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REVIEW ARTICLE

A Review on Current Approaches for Management of Psoriasis in Dermatological Practice

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ABSTRACT

It is a chronic inflammatory disorder of skin in which the epidermal cells are damaged by antibodies in the system. It is also called as auto immune disorder of joints. The newer formation of epidermal cells it takes 3-4 weeks but in psoriasis condition 3-4 days the faster development of epidermal cells are takes place. The causative factors are genetics HLA cw 6, alcohol, smoking, stress, life style factors, drugs. The diagnosis of disease includes skin biopsy-rays of joints. The symptoms include joint pain, joint infection, vasculitis, tendinitis, formation of red itchy plaques in the skin surface. The hyper activation of T-cells responsible for progression of disease. It forms the antigen processing complex responsible for the development of infection. The inflammatory cells, vascular changes are responsible for development of disease. The management of disease includes emollients, moistures, coal tar derivatives, anti TNF agents will reduce the progression of the disease.

Keywords: inflammation, emollients, infection, genetics.

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CONTENTS

1. Introduction	21
2. Common types of psoriasis	22
3. Pathophysiology.	23
4. Conclusion.	24
5. References	24

1. Introduction

Psoriasis is a skin condition that causes red, flaky, crusty patches of skin covered with silvery scales. These patches normally appear on your elbows, knees, scalp and lower back, but can appear anywhere on body [1]. Most people are only affected with small patches. In some cases, the patches can be itchy or sore. It can start at any age, but most International Journal of Medicine and Pharmaceutical Research

often develops in adults under 35 years old. The condition affects men and women equally. The severity of psoriasis varies greatly from person to person. For some people it's just a minor irritation, but for others it can have a major impact on their quality of life. Psoriasis is a long-lasting (chronic) disease that usually involves periods when you

have no symptoms or mild symptoms, followed by periods when symptoms are more severe [2].



Figure 1

Reasons for Psoriasis development

- People with psoriasis have an increased production of skin cells. Skin cells are normally made and replaced every three to four weeks, but in psoriasis this process only lasts about three to seven days.
- The immune system is your body's defence against disease and infection, but for people with psoriasis, it attacks healthy skin cells by mistake.

2. Common types of psoriasis

Plaque psoriasis (psoriasis vulgaris)

This is the most common form, accounting for about 80% of cases. Its symptoms are dry, red skin lesions, known as plaques, which are covered in silver scales. They normally appear on your elbows, knees, scalp and lower back, but can appear anywhere on your body. The plaques can be itchy, sore or both. In severe cases, the skin around your joints may crack and bleed [3].

Scalp psoriasis

This can occur on parts of your scalp or on the whole scalp. It causes red patches of skin covered in thick silvery-white scales.

Nail psoriasis

Psoriasis can cause your nails to develop tiny dents or pits, become discoloured (or) grow abnormally. Nails can often become loose and separate from your nail bed. In severe cases, your nails may crumble.

Guttate psoriasis

Guttate psoriasis causes small (less than 1cm or 1/3 inch) drop-shaped sores on your chest, arms, legs and scalp. This type of psoriasis sometimes occurs after a streptococcal throat infection and is more common among children and teenagers [4].

Inverse (flexural) psoriasis

This affects folds or creases in your skin, such as the armpits, groin, between the buttocks and under the breasts. It can cause large, smooth red patches in some or all of these areas. Inverse psoriasis is made worse by friction and sweating, so it can be particularly uncomfortable in hot weather.

Pustular psoriasis

Pustular psoriasis is a rare type of psoriasis that causes pus-filled blisters (pustules) to appear on your skin. Different

types of pustular psoriasis affect different parts of the body [5].

Generalised pustular psoriasis or von Zumbusch psoriasis

This causes pustules on a wide area of skin, which develop very quickly. The pus consists of white blood cells and is not a sign of infection. The pustules may reappear every few days or weeks in cycles. During the start of these cycles, von Zumbusch psoriasis can cause fever, chills, weight loss and fatigue [6].

Palmoplantar pustular psoriasis

This causes pustules to appear on the palms of your hands and the soles of your feet. The pustules gradually develop into circular brown, scaly spots, which then peel off. Pustules may reappear every few days or weeks [7].

Acropustulosis

This causes pustules to appear on your fingers and toes. The pustules then burst, leaving bright red areas that may ooze or become scaly. These may lead to painful nail deformities.

