Dermatology Quiz

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Clinical Editor, Advances in Skin & Wound Care
Course Director IIWCC & Masters of Science, Community Health (Prevention & Wound Care)
# Dr. Sibbald’s Potential Conflicts of Interest

Clinical Editor- Advances in Skin & Wound Care

<table>
<thead>
<tr>
<th>Company/ Agency</th>
<th>Paid Lecturers</th>
<th>Advisory Board Members</th>
<th>Research Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systagenix/ Acelity</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Mölnlycke</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>RNAO- Registered Nurses Association of Ontario</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Galderma</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leo</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hollister</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Health Point/ Smith &amp; Nephew</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Valeant</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Abbott/ Abbvie</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>MH-CCAC, MHLTC, HQO = Province of Ontario Government</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Eli Lilly Canada Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ferris Manufacturing Comp</td>
<td></td>
<td></td>
<td>✓</td>
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</tbody>
</table>
Participants will:

- Analyze dermatological conditions with new eyes
- Evaluate treatment tool kit for maximal clinical utility
- Examine persons with diabetes for a high risk foot to avoid lower limb amputation and premature death
Case 1: What is the most likely diagnosis?
What is the most likely diagnosis?

<table>
<thead>
<tr>
<th>Color</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Bullous Pemphigoid</td>
</tr>
<tr>
<td>Yellow</td>
<td>Acute poison Ivy</td>
</tr>
<tr>
<td>Blue</td>
<td>Insect bites</td>
</tr>
<tr>
<td>Pink</td>
<td>Sunburn</td>
</tr>
<tr>
<td>Green</td>
<td>Impetigo – bullous</td>
</tr>
</tbody>
</table>
Bullous Pemphigoid

- Elderly- autoimmune sub-epidermal blistering disorder
- Tense bullae, erythematous base
  - Localized
  - Generalized
- Diagnosis- Biopsy
  - Regular histology
  - Immunofluorescence
- Order lab including indirect pemphigus/ pemphigoid antibodies
Variability of bullous pemphigoid + partial treatment
Treatment of Bullous Pemphigoid

- Topical ultra potent steroids
  
  Watch for secondary infection

- Intralesional steroids

- Tetracyclines
  - 1-2 gms./day
  - Doxycycline line 100-200 mg

- Systemic steroids
  - 0.50 mg/kg day

- Steroid sparing agents
  - Azathioprine
  - Mycophenolate mofetil
  - Dapsone
  - Methotrexate
Treatment of Bullous Pemphigoid

Lacet: Published Online March 6, 2017 http://dx.doi.org/10.1016/S0140-6736(17)30560-3

Hywel C Williams, Fenella Wojnarowska, Gudula Kirtschig, James Mason, Thomas R Godec, Enno Schmidt, Joanne R Chalmers, Margaret Childs, Shernaz Walton, Karen Harman, Anna Chapman, Diane Whitham, Andrew J Nunn, on behalf of the UK Dermatology Clinical Trials Network BLISTER Study Group*

- **Doxycycline versus prednisolone**
  - as an initial treatment strategy for bullous pemphigoid: a pragmatic, non-inferiority, randomised controlled trial
- 100 mg Doxycycline bid
- Prednisolone 0.5 mg./kg/day
- 3 or more blisters/2 or more sites+
  - linear basement membrane C3 or IgG
- Local adjuvant high potency topical steroids allowed for first 3 weeks (30 gms per week)
- 54 UK and 7 German centers

- Assumed that doxycycline would be 25% less effective than corticosteroids with a 37% acceptable margin of non-inferiority
- The primary safety outcome was the proportion with severe, life-threatening, or fatal (grade 3–5) treatment-related adverse events by 52 weeks
- Analysis (modified intention to treat [mITT] for the superiority safety analysis and mITT and per protocol for non-inferiority effectiveness analysis
- used a regression model adjusting for baseline disease severity, age
Results RCT Bullous Pemphigoid Blister Study

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Doxycycline</th>
<th>Prednisolone</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects : 253</td>
<td>132</td>
<td>121</td>
<td>Enrolment 2009-2013</td>
</tr>
<tr>
<td>Week 6 : 3 or fewer blisters</td>
<td>83/112 (74%)</td>
<td>92/101 (91%)</td>
<td>Adjusted difference 18.6% 90% CI 11.1-26.1 within the predefined 37% margin</td>
</tr>
<tr>
<td>Related Severe, life threatening events - week 52</td>
<td>22/121 (18%)</td>
<td>41/113 (36%)</td>
<td>Double the severe or life threatening events</td>
</tr>
<tr>
<td>Deaths</td>
<td>3</td>
<td>11</td>
<td>3.67 x more likely to experience a death on prednisolone</td>
</tr>
</tbody>
</table>

