

BASIC INFLAMMATORY DERMATOLOGY

Brandon Litzner, MD

Dermatology/Dermatopathology

Heartland Dermatology



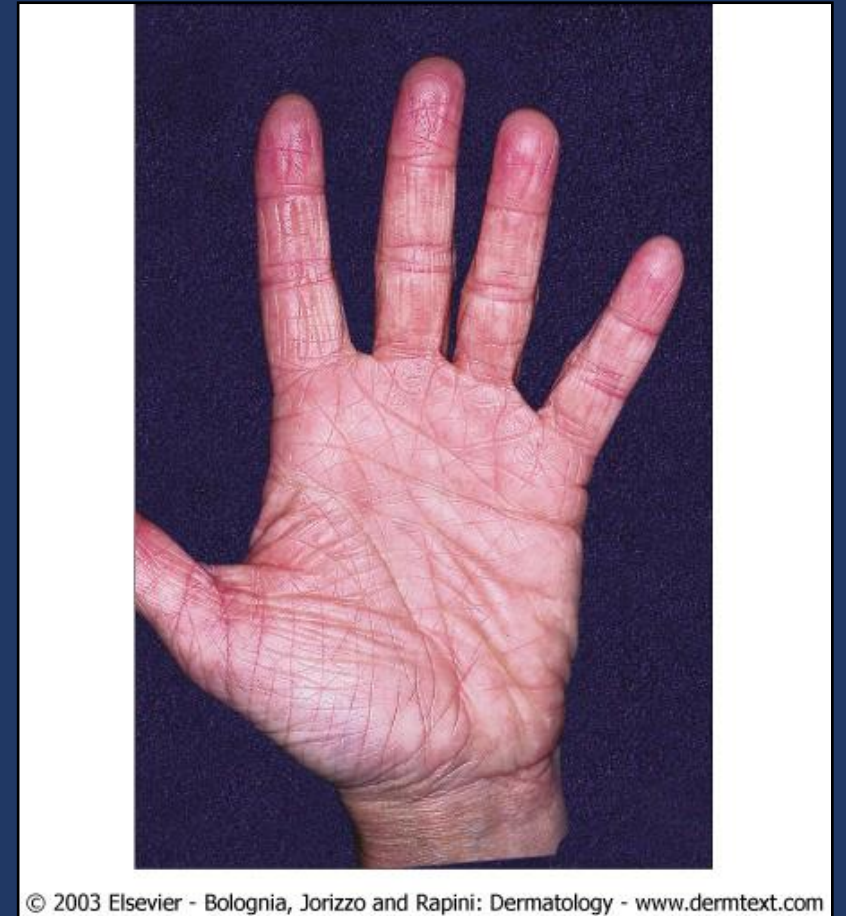
Topics

- Atopic Dermatitis
- Psoriasis
- Acne
- Drug Eruptions

Atopic Dermatitis

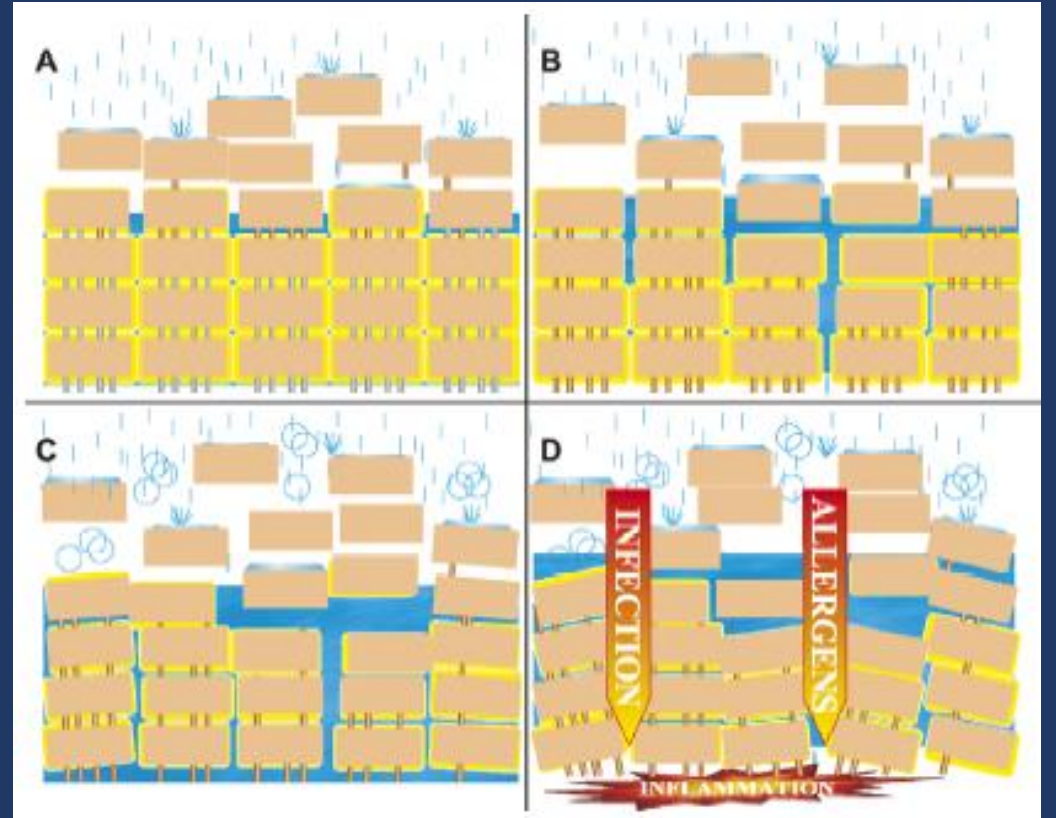
Atopic Dermatitis- Epidemiology

- 90% onset prior to age 5 (rarely before 2)
- 70% of patients have a family history (stronger maternal association)
- Atopic triad: Atopic dermatitis, seasonal allergies, asthma
- Complex genetic disease
 - Loss of function mutations of filaggrin one of the common mutations



Atopic Dermatitis- Pathophysiology

- At its core, a **barrier defect** of the skin
- Increased exposure to allergens, irritants, and infectious agents leads to clinical findings



Atopic Dermatitis- Clinical

- Ill-defined erythematous plaques with scale
- Distribution
 - Infants-face, scalp, extremities
 - Childhood-flexural areas
 - Adults: childhood areas plus hands
- Often with secondary lichenification



Atopic Dermatitis- Basic Treatment

- Restore the barrier
 - Emollients twice daily
 - Ceramide-containing emollients
- Topical steroids for active areas
 - Be aggressive but only on active areas
 - Don't mix with emollients
- Steroid sensitive areas
 - Tacrolimus (Protopic) ointment
 - Pimecrolimus (Elidel) ointment
 - Crisaborole (Eucrisa) ointment
 - Ruxolitinib (Opzelura) cream