Erythrodermic psoriasis

Erythrodermic psoriasis is a rare form of psoriasis that affects nearly all the skin on the body. This can cause intense itching or burning. Erythrodermic psoriasis can cause your body to lose proteins and fluid, leading to further problems such as infection, dehydration, heart failure, hypothermia and malnutrition [8].

Epidemiology:

Psoriasis, which affects at least four million Americans, is slightly more common in women than in men. Although the disease can develop at any time, 10-15% of all cases are diagnosed in children under 10, and the average age at the onset of symptoms is 28. Psoriasis is most common in fair-skinned people and extremely rare in dark-skinned individuals

Etiology:

The cause of psoriasis is unknown, but research suggests that an immune-system malfunction triggers the disease. Factors that increase the risk of developing psoriasis include:

- family history
- stress
- exposure to cold temperatures
- injury, illness, or infection
- steroids and other medications
- race

Genetics: Genes like cw6, HLA B 13, 16, 27, BW16.

Psoriasis triggers

Common triggers include:

- An injury to your skin, such as a cut, scrape, insect bite or sunburn (this is known as the Koebner response)
- drinking excessive amounts of alcohol
- smoking
- stress
- hormonal changes
- Certain medicines such as lithium, some antimalarial medicines, anti-inflammatory medicines including Ibuprofen, ACE inhibitors

(used to treat high blood pressure) and beta blockers.

- Throat infections – in some people, usually children and young adults, a form of psoriasis called guttate psoriasis develops after a streptococcal throat infection (although most people who have streptococcal throat infections don't develop psoriasis [9].
- Other immune disorders, such as HIV, which cause psoriasis to flare up or to appear for the first time.

Symptoms of Psoriasis

- Red lesions in the knees, elbows, palms, soles.
- Brown colour pus covered with red lesions
- Nail pitting, nail ridging, onycholysis.
- Red lesions in the scalp
- Temperature dys regulation, dehydration
- Electrolyte imbalances
- Bone pain, joint swelling, vasculitis, tendinitis.

3. Pathophysiology

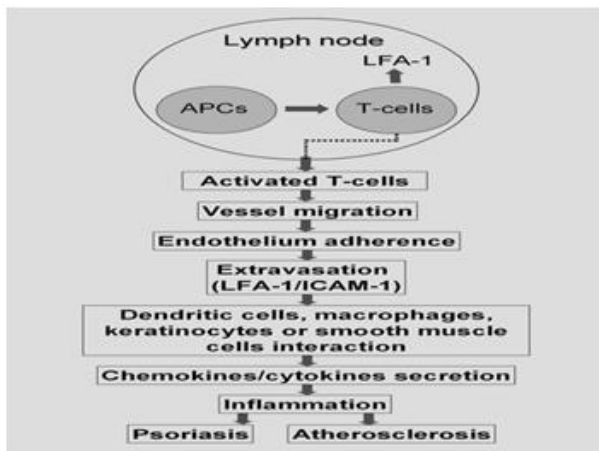


Figure 2: Pathophysiology of Psoriasis

Psoriasis is characterized by an abnormally excessive and rapid growth of the epidermal layer of the skin. Abnormal production of skin cells (especially during wound repair) and an overabundance of skin cells result from the sequence of pathological events in psoriasis. Skin cells are replaced every 3–5 days in psoriasis rather than the usual 28–30 days. These changes are believed to stem from the premature maturation of keratinocytes induced by an inflammatory cascade in the dermis involving dendritic cells, macrophages, and T cells (three subtypes of white blood cells). These immune cells move from the dermis to the epidermis and secrete inflammatory chemical signals (cytokines) such as tumor necrosis factor- α , interleukin-1, interleukin-6, interleukin-36 and interleukin-22.

Gene mutations of proteins involved in the skin's ability to function as a barrier have been identified as markers of susceptibility for the development of psoriasis. DNA released from dying cells acts as an inflammatory stimulus in psoriasis and stimulates the receptors on certain

dendritic cells, which in turn produce the cytokine interferon- γ . In response to these chemical messages from dendritic cells and T cells, keratinocytes also secrete cytokines such as interleukin-1, interleukin-6, and tumor necrosis factor- α , which signal downstream inflammatory cells to arrive and stimulate additional inflammation [10]. Interleukin-23 is known to induce the production of interleukin-17 and interleukin-22. Interleukin-22 works in combination with interleukin-17 to induce keratinocytes to secrete neutrophil-attracting cytokines and develop the risk of infection.

