Outline

Part 1:
- Approach to the itchy patient
- Eczemas
- Fungal infections of the skin
- Onychomycosis

Part 2:
- Seborrheic dermatitis
- Psoriasis as a systemic disease
- Acne in adults
- Topical immunomodulators
- Sunscreens

Seborrheic Dermatitis

- Etiology: Triggered by a yeast on the skin called Pityrosporum ovale
- Chronic condition that waxes and wanes
- May flare with illness, infection, meds
- HIV infection (virtually 100% affected)
- Parkinson’s patients frequently affected
- Patients given antipsychotics that have Parkinson’s like effects also affected
Seborrheic Dermatitis

- Greasy, yellow scale on erythematous patches and plaques
- Scalp, behind ears, nasolabial fold, and hairy areas (beard, central chest, groin, eyelid margin)
- Non-pruritic

Seborrheic Dermatitis Treatment

- **Topical steroids**
  - Face: hydrocortisone 2.5% cream (with or without ketoconazole cream) BID x 14d
  - Scalp: fluocinonide scalp solution
- **Ketoconazole cream**
  - Use with HC 2.5% cream for 2-14 d, then solo therapy for maintenance
- **Other- sulfur based**
  - Shampoo: Ketoconazole, Zinc Pyrithione, Selenium sulfide, Tar, Salicylic acid
Psoriasis

- 2.1% of the US population has psoriasis
- Most frequent onset 15-35 years
- Hereditary component (36% of patients have a family member with psoriasis)
- 4.5 million adults, 1.5 million have moderate to severe disease (>3% of body)
- Overall cost to treat exceeds $3 billion per year in the US

Psoriasis

- Erythematous, well demarcated plaques with an adherent, silvery scale
- Involves elbows, knees, scalp, umbilicus
- Nail involvement (pits, subungual hyperkeratosis, oil spots)
- May be extensive
- Look for typical areas of involvement

Question 3: Which of the Following is NOT True about Psoriasis

1. Psoriasis affects 2-3% of the US population
2. Psoriasis is an independent risk factor for MI
3. Pustular psoriasis is life-threatening
4. Patients with psoriasis have an increased mortality rate
5. Smoking has no influence on psoriasis severity

Source: National Psoriasis Foundation: www.psoriasis.org
Psoriasis Aggravators
- Medications
  - Systemic steroids (withdrawal)
  - Beta blockers
  - Lithium
  - Hydroxychloroquine
- Infections
  - Strep- children and young adults
  - Candida (balanitis)
- Trauma
- Sunburn
- Severe life stress
- HIV
  - 6% of AIDS patients develop psoriasis
- Alcohol for some
- Smoking for some

Severity of Psoriasis
- Mild: 0-2% body surface area
- Moderate: 3-10% BSA
- Severe: >10% BSA, or marked/disabling involvement of special sites: face, hands, feet, genitalia
- Treatment protocols are based on severity of disease, interference with function, location

* Using the size of the patient’s palm to represent 1% BSA

Psoriatic Arthritis
- 6-40% of psoriatic patients have arthritis
- In 20% of cases the arthritis starts before the psoriasis, 20% same time, and 60% of the time the skin disease appears first
- Associated with HLA-B27
- Treatment with methotrexate, cyclosporine, or biologics

Psoriatic Arthritis Types
- Monoarticular or polyarticular acral type (70%)
- Distal interphalangeal involvement (16%)
- Symmetrical rheumatoid arthritis type (RF negative) (15%)
- Arthritis mutilans (osteolysis and digital shortening) (5%)
- Axial type (spondylitic type) (5%)
Psoriasis and Comorbidities

- Psoriasis linked with:
  - Arthritis
  - Cardiovascular disease (including myocardial infarction)
  - Hypertension
  - Obesity
  - Diabetes
  - Metabolic syndrome
  - Malignancies
    - Lymphomas, SCCs, solid organ malignancies
    - Higher mortality

- Psoriasis patients more likely to:
  - Be depressed
  - Drink alcohol
  - Smoke

Psoriasis - independent risk factor for MI
Risk for MI -
- Greatest in young patients with severe psoriasis
- Attenuated with age
- Remains increased after controlling for other CV risk factors
- Magnitude of association is equivalent to other established CV risk factors
Psoriasis and Comorbidities