Mean age was 77.7 years (SD 9.7)

173 (68%) of 253 patients had moderate-to-severe baseline disease

Starting patients on doxycycline is non-inferior to standard treatment with oral prednisolone for short-term blister control in bullous pemphigoid and significantly safer in the long-term.
Doxycycline

- 100 mg – original/ generic-capsule + generic pill
- Anti MRSA= 100mg bid
- Lower doses often sufficient anti-inflammatory dose
- 40 mg anti-inflammatory dose not change gut flora
- WHO essential medication list
- Most anti-inflammatory of the tetracyclines
- Avoid Minocycline- drug induced lupus, pigment abnormalities
- Tetracycline 1gm= doxycycline

Common side effects:
- nausea, vomiting
- Urticarial drug reaction
- ↑ risk of a sunburn
- If used during pregnancy or in young children may result in permanent problems with the teeth including changes in their color
## Prednisone - 5 mg tablets

**Antihistamines + Topical steroids**

<table>
<thead>
<tr>
<th>Weight</th>
<th>Prednisone 0.5 mg/ kg/day</th>
<th>Total # of pills</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 kg</td>
<td>20 mg + reduce by 5 mg q5 days</td>
<td>5mg. X 50 pills</td>
</tr>
<tr>
<td>50 kg</td>
<td>30 mg + reduce by 5 mg q5 days</td>
<td>5mg x 105 pills</td>
</tr>
<tr>
<td>60 kg</td>
<td>40 mg + reduce by 5mg q5 days</td>
<td>5mg x 180 pills</td>
</tr>
</tbody>
</table>

**Acute poison ivy**

- Baseline Chest X-ray
- Blood pressure
- Lab- HbA1c, CBC, LFT, creatinine, ?lipids
Impetigo
Excoriations/ Bullous Insect Bites
Case 2 what is the most likely diagnosis?
What is the most likely diagnosis?

<table>
<thead>
<tr>
<th>Red</th>
<th>Psoriasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>Chronic Eczema</td>
</tr>
<tr>
<td>Blue</td>
<td>Inherited Ichthyosis</td>
</tr>
<tr>
<td>Pink</td>
<td>Neuropathy associated callus</td>
</tr>
<tr>
<td>Green</td>
<td>Fungus – Tinea pedis</td>
</tr>
</tbody>
</table>
Case 3: What is the most likely diagnosis?
What is the most likely diagnosis?

<table>
<thead>
<tr>
<th>Red</th>
<th>Psoriasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>Irritant hand eczema</td>
</tr>
<tr>
<td>Blue</td>
<td>Frictional dermatitis</td>
</tr>
<tr>
<td>Pink</td>
<td>Allergic contact dermatitis</td>
</tr>
<tr>
<td>Green</td>
<td>Fungus – Tinea pedis</td>
</tr>
</tbody>
</table>
Look Elsewhere!
Tinea Investigations

- Scraping or nail clipping for culture and sensitivity
  - Scraping from the edge of the lesion
  - Clipping should include the subungal debris
- About 10% direct mycology & 30% culture falsely negative \(\text{(Lily 2006)}\)
- Reasonable to perform 3 cultures before classed as negative
- Can order 1% Hydrocortisone powder in Clotrimazole cream when waiting for the results (order 100 gms)
## Diagnosis of Tinea Pedis

<table>
<thead>
<tr>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
</table>
| Toe webs | • 4<sup>th</sup> & 5<sup>th</sup> space  
• Maceration |
| Plantar | • Moccasin markings, scale |
| Groin | • Annular active boarder  
• Spares scrotum ('♂’s) |
| Body | • Annular lesions  
• Autoinoculation, animals |
Dry skin: What cream should I use:

Fungus:
- **Cicloprox Rx** – 60%  
- Azoles - 70%-80%  
  - Miconazole  
  - Clotrimazole  
  - Econazole  
  - Ketoconazole

X2 per day for 2 weeks
X1 per day for 1 week

- **Allylamines** – 90%  
  - Terbinafine Rx

Recurrences 7-16% per year,  
Use cream x 2 week to prevent recurrences

Dry Skin: Moisturizers

- **Humectants**  
  - Urea  
  - Lactic Acid  
  - Glycerin  
  - Ceramides

- **Lubricants**  
  - Silicone, dimethacane  
  - Lanolin, petrolatum

When in doubt, RX  
1% hydrocortisone powder in Clotrimazole cream  
Twice daily (BID) and give 100 grams
Are these all fungus?

