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A REVIEW ON PSORIASIS- SYMPTOMS, TYPES AND TREATMENT

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ABSTRACT

Psoriasis is a chronic dermatological disorder in which the skin cells proliferate nearly ten times faster than normal due to immune system dysregulation. It is characterized by papules and plaques of varying morphology, distribution, and severity. The lesions are typically well-demarcated, circular, erythematous papules or plaques covered with dry, grayish or silvery-white scales. They commonly appear symmetrically on the scalp, elbows, knees, lumbosacral region, and flexural areas. Red, itchy, scaly plaques are among the most frequent clinical features. Guttate psoriasis, which often begins in childhood or early adulthood, presents as multiple small, bright red, smooth lesions that may have minimal scaling. The underlying pathophysiology involves hyperproliferation and abnormal differentiation of epidermal keratinocytes, accompanied by inflammation and immune system alterations within the skin. Psoriasis tends to have a familial predisposition, although it may skip generations. Since immune dysfunction plays a central role, triggers such as cold and dry weather, as well as psychological stress, can exacerbate symptoms.

Although there is no definitive cure for psoriasis, available treatments can substantially reduce symptoms, even in severe cases. The therapeutic regimen is individualized based on

factors such as the extent and location of lesions, patient age, and overall health status. Commonly prescribed treatments include topical retinoids and corticosteroids in the form of creams, ointments, or gels. In addition, several systemic and advanced therapeutic options are available for patients with moderate to severe disease.

KEYWORDS: psoriasis, skin condition, skin cells, redness, scales, inflammation.

INTRODUCTION

Skin disorders rank as the fourth most prevalent category of human diseases worldwide, affecting nearly one-third of the global population. Collectively, they account for approximately 1.79% of the total global burden of disease.[1]

Psoriasis is a chronic skin disorder characterized by an accelerated rate of skin cell proliferation—nearly ten times faster than normal—resulting in the formation of red, raised patches covered with whitish scales. These lesions commonly appear on the scalp, lower back, elbows, and knees, although they may develop on other areas of the body as well. Psoriasis is not contagious and cannot be transmitted from one person to another; however, it may occur among members of the same family due to genetic predisposition.[2] Psoriasis commonly presents during young adulthood and typically affects limited areas of the body. However, in severe cases, more extensive regions may become involved. The condition follows a chronic, relapsing course, with lesions that tend to resolve and recur periodically throughout a person's lifetime.[3] Psoriasis is an immune-mediated inflammatory disorder of unknown etiology, characterized by abnormalities in the proliferation and differentiation of keratinocytes. The condition is also associated with inflammatory cell infiltration, predominantly involving T-lymphocytes, macrophages, and neutrophils within the skin.[4] Psoriasis affects 1–3% of the adult population with various extra cutaneous manifestations. Psoriasis is a common chronic inflammatory cutaneous disease affecting 0.5% to 2% of children and adolescence. The disease affects 4% of all children younger than 16 years with all types of dermatologic disorders.[5]

Different forms of psoriasis have been known so far

1. Plaque Psoriasis (characterized by dry scaly patches)
2. Pustular Psoriasis (contains pus like fluid mainly infiltrated with white blood cells)
3. Erythrodermic Psoriasis (characterized by exfoliation of fine scaly skin with pain and itching)

4. Guttate psoriasis (characterized by drop like dots)
5. Inverse Psoriasis (affects the flexure surfaces and characterized by smooth inflamed lesions)
6. Others including scalp psoriasis and nail psoriasis.

CAUSES OF PSORIASIS

Psoriasis is a chronic immune-mediated inflammatory disorder of uncertain etiology. Although its exact cause is not clearly established, it is believed to result from multiple contributing factors. In this condition, immune system dysfunction accelerates the turnover of skin cells. Normally, new skin cells replace old ones within 10–30 days; however, in psoriasis, this process occurs rapidly within 3–4 days. As a result, immature cells accumulate on the skin surface, forming thick, silvery-gray scales.[6] Psoriasis often shows a familial tendency, indicating a genetic predisposition; however, it may skip generations. For instance, the condition may be present in a grandparent and a grandchild, while the intervening parent remains unaffected.[7] Various factors can trigger a psoriasis flare-up, including surgery, skin injuries such as cuts or scrapes, and streptococcal infections. Emotional stress and certain medications—such as lithium and other mood stabilizers, antihypertensive drugs, non-steroidal anti-inflammatory drugs (NSAIDs), and some antibiotics—are also known to precipitate outbreaks.[8]

