

A REVIEW OF NATURAL GREEN ALTERNATIVES TO PSORIASIS TREATMENT

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Abstract: A chronic skin condition called psoriasis causes patches of skin to thicken and become covered in silvery scales. Though less successful, topical chemical treatments are used to treat psoriasis; nevertheless, medicinal plants can offer an alternative. One significant and distinctive source of medications is medicinal plants. The three most often used herbs for psoriasis are neem, turmeric, and aloe Vera. The most typical signs and symptoms are small scaling areas, red patches on the skin, itching, burning, and pain; thicker, pitted, or ridged nails are also prevalent. Psoriasis is an inflammatory immune-mediated illness for which there is no long-term treatment. Although there are a number of ways to treat psoriasis, no single drug makes a complete and satisfactory recovery. Due to their accessibility and safety, herbal medications have the potential to be effective anti-psoriatic agents.

Keywords: Psoriasis, medicinal plants, skin disorder, Anti-inflammatory.

INTRODUCTION

In any portion of the body, oxidative stress leads to inflammation, which is the body's immunological reaction. Despite not being contagious, psoriasis is shown to have a more severe form among the many inflammatory disorders. The skin, nails, and joints are the areas most commonly impacted by psoriasis. Under papulo-squamous diseases, it falls. The Greek word for "roughly itching condition" (psora: "itch", sis: "action") is where the term "psoriasis" originates. As an immune-mediated condition, psoriasis arises when a healthy skin cell misinterprets a pathogen and sends out a false signal, leading to an excessive generation of new skin cells. In addition, it is inherited. Although there is no known permanent cure for the condition, there are a number of therapies that can be used to manage how severe the symptoms are. The condition is usually lifelong.^[1]

Psoriasis is categorized as a skin condition in which the affected skin often thickens and develops silvery scales. The areas most commonly afflicted by psoriasis, a chronic autoimmune illness, include the tips of fingers, scalp, toes, palms, umbilicus, elbows, shin, glutes, knees, beneath the breasts, soles, etc.^[2]

An estimated 80–135 million people worldwide suffer from psoriasis, an inflammatory, hyperproliferative autoimmune skin condition that affects 1%–3% of the global population. It is an inflammatory skin condition that is persistent and can last for years even though the symptoms may come and go. Psoriasis symptoms can range in severity from barely perceptible to eruptions of lesions that cover nearly the entire body. There are a number of different kinds of psoriasis, including nail, scalp, guttate, erythrodermic, inverse, pustular, nail, and psoriatic arthritis. Plaque psoriasis is the most prevalent kind of the disease, making up about 80–90% of

cases. Although it cannot be spread, psoriasis can be inherited from parents. The disease develops as a result of multiple causes and contributing factors. Psoriasis is frequently brought on by or made worse by particular triggers. The primary cause of psoriasis pathogenesis is the body's production of free radicals, also known as reactive oxygen species (ROS), such as superoxide ion, hydrogen peroxide, and hydroxyl radical, as a result of the oxidation process. The primary enzymes called lipoxygenases (LOXs), which are in charge of producing inflammatory mediators such as leukotrienes and lipoxins, are also crucial to understanding the pathophysiology of the condition. Furthermore, psoriasis is thought to be caused by certain hereditary elements that affect the skin's immunological response, such as transforming growth factor (TGF), tumor necrosis factor (TNF)- α , interleukin (IL)-1 β , IL-6, IL-17, IL-22, and IL-23. Additional factors that might exacerbate psoriasis include radiation, environmental toxins, alcohol and tobacco use, streptococcal infections of the upper respiratory tract, and psychological stress. The condition is also made worse by the use of some medications, such as lithium, chloroquine, and chlorpropamide^[3].

MEDICINAL PLANTS USED IN THE TREATMENT OF PSORIASIS

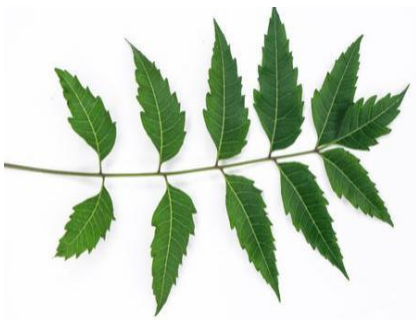
Compared to synthetic pharmaceuticals, natural remedies do not have additional side effects. The herbal remedy is simple to apply and readily accessible for medical usage. Herbal remedies are becoming increasingly essential in the treatment of inflammatory and skin conditions. A change in food and lifestyle may help alleviate the symptoms of psoriasis, according to certain research. Psoriasis symptoms have improved with the use of low-energy diets, vegetarian diets, and fasting periods. Because fish oil supplements contain omega-3 fatty acids and vitamin E, they can

be effective in certain treatments. Because of the anti-inflammatory qualities of its cannabinoids and how they regulate the immune system, cannabis is also recommended as a treatment for psoriasis.^[1]