There are 22 conditions that can mimic fungus
Onychomycosis: Demographics by Age only 19% are diagnosed

Source: Scott-Levin PDDA. MAT October 2002 U.S. Data
Classification onychomycosis

Mild
- Distal and lateral subungual
- Dermatophytoma

Moderate
- Proximal subungual
- Superficial white onychomycosis caused by nondermatophytic molds

Severe
- Total dystrophic onychomycosis

Photo’s AK Gupta
Fungal Nail Infections (L.I.O.N.)
Evans EG, Sigurgeirsson B: Br Med J 99

<table>
<thead>
<tr>
<th>Dose and Time</th>
<th>Mycological Cure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terbilinefine 250 od for 3 months</td>
<td>75.7%</td>
</tr>
<tr>
<td>Terbilinefine 250 od for 4 months</td>
<td>80.8%</td>
</tr>
<tr>
<td>Itraconazole 400 od x 1 wk /mo x3</td>
<td>38.3%</td>
</tr>
<tr>
<td>Itraconazole 400 od x 1 wk /mo x3</td>
<td>49.1%</td>
</tr>
</tbody>
</table>

A evidence: Double blind random study of more than 120 patients in each group
Mycological Cure Rates (Pooled Data)

Proportion of Subjects

- **Efinaconazole**: 53-55%
- **Itraconazole**: 54%
- **Terbinafine**: 70-80%
- **Ciclopirox**: 36%

Mycological Cure (Week 52)

Study 1

Proportion of Subjects

- Efinaconazole: 55%
- Vehicle: 17%

*P<0.001

Study 2

Proportion of Subjects

- Efinaconazole: 53%
- Vehicle: 17%

Mycologic Cure defined as negative KOH examination and negative fungal culture

Pathway to the Prevention and Treatment of Toe Onychomycosis

Detail: III Treatment strategies

- Treat the cause
  - Infection with Dermatophytes
  - Manage comorbidities
  - Assess risk based on health status

- Patient centered concerns
  - Provide individualized patient education
  - Engage patient and family in care planning
  - Explore potential barriers to adherence

Treatment of Dermatophytes caused toenail onychomycosis

- % nail involvement
  - >60% = oral terbinafine
  - 20-60% = topical efinaconazole +/- oral terbinafine (>3 nails)
  - <20% = topical efinaconazole

May be combined with:
- Selective debridement
- Oral terbinafine (post oral treatment to improve cure or when onychomycosis persist)

Diabetic Foot – Global View

- Every 20 seconds a lower limb is lost to diabetes somewhere in the world
- Vast majority are preventable through patient centred interprofessional care (integrated, coordinated)
- Diabetic foot screening (high risk foot) is one of the three most cost-savings diabetes interventions – yet the most neglected (others- HbA1c, blood pressure)

Diabetes Control Priorities in Developing Countries

- **Highest level priority:**
  - Cost saving **AND** Highly feasible

- **Type 2 Diabetes**
  - Foot care if high risk
  - Glycemic control to HbA1c < 9%
  - Blood pressure control to BP < 160/95

What percentage of persons with diabetes have a high risk foot?

<table>
<thead>
<tr>
<th>Color</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>20%</td>
</tr>
<tr>
<td>Yellow</td>
<td>6%</td>
</tr>
<tr>
<td>Blue</td>
<td>37%</td>
</tr>
<tr>
<td>Pink</td>
<td>48%</td>
</tr>
<tr>
<td>Green</td>
<td>75%</td>
</tr>
</tbody>
</table>
## Screening – high risk status

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Ulcer yearly incidence/ rate %</th>
<th>Odds ratio (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 0 (no PN, no PVD)</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Group 1 (PN, no PVD or deformity)</td>
<td>4.5%</td>
<td>2.4 (1.1-5)</td>
</tr>
<tr>
<td>Group 2B (PVD)</td>
<td>13.8%</td>
<td>9.3 (5.7-15.2)</td>
</tr>
<tr>
<td>Group 3 PN/ PVD (history of ulcer or amputation)</td>
<td>32.2%</td>
<td>52.7 (27.2-109.8)</td>
</tr>
</tbody>
</table>

