Review Article

A Review on Psoriasis: Treatable, but not Curable

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ABSTRACT

Psoriasis is a chronic proliferative inflammatory skin disorder. Erythematous plaques with silvery scales are covered in Extensor surfaces, scalp, and lumbosacral area, The disease can also impair the eyes and joints. It is one of the most prevalent dermatological diseases and a continuous challenge in regards to therapeutic approach. The appearance of psoriasis is described by the Koebner Phenomenon. There are two types of psoriasis, Type 1 psoriasis has a positive family history, begins before the age of 40, and is linked to HLA-Cw6; Type 2 psoriasis has no family history, begins after the age of 40, and is not linked to HLA-Cw6. The Body Surface Area (BSA), Physician's Global Assessment (PGA), Psoriasis Area and Severity Score (PASI), and Dermatology Life Quality Index are the most often used measures for assessing plaque psoriasis severity (DLQI), Psoriasis Area Severity Index (PASI) is the most extensively used assessment instrument for determining the severity of the illness and evaluating the treatment effectiveness. Topical treatment is employed for mild to moderate Psoriasis; biologics have a pragmatic strength of recommendation, which is often based on the patient's case evidence and the drug's performance. According to the American Academy of Dermatology and the National Psoriasis Foundation, biologic drugs are "engineered monoclonal antibodies and fusion proteins that exert their therapeutic activities by inhibiting cytokine receptors crucial to psoriatic inflammation".

Keywords: Psoriasis, chronic skin disease, Biologic's, Inflammation, Engineered monoclonal antibodies.

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INTRODUCTION

Psoriasis is a skin disorder that is chronic proliferative and inflammatory in nature. Extensor surfaces, scalp, and lumbosacral area are covered in erythematous plaques with silvery scales. The disease can also impair the eyes and joints. It has no cure. Because of their low quality of life, many psoriasis patients experience depression[1,2,3]. In addition to the cutaneous manifestations, it is associated with an increased risk of psoriatic arthritis, depression and cardiovascular disease.[12]

Psoriasis has various varieties, but the plaque form is the most prevalent, affecting the trunk, extremities, and scalp, White silvery scales are seen when plaques are examined closely. The eye is implicated in roughly ten percent of cases.[1,2,3]

The global prevalence is estimated to be around 2%, Asian and some African ethnicities have lower rates, whereas Caucasian and Scandinavian populations have a higher rate of 11%[6]. The epidermal thickening is caused by aberrant interactions between T cells, immune cells, and inflammatory cytokines. Due to racial considerations, genetic background, lifestyle, and other variables, the prevalence rate varies byarea[9].

It is one of the most prevalent dermatological diseases and a continuous challenge in regards to therapeutic approach[10].

Etiology

The specific cause is uncertain; however, it is a T lymphocyte-mediated autoimmune illness. Many psoriatic patients, primarily from distinct racial and ethnic groups, show an association of HLA antigens, its presence in families shows a hereditary susceptibility. Psoriasis lesions are caused by mechanical, chemical, and radiational damage[4].

Chloroquine, lithium, beta-blockers, steroids, and nonsteroidal anti-inflammatory medications (NSAIDs) can aggravate psoriasis, Psoriasis improves in the summer, whereas it worsens in the winter. Other triggering factors for psoriasis include infections, psychological stress, alcohol, smoking, obesity, and hypocalcaemia[4]. Psoriasis with pustules appears to be genetically different, with varying degrees of vulnerability[16].

The illness has a complex genetic foundation, with 60-80% of white psoriasis patients carrying HLA-Cw6 compared to 20% of the population of the same breed. Psoriasis

susceptibility loci are genetic loci linked to the illness (PSORS). PSORS1 is a protein that is found on the short arm of the human body[13,19].

Risk factors

External, Internal factors can increase the risk source of a person developing psoriasis.

Risk factors for developing psoriasis include:

1. Extrinsic Risk Factors:

- Mechanical Stress
- Air pollutants and Sun exposure
- Drugs, Vaccination
- Infection
- Lifestyle (Smoking and Alcohol Consumption)

2. Instrinsic Risk Factors:

- Diabetes Mellitus
- Dyslipidaemia
- Hypertension
- Mental Stress
- Obesity[25].

