Common Dermatologic Disorders: Tips for Diagnosis and Management

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Disclosure

• Nothing to disclose
Outline

• Approach to the itchy patient
• How to really treat eczema
• Psoriasis as a systemic disease
• Acne in the adult
• The red leg
• Drug eruptions
• Skin cancer (melanoma)

Approach to the itchy patient
Pruritus = the sensation of itch

• Itch can be divided into four categories:
  1. Pruritoceptive
     • Generated within the skin
     • Itchy rashes: scabies, eczema, bullous pemphigoid
  2. Neurogenic
     • Due to a systemic disease or circulating pruritogens
     • Itch “without a rash”
  3. Neuropathic
     • Due to anatomical lesion in the peripheral or central nervous system
     • Notalgia paresthetica, brachioradial pruritus
  4. Psychogenic itch

Pruritus- History

• Suggest cutaneous cause of itch:
  – Acute onset (days)
  – Related exposure or recent travel
  – Household members affected
  – Localized itch
• Itch is almost always worse at night
  – does not help identify cause of pruritus
• Aquagenic pruritus suggests polycythemia vera
• Dry skin itches
Pruritus- Physical Exam

Are there primary lesions present?

- yes
  - Pruritoceptive

- no
  - Neurogenic, Neuropathic, or Psychogenic

Question 1

- 57 M with 3 months of itch
- started on his lower extremities
- No response to antifungal creams and OTC hydrocortisone cream
- He showers 2 x/day with hot water, uses an antibacterial soap, and does not moisturize

Nummular dermatitis
Case 2
68M with ESRD complains of generalized itch

Linear Erosions with “Butterfly” of Sparing
Pruritus “Without Rash”

Causes of Neurogenic Pruritus
(Pruritus Without Rash)

• 40% will have an underlying cause:
  • Dry Skin
  • Liver diseases, especially cholestatic
  • Renal Failure
  • Iron Deficiency
  • Thyroid Disease
  • Low or High Calcium
  • HIV
  • Medications
  • Cancer, especially lymphoma (Hodgkin’s)
Linear erosions due to pruritus in patient with cholestatic liver disease

Workup of “Pruritus Without Rash”

- CBC with differential
- Serum iron level, ferritin, total iron binding capacity
- Thyroid stimulating hormone and free T4
- Renal function (blood urea nitrogen and creatinine)
- Calcium
- Liver function tests
  - total and direct bilirubin, AST, ALT, alkaline phosphatase, GGT, fasting total plasma bile acids
- HIV test
- Chest X-ray
- Age-appropriate malignancy screening, with more advanced testing as indicated by symptoms
Neuropathic Pruritus

- **Notalgia paresthetica**
- **Brachioradial Pruritus**
  - Localized and persistent area of pruritus, without associated primary skin lesions, usually on the back or forearms
- **Workup= MRI!!**
  - Cervical and/or thoracic spine disease in ~100% of patients with brachioradial pruritus and 60% of patients with notalgia paresthetica
- **Treatment-** capsaicin cream TID, gabapentin
  - Surgical intervention when appropriate

Notalgia Paresthetica
Treatment of Pruritus

• Treat the underlying cause if there is one
• Dry skin care
  – Short, lukewarm showers with Dove or soap-free cleanser
  – Moisturize with a cream or ointment BID
    • Cetaphil, eucerin, vanicream, vaseline, aquaphor
• Sarna lotion (menthol/camphor)
• Topical corticosteroids to inflamed areas
  – Face- low potency (desonide ointment)
  – Body- mid to high potency (triamcinolone acetonide 0.1% oint)

Antihistamines for Pruritus

• Work best for histamine-induced pruritus, but may also be effective for other types of pruritus
• First generation H1 antihistamines
  – hydroxyzine 25 mg QHS, titrate up to QID if tolerated
• Second generation H1 antihistamines
  – longer duration of action, less somnolence
  – cetirizine, loratidine, desloratidine, fexofenadine
Systemic Treatments for Pruritus

