A DERMATOLOGY FOUNDATION PUBLICATION

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VOL. 37 NO. 2 SUMMER 2018

DERMATOLOGY FOCUS™

DF Clinical Symposia: Proceedings 2018–Part II

ADVANCES IN DERMATOLOGY

The Dermatology Foundation presented its annual 3-day cutting-edge CME symposia series in January. Informal Breakfast Roundtables and evening Therapeutics Forums amplify the take-home value. Led by a keynote talk on Contact Dermatitis, 2018 symposia topics were: Inflammatory Disease Updates; Infectious Disease; CPC Session; Emerging Evidence and Emerging Diseases; Dermatologic Surgery and Minor Procedures; Comorbidities and Associations of Skin Diseases; Health Policy; Patient Interactions, Technologies, and Practice Satisfaction; and Cutaneous Oncology. The Proceedings appear in the Spring (Part I) and Summer (Part II) issues.

MINI-SYMPOSIUM: INFECTIOUS DISEASE

Herpes is Everywhere! Pearls for Dermatologists

Karolyn A. Wanat, MD

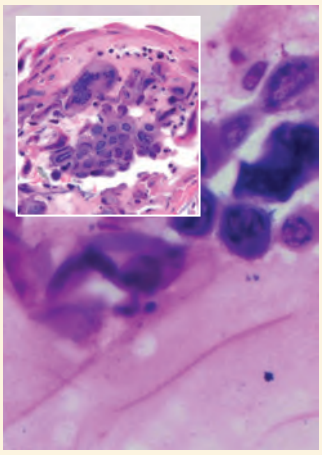
Introduction. "Herpes is truly everywhere," Dr. Wanat said. "I tell my residents that HSV (herpes simplex virus) is in almost every differential diagnosis." She reviewed clinically important cutaneous manifestations, and provided diagnostic and management pearls.

Herpes. "We easily recognize early-stage disease, and need to be able to recognize later forms as well." As herpes progresses pustules become crusted; the circular pustules eventually produce the classic telltale scalloped border. Herpes is particularly common in oral-labial locations, but can appear anywhere, including the perianal area. The virus can enter the bloodstream, especially in immunocompromised patients, and produce disseminated disease that can also affect the liver and central nervous system. Wanat described less-typical presentations that are more common among immunocompromised patients. She reviewed all of the clues for more advanced disease and discussed the diagnostic elements. A biopsy is sometimes essential, but serologic testing has no value. Regarding therapy, she advised valacyclovir if acyclovir is not effective, moving to cidofovir and foscarnet if needed. Once clinically evident infection has resolved, prophylactic management of latent disease is critical for patient health and transmission prevention. Wanat outlined helpful drugs.

Varicella zoster virus (VZV). One in five adults will develop zoster reactivation (spontaneously or stress-induced). Risk increases with age as the immune response weakens; vaccination strengthens the response. When unable to prevent reactivation, it avoids severe disease and, most important, averts postherpetic neuralgia and its

Diagnostic Options for Disseminated Herpes

- Tzanck smear: bedside diagnostic, fast, user-dependent
- Direct fluorescent antibody (DFA)
  - More sensitive (70–95%) than culture
  - User-dependent
- Biopsy
  - HSV1 and HSV2 immunostains can increase yield
- PCR
  - Fast & sensitive (99%) but can be expensive
- Viral Culture
  - 2–7 days for maximum sensitivity
  - Up to 3–4 weeks for antiviral sensitivities
- Serologic screening: not useful for diagnosis



KA Wanat et al. *J Am Acad Dermatol.* 2017;77:197–218.

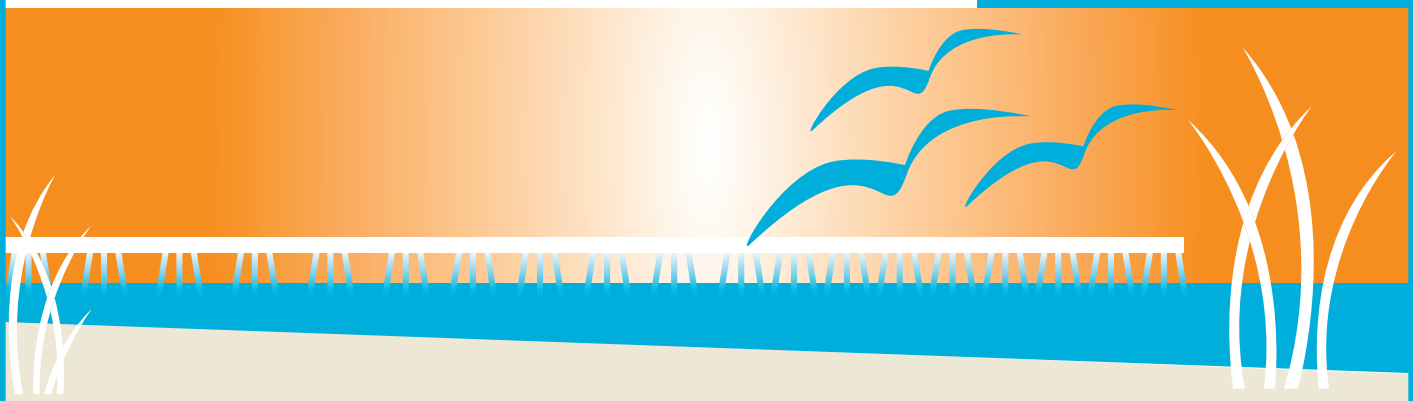
(Continued on page 3)

2019 DF CLINICAL SYMPOSIA

ADVANCES IN DERMATOLOGY

JANUARY 31–FEBRUARY 2, 2019

The Ritz-Carlton, Naples, Florida



Registration opens mid-September—visit dermatologyfoundation.org

Save the Date!

PRACTICE-RELEVANT MINI-SYMPOSIA

- Challenges in the Dermatology Clinic
- Special Populations
- CPC Session
- Therapeutic Updates
- Diagnostic Dilemmas in Adult and Pediatric Dermatology
- Medical Dermatology
- Cutaneous Oncology

RAVE REVIEWS

- *"Best medical derm meeting in the country."*
- *"Fabulous speakers, medical focus, scientific rigor, small intimate size."*
- *"Truly the best derm meeting I have ever been to."*
- *"All other meetings pale in comparison."*
- *"Best meeting—period."*

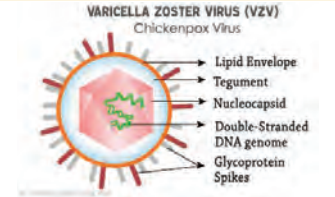
Dermatology Foundation

SHAPING THE FUTURE OF DERMATOLOGY

potentially devastating impact on quality of life. Wanat compared Zostavax® with the newly FDA-approved Shingrix®, a nonlive recombinant product (thus safe for immunocompromised patients) with dramatically better (>90%) and more persistent efficacy. CDC guidelines include targeting adults >50 years of age.

Shingrix: FDA-approved in September, 2017

- Non-live, recombinant vaccine combining glycoprotein E, a protein found on the varicella zoster virus (VZV), with the adjuvant system $AS01_B$ ➔ enhanced immunological response



- Recommended for healthy adults aged >50 years
- Recommended for adults who previously received Zostavax
- 2 doses at 0 and 2–6 months, cost ~$280/series
- More site reactions

	Ages 60–69 Years	Ages 70–79 Years	Ages ≥80 Years
Shingrix	97%	91%	91%
Zostavax	64%	41%	18%

AL Cunningham et al. *N Engl J Med.* 2016;375:1019–32; MN Oxman. *Clin Infect Dis.* 2010;51:197–213; I Leroux-Roels et al. *J Infect Dis.* 2012;206:1280–90.