Each individual with psoriasis has a unique set of triggers, and a factor that provokes a flare in one person may not affect another. Identifying these specific triggers can help patients prevent exacerbations and manage symptoms effectively. Since psoriasis involves immune system dysfunction, factors such as cold and dry weather, as well as psychological stress, can worsen the condition. Additionally, individuals experiencing anxiety are at a higher risk of developing flare-ups.[9] Infections such as streptococcal throat infection and tonsillitis can precipitate a specific type of psoriasis flare, characterized by the appearance of small, red, drop-like lesions predominantly on the trunk and limbs. Minor skin injuries—including cuts, burns, and bruises—may aggravate the condition in susceptible individuals. Human immunodeficiency virus (HIV) infection is also known to worsen psoriasis. Additionally, skin trauma from tattoos or insect bites can trigger the development of new lesions.[10]

PATHOPHYSIOLOGY

The pathophysiology of psoriasis involves hyperproliferation of the epidermis, abnormal differentiation of epidermal keratinocytes, and persistent inflammation, along with immune

system dysregulation triggered by multiple contributing factors.[11] Enhanced DNA synthesis is a hallmark of epidermal hyperproliferation, accompanied by a markedly accelerated turnover of epidermal cells. In psoriasis, there is delayed expression of keratins 1 and 10, which are normally produced during the physiological differentiation of healthy skin.[12] Abnormal differentiation of keratinocytes in psoriasis is characterized by increased expression of keratins 6 and 16. Neutrophils infiltrate the epidermis and the superficial layers, while T-lymphocytes—predominantly $CD8^+$ cells—accumulate within the dermis, contributing to the inflammatory process.[13]

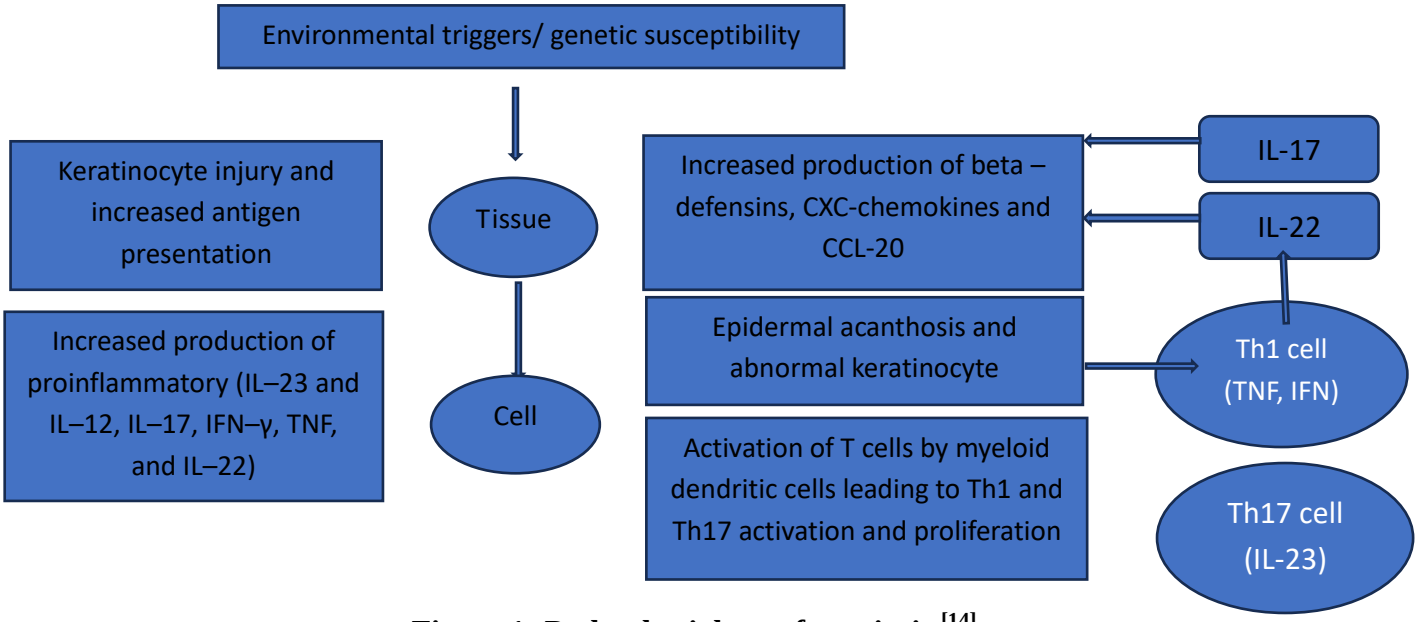

Figure 1: Pathophysiology of psoriasis.[14]

There are two main hypotheses about how psoriasis develops.

