All that Rashes is Not Eczema:
Distinguishing Atopic Dermatitis from
other Inflammatory Dermatoses

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DISCLOSURE OF RELATIONSHIPS WITH INDUSTRY

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F125 - Pediatric Dermatology for the Adult Dermatologist

DISCLOSURES

Regeneron Pharmaceuticals – clinical researcher:
Dupilumab use in adolescents with atopic dermatitis – no compensation
Objectives

• To distinguish between various eczematous eruptions in children
• To identify extracutaneous signs and symptoms that may suggest that the dermatitis is associated with immunodeficiency
• To appropriately treat eczematous dermatitis depending on its cause
Atopic Dermatitis ("eczema")

• “The itch that rashes”
• To make clinical diagnosis:
  • Pruritus +
  • Dry skin, flexural involvement, PH of atopy, onset in childhood

• Infancy: cheeks, extensor extremities
  • Diaper spared, “headlight sign”
  • Overlap with seborrheic dermatitis/cradle cap

• Childhood: wrists, ankles, hands, feet, neck, flexures, nipples
  • Chronic, dry, lichenified
  • LAD not uncommon
Other features of atopic dermatitis

• Dennie-Morgan folds
• Follicular accentuation
• Hyperlinear palms
• Crease through nose (allergic salute)
• Milia

• Allergic keratoconjunctivitis (late)
Treatment: the Basics

- Hydrocortisone 2.5% or desonide ointment for face, groin and intertriginous areas
  - Consider TCIs

- Up to triamcinolone 0.1% ointment for body
  - 1-2x per day for 1-2 weeks
  - Close follow-up to avoid overuse
  - ONLY use for active inflammation (redness, scale, lichenification)

- Written instructions
  - Consider a graphic “action plan”

- Superinfection?
  - Culture/treat
Gentle skin care

• Moisturization
  – Greasier = better
  – Beware of additives → allergic contact dermatitis (lanolin)
    – But also respect what patient is willing to do
  – Two or more times per day

• Bathing (less is more unless rinsing something off)

• Gentle detergent (dye and fragrance free)

• Avoid aerosolized fragrances

• Avoid irritating fabrics such as wool
Contact Dermatitis: Car Seat Dermatitis

- Elbows, lower lateral legs, upper posterior thighs, occipital scalp (band-like distribution)
- Often coexistent with atopic dermatitis
- Inciting agent unknown
- Irritant or Allergic Contact Dermatitis from certain linings
- More common in warmer months

- Apply cotton or plush cover over car seat to avoid direct contact with skin
Scabies: Treatment

• Permethrin 5% cream from the neck down to the entire body overnight (including face and scalp in infants)
  • FDA approved to 8 weeks
• The next morning, launder sheets/clothes in hot water, dry on high heat
• Treat entire family at once
• Repeat one week later

• For itch between treatments, topical steroid daily
• Post-scabetic itch
Acrodermatitis Enteropathica

• Zinc deficiency
  • Genetic cause with mutation in ZIP4 Zn transporter (SLC39A4)
  • Can be from insufficient maternal secretion in breast milk (SLC30A2)
• Insufficient intake: anorexic, vegan, IBD, CF, celiac disease, TPN, high phytate diet (cereal grains)
• Increased energy demands
• Prematurity
• Often appears at time of weaning (breast milk) or week 4-10 of life (formula fed)

• Periorificial and acral distribution of symmetric, red, scaly, exudative patches
  • Pustular, bullous lesions
• Periungual erythema, scale, nail thinning
• Generalized alopecia
• Diarrhea, irritability, impaired wound healing, growth retardation
• Tx: Zn sulfate 1-2 mg/kg/day
• Seen in MSUD, propionic academia, methylmalonic academia, PKU, ornithine transcarbamylase deficiency, citrullinemia, glutaric aciduria type I

• Diaper uniformly involved, also face and extremities

• Zinc/Alk-Phos levels normal

• From excessive protein restriction?
  • Respond to a.a. supplementation
  • Isoleucine of particular importance?
Concern for PID: Questions to ask

• Any history of infections?
  • Specify invasive vs. noninvasive (abscesses, etc.), requiring antibiotics (viral vs. bacterial PNA) or hospital stay, recurrent
• Meningitis, otitis media, sinus infections, sepsis?
• Any problems with fungus (thrush, ringworm, nail fungus)?
• Any problems with warts, molluscum, herpes infections?
• Infection with unusual organisms?
• Any know family members with PID or frequent infections?
  • Any family members who died abruptly at a young age?
• Problems with growth or development (FTT, diarrhea)?
• Disease specific: retained primary teeth, lymphedema, bone fractures, signs of autoimmunity?
AD Hyper IgE syndrome

- Dermatitis, abscesses, recurrent sinopulmonary (PNA, AOM) and bone infections
  - Cellulitis, lymphangitis, penumatoceles, abscesses, mucocutaneous candidiasis
- Pruritic, lichenified eruption
  - Distribution not entirely typical for AD
  - Lack other signs of atopy
- Papulopustular eruption of face in infancy

- Hyperextensible joints
- Retention of primary teeth
- Cathedral (high arched) palate
- Coarse facies in childhood

- Increased IgE levels (can vary initially)
In addition to standard treatments of dermatitis....

- Consider wet wrap therapy
- Superinfection?
  - Culture/treat
  - Regular bleach baths
- Prophylactic therapy --- trimethoprim-sulfamethoxazole, fluconazole
- Systemic immunosuppressive agents—methotrexate
  - Undertake in consultation with Immunology
- IVIG?
- Can consider BMT, but not standard of care
- Refer to Immunology (or your friendly local/distant Dermatology-Immunology clinic)
Take Home Points

• Everything red, scaly and itchy is not atopic dermatitis
• Be mindful of the distribution of a patient’s dermatitis
• Consider alternate diagnosis to AD if unresponsive to topical steroids
• Scabies in infants is more nodular, and involves the axillae and upper torso
• If involves only perioral and diaper area, consider AE
  • And if zinc and alk phos levels are normal, consider other organic acidemias
• Children who are red with high IgE levels do not necessarily have HIES
  • But if they are hypermobile with a history of multiple infections and coarse facies, consider HIES
  • Primary immunodeficiency should always be considered in children with dermatitis and h/o multiple invasive infections