- In patients with psoriasis, important to
  1. Recognize these associations
  2. Screen for and treat the comorbidities according to American Heart Association, American Cancer Society, and other accepted guidelines

Treatment for Psoriasis

- **Topical therapy**
  - Steroid ointment (start mid-potency)
  - Calcipotriene (Dovonex)
  - Tazarotene (Tazorac)
  - Coal tar
  - Tacrolimus (Protopic) / pimecrolimus (Elidel)
  - Combination agents: calcipotriene/betamethasone dipropionate (Taclonex)

- **Phototherapy** - refer to dermatologist
  - Broadband UVB or Narrowband UVB
  - PUVA: psoralens + UVA
  - Excimer laser

- **Systemic therapy** - refer to dermatologist
  - Acitretin (oral retinoid)
  - Methotrexate
  - Cyclosporine
  - Biologics (etanercept, infliximab, adalimumab, alefacept, ustekinumab)

*Systemic steroids are NOT on this list!*

Psoriasis Therapy Is Complex

- **Topicals**
  - Corticosteroids
  - Calcipotriene
  - Tazarotene

- **Systemics**
  - Acitretin
  - MTX
  - CsA

- **Biologics**
  - Alefacept
  - Infliximab
  - Etanercept

**Combination Therapy**

**Sequential Therapy**

**Rotational Therapy**

Source: National Psoriasis Foundation.
Psoriasis Treatment
Case 1: Mild

- Sequential Therapy
  - Phase 1: Induction
    - Topical steroid (halobetasol propionate 0.05%) PLUS Calcipotriene twice daily for 2-4 weeks to elbows/knees
  - Phase 2: Transition
    - Calcipotriene twice daily. Use combination with topical steroids twice daily only on weekends
  - Phase 3: Maintenance
    - Calcipotriene twice daily only
    - Moisturize whole body
Psoriasis Treatment
Case 2: Inverse Psoriasis
- Mild steroids 1st: HC, desonide, or aclovate
- Calcipotriene too irritating for most
- Topical tacrolimus or pimecrolimus
- Concurrent yeast/tinea triggering psoriasis?

Lebwohl, et al. JAAD 2004;51:723-30

Case 3
Psoriasis Treatment
Case 3: Moderate to severe

Treatment Depends Upon:
- Child bearing potential: NO ACITRETIN
- Malignancy history: avoid biologics, cyclosporine. Consider acitretin.
- Hepatitis C: consider etanercept
- HIV: acitretin, phototherapy
- Psoriatic arthritis: MTX, cyclosporine and TNF blockers

Psoriasis Treatment
Case 4: Guttate Psoriasis

- 3-22% of psoriasis patients
- Raindrops
- Young patients after strep infection
  - Consider checking ASO, throat culture, treating for strep
- May clear spontaneously or evolve into plaques
- UVB best anecdotally (refer to dermatology)
Case 5

- 55 yr old male
- COPD, HTN, non-small cell lung cancer and mild psoriasis
- Presents with low grade fever and diffuse erythema (erythroderma)
- Meds:
  - ACE inhibitor x 3 months
  - 1 week of pulsed prednisone with rapid taper for COPD flare
Psoriasis Treatment Case 5: Pustular Psoriasis
- Pustular and erythrodermic variants of psoriasis can be life-threatening
- Most commonly seen in patients who carry a diagnosis of psoriasis who have been given systemic steroids and now are rebounding
- High cardiac output state with risk of high output failure
- Electrolyte imbalance (Ca^{2+}), respiratory distress, temperature dysregulation
- Best treated with hospitalization and cyclosporine or acitretin

Acne Treatment Options-Topical
- Benzoyl peroxide
- Antibiotics- clindamycin, erythromycin, combination benzoyl peroxide and either of above
- Sulfur based preparations
- Azelaic acid
- Retinoids

Acne Treatment Options-Systemic
- Antibiotics
  - Doxycycline 100 mg po BID
  - Minocycline 50-100 mg po BID
  - Tetracycline 500 mg po BID
- Oral contraceptives
- Spironolactone
- Isotretinoin
Pathogenesis and Clinical Features of Acne

- **Pathogenesis** (treatment targets)
  - Excess sebum
  - Abnormal follicular keratinization
  - Inflammation from *Propionibacterium acnes*

