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Key Inforbits

- Psoriasis – An Introduction
- Pathophysiology and Causes of Psoriasis
- Diagnosis and Types of Psoriasis
- Treatment of Psoriasis
- New drugs for the disease
- Reviews of note

August is Psoriasis Awareness Month

Psoriasis – An Introduction

Psoriasis is thought to affect around 17 million people in North America and Europe.[1] This equates to approximately 2% of the population.[2] The disease occurs across all racial groups, but presents most commonly in Caucasians, with males and females being equally affected. The greatest age population affected is those aged 20-30 years, with a small portion affected between 50-60 years old. Although this is rarely a life threatening condition, psoriasis can have a negative effect on physical and emotional quality of life.[3]

1. De Rie MA, Goedkoop AY, Bos JD. Overview of psoriasis. Dermatol Ther. 2004;17:341-349.
2. Nestle FO, Kaplan DH, Barker J. Mechanisms of disease: psoriasis. N Engl J Med. 2009;361:496-509.
3. Law RM, Gulliver WP. 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. p. 1693-1706.

Pathophysiology

Psoriasis is a T-cell mediated immunologic reaction.[1] In patients with psoriasis activated T-cells migrate from the lymph nodes (where they mature) into the epidermis. Once there, the T-cells begin to release cytokines (mediators that induce changes in the cells). These cytokines induce keratinocytes to produce the physiological changes seen in psoriasis, such as plaque formation. As a result of the T-cell activation, the epidermal cells proliferate at a much faster rate than normal epidermal cells (about 7 times faster) which leads to the psoriasis flare up symptoms.

1. Law RM, Gulliver WP. 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. p. 1693-1706.

Causes of Psoriasis

There are two major factors that have been attributed to flares.[1]

Genetic Factors: The exact mode of inheritance is unknown, but patients with psoriasis generally have at least one immediate relative with psoriasis. Some genetic loci have been found on different chromosomes, some of the genetic patterns found in up to 50% of patients with psoriasis.

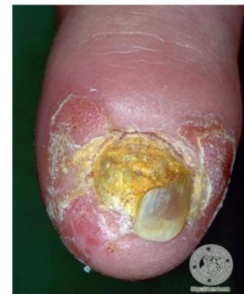
Environmental factors: Climate, stress, infection, trauma, drugs, and smoking/alcohol have all been known to aggravate psoriasis symptoms. Generally things such as warmer seasons and sunlight have been known to decrease 80% of psoriasis symptoms, while colder environments have seen a 90% worsening in symptoms. Stress has been known to worsen psoriasis symptoms in 40% of patients. Alcohol seems to be correlated with psoriatic symptoms in men, while smoking has a greater influence for females. Up to 25% of patients with psoriasis flare ups have been found to have had an infection that precipitated the flare. Some drugs known to induce a flare include: lithium carbonate, β-blockers, NSAID's, tetracyclines, and anti-malarial agents.

1. Law RM, Gulliver WP. 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. p. 1693-1706.

Types of Psoriasis

- **Plaque -** This is the most common form of psoriasis.[1,2] Main signs are raised, dry, red skin lesions which are covered by silvery scales. Plaque psoriasis can occur anywhere on the body and may itch or even be painful.
- **Intertriginous (Inverse) -** Mainly seen in the groin, armpits, around genitalia, and under breasts; this form of psoriasis causes patches of smooth, red, inflamed skin. Intertriginous is more common in people who are overweight and can be irritated by friction and sweating.
- **Scalp -**Red, itchy spots on the scalp covered with silvery scales.
- **Erythrodermic -** This is the least common form of psoriasis. Erythrodermic psoriasis can cover the entire body with a peeling, red rash that may itch or burn severely. Sunburn, corticosteroids, medications, and other forms of psoriasis that are poorly controlled can trigger this form.
- **Guttate -** This form of psoriasis mainly affects individuals who are less than 30 years of age and is commonly triggered by a bacterial infection. Main signs are small sores shaped like drops of water on the arms, legs, torso, and scalp. The sores are usually covered with a scale that is not as thick as those seen in plaque psoriasis. This form can be limited to a single outbreak that clears without treatment or repeated episodes.
- **Psoriasis Arthritis -** Causes painful, swollen joints and discolored nails in addition to the classic signs of psoriasis. Psoriasis arthritis can affect any joint in the body, but is typically not as severe as the other forms of arthritis.
- **Pustular -** Range of presentation varies from small patches on the hands, feet, or fingertips to widespread patches. Has a quick onset with pus-filled blisters manifesting only hours after the skin starts to become red and tender. The blisters generally dry up in 1-2 days, but may reappear in a few days or weeks.
- **Acrodermatitis of hallapeau**
  This is a very rare form of pustular psoriasis that involves recurrent pustular eruptions on the fingers and toes.

1. Diseases and Conditions: Psoriasis [internet]. Scottsdale (AZ): Mayo Clinic; 2011 Feb 25 [cited 2011 July 1] Available from: http://www.mayoclinic.com/health/psoriasis/DS00193 .
2. DermIS. Acrodermatitis Continua Suppurativa Hallopeau [internet]. Heidelburg, Germany: Dermatology Information System; [cited 2011 July 1] Available from: http://www.dermis.net/dermisroot/en/32213/diagnose.htm .



