Dermatology for the General Practitioners:
Some Common Pediatric Dermatological Disorders

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CANP Symposium
Sunday, March 22, 2015
Newport Beach, CA
Goals

• Discuss some common pediatric dermatological problems; atopic dermatitis, eczema herpeticum, molluscum contagiosum, and cutaneous warts.

• Up-to-date and evidenced-based treatment recommendations for each condition discussed

• Patient education

• When to refer patients to dermatology
Learner Outcomes

• Recognize common pediatric dermatological disorders discussed in this presentation.

• Able to recommend and or treat common conditions discussed.

• Recognize when to refer patients to dermatology.
Skin Structure
Skin Structure
Atopic Dermatitis (AD) Prevalence

- 5 to 20% of children worldwide
- ~11 -17% in the States
- Onset before age 5 years
- Slightly more in female than males
Atopic Dermatitis or Eczema

• “Dermatitis” and “eczema” used interchangeably

• A genetic defect in the proteins supporting epidermal barrier

• A chronic inflammatory skin condition

• Eczema, asthma, and allergic rhinitis (triad of atopies)
Pathogenesis of Atopic Dermatitis

• Impaired epidermal barrier function

• An immune function disorder
Impaired epidermal barrier function

• Intrinsic structural and functional abnormalities
• Disease evolves from the outside in
• Primary defect, an abnormal epidermal barrier
Epidermis

• First line of defense between the body and the environment

• With intact epidermis, environmental irritants, allergens, and microbes cannot enter the body
Goals of AD treatment:

• Reduce symptoms of pruritus and dermatitis

• Prevent exacerbations

• Minimize therapeutic risks
Atopic Dermatitis Treatments

- Prevention is the best treatment
- Mild soaps, moisturizers, or emollients
- Topical corticosteroids
  - Use lower strength in thin skin areas (face, armpits, genital areas)
  - No more than 2 wks of continuously use
- Antihistamine to help control pruritus and aid in sleep
Atopic Dermatitis Treatments, cont’d.

• Antibiotics for superinfection or secondary infection

• Phototherapy (ultraviolet light; adolescents and adults)

• Systemic immunosuppressive agents (use limited by potential side effects)
Moisturizers and Emollients

• Used interchangeably
• Emollients, “to soften”; reduces water loss from the epidermis
• Moisturizer, “to add moisture”
• Both have two actions:
  1. Occlusive---provides layer of oil on surface of skin to slow water loss → ↑moisture to stratum corneum
  2. Humectants---substances introduced into the stratum corneum to increase water holding capacity
Causes of Hypersensitivity Reactions to Treatment (hindering AD improvement)

• Topical emollients
  -lanolin
  -propylene glycol
  -ethylenediamine
  -formaldehyde

• Topical immunosuppressive medicines
  -corticosteroids
  -calcineurin inhibitors (protein phosphatase, activates T-cell system)
Food and Environmental Triggers

- Certain environmental factors and foods are controversial
  - reduction of house dust mite antigens
  - milk and egg exclusion, not shown to be beneficial
  (systemic review of 9 randomized trials)

(Weston & Howe 2015)
Lotion, cream, and ointments

• Lotion
  - high water and low oil content
  - may contain ethyl alcohol

• Cream (comes in a jar)
  - lower water content

• Ointments
  - no water content
  - better protect against xerosis
  - down side, too greasy
Atopic Dermatitis: Patient and Family Education

• Prevention is the best treatment
• Avoid triggers (environmental):
  - excessive bathing without using moisturizers
  - low humidity environments
  - emotional stress
  - xerosis (dry skin)
  - overheating of skin
  - exposure to solvents and detergents (esp. scented ones)
Atopic Dermatitis: Patient and Family Education

• Compliance and adherence to treatment regimen and basic skin care very important
• Short cool or lukewarm baths
• Mild unscented soaps
• Pat dry the skin after bathing
• Apply *unscented* moisturizer or emollients immediately
Atopic Dermatitis: Patient and Family Education

- If prescribed topical medicines, apply first then apply moisturizers.
- Apply moisturizers at least twice a day.
- Cotton clothing.
- Wet PJ wrap.
When to refer atopic dermatitis patients

• Patients with refractory AD

• Conventional therapies do not provide sufficient improvement
Eczema Herpeticum (EH)

• Disseminated herpes simplex virus (HSV); HSV-1 or HSV-2 exposure

• Highest incidence in younger children

• Association of AD and ↑ risk of EH poorly understood

• Multiple host factors play a role

Leung (2013); Khan, Shaw, & Bernatoniene (2014)
Eczema Herpaticum (EH), cont’d.