Syphilis in the 21st Century: Sex, Sores, Science, and Surveillance

Kenneth A. Katz, MD, MSc, MSCE

Introduction. Syphilis incidence in the U.S. has quadrupled, from ~6000 primary and secondary cases in 2000 to ~28,000 in 2016. "But patients do not come to us with syphilis," Dr. Katz cautioned. They present with a constellation of signs and symptoms that could be any number of conditions, including syphilis. "The protean manifestations of syphilis, combined with its increasing incidence—especially among men who have sex with men—should keep it high in our differential diagnoses." After a comprehensive clinical review, Katz discussed what is new—neurosyphilis and ocular syphilis, epidemiologic trends, and laboratory diagnosis—and outlined public health approaches for prevention and control.

Syphilis roadmap. Syphilis in the U.S. is most commonly acquired by sexual transmission, followed by skin-to-skin, skin-to-mucous membrane, or mucous membrane-to-skin contact. Condoms might not be fully protective. Risk of disease after exposure to infectious lesions is high: 30%–50%. Stages of sexually acquired infection include primary syphilis, which presents as chancre(s), which are typically painless and indurated and resolve spontaneously, often leaving patients believing they are cured; secondary syphilis, with protean mucocutaneous manifestations; early non-primary non-secondary syphilis, which has no cutaneous manifestations; and late or unknown duration syphilis, including tertiary manifestations such as gummas. Contagious lesions include chancres (primary) and mucous patches and condyloma lata (secondary). Katz discussed treatment (a single injection of benzathine penicillin G for most cases of sexually acquired syphilis without neurosyphilis) and assessment of clinical and serologic response. Neurosyphilis and/or ocular syphilis can occur at any stage, sometimes as the initial or only manifestation(s) of infection, and should be promptly identified and treated.

Conclusion. Katz also discussed the focused review of systems and the neurologic exam that should be done for all syphilis patients and reviewed syphilis screening recommendations.

Contagious Manifestations—*Caveat Physician!*

- Primary syphilis
  - Chancre
- Secondary syphilis
  - Mucous patch (including split papule)
  - Condyloma lata

What's New—Neurosyphilis and Ocular Syphilis

- Can occur at any stage, including as initial or sole manifestation
  - Not just part of "tertiary syphilis"
- Treatment is different if neurosyphilis or ocular syphilis is present
- Ocular syphilis: 200 cases reported over the past 2 years from 20 states
- Neurosyphilis classification:
  - Early neurosyphilis
  - Late neurosyphilis (Tabes dorsalis, general paresis [of the insane])

http://www.cdc.gov/std/tg2015/syphilis.htm

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2019 Dermatology Foundation Awards
Apply Now

The Foundation's nationally respected Research Awards Program supports innovative research studies that will significantly advance the care of patients with cutaneous diseases. They are designed and carried out by the most promising investigators. Thanks to the generosity of its many members and supporters, the DF is able to offer opportunities in 14 categories for the 2019 funding year.

Career Development Awards (CDAs)

Nine categories each provide an annual stipend of $55,000 for up to three years to enable physician-scientists and investigators to transition from fellowship to established researcher.

Physician-Scientist
Public Health
Clinical CDA in Dermatologic Surgery
Science of Human Appearance
Women's Health
Medical Dermatology
Pediatric Dermatology
Research

Fellowships

One-year *Dermatologist Investigator Research Fellowships*, providing a salary stipend of $30,000, are offered to individuals who have completed their residency training in dermatology.

Research Grants

One-year grants offer $20,000 in seed money for research projects in a variety of concentrations, including patient-directed investigation, basic dermatologic research, and cutaneous biology.

Charles & Daneen Stiefel Scholar Award—Skin Cancer

This exceptional gift from Charles and Daneen Stiefel awards a $100,000 annual salary stipend for up to 3 years to support an outstanding mid-career investigator dedicated to illuminating the molecular and cellular mechanisms of melanoma or nonmelanoma skin cancers, with the clear goal of developing more effective treatments.

New: Sun Pharma Research Award—Inflammatory Skin Disorders

This outstanding gift from Sun Pharma provides a $100,000 annual salary stipend for up to 3 years to support an exceptional mid-career investigator dedicated to progress in understanding and treating inflammatory skin disorders (see article on back cover).

Diversity Research Supplement Awards

These awards are dedicated to enhancing diversity in dermatology. They provide $5,000 to recent recipients of a DF CDA for supplementing efforts on a current research project via the participation of a medical student chosen from one of the minority groups identified as under-represented in biomedical research.

Important Application Information

Award proposals must be received at the DF office **on or before:**
September 18, 2018 for the Stiefel Scholar and Sun Pharma Research Awards
October 15, 2018 for the CDAs, Fellowships, and Grants
January 15, 2019 for the Diversity Research Supplement Awards

Detailed award descriptions and application instructions are available at dermatologyfoundation.org.
Questions are welcome: 847.328.2256.

CPC SESSION

Karolyn A. Wanat, MD

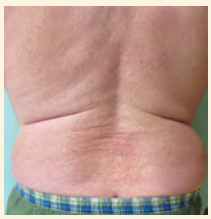
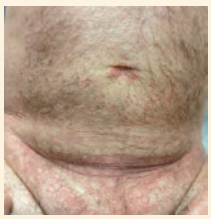
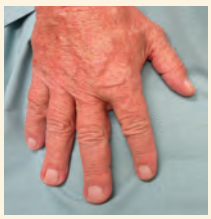
Patient 1: ***What would you do?*** A 49-year-old woman with a long history of psoriasis and significant psoriatic arthritis that was well-controlled on methotrexate and adalimumab (a TNF inhibitor) transferred her care to Dr. Wanat's university. Her team noted a suspicious-looking pigmented lesion identified as a superficial spreading melanoma arising in a nevus that was removed via wide local excision. Then treatment options for her psoriasis and psoriatic arthritis were discussed with the patient and her rheumatologist: Stop the immunosuppressive biologic because of the melanoma, continue it to prevent the burden from poorly controlled disease, or consider a newer biologic? "What would you do?"

Patient 2: ***What is the best next step?*** A 49-year-old man with bright-red skin and recent history of fever and cough had been diagnosed with pneumonia, admitted for bacteremia, and begun on vancomycin. Although his cough improved, the fever worsened and he developed facial swelling and a new rash, and was transferred to Dr. Wanat's university. She described his clinical presentation, labs, and biopsy results, asking, "What do you think is going on?" His antibiotic was discontinued; he improved dramatically on prednisone, and was discharged with instructions for tapering. But at 15 mg/day he returned with rash, increased pruritus, and elevated eosinophils and liver enzymes. After discussion, Dr. Wanat concluded that they

successfully transitioned the patient to mycophenolate mofetil, eventually terminating treatment with good results.

Patient 2

- At prednisone 15 mg/day, patient returns with increased pruritus, eosinophils, and liver enzymes
- What is the best next step in regard to:
  - other monitoring?
  - tapering?
  - management?

Marta J. Van Beek, MD, MPH

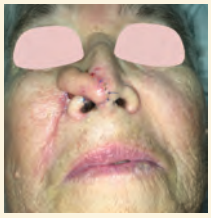
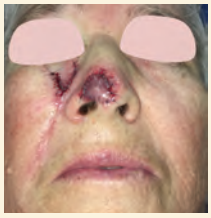
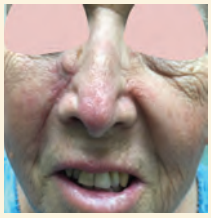
Patient 1. Dr. Van Beek discussed options to cope with the shortage of lidocaine with epinephrine. Epinephrine is added to lidocaine for its vasoconstrictive properties and its ability to increase the durability of anesthesia. After discussing the pros and cons of alternative treatment approaches, Van Beek focused on the increasingly complex issues involved in compounding in-office or ordering the compounded mixture. Although the AADA Compounding Workgroup has published guidelines, each state has its own regulations. Thus dermatologists are urged to check their state regulations on compounding before taking any action. This shortage will be ongoing, and may worsen over time.

