

Role of Topical Applications in Psoriasis as per Ayurveda

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ABSTRACT

Background: In Ayurveda all the Skin disorders are explained under *Kusthargoadhikar* and classified as 7 *Mahakusthas* and 11 *Kshudrakusthas*. *Kitibhakustha* and *Ekakustha* are among the *Kshudrakusthas*. *Kitibhakusthas* are characterized by symptoms like *Shyavam* (blackish brown/ash colour lesions), *kina Rauksham* (hard and dry in nature), *Kharasparsha* (rough on touch), *ugrakandu* (excessive itching) and *Ekakustha* have symptoms like *aswedanam* (loss of sweating), *mahavastu* (covering of large surface areas), *matsyashakalopam* (scaly lesions) with predominance of *vata* and *kaphadoshas* in both. Due to similarities in symptoms it can be correlated to Plaque Psoriasis. It is chronic in nature and mainly caused due to autoimmune factor characterized by sharply defined erythematous squamous lesion, reddish scaly patches on the skin. *Acharya Charak* has indicated repeated *shodhanaandshaman chikitsa* for *kustha*. In *bahyachikitsa* application of various *tail* and *lepa* are described. Thus the aim of the study is to review and discuss various external applications described in Psoriasis as per *Ayurveda*.

Methodology: The classical texts of *Ayurveda* and modern medicine, Journals and Research articles were reviewed.

Observations and Discussion: In the study following formulations like *Dhatrayadhyolepa*, *Kutajasuryapakitaila*, *Karanjabeejaitaila* showed significant result in reducing the symptoms of Psoriasis.

Conclusion: Psoriasis (*kustha*) can be managed effectively by *Lepachikitsa* that is local application of various medicated herbs in form of *lepa*, and *tails*.

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INTRODUCTION

Skin is the biggest organ of the body that defends the body from the outer environment. By changing the character of skin reflects numerous inside diseases. Psoriasis is an autoimmune papulo-squamous illness characterised by a pattern of skin inflammation in response to diverse stimuli. Sharply delineated erythematous plaques/patches/papules coated in silvery scaling characterise this condition.¹

Psoriasis is a prevalent skin disorder that affects about 5% of the global people. It mainly occurs in moderate to mild climates and in white population. This is most frequently found in countries like West Europe, Northern-America, Uganda and Kenya while it is rare in Mongoloid Asians, East African Negroes, and Japanese.²

Ayurveda classifies a variety of skin illnesses as '*Kushtha*,' which is further divided into *Mahakustha* and *Kshudrakushtha*.³ In *Ayurveda*, Psoriasis and its symptoms are not treated as a distinct entity. Psoriasis is a vitiation of the *Vata* and *Kaphadoshas*.⁴

One of the varieties of *Kshudrakushtha* is *Ekakushtha*. *Bhavaprakash* named it *Ekakushtha* due to its first position among all *Kshudrakushtha*.⁵

In *Ekakushtha* there is dominance of *Vatadosha* with association of *Kapha*. *Asvedanam* (dry), *Mahavastu*⁶ (broad lesion), and *krishnaarunvarna*⁷ (Reddish-blackish discoloration) are all related with '*Matsyashakalopama*' (fish-like scaling of the skin)

Kitibhakushtha is characterized by *Shyavam* (lesion blackish brown/ash colour), *Kina Rauksham* (hard and dry in nature), *Kharasparsha* (rough on touch), *ugrakandu* (excessive itching).⁸

Weather, stress, injury, infection, incomplete protein digestion, bowel toxemia, immunological factors and certain medication triggers the disease process leading to the onset and worsening of psoriasis.

Invasion of bacteria and illnesses are attacked and eliminated by white blood cells in the human body. New skin cells develop too quickly as a result of the enhanced rate of skin cell production. They are

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pushed to the skin's surface, where they build up. Plaques that are most typically associated with Psoriasis are the outcome of this process. Attacks on skin cells also result in the development of red, inflammatory regions of skin.

Role of drugs such as beta blockers, NSAIDs, synthetic anti-malarial drugs, tetracycline & lithium in the induction & exacerbation of psoriasis have also been studied. Treatment in modern medicine for Psoriasis comprises of use of topical corticosteroids, vitamin D3 analogs which need long term use and have limitations due to adverse effects and relapse.

In *Ayurveda* the common treatment principles of *kustha* is *Nidan parivarjana* (avoidance of causative factors), *Shodhana* (purification process) and *Shamanachikitsa*. *Acharya Charaka* described administration of *sarpi* (*Ghrita*) in *vata* dominance *kustha*, *vamana* in *kapha* dominance and *virechana* and *raktamokshana* in *pitta* dominance *kustha*⁹. *Shamana* therapy is a way to normalize the *TriDoshas*. It involves activating *Agni* and normalizing the digestion through fasting. *Shamana* is a process of normalizing the disturbed *Doshas* in the body without creating imbalance to the other *Doshas*.