Since ancient times, medicinal plants have been employed as immunomodulatory, anti-inflammatory, and antioxidant agents. Drugs derived from plants are very helpful in treating a wide range of human illnesses since they have therapeutic value. Furthermore, there is a growing demand for these plants in the pharmaceutical industry because of their easy availability, lower cost, and non-toxic nature when compared to modern medicine. Psoriasis symptoms have improved with the use of low-energy diets, vegetarian diets, and fasting periods. Because fish oil supplements contain omega-3 fatty acids and vitamin E, they can be effective in certain treatments. Because of the anti-inflammatory qualities of its

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(a)



(b)



(c)



(d)



(e)



(f)



(g)



(h)



(i)

(a)neem (b)black cumin (c)turmeric (d)aloe vera (e)garlic (f) milk thistle (g) chamomile (h) marigold (i) oregon grape.

TURMERIC

It is made up of both fresh and dried rhizomes from the *Curcuma longa* plant, which is a member of the Zingiberaceae family. Up to 90% of the world's entire output is produced in India. Approximately 70 species of rhizomatous herbs, primarily found in India, China, and Thailand, belong to the genus *Curcuma*. Sesquiterpenes, curcuminoids, and zingiberine are the active ingredients.^[4] It has five percent volatile oil, resin, and curcuminoids, which are compounds that give food its yellow color. Curcumin (50–60%) is the main ingredient in curcuminoids. Curcumin has demonstrated its anti-inflammatory properties.^[2] The useful properties of the herb are said to range from anti-oxidant, anti-inflammatory, anticancer, and anti-activities. That is, the way that microbes fight tumors is by controlling certain cellular and immune factors that are involved in the cell cycle and apoptosis. It has long been known that applying turmeric to wounds that heals lessens the production of scars.^[4]

BLACK CUMIN

Black cumin is the common name for *Nigella sativa*. This herb is a member of the Ranunculaceae family. Thymolacid, palmitic acid, oleic acid, and linoleic acid are the active ingredients. Ingredients found in *Nigella sativa* seeds include vitamins, minerals, carbs, lipids, and proteins, which include eight or nine essential amino acids. The seed extract has a wide range of actions, including anti-helminthic, anti-inflammatory, antifungal, and antibacterial properties, according to pharmacological studies.^[4] Topical use of these seeds is used to treat skin lesions. Traditionally, the seeds have been used to treat psoriasis, a skin condition that results in spotty eruptions and widespread irritation. Because *Nigella sativa* seeds had been used for psoriasis but no scientific studies on this usage had been reported, researchers began a systematic inquiry to assess the antipsoriatic activity of the ethanolic extract of seeds tested using mice tail model. The granular layer of the epidermis is greatly reduced in psoriatic lesions.^[5]

NEEM

Azadirachta indica is the biological name, and it is a member of the Meliaceae family. The main active ingredient is nimbidin. A leaf decoction bath is used to cure infections of the human anatomy. The same condition is treated orally with its decoction. The seed oil is applied externally to cure dandruff and eradicate lice.^[4] Usually grown in locations that are tropical and semitropical. Neem oil is mostly extracted from the plant's fruits and seeds. Azadirachtin functions as a pesticide, growth inhibitor, and anti-feedant to insects. It has polyphenolic flavonoids such as beta-sitosterol and quercetin. Neem leaves include antifungal and antibacterial properties. Neem oil has been used to treat ringworm, eczema, and psoriasis, among other chronic skin problems.^[2]

ALOE VERA

It has 400 species that are physiologically active. A World Health Organization research states that this medicinal herb is the best source for making natural medications. The plant was first brought to North Africa and other nations, yet it is native to southern and eastern Africa. It is a member of the family Liliaceae. The plant's various parts, particularly the gel, have therapeutic effects on the body. Aloe Vera Gel lessens psoriasis-related redness and peeling. Aloe vera is a plant that contains salicylic acid, steroids, mucopolysaccharides, anthraquinones, and saponins. Acemannan and isanthraquinone, the active components of aloe vera, have antibacterial properties and are used to treat psoriasis. This plant

contains salicylic acid, which has a keratolytic action that eliminates psoriatic plaques.^[2] The plant is known for its clear serum-containing succulent, pulpy leaves. This plant has long been used as a powerful remedy for a variety of illnesses. The use of the same grade agent is encouraged by the energetic ingredients' spectrum of functional properties, which include analgesic, antipruritic, wound healing, and anti-inflammatory. Undoubtedly, this is anti-psoriatic. Psoriasis was treated with 0.5% of local forms of Aloe vera extract in a double-blind, placebo-controlled study. Based on the information gathered, it was shown that 0.5% of the herb had higher effectiveness with no dangers and could be utilized as a viable herbal psoriasis therapy. On the other hand, another study found that psoriasis can be effectively treated using commercial aloe vera gel.^[4]