Patient 1: AADA Compounding Workgroup Recommendations

- Dilute 1% lidocaine with epinephrine 1:100,000 1:1, 1:2, 1:3, or 1:4 with 1% plain lidocaine to desired epinephrine concentration
- Mix 0.5% or 0.25% bupivacaine with epinephrine with 1% or 2% plain lidocaine to desired concentration of epinephrine (do not buffer this solution, as it may precipitate)
- Mix 1% lidocaine 50 ml with 0.25 ml of epinephrine multi-dose vial 1:1000 to get 1% lidocaine with 1:200,000 epinephrine (use of single dose vial leads to rapid inactivation of the epinephrine)

https://www.aad.org/members/publications/member-to-member/2017/sept-22-2017/academy-pushes-fda-action-on-resolving-shortages-of-sodium-bicarbonate-and-buffered-lidocaine

Patient 2

Planned take-down at 1 week post-op | Post-op take-down | 4 weeks after take-down

Patient 2. Van Beek showed a patient with a soft triangle defect after Mohs surgery and explained why she avoided the reconstructive forehead flap commonly used for repair. This 71-year-old woman is dependent on her trifocal glasses, and cannot drive, read, or do her beloved needlepoint without them. But the forehead flap interferes with the use of glasses, and thus with quality of life. Van Beek illustrated her use of a mesolabial interpolation to repair the defect aesthetically and without interfering with the ability to wear glasses. The flaps are extremely robust, and should be taken down within 1–2 weeks postoperatively.

Jonathan A. Dyer, MD

Patient 1. Dr. Dyer discussed a case that began when he first saw a 5-month-old boy with an asymptomatic hard plaque on the dorsal right foot that had appeared at at 1–2 months of age and grew steadily. Biopsy identified a fibrous hamartoma of infancy. The foot lesion resolved, but 4 months later pink lesions appeared on the right hand, with spots on the fingers and adjacent to the previous biopsy. It appeared to be an infantile digital fibroma, but then new lesions began to appear on the foot. A new biopsy clearly showed the classic

Patient 1: Infantile Digital Fibroma

- First description: 1965
- Rare; benign; first 2 years
- Single (rarely multiple)
- Can cause joint issues
- High recurrence rate
- Treatment:
  - Observation
  - IL steroid (10mg/mL)[1]
  - IL 5-FU (50mg/dL)[2]
    - Total of 10mg (0.2mL) IL at 2–3 sites
    - Partial response with 1
    - Total after 5 injections
- Histology: bland intradermal spindle cells
  - Whorls; fascicles; storiform pattern
    - Collagenous background
  - Perpendicular tumor cell fascicles extending to epidermis
  - Pale eosinophilic cytoplasm; plump, elongated nuclei, thin membrane, finely granulated chromatin
    - Mast cells
  - Perinuclear inclulsion bodies
    - Small round pale pink bodies on H&E; indented nucleus
    - Tightly packed amorphous and finely granular filaments

E Marks, M Ewart. *Arch Pathol Lab Med.* 2016;140:1153–6; WB Laskin et al. *Am J Surg Pathol.* 2009;33:1–13; WJM Holmes et al. *J Plast Reconstr Aesthet Surg.* 2011;64:632–7; C-K Oh et al. *Arch Dermatol.* 2005;141:549–50.

Patient 1: Myofibroma

- All ages; single or multicentric, generalized rare
  - Typically children
  - 90% before 2 yo
- Sporadic
  - Inherited forms
- Solitary nodular tumor
  - Dermis/ SQ
  - Head and neck (males)
  - Spindle cell neoplasm
  - Multicentric more common in females
- Spontaneous resolution
- Resection
- Low rate of recurrence
- Activating PDGFRB mutations
  - 6/8 (75%) infantile
  - 11/16 (69%) adult MFs
  - Not in angioleiomyomas or myopericytomas

A Agaimy et al. *Am J Surg Pathol.* 2017;41:195–203; FA Arts et al. *Human Mol Genet.* 2017;26:1801–10.

Giving Back—Profile of a DF Volunteer

"Ensuring the future of the specialty"

"From very early in my career, I have valued and admired what the Dermatology Foundation does," shares DF member and volunteer, Dr. Yvonne Chiu. "Making sure that we stay vibrant, forward-thinking, and focused on finding answers for our patients—these are all very important to me—and to the DF."

Yvonne E. Chiu, MD

Dr. Chiu is an associate professor of dermatology and pediatrics at the Medical College of Wisconsin (MCW), director of the MCW dermatology residency program, and a pediatric dermatologist at Children's Hospital of Wisconsin. She joined the Foundation's *Leaders Society (LS)* in 2011 during her fellowship in pediatric dermatology, and now generously contributes her time as a member of the DF's Board of Trustees. This year she takes on a new role in the national *LS* campaign to further her colleagues' awareness of the Foundation and its importance in advancing the specialty—and the subspecialty of pediatric dermatology.

Dr. Chiu thrives on making a difference to others, going well beyond the therapeutic benefits she brings to each of her patients. It manifests in her clinical work, her teaching, and her research. She is a passionate pediatric dermatologist, dedicated to treating children with skin disorders. Dr. Chiu had known from the start that she wanted a pediatric specialty but had no idea which one until she did a dermatology rotation—and discovered pediatric dermatology. It was a perfect fit.

Dr. Chiu finds academic medicine gratifying because she values "the intellectual stimulation, the active research environment, and the opportunity to teach." She is a committed teacher for the specialty's next generation of dermatologists. "I've always enjoyed the idea of passing on knowledge and seeing other people have their *eureka* moment." Dr. Chiu is also deeply involved in research, exploring the genetic and clinical aspects of pediatric morphea. "One of the things that really intrigues me about this autoimmune fibrosing disease is that we know so little about it. Because there is so much to learn here, I feel I can make a contribution to medicine by studying and understanding this disease."

Dr. Chiu regards the Foundation's mission to support innovative research—and the progressive impact this has on adult and pediatric patient care—as essential. She points to recent advances in the understanding of skin biology, and to increasing knowledge in diseases like vitiligo, atopic dermatitis, and alopecia areata. **"The DF has done so much to further the science of the specialty." She encourages others to make DF membership a priority. "It is so important to support the Foundation—and ensure the future of our specialty."**

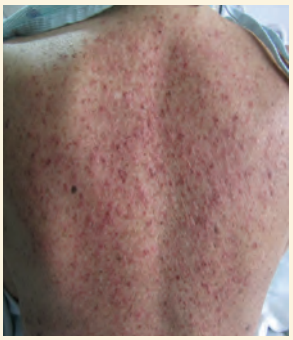
perinuclear inclusions for infantile digital fibroma, and a careful review of the original biopsy revealed them as well. "As far as I know, these mutiple eruptions that spread over time are an unknown presentation of this condition." These lesions can be difficult when they appear, and parents are often extremely anxious. But removal is not suggested because of the very high recurrence rate, and they often resolve spontaneously.

Kanade Shinkai, MD, PhD

Patient 1. This patient in her 60's illustrates a nonclassic presentation of Grover disease associated with chemotherapy. Her myelodysplastic syndrome had progressed to bone marrow crisis and an allogeneic stem cell transplant was scheduled. On day 2 of induction chemotherapy—with no other new medications—she developed a brisk fever and generalized nonpruritic eruption with erythematous eroded papules. Dr. Shinkai provided details, clinical photos, and pathology slides, then discussed the diagnosis before explaining that this variant of generalized Grover disease is "something we are beginning to see a lot of now following chemotherapy and in immunosuppressed patients." She treats it with midpotency topical steroids, or emollients alone. It is distinct from classic Grover disease in its generalized involvement, and is often asymptomatic.

Patient 1: Diagnosis?