Acharya Charak has indicated repeated *shodhana* and *shaman chikitsa* in the form of external application and internal drugs.

For *bahyachikitsa* application of various oils and *lepa* are mentioned.

While several studies have been conducted in the world of medicine, no absolute, simple, safe, and dependably successful permanent solution for Psoriasis has yet to be discovered. Topically applied medicines for Psoriasis are restricted and have numerous negative effects when utilised. As a result, there is an urgent need for a medicine that provides excellent results with low recurrence and no side effects.¹⁰

Different treatment modalities, like *Siravyadha* and *Jalauka* which are not so friendly or easily acceptable by patient are described in *literatures*, which needs direct supervision by a Physician. *Lepa*, is one among the *Bahyapradhana upakrama* which could be easily employed with effective results.¹¹

MATERIALS AND METHODS

The classical texts of *Ayurveda* and modern medicine, Journals and Research articles from Google scholar, Pubmed, etc were selected for study.

OBSERVATIONS AND RESULTS

Research articles on *Ayurvedic* management of Psoriasis from year 2011-2019 are as follows:

Sr.no.	Author and Journal name	Title of study	Grouping	Results
1.	Mehta, et al.: AYU Vol 32 Issue 3 Jul-Sep 2011	"A Clinical study of some Ayurvedic compound drugs in the assessment quality of life of patients with <i>EkaKushtha</i> (psoriasis)"	GroupA(45): <i>Dhatrayadhyolepa</i> for local application along with 2gm twice a day with <i>koshnajala</i> GroupB(49): <i>Dhatrayadhyolepa</i> for local application along with <i>Medhya Rasayana</i> tablet 2(each 500mg) twice a day with <i>koshnagodugdha</i> Duration: 3 months	Group A showed 70.26% relief in all the symptoms , whereas group B showed 67.64% relief in all the symptoms .
2.	Mythrey RC et.al.Int.J. RAP 4(1) Jan-Feb 2013	"A Comparative Clinical Study on the management of Psoriasis w.s.r to <i>Ekakustha</i> "	Group A(30):- 1.Classical <i>Virechana</i> -with <i>TrivritLehyam</i> . 2 <i>Shaman Snehapan-Guggulutiktakaghrita</i> 30 ml morning empty stomach for 30 days 3. <i>KutajasuryapakiTaila</i> for local application twice a day(30 days). Group B(30):- 1. <i>Shaman Snehapan-guggulutiktakaghrita</i> 30 ml morning empty stomachfor 30 days 2. <i>KutajasuryapakiTaila</i> for local application twice a day for 30 days	Group A- Complete Relief -8 Marked Improvement -20 Moderate Improvement-2 Group B- Complete Relief -3 Marked Improvement -23 Moderate Improvement-4
3.	Singh A. et al. UJAHM, 02 (06): Page 44-50, 2014	"Effect of <i>tutthadilepa</i> in psoriasis"	Single group (20)- <i>Tutthadilepa</i> mixed with mustard oil for application on lesions at bed time for 4 months.	70-75% reduction was observed in all parameters, with no adverse effects, slight itching was present in some cases.
4.	Glob. J. Res. Med. Plants Indig. Med. 4 (8) pp.162-171, Aug. 2015	"A Clinical study on the efficacy of <i>karanjabeejataila</i> along with <i>dooshivishariagada</i> in the management of Psoriasis"	Single group (30)- <i>Karanjabeejataila</i> for external application and <i>DooshivishariAgadatablet</i> internally daily for 14 days.	Highly effective in reducing scaling upto 84% and thickness of lesions upto 57 %,reducing erythema upto 20 % & degree of involvement of lesions upto 30 %.
5.	N.r.hendge et al international ayurvedic medical journal, (issn:2320 5091) (february, 2017) 5 (2)	"A comparative study of effect of mahanim badichurnam & mahaman jishtha tail with vajra kaghrutam & mulakabija dilepain	GroupA (30 days) - <i>MahanimbadiChurnam</i> 3 gm (1.5gm twice in day) & <i>MahamanjishthaTaila</i> for local application(40 days)	Both group A & group B are equally effective & less recurrency& chronicity.

