

A CME/CE CERTIFIED SUPPLEMENT TO

Seminars in Cutaneous Medicine and Surgery

SUPPLEMENT 3
VOL. 35, NO. 3S
MARCH 2016

EDITORS

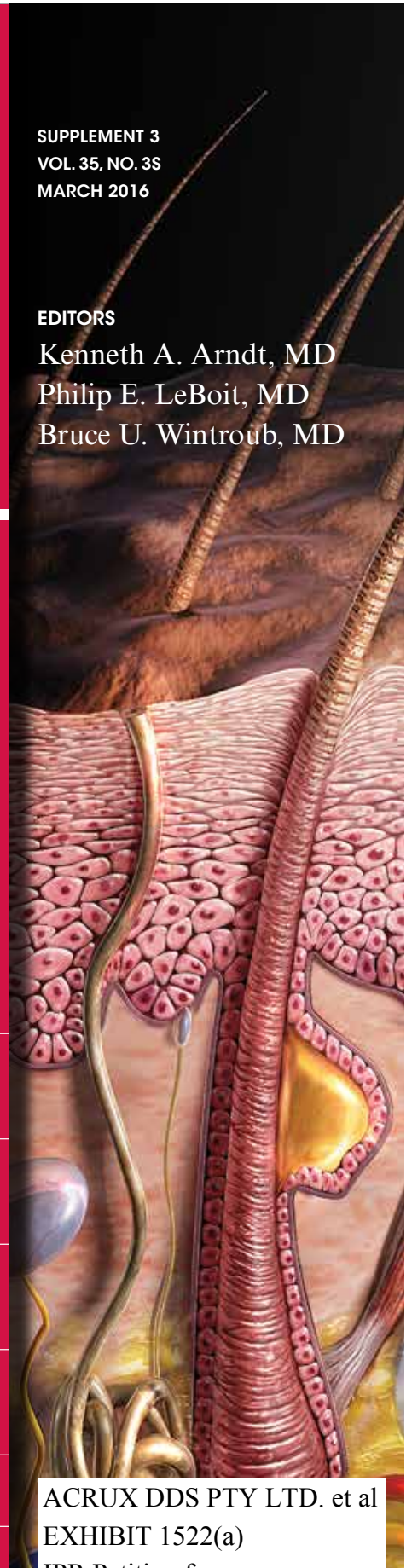
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Bruce U. Wintroub, MD

Onychomycosis: Diagnosis, Treatment, and Prevention Strategies

GUEST EDITORS

Linda F. Stein Gold, MD
Theodore Rosen, MD

Introduction	S47
Understanding Onychomycosis: Resolving Diagnostic Dilemmas	S48
Antifungal Drugs for Onychomycosis: Efficacy, Safety, and Mechanisms of Action	S51
Concepts in Onychomycosis Treatment and Recurrence Prevention: An Update	S56
Using Topical Antifungal Medications: Instructions for Patients	S60
Post-Test and Evaluation Form	S61



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JPD Petition for

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Onychomycosis: Diagnosis, Treatment, and Prevention Strategies

Original Release Date: **March 2016**
Most Recent Review Date: **March 2016**
Expiration Date: **February 28, 2018**

Estimated Time to Complete Activity: **2.5 hours**

Participants should read the activity information, review the activity in its entirety, and complete the online post-test and evaluation. Upon completing this activity as designed and achieving a passing score on the post-test, you will be directed to a Web page that will allow you to receive your certificate of credit via e-mail or you may print it out at that time. The online post-test and evaluation can be accessed at <http://tinyurl.com/onychosuppl16>.

Inquiries about CME accreditation may be directed to the University of Louisville CME & PD at cmepd@louisville.edu or (502)852-5329.

Accreditation Statements

Physicians: This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of The University of Louisville and Global Academy for Medical Education, LLC. The University of Louisville is accredited by the ACCME to provide continuing medical education for physicians.

The University of Louisville Office of Continuing Medical Education & Professional Development designates this enduring material for a maximum of 2.5 *AMA PRA Category 1 Credits*SM. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Nurses: This program has been approved by the Kentucky Board of Nursing for 3.0 contact hours through the University of Louisville Hospital, provider number 4-0068-7-16-895. The Kentucky Board of Nursing approval of an individual nursing education provider does not constitute endorsement of program content. Participants must complete the entire session, provide their license number, and complete the evaluation to receive contact hours.

Target Audience

This journal supplement is intended for dermatologists, family practitioners, internists, nurse practitioners, physician assistants, and other clinicians who treat patients with onychomycosis.

Educational Needs

For many years, the treatment of onychomycosis was frustrating for clinicians and patients alike, and the perceived futility of addressing fungal nail infections meant that many patients failed to seek treatment, and many others with suspected infections were neither definitively diagnosed nor treated. With the introduction of oral terbinafine in 1996 and the approval of the first topical agent in 1999, more effective control—if not cure—became possible, and clinicians showed increased interest in diagnosing and treating the condition. The introduction of two new topical agents in 2014 broadened the therapeutic options.