- 64 yo F with myelodysplastic syndrome -> allo-SCT
- Day 2: induction chemo (busulfan, fludarabine)
- Fevers and rash: erythematous eroded papules @ buttocks, chest, abdomen, proximal/ upper and lower extremities
- No new meds other than chemo



- **Generalized Grover disease**
- Mean age: 56 years, 71% males
- Distinct distribution: trunk (90%), upper limbs (63%), lower limbs (61%), face/scalp (28%), neck (21%), groin (11%), buttocks (8%)
- Malignancy (61%), chemo (38%), transplant (20%)

MINI-SYMPOSIUM: EMERGING EVIDENCE AND EMERGING DISEASES

Emerging Infectious Diseases: Focus on Returning Travelers

Karolyn A. Wanat, MD

Background. Among people returning from travel with an illness, skin diseases are the third most common category. Travel-acquired infectious diseases are increasing because global warming enables disease vectors to spread around the world, and globalization now enables people to travel anywhere. Dermatologists are extremely important in diagnosis, treatment, and management.

Keep in mind. In addition to the standard workup of a new patient with cutaneous symptoms, the patient who has left the U.S. within the past year requires additional questions to ferret out relevant information. *When* was the travel? The time elapsed is critical: some diseases appear immediately, while some do not manifest until substantially post-travel. *Where* and *what* include purpose of trip, a precisely detailed itinerary, list of activities, and sleep locations. Dr. Wanat discussed common post-return presentations.

Emerging diseases. *Ulcers:* Wanat illustrated with a patient she diagnosed with leishmaniasis once she learned that he had slept outdoors one night. She articulated the many details of her search, diagnostic confirmation (mitochondrial DNA done at bedside), and treatment (*Clinical Infectious Diseases* has excellent guidelines), and the differences that point to other possibilities for post-travel ulcers. ***Peripheral eosinophilia:*** Wanat discussed causal organisms (primarily parasitic, with some viruses) of this highly pruritic eruption, and the diagnostic value of serology. ***Migratory eruptions:*** The patient feels things moving under the skin, or a nodule has moved. Wanat discussed cutaneous larva migrans (the most common post-travel infectious skin disease), noting responsible parasites and treatment issues for different causes. ***Fever/rash:*** Wanat concentrated on the trifecta—dengue, chikungunya, and zika—all transmitted by the Aedes mosquito and involving fever, rash, and joint pain. She noted telltale differences and concerns. State and local health departments have an algorithm for approaching and treating these patients.

Skin Diseases in Returning Travelers

3rd most common post-travel illness

1. Cutaneous larva migrans: 9.8%
2. Insect bite: 8.2%
3. Skin abscess: 7.7%
4. Super infected insect bite: 6.8%
5. Allergic reaction: 5.5%
6. Unknown rash: 5.5%
7. Dog bite: 4.3%
8. Superficial fungal infection: 4.0%
9. Dengue: 3.4%
10. Leishmaniasis: 3.3%

ER Lederman et al. *Int J Infect Dis.* 2008;12:593–602.

	Chikungunya	Dengue	Zika
Virus	ssRNA		
Vectors	*Aedes aegypti, Aedes albopictus*		
Clinical symptoms	Fever, rash, joint pain, headache		
Symptom onset	Few Days to Two Weeks from Exposure		
Fever	High	High	High
Conjunctivitis	+	-	+
Arthralgias	+++	+	++
Skin	Morbilliform, vesicular, dyspigmentation, purpura	Morbilliform, Islands of white in a sea of red, tourniquet	Morbilliform
Sexual transmission	-	-	+
Blood transfusion	+	+	+
Sequelae	Debilitating arthritis	Hemorrhagic fever, shock	Guillain-Barré, Microcephaly

Testing

- State or local health departments
- Serum or urine
- Within 14 days of symptom onset: RNA
  - RNA nucleic acid testing
  - **Trioplex PCR:** Detects Zika, Dengue, Chikungunya
- Day 4 post-symptom to 12+ weeks: Serologic
  - IgM

Birthmarks, Oncogenes, and Embryogenesis: Can Patterning Connect the Dots?

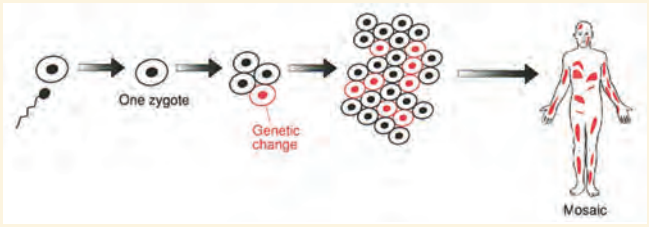
Beth A. Drolet, MD

Introduction. Dr. Drolet discussed the phenomenon of *somatic mosaicism* and how it explains the true molecular underpinnings and previously puzzling phenotypes of many birthmarks and related syndromes. This new reality has made "many of our previous classification systems and acronyms antiquated and not clinically useful."

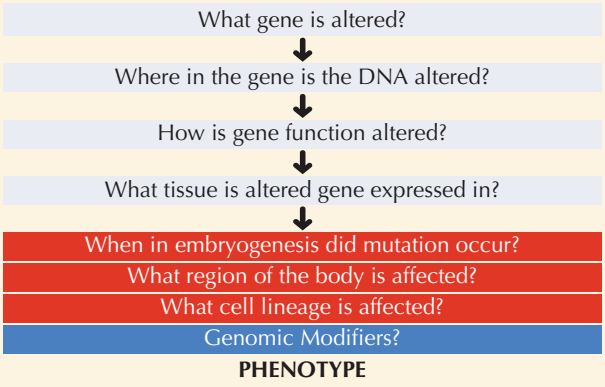
Growth-driving oncogenes. Drolet illustrated this phenomenon with a complicated patient who had presented close to 20 years earlier with an elevated red birthmark on her left leg, which was larger than her right leg. Drolet's initial diagnosis did not account for the increasing leg-size disparity, nor did succeeding diagnoses account for her eventual skin changes, scoliosis, large lipoma, or epidermal nevus. Years later, in collaboration with experts in cancer genomics, her team identified a postzygotic mutation in the *PIK3CA* gene (a major oncogene) limited to specific cells in the altered areas of the affected

leg. Each location—keratinocyte, blood vessel, fat, bone—directly explained a different element of her phenotype. *PIK3CA* mutations stimulate cell growth in numerous cancers. Drolet and her Hemangioma Investigator Group began a nationwide study, with birthmark biopsies from 100 patients assessed so far. 85%—"a high hit rate"—show somatic mosaicism in 12 oncogenes. Drolet explained the postzygotic dynamics of somatic mosaicism, with the phenotype reflecting timing (the earlier in embryogenesis the mutation occurs, the more severe), the gene/gene region/function altered, the body region and tissue involved (eg, variants in the brain may cause more morbidity than in the skin), the cell line affected. Phenotype is modified further by race, ethnicity, and ancestry, and potentially by environmental exposures.

Conclusions. "By studying somatic mosaicism in the skin—the largest, most accessible organ—and continued interrogation of oncogenes in benign developmental disorders, we will provide important insight into fundamental mechanisms regulating cell growth, differentiation, and the development of cancer."



- One human, multiple genomes—genetic mosaicism
- Postzygotic/Embryonic
- Zygote–birth: 40 cell divisions ➔ 120 somatic mutations/cell



New Developments in Atopic Dermatitis

David E. Cohen, MD, MPH

Introduction. "Atopic dermatitis (AD)—one of the most common diseases in the Western world—is an area on the move," Dr. Cohen noted. "Our treatments before this year were very broad anti-inflammatories, but now we are getting into an area of targeted and safer therapies." Cohen described what we know, and what may be right around the corner.

Updates. We have debunked two epidemiologic myths. Now we know that AD does not typically resolve during adolescence, but often continues through adulthood. And moderate disease is more common than assumed. Next, Cohen summarized the components of AD that result from barrier defects vs from inflammatory pathways, their complicated interactions, and the molecular and histologic differences between acute and chronic disease. Then he moved to the science and encouraging results of new treatments that provide efficacy without the concerns associated with cyclosporine and methotrexate: the noncorticosteroid anti-inflammatory phosphodiesterase 4 inhibitor *crisaborole;* the rapidity and cadence of improvement with the IL-4 inhibitor dupilumab (SOLO 1 and 2 data, the CHRONOS trial, and the LIBERTY AD CAFÉ including topical corticosteroid). Cohen also discussed his excellent experience with subcutaneous methotrexate, providing better delivery while mitigating some side effects.

