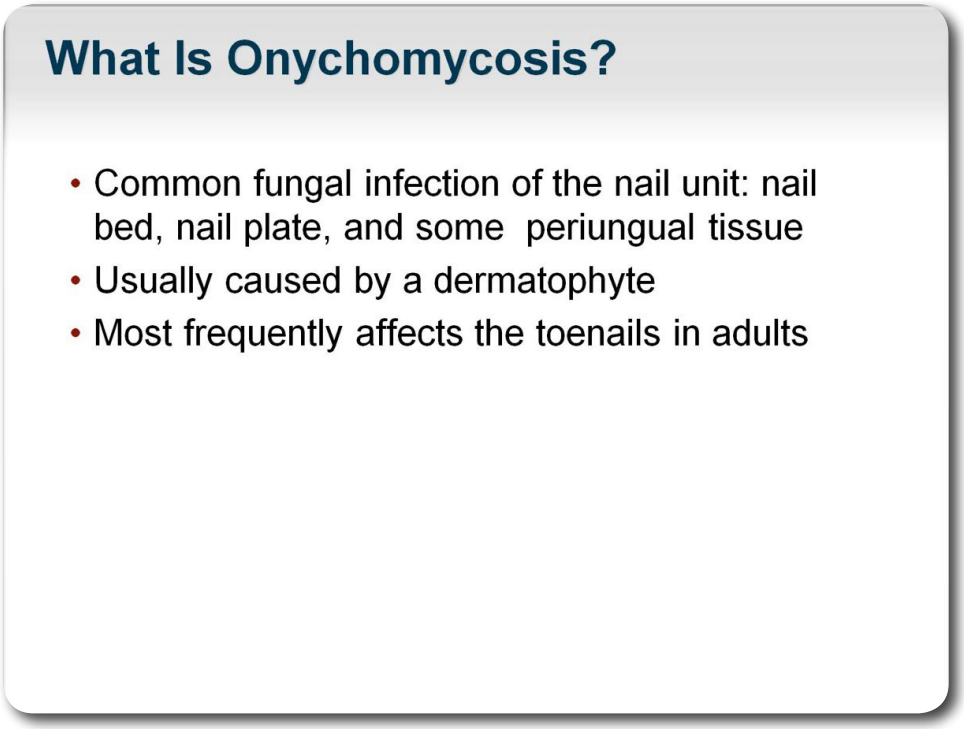


Boni E. Elewski, MD: I'm Boni Elewski, professor of dermatology at the University of Alabama in Birmingham, Alabama. Welcome to this CME-CE program on onychomycosis.

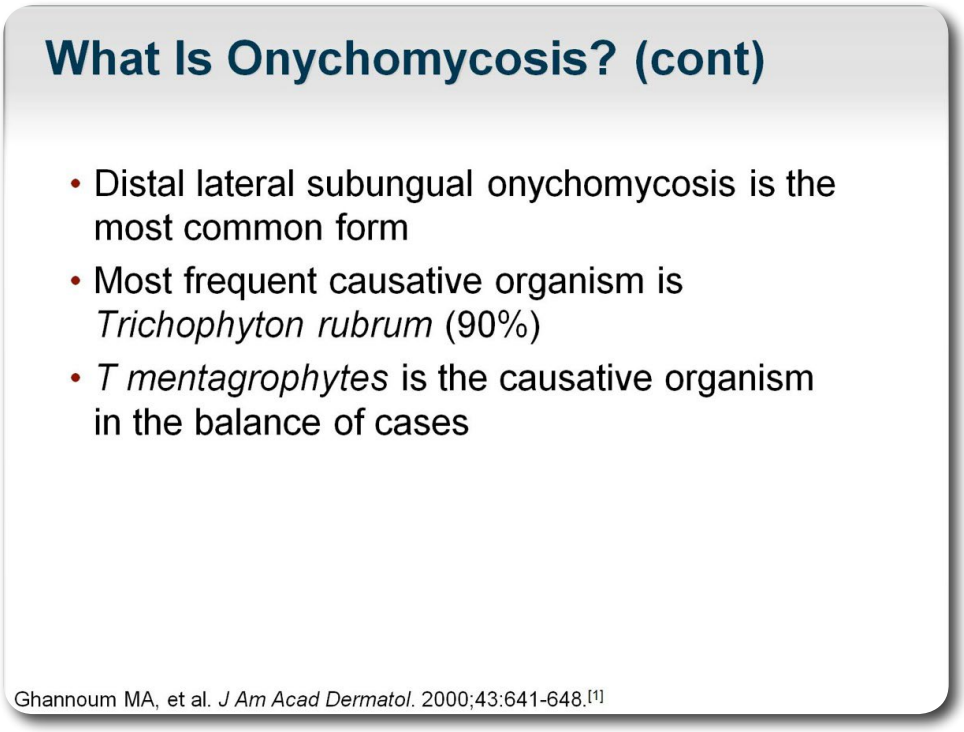
Joining me today are Jim Del Rosso, clinical professor of dermatology at Touro University College of Osteopathic Medicine in Henderson, Nevada, and Warren Joseph, a podiatrist and infectious disease specialist at Roxborough Memorial Hospital in Philadelphia, Pennsylvania.



Dr Elewski: In this program, we will describe treatment goals for patients with onychomycosis and review the 2 recently approved topical agents for the treatment of onychomycosis. I would also like to mention that this program will include a discussion of off-label treatment options.



Let's start with some basics. Onychomycosis is a common fungal infection of the nail unit: the nail bed, nail plate, and some periungual tissue. It is usually caused by a dermatophyte fungus, and it most frequently affects the toenails in adults.



Dr Elewski: Distal lateral subungual onychomycosis, or simply distal subungual onychomycosis, is the most common form. The most frequent causative organism is *Trichophyton rubrum,* which causes approximately 90% of cases.[1] *T mentagrophytes,* also known as *T interdigitale,* is the other causative organism in the balance of cases.[1]

Jim and Warren, let's look at some images of onychomycosis and discuss the clinical presentation.

Warren Joseph, DPM: I would classify this case as relatively mild onychomycosis. There is some toenail discoloration, but there is not a lot of thickening. There is perhaps 40% involvement.

James Q Del Rosso, DO: I think you have to consider if it *is* onychomycosis; you need to be sure that you have the correct diagnosis.

Dr Elewski: How would you know clinically that this is onychomycosis?

Dr Del Rosso: I would determine if the patient has concomitant tinea pedis, usually moccasin or dry plantar tinea pedis. You can certainly do a potassium hydroxide (KOH) test and fungal culture. The sensitivities of those tests are sometimes reported to not be very good, but I think a lot depends on how the operator obtains the specimen or performs the culture.

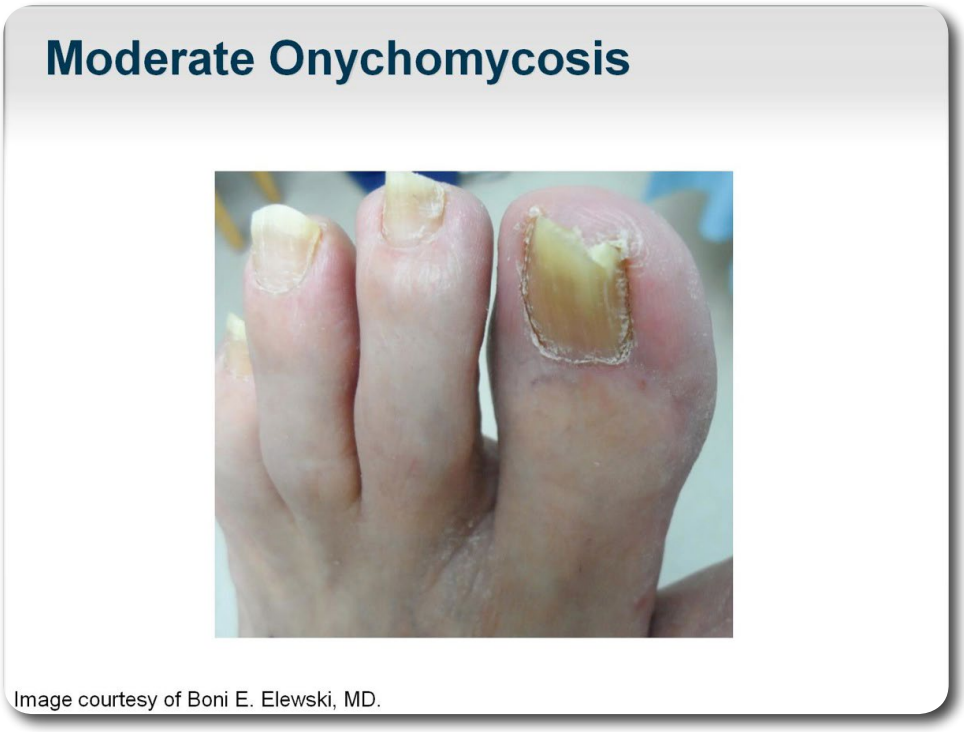
Dr Joseph: We have to look at the evidence. Fletcher and colleagues [2] and, more recently, Garcia-Doval and colleagues [3] found that the positive predictive values for clinical diagnosis, especially if you have a patient with suspected onychomycosis and plantar desquamation suggesting tinea pedis, are better than for some of the other tests. I think it is a combination of using your clinical acumen plus the laboratory tests.

Dr Del Rosso: Especially if there is evidence of concomitant tinea pedis; that really supports the diagnosis of onychomycosis.

Dr Joseph: Yes. I think that is the key.

Dr Elewski: This patient would be a perfect candidate for treatment, because the onychomycosis is not that bad and the patient would likely be cured.

Dr Del Rosso: Right. The earlier you diagnose onychomycosis, the better the patient will do with treatment.



Dr Elewski: Let's look at another case. What do you think of this case, Warren?

Dr Joseph: I think this is the next step. In the earlier case, we did not see a lot of thickening. There was 40% to 50% involvement, if that. Here you are starting to see more onycholysis: the nail is lifting up off the nail bed. You have a thicker-looking nail. This case is going to be more difficult to treat. I'll echo what Jim said: the earlier you treat, the better the result. Once the nail starts looking like the nail in this photograph, you are going to have to debride to thin and shorten the nail, so treatment is going to be more difficult.

Dr Elewski: Let's look at another case.