- **Clinical features**
  - Non-inflammatory open and closed comedones (“blackheads and whiteheads”)
  - Inflammatory papules and pustules
  - Cystic nodules

Acne Vulgaris Old Wives Tales

- Acne is not related to skin dirt. Washing more doesn’t help!!!
- Acne vulgaris is not related to diet; chocolate and greasy food do not cause or exacerbate acne

Acne Treatment

- Mild inflammatory acne- benzoyl peroxide + topical antibiotic (clindamycin, erythromycin)
- Moderate inflammatory acne- oral antibiotic (tetracyclines) (with or without topicals)
- Comedonal acne - topical retinoid
- Acne with hyperpigmentation- azelaic acid
- Acne/roacea overlap or if also has seborrheic dermatitis- sulfur based preparations
- Hormonal component- oral contraceptive, spironolactone
- Cystic, scarring- isotretinoin
  - Teratogenic, hypertriglyceridemia, transaminitis, cheilitis, xerosis, alopecia (telogen effluvium)

Topical Retinoids

- **Side effects**
  - Irritating- redness, flaking/dryness
  - May flare acne early in course
  - Photosensitizing
  - Tazarotene is category X in pregnancy !!!
Topical Retinoids- How to Use Them

- Warn patients of side effects
- Start with a low dose: tretinoin 0.025% cream
- Wait 20-30 minutes after washing face to apply
- Use 1-2 pea-sized amount to cover the whole face
- Start BIW or TIW
- Moisturize 30 minutes after applying
- If using another topical acne therapy, use on alternate days
- Sunscreen daily
Acne in Adult Women

- Often related to excess androgen or excess androgen effect on hair follicles
- Other features of PCOD are often not present—irregular menses, etc.
- Serum testosterone can be normal
- Spironolactone 50 mg-100mg daily with or without OCP’s can be very effective, especially in women with lower facial acne
Topical Immunomodulators

- Tacrolimus (0.03%, 0.1%) and Pimecrolimus (1%)
- Approved as second line for the treatment of atopic dermatitis in patients ≥ 2 years
- Anti-inflammatory
- Avoids steroid side effects
  - Atrophy/striae, telangiectasias, hypopigmentation
- Very useful for dermatitis in areas prone to steroid side effects
  - especially on facial skin, intertriginous areas

Topical Immunomodulators and Cancer

- 29 cases of cancers in children and adults associated with use of these agents
  - lymphomas, SCC’s, sarcomas
- Causality not proven

Tacrolimus and Pimecrolimus

Black box warning

Information for Healthcare Professionals

Tacrolimus (marketed as Protopic)

6/2006: The issues described in this alert have been addressed in product labeling.

FDA ALERT [03/2005] The FDA has issued a public health advisory to inform healthcare professionals and patients about a potential cancer risk from use of Protopic (tacrolimus). This concern is based on information from animal studies, case reports in a small number of patients, and knowledge of how drugs in this class work. It may take human studies of ten years or longer to determine if use of Protopic is linked to cancer. In the meantime, this risk is uncertain, and FDA advises Protopic should be used only as labeled, for patients after other prescription treatments have failed to work or cannot be tolerated.
FDA Response

- Second line, short-term, intermittent treatment of atopic dermatitis
- Avoid in children < 2 years
- Use intermittently
- Do not use in children or adults with a weakened immune system
- Use the minimum amount to control the patient’s symptoms
- In animals, increasing the dose resulted in higher rates of cancer

Topical Immunomodulators
When to use

- Eyelid dermatitis
- Refractory psoriasis on upper thighs, scrotum, glans penis
- Otherwise use cheaper alternatives first
  - Tacrolimus = triamcinolone acetonide 0.1%
  - Pimecrolimus = hydrocortisone 2.5%
- If not responding to treatment, consider a skin biopsy

FROM THE ACADEMY

Authors’ Note: On January 13, 2006, the Food and Drug Administration approved the labeling change that broadened the indication for topical calcineurin inhibitors. This article was submitted prior to that announcement. Readers may find the broadening to the indication to the article. Additional information and resources are available at http://www.aad.org/professionals/Advocacy/Research/Information.htm.