- Pt may not have active or severe eczema to get EH

- Abnormal skin barrier function predisposes pt to EH

- Pts with more severe AD, hx/o food allergy or asthma, early onset of AD, hx/o cutaneous staph or molluscum contagiosum infections are prone to EH

Leung (2013); Khan, Shaw, & Bernatoniene (2014)
Diagnosing EH

• If a child’s infected AD fails to respond to abx and topical corticosteroids

• Rapidly worsening, painful eczema

• Viral culture, gold standard
EH: Clinical Presentations

- Widespread vesicles in pts with pre-existing skin dz (AD); may be difficult to distinguish from secondary bacterial infection (resembles chickenpox)
- Many similar shape and size of eroded lesion (secondary to scratching)
- Viremia
- Fever
- Malaise
- LAD
EH Complications

• Systemic complications
  keratoconjunctivitis (cornea and conjunctiva inflammation) → blindness, multi organ involvement → meningitis and encephalitis → death

• Mortality rates for untreated EH: 6-10%

Khan, Shaw, & Bernatoniene (2014).
EH Transmission

• Direct contact with infected secretions
EH Treatment

• Often needs hospital admission
• PO or IV acyclovir
• Hydration
• Abx for secondary bacterial infection
• Strict skin care; emollients
• Needs ophthalmology referral
Use of topical corticosteroids and eczema herpaticum

- Previously, use of topical corticosteroids concerns:
  - may promote dissemination of HSV
  - worsen the disease itself
- Multicenter retrospective cohort study, n = 1331, 2 months - 17 yrs with admitting dx of eczema herpaticum
- Not associated with worsening of disease
- Systemic therapy → to ↑ LOS

Molluscum Contagiosum

• A member of a poxvirus family

• More exclusive disease of children than warts

• Chronic, localized infection

• Flesh-colored, domed shaped papules (anywhere on body except palms and soles)
Molluscum Contagiosum, cont’d.

• Humans, the only known host
• Common disease of childhood
• May appear anywhere on body, except palms and soles
• Common areas of involvement:
  trunk, axillae, antecubital and popliteal fossae, and crural (groin) folds
Molluscum Contagiosum, cont’d.

• In adolescents and adults:
  - STI, contact sports, immunosuppressed
• In STI:
  - groins, genitals, proximal thighs, and lower abd
• In HIV or other immunocompromised pts:
  - lesions can be large (giant molluscum)
  - widespread
• May or may not be pruritic
Molluscum Contagiosum Transmission and Risk Factors

• Skin-to-skin contact
• Auto-inoculation
• Bath sponges and towels
• Risk factors:
  having AD
  swimming in public pools
Molluscum Contagiosum: Diagnosis and Treatment

• By clinical characteristic appearance of lesions

• Cryotherapy with liquid nitrogen (repeat q2-4 wks)

• Curettage (bleeding and risk of scarring)
Molluscum Contagiosum: Diagnosis and Treatment, cont’d.

• Cantharidin (topical blistering agent; avoid using on face, genital, perianal areas)
  high rates of parental satisfaction

• Topical retinoids (Tretinoin; qod to bid)

• Imiquimod (not effective); KOH (needs more data)
Molluscum Contagiosum: Patient and family education

• Most cases self-resolve within 6-9 months
• Rare cases persist 3-5 years
• Cover lesions likely to come in contact with others with clothing or watertight bandage
• Keep fingernails trimmed short
• Avoid scratching
• No sharing of bath towels
Cutaneous Warts (Verrucae) or Common Warts

- Common in children and young adults
- Human papillomaviruses (HPV)
- Skin-to-skin (direct or indirect) contact spread
- Self-inoculation (scratching)
- Maceration or sites of trauma predispose patients to inoculation
- Spontaneous remission within two years in two-thirds of patients
Cutaneous Warts, cont’d.

• Many different types of warts

• Mostly seen on fingers, periungual, and back of hands

• Site of entry, open skin or wound; e.g. nail biters or picking at hangnails

• May have black to red dots, “seeds”, and globules
Diagnosis

• By clinical appearance and location

• Dermatoglyphics (obscure normal skin markings)
Choice of Therapy

• Often goes away without tx (but can last for a long time)

• Type of tx dependent on patient’s age and location of lesion

• Cryotherapy with liquid nitrogen (different modes of administration)

• Cantharidin
Other options for wart treatment

• Chemical peels (Salicylic acid, tretinoin, and glycolic acid)

• Electrosurgery (burning) and curettage (scraping)

• Excision

• Laser tx
Wart home treatment

• Soak the warts first, may pare down (using nail filers or pumice stone) the wart first then apply med

• Salicylic acid (OTC, different forms)

• Duct tape---conflicting evidence about efficacy
Warts: Pt Education

• Avoid scratching at the lesions
• Keep fingernails trimmed short
• No sharing of bath towels or shaving equipment
• Nail file or pumice stone used to pare warts should not be used on normal nail or skin
• Wear flip-flops at public pools, showers, and locker rooms
• Do not touch someone else’s warts
• Keep warts dry; moisture enhances spread
When to refer pt with warts to a dermatologist

- Warts that hurt, itch, burn, or bleed
- Warts are growing rapidly
- Multiple warts
- Warts on face or genitals
- Immunosuppressive
- Suspicion that lesion is not wart
Thank all you for coming!
References


References


References


References, cont’d.