Sr.no.	Author and Journal name	Title of study	Grouping	Results
		the management of kitibhakush-thaw.s.r. psoriasis”	Group B (30 days)- <i>VajrakaGhrutam</i> 10ml (5ml twice in day) & <i>MulakabijadiLepa</i> for local application	Both group A & group B are equally effective & less recurrency& chronicity.
6.	Morya et al., Med Aromat Plants (Los Angeles)- 2017	“A Clinical Study- on Evaluation of the Effect of <i>Neem</i> , <i>Tulsi</i> and <i>Henna</i> on Psoriasis”	GROUP A (15): <i>Nimba</i> and <i>Tulsi</i> , fine powder each 2.5 gm in quantity two times for 90 days. GROUP B (15): <i>Nimba</i> and <i>Tulsi</i> , fine powder each 2.5 gm in quantity two times with oil of <i>Nimba</i> , <i>Tulsi</i> & <i>Henna</i> for topical application two times a day. (90 days)	Both Groups showed significant improvement but Group B showed better result than Group A because of topical and systemic use of drugs in Group B.
7.	Ayurpharma, Int J AyurAlli Sci., Vol. 7(7) p.101 - 108, 2018	“Clinical efficacy of <i>Dinamallika (Cestrum diurnum)</i> in <i>Kitibhakustha</i> (Psoriasis)”	Single group (20)- <i>Dinamallika patrataila</i> externally on affected areas twice daily for a period of 60 days.	14 patients got 80-100% relief from symptoms and 6 subjects obtained 60-80% relief.
8.	Jakhotiya Y. And Kuchewar V. Int. J. Res. Ayu Pharm. 10 (5), 2019	“A clinical study on evaluation of effect of <i>Khadirghrita</i> in <i>Ekakushtha</i> with special reference to Psoriasis”	Single group (30)- <i>Haritaki</i> powder with lukewarm water at night for consecutive three days. <i>Khadirghrita</i> 10 ml twice a day with lukewarm water. <i>Khadiraghrita</i> for local application 30 days	Result showed significant improvement in PASI score like Erythema, induration, Scaling and pruritus.
9.	A. Vijayalakshmi. et al. / The Revista Brasileira de Farmacognosia-Brazilian J. of Pharmacognosy 24:P. 322-329, 2014	“Anti-psoriatic activity of flavonoids from <i>Cassia tora</i> leaves using the rat ultraviolet B ray photo dermatitis model”	Three flavonoids, (-) luteolin-7-O-β-glucopyranosid II) quercetin-3-O-β-D-glucuronide III) formononetin-7-O-β-D-glucoside Isolated from <i>Cassia tora</i> leaves and the ethanol extracts were studied by UVB induced photo dermatitis in rat.	Isolated extract of ethanol (400 mg/kg) and isolated 3 flavonoids showed significant decrease in thickness of epidermis in comparison with control. Flavonoids isolated from leaves of <i>Cassia tora</i> possess significant antipsoriatic activity.
10.	International Scholarly Research Network ISRN Dermatology Volume 2012	“ <i>Cassia tora</i> Linn Cream Inhibits Ultraviolet-B-Induced Psoriasis in Rats”	Standard control-(Tretinoin-0.05%) cream Throughout the therapy, the animals (Rats) were given various doses of O/W creams (Test 1—0.05 percent, Test 2—0.1 percent, Test 3—0.2 percent), standard (Tretinoin-0.05 percent), cream base, and crude extract applied topically (single dose).	In comparison to the positive control, O/W creams and methanolic extract of <i>Cassia tora</i> L. leaves exhibited a substantial reduction in percentage of relative epidermal thickness and spleen index. From this it can be concluded that local O/W creams and extract of <i>Cassia tora</i> L. Leaves in methanol possess strong anti psoriatic action in UVB induced psoriasis in rat.

DISCUSSION:

All Skin illnesses have been classified as *Kushtha* in the *Ayurvedic* Classics. The word *Kushtha* comes from the Sanskrit phrase ‘*Kushnativapuitikushtham*,’ which means conditions that distort the skin.

In *KushthaVyadhi*, there is *srotodushti* of *rasa*, *rakta*, *annavaha srotas* and vitiation of all the three *doshas* due to *nidansevan* leads to *dushti* of *twak*, *rakta*, *mamsa*, *lasika* further leading to formation of *mandalas* which is termed as *kushtha*.

It is the need of the hour to develop economic, easily available and an efficacious medicine for psoriasis

All *Acharayas* have mentioned administration of *samshodhanchikitsa* followed by *samshamanchikitsa* for

Kushtha. Though *samshodhana* is the best therapy but *bahipari-marjanchikitsa* along with internal medications also plays a major role in the management of *kushtha*. Among which *lepa* and *Taila* are safe, effective and economical for the patients of Psoriasis.