On the cusp. Two drugs "you will be hearing more about" are the IL-31 inhibitor *nemolizumab* and the JAK-1 inhibitors. IL-31 is thought to be important in atopic itching. Although phase II data for nemolizumab show a fairly rapid decrease in itching, up to half of subjects had left the trial by study's end. *Upadacitinib*, a JAK-1 inhibitor, has shown impressive efficacy, but long-term safety data have not appeared yet.

Subcutaneous Methotrexate

- 25 mg/cc solution
- Insulin syringes, 1 cc, 22–30 gauge, ½" needles
  - Prefilled branded versions
  - Dose 7.5–30 mg/wk
- Better bioavailability, tolerability; more linear pharmacokinetics than PO MTX

AD Summary

- Atopic dermatitis has a genetic barrier defect
- Inflammation causes further barrier dysfunction, fueling the vortex
- The atopic patient has intrinsic abnormalities in immune function
- Treatments to date work at various general points in the pathophysiology to interrupt the inflammatory cycle
- Newer therapies offer more targeted approaches with fewer adverse events

MINI-SYMPOSIUM: HEALTH POLICY

Positioning Dermatology (and Our Image for a Bright Future)

Karen E. Edison, MD

Introduction. The AAD has been working to enhance the specialty positioning of dermatology in the house of medicine. Dr. Edison discussed the decision to "focus our specialty positioning campaign on educating others about the breadth and seriousness of the dermatology conditions we treat."

Improving the narrative. Edison described the AAD's recognition that the public is "aware of us, values us, and likes us. It is the nondermatology specialties who, although they like us and recognize our unique capabilities with skin cancer (we own it), are less aware of the other serious skin diseases that we treat, and have no idea of the

impact of these skin diseases on patients' lives." The effort is underway to enable physicians in influential organizations "to understand that we are dedicated physicians who are highly trained to provide life-saving, life-changing care and eager to work in a patient-centered team." The AAD task force also determined that many nondermatologists are concerned about inadequate access to dermatologists for their patients in need. Edison discussed several innovative approaches with which they are attempting to improve access, including various applications of teledermatology and other strategies for bringing dermatology expertise to seriously underserved areas. The AAD's Access Derm charitable teledermatology program has been rebooted.

Conclusion. *Skinserious.org* integrates and illustrates many of these efforts, and tells the success stories enabled by them. Anyone with a story to add—from a dermatologist or other physician partner, or from a patient who has benefited—can respond via the website function.

Importance of Access

- 25% of population in U.S. and 50% of those 65 and older accessed care for skin disease in one year
- 2 out of 3 patients with skin disease were treated by nondermatologists
- An estimated 20,000 dermatology clinicians were needed to treat skin disease in 2013—yet there are only 10,000 board-certified dermatologists

Messaging

- **Serious:** Dermatologists treat serious conditions
  - Dermatologists treat a wide array of conditions and provide essential, life-saving care to patients
- **Team:** We embrace a team-based approach to care
  - Dermatologists are eager to be "team players" with their fellow clinicians, expertly coordinating care across disciplines to treat "the whole patient"
- **Access:** We're working to increase access to timely dermatologic care
  - As in many specialties, timely access to dermatologists can be challenging in some locations. We are developing and sharing innovative ways to improve access for patients and fellow clinicians.

Reframe the narrative—dermatologists are:

- Dedicated physicians highly trained to provide life-saving, life-changing, and cost-effective care
- Eager to be integral partners in a high-value, patient-centered health care team

Do You Have a Good Patient Story to Tell?

- About a serious skin disease you treated
- How your consultation with a nondermatologist physician led to the right diagnosis and better patient care
- How a patient received care for a serious condition as a result of your efforts to increase access
- Go to skinserious.org and add your stories

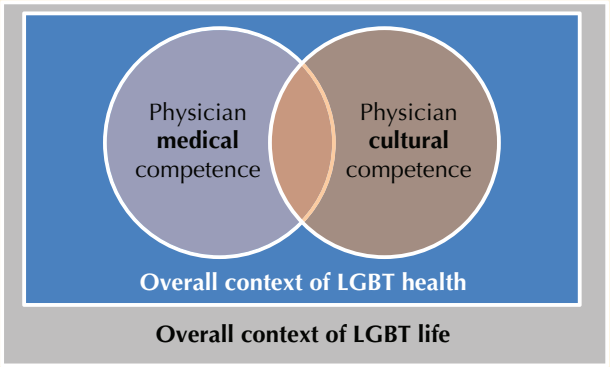
MINI-SYMPOSIUM: PATIENT INTERACTIONS, TECHNOLOGIES, AND PRACTICE SATISFACTION

LGBT Health Matters: Cutural and Medical Competence for Dermatologists

Kenneth A. Katz, MD, MSc, MSCE

Introduction. Lesbian, gay, bisexual, and transgender (LGBT) persons in the U.S. experience substantial health disparities. LGBT persons report negative experiences in healthcare settings as well, including discrimination and lack of access to culturally competent care, or sometimes even care at all. Those experiences lead some LGBT persons to approach healthcare encounters with fear. Negative experiences are more common among LGBT people of color and low income. Those health disparities have led Healthy People 2020—the

Framework for Caring for LGBT Persons



federal government's public health agenda—to include LGBT health as a specific objective. LGBT health disparities have also prompted many organizations, including the Joint Commission and the Association of American Medical Colleges, to publish guidelines on providing culturally competent care to this population. Dr. Katz characterized the spectrum of existing disparities, provided guidelines for caring for LGBT persons in dermatologic settings, and recommended resources.

Problems and solutions. Approximately 4 million lesbian or bisexual women, 4 million gay or bisexual men, and 1.4 million transgender people live in the U.S. Dermatology-relevant health disparities among some of these groups include higher rates of HIV, syphilis, and other infectious diseases, higher rates of skin cancer and indoor tanning among gay men, and effects of gender-affirming therapies and surgeries among transgender persons. Providing appropriate care to LGBT persons requires both medical and cultural competence. Cultural competence involves "the set of congruent behaviors, knowledge, attitudes, and policies that enable effective work in cross-cultural situations." Katz illustrated lack of cultural competence with examples that included misgendering patients.

Conclusions. Katz provided a variety of resources to help dermatologists identify and meet medical needs of LGBT patients in culturally competent ways.

Dermatology-specific Resources for LGBT Health

- Dermatology literature
  - Review articles
  - JAAD 2-part CME (in press)
  - *Dermatology World* (11/17 and 6/18)
- Textbook chapters (in press)
- Talks at Dermatology Foundation, AAD, and other meetings
- Questions for ABD certifying and in-training examinations (forthcoming)
- AAD Expert Resource Group on LGBT/Sexual and Gender Minority Health
- Gay and Lesbian Dermatology Association: www.glderm.org
- Gay and Lesbian Medical Association: www.glma.org
- National LGBT Health Education Center: https://www.lgbthealtheducation.org/

Patient Experience: 8 Tips to Successfully Engaging Children and Parents in Dermatology

Beth A. Drolet, MD

Introduction. As Chief Experience Office at her institution—charged with maximizing patients' positive experiences with the hospital and physicians, which is how patients typically judge quality—Dr. Drolet began to think about the nature and components of good physician-patient relationships with a new awareness. "Our focus had always been on effective care, but it's much broader than that." She shared what she has learned and incorporated into her practice as a pediatric dermatologist.

