DERMATOLOGICAL CONDITIONS OF THE FOOT AND ANKLE: UPDATE

TRACEY C. VLAHOVIC, DPM FFPM RCPS (GLASG)
CLINICAL ASSOCIATE PROFESSOR
TEMPLE UNIV SCHOOL OF PODIATRIC MEDICINE
PHILADELPHIA, PA
THIS MORNING’S AGENDA...

• Various Inflammatory skin conditions
• Verruca
• Onychomycosis
WHAT TYPICALLY WALKS INTO THE OFFICE:
ERYTHRASMA

We Need:
- Antimicrobial
- Soothing
- Anti-pruritic
- Wound healing
HYPOCHLOROUS ACID KEY ATTRIBUTES

**Antimicrobial Activity**
- Kills a broad spectrum of gram negative, gram positive, and yeast species in solution

**Wound Cleansing**
- Effective debriding agent
- Physically breaks down biofilm

**Eliminates odor**

**Non-cytotoxic**

**Blocks histamine response**
- encourages wound healing
- Clinical observations have shown reduced redness, swelling, and irritation

**Enhanced Vascular Circulation**
Better oxygenation at the wound site promotes faster healing
- Promotes granulation
- Encourages epithelialization
- Increases blood flow to treated tissue
HYPOCHLOROUS ACID SPRAY OR GEL (ALEVICYN, INTRADERM)

Severely infected diabetic foot with high potential for loss of limb.

Week 1: Comprehensive care including Microcyn initiated.

Week 2: Granulation tissue begins to appear.

Week 3: Improved healthy tissue surrounding wound.

Week 18: Wound is completely healed.

Case from Dr Fermin Martinez, 2007
HYPOCHORLOUS ACID SOLUTION (ALEVICYN, INTRADERM)

- Antipruritic Hydrogel/Spray
  - Hypochlorous acid plus moisturizer foam or cream = steroid free regimen for pediatric patients

*R Smith, Poster at Caribbean Dermatology, Jan 2012*
Using a non steroidal to soothe:
Low molecular weight Hyaluronic Acid (Bionect, EPI Health)
TYPICALLY, FOR INFLAMMATORY CONDITIONS...

• The first line is a topical corticosteroid:
  • Class I drugs should be used for 2 weeks to 1 month with NO refills, remember side effects!
  • Titrate down
  • Prepare for flares
  • Add a barrier function cream
  • Goal: use little to no topical steroid ultimately

Class I steroids:
Clobetasol (Clobex, Olux, Temovate)          Halobetasol (Ultravate)
Betamethasone (Diprolene)                  Fluocinonide (Vanos)
Diflorasone (Psorcon)
• About the fingertip rule

• It’s the concentration of the active ingredient at the specific site, not the amount put on the skin that affects percutaneous absorption
OVER ONE MONTH...

Antimicrobial
Soothing
Anti-pruritic
Wound healing

Then, what????
Xerosis
RX DEVICES: THE MOISTURIZERS

• We should have patients using 10x the amount than they already are
• Best time to apply: within minutes of getting out of tub/shower, be careful of tile floors
• Try to choose fragrance-free preps—if they can’t have an Rx
• 59% reduction on AD pts when used for two months — J Dermatol Treat 2006
• The vehicle effect?
RX DEVICES: THE MOISTURIZERS

• Epiceram (Pura Cap)
• Ceramax (Intraderm)
• Neosalus (Exeltis)
• Hylatopic plus (Encore)

• It’s all about the level of ceramides, hyaluronic acid, physiologic lipids
Ghadially R., abstract presented at 7th Annual Caribbean Dermatology Symposium, St Thomas, US Virgin Islands, 2008
PHENOTYPIC EXPRESSION OF PALMOPLANTAR PSORIASIS

• Retrospective review of 150 patients with palmoplantar psoriasis defined subtypes:
  • 1. Purely hyperkeratotic
  • 2. Purely pustular
  • 3. Mixed hyperkeratotic/pustular
  • 4. With or without psoriasis elsewhere

PUSTULAR PSORIASIS
DON’T DEBRIDE THIS!
PSORIATIC NAIL MANAGEMENT

- Nuvail (poly-ureaurethane, 16%), Genadur (Hydrosoluble Nail Lacquer)
- KeryFlex (Podiatree Company) for nails (a cosmetic resin approach to nails)
INDIGO NATURALIS FOR PSORIATIC NAILS

• Chinese medicine (Qing Dai—from plants indigofera tinctoria, baphieacanthuscusia, isatis tinctoria, polygonum tinctorium, and isatis indigotica)

• antipyretic, anti-inflammatory,
  antiviral, antimicrobial,
  antitumor and detoxifying
  properties