Severe Onychomycosis With Tinea Pedis

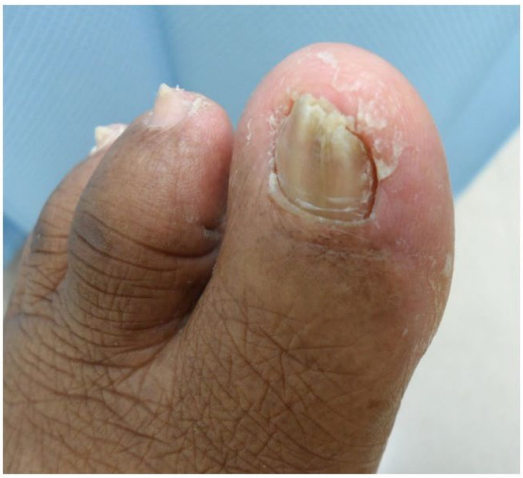
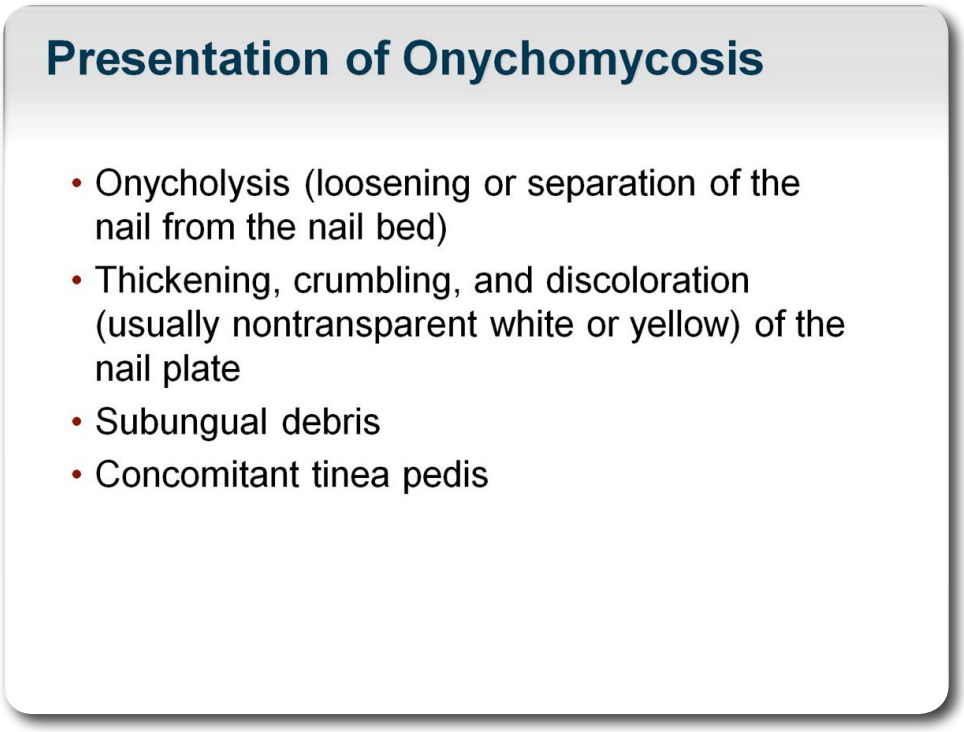


Image courtesy of Boni E. Elewski, MD.

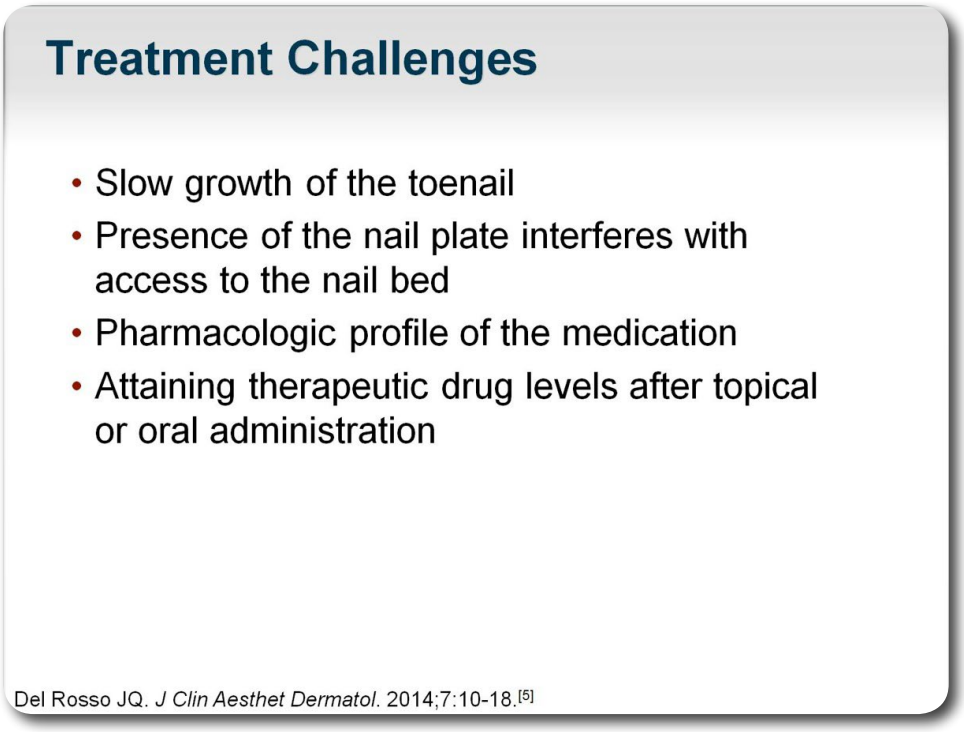
Dr Joseph: We have shown a nice progression from mild to moderate to severe onychomycosis, although the terms are not really well defined. I would call this case severe onychomycosis. I might even go as far as to call it totally dystrophic onychomycosis. What is interesting is the evidence of tinea pedis along with the onychomycosis. You see the scaling of the skin of the hallux. I'm a firm believer that this is the natural history of onychomycosis. It starts as tinea pedis and then invades up underneath the toenail. This is a perfect example of concomitant tinea pedis and onychomycosis.

Dr Del Rosso: When we say toenail, we are talking about the toenail plate. It is really a disease of the nail bed first, when it starts to invade the nail unit. The onychodermal band can be violated very easily by simple trauma, and once that portal of entry is broken, the organism has an easier time invading the nail bed.



Dr Elewski: Clinically we see onycholysis, subungual debris, and thickening of the nail plate. You also look for tinea pedis. These are the take-home points.

Onychomycosis is common. Approximately 10% of the population has this infection.[4] It also has the reputation of being difficult to treat, partly because it is not correctly diagnosed. Jim, can you discuss some of the challenges we face when treating onychomycosis?

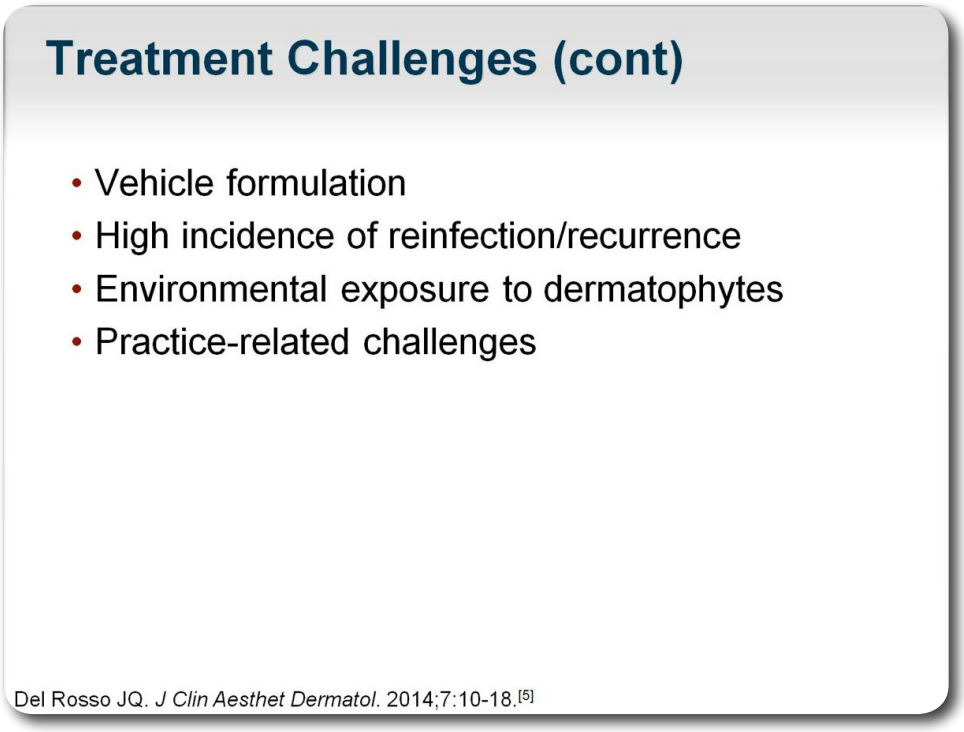


Dr Del Rosso: Patients would like onychomycosis to go away quickly, but toenails grow very slowly, especially as people age.[5] We cite the average of 1 year, but not everyone's toenails grow out from proximal to distal in 1 year. Some people's toenails take longer, especially if the person is older or has peripheral vascular disease. It takes a long time for the new nail plate to grow in and replace the affected nail plate. Patients have to be patient, and so do practitioners.

Another challenge is that the presence of the nail plate interferes with penetration to the nail bed, and that is assuming that the medication has transungual penetration.[5] With the newer topical agents, because they are solutions, we may not be dependent only on that feature. The solutions may actually be getting through the air gaps, along the sides of the nail, under the cuticle, and also under the hyponychium, which may be how they are able to better penetrate the nail unit. But treatment still takes time.

The pharmacologic profile of the medication is important.[5] If you are trying to get transungual penetration through the nail plate and into the nail bed, the medications have to be small molecules with the correct partition coefficient.

It is important to get therapeutic concentrations, because I agree totally with Warren Joseph's philosophy that you have to eradicate the fungus. Although it can come back, you have to eradicate the organism, so you must get adequate antifungal concentrations either from a topical medication, an oral medication, or both.

