Atopic Dermatitis for the Pediatrician
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Disclosures

I have the following financial relationships with the manufacturer(s) of any commercial product and/or provider of commercial services discussed in this CME activity.

Consultant for: Galderma, Sun Pharma, Pierre Fabre, Anacor
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I do intend to discuss an unapproved/investigative use of a commercial product/device in this presentation.
Rationale

Atopic dermatitis (AD) occurs in up to 17% of U.S. children; pediatricians are first-line.

It is chronic, relapsing and uncomfortable.

Tolls of AD include sleep disturbance, psychological abnormalities, impaired school performance and family discord.

An effective action plan addresses inflammation, infection, pruritus and dry skin in an effort to control disease and improve quality of life.
Objectives

At the conclusion of this activity, participants will be able to …

Appreciate the optimal approach to dry skin care
Safely and effectively use topical anti-inflammatory agents
Consider and address itch, sleep disruption and the common parental concern of food allergy
Recognize secondary superinfection and understand effective approaches to treatment and prevention
Atopic dermatitis (AD)

Common in any pediatric practice
Genetic predisposition

Chronic, relapsing, pruritic

17% of school-aged children; 5-10% of adults
Significant \( \uparrow \) over past few decades

Most common associated atopic diseases:
- Asthma
- Allergic rhinoconjunctivitis
The toll of AD

Sleep disturbance, co-sleeping
Frequent nighttime awakenings
More psychological disturbances
School absence, impaired performance
Family discord
Parents: psychosocial stress, lower rates of employment
Social isolation
Poor self esteem
Secondary gain

The atopic diathesis
Framework for treating AD

Dry skin care
   Bathing, emollients, barrier repair products
Inflammation
   Topical steroids, topical calcineurin inhibitors
Pruritus/sleep
   Sedating antihistamines
Infection
   Treatment and prevention

PUT IT ALL TOGETHER
Lets answer some questions

What bathing frequency should I recommend?
Are some moisturizers better than others?
How do I safely & effectively treat the inflammation?
Can I treat the face? How about periorbital areas?
What about itch?
When should I suspect infection?
If infection, what is the best choice for empiric therapy?
When should I refer for food allergy testing?
What bathing frequency should I recommend?
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Bathing

“Minimize bathing” frequently taught
Bathing errors a major cause of persistent disease
2 true but opposing facts:
- Bathing dries the skin (wet evaporation), especially hot water for prolonged periods
- Bathing hydrates the skin (if brief exposure, <10 minutes)

When performed correctly ➔ DAILY bathing superior

Bathing – advantages

Bonding
Debridement
Hydration
Enhanced medication penetration
Feeling of clean

Severe flare: consider wet wraps

What bathing frequency should I recommend?
Are some moisturizers better than others?
Emollients & barrier repair

Ointment = pure grease
Cream = grease with some water
Lotion = water with some grease

Efficacy: ointments > creams > lotions
Must balance with patient acceptance

Barrier repair-targeted ingredients have become popular
Replace ceramides, filaggrin breakdown products
Emollients

Vital component of care
Apply after bathing (blot dry); can apply over topical medications
Throughout day as needed

Favorites:
- Aquaphor ointment (avoid in Summer)
- Cetaphil, Eucerin, Vanicream, CeraVe creams
- Limited resources: Crisco/Vaseline/Absorbase
Rx and OTC barrier repair agents

Atopiclair
CeraVe*
Cetaphil Restoraderm*
EpiCeram Skin Barrier Emulsion
Eletone
Hylatopic Plus
MimyX
Neosalus
Tetrix

* = OTC
Barrier repair agents – when?

Early AD flares, mild to moderate
Maintenance therapy between flares
  → Barrier repair as a preventative measure
In conjunction with anti-inflammatory agents
As a steroid-free, TCI-free option for parents with concerns
What bathing frequency should I recommend?
Are some moisturizers better than others?
How do I safely & effectively treat the inflammation?
“Footprints left over after the animal runs away”

Treating inflammation

Important goal of therapy
Topical steroids *still* the mainstay of therapy
Extremely safe when used correctly

“White spots” are post-inflammatory hypopigmentation – signal improvement in the AD, NOT a side effect
Topical steroids

Ointments preferred
BID application, with tapering as dermatitis subsides
Be familiar with 2 in each of the classes you will use
Much of what we use ➔ off-label

Pediatrician “steroid toolbox”:
- Face: alclometasone, desonide
- Trunk/extremities: fluocinolone, triamcinolone
- More potent (“fires”): mometasone, fluocinonide
What bathing frequency should I recommend?
Are some moisturizers better than others?
How do I safely & effectively treat the inflammation?
Can I treat the face? How about periorbital areas?
Face? Eyelids?

Important to treat, if involved
Reassure parents about safety of perioral use (no concern about minor ingestion)
Topical calcineurin inhibitors (TCI) play a role, especially for eyelids

TCI = tacrolimus (Protopic), pimecrolimus (Elidel)
Face/ears: alclometasone, desonide or TCI
Eyelids: TCI (my only choice for periorbital disease)
Don’t forget the scalp

Often involved in AD
(especially infants)

Low-mid potency steroid 1-2 times daily when flaring

Regular shampoo

Infants – may be able to use ointments

Once hair grows:
- Fluocinolone solution
- Mometasone lotion
- Fluocinolone scalp oil
What bathing frequency should I recommend? Are some moisturizers better than others? How do I safely & effectively treat the inflammation? Can I treat the face? How about periorbital areas? What about itch?
Sleep disorders in AD