Symptoms

Psoriasis can present itself in a variety of ways, including plaque, flexural, guttate, Pustular, or erythrodermic psoriasis. Plaque psoriasis is the most prevalent type, and it appears as well-defined salmon spots, Extensor surfaces (particularly elbows and knees), trunk, and scalp are affected by pink plaques with silvery-white scale in a symmetrical pattern. Removal of scales results in visible of bleeding sites (Auspitz sign). Flexural psoriasis is a type of psoriasis that affects the axillae, sub mammary, and vaginal areas. Guttate psoriasis is characterised by an abrupt symmetrical eruption of drop-like papules/plaques that mostly affects the trunk and limbs and is often preceded by streptococcal infection, Guttate psoriasis patients may acquire plaque psoriasis later in life. Psoriasis develops a widespread erythematous rash (erythroderma) in rare cases of severe uncontrolled disease, which can be life-threatening because to potential consequences such as hypothermia, infection, acute renal injury, and high-output heart failure. The appearance of psoriasis is described by the Koebner Phenomenon[3,22].

TYPES

There are two types of psoriasis. Type 1 has positive family history, begins before age of 40, and is linked to HLA-Cw6; type 2 has no family history, begins after age of 40, and is not linked to HLA-Cw6. Plaque, guttate, rupioid, erythrodermic, pustular, inverted, elephantine, and psoriatic arthritis are some of the morphologies of psoriasis. The involvement of the scalp, palmoplantar area, genitals, and nails shows variation in a site. In people with psoriasis any injury to the skin whether mechanical, chemical, or radiational causes psoriasis lesions at the location which is known as the Koebner phenomenon, it shows how active the sickness is.

Plaque psoriasis is characterised by erythematous plaques with silvery scales, which is most usually appear on the elbows, knees, scalp, and back [3,22]. Approximately 90% of psoriasis cases are chronic plaque-type psoriasis[6].

Guttate psoriasis, also known as eruptive psoriasis, is a kind of psoriasis that develops in children after a streptococcal infection of the upper respiratory tract[3,22]. It is characterised by erythematous and scaly raindrop-shaped lesions that primarily affect the trunk and back[3]. It is most common in children and teenagers, and is caused by group-A streptococcal infections of the tonsils[6].

Pustular psoriasis is characterised by tiny, non-infectious pus-filled lesions surrounded by erythema. It is divided into two categories: localised and generalised. Generalized pustular psoriasis is characterised by sterile pustules on an erythematous plaque that covers the entire body and is accompanied with hypocalcaemia[3,22].

Psoriasis pustulosa palmoplantaris (PPP) and acrodermatitis continua of Hallopeau are two separate localised manifestations. Both affect the hands and feet; PPP affects the palms and soles, whereas ACS affects the nail apparatus and is more distally positioned at the points of fingers and toes[6].

Erythrodermic psoriasis is characterised by extensive erythema, exfoliation of skin that covers more than 90% of body surface. It's linked to a lot of itching, swelling, and pain[3,22,6].

Rapid cessation of systemic steroids, it is the outcome of an aggravation of unstable plaque psoriasis[3]. Erythrodermic psoriasis is a severe form of psoriasis in which the skin becomes inflamed[3,6].

Flexural psoriasis or intertriginous psoriasis are other names for inverse psoriasis. It affects intertriginous areas such as the groins, armpits, intergluteal region, and inframammary region as smooth, erythematous, and strongly defined patches[6,3,22]. The skin could be wet, macerated, or have fissures that are odorous, pruritic, or both. It must be distinguished from dermatophyte infection of these places, which is characterised by centre clearance and an active perimeter with scales, vesicles, and pustules.

Sebopsoriasis is a kind of psoriasis that appears as red plaques with oily scales. The scalp, forehead, nasolabial folds, sternum, and retro-auricular folds are frequent locations with elevated sebum production[3,22].

Inverse psoriasis, also known as flexural psoriasis, is a type of psoriasis that affects the intertriginous areas and is characterised by somewhat erosive erythematous plaques and patches[3, 6].

Nail Psoriasis -Psoriasis of the nails causes a variety of alterations in the appearance of the fingers and toes, Discoloration under the nail plate, pitting of the nails, thickening of the skin under the nail, loosening (onycholysis), and crumbling of the nail are examples of these alterations[18].