Relationship tips. Drolet discussed measures that physicians can take to help their patients maximize positive experiences and interactions, minimize frustrations and misunderstandings, feel acknowledged and supported, and know what they need to know. Create positive expectations by being considerate and communicating honestly: provide accurate (and brief) wait and call-back and message-response times; identify potential prescription problems in advance and promise your help if needed; agree to your appointment agenda beforehand and mutually ensure all items were addressed. At the visit's start, let the family know you have taken time to prepare, ie, have reviewed paper and electronic records, and ask if there is anything more you need to know. Make it clear, with verbal and nonverbal cues, that you are *listening* to them. When caring for anyone under 21, remember that you are also caring for their mother. Drolet provided age-based pointers for optimizing interactions involving infants, toddlers, and adolescents. First impressions are important, but what happens at the visit's end is the most likely to be remembered—"and not realizing this is where a lot of us go wrong." Finally, she stressed the value of empathy.

Providers Must Demonstrate:

- Preparation for the visit
- Listening—verbally, nonverbally
- Empathy—verbally, nonverbally
  - **The ability to recognize someone's perspective as their truth—this is a choice and needs practice**
  - Recognize emotion in other people and communicate that you recognize it
  - Relieve suffering, but first acknowledge it
  - Empathy fuels connection
- Remember: first impressions are important, but final impressions are lasting

Stratify Engagement by Age of Child

- <12 months
  - Maternal anxiety about doing something wrong, or having caused the disease or birthmark
  - Families need enormous reassurance and education
  - Families have high procedural anxiety
- Toddlers/School-age
  - Waiting in rooms should be avoided
  - Detailed written information is especially important, as parents are often distracted during visits
  - High procedural anxiety for child/parents, so: (1) provide explicit explanations about local anesthesia; (2) set expectations of child's reaction to procedure
  - Parents expect physicians to speak to their children
- Teenagers
  - Extreme anxiety about exam (males>females)
  - Often conflict between parents and child
  - Conflict around compliance
  - Speak to child, ask preferences, but parents make decisions

Maintaining the Joy of Practice

Suzanne M. Olbricht, MD

Introduction. "We live in a time of rapid change, with disruption of societal norms and disruption in our professional lives," Dr. Olbricht said. She pointed to the negative consequences for physicians—with rising rates of alienation and burnout—and thus the negative impact on one's practice. Although we cannot moderate these larger societal currents, we *do* have control over how we react. Instead of allowing the stresses to erode us, we can choose self-nurturing measures that support

(Continued on page 13)

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INDICATION

RETIN-A MICRO (tretinoin gel) microsphere is indicated for topical application in the treatment of acne vulgaris.

IMPORTANT SAFETY INFORMATION

- The skin of certain individuals may become excessively dry, red, swollen or blistered during the use of RETIN-A MICRO.
- Tretinoin has been reported to cause severe irritation on eczematous skin and should be used with utmost caution in patients with this condition.
- If warranted, patients should temporarily reduce the amount or frequency of application, or discontinue use temporarily or altogether. If a reaction suggesting sensitivity occurs, use should be discontinued.
- Unprotected exposure to sunlight, including sunlamps, should be minimized during the use of RETIN-A MICRO, and patients with sunburn should be advised not to use the product until fully recovered because of heightened susceptibility to sunlight with the use of tretinoin.
- Patients should be encouraged to use a sunscreen with a SPF of 15 or higher and protective clothing over treated areas when exposure cannot be avoided.
- Weather extremes, such as wind or cold, also may be irritating to patients under treatment with tretinoin.
- The most common adverse events are mild to moderate irritation (erythema, peeling, dryness, burning/stinging, or itching of the skin).
- RETIN-A MICRO should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus, and caution should be exercised in prescribing for nursing mothers. Safety and efficacy in patients under 12 have not been established.

To report SUSPECTED ADVERSE REACTIONS, contact Ortho Dermatologics at 1-800-321-4576 or FDA at 1-800-FDA-1088 or visit www.fda.gov/medwatch.

Please see Brief Summary of full Prescribing Information on the following page.

Reference: 1. Retin-A Micro Gel Package Insert. Bridgewater, NJ: Valeant Pharmaceuticals North America LLC.

Ortho | Dermatologics

RETIN-A MICRO®
[tretinoin] Gel microsphere
0.06% / 0.08%

BRIEF SUMMARY OF PRESCRIBING INFORMATION

This Brief Summary does not include all the information needed to use RETIN-A MICRO safely and effectively. See full prescribing information for RETIN-A MICRO.

RETIN-A MICRO® (tretinoin) gel microsphere, 0.1%, 0.08%, 0.06% and 0.04%, for topical use
Initial U.S. Approval: 1971

INDICATIONS AND USAGE
Retin-A Micro® is a retinoid indicated for topical application in the treatment of acne vulgaris.

CONTRAINDICATIONS
None.

WARNINGS AND PRECAUTIONS
Local Irritation
The skin of certain individuals may become excessively dry, red, swollen, or blistered.

Tretinoin has been reported to cause severe irritation on eczematous skin and should be used with utmost caution in patients with this condition.

If the degree of irritation warrants, patients should be directed to temporarily reduce the amount or frequency of application of the medication, discontinue use temporarily, or discontinue use all together. Efficacy at reduced frequencies of application has not been established. If a reaction suggesting sensitivity occurs, use of the medication should be discontinued.

To help limit skin irritation, patients must

- wash the treated skin gently, using a mild, non-medicated soap, and pat it dry, and
- avoid washing the treated skin too often or scrubbing it hard when washing.

Patients should apply a topical moisturizer if dryness is bothersome.

Exposure to Ultraviolet Light or Weather Extremes
Unprotected exposure to sunlight, including sunlamps (UV light) should be avoided or minimized during the use of Retin-A Micro and patients with sunburn should be advised not to use the product until fully recovered because of heightened susceptibility to sunlight as a result of the use of tretinoin. Patients who may be required to have extended periods of UV exposure (e.g., due to occupation or sports), or those with inherent sensitivity to the sun, or those using medications that cause photosensitivity, should exercise particular caution. Use of sunscreen products (SPF 15 or higher) and protective clothing over treated areas are recommended when exposure cannot be avoided *[see Nonclinical Toxicology]*.

Weather extremes, such as wind or cold, also may be irritating to tretinoin-treated skin.

ADVERSE REACTIONS
Clinical Trials Experience
Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

Clinical Trials in Subjects with Acne
In separate clinical trials for each concentration, acne subjects treated with Retin-A Micro (tretinoin) Gel microsphere, 0.1% or 0.04%, over the twelve-week period showed that cutaneous irritation scores for erythema, peeling, dryness, burning/stinging, or itching peaked during the initial two weeks of therapy, decreasing thereafter.

Approximately half of the subjects treated with Retin-A Micro, 0.04%, had cutaneous irritation at Week 2. Of those subjects who did experience cutaneous side effects, most had signs or symptoms that were mild in severity (severity was ranked on a 4-point ordinal scale: 0=none, 1=mild, 2=moderate, and 3=severe). Less than 10% of patients experienced moderate cutaneous irritation and there was no severe irritation at Week 2.

In trials of Retin-A Micro (tretinoin) Gel microsphere, 0.04%, throughout the treatment period the majority of subjects experienced some degree of irritation (mild, moderate, or severe) with 1% (2/225) of subjects having scores indicative of a severe irritation; 1.3% (3/225) of subjects treated with Retin-A Micro (tretinoin) Gel microsphere, 0.04%, discontinued treatment due to irritation, which included dryness in one patient and peeling and urticaria in another.

In trials of Retin-A Micro (tretinoin) Gel microsphere, 0.1%, no more than 3% of subjects had cutaneous irritation scores indicative of severe irritation; 6% (14/224) of subjects treated with Retin-A Micro (tretinoin) Gel microsphere, 0.1%, discontinued treatment due to irritation. Of these 14 subjects, four had severe irritation after 3 to 5 days of treatment, with blistering in one subject.