Diagnosis

- skin biopsy
- Blood test
- X-rays of the affected joints may be taken.
- ESR test
- CBP test

Topical Treatments for Psoriasis

Steroid-based creams

The mainstay of psoriasis treatment, steroid creams decrease inflammation, relieve itching, and block the production of cells that are overproduced in psoriasis. Stronger preparations, which are more effective than milder ones, can cause side effects that include burning, dryness, irritation, and thinning of the skin.

Calcipotriene -containing topical ointment

Calcipotriene, which is related to vitamin D, has proven to be effective for treating psoriasis, especially when combined with a topical corticosteroid cream.

Coal-tar ointments and shampoos

These products can help slow the rapid growth of skin cells and alleviate symptoms, but some people are vulnerable to the side effects, especially folliculitis, a pimple-like rash affecting the hair follicles. These medicines should be used only under a doctor's supervision.

Prescription retinoids

These topical preparations containing a synthetic form of vitamin A can help improve psoriasis. These preparations don't work as quickly as steroids. Topical retinoids can sometimes cause dryness and irritation of the skin

Light Therapy for Psoriasis

- Even regular doses of sunlight not enough to produce sunburn can help psoriasis lesions in many people. For persistent, difficult-to-treat cases of psoriasis, many doctors recommend light therapy. One of the most effective treatments is PUVA (the drug psoralen combined with ultraviolet A, or UVA, light).
- The ultraviolet B light (UVB) treatment using a light box alone or with other therapies such as coal tar.

Oral Drugs for Psoriasis

- One such medication, methotrexate (also used as a chemotherapy drug for cancer and for various forms of arthritis), can produce dramatic clearing of the psoriasis lesions.
- Another medication of this type is cyclosporine.

- Oral retinoids, compounds with vitamin-A-like properties, can be mildly helpful to people with severe psoriasis. Women of childbearing age need to use birth control with this medication and for three years afterwards, because it is associated with increased risk for birth defects.
- Newer treatments for people with severe psoriasis and psoriatic arthritis are now available. Several "biologic" drugs, which are made from human or animal proteins, focus on controlling the body's immune response.
- These drugs are quite effective but are extremely expensive and include etanercept (Enbrel), adalimumab (Humira) and ustekinumab (Stelara).

Natural Psoriasis Treatments continued

Aloe vera:

Preliminary research suggests that topical cream from the aloe vera plant may improve symptoms of psoriasis. One study showed that topical aloe vera was more effective than placebo. This product is of only minimal benefit, at best.

Fish oil:

Fish oil may be helpful for psoriasis when taken orally. Research has suggested that taking daily oral fish oil supplements containing 1.8 to 3.6 grams of eicosapentaenoic acid (EPA) may bring some improvement.

Dead Sea salts:

Bath solutions, such as Dead Sea salts, oil, oilated oatmeal, or Epsom salts can help psoriasis by removing scales and easing itching. Capsaicin, the ingredient in peppers that gives them their heat, is also the active ingredient in many pain-relieving gels and creams. Capsaicin can cause a burning sensation to the skin, which improves the longer you use it. It's important to wash your hands immediately after rubbing in capsaicin and not touch your eyes or mouth while you have capsaicin on your hands.

- The emollient salicylic acid is structurally similar to para-aminobenzoic acid (PABA), commonly found in sunscreen, and is known to interfere with phototherapy in psoriasis.
- Coconut oil, when used as an emollient in psoriasis, has been found to decrease plaque clearance with phototherapy.
- Medicated creams and ointments applied directly to psoriatic plaques can help reduce inflammation, remove built-up scale, reduce skin turnover, and clear affected skin of

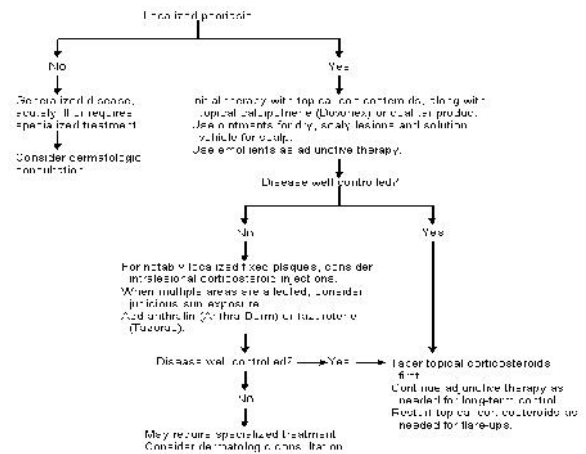


Figure 4

Surgery

Limited evidence suggests removal of the tonsils may benefit people with chronic plaque psoriasis, guttate psoriasis, and Palmoplantar Pustulosis.