HIV-associated psoriasis: A study of HIV patients found that they have a higher risk of developing psoriasis, as several genes connected to psoriasis have antiviral properties. The exhaustion and imbalance of suppressor T cells may play a role in the progression and exacerbation of psoriasis.RNA transcripts can be seen on the skin of HIV-positive psoriatic individuals. Sebopsoriasis is the most common form of psoriasis in HIV patients, but rupioid psoriasis is uncommon. The disease is also linked to psoriatic arthritis. Corticosteroids, phototherapy, cyclosporins, immunosuppressant's, and other treatments are available[3].

Scalp Psoriasis: Scaly plaques occur all over the scalp, with some spreading to the neck, face, and retro auricular area. Clinical patterns such as red Spots, globules, and a typical vascular pattern are visible in this type of psoriasis. Vitamin D analogues, salicylic acid-containing preparations, tar, and other treatments are available[3]. A recent study found that, among psoriasis patients, the scalp psoriasis prevalence was between 45% and 56%. Other epidemiologic studies have stated that 90% of patients have scalp involvement at some point during their lifetimes[16].

Psoriasis arthritis is a persistent inflammatory joint condition caused by psoriasis. Clinical aspects include bending of both the skin and the synovium, immune cell infiltration, and synovial hyperplasia, all of which result in discomfort, joint soreness, and swelling. The genes linked to the development of psoriatic arthritis are similar to those linked to rheumatoid arthritis, but there are a few differences that distinguish the illness. This condition is also responsible for the majority of cardiovascular ailments that affect the elderly[3].

DIAGNOSIS

Diagnosis is usually made based on clinical appearance and the location of lesions. Histopathology is rarely required; however, it can assist in distinguishing psoriasis from other dermatoses if the diagnosis is difficult. Microabscess, Parakeratosis, absence of granular lesions, regular elongation of ridges in camel foot shape, spongiform pustules of Kogoj with dilated and tortuous capillaries in the dermal papilla are all characteristic changes in biopsy[5,11].

Laboratory Studies

• A thorough CBC, kidney, and liver function test should be ordered.

• Factor causing rheumatoid arthritis

• In erythrodermic and pustular psoriasis, the ESR may be high.

• Psoriasis patients have excessive levels of uric acid.

• Obtain scrappings for fungal tests if only the hands and feet are implicated.

• Test for pregnancy

• Serology for hepatitis[5,11].

The intensity of erythema, induration, and scaling, as well as the extent of skin involvement (body Surface area (BSA)), are used to diagnose psoriasis. Validated scores like the Psoriasis Area Severity Index (PASI) and the Physician Global Assessment Scale are routinely used in secondary care, along with patient-reported outcome measures like the Dermatology Life Quality Index (DLQI)[14,16.] A PASI of ten or a DLQI of ten indicates the presence of serious illness[17].

The Body Surface Area (BSA), Physician's Global Assessment (PGA), Psoriasis Area and Severity Score (PASI), and Dermatology Life Quality Index are the most often used measures for assessing plaque psoriasis severity (DLQI). In addition to an assessment of the amount of inflammation, induration, and scaling, the PASI index considers surface area. When a patient's quality of life is considerably impacted by the involvement of visible areas, important sections, or both, the DLQI is a superior and commonly accepted measure of severity[14].

For assessment of overall disease severity, a specific tool has been developed—the Salford Psoriasis Index (SPI)32:

S—Signs: 0–10 measure of physical severity derived from PASI

P—Psychosocial disability: measured as 0–10 on visual analogue scale

I—Interventions: cumulative record of systemic therapies, episodes of erythroderma, etc[19].

TREATMENT

Psoriasis Area Severity Index (PASI) is the most extensively used assessment instrument for determining the severity of the illness and evaluating treatment effectiveness. In mild to moderate psoriasis, topical treatment is employed. Emollients and moisturisers can help maintain the hydration of the stratum corneum and improve barrier function. Coal tar, dithranol, corticosteroids, vitamin D analogue, and retinoids are some of the topical agents used.

PUVA therapy, which mixes psoralen with ultraviolet light (UVA), and NBUVB (Narrowband UVB light) with a wavelength range of 311 nanometers to 313 nanometers, are two types of Phototherapies. NBUVB is just as effective as psoralen but without the gastrointestinal issues, cataract formation, or carcinogenic consequences. It is safe for youngsters, pregnant and lactating women, and even the elderly. Phototherapy has been shown to be the most effective treatment for guttate psoriasis.