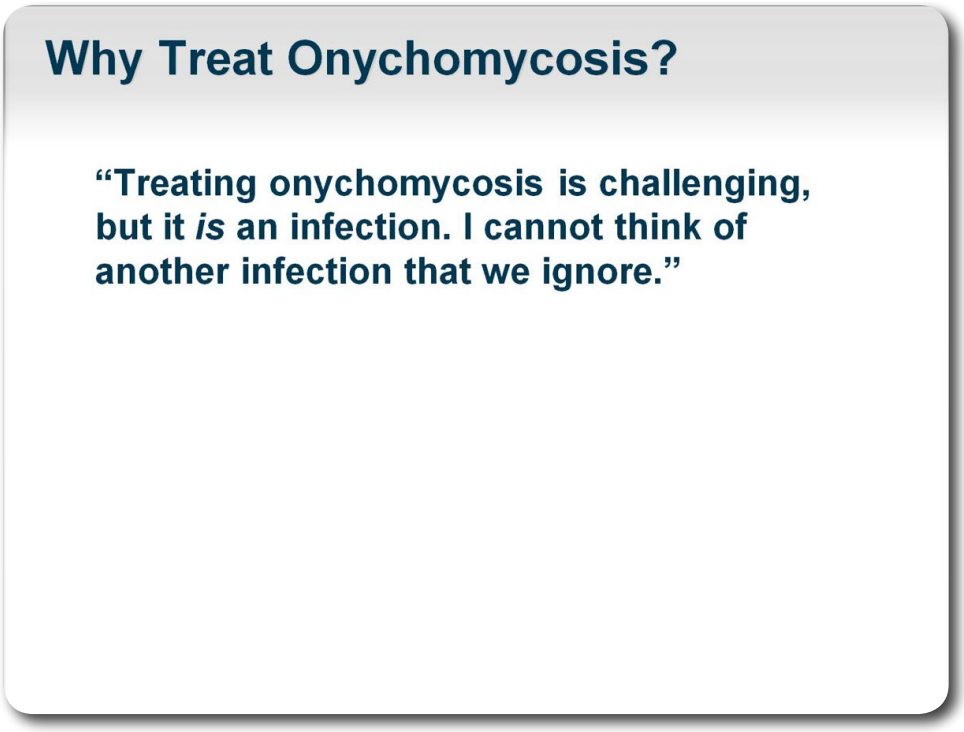


Dr Del Rosso: For topical medications, the vehicle is important.[5]The first topical drug approved for onychomycosis, ciclopirox, is a very effective antifungal agent, but the vehicle does not penetrate well because it is a lacquer. It does not get into crevices and cracks, which is very important for a topical antifungal.

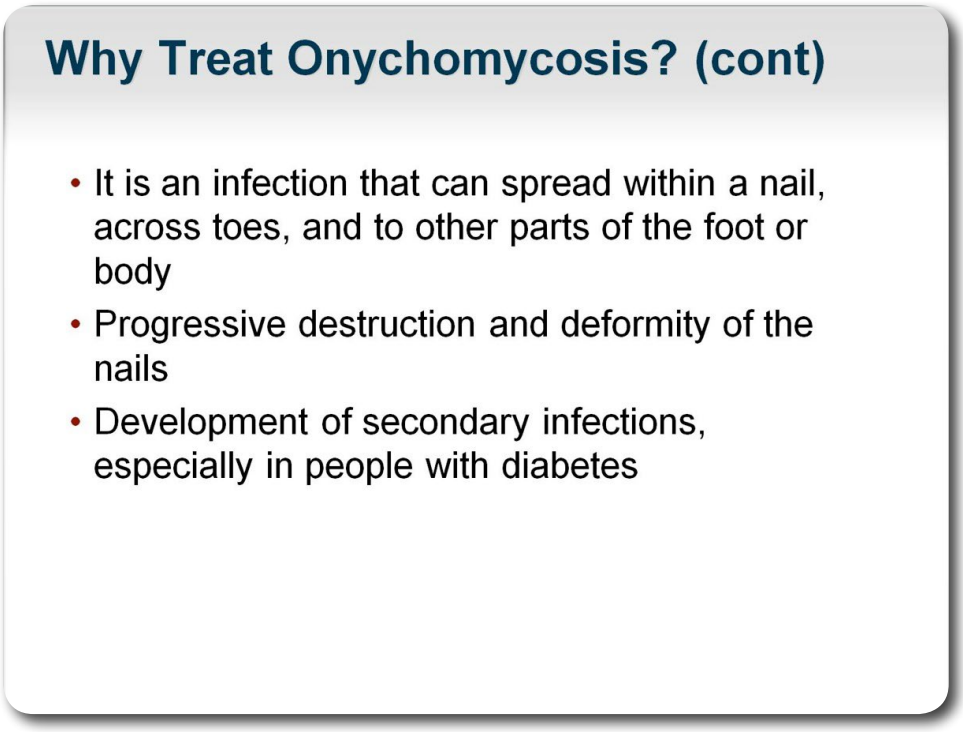
Reinfection and recurrence are important obstacles.[5] If you do not get rid of the concomitant *T rubrum*, let's say, on the skin around the affected toenail, it is going to reinvade later. You can clear patients, they can go through all of this trouble, but if they are carriers of *T rubrum* or if they are re-exposed, they can become reinfected fairly easily. You cannot blame the initial treatment; it worked, but now the patient is reinfected.

Environmental exposure to dermatophytes can be an issue. I don't get too crazy about people throwing out their shoes, but I think it is important to control concomitant tinea pedis.

Today, we also have to deal with practice-related challenges. We have great medications, but patients have higher copays. They do not want to come in as often to see the clinician. They may not be able to get access to medications, so that becomes a challenge. We need to make certain that patients get the therapy they need.

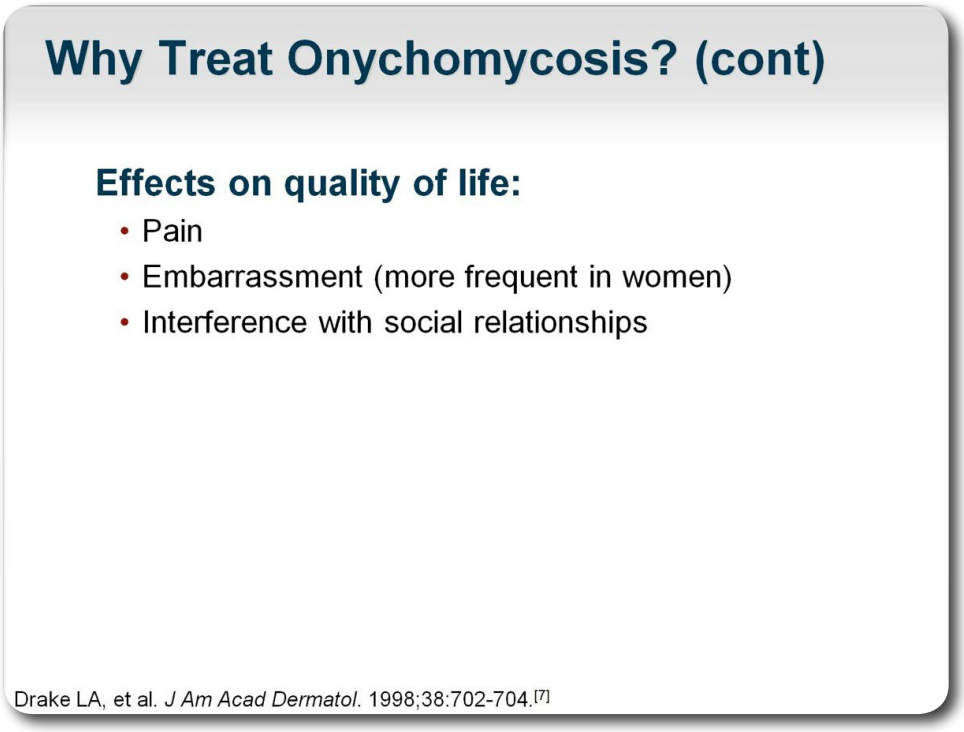


Dr Elewski: We know that treating onychomycosis is challenging, but it is an infection. We have to keep remembering that. I cannot think of another infection that we ignore, yet many clinicians just ignore onychomycosis. Warren, could you review some of the consequences of *not* treating onychomycosis?



Dr Joseph: I think you used the key word -- infection -- and because my training is in infectious diseases, I always think of onychomycosis not as a disease of the nail or the skin but as an infection. We do not think twice about using an antibiotic when there is a bacterial infection; we should be using an antifungal when there is a fungal infection. It is an infection that needs to be treated, and as an infection, it can progress. We know that onychomycosis starts on one part of one toenail. It can spread to the rest of that toenail. It can spread from one toenail to other toenails and from the toenails to other parts of the body. Zaias showed that.[6] He was talking about tinea pedis, tinea cruris, and tinea corporis being associated with onychomycosis. It is progressive. It can cause destruction of the nail. You may never get a good-looking nail back if you wait too long to treat.

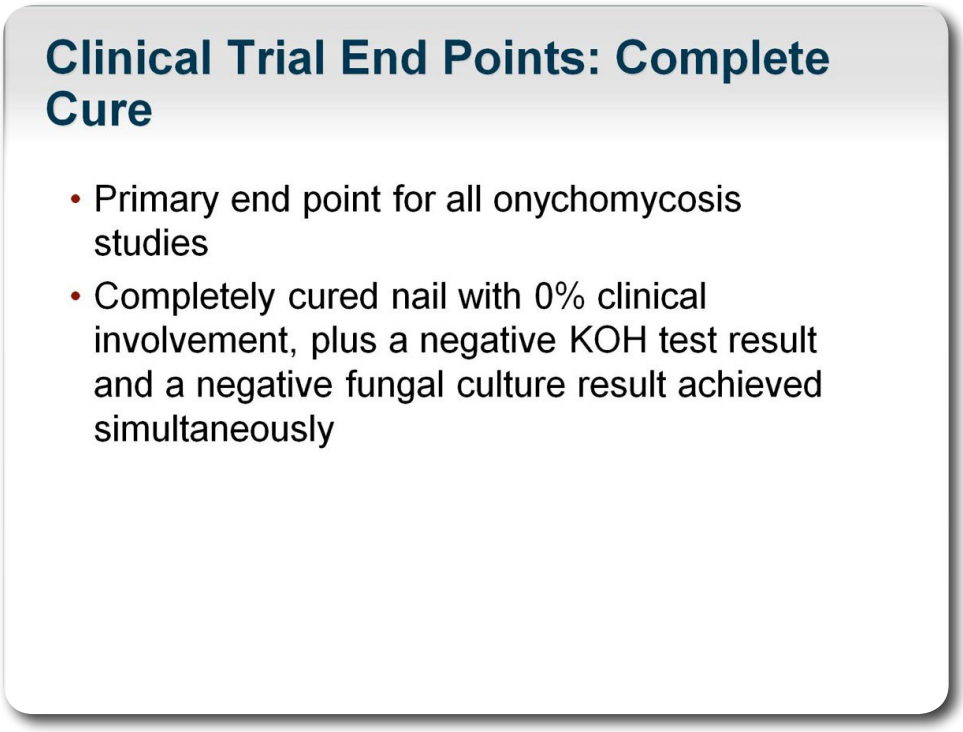
There are other issues. There can be secondary infections, bacterial infections, especially in populations such as patients with diabetes. You take a thick onychomycotic nail, put it on a neuropathic toe, and then place it in a shoe that might be a little bit too tight, and subungual ulcerations can develop. These can go down to the bone, and then you have osteomyelitis as a result of onychomycosis. That is another reason to treat.



