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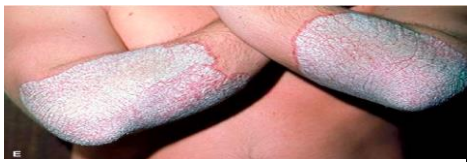
Guest Editors: David Gravette, Morgan Luger, Jay Moulton, Pharm.D. Candidates; Wesley Lindsey, Pharm.D.

Key Inforbits

- Introduction
- Pathophysiology
- Diagnosis
- Types of psoriasis
- Treatment options
- New drugs being studied

August is Psoriasis awareness month



http://www.aad.org/education/clinical-guidelines

Introduction:

Psoriasis is a common immune modulated inflammatory disease affecting nearly 17 million people in North America and Europe, which is approximately 2% of the population. There are lower frequencies in African Americans and Asian patients. Males and females are equally affected among each race.[1] Psoriasis tends to have onset at two peak times during life 1) between the ages of 20-30 or 2) 50-60 years old. It typically presents as thickened erythematous skin or dermal plaques covered with a silvery scale. There are multiple treatment options of topical agents, systemic agents, and phototherapy.[1,2]

1. Law R, Gulliver W. Psoriasis. In: DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM, editors. Pharmacotherapy: A pathophysiologic approach. 8th ed. New York: McGraw-Hill Medical; c2011. Chapter 107; p 1693-1706.
2. Kiser K, Ives T. In: Alldredge B, Corelli R, Ernest M, editors. Koda-Kimble and Young's: Applied Therapeutics: The Clinical Use of Drugs. 10th ed. Philadelphia: Lippincott Williams and Wilkins; c2013. Chapter 41; p956-967.

Pathophysiology:

Psoriasis is a T-lymphocyte-mediated inflammatory disease triggered by the immune system which causes inflammation, new blood vessel growth, and increase cell turnover. These processes occur due to interactions with dermal dendritic cells, activated T-cells, multiple different cytokines, and growth factors present in psoriatic lesions. Patients usually have a family history and precipitating factors such as injury to the skin, infections, drugs (eg, non-steroidal anti-inflammatory drugs (NSAIDS), antimalarials, and beta-adrenergic blockers), smoking, alcohol use, obesity, or stress.[1,2]

1. Law R, Gulliver W. Psoriasis. In: DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM, editors. Pharmacotherapy: A pathophysiologic approach. 8th ed. New York: McGraw-Hill Medical; c2011. Chapter 107; p 1693-1706.
2. Kiser K, Ives T. In: Alldredge B, Corelli R, Ernest M, editors. Koda-Kimble and Young's: Applied Therapeutics: The Clinical Use of Drugs. 10th ed. Philadelphia: Lippincott Williams and Wilkins; c2013. Chapter 41; p956-967.

Diagnosis:

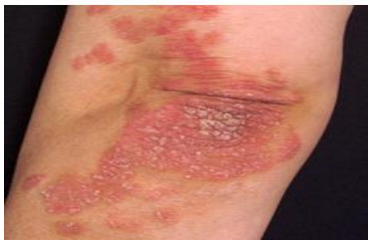
There are several forms of psoriasis each of which have distinguishing characteristics that allow dermatologists to identify what type or types are present. Psoriasis is diagnosed based on characteristics of the lesion and generally does not require any laboratory tests. This is done by conducting a visual inspection of the patients skin, nails, and scalp along with a family history.[1,2] A skin biopsy may be suggested to confirm the diagnosis in order to rule out other skin conditions such as eczema, ringworm, seborrheic dermatitis, lichen planus, and rosea.[1,3] Psoriasis is classified as mild, moderate, or severe based on body surface area (BSA) or the Psoriasis Area and Severity Index (PASI).[4]

1. Diseases and Conditions: Psoriasis [Internet]. Scottsdale (AZ): Mayo Clinic; 2011 Feb 25 [cited 2013 July 9] Available from: http://www.mayoclinic.com/health/psoriasis/DS00193
2. American Academy of Dermatology. Psoriasis Net [Internet]. Schamburg (IL): 2011 Jan 19 [cited 2013 July 9]. Available from: http://www.skincarephysicians.com/psoriasisnet/looks_like.html