In a double-blind trial with 156 acne subjects comparing 12 weeks of treatment with Retin-A Micro (tretinoin) Gel, 0.04% or 0.1%, (78 subjects each group), the most frequently reported adverse events affected the skin and subcutaneous tissue (15.4% in the 0.04% group, and 20.5% in the 0.1% group). The most prevalent of the dermatologic adverse events in the 0.04% group was skin irritation (6.4%); and in the 0.1% group skin burning (7.7%), erythema (5.1%), skin irritation (3.8%), and dermatitis (3.8%). Most adverse events were of mild intensity (63.4%), and 34.4% were moderate. One subject in each group had adverse events characterized as severe, neither were dermatologic findings and neither was characterized as related to drug by the investigator.

Trials in Subjects without Acne
In a half-face comparison trial conducted for up to 14 days in women with sensitive skin, but without acne, Retin-A Micro (tretinoin) Gel microsphere, 0.1%, was statistically less irritating than tretinoin cream, 0.1%. In addition, a cumulative 21-day irritation evaluation in subjects with normal skin showed that Retin-A Micro (tretinoin) Gel microsphere, 0.1%, had a lower irritation profile than tretinoin cream, 0.1%. The clinical significance of these irritation studies for patients with acne is not established. Comparable effectiveness of Retin-A Micro (tretinoin) Gel microsphere, 0.1%, and tretinoin cream, 0.1%, has not been established. The lower irritancy of Retin-A Micro (tretinoin) Gel microsphere, 0.1%, in subjects without acne may be attributable to the properties of its vehicle. The contribution of decreased irritancy by the MICROSPONGE System has not been established. No irritation trials have been performed to compare Retin-A Micro (tretinoin) Gel microsphere, 0.04%, with either Retin-A Micro (tretinoin) Gel microsphere, 0.1%, or tretinoin cream, 0.1%.

Postmarketing Experience
The following adverse reactions have been identified during post-approval use of Retin-A Micro Gel. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Temporary hyper- or hypopigmentation has been reported with repeated application of tretinoin.

USE IN SPECIFIC POPULATIONS
Pregnancy
Pregnancy Category C

There are no adequate and well-controlled studies in pregnant women. Retin-A Micro should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Thirty human cases of temporally associated congenital malformations have been reported during two decades of clinical use of tretinoin products. Although no definite pattern of teratogenicity and no causal association has been established from these cases, five of the reports describe the rare birth defect category holoprosencephaly (defects associated with incomplete midline development of the forebrain). The significance of these spontaneous reports in terms of risk to the fetus is not known.

For purposes of comparison of the animal exposure to systemic human exposure, the MRHD applied topically is defined as 1 gram of Retin-A Micro (tretinoin) Gel microsphere, 0.1%, applied daily to a 60 kg person (0.017 mg tretinoin/kg body weight).

Pregnant rats were treated with Retin-A Micro (tretinoin) Gel microsphere, 0.1%, at daily dermal doses of 0.5 to 1.0 mg/kg/day tretinoin on gestation days 6-15. Alterations were seen in vertebrae and ribs of offspring at 5 to 10 times the MRHD based on the body surface area (BSA) comparison.

Pregnant New Zealand White rabbits were treated with Retin-A Micro (tretinoin) Gel microsphere, 0.1%, at daily dermal doses of 0.2, 0.5, and 1.0 mg/kg/day tretinoin on gestation days 7-19. Doses were administered topically for 24 hours a day while wearing Elizabethan collars to prevent ingestion of the drug. Increased incidences of certain alterations, including domed head and hydrocephaly, typical of retinoid-induced fetal malformations in this species, were observed at 0.5 and 1.0 mg/kg/day. Similar malformations were not observed at 0.2 mg/kg/day, 4 times the MRHD based on BSA comparison. Other pregnant rabbits exposed topically for six hours per day to 0.5 or 1.0 mg/kg/day tretinoin while restrained in stocks to prevent ingestion, did not show any malformations at doses up to 19 times (1.0 mg/kg/day) the MRHD based on BSA comparison, but fetal resorptions were increased at 0.5 mg/kg (10 times the MRHD based on BSA comparison).

Oral tretinoin has been shown to cause malformations in rats, mice, rabbits, hamsters, and nonhuman primates.

Tretinoin induced fetal malformations in Wistar rats when given orally at doses greater than 1 mg/kg/day (10 times the MRHD based on BSA comparison). In the cynomolgus monkey, fetal malformations were reported for doses of 10 mg/kg/day but none were observed at 5 mg/kg/day (95 times the MRHD based on BSA comparison), although increased skeletal variations were observed at all doses. Dose-related increases in embryolethality and abortion also were reported. Similar results have also been reported in pigtail macaques.

In oral peri- and postnatal development studies in rats with tretinoin, decreased survival of neonates and growth retardation were observed at doses in excess of 2 mg/kg/day (19 times the MRHD based on BSA comparison).

Nonteratogenic effects on fetus
Oral tretinoin has been shown to be fetotoxic in rats when administered at doses 24 times the MRHD based on BSA comparison.

Topical tretinoin has been shown to be fetotoxic in rabbits when administered at doses 10 times the MRHD based on BSA comparison.

Nursing Mothers
It is not known whether tretinoin and/or its metabolites are excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Retin-A Micro is administered to a nursing woman.

Pediatric Use
Safety and effectiveness in children below the age of 12 have not been established.

Geriatric Use
Safety and effectiveness in a geriatric population have not been established. Clinical trials of Retin-A Micro (tretinoin) Gel microsphere, 0.1% and 0.04%, did not include sufficient numbers of subjects aged 65 and over to determine whether they responded differently from younger subjects.

OVERDOSAGE
Oral ingestion of large amounts of the drug may lead to the same side effects as those associated with excessive oral intake of Vitamin A.

NONCLINICAL TOXICOLOGY
Carcinogenesis, Mutagenesis, Impairment of Fertility
Dermal carcinogenicity testing has not been performed with Retin-A Micro (tretinoin) Gel microsphere, 0.1%, 0.08%, 0.06% or 0.04%.

In a 91-week dermal study in which CD-1 mice were administered 0.017% and 0.035% formulations of tretinoin, cutaneous squamous cell carcinomas and papillomas in the treatment area were observed in some female mice. These concentrations are near the tretinoin concentration of the 0.04% and 0.1% clinical formulations. A dose-related incidence of liver tumors in male mice was observed at those same doses. The maximum systemic doses associated with the administered 0.017% and 0.035% formulations are 0.5 and 1.0 mg/kg/day tretinoin, respectively. These doses are two and four times the MRHD based on BSA comparison.

The biological significance of these findings is not clear because they occurred at doses that exceeded the dermal maximally tolerated dose of tretinoin and because they were within the background natural occurrence rate for these tumors in this strain of mice.

There was no evidence of carcinogenic potential when 0.025 mg/kg/day of tretinoin was administered topically to mice (0.1 times the MRHD based on BSA comparison). Studies in hairless albino mice suggest that concurrent exposure to tretinoin may enhance the tumorigenic potential of carcinogenic doses of UVB and UVA light from a solar simulator. This effect has been confirmed in a later study in pigmented mice, and dark pigmentation did not overcome the enhancement of photocarcinogenesis by 0.05% tretinoin. Although the significance of these studies to humans is not clear, patients should minimize exposure to sunlight or artificial ultraviolet irradiation sources *[see Warnings and Precautions]*.

The genotoxic potential of tretinoin was evaluated in the Ames assay and in the in vivo mouse micronucleus assay, both of which were negative.

The components of the microspheres have shown potential for genetic toxicity and fetal malformation. EGDMA, a component of the excipient acrylates copolymer, was positive for induction of structural chromosomal aberrations in the in vitro chromosomal aberration assay in mammalian cells in the absence of metabolic activation, and negative for genetic toxicity in the Ames assay, and the in vivo mouse micronucleus assay.

In oral fertility studies in rats with tretinoin, the no-observable effect level was 2 mg/kg/day (19 times the MRHD based on BSA comparison).