PASI improvement of at least 75 or 90% (PASI75 or PASI90) is one of the treatments goals[7,8,23].

Drugs available for Psoriasis therapy

MTX is analogue of folic acid that inhibits DNA synthesis by blocking thymidine and purine biosynthesis. The suggested dose of 7.5–10 mg/weekly can be increased to a maximum of 25 mg/weekly if necessary. It is administered weekly at low single dose to reduce side effects before the dose can be increased to achieve its optimal efficacy[9].A recent retrospective study found that 33 percent, 47 percent, and 64 percent of patients achieved an effective treatment response (defined as a PASI drop of 50 percent to 75 percent and an absolute DLQI value) at three, six, and twelve months, respectively. The evidence for MTX's usefulness in treating psoriatic arthritis is mixed. According to a recent study, 22.4 percent of patients had minimal arthritic disease activity at week 12 and 27.2 percent had a PASI 75. HLA-Cw6 has also been proposed as a possible marker for people who might benefit from MTX treatment. Nausea, Leucopenia, Stomatitis, Macrocytic Anaemia, Vomiting, Diarrhoea, Fatigue and an increase in liver transaminase are the most prevalent side effects[6,15,18].

Cyclosporine is a calcineurin inhibitor, a type of immunosuppressant that inhibits T cells. Cyclosporine is an effective remission inducer and maintenance therapy for psoriasis for up to two years. Significant potential side effects include hypertension, renal damage, and non-melanoma skin cancer, Gingival Hyperplasia, Tremors, Hypomagnesaemia, Hypercalcaemia[9,15,18]. Duration of treatment and the dose are also factors in nephrotoxicity. Cyclosporine is used as a short-term, intermittent treatment. For 10 to 16 weeks, the dosage is 2.5 to 5.0 mg/kg of body weight. To avoid a recurrence, the medicine should be tapered[6,9].

Retinoids are vitamin A-related compounds that can be natural or manufactured. Acitretin is a retinoid that is used to treat psoriasis. It regulates keratinocyte proliferation and differentiation by working on transcriptional processes via nuclear receptors. At 24 weeks, 22.2 percent and 44.4 percent of patients in a multicenter, randomised research reached PASI 75 and PASI 50, respectively. Acitretin is given at a dose of 0.3–0.5 mg/kg of body weight per day at first. The maximum daily dose is 1 mg/kg of body weight. Cheilitis is the most prevalent adverse effect, which affects all patients in a dose-dependent manner. Conjunctivitis, effluvium, hepatitis, and teratogenicity are some of the other side effects[6,9].

Topical treatment

Topical treatments, in which the therapy is applied to the diseased skin, are the suggested first line of defence. Cream, solution, ointment, and shampoo are common forms of topical formulations (for scalp treatment). To treat psoriasis, a variety of topical therapies with various modes of action are available. Topical medications are quick and easy to use, but they usually work better when used in combination with other topical agents. The types of topical agents are classified in this section from older to newer therapies that are related to the drugs[9].

Coal tar: Tar from coal tar has been used to treat psoriasis since ancient times, particularly for scalp psoriasis, but its use has waned in recent decades when compared to other tropicals. This is likely due to its cosmetically unappealing properties, such as a foul odour and textile stains, particularly in patients with non-black hair. It is keratolytic and have anti-proliferative,anti-inflammatory effects. Polycyclic aryl hydrocarbon is the most studied of the thousands of chemicals found in tar, as it is thought to have a therapeutic effect in the treatment of psoriasis. On the other hand, carbazole of aryl hydrocarbons is thought to have a significant effect in coal tar. Despite this, the hundreds of unexplained components in coal tar have caused concerns among clinicians and patients. Because of carcinogenic concerns, it is also prohibited for cosmetic usage in Canada and the European Union[9]. The adverse effects include, odour, contact surface staining, irritant contact dermatitis, stinging, folliculitis and keratokanthomas[18].

Hydrocortisone creams: These reduce inflammation and soothe itching[13].