3. National Psoriasis Foundation/USA: Psoriasis [Internet]. Portland (OR): 2013 [cited 2013 July 9]. Available from : http://www.psoriasis.org/about-psoriasis
4. Law R, Gulliver W. Psoriasis. In: DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM, editors. Pharmacotherapy: A pathophysiologic approach. 8th ed. New York: McGraw-Hill Medical; c2011. Chapter 107; p 1693-1706.

Types of Psoriasis:

A.



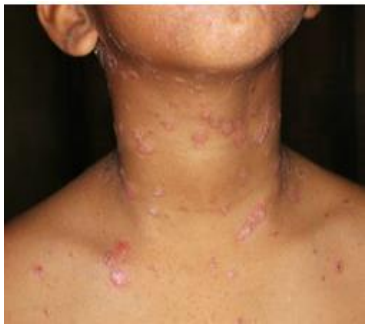
A. Plaque Psoriasis

- Also called psoriasis vulgaris, affects 80% of patients. [2]

Characteristics:

- Raised and thickened patches of reddish skin, which are covered by silvery-white scales, often appearing on the elbows, knees, scalp, chest, and lower back.
- The skin is dry, and may itch, burn, bleed, and crack causing discomfort.

B.



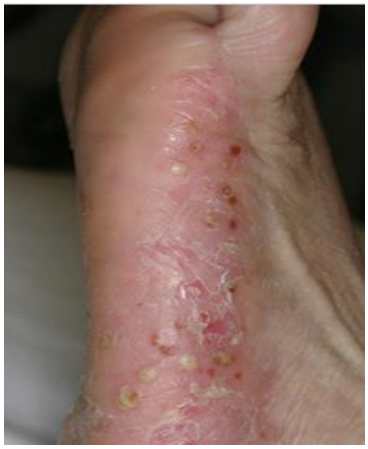
B. Guttate Psoriasis

- 2nd most common type occurring in about 10% of cases.[2]
- Usually occurs in children and young adults with a history of streptococcal infections. May also appear quickly after triggers such as cold, tonsillitis, chicken pox, or certain medications.

Characteristics:

- Drop sized, red dots usually widespread on the trunk, arms, legs, and occasionally on the scalp, face or ears usually as less pronounced scales.
- May first appear as plaque psoriasis and develop into guttate psoriasis.

C.



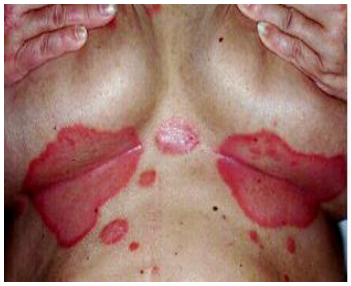
C. Pustular Psoriasis

- Occurs in less than 5%, and primarily in adults as localized or generalized forms.[2]
- May be triggered by infections, sunburn, pregnancy, medications (such as Lithium or systemic cortisone) or develop from plaque psoriasis.

Characteristics:

- Localized: Confined to certain areas such as the palms and soles (known as palmoplantar psoriasis), or ends of fingernails or toes (known as acropustulosis).
- Skin is red swollen and dotted with pus filled lesions. After drying these lesions become brown dots or scales which are sore and painful.
- Generalized: Rare severe form that can be life threatening and hospitalization may be required. Triggers include strep throat, suddenly stopping corticosteroids, pregnancy, and certain medications (such as Lithium or systemic cortisone).
- Lesions are widespread and fever, chills, severe itching, rapid pulse rate, loss of appetite, anemia, and muscle weakness may occur

D.