1. The first perspective considers psoriasis primarily as a disorder of excessive skin cell growth and replication, viewing it as a manifestation of an intrinsic defect in the epidermis and its keratinocytes.[15]

2. The second perspective proposes that psoriasis results from an abnormal immune response that leads to increased skin cell proliferation. In this model, T cells deviate from their normal role of combating infections and become aberrantly activated. They migrate to the dermis and release pro-inflammatory cytokines, particularly tumor necrosis factor-alpha (TNF-α), which promote inflammation and stimulate excessive production and accumulation of skin cells. However, the exact trigger responsible for initiating T-cell activation in psoriasis remains unclear.[16]

SYMPTOMS

The clinical manifestations of psoriasis vary depending on its type. The most common form is plaque psoriasis, characterized by well-defined, erythematous plaques covered with silvery-white scales.[17] These plaques are often pruritic and may be painful; in some cases, they crack and bleed. In severe conditions, the lesions may enlarge and coalesce, covering extensive areas of the body. Nail involvement is also common, presenting as discoloration, pitting, thickening, or even separation of the nail from the nail bed. Lesions may additionally appear on the scalp in the form of plaques and crusting.[18] Psoriatic arthritis is an associated inflammatory joint disorder that can occur in individuals with psoriasis, leading to joint pain, stiffness, and swelling. According to the National Psoriasis Foundation, approximately 10% to 30% of individuals with psoriasis may develop psoriatic arthritis.[19]

DIAGNOSIS

Physical examination

Psoriasis is often clinically diagnosed, particularly when characteristic plaques appear on typical sites such as the ears, scalp, knees, umbilical region, elbows, and nails.[20] In cases where confirmation is required or to rule out other dermatological conditions, a physician may perform a skin biopsy, which involves removing a small sample of affected tissue for microscopic examination. Currently, there are no specific laboratory tests that can definitively confirm or exclude psoriasis.[21]

TYPES

1. Pustular psoriasis

This uncommon form of psoriasis is characterized by the development of red pustules on the palms of the hands and soles of the feet, often accompanied by erythematous, scaly skin. It primarily affects adults and presents with red, pus-filled lesions known as pustules. Although these lesions may appear infectious, they are non-contagious and result from inflammatory processes rather than infection.[22] **Location**- This variant may be localized, affecting only a specific area such as the hands or feet. However, when it involves most of the body, it is referred to as generalized pustular psoriasis. The generalized form can be severe and potentially life-threatening, requiring urgent medical attention. It may be accompanied by systemic symptoms such as fever, chills, nausea, tachycardia, and muscle weakness.

Certain factors can precipitate this condition, particularly the use of corticosteroids—whether topical or systemic—or the abrupt withdrawal of potent topical steroids applied over large

body areas. Additional triggers include excessive unprotected exposure to ultraviolet (UV) radiation, pregnancy, infections, psychological stress, and exposure to certain chemicals.[23]

2. Guttate psoriasis

3. In guttate psoriasis, the hallmark feature is the sudden appearance of numerous small, red, drop-like lesions, most commonly seen in children, adolescents, and young adults. These lesions typically develop on the trunk and limbs. Common triggering factors include respiratory infections such as streptococcal throat infection and tonsillitis, as well as stress, skin injury, and certain medications, including beta-blockers and antimalarial drugs.[24]

4. Inverse psoriasis primarily affects intertriginous areas, including the armpits, groin, region beneath the breasts, buttocks, and genital skin folds. It is characterized by well-defined, bright red, smooth, and shiny lesions that typically lack scaling. The condition often worsens with friction and excessive perspiration. Common precipitating factors include mechanical irritation, sweating, and secondary fungal infections.[25]

5. Erythrodermic psoriasis

This is the rarest and most severe form of psoriasis, characterized by widespread erythema and extensive shedding of the skin in thin, sheet-like scales. It may be triggered by severe sunburn, infections, certain medications, or abrupt discontinuation of treatment. Due to its potential to cause serious systemic complications, it requires immediate medical attention and prompt management.[26]