Dithranol (also known as anthralin) is one of the oldest treatments for plaque psoriasis, as demonstrated by human keratinocyte (HaCaT) cells, by suppressing proliferation and promoting keratinocyte apoptosis. Despite this, a recent study found that topical dithranol reduces the PASI score quickly, resulting in decreased epidermal hyperproliferation and delayed reduction of inflammatory penetration in psoriatic skin. The study also showed that rather than targeting immune cells, keratinocytes (which reside in the epidermis) could be used to reduce psoriatic activity. Despite its benefits, dithranol is linked with limited solubility and stability, toxicity, discoloration, and skin irritation, therefore it may not be potent enough for skin permeation[9].

Retinoids: Vitamin A compounds or vitamins are known as retinoids. Tazarotene and acitretin are the only FDA-approved retinoids for psoriasis therapy. Tazarotene is a topical medication, whereas acitretin is an oral medication. Retinoids suppress keratinocyte growth via binding to retinoic acid receptors and retinoid-X receptors, causing gene expression to change and inflammatory cytokines to be modified. Topical tazarotene, on the other hand, can induce localised toxicity like skin irritation and photosensitivity[18].Tazarotene's efficiency has been extensively investigated in combination with topical corticosteroids because they best increase the post-treatment effects of psoriasis, with tazarotene reducing irritation and corticosteroids providing anti-inflammatory effects [9].

Calcineurin Inhibitors: Tacrolimus and pimecrolimus are two different forms of topical calcineurin inhibitors (immunosuppressant's) that are used to treat inverse psoriasis (body fold area) for long periods of time, they

inhibit calcineurin phosphatase, which suppresses T-cell activation and cytokine generation, and so have anti-inflammatory and immunomodulatory properties. Tacrolimus is also used to treat genital psoriasis, is well tolerated in adults, and is appropriate for individuals who are allergic to steroids but have mild itching and a burning sensation at the start of treatment. Similarly, pimecrolimus has been utilised for psoriatic problems and face psoriasis in children with comparable potency, however it has less therapeutic value in adults than tacrolimus[9].

Salicylic acid is a strong keratolytic agent that is frequently used in conjunction with other topical medications like corticosteroids and calcineurin inhibitors. Its use in conjunction with calcineurin inhibitors is thought to aid in medication absorption into psoriasis plaques. When used alone for scalp psoriasis, salicylic acid may cause transient telogen hair shedding; however, discontinuing use may alleviate the problem. Furthermore, using salicylic acid in concentrations greater than 10% on broad body surface regions is not advised, this is primarily to avoid potentially harmful side effects such as oral mucosal burn, headache, and nausea. Salicylic acid has been demonstrated to have substantial penetration enhancing effects when combined with a calcineurin inhibitor, vitamin D analogue, and corticosteroid for improved skin permeation and sustained release profile in prior studies[9].

Vitamin D Analogues: Calcipotriol and calcitriol are two types of vitamin D mimics that are produced by the sun. Vitamin D deficiency is linked to psoriasis because it helps to limit the synthesis of inflammation's strong cytokine mediators, such as IL-2, IL-6, and IFN-, and therefore keeps the body healthy. Furthermore, in psoriasis sufferers, there is a link between Th17 cells (which help maintain a healthy immune system) and vitamin D levels. Vitamin D is a natural killer of cell hyperproliferation because it increases suppressor T cells, which regulate other immune system cells and limit cytotoxicity. Nonetheless, its link is controversial, although being well-documented, and vitamin D analogues are frequently suggested in conjunction with other topical treatments. Calcipotriol and betamethasone dipropionate (a type of corticosteroid) have both been extensively explored in the treatment of trunk and limb psoriasis because they function in tandem to reduce inflammation, the combination of the two therapies aids in the control of the condition[9,20].

Corticosteroids: Topical psoriasis treatments primarily consist of corticosteroids. They operate directly on deoxyribonucleic acid (DNA) and inflammatory cytokines by blocking the release of phospholipase A2. They work as a first-line topical therapy for genital psoriasis by lowering inflammation and delaying cell hyperproliferation. Corticosteroids' effects are amplified when combined with other topical medicines such as retinoids, salicylic acid, and vitamin D analogues. Long-term usage of topical corticosteroids has been linked to local adverse effects such as perioral dermatitis, striae, hypertrichosis, and infections, Growth Retardation and HPA Suppression[18]. According to studies, our present generation, particularly women, has a somewhat high sense of steroid phobia. According to the studies, people are afraid of using steroid-related medicines because of skin degradation, weight gain, asthma, and stunted growth[9].