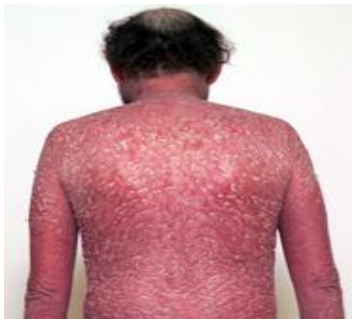
D. Inverse Psoriasis

- Uncommon form of psoriasis; also called skin fold, flexural, or genital psoriasis which occurs in armpits, genital area, between the buttocks or under the breast.

Characteristics:

- Lesions are shiny, smooth, red, and inflamed plaques without scales
- Skin is very tender, and easily irritated by rubbing and sweating.
- Is usually accompanied by another form of psoriasis elsewhere on the body.

E



All pictures taken from
http://www.mayoclinic.com/health/psoriasis/DS00193

E. Erythrodermic Psoriasis

- Also known as exfoliative psoriasis, and occurs in 1% to 2% of patients.[2]
- May occur suddenly or evolve from plaque psoriasis.

Characteristics:

- Lesions have severe redness, shedding, appear burnt. Patients experience fluctuating body temperature, accelerated heart rate, severe pain, and itching
- Triggered by infection, stress, alcoholism, lithium, anti-malarial drugs, strong coal tar preparation, excessive potent corticosteroid use, or cessations of psoriasis medications (i.e. methotrexate or cyclosporine)

1. Diseases and Conditions: Psoriasis [Internet]. Scottsdale (AZ): Mayo Clinic; 2011 Feb 25 [cited 2013 July 9] Available from: http://www.mayoclinic.com/health/psoriasis/DS00193
2. American Academy of Dermatology. Psoriasis Net [Internet]. Schamburg (IL): 2011 Jan 19 [cited 2013 July 9]. Available from: http://www.skincarephysicians.com/psoriasisnet/looks_like.html
3. National Psoriasis Foundation/USA: Psoriasis [Internet]. Portland (OR): 2013 [cited 2013 July 9]. Available from : http://www.psoriasis.org/about-psoriasis

Treatment:

Goals of Treatment[1]	
• Minimize plaques and scales	• Provide cost-effective therapy
• Decrease itching and tearing	• Provide counseling for stress-reduction
• Reduce frequency of flare-ups	• Maintain or improve quality of life

General approach to therapy: use both non-pharmacologic and pharmacologic treatments.

Non-Pharmacologic Treatments[1,2]
• Stress-reduction: reduces extent and severity of psoriasis
• Moisturizers: maintains moisture, reduces shedding, scaling, and pruritus. Ointments may be more beneficial
• Sunscreen: SPF 30 or more should be regularly used since sunburn can trigger outbreak
• Harsh soaps, detergent: should be avoided
• Tepid water, lipid free and fragrance-free cleansers: should be used

Pharmacologic treatments for limited or mild to moderate disease, topical treatments are the standard of care. For extensive or moderate to severe disease, phototherapy or systemic agents with or without topical therapy are the standards of care.

Topical Agents: For Mild to Moderate Psoriasis[3]	
Corticosteroids (CS)	Hydrocortisone and betamethasone are 1st line and most frequently used. Use low potency for sensitive areas (face) and high potency for persistent psoriasis.
Vitamin D analogues	Calcipotriol and calcitriol have similar effects to mid-potency CS with lower side effect profiles. Use in combination with topical agents or phototherapy for best results.
Topical Retinoids	Tazarotene (*Tazorac*). For plaque-type psoriasis to help clear lesions from skin.
Calcineurin inhibitors	Tacrolimus and pimecrolimus are used on thin skin around eyes and facial areas. Not intended for long-term or continuous treatment.

Light Therapy (Phototherapy): For Mild to Moderate Psoriasis[2,4]	
Ultraviolet B waves(UVB) phototherapy	Uses artificial light for single patches, widespread, or topical resistant psoriasis.
Narrowband UVB therapy	Used for localized psoriasis and is preferred over UVB phototherapy
Goeckerman therapy	UVB + coal tar more effective than monotherapy with UVB or coal tar
Photochemotherapy or	Photosensitizer (psoralen) is used prior to UVA exposure allowing UVA rays to reach

psoralen plus ultraviolet A waves (UVA)	deeper into skin making it a more aggressive treatment option.
Combination light therapy	UVA/B with retinoids; use only after other light therapy has failed.