Dr Joseph: Lynn Drake, MD, did a classic study looking at quality of life and found that 48% of patients with onychomycosis have pain.[7] Many insurers would want to say to us that they don't want to pay for onychomycosis because it is a cosmetic disease. But how can onychomycosis be a cosmetic condition when half the patients have pain? Seventy-four percent of patients experience embarrassment; 40% cannot wear shoes.[7] Onychomycosis places a major burden on the healthcare system. Onychomycosis is an infection that we need to treat because it has effects on all aspects of life.

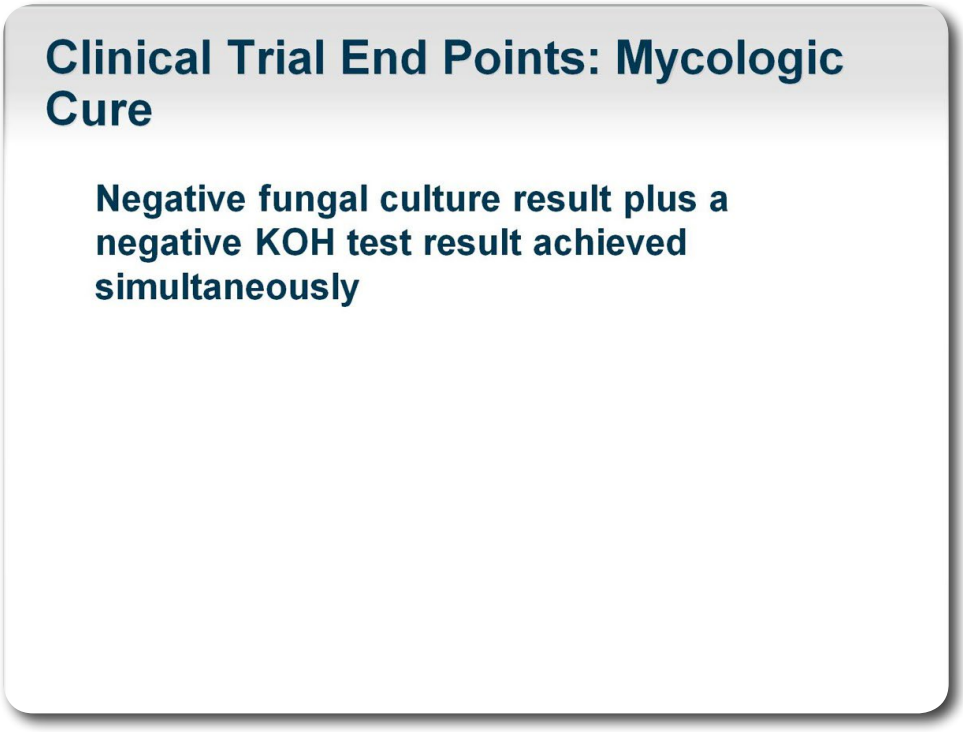
Dr Del Rosso: An infection by definition cannot be just cosmetic. It is an infectious disease.

Dr Joseph: It's an infectious disease but people tend to pooh-pooh it, perhaps because it is hidden in the shoe. No; it is progressive and recurrent and can cause major issues. Onychomycosis needs to be treated.

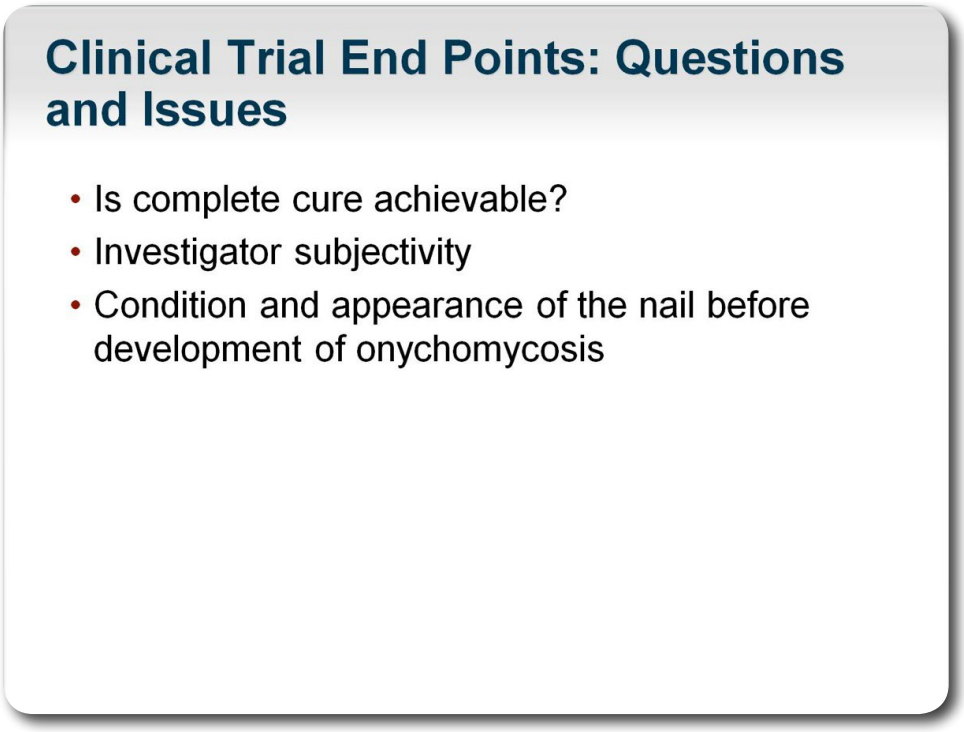


Dr Elewski: To help us understand the clinical trials we will be discussing, it is important to review the 2 clinical trial end points that are mandated by the US Food and Drug Administration (FDA).

Complete cure is the primary end point for all onychomycosis studies. Complete cure means a completely cured nail with 0% clinical involvement plus a negative KOH test result and a negative fungal culture result achieved simultaneously.



The second end point is mycologic cure, which is a negative fungal culture result plus a negative KOH test result achieved simultaneously. To me, this is an objective test and the practical end point when treating a fungal infection. What do you think?



Dr Joseph: What I tell people is that in the definition of complete cure not only does the condition have to be mycologically cured, with negative KOH and culture results, but the nail has to be perfect, which is an end point that is almost unachievable. This is why some of the complete cure data across all drugs, oral and topical, have not been particularly impressive.

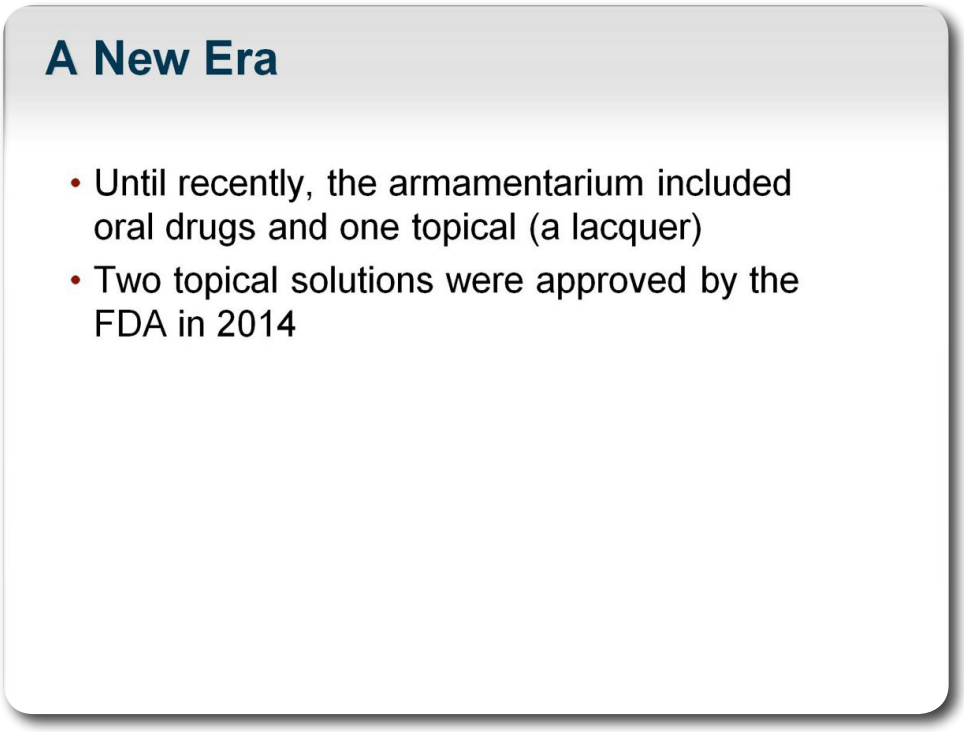
Mycologic cure tends to be an easier end point to reach. Boni, I agree with you that it is an important and objective end point because we are looking to get rid of the fungus. And the hope is that, as Jim mentioned earlier, if we kill the fungus then the nail has the opportunity to grow out over time. We have to look at some intermediate end points that make patients happy, and if they are happy, we are happy and we still kill the fungus.

Dr Del Rosso: We have to remember that clinical assessments are based on the investigator's eye, which can be subjective and cause variability in the clinical numbers.

Dr Elewski: Clinical cure, to me, is like stipulating in an acne study that the objective is perfectly smooth skin without any scarring or redness, and you cannot achieve that.

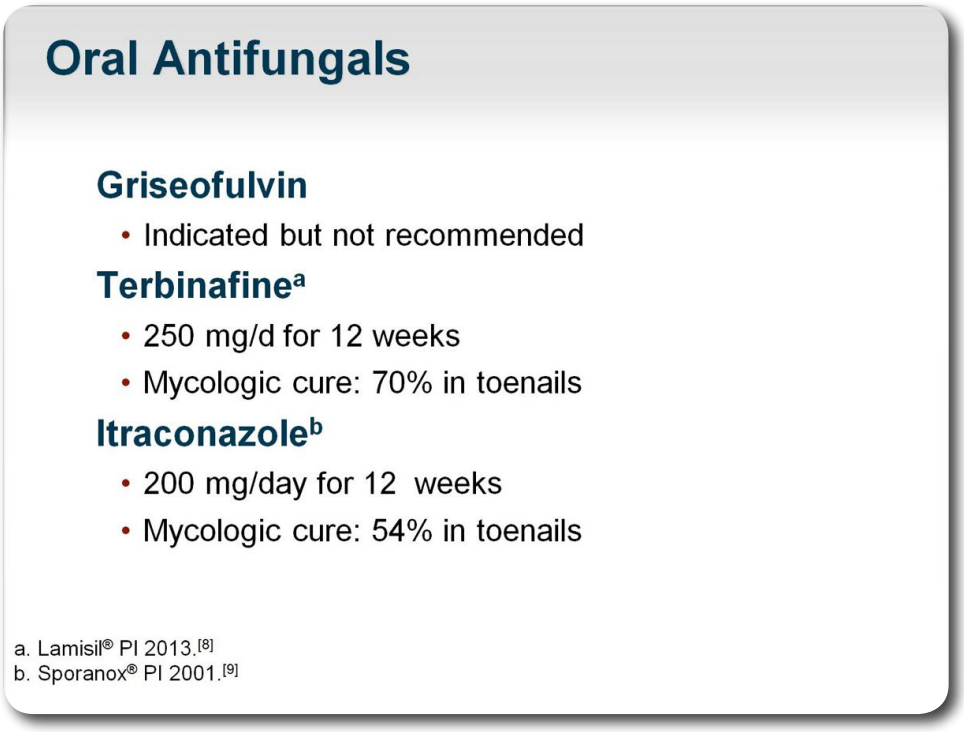
Dr Del Rosso: The other problem is that you do not know what the nail looked like before the patient developed onychomycosis and sought treatment. There can be many reasons why the patient has an imperfect nail, which may prevent the patient from achieving a perfect nail after treatment.