Bharat Bhaishjya Ratnakara describes formulations for local application, such as *Dhatryadhyolepa*¹². *Triphalachurna* is one of the ingredients, and *LohaBhasma*, which is also contained in the *Lepa*, contains *Lekhana* properties that may aid in the removal of hyperkeratinization. It also contains the properties of *Yogvahi* and *Raktaprasadana*, which may aid in disease management. *Ekakushta* is an illness that is dominated by the *Kapha-Vatadosha*. The active principle of the *Lepa* reaches deeper tissues through the *Siramukha* and *Swedavahi Srotas* and stains them with its *Sukshma* and *Tikshna* properties when

applied topically. It deblocks the impediment in *Swedavahi Srotas* and allows the local toxins to flow out through the *Sweda*, clearing out the micro channels, due to its *Ushna*, *Tikshna*, and *Sukshma* characteristics.

KutajaSuryapaki Taila is made up of *tilataila* and *Kutaja (Holarrhena antidysenterica)*. When this *tail* is used, it acts as *Twachya* and *Varnya*. These two drugs have the effects of *Kaphaghna*, *Pittaghna*, *Kandughna*, *twakdoshhara*, *vranashodhak*, *vranaropana*, and *shothahara*. Due to *sookshma*, *guru*, and *saraguna*, *Tilataila* brings *mardavata* of *twagadidhatus* as well as *dhatupushti*.

The keratin layer works as a reservoir for a drug, which diffuses gently into the skin's deeper layers over time. As a result, this preparation may be effective for a longer period of time. It serves as a lubricant, reducing the creation of fissures within plaques while maintaining the elasticity of the surrounding skin.

It also aids in the reduction of scales on the psoriatic plaque's surface. *Krimighna* property of preparation may help in reducing the *kandu*. The drug's *vranaropan* and *vranashodhak* actions may aid in the healing of lesions.¹³

The main ingredients of *Tutthadilepa* are *Tuttha (Blue vitriol)*, *Marich (Piper nigrum)*, *Vayvidanga (Embeliaribes)*, *Kushtha (Saussurealappa)*, *Lodhra (Symplocosracemosa)*, and *Manahshila (realagar)*. *Kandughna* (reduces pruritis), *Kushthagha* (anti-psoriatic property), and *Krimihara* (antimicrobial property) are all qualities of *Tutthadi lepa* medicines. *Tutthadilepa* possesses antipruritic, antibacterial, antifungal, and therapeutic properties when used topically.¹⁴

Karanja (Pongamiapinnata) beeja is having *katuvipaka* (pungent- post digestive effect), *katutikta rasa* (pungent-bitter taste), *laghu ,Ruksha guna* (easily digestible and dry), *ushnaveerya* (hot potency), *vatakaphashamaka* (pacify vata and kapha humours) property and *kushthagha karma* (skin disease curing property).

Katu rasa (pungent taste)- property of *katu rasa* described by *Acharya Charaka* is "*Marganvivrunoti*" which means it dilates the *srotas* (channels) and thus acts on cellular level and stops the uncontrolled production of cells which causes hyperkertanization.

Tikta rasa (bitter taste) has the property of *raktaprasadana* (blood purification), *vishaghna*, *kushthagha*, *kandughna* (antiitching). It also has *kaphaghna* (pacifies *kapha* humour) property. *Laghuguna* (easy to digest) possess *kaphashamaka* (pacifies *kapha* humour) property. *Lekhan* property might help in management of hyperkertanization which leads to scaling.

Acharya Madhava has described *kaphavatahara* (pacifies *kapha* and *vata*) and *lekhana* (scraping) property of *tikshna* (intense) *guna*.

Ushnaveerya (hot potency)-According to *Ashtangasangraha*, *ushnaveerya* has *vatakaphashamaka* (pacifies *vata* and *kapha*) property and according to *Ashtanga Hrudaya*, it has *ashupaka* property through which it acts quickly at minute channels.

Looking to the *karmas*, it is clear that the *karanjabeejataila* is having *kushthagha*, *kandughna* and *vrunaghna* (wound healing) properties which clearly explains its mode of action in *kushta*.¹⁵

Neem (Azadirachtaindica) is a plant that boosts your immune system naturally. It boosts your body's immunity by promoting T-cell production, which enables your body (and skin) to fight infections.

Regular intake of *neem* capsules/tablets aids in the elimination of dangerous fungi, parasites, and viruses while causing no harm to the good intestinal flora of healthy micro organisms due to its powerful antibacterial (anti fungal) qualities.

Carotenoids found in *neem (Azadirachtaindica)* are quite similar to carotene. These carotenoids have antioxidant qualities that can help protect the skin from free radical damage. Significant research and studies are being conducted to see if these carotenoids can also aid in the treatment of various types of cancer.