PATIENT COUNSELING INFORMATION
Advise the patient to read the FDA-approved patient labeling (Patient Information).

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our resilience and, as a consequence, also benefit our practice and patients. Olbricht identified negative responses, then discussed positive countermeasures that support our ability to remain positively invested in our work as dermatologists.

The negative and positive. National statistics reveal that the burnout rate in dermatology, which used to be among the lowest of the specialties, "has doubled." *Burnout* involves emotional fatigue, depersonalization, and a reduced sense of one's accomplishments. Patients lack adequate attention, and physician suicides are increasing. Olbricht's department survey at Harvard identified "a very high prevalence of burnout." She discussed negative and positive coping styles—*disengagement* vs *engagement*—and their consequences. *Engagement strategies*—which enable *resilient* coping—include maintaining healthy nonwork relationships, relishing our relationships with patients, cognitive restructuring (looking for positives instead of negatives), taking time off, attending more conferences, and practicing mindfulness. Stress falls substantially despite unchanged stressful working conditions.

Practice Mindfulness

- Purposeful activity—intentional, not accidental
- Acute awareness of the present—noticing rather than reacting
- Inattentiveness to the past or the future—being rather than becoming
- Ways to practice mindfulness
  - Yoga, tai chi, meditation
  - Buddhists listen to bell chimes
  - Sufis spin
  - Fly fishermen watch ripples
  - Photographers look for pictures
  - Musicians play

ACM Atanes et al. *BMC Complement Altern Med.* 2015;15:303–9; JA Irving et al. *Complement Ther Clin Pract.* 2009;15:61–6; RA Kusurkar et al. *Med Educ Online.* 2015;20:10.3402/meo.v20.27951; SL Shapiro et al. *J Behav Med.* 1998;21:581–99.

Conclusion. Mindfulness is critical to Olbricht's resilience.* She discussed techniques for experiencing it and provided her personal approach.

*See SM Olbricht."Mindfulness: Is it relevant to my work life?" *Cutis*. 2016;98:79–80.

Mindfulness is Relevant

- Strong negative correlation between mindfulness practice and report of stress
- 8-week mindfulness program reduced health care worker stress
- Medical students with mindfulness traits had lower rate of depression
- Medical students taught mindfulness practice had lower report of stress

ACM Atanes et al. *BMC Complement Altern Med.* 2015;15:303–9; JA Irving et al. *Complement Ther Clin Pract.* 2009;15:61–6; RA Kusurkar et al. *Med Educ Online.* 2015;20:10.3402/meo.v20.27951; SL Shapiro et al. *J Behav Med.* 1998;21:581–99.

Improving Care With the Dermatology ECHO Model

Karen E. Edison, MD

Introduction. Teledermatology increases access but reaches only one patient at a time. ECHO—Extension for Community Healthcare Outcomes—uses videoconferencing to teach basic dermatology care to groups of primary care physicians in underserved areas. Dr. Edison has established a highly successful ECHO program at the University of Missouri to provide dermatology mentoring at a distance. She discussed the need, the mechanics, the many benefits, and the joys.

ECHO in dermatology. Edison traced the beginnings of this new model of education and practice outreach to a hepatologist at the University of New Mexico during the hepatitis C epidemic. He established a weekly hepatitis C clinic via videoconferencing, and physicians called in from needy areas across the state. The cure rate across the state rose to equal that at the university, and the wait for university clinic appointments fell to 2 weeks. Edison's case-based 1-hour weekly telementoring program brings together primary care physicians across the state with her multidisciplinary dermatology team every Friday. A 10- to 15-minute didactic introduction precedes discussing "the art and science of managing the patient cases that participants sent in ahead of time." Edison discussed the many benefits to patients (including fewer needless melanoma deaths), to participating PCPs, to her department, and to the credibility of the specialty. These weekly sessions have also restored Edison's joy in practice.

Conclusion. "Case-based learning in a live environment really does change practice." Anyone interested in extending specialty care into primary care is referred to https://showmeecho.org/ ■

Derm ECHO

Benefits PCPs

- Increased ability to diagnose and treat patients
- Increased confidence about treating common skin disease
- Access to dermatology expertise
- Participation in learning collaborative with dermatologists
- No-cost CMEs

Benefits specialty physicians

- Increases sense of purpose and joy
  - Ability to make a big difference in a short time; may help to reduce burnout
- Supports parts of base salaries for participating faculty
- Learning through teaching and learning from each other
- Improves reputation of our specialty out in the community

Dermatology ECHO Model

(Over 2 years, 17 unique participants, 644 total attendees, 238 cases presented)

Increases:

- Access to dermatology expertise
- PCPs' self-efficacy in dermatology
- Respect for breadth and seriousness of skin diseases
- Credibility of all dermatologists
- Referrals for serious skin disease
- Collaborative relationships b/t derms and PCPs

Decreases:

- Costs of meds, labs, etc. from misdiagnosing skin disease
- Unnecessary deaths from melanoma
- Patients suffering from skin diseases
- Unnecessary office visits for patients with straightforward skin diseases

Save the Date—Sunday, March 3 Annual Leadership Gala

Each year, the Dermatology Foundation's Annual Leadership Gala creates a very special way to say "thank you" to its *Leaders Society,* Annenberg Circle, *AC Sustaining*, and Fitzpatrick Legacy Fund memebers. ***The 2019 gala*** will be held on March 3 from 7:30–9 pm at Washington D.C.'s unique National Museum of Women in the Arts. The DF is grateful for the support of *Leaders Society* members who have joined within five years of completing their residency. Honoring their early career commitment, the DF will hold its ***Young Leaders Pre-Gala***, beginning at 6:45 pm. Be sure to save the date.

Photo: Tom Field

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David E. Cohen, MD, MPH: Dermira, Ferndale Labs, FIDE, Medimetriks. **Beth A. Drolet, MD:** Pierre Fabre. **Jonathan A. Dyer, MD:** Allergan, Castle Creek Pharma, Crown Pharmaceuticals, Scioderm. **Karen Edison, MD:** none. **Kenneth Katz, MD:** Arrowhead Pharmaceuticals, Prevention Health Labs, Inc. **Suzanne M. Olbricht, MD:** none. **Kanade Shinkai, MD, PhD:** none. **Marta J. Van Beek, MD, MPH:** none. **Karolyn A. Wanat, MD:** none.

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Sun Pharma Contribution Advancing Care for Inflammatory Skin Disease

The DF is the recent recipient of a generous $1 million grant from Sun Pharmaceutical Industries, Inc. that is enabling the Foundation to launch a valuable new funding opportunity for investigators with an established trajectory of excellence in dermatologic research. The Sun Pharma Research Award is dedicated specifically to advancing outstanding basic, clinical, or translational research that will enable significant progress in understanding and treating challenging inflammatory skin diseases, including psoriasis and atopic dermatitis. The first of three planned awards will be funded beginning in July of 2019. Each recipient with receive $100,000 in annual funding for up to 3 years.

Simon Lowry, MD, Chief Medical Officer of Sun North America, announced the company's decision to work with the DF to further patient care. **"Sun is delighted to be able to partner with the Dermatology Foundation, where we share values and a commitment to furthering research and education with the goal of helping patients and their health care providers find better treatments and ultimately a cure for serious diseases affecting the skin."**

The opportunities for continued progress in all aspects of the specialty are tremendous. However, the need for research funding continues to grow—especially for those entering the middle years of their investigative careers. This collaborative effort helps reduce the growing gap in mid-career research dollars.

"I am extremely grateful to Sun Pharma, Inc., for their generous support of a new research award focused on inflammatory skin diseases," Dr. Kim Yancey, DF President, says. "This award addresses a profound need for research support, and will enable three outstanding investigators to carry out unique, high impact, multi-year projects. The DF and Sun Pharma are both dedicated to supporting discoveries and innovations that will enable patients with dermatologic diseases to live normal lives."

For complete award and application information, visit *dermatologyfoundation.org*.

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