

# ABCs of Pediatric Dermatology

Christie Freeman MD, CCFP,  
DipPDerm, MSc (Derm)  
Derm Clinic, Peterborough ON

FMF 2015

# Diagnosis?



# Atopic Dermatitis



- Develops most often in infancy or early childhood, but can develop throughout life
- Often a personal or family hx of atopy (allergic rhinitis, asthma, eczema)
- AD represents an abnormality in skin barrier function and immune dysregulation

# Non-pharmacologic treatment for AD

- Dry skin is a primary feature of AD and is a result of a dysfunctional epidermal barrier
- A number of clinical trials have shown moisturizing lesions reduces itch, redness, fissuring and lichenification
- 3 RCTs show that moisturizing decreases the amount of prescription therapy required for control

# Example of a moisturizing routine

- Bathe 1-2x daily in **emulsified oil** bath x 10 min (Keri oil, Aveeno oil- not baby oil)
- **No soap.** Non-soap cleanser (Cetaphil Restoraderm, Cerave cleanser, Aveeno eczema body wash) can be used.
- **Pat skin** dry- rubbing is the same as scratching
- Apply **Rx to affected areas** only as instructed

# Moisturizing cont

- Apply emollient **cream** (not lotion and should be unscented, free of additives, inexpensive) over ENTIRE body, AT LEAST 2X DAILY
- Consider keeping a tub of **cream in fridge** that can be applied throughout the day whenever child is scratching. Cold is a great itch reliever!
- Vaseline petroleum jelly never stings 😊

# Anti-inflammatories

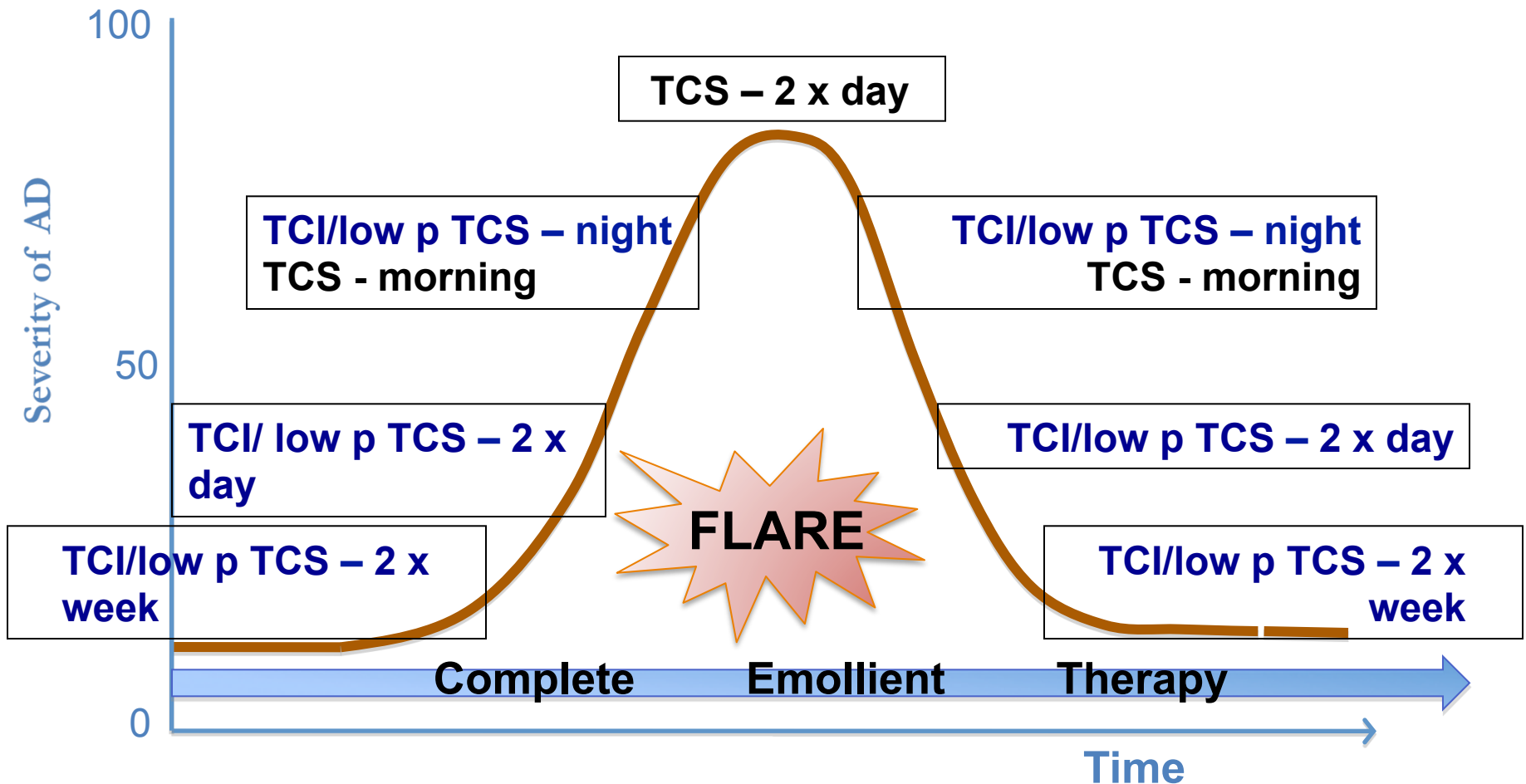
- Topical steroids
  - Non-specific anti-inflammatory action
  - Tachyphylaxis (no evidence), skin atrophy and striae (more common in elderly patients), steroid acne, risk HPA axis suppression
  - Often require mid-potency to achieve results during flares
- Topical TCIs (Tacrolimus and Pimecrolimus)
  - Directed anti-inflammatory to T cells
  - No skin atrophy
  - Site application burning (transient)