Combination products

Betamethasone dipropionate and Calcipotriol combination was more effective for psoriasis than either monotherapy alone in a Cochrane review of 177 RCTs.19 Clinical trials has demonstrated reduced incidence of adverse events with concomitant use of vitamin D3 analogues and topical corticosteroids[20].

Systemic Treatment:

A medication that circulates throughout the body is used in a systemic treatment. It is classified into two types: 1 oral agents, and 2 biologic agents, which are injected or given as an IV infusion into the body.

Oral medications Nonbiologic systemic medicines reduce inflammatory responses through oral administration. The two most well-known oral medications are methotrexate and cyclosporine[9].

Biologics:

Biologics have a pragmatic strength of recommendation, which is based on the patient's case evidence and the drug's performance. Biologic drugs are "engineered monoclonal antibodies and fusion proteins that exert their therapeutic activities by inhibiting specific cytokines crucial to psoriatic inflammation," according to the American Academy of Dermatology and the National Psoriasis Foundation. There are now 11 FDA-approved biologic medicines for adult psoriasis therapies, which are divided into four cytokine classes (TNF, IL-12, IL-23, and IL-17A). Secukinumab is discussed as a first-line systemic biological treatment to provide an overview of this kind of advanced medicine.

Secukinumab (Cosentyx®) prevents IL-17A from attaching to its inflammatory cytokine receptor. It has a very favourable safety profile, since its efficacy is comparable to that of regularly used psoriasis medications (methotrexate and TNF-blockers, for example). Its effectiveness in treating moderate to severe plaque psoriasis and psoriatic arthritis has been frequently reported. Aside from that, persons with a history of therapy failure, difficult-to-treat psoriasis patterns (nail, scalp, and palmoplantar psoriasis), and a desire for clear skin may benefit from these biologics. However, when compared to other biologic treatments, secukinumab is thought to have the most common side effects, mostly infections. Nasopharyngitis, upper respiratory tract infections, and headaches have all been described as secukinumab side effects.

Phototherapy treatments: Since the 1920s, phototherapy has been used to treat psoriasis, and it is now considered a standard treatment for moderate to severe psoriasis.

Phototherapy is generally regarded as an effective and reasonably priced treatment.

When compared to systemic medications, phototherapy treatments have a low incidence of side effects, including immunosuppression.

International standards prescribe three forms of phototherapy treatments to treat psoriasis: narrowband ultraviolet B (NB-UVB), excimer laser/lamp (targeted phototherapy), and psoralen plus ultraviolet A (PUVA)[9].

Narrow Band Ultra-Violet B (NB-UV B): Excimer laser and narrowband ultraviolet B (NB-UVB). The phototherapies NB-UVB light (311 nm) and excimer lamp/laser (308 nm) are presently the first-line treatments for stable plaque psoriasis, both methods are equally effective in clearing the skin of psoriasis. The decision to use NB-UVB is usually taken after a series of topical treatments have failed. Phototherapy entails exposing the skin to UV radiation on a regular basis. The UV radiation from phototherapy treatments causes apoptosis in T lymphocytes and keratinocytes in the epidermis, which helps to reduce psoriatic lesions. The extremely cost-effective UVB treatment is becoming the only option for a certain group of patients, such as those with HIV, internal cancer, or pregnancy, who may experience a systemic immune reaction contraindication (if modified while using other psoriasis treatments).

Psoralen plus ultraviolet A (PUVA) is a photochemotherapy treatment for chronic plaque psoriasis that is also effective. The combination of psoralens and UVA has been demonstrated to reduce PASI by 75% to 80% in users, making this phototherapy beneficial as a second-line treatment if topical and NB-UVB treatments have failed[12]. Patients develop pustular psoriasis and pityriasis rubra pilaris conditions, unique failure treatment signs of NB-UVB relapse occur, as a result, in order to introduce PUVA phototherapy to patients with severe psoriasis, psoralen must be sensitised on them as a way to improve the therapeutic procedure. Psoralen is a collection of light-sensitive chemicals generated from natural plants with therapeutic benefits, most typically found in Psoralea corylifolia (Babchi). After this therapeutic activity, they are likely to cause skin-related disorders such as burning, itching, and discoloration, as well as nausea[9].

