Common Infections of the Skin
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Candida of Nails

- Occurs in persons who have hands in water
- Green nails represent the co-pathogen which is pseudomonas

TREATMENT:
- Fluconazole 150 mg qd x1 month PLUS Ciprofloxacin 500 bid x 2 weeks
  OR
  Thymol 2-4% soak 20 mins bid x 3 months and tobramycin or gentamycin ophthalmologic drops

How to diagnose

- Not all dystrophic nails= onychomycosis
- KOH-difficult to do and operator dependent
- CULTURE is gold standard but takes 3 weeks to grow out.
- Now PCR-used in Europe with high sensitivity and specificity
- Cost effective and results in 24-72 hours

Onychomycosis

- Topical treatment –use for the right type of lesions
- Naftin gel for small superficial lesions
- Penlac (Ciclopirox 8%) reported to work 35-52% of the time
  – cost: expensive
Right type of lesions for topicals

- Lunula not affected
- Less than 5 nails affected
- No thickening of nails
- No separation of nail plate on sides

- Griseofulvin-least hepatotoxic but lower efficacy- 250 mg bid x 12-18 months
- Fluconazole- 150 mg qweek for more than 6 months –July 2012 Dermat Tx Gupta AK et al
- Itraconazole- can pulse it- 400 mg qd x 7 days q month x 4 months

Terbinafine (Lamisil)

- Still the leader of the pack-most effective in terms of INITIAL and LONG-TERM cure rate.
- DOSE: 250 mg qd Continuously x 3 months for fingernails and x4 months for toenails (July 2012) i.e. no pulsing

<table>
<thead>
<tr>
<th>Baseline</th>
<th>1 yr</th>
<th>5 yr</th>
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<tbody>
<tr>
<td>Terbinafine</td>
<td>77%</td>
<td>75%</td>
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<tr>
<td>Itraconazole</td>
<td>70%</td>
<td>50%</td>
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<tr>
<td>Grispeg</td>
<td>41%</td>
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<tr>
<td>Fluconazole</td>
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Liver toxicity

- Transaminase elevation 0.4% to 1% with terbinafine and intraconazole
- Transaminase elevation does not predict liver failure
- Liver failure 1/100,000
- Terbinafine has gone generic

What about laser?

- Photo-inactivation laser and destructive laser
- 4 studies-2 – no results; 2 show results but with recurrence. Gp treated with laser and topical had fewer recurrences.

Dissecting Cellulitis of Scalp

- Occurs in persons of color
- Culture for tinea but usually bacterial
- Culture and ask lab to provide identification of organism regardless of colony count
- Can take 1-2 years to treat with long-term antibiotics

Tinea Capitis

- Scaling and alopecia
- Examine all children in the family
- “Brush” culture and begin empiric therapy
- Treatment
  - Gris-PEG: 15-25mg/day x 6 weeks
  - Terbinafine 2-4 weeks
  - 62.5mg/kg(10-20kg)
  - 125 mg/day(20-40 kg)
  - 250 mg/day(>40 kg)
**Cutaneous Tinea**
- KOH is helpful in distinguishing tinea from eczema
- Topical antifungals x 4-6 weeks
- Just say NO to Lotrisone PLEASE!

**Pitted Keratolysis**
- May be confused with tinea on foot
- See pits
- Bad odor
- From bacteria (corynibacteria)-topical erythromycin bid

**Intertrigo**
- Under pannus and breasts
- Always a component of candida
- Blow dry area
- Topical antifungals
- Tucks pads (wet to dry dressing)

**Erosio interdigitalis blastomycetica**
- Candida and bacteria between toes or fingers
- Spreads to DORSUM of foot and has impetiginous look
- Treatment:
  - Drying agents: Burow’s soaks (aluminum acetate) 20 mins bid
  - Antibiotics for staph aureus
  - Topical or po antifungals
  - Mild topical steroid for itch
**Tinea Versicolor**

Treatment:
- for localized areas, topical antifungal otherwise:
  - Ketoconazole (Nizoral) 200 mg po daily x 4 days - NOT USING THIS ANYMORE
  - Fluconazole 400 mg x 1; tebinafine 250 qd x 7 days

**Recurrent Staph Infection**

- Tx for methcillin resistant staph (MRSA) right off the bat: Doxycycline, septra, clinda and cipro
- Eradicate staph for 3 months by adding rifampin 600 qd x 5 days (watch drug-drug interactions) or
- Mupiricin intranasally qd for first 5 days of every month

