Only Skin Deep: Updates in the Clinical Management of Acne, Eczema, and Suspicious Skin Lesions

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I have no conflicts and nothing to disclose

Goals and Objectives

- The goal of this lecture is to help develop a simplified approach to diagnosis and management of acne, atopic dermatitis, and suspicious skin lesions
Acne

- Identify different types of acne
- Formulate an initial treatment plan
- Have some “go-to” generic and OTC options
- Become familiar with new treatment options

Atopic Dermatitis

- Review of general recommendations
- Discuss new treatment options

Biopsy of Suspicious Skin Lesions

- Review clinical aspects of suspicious skin lesions
- Determine the best way to perform an effective biopsy based on type of lesion
Acne

Acne: Overview

- 50 million people affected
- 12% prevalence in adult females
- Cost of disease over $3 billion annually
- Contributes to depression and anxiety


Acne: Pathogenesis

- Inflammatory multifactorial disease of pilosebaceous glands
  - Hyperkeratinization
  - Bacterial colonization with C. acnes (reclassified from P. acnes)
  - Inflammation: acute and chronic
  - Androgen stimulation of sebaceous glands
General treatment principles

- Keep the regimen simple, noncompliance is high
- Monotherapy is generally not effective, and may promote resistance
- Use the topical treatments all over the affected areas (no spot treatments)
- Moisturize
- Give each regimen 3 months to work
- Avoid long courses of oral antibiotics

Acne classification: Keep it simple

- Formulate plan based on the type of acne:
  - Mild, Moderate, Severe
  - Age of patient
  - Gender
  - Hormonal influence

Mild Acne

- Open and closed comedones (blackheads and whiteheads)
- Few inflammatory papules or pustules (red bumps)
Targeting Comedones: Topical treatments

- **Retinoids (tretinoin 0.025%-0.1% cream or micronized gel, tazarotene)**
- **Adapalene 0.1% gel (now OTC) and 0.3% gel**
- **Salicylic acid (OTC)**
- **Azelaic Acid (pregnancy category B)**

Comedonal acne

- **What’s new?**
- **New forms of retinoids:**
  - Tretinoin 0.05% lotion
    - Photostable and less drying
  - Trifarotene 0.005% cream
    - New retinoid molecule targeting most prevalent retinoid receptor
    - RAR-gamma receptor
    - More effective and well tolerated on face, chest and back

Inflammatory papules and pustules: topical anti-bacterial preparations

- **Benzoyl peroxide 2-10%, available in multiple formulations (OTC)**
- **Clindamycin**
- **Erythromycin**
- **Dapsone 5% (BID) and 7.5% (QD)**
- **Sodium sulfacetamide with and without Sulfur**
- **Topical minocycline 4% foam QD **new****
  - Ages 9 and older
  - Alternative to PO antibiotics
## Moderate Acne

- Comedones, more widespread including chest, back, shoulders
- Larger and more diffuse inflammatory papules and pustules
- No cysts or scarring
- Often have post-inflammatory hyperpigmentation

## Moderate Acne Treatments

- **Topical retinoid + Topical antimicrobial (combination products)**
- **Oral antibiotic**
  - Doxycycline 100mg QD for 3 months
  - Minocycline 100mg QD for 3 months, or extended release based on patient weight
  - Topical minocycline 4% foam (alternative to PO)
  - Sarecycline **new**
    - weight-based daily dosing
    - Second line
    - TMP-SMX DS BID
    - Trimethoprim 300mg BID

## Severe Acne

- Nodulocystic acne
- Scarring, painful cysts and abscesses
  - Acne conglobata
  - Acne fulminans
Severe acne treatment

- Prednisone (short course)
- Intralesional corticosteroids
- Tumor necrosis factor (TNF) inhibitors
- Isotretinoin

Isotretinoin

- 0.5-1mg/kg/day up to 120-150mg/kg total dose
- 40-60% of patients remain acne free after 1 course
- In patients under 16 y/o, 40% relapse within 1 yr, 73% within 2 yrs
- High risk of side effects (embryopathy, depression, etc)
- All providers and patients must enroll in ipledge program
- Lab monitoring for lipids, LFT's, pregnancy test monthly

Adult female acne

- Lower face and neck inflammatory and cystic acne
- Monthly pattern of flares
- May have abnormal labs, PCOS, hirsutism
  consider endocrine work up if indicated
- Usually labs WNL
Adult female acne treatment

- Oral contraceptive pills
- Spironolactone
  - Androgen receptor blocker (5-a reductase inhibitor)
  - 25-200mg /day
  - Start 50mg QD for 2 weeks, then increase to 50mg BID
  - 66% clear or show marked improvement

Adult female acne treatment:

- May combine OCP and/or Spironolactone with topical retinoids and topical antibiotics
  - may combine with oral antibiotics for short course
- Side effects include headache, diuresis, breast tenderness and irregular menstrual periods, rarely hyperkalemia
  - Side effects are dose dependent
- Routine Potassium labs no longer recommended
- Close clinical monitoring for symptoms and side effects is important
- Counsel patients that significant improvement may take 3-4 months

Acne: Other recommendations

- Address the patient's diet:
  - Avoid or limit cow's milk
  - Daily prebiotics and probiotics
  - Low glycemic index foods
  - Research still early and ongoing
Acne: Useful resources

- **Guidelines of care for the management of acne vulgaris**
  - published in 2016 in the Journal of the American Academy of Dermatology (JAAD)