Newly Approved Drugs:

1. **Skyrizi (risankizumab-rzaa)-** subcutaneous injection at weeks 0, 4, then every 12 weeks Drug Class - interleukin-23 antagonist

Patient Population – Adults

Psoriasis Indication -moderate-to-severe plaque psoriasis

2. **Guselkumab (Tremfya) -**Subcutaneous injection every 8 weeks

Drug Class –interleukin-23 antagonist

Patient Population- Adults

Psoriasis Indication – moderate-to-severe psoriasis, psoriatic arthritis

3. (Tildrakizumab-asmn) -Subcutaneous injection at 0,4 weeks then every 12 weeks

Drug Class – interleukin-23 antagonist

Patient Population – Adults

Psoriasis Indication – moderate-to-severe plaque psoriasis[24].

Difficulties in Psoriasis Management:

Despite the fact that psoriasis treatment has advanced significantly, some people do not respond well to it. The profile of patients, since diverse patient populations react differently to the therapy, skin barriers, obstacles to topical therapy, and satisfaction or adherence to the therapy are all key challenges in psoriasis treatment[15].

In the Treatment of Psoriasis with Phytopharmaceuticals:

Vitamins and dietary supplements have been found to help lessen the irritation and itching associated with psoriasis. These also aid in the removal of skin blemishes. Capsules, tablets, gels, and powders are just a few of the dose forms accessible. Aloe vera, turmeric, soybean, neem, vitamin D, fish oil, and evening primrose oil are some of the phytopharmaceuticals commonly used to treat psoriasis.

Gallic Acid:

Gallic acid is a type of acid that is found in Radix Paeonia Rubra produces gallic acid, which is a tri-hydroxybenzoic acid. It can be found in the form of free tannins or hydrolysable tannins. It has a wide range of biological applications as well as being commonly utilised as an antioxidant. The genes that code for keratin 16 and 17 are referred to as KRT16 and KRT17, respectively. In psoriasis-affected skin, these genes are over-exposed relative to unaffected skin. Gallic acid shows anti-psoriatic effect.

Olive Oil:

Olive oil is made from whole olives and is mostly made up of oleic acid, with a minor bit of linoleic acid and palmitic acid thrown in for good measure. It is known to have antioxidant and anti-inflammatory properties, which may explain why it is used to treat psoriasis. Psoriasis is treated using hydroxy-tyrosol (HT) and other phenolic derivatives of olive oil, which reduce the number of lesions and the area affected. The usage of olive phenols reduces cutaneous expression in people suffering from mild psoriasis.

Oxymatrine:

Oxymatrine is an alkaloid found in the roots of the Sophora flavescens plant, it offers a number of useful properties, including protection against apoptosis, tumour formation, and inflammation. It also possesses anti-proliferative

properties. Keratinocyte proliferation and differentiation are targeted by Oxymatrine.

Aloe Vera:

Thick green leaves of the aloe vera plant can be found, it includes numerous photochemical that have biological functions such as skin-soothing and hydrating, as well as therapeutic characteristics that aid in the treatment of skin disorders. Aloe vera can assist to alleviate the symptoms of psoriatic skin.

Turmeric:

Curcumin has been shown to reduce and inhibit the activity of phosphorylase kinase in studies. It inhibits the function of pro-inflammatory cytokines, resulting in a reduction in cell growth. It inhibits nuclear factor kappa B (NF-B) and hence prevents psoriatic skin inflammation. It aids in the skin's regeneration, and protects the skin from oxidation and aids in the elimination of harmful chemicals.

Soyabean:

Isoflavones are abundant in soybeans, with genistein being the most significant isoflavone. The anti-oxidant, anti-inflammatory, and ant proliferative properties of genistein are commonly connected with it. It inhibits pro-inflammatory cytokines, which lowers inflammation.

Neem:

Neem aids in the treatment of psoriasis symptoms. The emollient properties of neem aid in the relief of dry and cracked skin. It relieves redness while also improving the skin's natural immunity. It is a powerful antibacterial that aids in the battle against bacterial infections that might occur as a result of psoriasis.

Aquifolium Mahonia:

Mahonia Aquifolium is also known as Oregon grape and is derived from the mahonia bush. Berberine is the active ingredient that has anti-inflammatory and anti-microbial activities,it also has anti-proliferative effects which make it useful for illness treatment.