Atopic Dermatitis- Advanced Treatments

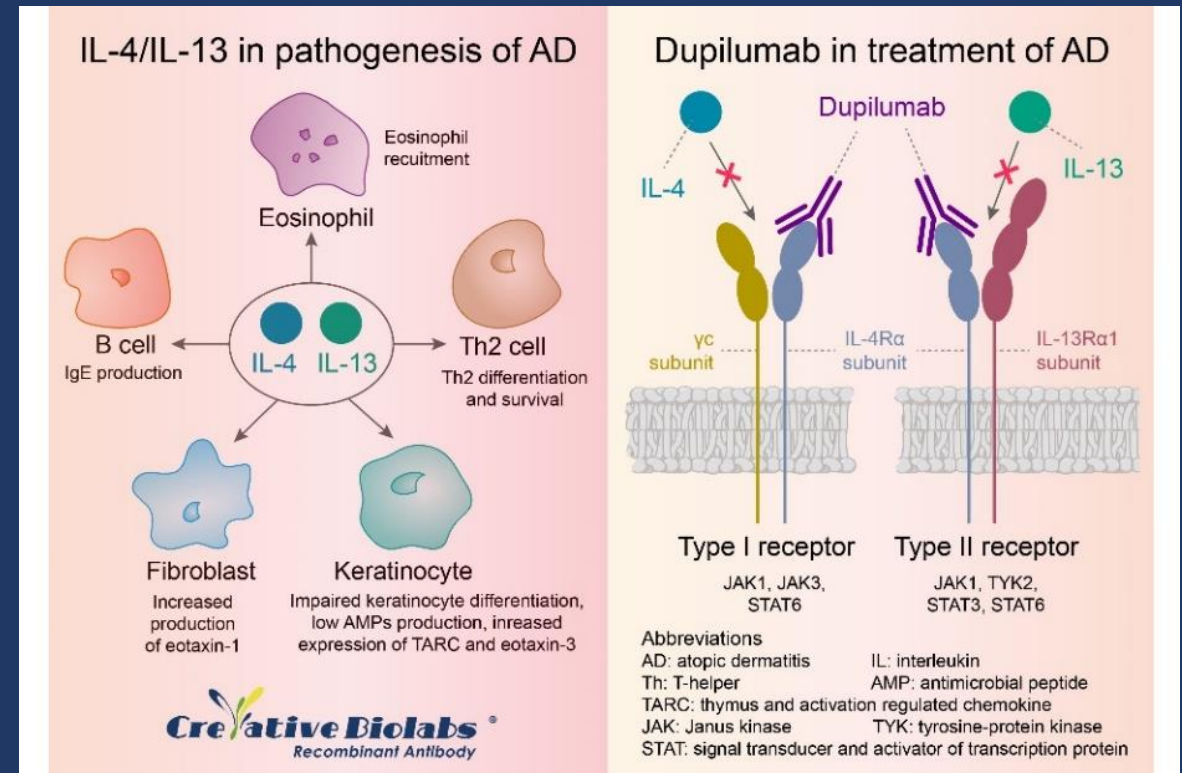
- Immunosuppressive medications

- Methotrexate
- Mycophenolate Mofetil
- Cyclosporine
- Prednisone
 - Please avoid long-term use

- Targeted medications

- Dupilumab (Dupixent)
- Tralokinumab (Adbry)
- Abrocitinib (Cibinqo)
- Upadacitinib (Rinvoq)

- Narrowband UVB (NBUVB)



Atopic Dermatitis- When to Consider Referral

- Not responsive to good skin care, regular emollient use, and topical steroids
- Concern for secondary infection- may require urgent referral/phone call



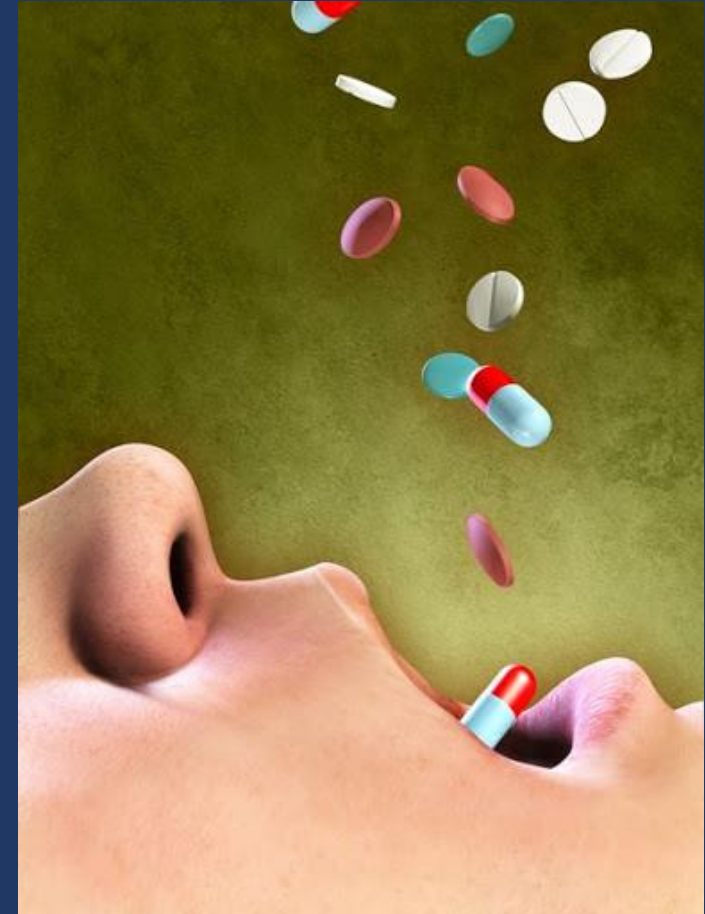
Fact vs Fiction: Bath Time

- “Children with atopic dermatitis should bathe every other day or less frequently”
 - Fiction
- Dermatologists typically recommend daily bathing, but primary care physicians recommend less frequent bathing
- Randomized controlled trial showing twice daily bathing is superior to twice weekly bathing in reducing validated atopic dermatitis outcome method
- Soak and Smear method
 - Warm water
 - 5-10 min in length
 - Medications and emollients applied immediately upon exiting