*taken from http://www.dermis.net/dermisroot/en/32213/diagnose.htm

Diagnosing Psoriasis

Diagnosing psoriasis is typically performed by observing the skin, scalp, and nails. In some cases a skin biopsy may be performed to determine the exact type of psoriasis. It is also important to rule out other skin conditions that are similar to psoriasis such as seborrheic dermatitis, pityriasis rosea, ringworm, and lichen planus.[1]

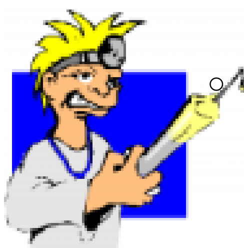
- Evaluating psoriasis to determine severity is based on impact on quality of life, amount of body surface involved, and characteristics of the lesion.[2]
- Lesions are generally areas of redness covered by silvery scales with well defined borders.
  - 50% of lesions are associated with itching and should be treated to avoid excoriations.[2]

1. Diseases and Conditions: Psoriasis [internet]. Scottsdale (AZ): Mayo Clinic; 2011 Feb 25 [cited 2011 July 1] Available from: http://www.mayoclinic.com/health/psoriasis/DS00193.
2. Law RM, Gulliver WP. 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. p. 1693-1706.

Treating Psoriasis

There is currently no cure for psoriasis, but there are many options available for treatment. Selection of treatment is highly patient specific and is tailored to the location, type, and severity of psoriasis. Topical agents are preferred for limited-mild disease, while phototherapy and systemic agents are preferred for moderate-severe psoriasis with or without topical agents.[1]

- Non-Pharmacologic Therapy: Stress reduction has been shown to decrease the severity of psoriasis and oatmeal baths can reduce itching.[1] Sunscreen of at least 30 SPF should always be used by patients with psoriasis to prevent flare-ups.
- Topical Agents: Includes corticosteroids, vitamin D3 analogues, retinoids, anthralin, coal tar.[1,2]
  - Mid-high potency corticosteroids should be used on all areas of the body except the face and skin on skin contact areas in which case low potency corticosteroids should be used.
  - Calcipotriol is a vitamin D3 analogue and has been shown to have similar potency to class 3 corticosteroids with a better side effect profile.
  - Retinoids can help with scaling, but can irritate the skin.
  - FYI: 1 fingertip (tip of the finger to the first joint) (500 mg) of topical agents will cover 1 hand or foot. For psoriasis on the torso, 16 fingertips (7.5 g) are generally needed to cover the front and back.
- Phototherapy: exposure to sunlight, UVB phototherapy, Goeckerman therapy, and PUVA[3,4]
  - Goeckerman therapy is when coal tar is applied to the affected area and the patient is exposed to UVB light and is more effective than monotherapy with either treatment.
  - PUVA is when the patient takes psoralen before being exposed to UVA light, which makes the skin more responsive to UVA light.
- Systemic Agents: For moderate-severe forms of psoriasis with/without a topical or phototherapy.
  - Oral Agents:[5]
    - Soriatane® (acitretin) – 25-50 mg/day
    - Gengraf® /Neoral® (cyclosporine) – 1.25 mg/kg twice daily
    - Trexall® (methotrexate) – 10-25 mg once weekly
    - Hydrea® (hydroxyurea) – 500 mg twice daily
  - Injectable Agents:[5]
    - Humira® (adalimumab) – 80 mg SC for initial dose, then 1 week later start maintenance dose of 40 mg every other week
    - Amevive® (alefacept) – 15 mg IM once weekly for 12 weeks
    - Enbrel® (etanercept) – 50 mg SC twice weekly for 3 months, then 50 mg SC once weekly



- Remicade® (infliximab) – 5 mg/kg IV infusion followed by repeated doses, 2 and 6 weeks after first infusion, then every 8 weeks
- Stelara® (ustekinumab) – 45-90 mg (depending on weight) SC initially and 4 weeks after initial dose, then every 12 weeks

1. Law RM, Gulliver WP. 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. p. 1693-1706.
2. 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
3. Diseases and Conditions: Psoriasis [internet]. Scottsdale (AZ): Mayo Clinic; 2011 Feb 25 [cited 2011 July 1] Available from: http://www.mayoclinic.com/health/psoriasis/DS00193.
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 2011, cited 2011 July 1] Available from http://online.factsandcomparisons.com/

New Drugs[1,2]

- Paxceed® (micellar paclitaxel) is a cancer drug in phase 2 clinical trials that interferes with new blood vessel growth and cell division and may decrease the growth of new skin cells in psoriasis.
- Voclosporin is a drug similar to cyclosporine with fewer side effects; it is in phase 3 clinical trials for use in psoriasis.
- Apremilast is an oral drug currently in phase 3 trials for use in moderate-severe psoriasis and psoriatic arthritis.
- Ozesp® (briakinumab) is an interleukin 12/23 receptor blocker similar to Stelara® that showed good efficacy, but its new drug application was withdrawn in January 2011 due to side effects.
- Cimzia® (certolizumab pegol) is an anti-TNFα drug currently indicated for Crohn's disease and rheumatoid arthritis; it is in phase 3 trials for psoriatic arthritis.
- Tasocitinib is an oral immunosuppressant currently in phase 3 trials that showed good efficacy in phase 2 trials, however it was only tested for 12 weeks.

1. Psoriasis Cure Now. Hope: Psoriasis and Psoriatic Arthritis Treatments in Clinical Trials [internet]. Washington, DC: Psoriasis Cure Now; [cited 2011 July 5] Available from: http://www.psoriasis-cure-now.org/treatment/
2. Herrier RN. Advances in the treatment of moderate-to-severe plaque psoriasis. Am J Health-Syst Pharm. 2011;68(9):795-806.

Reviews of Note:

- Herrier RN. Advances in the treatment of moderate-to-severe plaque psoriasis. Am J Health-Syst Pharm. 2011;68(9):795-806.
- 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.
- 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

The last "dose" …

"A fine beer may be judged with only one sip, but it's better to be thoroughly sure."

~Czech Proverb

August 5th is International Beer Day

An electronic bulletin of drug and health-related news highlights, a service of …
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