Cayenne Pepper:

Cayenne Pepper Capsaicin, the primary ingredient in cayenne pepper is responsible for producing heat and warmth, which aids in the relief of discomfort associated with psoriatic lesions. It aids in the relief of itching and scaling. After application, it causes a burning feeling on the skin. The fundamental cause of psoriasis beginning is understood to be cutaneous vasodilation and the leaky nature of papillary vessels. Capsaicin prevents the initiation of vasodilation, which leads to the formation of lesions. In mild to severe psoriasis, it gives clinical relief.

Tamanu:

Tamanu is also known as bitaog or sweet-scented Calophyllum. Tamanu is also known as bitaog or sweet-scented Calophyllum. Tamanu oil is a green to yellow coloured oil obtained through cold pressing from tree nuts. It has anti-inflammatory and antibacterial characteristics, thus it's used to treat a variety of skin conditions, as well as cuts and wounds. It lessens the severity of psoriasis flare-ups. Tamanu oil includes a significant level of linoleic and oleic acid, which helps to alleviate disease symptoms.

Biotin:

Biotin, often known as Vitamin B-7, is an essential mineral for humans. Biotin supplements can assist to alleviate skin issues including rashes and scales. Biotin is necessary for maintaining healthy skin. It can be taken on its own or in conjunction with other supplements like vitamins and multivitamins.

Vitamin D:

When exposed to sunshine, vitamin D is created. Psoriasis triggers an autoimmune reaction. It helps in development of a healthy immune system. It also has anti-proliferative properties, preventing the formation of new cells and also helps to reduce the thickness of psoriatic plaques and prevents disease aggravation. Oral supplements, foods including cheese, egg yolks, fatty fish, cereals, and juices are all good sources of it. Phototherapy can also help the body produce it naturally. Vitamin D is also accessible in the form of topical treatment. It's not recommended for long-term use, but it can be used in conjunction with other topical drugs like corticosteroids.

Fish Oil: Fish Oil is a kind of omega-3 fatty. It is necessary for maintaining the skin's structure, and has necessary fatty acids in it. The thickness and redness of psoriatic plaque can be reduced with the use of fish oil. In and around the lesions of psoriatic skin, there is a high concentration of leuko-triene B4, fish oil inhibits the formation of leukotriene B4 and thereby alleviates the symptoms of the condition. It also helps to reduce plaque thickness and redness[15].

Summary of Instructions:

- When more than 10% BSA is implicated in psoriasis, it is considered extensive.
- It is also deemed severe when the illness affects the face, nails, scalp, genitals, flexures, and soles, as these regions are difficult to treat and are associated with poor cosmesis.
- If methotrexate is not well tolerated or if a patient has active severe psoriasis, biological therapy should be attempted early.
- Assess therapy response by noting a decrease in the severity of the disease at baseline and improvements in physical, social, and psychological functioning.
- The first-line biological agent of choice is Stekinumab. Another option is Secukinumab.
- In patients with psoriatic arthropathy, Adalimumab is the first-line biological treatment of choice.

- Infliximab is reserved for patients with severe illness who cannot be treated with other biological medicines.
- Women of childbearing age who are taking a biological agent should begin using effective contraception as soon as possible.
- On patients who are taking biological agents, live vaccines should be avoided. Before using biological agents, all vaccines must be performed.
- TNF antagonists should not be used to treat patients with demyelinating diseases.
- TNF antagonists should not be used to treat heart failure patients[26].

CONCLUSION

Psoriasis is a skin condition caused by cell hyperproliferation as a result of various recognised variables, including environmental and hereditary factors. Appropriate long-term management is necessary for effective control of skin manifestations and associated conditions: maintaining the patient at the centre of care is critical. Patients seeking initial examination at the primary care level are well positioned for diagnosis and treatment by primary caregivers. Understanding of its pathogenesis has led to the development of a growing number of therapeutic alternatives that could significantly improve the lives of psoriasis patients. Dosing regimens, administration modality, and pharmacodynamic profiles for currently available IL-23 and IL-17 inhibitors may require essential appraisal because they are central for a proper approach to management and quality of life in these patients. Topical ointments and lifestyle changes are used to treat mild cases of psoriasis. Rheumatologists may prescribe more advanced treatments, such as corticosteroids, retinoids, biologics, or phototherapy, in more severe situations

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