The optimum results with these agents requires the correct diagnosis, which cannot be made reliably on visual inspection alone. To use antifungals most effectively, clinicians must test to confirm the presence of infecting organisms and, in appropriate cases, identify the species involved so that the most appropriate antifungal can be prescribed. Patient selection also is important: for example, the potential for drug-drug interactions with systemic antifungals must be considered, the presence of certain comorbid conditions may affect the choice of antifungal employed, and the patient's ability to adhere to the long treatment regimens required must be addressed.

Clinicians must remain up-to-date on these issues, and must be able to effectively and safely use the available antifungal, evaluate the emerging data on medications and devices now being investigated, and educate patients to improve adherence.

Learning Objectives

After reading and studying this journal supplement, participants will be better able to:

- Establish or improve practice protocols for identifying patients with onychomycosis, particularly in special populations (eg, the elderly, pediatric patients, immunocompromised patients, patients with psoriasis, and those with diabetes mellitus).
- Discuss techniques, including obtaining good culture specimens, that

permit more accurate diagnosis of the infecting organisms and the most appropriate choice of therapy.

- Explain the drug classes and mechanisms of action for the currently available therapeutic options, including differences in formulation and associated efficacy.
- More effectively use currently available oral and topical medications to treat various patient populations.
- Review and, if necessary, improve patient education materials designed to enhance patient adherence with the treatment regimen and to change habits that increase the chances of good long-term management of onychomycosis.
- Determine and help each patient recognize the realistic expectations for improvement in his or her individual case.
- Evaluate the results of clinical studies on new and emerging and available treatments for onychomycosis based on an understanding of possible differences in testing protocols (eg, inclusion or exclusion of patients with psoriasis or diabetes mellitus).

Disclosure Declarations

As a provider accredited by the ACCME, the Office of CME & PD, School of Medicine, University of Louisville must ensure balance, independence, objectivity, and scientific rigor in all its sponsored educational activities. All planners, faculty, reviewers, and other persons that affected the content of this CME activity were required to submit a financial disclosure form from which relevant conflicts of interest were determined. The persons below disclosed the following:

Linda F. Stein Gold, MD, Consultant: Anacor Pharmaceuticals Inc., Eli Lilly and Company, Galderma Laboratories, L.P., LEO Pharma Inc., Novartis Pharmaceuticals Corporation, Pfizer Inc., Sandoz, Taro Pharmaceutical Industries Ltd., and Valeant Pharmaceuticals North America LLC. Speaker: Galderma, LEO, Novartis, and Valeant. Grant Research/Support: Anacor, Galderma, GlaxoSmithKline, LEO, Novartis, Pfizer Inc., Sandoz, Taro, and Valeant.

Theodore Rosen, MD, Consultant: Anacor Pharmaceuticals and Valeant Pharmaceuticals North America LLC.

CME Reviewer: Cindy England Owen, MD, Assistant Professor, Division of Dermatology, University of Louisville School of Medicine, has no relevant financial relationships to disclose.

The CME & PD Staff and Advisory Board have nothing to disclose with the exception of Douglas Coldwell, MD, Speaker: Sirtex, Inc.; Consultant: DFine, Inc.

Global Academy for Medical Education Staff: Sylvia H. Reitman, MBA, DipEd; Shirley V. Jones, MBA; Jenny Campano; and Joanne Still have no relevant financial relationships to disclose.

Off-Label/Investigational Use Disclosure

This CME/CE activity discusses the off-label use of fluconazole for the treatment of onychomycosis. Also discussed are off-label, alternative dosing schedules for itraconazole, as well as the use in pediatric patients of medications approved for the treatment of onychomycosis in adults; currently, no medication is approved for the treatment of onychomycosis in pediatric patients.

This continuing education supplement was developed from a satellite symposium held at Skin Disease Education Foundation (SDEF)'s 16th Annual Las Vegas Dermatology Seminar, which took place Friday, November 6, 2015, in Las Vegas, Nevada. The Guest Editors acknowledge the editorial assistance of Global Academy for Medical Education and Joanne Still, medical writer, in the development of this supplement. The manuscript was reviewed and approved by the Guest Editors as well as the Editors of Seminars in Cutaneous Medicine and Surgery. The ideas and opinions expressed in this supplement are those of the Guest Editors and do not necessarily reflect the views of the supporters, Global Academy for Medical Education, the University of Louisville, or the Publisher.

Seminars in Cutaneous Medicine and Surgery

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STATEMENT OF PURPOSE

Seminars in Cutaneous Medicine and Surgery presents well-rounded and authoritative discussions of important clinical areas, especially those undergoing rapid change in the specialty. Each issue, under the direction of the Editors and Guest Editors selected because of their expertise in the subject area, includes the most current information on the diagnosis and management of specific disorders of the skin, as well as the application of the latest scientific findings to patient care.

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