6. Psoriatic arthritis

Psoriatic arthritis, which affects the joints, is more commonly observed in individuals with nail psoriasis. Nail involvement may present with pitting, yellow-brown discoloration, subungual hyperkeratosis (chalk-like debris beneath the nails), increased nail sensitivity, and onycholysis, where the nail separates from the nail bed. These changes can sometimes resemble fungal infection, although they are inflammatory in origin.[27] Psoriatic arthritis is characterized by the coexistence of psoriasis and inflammatory arthritis. In approximately 70% of affected individuals, cutaneous psoriasis precedes the onset of joint symptoms by about 10 years. Nail changes are observed in nearly 90% of patients with this condition. Clinical features include dactylitis (sausage-like swelling of the fingers and toes), morning

stiffness, joint pain that worsens after periods of rest, and joints that may appear warm, swollen, and discolored due to active inflammation.[28]

7. Plaque psoriasis

Plaque psoriasis is the most prevalent form of psoriasis, accounting for nearly 80% of cases. It is characterized by raised, inflamed, erythematous plaques covered with silvery-white scales. These lesions are often associated with itching and a burning sensation.

Location: Although plaque psoriasis can develop on any part of the body, it most commonly affects the elbows, knees, scalp, and lower back.[29]

PREVENTION

1. Use Moisturizing Lotions.

Dry skin can aggravate psoriasis symptoms; therefore, regular use of moisturizers is beneficial in maintaining skin hydration and reducing irritation. Thick, occlusive emollients such as petroleum jelly are particularly effective, as they help lock in moisture and prevent transepidermal water loss.

Applying a moisturizer over scaly areas can also facilitate softening and removal of scales. For enhanced effect, the treated area may be covered with plastic wrap or another water-resistant dressing for a few hours before gently removing it.[30]

2. Taking Care of Skin and Scalp

Avoid picking or scratching psoriasis plaques or scales, as this can worsen the condition and potentially trigger new lesions. Trim nails carefully to prevent accidental injury to affected skin. For scalp involvement, topical treatments such as medicated or tar-based shampoos should be gently massaged into the scalp as directed. Additionally, regular baths with soothing additives, including tar preparations, may help relieve irritation and reduce scaling.[31]

3. Avoid Dry and Cold Conditions

Climate can significantly influence the severity of psoriasis. For many individuals, cold and dry weather tends to aggravate symptoms, leading to increased dryness, scaling, and irritation. Symptoms often improve during warm and humid conditions; however, this improvement is not consistent in all patients.[32]

4. A Humidifier

Maintaining adequate skin hydration at all times is essential in managing psoriasis. When indoor air becomes dry, using a humidifier can help retain moisture in the environment and prevent excessive skin dryness.[33]

5. Avoid Medications Responsible for Flare-Ups

Patients should consult their physician regarding all medications they are taking, including over-the-counter drugs, to determine whether any may exacerbate psoriasis. Certain medications are known to worsen the condition, including lithium (commonly used for psychiatric disorders), propranolol and other beta-blockers prescribed for cardiovascular conditions, and quinidine, an antiarrhythmic agent used to manage cardiac rhythm disturbances.[34]

6. Avoid Scrapes, Cuts, Bumps, and Infections

Skin trauma such as cuts, abrasions, or minor injuries should be avoided, as they can precipitate a psoriasis flare—a reaction known as **Koebner's phenomenon**. Such injuries may also increase the risk of secondary infection. Extra care should be taken while shaving to prevent nicks and irritation. Minimizing friction, preventing skin infections, and avoiding procedures such as tattooing or acupuncture are advisable to reduce the likelihood of triggering new lesions.[35]

7. Sun in limit

Ultraviolet (UV) light can help reduce excessive skin cell proliferation in psoriasis; therefore, brief and controlled sun exposure may be beneficial. Limited exposure—around 15 to 20 minutes—is generally sufficient. However, sunscreen should be applied to unaffected skin to prevent damage. Sunburn can trigger psoriasis flare-ups and increase the risk of skin cancer. Additionally, certain medications may increase photosensitivity, making the skin more susceptible to UV damage. It is advisable to consult a physician before sun exposure, especially when taking such medications.[36]

8. Control Stress

Although the association between stress and psoriasis flare-ups is not fully established, many individuals report worsening of symptoms during periods of emotional strain. Therefore, it is advisable to minimize factors that provoke anxiety. Practicing relaxation techniques such as

meditation, yoga, or other stress-management strategies may help promote overall well-being and potentially reduce symptom exacerbations.[37]