Dr Elewski: Right, but there are other end points that are flexible. These end points may not be the same from study to study. We'll look at some of these end points when we discuss the clinical trials.



Dr Elewski: Until recently, we have had 2 approved oral drugs and a nail lacquer to treat onychomycosis. The recent approval of 2 new topical drugs is exciting. We are at the beginning of a new era of effective topical treatment. Before we discuss the newer options, let's review what has been available.

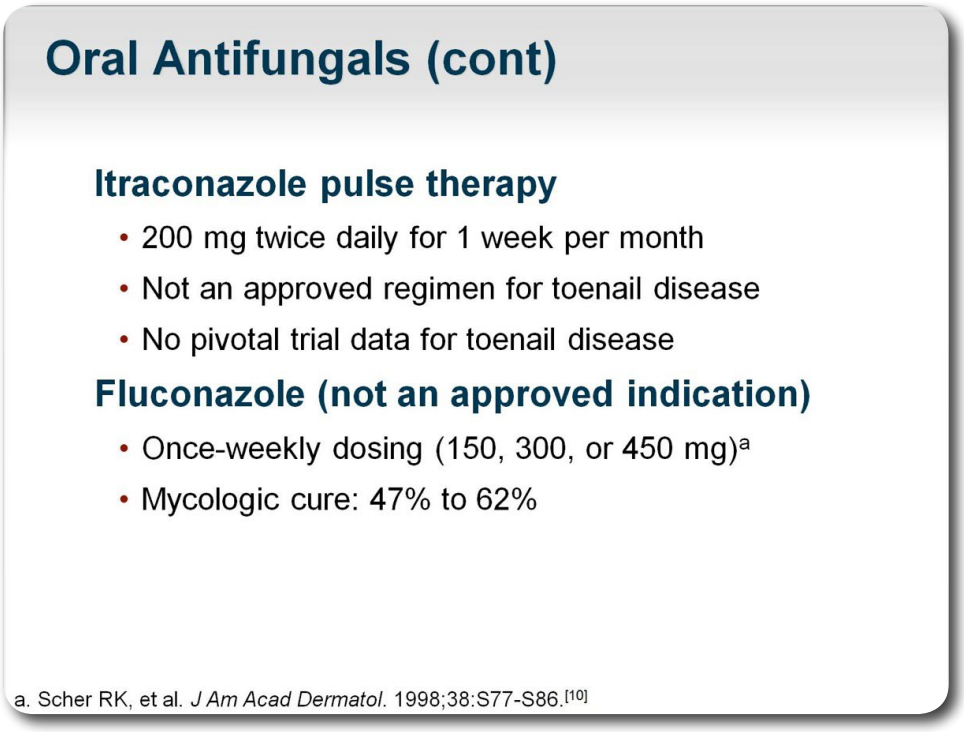
Jim, do you want to refresh us on the oral agents?



Dr Del Rosso: Griseofulvin is approved for the treatment of onychomycosis, but we do not recommend it because it does not work very well in adults with toenail onychomycosis.[5]

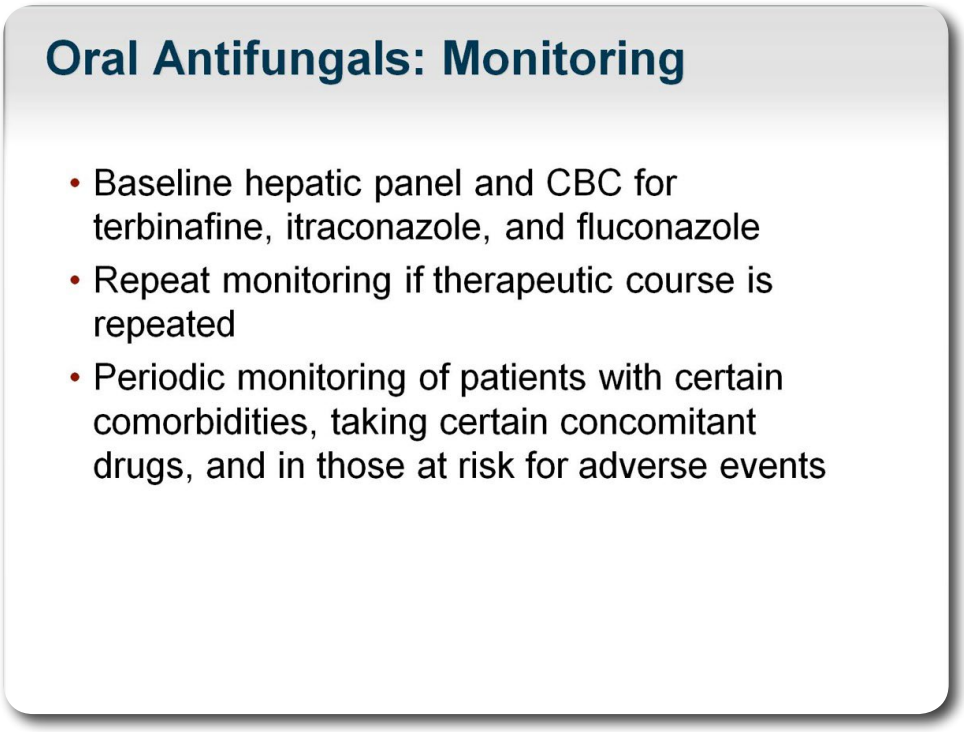
Oral terbinafine has been around for quite some time. The recommended regimen based on approved labeling is 250 mg/day for 12 weeks.[8] It has a reservoir effect in the nail unit, and the nail continues to grow and clear, although the patient takes the drug for only 12 weeks. In the pivotal trials, the mycologic cure at 1 year was 70% in toenails.[8]

Oral itraconazole is also approved for the treatment of onychomycosis. The approved regimen is 200 mg/day for 12 weeks.[9] Dosing can be with two 100-mg capsules or a newer 200-mg tablet. The mycologic cure rate was 54% at 1 year.[9]

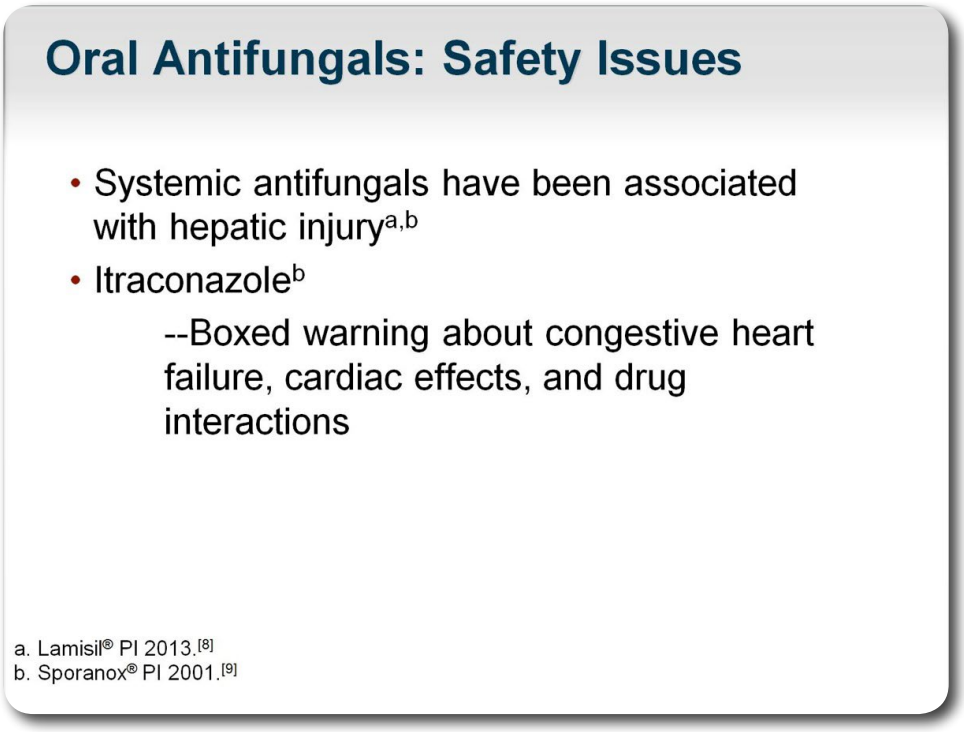


Dr Del Rosso: Itraconazole has also been used in a pulse regimen, although this regimen was never approved for toenail dermatophyte onychomycosis. A pulse regimen was approved for fingernails at 200 mg twice a day for 1 week each month, 2 pulses for fingernails.[9] Three pulses have been used off label for toenails, but we do not have any pivotal trial data on that regimen.

Fluconazole never received FDA approval for the treatment of toenail dermatophyte onychomycosis. In a clinical trial of dosing at 150, 300, and 450 mg once a week until the nail plate grew out completely, mycologic cure rates of 47% to 62% were achieved.[10]



Dr Elewski: When we use oral drugs in the treatment of onychomycosis, there is some laboratory monitoring we have to perform. I generally do a baseline hepatic function panel and a complete blood count before treatment. If I prescribe a second course of treatment, I do another baseline hepatic panel and complete blood count. In patients with certain comorbidities -- for example, patients with diabetes, immunocompromised patients, or patients taking medications that might irritate the liver -- I check these levels in the middle of treatment.