DX: LICHEN PLANUS

Plentiful, Pruritic, Purple, Polygonal, Planar
Polished, Papular + Wickham’s Striae
WEEPY AND ITCHY SKIN
IRRITANT CD VS ALLERGIC CD = PATCH TEST
SHOE CONTACT DERMATITIS (FIND THIS LIST ON PODIATRY TODAY ONLINE)

1. Askin Shoes: http://www.askin.it/eng/home.php
   Shoes that are excluding the following materials such as chromium salts, aluminum, zirconium, titanium, nickel, lead, copper, cadmium, and many others

   Offers lanolin-free socks made of breathable alpaca fiber

3. Birkenstock for cork insole replacements
   n.b. Birkenstock buckles are nickel-free

4. The Cordwainer Shop http://www.cordwainershop.com/: offers Glue-free linings for allergy sensitive customers

5. Loveless Orthopedic Appliance http://www.lovelessboots.com/: Offers hypoallergenic liners for shoes and boots


7. Multnomah Leather Shop: http://www.multnomahleather.com/Allergy  Offers clogs made of chromate-free vegetable-tanned cowhide and for those with rubber allergy, they use a wood midsole, isolating the wearer’s feet from the cemented outsole.

8. P.W. Minor and Son http://www.pwminor.com/ offers hypoallergenic footwear, including chrome-free leather and the use of minimal adhesives
<table>
<thead>
<tr>
<th></th>
<th>Mild Atopic Dermatitis</th>
<th>Moderate Atopic Dermatitis Consider Derm Referral</th>
<th>Severe Atopic Dermatitis Consider Derm Referral</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st Line</strong></td>
<td>TCS* BRMD/Emollients</td>
<td>TCS* BRMD/Emollients (+/-) TCI</td>
<td>TCS* BRMD/Emollients (+/-) TCI</td>
</tr>
<tr>
<td><strong>2nd Line</strong></td>
<td>TCI</td>
<td>TCI</td>
<td>TCI Narrowband UVB Systemic medications</td>
</tr>
<tr>
<td><strong>Maintenance</strong></td>
<td>BRMD/Emollients (+/-) TCS/TCI†</td>
<td>BRMD/Emollients (+/-) TCS/TCI†</td>
<td>BRMD/Emollients (+/-) TCS/TCI†</td>
</tr>
<tr>
<td><strong>Special Circumstances</strong></td>
<td>(+/-) sedating antihistamine&lt;sup&gt;a&lt;/sup&gt; (+/-) sodium hypochlorite (bleach bath) or topical hypochlorous acid&lt;sup&gt;b&lt;/sup&gt; (+/-) oral antimicrobial&lt;sup&gt;c&lt;/sup&gt;</td>
<td>*Potency based on site, duration and age appropriateness †Rotational/intermittent (+/-) sedating antihistamine&lt;sup&gt;a&lt;/sup&gt; (+/-) sodium hypochlorite (bleach bath) or topical hypochlorous acid&lt;sup&gt;b&lt;/sup&gt; (+/-) oral antimicrobial&lt;sup&gt;c&lt;/sup&gt;</td>
<td>*Potency based on site, duration and age appropriateness †Rotational/intermittent (+/-) sedating antihistamine&lt;sup&gt;a&lt;/sup&gt; (+/-) sodium hypochlorite (bleach bath) or topical hypochlorous acid&lt;sup&gt;b&lt;/sup&gt; (+/-) oral antimicrobial&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
</tbody>
</table>


*Potency based on site, duration and age appropriateness
†Rotational/intermittent
<sup>a</sup> (+/-) sedating antihistamine
<sup>b</sup> (+/-) sodium hypochlorite (bleach bath) or topical hypochlorous acid
<sup>c</sup> (+/-) oral antimicrobial
LOGICAL APPROACH TO TREATMENT FOR INFLAMMATORY CONDITIONS

- Educate, educate, educate
- Reduce signs and symptoms (get acute flare down)
- Prevent and decrease frequency of flares

- Skin Hydration!
- Avoid triggers!
- Frequent moisturizers!
- Educate patient and family!
- COMBO therapy

VERRUCA—WHY ISN’T IT A ONCE SIZE FITS ALL TREATMENT?