Fact vs Fiction: Antibiotic Use

- “Regular antibiotic use is effective for children with atopic dermatitis”
 - Fiction
- Antibiotic use in the absence of clinical signs of infection has not been shown to be effective and may lead to antibiotic resistance



Fact vs Fiction: Allergy and Atopic Dermatitis

- “Regular use of skin prick or blood (RAST) allergy testing is useful in atopic dermatitis”
 - Fiction
- Children with atopic dermatitis have higher rates of allergies, although these rarely drive their skin disease
- Allergy testing should only be considered in children who have evidence of an immediate reaction (hives, swelling, pruritus) AND their atopic dermatitis has persisted despite optimal therapy



An Aside: Skin Prick Testing vs Patch Testing

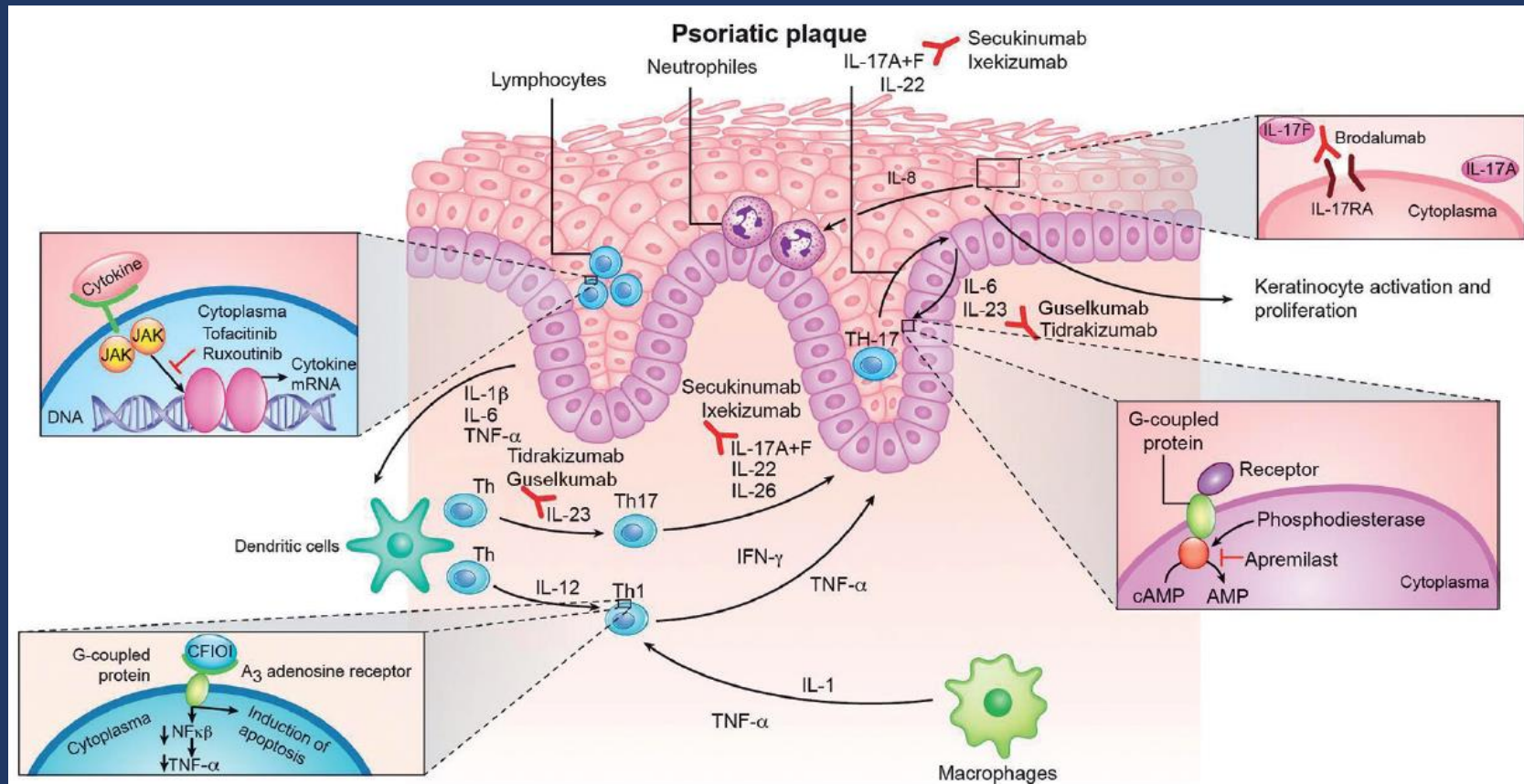
- Skin prick testing
 - Test immediate (type I hypersensitivity)
 - Potentially useful for urticaria and seasonal allergies
 - Useless for allergic contact dermatitis on the skin
- Patch testing
 - Tests delayed type hypersensitivity (type IV)
 - Useful for allergic contact dermatitis
 - Useless for urticaria and seasonal allergies



© MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH. ALL RIGHTS RESERVED.

Psoriasis

Psoriasis- Pathophysiology



Psoriasis- Clinical

- Well demarcated usually thick erythematous plaques
- Silvery/micaceous scale
- Auspitz sign
- Koebnerization
- Common areas of involvement
 - Knees/Elbows
 - Umbilicus
 - Gluteal cleft



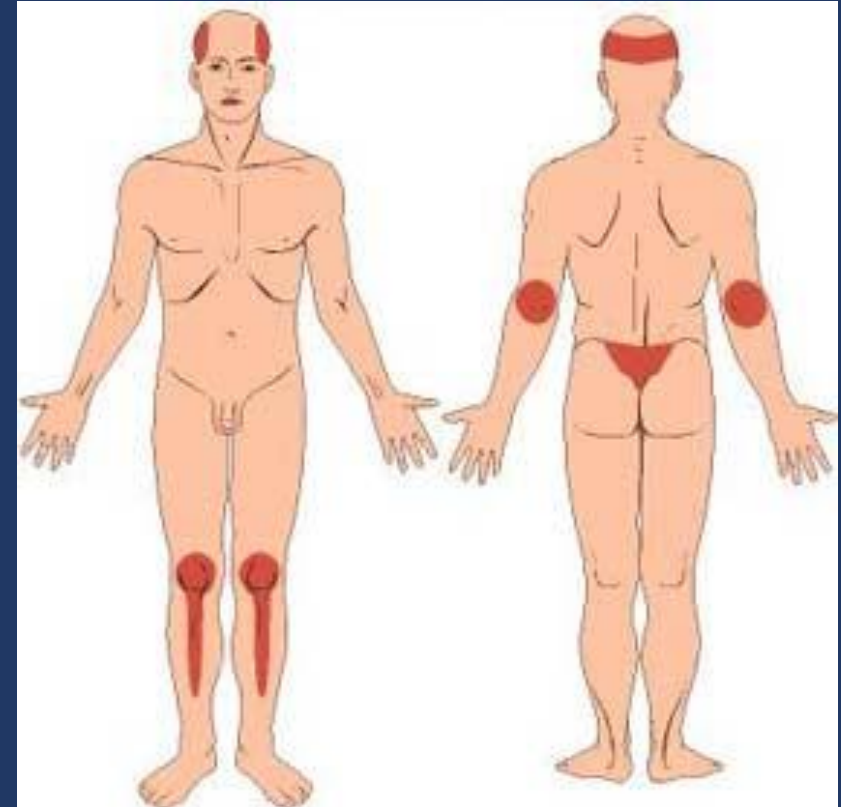
Psoriasis- Clinical Variants

- Inverse psoriasis
- Guttate psoriasis
- Pustular psoriasis
- Palmoplantar pustular psoriasis
- Erythrodermic psoriasis