- **Doxepin** - 10mg QHS, titrate up to 50 mg QHS
  - Tricyclic antidepressant with potent H1 and H2 antihistamine properties
  - Good for pruritus associated with anxiety or depression
  - Anticholinergic side effects
- **Paroxetine (SSRI)** - 25-50 mg QD
- **Mirtazepine** - 15-30 mg QHS
  - H1 antihistamine properties
  - Good for cholestatic pruritus, pruritus of renal failure
- **Gabapentin** - 300 mg QHS, increase as tolerated
  - Best for neuropathic pruritus, pruritus of renal failure

**Eczemas**
Eczema (=dermatitis)

- Group of disorders characterized by:
  1. Itching
  2. Intraepidermal vesicles (= spongiosis)
     - Macroscopic (you can see)
     - Microscopic (seen histologically on biopsy)
  3. Perturbations in the skin’s water barrier
  4. Response to steroids

Eczemas

- Atopic Dermatitis
- Hand and Foot Eczemas
- Asteatotic Dermatitis (Xerotic Eczema)
- Nummular Dermatitis
- Contact Dermatitis (allergic or irritant)
- Stasis Dermatitis
- Lichen Simplex Chronicus
Eczema
Good Skin Care Regimen

- Soap to armpits, groin, scalp only (no soap on the rash)
- Short cool showers or tub soak for 15-20 minutes
- Apply medications and moisturizer within 3 minutes of bathing or swimming

Eczema
Topical Therapy

- Choose agent by body site, age, type of lesion (weeping or not), surface area
- For Face:
  - Hydrocortisone 2.5% Ointment BID
  - If fails, aclometasone (Aclovate), desonide ointment
- For Body:
  - Triamcinolone acetonide 0.1% ointment BID
  - If fails, fluocinonide ointment
- For weepy sites:
  - soak 15 min BID with dilute Burow’s solution (aluminum acetate) (1:20) for 3 days
Eczema
Oral Antipruritics

• Suppress itching with nightly oral sedating antihistamine
• If it is not sedating it doesn’t help
• Diphenhydramine
• Hydroxyzine 25-50mg
• Doxepin 10-25mg

Eczema
Severe Cases

• Refer to dermatologist
• Do not give systemic steroids
• We might use phototherapy, hospitalization, immunotherapy

• Beware of making the diagnosis of atopic dermatitis in an adult- this can be cutaneous T cell lymphoma!
Psoriasis pearls for the internist

Psoriasis

• 2-3% of the US population has psoriasis
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

Psoriasis and Comorbidities

- Psoriasis is 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
Pustular Psoriasis

• Pustular and erythrodermic variants of psoriasis can be life-threatening
• Most common in patients with psoriasis who are given systemic steroids
• High cardiac output state with risk of high output failure
• Electrolyte imbalance (hypo Ca^{2+}), respiratory distress, temperature dysregulation
• Treat with hospitalization and cyclosporine or acitretin or TNF alpha blocker (infliximab)

Approach to the Adult Acne Patient
Acne Pathogenesis, Clinical Features, Therapeutics

Pathogenesis
- Excess sebum
- Abnormal follicular keratinization
- Propionibacterium acnes
- Inflammation

Clinical features
- Oily skin
- Non-inflammatory open and closed comedones ("blackheads and whiteheads")
- Inflammatory papules and pustules
- Cystic nodules

Therapeutics
- Retinoids, spironolactone
- Salicylic acid, retinoids
- Benzoyl peroxide
- Antibiotics (topical and oral)
- Spironolactone
- OCPs
- Isotretinoin

Acne Treatment

- Mild inflammatory acne
  - benzoyl peroxide + topical antibiotic (clindamycin, erythromycin)
- Moderate inflammatory acne
  - oral antibiotic (tetracyclines) (with topicals)
- Comedonal acne
  - topical retinoid (tretinoin, adapalene, tazarotene)
- Acne with hyperpigmentation
  - azelaic acid
- Acne/roacea overlap / 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 !!!!