60-80% incidence in children with AD
Disorder falling/staying asleep due to itch
Poor sleep habits become learned behavior, persists during remission
Sleep loss/exhaustion for parents, too
Sequelae: discipline problems, afternoon sleepiness, impaired daytime alertness, neurocognitive deficits
Co-sleeping in 30%; parent sleep loss
Increased prevalence of ADHD

“Glove sign”
Treating itch

Abolish the itch-scratch cycle
Help normalize the sleep cycle
Prevent secondary infection
Benefits: both decreased itch and improved sleep (patient and parent)

Hydroxyzine 0.25-1 mg/kg/dose (lower dose BID, full dose at bedtime)
Cetirizine (Zyrtec)/Xyzal (levocetirizine) for day, school-aged children
**Can combine non-sedating (AM) with sedating (PM)
Cyproheptadine (Periactin) – appetite stimulant
Doxepin (off-label); 10 mg/ml; 5-10 mg at bedtime
What bathing frequency should I recommend?
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What about itch?
When should I suspect infection?
Bacterial infection in AD

*Staph* colonization common in AD (up to 85%)  
Crusting or pustules suggestive of infection  
Worsens inflammation; treatment accelerates healing  
Most AD with infection still MSSA; less often  
community-acquired MRSA  
Avoid indiscriminate or prolonged use  
“Mild” infection may clear with topical steroids

INFECTED or NOT INFECTED?

Yes; crusts

Yes; crusts & fissures

No; lichen simplex

Yes; pustules

Yes; crusts

No; just dermatitis

Um, doh

Eczema herpeticum
What bathing frequency should I recommend? Are some moisturizers better than others? How do I safely & effectively treat the inflammation? Can I treat the face? How about periorbital areas? What about itch? When should I suspect infection? If infection, what is the best choice for empiric therapy?
Antibiotics

Best choice:
- Cephalexin (taste, availability, low cost)
- Dicloxacillin (if able to swallow tablets)

Cephalexin 40 mg/kg/day divided TID; 10-14 days
Clindamycin for MRSA (other options: sulfa, rifampin, linezolid, tetracyclines); “D test”; know local patterns
*Clindamycin should NOT be initial choice for empiric therapy*
Macrolides *variable* effectiveness
When to culture? ➔ recurrent infection, lack of response
What about bleach?

Sodium hypochlorite: disinfectant & antimicrobial
Use shown to minimize antibiotic use, ↓ disease severity


Clorox® bleach, 5.95% sodium hypochlorite
→ ¼ - ½ cup bleach in full tub of water; soak 10-15 min, TIW
CLn wash – OTC cleanser with sodium hypochlorite (0.006%); better acceptance by older kids/teens; www.clnwash.com
When? → frequent, recurrent skin infections
What bathing frequency should I recommend?
Are some moisturizers better than others?
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When should I suspect infection?
If infection, what is the best choice for empiric therapy?
When should I refer for food allergy testing?
Food allergy and AD

25-35% with moderate-severe AD
Food avoidance usually ≠ AD course modification
Blind elimination prior to dermatologic evaluation common
History, skin-prick/serum antibody tests: low (+) predictive value

Evaluate for FA in child <5 years with persistent AD (on rx) or reliable history of food reaction
Co-management (pediatric allergist) vital

The Eczema Circle

- dry/cold climate
- wool
- dog
- FOOD

★ Atopic dermatitis
On the Horizon for AD

Crisaborole 2% ointment
- PDE-4 inhibitor
- Completed phase 3 pediatric trials in > 750 patients
- FDA application: early 2016

Mod-severe adult AD:
Dupilumab
- Subcutaneous monoclonal antibody, blocks IL-4 and IL-13

Tofacitinib citrate (Xeljanz)
- Oral Janus kinase inhibitor

Put it all together

Patient vignettes
Dispense personalized written action plans
  (customize in your EMR w/smartfields)
Close follow up (4 - 6 weeks)
Vignette – mild disease

5-month-old
Cheeks, anterior shins
No infection

Action plan:
Daily bathing/emolliation
Desonide ointment BID
Vignette – moderate disease

2-year-old
Face (mainly eyelids), diffusely on arms/legs
No infection

Action plan:
Daily bathing/emolliation
Elidel cream BID (face)
Fluocinolone ointment BID (extremities)
Hydroxyzine 0.5 mg/kg BID and 1 mg/kg q HS
Vignette – moderate disease

11-month-old
Face, arms, legs; lichenification
Infection present

Action plan
Daily bathing/emolliation
Fluocinolone → alclometasone oint BID (face)
Mometasone → fluocinolone oint BID (extremities)
Hydroxyzine 0.5 mg/kg BID and 1 mg/kg q HS
Cephalexin for 10 days
Vignette – severe disease

5-year-old
Total body, face, extremities
Multiple crusts; 2\textsuperscript{nd} infection

Action plan:
Daily bathing/emolliiation
Alclometasone oint BID (face)
Protopic oint BID (eyelids)
Mometasone oint BID (trunk and extremities)
Cetirizine in AM, hydroxyzine after school and q HS
Cephalexin for 10 days; start bleach baths 3x/weekly
Skin swab for bacterial C & S
“My eczema makes me feel like I’ve been ‘alien’-ated”
Take Home Points …

Daily bathing is good! – <10 minutes, warm water, follow by application of medications and then emollient
Apply topical steroid BID; know 2 in each class you will prescribe
Eyelids are best treated with tacrolimus or pimecrolimus (Protopic or Elidel)
Treat itch, especially at bedtime; 1 mg/kg of hydroxyzine; consider low dose or non-sedating agents for daytime
If infection: empiric therapy should target MSSA (cephalexin)
Bleach (bath or wash) may decrease antibiotic use and disease severity
Refer for food allergy testing: persistent AD on therapy
I WANTA

NEW BODY