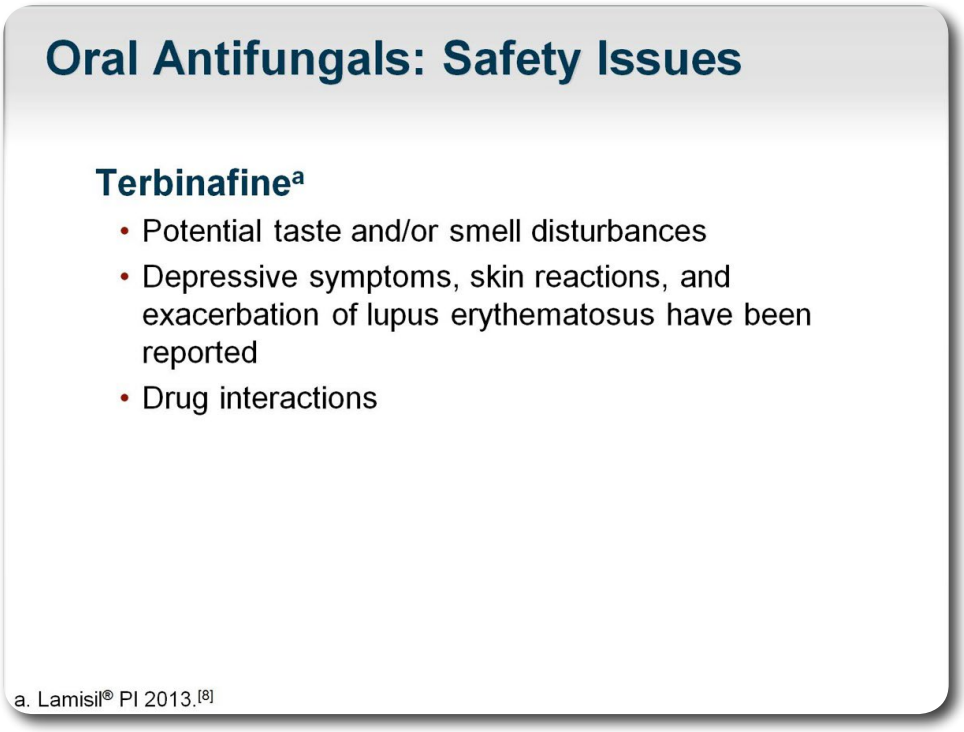


Dr Elewski: There are adverse effects that we have to consider: drug-drug interactions, drug eruptions, potential loss of taste, and cardiac issues such as congestive heart failure.

Dr Del Rosso: Which was an issue that came up with itraconazole.

Dr Elewski: It did.

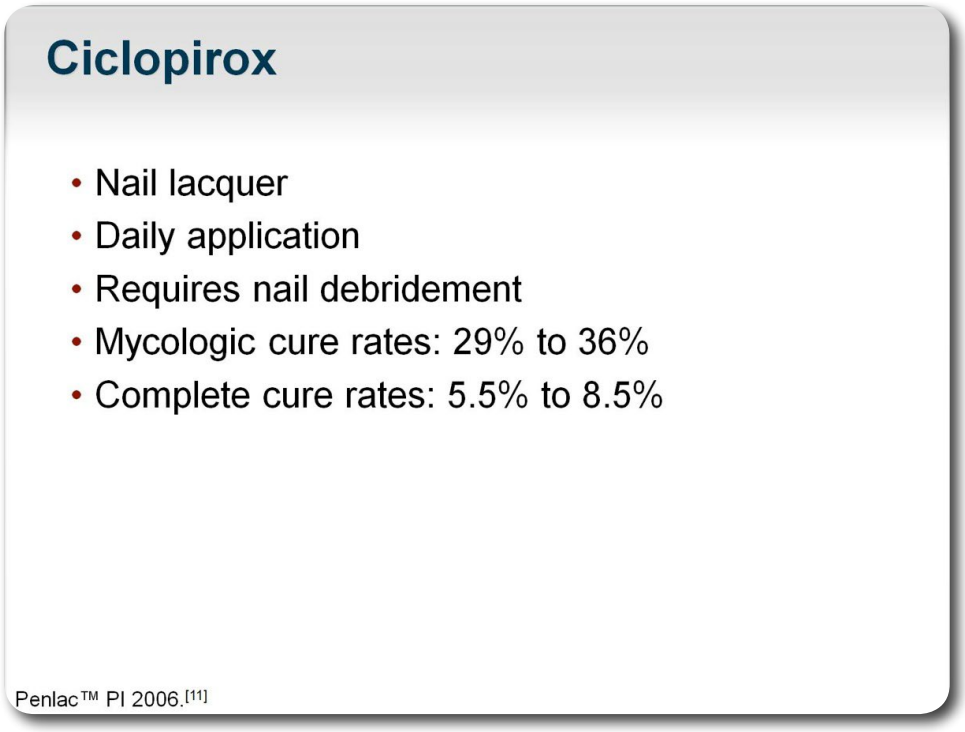
Dr Del Rosso: We did not see it frequently in patients with onychomycosis, but there was some worsening of congestive heart failure, and it created a significant warning for itraconazole.



Dr Del Rosso: I think the most significant issue with oral drugs for onychomycosis is drug-drug interactions. Most of the adverse effects, such as hepatotoxicity, are quite rare, but there are a significant number of drug interactions and contraindications. We all know the oral drugs and use them, but there is a lot more to think about when you are prescribing oral treatment.

Dr Joseph: I think there is an unwarranted fear of the use of oral antifungals, not only on the part of patients who read something on the Internet but also prescribing clinicians. There is a lot of misunderstanding because the adverse events are relatively rare, but as you pointed out, they are out there.

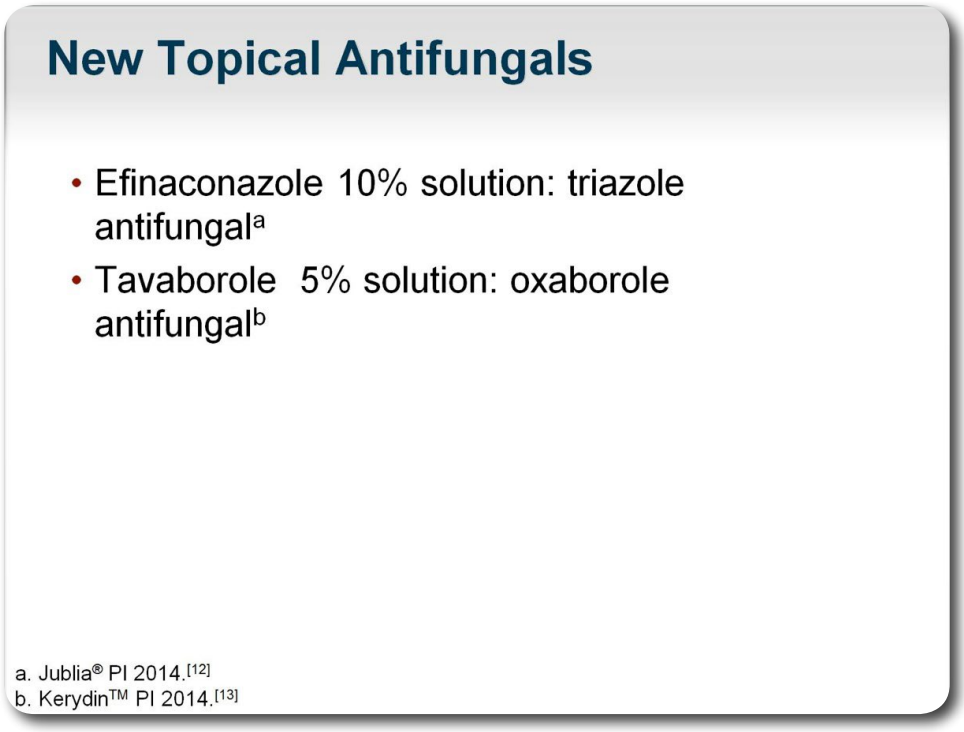
Dr Del Rosso: I also get concerned that people are going to be too cavalier with topical drugs. You still have to look at the patient, evaluate what is going on, and educate the patient -- not just prescribe a topical. I look at that as a real-world concern.



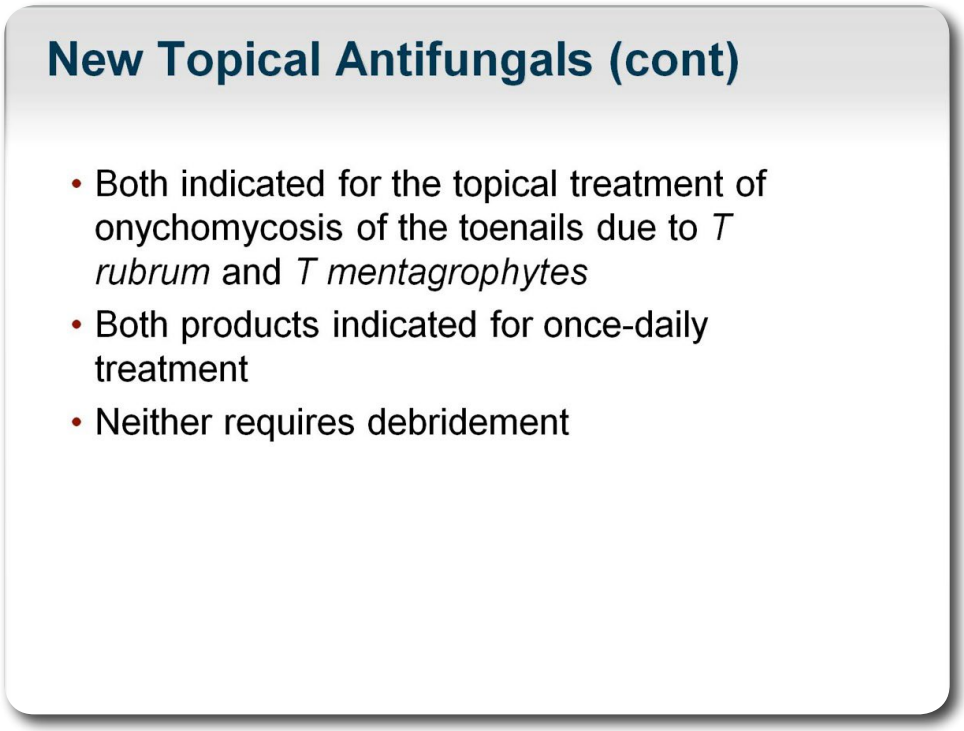
Dr Elewski: Don't forget about ciclopirox lacquer. Warren, many of my friends who are podiatrists use it. Can you talk about ciclopirox?

Dr Joseph: We were excited when the drug first came out about 15 years ago. Everyone was concerned about the oral antifungals, and they wanted a topical. There is no question that for the right patient, someone who is motivated, with 25% to 40% nail involvement without a lot of thickening, the drug did work.[11] The problem with the drug was poor patient selection. A patient with a big thick nail is not going to get better on a topical. Another problem with the drug is the lacquer vehicle. Until now, it was the only FDA-approved topical we had.