# Treatment pearls

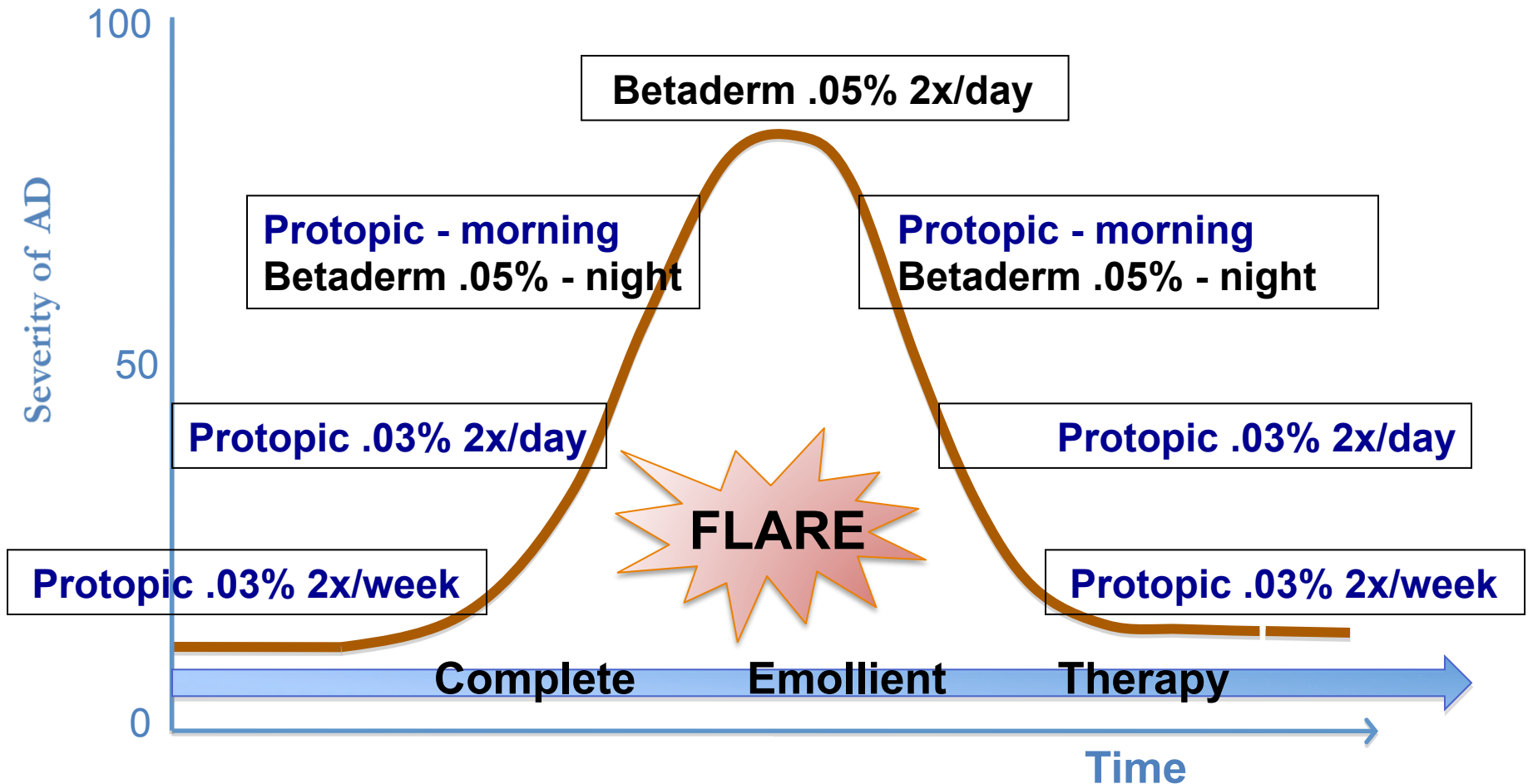
- 1% HC or OTC HC not strong enough in severe AD or flares of AD
- Desonide or Hydroval for face flares
- Betaderm .05% for body flares
- Use above BID **in conjunction with moisturizing** until flare settles then qhs and add TCI or lower potency(low p) TCS qam
- TCI or low p TCS BID once severity less acute; TCI/ low p TCS 2 x weekly in areas of frequent recurrence for maintenance