Oral or Parenteral Medications: For Moderate to Severe Psoriasis[1,5,6]	
Retinoids: Soriatane® (acitretin)	Typical oral single dose: 10-50 mg/day. Efficacy is dose dependent. Used best with topical calcipotriol or phototherapy.
Trexall® (methotrexate)	Typical oral single dose: 7.5 mg to 25 mg weekly (max dose: 30 mg/week)
Gengraf® / Neoral® (cyclosporine)	Initial oral dose: 2.5-3.0 mg/kg/day in two divided doses for 4 weeks, then increase by 0.5 mg/kg/day (max dose: 5 mg/kg/day (per guidelines)) Solution can be mixed with milk or orange juice (not grapefruit juice)
Hydrea ®(hydroxyurea)	Initial oral dose: 500 mg BID, then increase up to 3 g/days as tolerated. Typical oral dose: 3-4.5 g/ week has been used
Biologic Response Modifiers	Humira® (adalimumab): 80 mg SubQ during 1st week, the 40 mg next week, then 40 mg every other week continuously. Amevive® (alefacept): 15 mg IM weekly over 12 weeks, then only when uncontrolled. Enbrel® (etanercept): continuously given as 50 mg SubQ twice weekly for first 12 weeks, then 25 mg twice weekly or 50 mg once weekly Remicade® (infliximab): 3 IV infusions of 5 mg/kg given over a 6 week induction period, the regular infusions every 8 weeks Stelara® (ustekinumab): 45 mg at baseline, 4 weeks, and every 12 weeks in those < 100 kg, and 90 mg at same intervals if > 100 kg.

1. Law R, Gulliver W. Psoriasis. In: DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM, editors. Pharmacotherapy: A pathophysiologic approach. 8th ed. New York: McGraw-Hill Medical; c2011. Chapter 107; p 1693-1706.
2. Treatments and drugs: Psoriasis [internet]. Scottsdale (AZ): Mayo Clinic; 2011 Feb 25 [cited 2013 July 10] Available from: http://www.mayoclinic.com/health/psoriasis/DS00193/DSECTION=treatments-and-drugs
3. Menter M, Korman NJ, Elmets CA, Feldman SR, et al. Guidelines for the management of psoriasis and psoriatic arthritis. J Am Acad Dermatol. 2009;12(32):1-17
4. Lapolla W, Yentzer BA, Bagel J, Halvorson CR, Feldman SR. A review of phototherapy protocols for psoriasis treatment. J Am Acad Dermatol. 2011;64(5):936-949.
5. Drug Facts and Comparisons (Facts and Comparison eAnswers) [AUSHOP Intranet]. St. Louis: Wolters Kluwer Health [updated 2013, cited 2013 July 10] Available from http://online.factsandcomparisons.com/
6. Menter M, Korman NJ, Elmets CA, Feldman SR, et al. Guidelines for the management of psoriasis and psoriatic arthritis. J Am Acad Dermatol. 2011;65(1):137-174

New Drugs:

- Tofacitinib approved in 2012 for rheumatoid arthritis treatment is now undergoing clinical trials for use as a topical treatment for plaque psoriasis.
- Apremilast is a suppressor of tumor necrosis alpha thus decreasing immune response. It has completed phase 2 trials and is showing promising results in treating plaque psoriasis.
- Secukinumab is a new biologic agent which decreases immune responses in severe psoriasis.

1. Psoriasis [internet].Washington D.C.: Clinical Trials; [cited 2013 July 10] Available from: http://clinicaltrials.gov/ct2/results?term=psoriasis&cond=%22Psoriasis%22

The last "dose" … **"We cannot solve our problems with the same thinking we used when we created them."**

~ Albert Einstein [Theoretical Physicist, 1879 to 1955]

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