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 OCPs
Perioral Dermatitis

- Women aged 20-45
- Papules and small pustules around the mouth, narrow spared zone around the lips.
- Asymptomatic, burning, itching
- Causes
  - Steroids (topical, nasal inhalers)
  - Fluorinated toothpaste
  - Skin care creams with petrolatum or paraffin base or Isopropyl myristate (vehicle)

Perioral Dermatitis: Treatment

- Stop topical products
- Topical Antibiotics
  - clindamycin
- Oral tetracyclines
- Warn patients of rebound if coming off topical steroids
- Avoid triggers
Acne Pearls

• Retinoids are the most comedolytic
• Topical retinoids can be tolerated by most
  • 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
• Tazarotene is category X in pregnancy
• Back acne often requires systemic therapy
• Acne in adult women- use spironolactone
  – No need to check K⁺

The red leg:
Cellulitis and its (common) mimics

• Cellulitis/erysipelas
• Stasis dermatitis
• Contact dermatitis
Cellulitis

- Infection of the dermis
- Gp A beta hemolytic strep and Staph aureus
- Rapidly spreading
- Erythematous, tender plaque, not fluctuant
- Patient often toxic
- WBC, LAD, streaking

- Rarely bilateral
- Treat tinea pedis

Stasis Dermatitis

- Often bilateral, L>R
- Itchy and/or painful
- Red, hot, swollen leg
- No fever, elevated WBC, LAD, streaking
- Look for: varicosities, edema, venous ulceration, hemosiderin deposition
- Superimposed contact dermatitis common
Contact Dermatitis

• Itch (no pain)
• Patient is non-toxic
• Erythema and edema can be severe
• Look for sharp cutoff
• Treat with topical steroids

Contact Dermatitis

• Common causes
  – Applied antibiotics (Neomycin, Bacitracin)
  – Topical anesthetics (benzocaine)
  – Other (Vitamin E, topical diphenhydramine)
• Avoid topical antibiotics to leg ulcers
  – Metronidazole OK (prevents odor)
## The Red Leg:
Key features of the physical exam:

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<th>Warmth</th>
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<th>Streaking</th>
<th>Lymphadenopathy</th>
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## Drug Eruptions
Drug reactions:
3 things you need to know

1. Type of drug reaction
2. Statistics:
   – Which drugs are most likely to cause that type of reaction?
3. Timing:
   – How long after the drug started did the reaction begin?

Case

• 46 year old HIV+ man
  admitted to ICU for r/o sepsis
• Severely hypotensive → IV fluids, norepinephrine
• Sepsis? → antibiotics are started
• At home has been taking trimethoprim/sulfamethoxazole for UTI
**Question 3:**
Per the drug chart, the most likely culprit is:

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Admit day

Rash onset
Drug Eruptions: Degrees of Severity

Simple

Morbilliform drug eruption
Minimal systemic symptoms

Complex

Drug hypersensitivity reaction
Stevens-Johnson syndrome (SJS)
Toxic epidermal necrolysis (TEN)
Systemic involvement
Potentially life threatening

Common Causes of Cutaneous Drug Eruptions

- Antibiotics
- NSAIDs
- Sulfa
- Allopurinol
- Anticonvulsants
Morbilliform (Simple) Drug Eruption

- Begins 5-10 days after drug started
- Erythematous macules, papules
- Pruritus
- No systemic symptoms
- Risk factors: EBV, HIV infection
- Treatment:
  - D/C medication
  - diphenhydramine, topical steroids
- Resolves 7-10 days after drug stopped
  - Gets worse before gets better

Hypersensitivity Reactions

- Skin eruption associated with systemic symptoms and alteration of internal organs
- “DRESS” - Drug reaction w/ eosinophilia and systemic symptoms
- “DIHS” = Drug induced hypersensitivity syndrome
- Begins 2-6 weeks after medication started
  - time to abnormally metabolize the medication
- May be role for HHV6
- Mortality 10-25%
Hypersensitivity Reactions

Drugs

- Aromatic anticonvulsants
  - phenobarbital, carbamazepine, phenytoin
  - THESE CROSS-REACT
- Sulfonamides
- Lamotrigine
- Dapsone
- Allopurinol (HLA-B*5801)
- NSAIDs
- Other
  - Abacavir (HLA-B*5701)
  - Nevirapine (HLA-DRB1*0101)
  - Minocycline, metronidazole, azathioprine, gold salts