9. Quit Alcohol Alcohol consumption may be harmful, particularly when taken alongside psoriasis treatment, as it can interfere with the metabolism and effectiveness of certain medications. Although the exact relationship between alcohol and psoriasis is not fully understood, it is widely believed that alcohol may worsen symptoms and increase the likelihood of flare-ups.[38]

10. Eating right and Exercising to Maintain a Healthy Weight

Current evidence does not establish a definitive link between diet and psoriasis. However, many experts recommend that patients follow a well-balanced, nutrient-rich diet emphasizing fruits and vegetables. Some individuals report improvement in symptoms after reducing or eliminating dairy or gluten from their diet, although responses may vary. Regular physical activity is also beneficial, as maintaining a healthy body weight is important; studies suggest that excess weight may increase the frequency and severity of flare-ups.[39]

TREATMENT

Fortunately, a wide range of treatment options is available for psoriasis. Some therapies target the underlying pathophysiology by reducing excessive skin cell proliferation and modulating the immune response, while others focus on symptomatic relief by alleviating itching, dryness, and scaling.[40] The physician selects an individualized treatment regimen based on factors such as the extent and location of the lesions, the patient's age, associated comorbidities, and overall health status. Common therapeutic options include topical corticosteroids, emollients for dry skin, and coal tar preparations—an established active ingredient found in creams, lotions, shampoos, foams, and bath solutions, particularly for scalp psoriasis. Topical vitamin D analogues in the form of creams or ointments are also widely used, as dietary vitamin D or oral supplements do not provide the same localized therapeutic effect. Retinoid creams are another commonly prescribed treatment for managing psoriatic lesions.[41] For individuals with moderate to severe psoriasis, several advanced treatment options are available. Phototherapy is commonly used, in which a dermatologist exposes the skin to controlled ultraviolet (UV) light to reduce excessive skin cell proliferation. In PUVA therapy, psoralen is administered in combination with a specific type of ultraviolet A (UVA) radiation to enhance therapeutic effectiveness.

Methotrexate is generally reserved for patients with severe or progressive disease. However, its use requires careful monitoring, as it may cause serious adverse effects, including bone marrow suppression and hepatic or pulmonary toxicity. [42] Retinoids are vitamin A derivatives available in various formulations, including oral tablets, lotions, foams, creams, and gels. Although they are effective in managing psoriasis, they are associated with significant adverse effects, particularly teratogenicity (risk of birth defects). Therefore, retinoids are contraindicated in pregnant women and are generally not recommended for women of childbearing potential unless strict contraceptive measures are followed.[43] Cyclosporine, an immunosuppressive agent, is typically reserved for severe cases of psoriasis that do not respond to other therapies. Once treatment is initiated, patients require close medical supervision, as cyclosporine may cause adverse effects such as nephrotoxicity and hypertension. Regular monitoring of renal function and blood pressure is therefore essential during therapy.[44] Biologic therapies target specific components of the immune system responsible for the exaggerated inflammatory response seen in psoriasis. By selectively inhibiting key immune pathways, these agents help reduce inflammation and slow disease progression. Examples include brodalumab (Siliq) and adalimumab (Humira), among others.[45] Apremilast (Otezla) is an oral enzyme inhibitor used in the management of chronic inflammatory conditions such as psoriasis and psoriatic arthritis. It works by inhibiting phosphodiesterase-4 (PDE-4), thereby modulating inflammatory pathways and reducing the production of pro-inflammatory mediators, which helps slow the inflammatory process.[46] Tapinarof (Vtama) is a non-steroidal topical agent that functions as an aryl hydrocarbon receptor (AHR) agonist. It is applied once daily and can be used on any area of the body, including sensitive regions, for the management of psoriasis.[47,48]

CONCLUSION

Psoriasis is a chronic inflammatory skin disorder characterized by an abnormal immune response that leads to accelerated skin cell proliferation, inflammation, itching, and redness. Each individual has a distinct set of triggers that may precipitate or worsen the condition. Lesions can appear on various parts of the body, including the scalp, shoulders, and arms, and may also involve the fingernails, toenails, and joints, causing pain and swelling depending on the type of psoriasis. The major clinical variants include pustular, guttate, erythrodermic, psoriatic arthritis, and plaque psoriasis.

As there is no definitive cure for psoriasis, emphasis should be placed on preventive measures and trigger avoidance. Numerous treatment options are available, primarily aimed at symptomatic relief or at suppressing the underlying abnormal immune response. These include topical corticosteroids, systemic therapies, and phototherapy such as PUVA for severe cases. Immunosuppressive agents are generally reserved for patients with refractory or advanced disease.

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