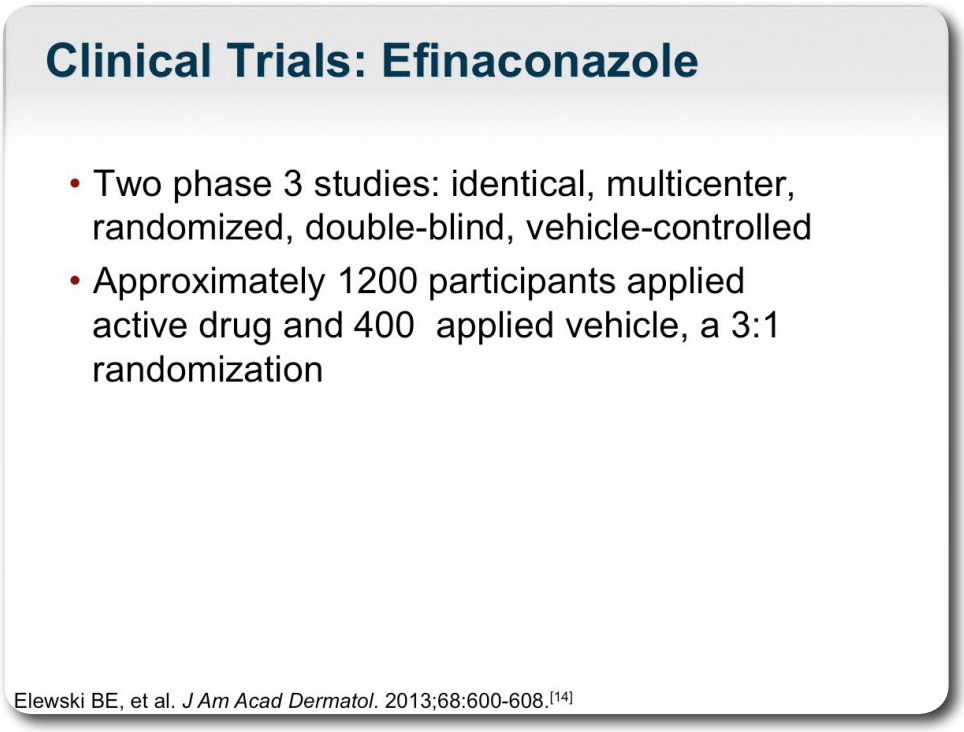
Dr Del Rosso: It is interesting because they were thinking only in terms of transungual penetration through the nail plate into the nail bed by having a lacquer. They were not recognizing that you need to get to the portal of entry underneath the nail plate.



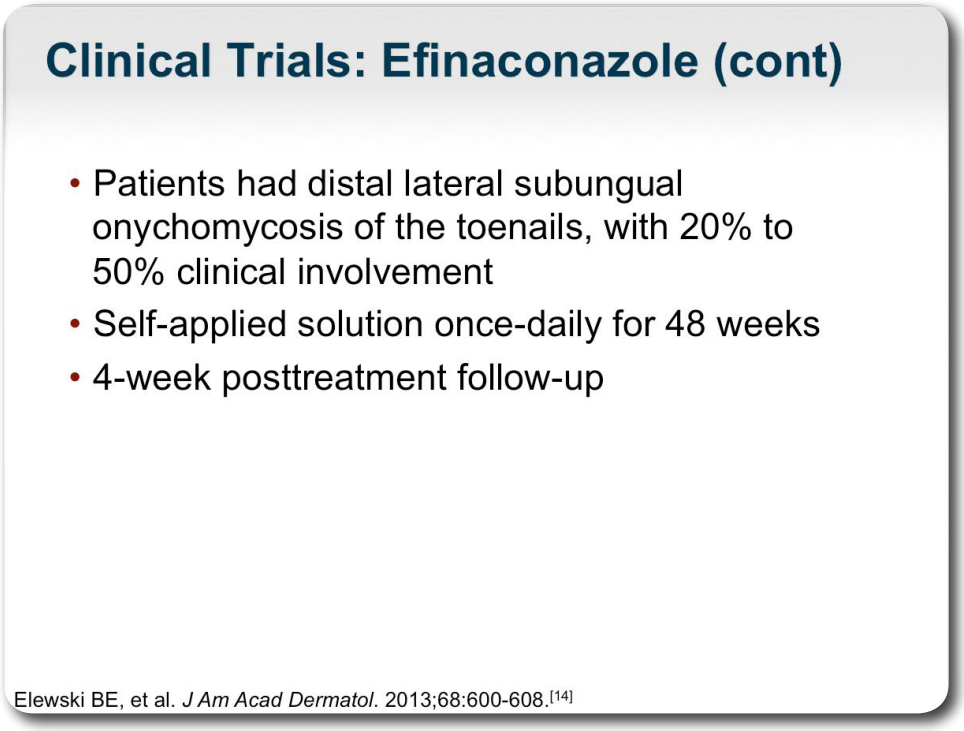
Dr Elewski: Let's turn our attention to the 2 new topical antifungal treatments. We have efinaconazole 10% solution, which is a triazole antifungal, and tavaborole 5% solution, which is an oxaborole antifungal.[12,13]



Both are indicated for the topical treatment of onychomycosis of the toenails due to *T rubrum* and *T mentagrophytes*. Both are indicated for once-daily treatment. Neither requires debridement; debridement was not performed in the clinical studies.



Dr Elewski: The safety and efficacy of efinaconazole were established in 2 identical multicenter, randomized, double-blind, vehicle-controlled phase 3 studies.[14] Approximately 1200 participants received active drug and 400 received vehicle, which is roughly a 3:1 randomization.



The patients had distal lateral subungual onychomycosis of the toenails, with 20% to 50% clinical involvement. Patients self-applied the drug once daily for 48 weeks, followed by a 4-week posttreatment follow-up.

Efinaconazole Cure Rates

	Study 1 (N = 870)[a]	Study 2 (N = 785)[a]	Pooled Analysis[b] (mITT)
Mycologic Cure	Active: 55.2% Vehicle: 16.8% (*P* < .001)	Active: 53.4% Vehicle: 16.9% (*P* < .001)	Active: 56.3% Vehicle: 16.6% (*P* < .001)
Complete Cure	Active: 17.8% Vehicle: 3.3% (P<.001)	Active: 15.2% Vehicle: 5.5% (P<.001)	Active: 18.5% Vehicle: 4.7% (P<.001)

a. Elewski BE, et al. *J Am Acad Dermatol*. 2013;68:600-608.[14]
b. Gupta AK, et al. *J Drugs Dermatol*. 2014;13:815-820.[15]

Dr Elewski: Let's look at the 2 prime efficacy analyses. Mycologic cure rate from the pooled data was 56.3%. Complete cure rate from the pooled data was 18.5%.[15]

Dr Del Rosso: You could look at that data and say that those numbers are better than what we had in the past [with topical treatment], but they are still low. However, the mandated clinical efficacy end points set a high bar.

Efinaconazole Cure Rates (Cont)

	Study 1 (N = 870)[a]	Study 2 (N = 785)[a]	Pooled Analysis[b] (mITT)
Complete or Almost Complete*	Active: 26.4% Vehicle: 7.0% (*P* < .001)	Active: 23.4% Vehicle: 7.5% (*P* < .001)	Active: 27.7% Vehicle: 7.9% (*P* < .001)
Treatment Success†	Active: 35.7% Vehicle: 11.7% (*P* < .001)	Active: 31.0% Vehicle: 11.9% (*P* < .001)	Active: 47.2% Vehicle: 18.2% (*P* < .001)

mITT = modified intention-to-treat analysis.
*≤5% affected target toenail area involved + mycological cure.
†<10% clinical involvement of the large toenail.

a. Elewski BE, et al. *J Am Acad Dermatol*. 2013;68:600-608.[14]
b. Gupta AK, et al. *J Drugs Dermatol*. 2014;13:815-820.[15]

Dr Elewski: Let's look at the "complete or almost complete cure" measure: KOH negative, fungal culture negative, and 5% or less visible clinical involvement of the nail. So the nail is almost totally perfect and there is a smidgen of dystrophy somewhere, probably onycholysis. The "complete or almost complete cure" measure for efinaconazole was nearly 28%. Treatment success, measured as less than 10% involvement of the large toenail, was 47.2%.

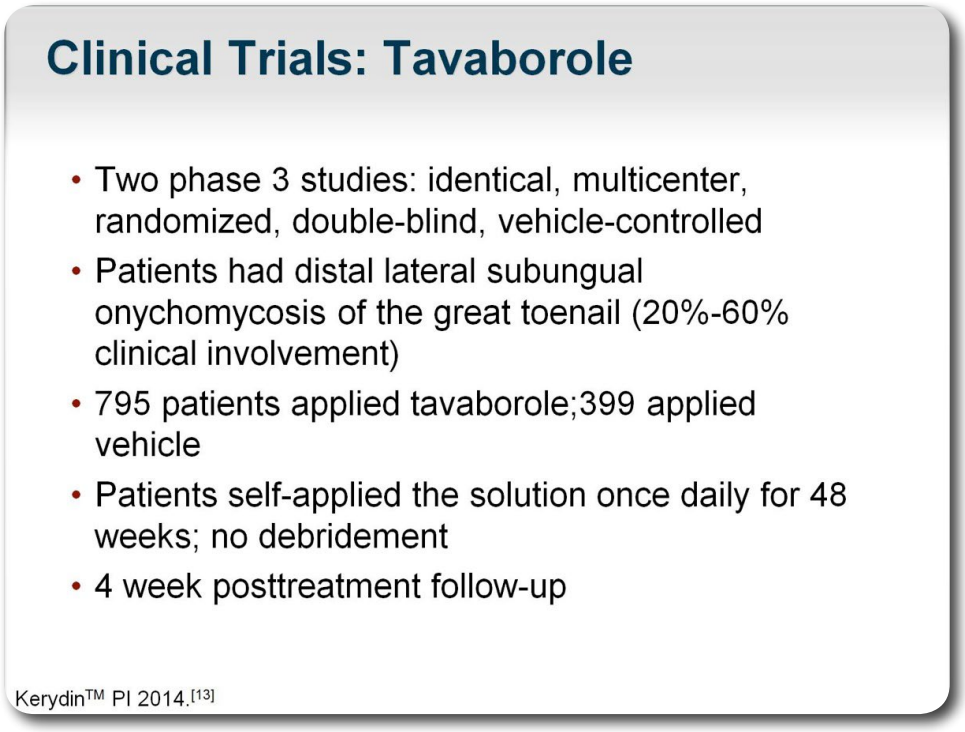
Efinaconazole Safety

Adverse Reactions Reported by at Least 1% of Participants Treated for up to 48 Weeks

	Efinaconazole	Vehicle
Ingrown toenail, %	2.3	0.7
Application site dermatitis, %	2.2	0.2
Application site vesicles, %	1.6	0.0
Application site pain, %	1.1	0.2

Jublia® PI 2014.[12]