Due to its anti-bacterial, anti-fungal, anti-oxidant, and anti-inflammatory properties, *Tulsi (Ocimum sanctum)* is used as a natural remedy for viral infections, strengthening immunity, combating and treating various dermatological disorders, as well as common health and lifestyle-related issues. Oral drug administration alone is insufficient to reverse the metabolic changes occurring throughout the body and to deliver sufficient amounts of medicine to skin tissues. When a medicine is applied locally, it stays in contact with the skin for a longer period of time.

Psoriasis and other skin problems can be treated with *Dinamallika (Cestrum diurnum)*. The leaves of *Cestrum diurnum* have been used for topical psoriasis therapy in Europe and other parts of the world because they contain Calcitriol, a naturally occurring active form of vitamin D3. Calcitriol 3 microg/g ointment has also been thoroughly tested for the treatment of chronic plaque-type psoriasis, and has been demonstrated to be efficacious, safe, and well-tolerated in a variety of short and long-term clinical trials. Topical calcitriol ointment yields low systemic absorption, according to pharmacokinetic investigations in psoriasis sufferers and healthy control volunteers¹⁶.

Khadir (Acacia catechu) contains astringent and cold properties, as well as *kapha-pitta* balancing properties. Quercetin and tannins are also included, which have been shown to regulate cytotoxic T-cells. Quercetin reduces the release of histamine, whereas tannin is a vasoconstrictor. As a result, it is effective in combating the inflammatory autoimmune response when used in combination. The itching in psoriasis is caused by extreme dryness. *Snigdha* (unctuous) is a quality of *goghrita*. As a result, the combined effect of the *Kandughna* and *Snigdha* properties of *Khadirghrita* may be beneficial in reducing itching.

Because of its '*Yogvahi*' quality, *Ghrita* has been referred to as one of the greatest *sneha* as in *Ayurveda*. As a result, the *Khadirghrita* may be more effective than the *Khadir* alone.¹⁷

For generations, *Chakramarda (Cassia tora)* has been used to treat Psoriasis and other skin issues.^{18, 19} *Cassia tora* L. leaves, which are high in glycosides and also contain aloe-emodin, may aid in the treatment of skin conditions.²⁰

The total epidermal thickness of rat skin exposed to UVB irradiation when treated with extract of *C. tora* leaves (400mg/kg) and isolated 3 flavonoids showed significant decrease in thickness of epidermis layer of skin in comparison with control group. Thus it is suggestive that Flavonoids isolated

from leaves of *Cassia tora* possess significant antipsoriatic activity. This property is due to its effect on proliferated keratinocyte cells which mainly caused due to exposure of skin to Ultraviolet irradiation. The stratum granulosum capacity to boost the proliferation of keratinocyte cells, which is a defensive mechanism of dermal cells when it is exposed to incisive emission, is most likely the reason for its substantial preservation. The observed anti-psoriatic efficacy could be due to keratinocyte growth suppression.

When only drug is given orally then it is not sufficient to correct the metabolic abnormalities occurring throughout the all systems of body and to deliver a significant amount of medicine to skin tissues. When a medicine is applied locally, it stays in contact with the skin for the longer duration of time.

To treat any ailment it is important to explore the drug at the cellular level. An appropriate carrier should be utilised to assist the pharmacological effects of the medicine at the cellular level. Lipid and lipid soluble compounds have a free passage across the cell membrane. Because of its 'Yogvahi' quality, *Ghrita* and *Taila* have been referred to as one of the greatest *snehas* in Ayurveda. Therefore *kutajasuryapakitaila*, *karanjabeejaitaila*, *khadiraghrita* showed significant result in reducing the symptoms of Psoriasis because of its *kusthagna*, *kandughna*, *vrnaghna* and *krimighna* properties.

CONCLUSION

The present day polluted environment, unhealthy and unwholesome foods and stressful regimen can trigger accumulation of toxins in the body. Certain drugs, *virudhahara* (incompatible food), mental stress are aggravating factors in psoriasis. *Virudhavihara* (incompatible life style) will also contribute in the causation and exacerbation of *kushta*. It is a relapsing disease and long term therapy is required. Different treatment modalities, like *Siravyadha* and *Jaloaka* which are not so friendly or easily acceptable by patient are described in literatures, which needs direct supervision by a Physician. *Lepa*, is one among the *Bahyapradhanaupakrama* which could be easily employed with effective results. Various medicines for internal administration should also be used to prevent its relapse. Thus *Ayurveda* can be used effectively in management of Psoriasis.

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