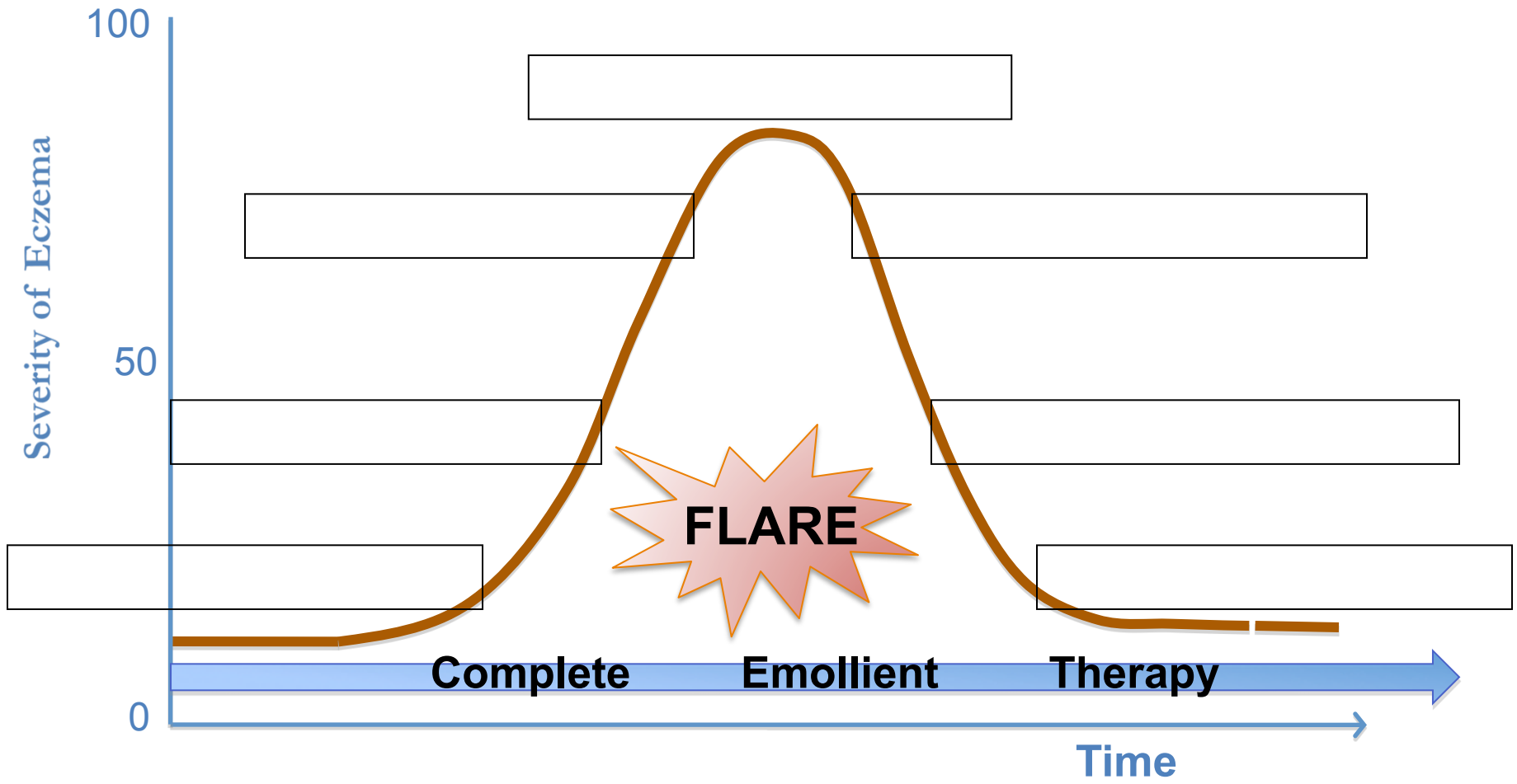
# TCI Preventative Therapy: A Paradigm Shift in the Long-Term Management of Eczema