- Each class of drug causes a slightly different clinical picture

Hypersensitivity Reactions

Clinical features

- Rash
- Fever (precedes eruption by day or more)
- Pharyngitis
- Hepatitis
- Arthralgias
- Lymphadenopathy
- Hematologic abnormalities
  - eosinophilia
  - atypical lymphocytosis
- Other organs involved
  - myocarditis, interstitial pneumonitis, interstitial nephritis, thyroiditis
Hypersensitivity Reactions Treatment

• Stop the medication
• Follow CBC with diff, LFT’s, BUN/Cr
• Avoid cross reacting medications!!!!
  – Aromatic anticonvulsants cross react (70%)
    • Phenobarbital, Phenytoin, Carbamazepine
    • Valproic acid and Keppra generally safe
• Systemic steroids (Prednisone 1.5-2mg/kg)
  – Taper slowly- 1-3 months
• Allopurinol hypersensitivity may require steroid sparing agent
  • NOT azathioprine (also metabolized by xanthine oxidase)
• Completely recover, IF the hepatitis resolves
• Check TSH monthly for 6 months
• Watch for later cardiac involvement (low EF)

Skin Cancer
Screening for Skin Cancer: U.S. Preventive Services Task Force Recommendation Statement

U.S. Preventive Services Task Force*

Description: Update of the 2001 U.S. Preventive Services Task Force (USPSTF) recommendation statement on screening for skin cancer.

Methods: To update its recommendation, the USPSTF reviewed evidence published since 2001 on studies on screening effectiveness, the stage of detection by screening, and the accuracy of whole-body examination by primary care clinicians and self-examination by patients.

Recommendation: The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for skin cancer by primary care clinicians or by patient skin self-examination. (I statement)

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**Clinical Guidelines**

- Applies to adults without history of malignancy or premalignant conditions
- Clinicians should remain alert for skin lesions with malignant features noted in the context of the physical exam performed for other purposes
  - LOOK! for ABCDs, rapidly changing lesions, do a biopsy when indicated
Know who is at risk:
- Fair skin patients >65yrs
- Atypical nevi
- > 50 nevi
- Positive family history of skin cancer
- History of significant sun exposure and sunburns

Malignant Melanoma
- Most frequent cause of death from skin cancer
- Frequently occurs in young adults
  - #1 cause of cancer death in women age 30-35
- Intermittent, intense sun exposure (sunburns)
Melanoma Diagnosis and Prognosis

- The prognosis is DEPENDENT on the depth of lesion (Breslow’s classification) and lymph node status
- Melanoma of < 1mm in thickness is low risk
- Sentinel lymph node biopsy is recommended for melanoma > 1mm (controversial)
- If melanoma is on the differential, complete excision or full thickness incisional biopsy is indicated
Malignant Melanoma

• Asymmetry
• Border
• Color
• Diameter
• Evolution
Acral Melanoma

- Suspect in African American, Latino, Asian patients
Skin Cancers: What to be concerned about:

- ANY suspicious pigmented lesion
- Any bleeding skin lesion
- Any red spot that doesn’t clear in 6-8 weeks
- Any non-healing erosion or ulceration
- Persons with greater than 50 moles, atypical moles, or family history of melanoma
- Fair-skinned organ transplant recipients with prior sun exposure

NEW Therapies for Skin Cancer

- BCC
  - Vismodegib (Erivedge)
    - Hedgehog signaling pathway inhibitor
    - Metastatic, relapsed, inoperable, BCC or BCC not amenable to radiation
- Melanoma
  - BRAF inhibitors (V600E mutation)
    - Vemurafenib (Zelboraf); Dabrafenib (Tafinlar)
  - Monoclonal Ab to CTLA4
    - Ipilimumab (Yervoy)
  - Monoclonal Ab to PD-1
    - Pembrolizumab (Keytruda)
  - MEK inhibitor
    - Trametinib (Mekinist)
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 scientifically 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.

A few simple rules to live by:

- Never give systemic steroids for psoriasis or atopic dermatitis
- Do an excisional biopsy to diagnose melanoma
- Cellulitis is almost never bilateral
- Drug eruptions are usually due to medications started 7-10 prior to onset of the rash