American Academy of Dermatology website: aad.org:
Acne resource center

Atopic Dermatitis

- **General Recommendations**:
  - Gentle cleansers
  - Moisturizing liberally (ceramide-based creams)
  - Avoid triggers
  - Oral antihistamines
  - Allergy evaluations and contact dermatitis testing when indicated
  - Topical corticosteroids – short courses when flared
  - Topical calcineurin inhibitors (TCIs) for sensitive areas
  - Systemic corticosteroids/ immunosuppressive tx - avoid if possible
AD: what is NEW

- Addressing the microbiome
- Crisaborole non-steroidal topical ointment
- Dupilumab injections
- Phototherapy (NB UVB) laser light treatments

The microbiome

- Emerging evidence for bacterial colonization and frequent infection
- S. aureus in 90% of chronic eczematous lesions
- S. aureus promotes inflammatory pathways

- Promptly recognize and treat infections
- Reduce nasal carriage of Staph – mupirocin
- Probiotics (research shows mixed results)
- NB-UVB phototherapy decreases S. aureus
- Bleach baths
  - 2x week, ¼ cup standard bleach in 20 gal water
- OTC Sodium hypochlorite body wash** new
  - Body wash daily for 6 weeks
  - Use concurrently with topical therapies

Crisaborole 2% ointment

- Non steroid ointment for age 2 and older
- Indicated for mild-to-moderate AD
- Phosphodiesterase 4 (PDE4) inhibitor
- May use as monotherapy or intermittently with topical steroids
- May use long term
- Okay to use on the face and sensitive areas
- Side effect of application site burning

Dupilumab injection

- Fully human monoclonal antibody that reduces Th2 inflammation by blocking the shared receptor subunit for interleukin (IL)-4 and IL-13
- Injected every 2 weeks
- No lab monitoring
- Approved 12 yrs and older for moderate-to-severe atopic dermatitis
- Currently the only injectable immunomodulator for AD
- Generally safe and effective

Possible adverse effects/downsides:

- Injection site reactions
- Allergic reactions
- Conjunctivitis (noninfectious)- most common
- May be difficult to obtain (prior authorizations, failure of other tx)
Phototherapy/excimer laser

- Single band of 308nm NB UVB light to alter DNA of T-cells and decrease inflammation
- Same principle as UV light box phototherapy – used successfully for decades
- 2-3x week on affected areas for 12-18 weeks
- Safe for all ages
- Painless, well tolerated
- Also effective for Vitiligo and Psoriasis

Excimer laser

May not be covered by insurance
Theoretical risk of solar-induced damage to skin
Frequent office visits

Suspicious lesions and biopsy types
Biopsy types: Shave, punch, and excisional

- Shave biopsy – epidermal and superficial to mid dermal sample
  - Saucerization/scoop – deeper, broader shave biopsy
- Punch biopsy – full thickness cylindrical sample of skin
- Excisional biopsy – full thickness and width of the lesion with margin

Shave biopsy

- Epidermis, superficial and/or mid dermis
- Quick and usually effective sampling
- Can be performed on any body site
- Technique:
  - Local infiltration of anesthesia
  - Flexed Razor blade or No. 15 scalpel
  - Hemostasis using 35% aluminum chloride solution or electrocautery (lip or scalp)
  - Second intention healing

Punch biopsy

- Epidermis, full thickness dermis and subcutis
- 3-6mm generally most common size
- Local infiltration of anesthesia
- Punch biopsy gently rotated while applying pressure
- Grasp the specimen and cut the base at the sub-Q
- Simple epidermal sutures placed for hemostasis
Excisional biopsy

- Epidermis, full thickness dermis, and subcutis, with margin (1-3mm)
- Fusiform excision technique after local anesthesia
- Long axis oriented along skin tension lines
- Length/width ration 3:1 and 30-degree angle at each pole
- Hemostasis with electrocautery
- Deep sutures and epidermal sutures for best outcome

Suspicious lesions and biopsy techniques

- First consider 3 things to determine type of biopsy:
  - Reason for biopsy
  - Lesion characteristics
  - Body site

Non-melanoma skin cancer

- Basal cell carcinoma
- Squamous cell carcinoma
- Adnexal neoplasms (benign and malignant)
- Vascular neoplasms
- Clinical characteristics:
  - Pink, pearly, keratotic, red, bleeding macules, papules, nodules
  - Non-healing lesions
  - AK not responding to treatment
Non melanoma skin cancer
• Shave biopsy generally effective
• Lesions typically in epidermis to mid dermis
• Consider punch biopsy on ear, lip, and scalp

Pigmented lesions
• Suspected melanoma
• Atypical appearing (dysplastic) nevus
• Large or atypical appearing lentigo
• Clinical characteristics
  • ABCDE’s
  • Changing size, shape, or color
  • Symptomatic pigmented lesion (itchy, painful, growing)

Suspected melanoma
• Excisional biopsy if possible
• Saucerization (deep shave) of ENTIRE lesion preferred
• Avoid punch biopsy of a portion of the lesion due to possible sampling error
• Getting an accurate diagnosis is more important than getting the depth
• Breslow depth can be amended when excised
Deep seated nodules

- Sarcoma (DFSP, Liposarcoma, fibrosarcoma)
- Inflamed or infected cysts
- Painful Lipomas
- Growing nodules
- Painful nodules
- Surface color change overlying nodule

Deep seated nodules

- Excisional biopsy of entire lesion if possible
- Punch biopsy to determine diagnosis if excision not possible
- Do not shave biopsy - likely will miss the diagnosis

Thank you and... Enjoy VAIL