# Example of a personalized routine for AD patient



# Skin Care Routine for Eczema



# Black box warning on TCIs

- March 2005 FDA gave a black box warning insert to Tacrolimus and Pimecrolimus
- Highest level of warning
- Although a causal link has not been established, rare cases of cancer have been reported in patients using them
- Usage of these products dropped significantly after that time

# Relevant Reported Malignancies with Protopic

Clinical development program and post-marketing reports, including 2.1 million US patients through 2005\*:

- **NMSC: 21 reports**

- None in pediatric patients (<16 years of age)

- **Lymphoma: 25 reports**

- 17 non-cutaneous lymphoma

- 8 cutaneous T-cell lymphoma (CTCL)

- None in pediatric patients (<16 years of age)

\* 7/1/93 – 12/31/05; 5.4 million patients worldwide.

# Risk of Lymphoma

| <b>Expected Rate in US General Population<br/>(SEER, PHS)</b> | <b>Reported Rate in US Protopic Patients</b> |
|---|--|
| 22/100,000<br>(0.02%)   | 25/2.1 million (8 CTCL)<br>(0.001%)          |

**No increased rate of malignancy compared with the expected rates in the general population.**

# Risk of NMSC

| <b>Expected Rate in US General Population</b><br>(SEER*, PHS**) | <b>Reported Rate in US Protopic Patients</b> |
|---|--|
| 533/100,000<br>(0.5%)   | 21/2.1 million<br>(0.001%)                   |

**No increased rate of malignancy compared with the expected rates in the general population.**

# Boxed Warning

- The AAD, CDA, and other dermatology related organizations have issued statements to counter the FDA warning, in favour of the use of TCIs.
- Relevant data shows that there are actually less incidences of malignancy in patients using TCIs than would be expected in the general population.



# AD- secondary bacterial infection



- If sudden flare, fire engine red, more crusting = infected
- Treat clinical infection NOT swab results( they are often colonized)
- Swab to r/o MRSA
- Keflex, Cefzil if widespread (x7-10d)

# Bleach Baths

- Bleach baths 2-3 x per week plus mupirocin in the nares 5 d/mos have been proven to reduce flares caused by 2ndary infection.
- For patients with frequent flares- ask them to “make your very own swimming pool right in the bathtub”.
- Have a handout with instructions. Make sure parents understand they are never to use undiluted bleach on the skin. Also they shouldn't use if multiple breaks in skin as will sting.

# How to make a “bleach bath”

- Lukewarm water to fill a standard bath (150 L)
- $\frac{1}{4}$  -  $\frac{1}{2}$  cup common liquid bleach (eg. Clorox) into bath water. Check bottle to make sure concentration of bleach (sodium hypochlorite) is 6%
- Soak in chlorinated water x 10min
- Use shower or sponge bath to rinse skin with fresh water at end of bath
- Immediately apply topicals as directed.

# Eczema Herpeticum



- Can be misdiagnosed as bacterial infection
- Multiple **vesiculopustular** lesions and painful punched out erosions
- Take a viral swab
- Acyclovir 30mg/kg divided QID x 7-10d
- If fever and severe then IV acyclovir 30-50mg/d divided TID

# Tinea capitis



- fungal infection of the scalp, hair and pilosebaceous unit
- scaling, patchy alopecia, black dots, pustules, boggy mass (kerion), lymphadenopathy
- main culprits: *Trichophyton tonsurans* (NAmerica) and *Microsporum canis* (world)

# Management of Tinea Capitis

- CULTURE is the gold standard for diagnosis
  - hair plucking, scalpel scraping, swabbing scalp with toothbrush or cotton-tip swab
- topical antifungals may be helpful as adjunctive therapy but do not penetrate hair or nail
- *tinea capitis requires oral therapy for clearance*
- Griseofulvin has been the agent of choice, but is no longer available