Alternative therapy

Uncontrolled studies have suggested that individuals with psoriasis or psoriatic arthritis may benefit from a diet supplemented with fish oil rich in eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

4. Conclusion

It is a chronic inflammatory disorder of skin in which dermal cells are rapidly damaged by inflammation process. The early detection and diagnosis of disease we can minimize the disease complications. The management of disease through Pharmacological and non Pharmacological therapy we can minimize the disease progression conditions. The emollients, coal tars, poralen therapy we can improve the patient better compliance to the therapy.

5. References

[1] Griffiths CE., Christophers E, Barker JN, Chalmers RJ, Chimenti, S, Krueger GG, Leonardi C, Menter A, Ortonne JP, Fry, L. A classification of psoriasis vulgaris according to phenotype. Br J Dermatol, 2007, 156 (2): 258–62.

[2] Weidemann AK, Crawshaw AA, Byrne E, Young HS, Vascular endothelial growth factor inhibitors: investigational therapies for the treatment of psoriasis". Clin Cosmet Investig Dermatol, 2013, 6: 233–44.

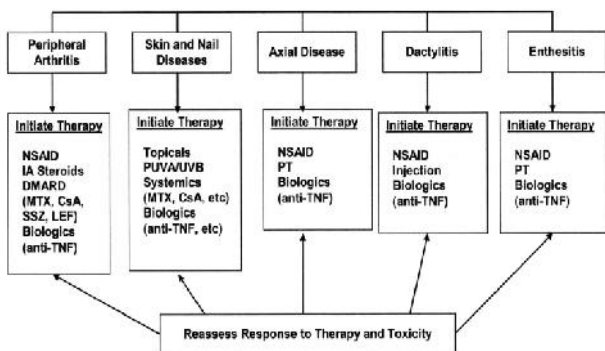


Figure 3: Algorithms for management of psoriasis

- Moisturizers and emollients such as mineral oil, petroleum jelly, calcipotriol, and decubal (an oil-in-water emollient) were found to increase the clearance of psoriatic plaques.
- Emollients have been shown to be even more effective at clearing psoriatic plaques when combined with phototherapy.

- [3] Han R, Rostami-Yazdi M, Gerdes S, Mrowietz U. Triptolide in the treatment of psoriasis and other immune-mediated inflammatory diseases. *Br J Clin Dermatol*, 2013, 74(3): 424–36.
- [4] Quatresooz P, Hermanns-Lê T, Piérard GE, Humbert P, Delvenne P, Piérard-Franchimont C. Ustekinumab in psoriasis immunopathology with emphasis on the Th17-IL23 axis: a primer. *J Biomed Biotechnol*, 2012, (147413): 1–5.
- [5] Gelmetti C. Therapeutic moisturizers as adjuvant therapy for psoriasis patients. *Am J Clin Dermatol*, 2009, 10(1): 7–12.
- [6] Prieto-Pérez R, Cabaleiro T, Daudén E, Ochoa D, Roman M, Abad-Santos F. Genetics of Psoriasis and Pharmacogenetics of Biological Drugs. *Autoimmune Dis*. 2013 (613086): 613086.
- [7] Gisondi P, Del Giglio M, Di Francesco V, Zamboni M, Girolomoni G. Weight loss improves the response of obese patients with moderate-to-severe chronic plaque psoriasis to low-dose cyclosporine therapy: a randomized, controlled, investigator-blinded clinical trial. *Am J Clin Nutr* 2008, 88: 1242-7.
- [8] Rapp SR, Feldman SR, Exum ML, Fleischer AB, Reboussin DM. Psoriasis causes as much disability as other major medical diseases. *J Am Acad Dermatol* 1999, 41: 401-7. 145.
- [9] Krueger G, Koo J, Lebwohl M, Menter A, Stern RS, Rolstad T. The impact of psoriasis on quality of life: results of a 1998 National Psoriasis Foundation patient-membership survey. *Arch Dermatol*. 2001, 137: 280-4.
- [10] Schmitt JM, Ford DE. Work limitations and productivity loss are associated with health-related quality of life but not with clinical severity in patients with psoriasis. *Dermatology*, 2006, 213: 102-10.