Psoriasis- Basic Treatment

- Topical steroids- be aggressive
- Calcipotriene (dovonex)
- Combination products
 - Betamethasone and calcipotriene (Enstilar)
 - Halobetasol and tazarotene (Duobrii)
- Tapinarof (Vtama)
- Natural light therapy
 - 10-15 min 3x weekly



Psoriasis- Advanced Treatment

- Narrow-band UVB phototherapy
- Immunosuppressive medications
 - Methotrexate
 - Cyclosporine
 - ~~Prednisone~~
- Phosphodiesterase type IV inhibitor
 - Otezla (apremilast)
- TYK2 inhibitor
 - Sotyktu (Deucravacitinib)
- Biologic Medications
 - Tumor necrosis factor-alpha
 - Adalimumab (Humira)
 - Etanercept (Enbrel)
 - Infliximab (Remicade)
 - Interleukin 12/23
 - Ustekinumab (Stelara)
 - Interleukin 17
 - Brodalumab (Siliq)
 - Ixekizumab (Taltz)
 - Secukinumab (Cosentyx)
 - Interleukin 23
 - Guselkumab (Tremfya)
 - Risankizumab (Skyrizi)
 - Tildrakizumab (Ilumya)

Psoriasis- When/Where to Consider Referral

- Dermatology

- Recalcitrant to topical treatments
- Severe disease
 - Greater than 10% BSA
 - Involvement of genitals, hands, scalp

- Rheumatology

- Psoriasis plus joint pain
 - Usually, small joints of hands feet associated with morning stiffness >30 min
 - Enthesitis, especially of the feet, is a common presentation

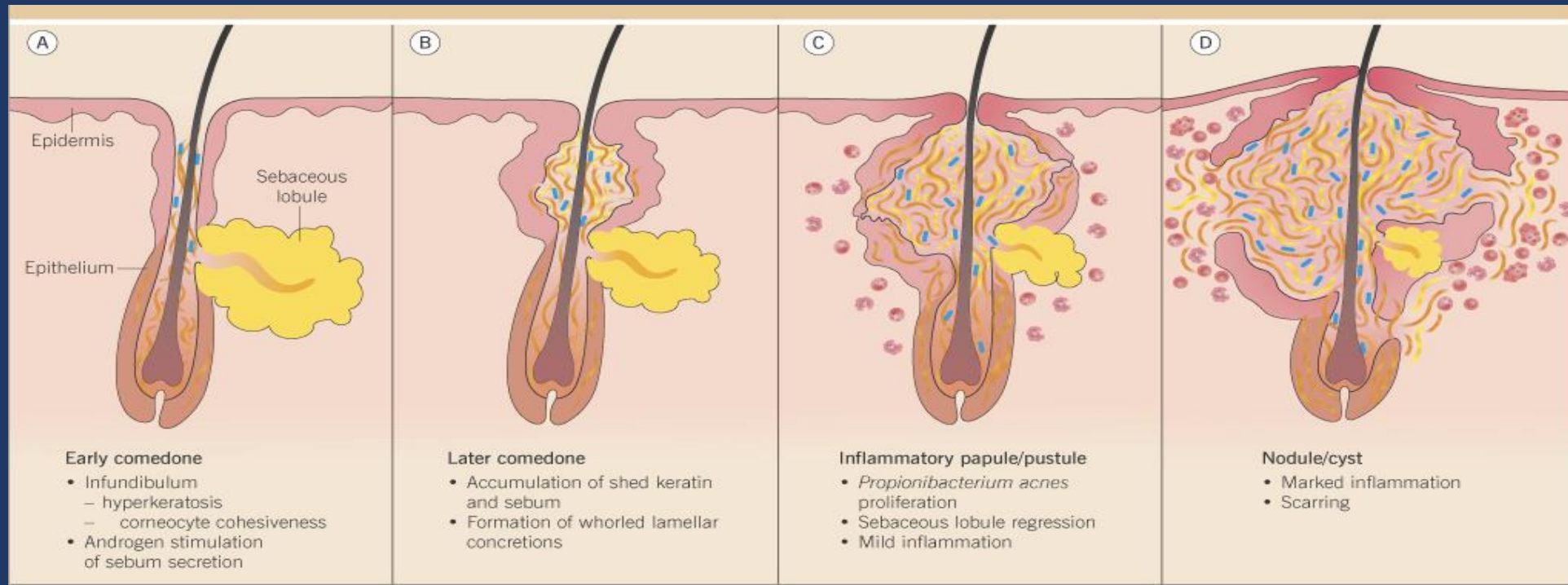
Fact vs Fiction: Steroid-induced Atrophy