GARLIC

Allium sativum, or garlic, is a member of the Liliaceae family. It is mostly grown in India, southern Europe, the United States, and central Asia. About 56% of proteins (albumin) and 29% of carbohydrates are found in garlic bulbs. The primary active ingredient in the medication is its volatile oil, which also contains allicin, diallyl disulphide, allyl propyl disulphide, and alliin. Garlic is applied topically to treat respiratory ailments. Allicin, the compound found in garlic, has antibacterial, antifungal, antiviral, and antiseptic qualities. Allicin aids in the bacterial destruction that causes acne.^[2]

MILK THISTLE

It is known as *silybum marianum* belongs to the asteraceae family. Mainly it contains flavonoids. Milk thistle has been shown to restrict T this is certainly peoples cell activation which happens in psoriasis. This plant is quite well-known for its hepatoprotective activity. Many changes have been recognized in the liver of clients with psoriasis, including steatosis, periportal infection, fibrosis, necrosis and cirrhosis. The potential of silymarin to enhance the liver's ability to reduce endotoxins, inhibit phosphodiesterase Camp, and prevent leukotriene deduction may account for its importance in the treatment of psoriasis.^[4] Psoriasis sufferers' liver disease has a complex etiology that includes alterations brought on by alcohol consumption, dietary variables, anti-psoriatic drugs, and the psoriasis itself. Psoriatic patients have been shown to have abnormally high amounts of cAMP and leukotrienes; returning these levels to normal may help the illness.^[1]

MATRICARIA RECUTITA (CHAMOMILE)

M. chamomile is a member of the family Asteraceae. Most people refer to it as chamomile. There is a traditional use for chamomile flowers that involves curing digestive disorders. The use of chamazulene in psoriasis is due to its non-volatile oil extract, matricin, which is known to have anti-inflammatory properties by inhibiting lipoxygenase and, consequently, the generation of leukotriene B4 (LTB4). .. It has been shown that quercetin is a potent and relatively inexpensive cyclooxygenase inhibitor. It's nice that quercetin also exhibits epidermal penetrating properties.^[4] It is a significant medicinal herb that is indigenous to eastern and southern Europe. The Asteraceae family includes it. Chamomile has antispasmodic, antiseptic, and anti-inflammatory properties. It contains antimicrobials such as sesquiterpenes, flavonoids, coumarins, polyacetylenes, alpha bisolol, and cyclic ethers; umbelliferone also has fungistatic properties, while chamazulene and alpha bisolol have antiseptic properties.^[2] Most people refer to it as chamomile. There is a long-standing medicinal history of

chamomile flowers to treat gastrointestinal disorders. Additionally, quercetin has high skin penetration.^[1]

MARIGOLD(GENDA)

Calendula officinalis belongs to compositae family. *Calendula officinalis* are a few of the very Indian this is certainly typical herb numerous medicinal properties for the treatment of various variety of infection, viz. antifungal, wound healing and representatives that are anti diabetic. It contains esters of faradiol. This natural herb has actually been reported because of their effectiveness in the shape of decoctions, infusions and tinctures in conventional method of medicines for the treatment of skin circumstances like psoriasis, leprosy etc.^[4]

OREGON GRAPE

It belongs to the berberidaceae family. It is deemed an extremely well understood plant utilized as a part of skin problems, particularly in psoriatic plaques. The affect of bark focus of *Mahonia aquifolium* and its particular primary constituents (berberine, berbamine, oxyacanthine). He furthermore unveiled the focus of bark of *Mahonia aquifolium* is definitely a substance of keratinocytes improvement. The benzyloquinoline berbamine that is alkaloid oxyacanthine were more powerful inhibitors.^[4]