The use of topical calcineurin inhibitors in dermatology: Safety concerns

Report of the American Academy of Dermatology Association Task Force

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Review of this body of information led meeting participants to conclude that at the current time the risk of cancer from the use of TCIs remains theoretical and unknown. AE reporting and animal models have suggested there may be a risk. No causal relationship has been proven between TCI use and the development of lymphoma or nonmelanoma skin cancer. The uncertainty of carcinogenesis risk needs to be appropriately conveyed. TCIs are useful.

SUNSCREENS 101
Why Sunscreens?
- Prevention of skin cancer
- Prevention of photosensitivity (UVA)
  - Medications
  - Diseases: e.g. lupus erythematosus
- Prevention of skin aging

UV-B and UV-A

<table>
<thead>
<tr>
<th>UVB (290-320nm)</th>
<th>UVA (320-400nm)</th>
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<tbody>
<tr>
<td>Burning rays of the sun</td>
<td></td>
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<tr>
<td>Filtered by the ozone layer</td>
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<tr>
<td>Most carcinogenic</td>
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<tr>
<td>Primary target of sunscreens</td>
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<tr>
<td>Tanning rays</td>
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<tr>
<td>Aging rays</td>
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</tbody>
</table>
  - a complete UVA blocker = anti-aging cream
  - Cause of medication related photosensitivity (e.g. HCTZ)
| Harder to block |

Sunscreen 101
- SPF refers ONLY to UVB blockage
- There is no standardized measure of UVA blockade (yet)
- Water resistant
  - Maintain SPF after 40 minutes of immersion in water
- Water proof
  - Maintain SPF after 80 minutes of immersion in water

Chemical vs. Physical Sunscreens
- Chemical sunscreens have UV absorbing chemicals
  - Benzophenone, Parsol 1789, Mexoryl, etc
  - Chemical UVA blockers are photo-unstable (degrade)
    - Stabilizers are now common (e.g. Helioplex)
- Physical sunscreens scatter or block UV rays
  - Zinc and titanium are physical blockers
  - More photostable
  - Block UVA well
  - Inelegant (white film)
What Sunscreen Should I Buy?
- SPF must be double digits (preferably ≥30)
- Broad spectrum (UVA AND UVB protection)
- UVA blockade does not parallel SPF on the label
- Best UVA protection in US:
  - TiO₂, ZnO, Mexoryl, or Parsol 1789 with Helioplex
- Examples:
  - Neutrogena Ultrasheer SPF 85 (Parsol 1789 with helioplex)
  - Anthelios XL 50+ (Mexoryl) (now approved in US as SPF 40)

How to Apply Sunscreen
- Put it on every morning before leaving the house (at least 20 min before sun exposure)
- For heavy sun exposure: reapply 20 minutes after exposure begins
- Reapply every 2 hours or after swimming/sweating/towel-drying
- Apply liberally (1oz application covers the body)
- Put sunscreen on your children (75% of skin cancers are produced by sun exposure BEFORE the age of 18!!)

What to Tell Your Patients
- Use sunscreen, SPF ≥ 30 EVERYDAY
- Avoid mid-day sun/Short Shadow Seek Shade
- Wear protective clothing (hats)
- Put sunscreen on your children
- Ask your doctor to check your skin lesions (most persons with melanoma have been seeing doctors regularly for years)
- Vitamin D Supplement for those at risk for osteoporosis who obey stringent sun-protections practices
  - E.g. organ transplant patients

American Academy of Dermatology and AAD Association
Position Statements
- The American Academy of Dermatology recommends that an adequate amount of vitamin D should be obtained from a healthy diet that includes foods naturally rich in vitamin D, foods/beverages fortified with vitamin D, and/or vitamin D supplements. Vitamin D should not be obtained from unprotected exposure to ultraviolet (UV) radiation.
- Unprotected UV exposure to the sun or indoor tanning devices is a known risk factor for the development of skin cancer.
- There is no scientific/validated, safe threshold level of UV exposure from the sun or indoor tanning devices that allows for maximal vitamin D synthesis without increasing skin cancer risk.
- To protect against skin cancer, a comprehensive photoprotective regimen, including the regular use and proper use of a broad-spectrum sunscreen, is recommended.

Taken from: American Academy of Dermatology website, 1/25/11
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