- “Steroid-induced skin atrophy is a common problem in patients treated with topical corticosteroids”
 - Fiction
- Available studies suggest a risk ranging from 0-5% with long-term use
- Patient counseling regarding appropriate use is critical



Acne Vulgaris

Acne Vulgaris- Pathophysiology



Acne Vulgaris- Clinical

- Open and closed comedones
- Inflammatory papules
- Cysts
- Scarring



Acne Vulgaris- Basic Treatment

- Comedonal acne
 - Retinoid- qpm
- Inflammatory acne
 - Retinoid- qpm
 - Topical antibiotic- qam
 - Oral antibiotic



Acne Vulgaris- When to Consider Referral

- Severe nodulocystic acne
- Recalcitrant to basic treatments



Drug Eruptions

Morbilliform Drug Eruption

- Clinical
 - Erythematous macules/papules coalescing into patches/plaques
 - “Measles-like”
- Onset
 - 7-14 days after starting medication
- Lab abnormalities
 - None
- Common Medications
 - Numerous but antibiotics, NSAIDs, and anticonvulsants are common



Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS)/Drug induced hypersensitivity Syndrome (DIHS)

- Clinical
 - Many different presentations including bullous; however, morbilliform is the most common presentation
 - Lip swelling is common
 - Systemic symptoms including fever and lymphadenopathy
- Onset
 - 2-6 weeks after starting medication
- Lab Abnormalities
 - Leukocytosis with atypical lymphocytes (may have leukopenia early)
 - Eosinophilia
 - Elevated ALT/AST
 - Hematuria and/or proteinuria
- Common Medications
 - Sulfonamides, anticonvulsants, allopurinol



Score	-1	0	1	2	Minimum	Maximum
Fever >38.58°C	No/U	Yes			-1	0
Enlarged lymph nodes		No/U	Yes		0	1
Eosinophilia		No/U				
Eosinophils			700-1499/μL	1500/μL	0	2
Eosinophils, if leukocytes <4000			10-19.9%	20% or more		
Atypical lymphocytes		No/U	Yes		0	1
Skin involvement						
Rash extent (>50% BSA)		No/U	Yes		-2	2
Rash suggesting DRESS ^{##}	No	U	Yes			
Biopsy suggesting DRESS	No	Yes/U				
Organ involvement [#]						
Liver		No/U	Yes		0	2
Kidney		No/U	Yes			
Lung		No/U	Yes			
Muscle/heart		No/U	Yes			
Pancreas		No/U	Yes			
Other organ(s)		No/U	Yes			
Resolution >15 days	No/U	Yes			-1	0
Evaluation other potential causes						
ANA					0	1
Blood culture						
Serology for Hep A/ Hep B/ Hep C						
<i>Chlamydia/Mycoplasma pneumoniae</i>						
Other serology/PCR						
If none positive and 3 or more of above negative			Yes			
Total score					-4	9

[#]After exclusion of other explanations: 1: 1 organ, 2: [§]2 organs. Final score <2: No case, Final score 2-3: Possible case, Final score 4-5: Probable case, Final score >5: Definite case, ^{##}Morphology is considered suggestive for DRESS: Scaling/desquamation, e.g., exfoliative dermatitis. Oedema, especially facial oedema (excluding lower leg oedema), purpura (excluding lower leg). Infiltration.^[37] U: unknown/unclassifiable, DRESS: Drug reaction with eosinophilia and systemic symptom, BSA: Body surface area, ANA: Antinuclear antibody, PCR: Polymerase chain reaction, Hep A: Hepatitis A virus, Hep B: Hepatitis B virus, Hep C: Hepatitis C virus

Stevens-Johnson Syndrome (SJS)/ Toxic Epidermal Necrolysis (TEN)