• Plantar warts commonly have HPV types 1, 2, 27, 57
  • 86% of warts will have one of these
  • HPV 1 will most commonly occur in children plantarly—better response and disappear faster

• Article differentiated between plantar and common warts; clinical appearance and HPV type

• Black dots strongly show the presence of active HPV infection
  • Some warts had no detectable HPV DNA ---- These were older lesions and some had no black dots

• Authors developed an assay HSL PCR/MPG to determine HPV genotype

• HPV type may relate to treatment success, ie HPV 2 and 27 had a DECREASED response to combo salicylic acid and cryotherapy, but HPV 1 does respond well to this therapy
CHARACTERISTICS FOUND

• Presence of HPV infection: black dots, well defined border, callus present
• HPV 27 found plantarly with white skin flakes
  • HPV 2 and 27 types do not respond well to monochloroacetic acid or combo cryo/sal acid
• HPV 57 found in multiple confluent warts without black dots
• HPV 1 solitary warts, sharp border, black dots in children
  • Combo of cryo and sal acid worked best
INTRALESIONAL IMMUNOTHERAPY FOR VERRUCA

- *Candida*
- *Trichophyton*
- *Mumps*

- 70% of the population has immunity
- Great for mosaics
- Not for immunocompromised, pregnant, etc
• Inject 0.1-0.3 cc intralesionally
• Candin® by Nielsen BioSciences
• One injection per month
• Mother wart

• J Am Podiatr Med Assoc. 2015 Sep;105(5):395-400
INJECT INTRADERMALLY...

- Place needle **almost** flat against skin, bevel up. Insert needle
- Slowly inject agent; watch for wheal to appear. If it does not, withdraw needle slightly and reinject. Do not aspirate before injecting. Do not massage site after injecting.
- Withdraw needle quickly at the same angle as it was inserted. Dispose of needle without recapping
THE EVER T2 METHOD TRIALS FOR VERRUCA

• The Ever T2 trial compared needling of warts to debridement
• 60 patients, aged 18 and over
• Falknor needling technique
  • Local anesthesia, repeatedly needling wart down to dermis
• Needling vs callus debridement had no benefit in clearing warts, but did seem to help pain reduce over time
  • Cost of treating patient higher with needling technique
• Br J Dermatol. 2017 Jun 27
CANTHARONE PLUS VS YAG LASER

- Cantharidin, salicylic acid, podophylin combo vs long pulsed Nd:YAG laser on plantar warts older than 2 years
- Laser group: 1 laser session/month
- Cantharone Plus group: 1 application/2 weeks
- Bottom line: both work, but cantharone plus seems to work more efficaciously than laser

WHAT ABOUT THE FUTURE FOR NAILS?

- Novan SB208 topical: nitrous oxide silicone based topical for nails and skin, phase 2 trials, 4 and 16% concentrations, www.novan.com

"Physicians are in need of new, effective treatment options for onychomycosis. Oral therapies are effective in many patients, but can cause systemic side effects and may require laboratory monitoring. Topical therapies generally have better safety profiles and do not require routine lab monitoring. Novan’s SB208 product candidate appears to have a novel and interesting mechanism of action and may yield a safe alternative to currently available treatment options."

Boni Elewski, MD, Endowed Professor for Graduate Education, Vice-Chair for Clinical Affairs and Residency Program Director at The University of Alabama at Birmingham School of Medicine, Department of Dermatology
WHAT ABOUT THE FUTURE FOR NAILS?

• Hallux, Inc is beginning a phase 2 clinical trial with a micro insert HTS-519, [www.halluxinc.com](http://www.halluxinc.com)

• MOE medical devices is studying an antimicrobial plasma treatment system, now recruiting, [www.clinicaltrials.gov](http://www.clinicaltrials.gov)
WHAT ABOUT THE FUTURE FOR NAILS?

• Next-generation oral antifungal
  • High potency and selectivity
• High penetration into nail/skin
• Favorable oral PK profile; once-weekly dosing
• Robust safety profile
  • ~600 patients dosed to date
  • Low potential for drug interactions
• Phase 2b study in moderate to severe onychomycosis fully enrolled

VT-1161

Novel “Tetrazole” MBG
VT-1161: RENOVATE PHOTOS PATIENT # 1
COMPLETE CURE OVER TIME - ITT

Patients with complete cure

- 300mg 12-Week
- 300mg 24-Week
- 600mg 12-Week
- 600mg 24-Week

Complete Cure Over Time – ITT Analysis (LOCF)
There are an estimated 20 million people with onychomycosis in the United States alone, making it the most common nail disease seen and treated, but also quite misunderstood. With the sole focus of this book devoted to onychomycosis, the reader is provided with insight into the diagnosis and management of this nail infection. Onychomycosis includes chapters on how onychomycosis infects the nail unit, the types of nail diseases, diagnosis from a gross and microscopic view, and the various treatment options available. With chapters written by the world's experts along with dozens of high-quality color photographs and illustrations, this book is a practical reference guide for every dermatologist, podiatrist, and primary care physician.