CAPSICUM

Capsicum belongs to solanaceae family. Capsaicin, active constituent present in cayenne pepper (*Capsicum frutescens*) has shown a possible technique towards psoriasis, through activation of cellular factors, that is apoptotic. 0.02% of the formula had been applied as local ointment to boost the standing this is certainly psoriatic of with differing disease intensity. The information obtained showed a clear decline in illness seriousness within short period of the time, nonetheless the absolute minimum risk effect like regional site burning was reported, so the formulae was encouraged is requested just 2 days that is successive.^[4] One hypothesis on the pathogenesis of psoriasis suggests a neurogenic inflammatory etiology mediated through substance - P (SP). SP activates inflammatory cells and ultimately perpetuates vasodilatation, angiogenesis and keratinocyte hyperproliferation. In accordance, psoriatic lesions are known to be more densely innervated with higher SP content than control or uninvolved psoriatic skin. Capsaicin stimulates the release of SP by binding to the vanilloid receptor on slow - conducting, unmyelinated type C neurons and ultimately leads to its depletion.^[1]

INDIGO NATURALIS

Common name is quingdai. *Indigo naturalis* belongs to the acanthaceae family. Indirubin is the main active constituent. It's also been used to make indigo colored dye for many centuries. *Indigo naturalis* can be distilled into an oil extract. This extract can treat nail psoriasis; in one study using the oil on nail psoriasis for every day for 24 weeks resulted in significant improvement. The herb extract can also be used topically on other part of body for psoriasis flare.^[4]

GREEN TEA

Biological name of green tea is *Melaleuca alternifolia* belongs to the myrtaceae family. Tea considered the around the world that is second close to beverage. It absorb as green, black colored, or beverage that is oolong. Active constituents of green tea are terpinen-4-ol, alpha-terpineol, and alpha-pinene It was reported that green tea extract is the most important agent targeting health.

This may be associated with its higher content of polyphenolic compounds, like flavones and catechins, whereas dried tea that is green produce significantly more than 30% among these active constituents. Most studies suggested that green tea constituents have actually a wide range of medical utilizes as anti-oxidant, antimicrobial, anti-tumor, antiinflammatory, and agents that is thermogenic.^[4]

GAULTHERIA PROCUMBENS

It's frequently referred to as Wintergreen. It belongs to ericaceae family. It contains methyl salicylate, which will be having properties which can be anti-inflammatory. Albeit utilized externally for psoriasis, wintergreen could cause foundational effects like tinnitus, heaving, tachypnea acid – base influences which can be unsettling. patients stress this is certainly using or even a advised salicylic acid element together with a salicylate from herbal (for example, wintergreen, aloe vera or red clover) tend to be more powerless for foundational toxicities. There are no tests on its viability in psoriasis, however have actually potential anti-inflammatory and requires perfect examinations that are reasonable its application in eczema.^[4]

MELALEUCA ALTERNIFOLIA

It is traditionally known as Tea Tree Oil and is popular for its wound healing property. The oil contains terpin – 4-ol, alpha - terpineol and alpha – pinene which confer antimicrobial activity against *Propionibacterium acnes* and *Staphylococcus epidermidis*. No studies have investigated the use of tea tree oil in psoriasis; however, its role in urticarial reactions and control of wheal and flare has been reported. Hence, study can be made to evaluate its anti – psoriatic efficacy. Although there is reported efficacy in the treatment of acne, dandruff and cold sores, tea tree oil can produce allergic dermatitis in individuals sensitized to the sesquiterpenoid fractions. Oral ingestion can lead to the detrimental effects of cognitive disorientation, systemic contact dermatitis and coma.^[1]

FUTURE CHALLENGES OF HERBAL REMEDY OF PSORIASIS TREATMENT

The herbal sources are currently getting more reliability due to their safety and easy availability. For herbal remedy and screening of plant extracts for anti-psoriatic activity the main targets to consider is the T-cell activation, T-cell trafficking, Cytokine inhibition and Counter offensive strategies. Anti-inflammatory and next generation immunosuppressant ideally would be able to treat psoriasis effectively. Future challenges are several folds and include the caring and monitoring of patient and biologic monitoring of the historical background, chronic inflammatory mediators. The specific trigger identified for initial production of TNF- α cytokines may also impact TNF- α production include HMG-B1, IL-15 and IL-23. Elucidation of the basic mechanism by which the disease is transmitted from one generation to another is another facet of the research which must be investigated to explore some more herbal drugs for the treatment of psoriasis.^[1]

CONCLUSION

Psoriasis is a complex multifunctional inflammatory skin disease characterized by T-cell activation, local vascular changes, abnormal keratinocyte proliferation and neutrophil activation. The synthetic drugs used to treat it are having side effects and it has been seen that some the synthetic drugs have psoriasis as adverse effect. In that case, the herbal natural remedy is the obvious

alternative, which is safe and equally effective as the synthetic drug. Several plant sources have been highlighted in this article on the basis of traditional knowledge and reports of different researchers.

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