- Clinical
 - Red purple patches progressing to blisters and desquamation
 - Nikolsky sign (skin separation with lateral pressure)
 - Involvement of two mucosal sites
 - May have fever
- Onset
 - 1-2 weeks
- Common Medications
 - Anticonvulsants, sulfonamides, Allopurinol, NSAIDs

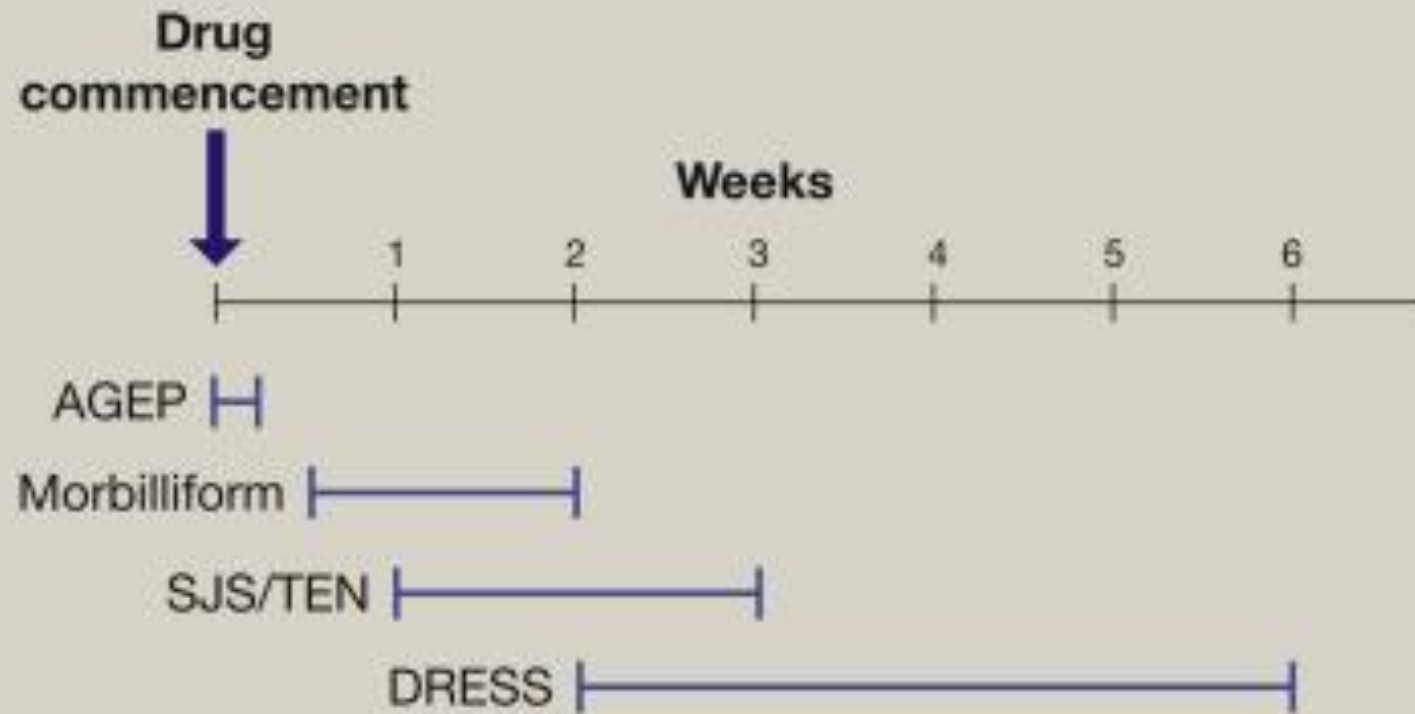


Acute Generalized Exanthematous Pustulosis (AGEP)

- Clinical
 - Small pustules (“pretty and pristine”) on an erythematous base
 - Often starts on intertriginous sites and spreads
 - Fever
- Onset
 - 1-3 days after starting medication
- Common medications
 - Antibiotics (aminopenicillins, macrolides), hydroxychloroquine, calcium channel blockers, and terbinafine



Timeline of onset



Questions?

Contact Information

Dr. Brandon Litzner

drlitzner@heartland-derm.com