# Oral treatment

- Terbinafine can be dosed according to weight:
  - <20 kg: 62.5 mg (1/4 tablet)
  - 20 – 40 kg: 125 mg (1/2 tablet)
  - > 40 kg: 250 mg (1 tablet)
- for use in children > 2 years of age
- treatment period of 2 to 4 wks depending on severity of infection and organism, *M. canis* infection may require up to 8 wks
- suspension not available but can crush with food

# Oral treatment

- Fluconazole can be given daily or weekly:
  - 6 mg/kg OD for 20 days
  - 8 mg/kg q week for 8 weeks
  - available as suspension
- Itraconazole can be given as a pulse or continuous:
  - 5 mg/kg OD for 4 – 6 weeks
  - 5 mg/kg OD for 2 to 3 pulses



# Management

- Remember to tell the patient/parent:
  - family members may be asymptomatic carriers
  - all family members should use an anti-fungal shampoo (ketoconazole, selenium sulfide, zinc pyrithione) twice weekly
  - scalp grooming items, towels, pillowcases and hats should not be shared
  - children may return to school after institution of oral therapy and measures to reduce spread

# Perioral dermatitis



- 90% cases in young women
- 2mm red papules, pustules and erythema; dryness common
- locations include perioral area (sparing vermilion border of lips), nasolabial folds, lateral eyelids
- ‘periorificial dermatitis’

# Perioral dermatitis

- use of topical steroids on the face may precede or aggravate POD
- other causes include: cosmetics, toothpaste, emollients, UV light, wind, ? hormonal factors, idiopathic in most cases
- link to rosacea is not certain, but probable
  - same histopathology, similar population, same treatment

# Therapy for Perioral Dermatitis

- *discontinue topical steroids*
  - may require topical hydrocortisone 0.5-1.0% for 2 weeks to prevent flare
- zero-therapy (use nothing) can resolve in 8 wks
- PO tetracycline 250-500 mg OD-BID x 4-8 wks, usually resolves within 4 weeks (only 1 RCT)
- topical erythromycin or metronidazole (Metrocream ®) is less effective and used second line; or concurrently with oral therapy

# Tx for POD

- Submicrobial dose doxycycline is ideal for this condition. TCN antibiotics are used purely for their inflammatory properties since there is no microbe at play, and thus Apprilon 40mg qd would be the systemic tx of choice x 4-6 weeks

# Guttate Psoriasis



- Sudden onset of widespread scaling patches
- Some itch, but not as severe as in dermatitis
- On history may have been preceded by a sore throat 2-3 weeks prior
- Usually self limited and resolves in 2 months. Small % of patients go on to have chronic plaque psoriasis
- Betaderm .1% cream BID, scalp, moisturizing, nUVB
- NO prednisone

# Molluscum Contagiosum



- Common self-limited pox virus on trunk and body folds (in young adults STI found on genitals)
- Often asymptomatic
- May be surrounded by eczematous rash which disappears when infection resolves
- Lasts 6 mos to 2 years

# Treatment pearls

- Avoid communal bathing with sibs and shared towels
- Encourage parents to await spontaneous resolution unless the CHILD is distressed emotionally or physically
- A 2010 Cochrane review concluded that there were no reliable evidence-based treatment options and urged clinicians to consider expectant management (ie, awaiting spontaneous resolution of the molluscum lesions)
- Cantharidin (Cantherone ®) applied with wooden end of cotton wool applicator. Make sure lesions dry well before leaving the office. Wash area in 6-8 hours and expect blistering in 24-36 hours
- Vit A acid cream 0.1% applied qhs (my treatment of choice)
- Common to require multiple treatments



# Treatment pearls cont

- Off-label use Imiquimod 5% (Aldara®). Can be used in conjunction with Cantharidin q4 weeks in the office<sup>1</sup>, or as monotherapy. Apply at night, wash off in am. Take breaks if severe inflammation
- Not indicated for children, but one study suggesting safety<sup>2</sup>
- Very expensive option

1. Ross GL, Orchard GC. Aust J Dermatol 2004; 44: 100-2

2. Myhre PE, Levy ML, Eichenfield LF, Kolb VB, Fielder SL Meng TC. Paediatr Dermatol 2008; 25: 88-95

# Warts

**Common Warts**



**Plantar Warts**



# Wart myths

- **Does duct tape work?**
- Parents may have read about a number of folk remedies and may have questions about their safety and efficacy. Proposed remedies have ranged from topical tea tree oil to use of a banana peel or potato. None has any proven efficacy. The exception is duct tape. A double-blind study in 2005 comparing the efficacy of occlusion with duct tape vs moleskin in the treatment of common warts in adults reported resolution of the wart in 22% of cases with these occlusive treatments.<sup>1</sup>

However, this study also noted a recurrence rate of up to 75% within 6 months.