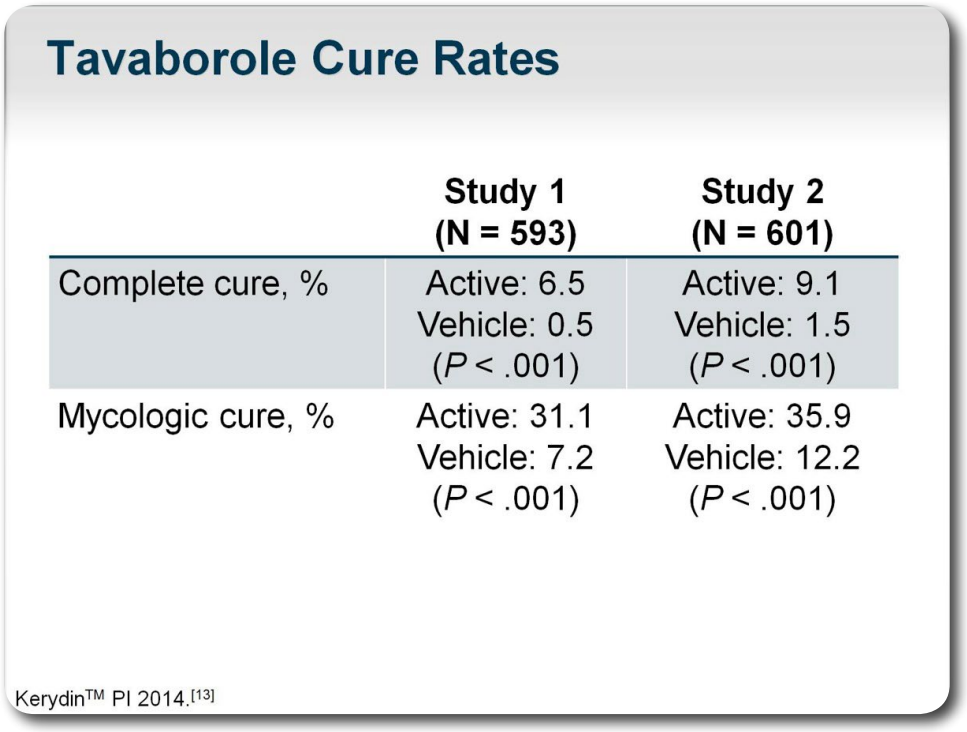
Dr Elewski: Safety was quite good. The majority of adverse events were mild or moderate and were not considered related to the study drug.[12] The incidence of treatment-related adverse events was comparable to vehicle. The most common adverse event leading to discontinuation was treatment-related application site reactions such as irritation. Rates of discontinuation were very low, approximately 2% to 3%.[12]



Dr Elewski: Let's turn our attention to tavaborole.

Dr Del Rosso: Tavaborole was studied in a similar way: two identical phase 3, multicenter, randomized, double-blind, vehicle-controlled studies.[13] Patients were treated once a day with no debridement for 48 weeks and were then tested 4 weeks later. Patients had up to 60% involvement of the nail plate (in the efinaconazole studies, patients had up to 50% involvement).

There were 795 patients applying the active drug and 399 applying the vehicle. Keep in mind that tavaborole is a new type of compound; it is in the oxaborole class, and the integration of boron into the molecular structure helps get the compound to the target site.[16]



Dr Del Rosso: In study 1, the complete cure rates were 6.5% for tavaborole and 0.5% for vehicle.[13] In study 2, the complete cure rates were 9.1% for tavaborole vs 1.5% for vehicle. In study 1, the mycologic cure rates were 31.1% for tavaborole vs 7.2% for vehicle. In trial 2, the mycologic cure rates were 35.9% for tavaborole vs 12.2% for vehicle.[13] Those were the primary end points in the studies.

Dr Elewski: I gave the pooled data for efinaconazole because we have it, but the pooled data are not in the package insert for tavaborole.

Tavaborole Cure Rates (cont)

	Study 1 (N = 593)	Study 2 (N = 601)
Complete or almost complete*[a]	Active: 26.1% Vehicle: 9.3% (*P* < .001)	Active: 27.5% Vehicle: 14.6% (*P* < .001)
Complete or almost complete plus mycologic cure†[b]	Active: 15.3% Vehicle: 1.5% (*P* < .001)	Active: 17.9% Vehicle: 3.9% (*P* < .001)

*≤ 10% affected target toenail area involved.
†≤ 10% affected target toenail area involved plus negative KOH and culture results.

a. Gupta AK, et al. *Expert Rev Anti Infect Ther*. 2014;12:735-742.[17]
b. Kerydin™ PI 2014.[13]

Dr Del Rosso: If we look at complete or almost complete cure (≤10% affected target toenail area involved), the results were 26.1% for tavaborole vs 9.3% for vehicle in study 1.[13,17] In study 2, results were 27.5% for tavaborole vs 14.6% with the vehicle.[13,17] Complete/almost complete cure rates plus mycologic cure rates were 15.3% in study 1 for tavaborole vs 1.5% for vehicle, and in study 2, results were 17.9% for tavaborole vs 3.9% for vehicle.[13]

There were some differences in the efinaconazole and tavaborole trials that may affect some of the results. Some people agree; some people do not. However, I think we have to find out what these drugs are going to do in the real world.

Dr Joseph: The take-home message is that for the first time in 15 years, we have 2 new FDA-approved drugs for the treatment of onychomycosis, and they both have solid data showing that they are statistically significantly better than vehicle. That is major for our patients.

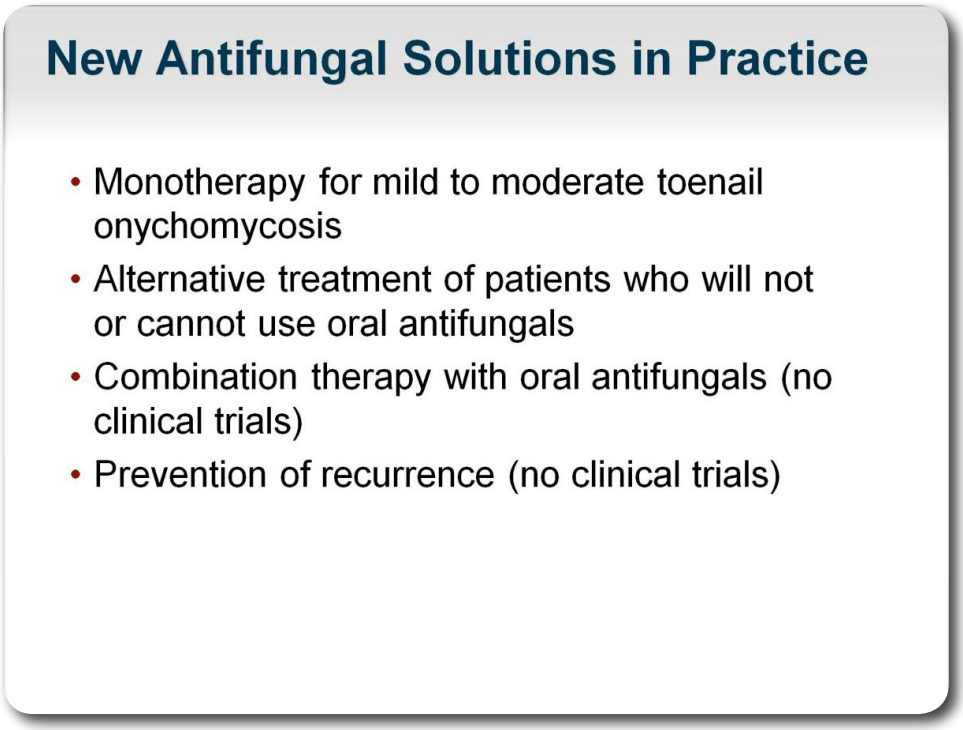
Tavaborole Safety

Adverse Reactions Occurring in ≥1% of Participants

AE	Tavaborole	Vehicle
Application site exfoliation, %	2.7	0.3
Ingrown toenail, %	2.5	0.3
Application site erythema, %	1.6	0
Application site dermatitis, %	1.3	0

Kerydin™ PI 2014.[13]

Dr. Del Rosso: Similar to efinaconazole, tavaborole was well tolerated. There were no safety signals. There was no systemic toxicity from absorption or anything of that nature. Some patients may get some local irritation, but there was not anything significant to be concerned about.



Dr Elewski: Let's discuss the place of these new topical drugs in our practice. Warren, where do you think you will use these new drugs?

Dr Joseph: I have always said that topical agents are not appropriate for the treatment of thick, totally dystrophic nails, what we would call severe onychomycosis. Topicals are appropriate for mild to moderate onychomycosis: the patient who has 20% to 50% involvement without a lot of thickening.

Dr Del Rosso: You are talking about monotherapy.

Dr Joseph: As monotherapy, yes. I think about very mild to moderate disease, although, interestingly, neither drug is labeled for mild to moderate disease. Both drugs are labeled for onychomycosis of the toenails due to *T rubrum* or *T mentagrophytes*. Another use I see for these drugs is as alternative therapy. What I mean by that are patients who, for whatever reason, will not take or cannot take oral therapy. Perhaps such patients have the potential for one of the drug-drug interactions or a history of liver toxicity, hepatitis C for instance. So these drugs can be an alternative for patients who cannot take an oral drug.

I also would like to talk about adjunctive therapy, combination therapy. There are no studies to prove this, but think about it: If you use an oral drug, it works from the inside out. The topical drug works from the outside in. The fungus gets caught in the middle, and hopefully it gets killed. You would think that, at least empirically, that would be a better way to go.

Finally, I think an interesting use of these drugs would be for preventing recurrence. Again, there is no evidence to support this, but if you have a patient who has been cleared either through the use of an oral or one of these topicals and you want them to remain clear, you need to treat the tinea pedis and you need to keep the nails clear of fungus. I joke around about "toenail Tuesday" or "fungal Friday" -- apply a topical perhaps twice a week to keep the fungus away.

Dr Del Rosso: I think we have a great opportunity if we step back and, as clinicians, really look at our patients. We should also look at the clinical presentation and make certain that patients understand their condition and its treatment.

Dr Elewski: This is a great time for patients with onychomycosis because now they have options. They can take an oral drug or they can use a topical drug. Also, as you mentioned, Warren, maybe they can use both an oral and a topical drug.
I would like to thank you, Jim and Warren, for this very interesting discussion.

And thank you for participating in this activity. Click on the Earn CME/CE Credit link to revisit the questions presented at the beginning of the program to see what you have learned. The posttest and evaluation will follow. Thank you.

This transcript has been edited for style and clarity.

This article is a CME/CE certified activity. To earn credit for this activity visit:
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Abbreviations

AE = adverse event

FDA = US Food and Drug Administration

KOH = potassium hydroxide

mITT = modified intention-to-treat analysis

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