Focus on Prevention: 60 Second Screening

- History
- Inspection abnormalities
- Palpate pulse
- Deformity
- Monofilament testing
  (4 out 10 negative)

After Inlow 60 sec exam

Available at

www.diabeticfootscreen.com
www.WoundPedia.com

- Palpate pulse
- Deformity
- Monofilament testing
  (4 out 10 negative)

After Inlow 60 sec exam

Screening for the high-risk diabetic foot: A 60-Second Tool (2012) © Sibbald

Name: _______________________________________________
ID#: ________ Phone #:_____________ Facility:____________
DOB (dd/mm/yy): [ ] [ ] [ ]
Gender: □ M □ F
Years with diabetes: _______
Ethnicity: Black □ Asian □ Caucasian □ Mixed □ Other □
Date of Exam (dd/mm/yy): ________/______/______

CHECK BOTH FEET
(Circle correct response)

"YES" on either foot = HIGH RISK

HISTORY

1. Previous ulcer
   NO              YES
   NO             YES

2. Previous amputation
   NO              YES
   NO             YES

PHYSICAL EXAM

3. Deformity
   NO              YES
   NO             YES

4. Absent pedal pulses
   (Dorsalis Pedis and/or Posterior Tibial)
   NO              YES
   NO             YES

FOOT LESIONS

Remember to check 4th and 5th web spaces/nails for fungal infection and check for inappropriate footwear.

5. Active ulcer
   NO              YES
   NO             YES

6. Ingrown toenail
   NO              YES
   NO             YES

7. Calluses (thick plantar skin)
   NO              YES
   NO             YES

8. Blisters
   NO              YES
   NO             YES

9. Fissure (linear crack)
   NO              YES
   NO             YES

NEUROPATHY

MORE THAN 4/10 SITES LACKING FEELING = "YES"

10. Monofilament exam (record negative reaction):
    a) Right______/10 negatives
    (4 negatives = Yes)
    b) Left_______/10 negatives
    (4 negatives = Yes)

Total # of YES:__
Total # of YES: __

PLAN

a) POSITIVE SCREEN - Results when there are one or more “Yes” responses. Refer to a foot specialist or team for prevention, treatment and follow-up. Emergency diabetes centers, wound care centers, etc. are some options.

b) NEGATIVE SCREEN - Results when there are all “No” responses. No referral required.

These individuals are at increased risk of a foot ulcer and/or infection. Patients should be educated on what changes to observe and report, while waiting for the specialist appointment.

Referral to: ________________
Appointment time: _______ _______

One Year Date for Re-Examination (dd/mm/yy): ________/______/______

Completed By: __________________________      Date: _________________________________

Additional Note: See reverse side for recommendations from the International Diabetes Federation & International Working Group on the Diabetic Foot.

Local referral patterns may vary depending on expertise and available resources.
### Profile: 1266 consecutive PWD

<table>
<thead>
<tr>
<th>ITEM</th>
<th>NO %</th>
<th>YES %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Ulcer</td>
<td>91</td>
<td>9</td>
</tr>
<tr>
<td>Previous Amp</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>Deformity</td>
<td>92.1</td>
<td>7.9</td>
</tr>
<tr>
<td>Absent pulse</td>
<td>88</td>
<td>12</td>
</tr>
<tr>
<td>Active DFU</td>
<td>92.3</td>
<td>9</td>
</tr>
<tr>
<td>Ingrown toenail</td>
<td>81.7</td>
<td>18.3</td>
</tr>
<tr>
<td>Callus</td>
<td>77.7</td>
<td>22.3</td>
</tr>
<tr>
<td>Fissure</td>
<td>89.5</td>
<td>10.5</td>
</tr>
<tr>
<td>Neuropathy</td>
<td>76.6</td>
<td>23.4</td>
</tr>
<tr>
<td>REFERRED DFC</td>
<td>52</td>
<td>48</td>
</tr>
</tbody>
</table>


- Interprofessional team
- Center of excellence
- Footwear- Footcare + VIPs
- Reduced amputations 68-72%

Julia Lowe, R. Gary Sibbald, Nashwah Y. Taha, Gerald Lebovic, Carlos Martin, Indira Bhoj, Rolinda Kirton, Brian Ostrow, and the Guyana Diabetes and Foot Care Project Team*
Lets go to the video tape!
Simplified 60 Second Screen Tool (2012)©
Participants have:

• Analyzed dermatological conditions with new eyes
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• Examined persons with diabetes for a high risk foot to avoid lower limb amputation and premature death