**Recurrent skin infection**

- UNDERLYING disease that could be portal of entry
- Dry skin-lubricate with grease
- Eczema/Contact Dermatitis-TAC and lubrication
- Psoriasis-staph exacerbates psoriasis and psoriasis portal of entry
- Tinea- portal of entry-tx with antifungals

**If not improving**

- Was patient treated long enough?
  Once hair structures are involved or deep tissues, treatment time may be longer
Don’t forget strep

- Strep: Doxycycline and septra may not cover strep
- Cipro/levo do not cover strep
- Add antibiotic that covers strep-
  Cephalosporins or Dicloxicillin

Jacobs et al Diagn Microb Inf Dis 2007, March

Cellulitis

- Goal in study was to have dermatologists diagnose cellulitis vs other diseases
- 635 pts seen-67% had cellulitis N=425
- 33% had OTHER-eczema, lymphedema, lipodermatosclerosis

Levell et al Br J of Dermatol (BJD) 2011 Feb

Take Home Points:

- Of the 425 with cellulitis, 30% had predisposing dermatologic disease like tinea, eczema, psoriasis (treat underlying dermat disease!!)
- Hospitalization was averted for 96% of those with cellulitis (p.o. antibiotics with close follow-up)

- Does the patient really have cellulitis?
- Is there an underlying dermatologic cause that contributes to condition-if treated could prevent repeated episodes?
- Does this patient require hospitalization?
Venous Insufficiency Ulcer

- **Control Edema**
  - Elevation of leg above heart 2 hours twice daily
  - Walk, don’t sit
  - Compression
- Diuretics overused and not of benefit unless fluid retention due to central problem is present (CHF, CRF)
- Create healing wound environment
  *lymphedema/venous ulcers biggest risk factor for recurrent cellulitis (Tay JAAD 2015)

Venous Insufficiency Ulcer

- **Metrogel** on ulcer-decreases anaerobes
- **Semipermeable Dressing** (Hydrosorb, Duoderm, etc)
- **Compression**
  Unna boot covered by Coban –
  This both provides graded compression AND creates the correct wound environment
  - Change dressing weekly
  - Refer to dermatology if not healing

When is a Leg Ulcer Infected?

- All leg ulcers are colonized with bacteria. Surface culture of little value
- Suspect infection if:
  - Increasing pain
  - Surrounding erythema, cellulitis
  - Focal area not healing and undermining present
- Treat superficial contaminant with vinegar/Burow’s soaks

Was it an inflammatory condition and not an infection?

- Erythema nodosum
- Pyoderma gangrenosum
- Hidradenitis suppurativa
### Erythema Nodosum
- Not an infection
- Reaction pattern to strep, cocci, oral contraceptives, estrogen replacement, inflammatory bowel disease, TB and INFLAMMATORY BREAST DISEASE
- Painful, red nodules lower legs
- Pt’s feel bad
- Biopsy diagnosis: inflammation of fat
- Treatment with bedrest, NSAIDS, prednisone

### Pyoderma Gangrenosum
- Not an infectious disease
- A “reactive” inflammatory disease
- Biopsy diagnosis
- Surgical I&D/excision make it worse

### Treatment
- Do Not I&D
- Prednisone/cyclosporine
- Thalidomide
- Tacrolimus (protopic)
- Tx underlying disease

### Hidradenitis Supparativa
- Not an infectious disease
- Disease of apocrine glands
- Treatment
  - IL Kenalog
  - Minocycline
  - NEW: clindamycin and rifampin for 12 weeks or acitretin
- NOW Isotretinoin being used again-best in younger and thinner pts.
  - Surgery
  - NOT Antibiotics for bacteria i.e. 10 day course
  - Biologics: infliximab (remicade), adalimumab (humira)
Inflammatory Diseases

• Trying to find specific cytokines in tissues and target them with biologics

Orolabial Herpes Simplex

• No prophylaxis
• Treat when symptomatic
• Sun exposure can activate HSV-ACV 800 mg 1 hour before sun exposure

Warts

• HSV can give an erythema multiforme reaction
• Usually painful targetoid lesions on elbows and knees

60 different wart types
We have been exposed by the age of 2 to cutaneous warts
60 ways to treat-only 50% efficacy
Tx every 3 wks
LN2 most common
Sal acid effective but use nightly for 3 months at least
Molluscum

- In normal host-self-limited
- LN2 works
- Picking center works
- Retinoids /imiquimod do not work