# Wart Treatments

- A 2011 Dutch study that compared randomly assigned patients (n = 250, ages 4 to 78 years) with warts into 1 of 3 treatment groups (cryotherapy treatments every 2 weeks; daily applications of a salicylic acid liquid; watchful waiting) concluded that cryotherapy was more effective than the other 2 methods.<sup>1</sup>
- Applications of topical salicylic acid have been reported to result in lesion resolution faster than a topical placebo solution, and cryotherapy plus applications of salicylic acid resulted in faster lesion resolution than cryotherapy alone<sup>2</sup>

1. Ned Tijdschr Geneeskd. 2011;155:A3134-3134

2. Clin Med Res. 2006;4:273-293

# How do I treat common and plantar warts?

- In my office I see patients every 2 weeks. The lesions are pared with a 15 blade and then liquid nitrogen is used for 2-3 freeze thaw cycles of 15 seconds each. (10s for younger children)
- Patients are asked to apply Soluver Plus after gentle paring under tape occlusion nightly between visits
- I tell them that it will take 10 visits on average for a wart to resolve.

# Pityriasis (Tinea) Versicolor



- caused by *Malassezia spp.*
  - *M. globosa* (97%)
  - *M. restricta*, *M. slooffiae*, *M. sympodialis*
- caused by conversion of the saprophytic yeast to pathologic mycelial form
- presents as hypo- or hyperpigmented patches with overlying fine scale
- Starts in teens/ young adults when perspiring more

# Pityriasis Versicolor (PV) Treatment

- Topical treatment:
  - selenium sulfide (Selsun® 2.5% shampoo)
    - not Selsun blue ® which is only 1%
    - apply 10 to 15 minutes before washing off in shower
    - other shampoos to try include ketoconazole (Nizoral ®) or ciclopirox (Stieprox ®)
  - topical antifungals (ketoconazole, terbinafine, ciclopirox) can also be applied to limited areas
  - 2 weeks of daily application for all topicals

# PV- Treatment

- Oral treatment:
  - Fluconazole 300 mg once, repeated in 14 days
  - Ketoconazole (Nizoral ®) 200 mg OD x 5 days
    - need to exercise 2 hours after dose
  - Itraconazole (Sporanox ®) 200 mg OD x 5-7 days
  - oral terbinafine (Lamisil ®) **doesn't work!**



# PV- Treatment cont

- Remember to tell the patient:
  - it is likely to recur. Try weekly application of a topical or once monthly with oral agent if trying to prevent recurrence
  - it is not contagious
  - change to dry clothing after exercise or sweating
  - skin colour **will come back**, but may take months after the infection is cleared

# Diagnosis?



# Infantile papular acrodermatitis



- Also known as Gianotti-Crosti syndrome
- Can occur in infants up to 12 years of age
- Develops suddenly over 3-4 days, may last 2-8 weeks
- Symmetric monomorphous papulovesicles on hands, extensor surfaces of extremities, buttocks and face (RARELY on torso)
- Only 23% have pruritis, rash is generally asymptomatic
- Triggered by infection, Hep Bc, EBV, RSV
- Treatment with TCs or emollients if itch is only tx

# Summary

- Give all AD patients/ parents a moisturizing routine, RX routine to deal with flares and maintenance
- If AD patients gets frequent infections, advise and give handout re bleach bath routine
- If AD is blistering/ painful remember herpes virus
- Tinea Capitis require ORAL therapy for cure
- Perioral Dermatitis- DON'T treat with topical steroids- submicrobial dose doxycycline is tx of choice
- Guttate Psoriasis- don't use prednisone, swab throat, mid potency TCS and nUVB

# Summary cont

- Molluscum Contagiosum- watch and wait. If treating consider retin-a cream topically
- Warts require persistence- cryotherapy and nightly Sal Acid under occlusion
- Pityriasis Versicolor- often recurs. Weekly Selsun or Nizoral shampo for maintenance. Systemic agents if widespread or resistant to topical treatment.
- Gianotti-Crosti looks dramatic, but requires no treatment other than reassurance unless child is itchy.

Thank you!