



EFFECT OF THE NIRGUNDI TAILA AS EXTERNAL APPLICATION IN THE MANAGEMENT OF PSORIASIS

Research article

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ABSTRACT

Psoriasis is a skin disease characterized by red scaly patches on the skin and intense itching. Extensor surfaces of the body like knee, elbow, scalp, palms, soles, finger nails, toe nails and genitalia are the most commonly affected sites. It is relapsing and immune mediated systemic disease. Management of it includes topical agents like retinoids, coal tar and phototherapy. But the amount of the relief is varied and relapses are more common. To avoid the relapses, alternate medicines like herbal based medicines are given prime importance. Ayurveda, the Indian system of medicine relies on herbal based medicine and provides considerable relief for the treatment of various such conditions. *Nirgundi taila*, one of the medicines mentioned in Ayurvedic System of Medicine is most commonly used as a pain killer. Apart from the anti-inflammatory conditions, it is useful in many other conditions like skin disorders. The present study was planned to know the efficacy of the *Nirgundi taila* as external application in the management of psoriatic skin disorders. The study was an open arm clinical study with single blinding design. 30 patients were studied and were assessed before the start of the treatment and after 2 months of the treatment. Assessment was done according to the PASI score. The results showed that *Nirgundi taila* was found to be statistically significant in reducing the erythema, scaling and redness ($p < 0.001$). Thus, *Nirgundi taila* can be an effective remedy for the management of Psoriasis.

Keywords: Skin disorders, *Kushta*, *Kitibha*, External application, *Vitex negundo* L, *Lepa*

INTRODUCTION: Psoriasis is one of the skin diseases. It commonly affects the extensor surfaces of the body like knee, elbow, scalp, palms, soles, finger nails, toe nails and genitalia. The lesion are red scaly patches on the skin and with itching.

By definition, “Psoriasis is a common, genetically determined, inflammatory skin disorder of unknown cause, which, in its

most usual form, is characterized by well demarcated, raised, red scaling patches that preferentially localize to the extensor surfaces”. (1)

It affects around 1-3 percent of the population in USA and UK. It is less common in Asia when compared to the western world. (1)

There are three major clinical types of psoriasis. They are

- Guttate psoriasis (7-14 yrs children, drop sized lesions develop suddenly)
- Napkin psoriasis (infants, lesions appear on the scalp and trunk)
- Erythrodermic psoriasis (generalized skin involvement, skin red and scaly)
- Pustular psoriasis (pustules are formed and especially on the central parts of the palms and soles)
- Arthropathic psoriasis (rheumatoid like arthritis with symmetrical involvement of the small joints of the hand and feet, wrists and ankles in the patients with psoriasis)

It is relapsing and immune mediated systemic disease. Management of it includes topical agents like retinoids, coal tar and phototherapy. But the amount of the relief is varied and relapses are more common. Hence it is important to rely on various alternative treatments for the effective management of the condition.

Ayurveda, an Indian System of Medicine, with its vast literature on the management of various ailments of the body, suggests the use of various herbal and mineral based medicines for the management of various skin conditions. In Ayurveda, psoriasis is considered as *Kitibha kushta* of *eka kushta*. They are included in the 18 types of the *kushta rogas* mentioned in Ayurveda. The treatment of the condition is also similar to the general management of the *kushta roga* or the skin diseases. The general line of the treatment for the *kushta* includes *shodhan cikitsa* (purification methods) like *vamana* (therapeutic emesis), *virecana* (therapeutic purgation), *nasya* (nasal instillation of medicine), *rakta mokshana* (bloodletting) and *shamana cikitsa* (therapeutic

management) like internal medications and external applications (4,5). As the disease is considered in the *kshudra kushta* or the skin diseases, which are easily treatable with the internal medications, most of the cases of the psoriasis does not require the *shodhana* therapy. Hence *shamana* therapy like external applications (*tail lepa*) are mostly preferred and easy to use medications. One of the single medicinal preparations, which can be easily prepared with easily available herbs is *Nirgundi taila*. It is made by boiling the fresh leaves of *Nirgundi* (*Vitex negundo* L., Family *Lamiaceae*), in sesame oil (*Tila taila*). *Nirgundi* is said to be effective in the management of *krimi* (worm infestations), *kushta* (skin disorders), *ruja* (pain), *pliha* (splenic disorders), *gulma* (bloating of abdomen) and *aruci* (tastelessness) (6). As it is mixed in the base of the *taila* or oil, it is convenient to apply on the lesions and is also helpful in reducing the dryness and prevent the scaling of the skin. Because of its anti-inflammatory action, it may reduce the erythema and redness of the lesions. Hence the present study is planned with the following aims and objectives.

AIMS AND OBJECTIVES:

To evaluate the efficacy of external application of *Nirugndi taila* in the management of Psoriasis.

MATERIALS AND METHODS:

The study was an open arm clinical study with single blinding design.

Materials used:

Patients:

As the study was an open arm clinical study, no randomization has been adapted, and the patients with the clinical features of the psoriasis were selected as per the convenience sampling and the complete case was recorded with the consent of the

patient. All the patients were explained about the procedure and written consent was obtained.

INCLUSION CRITERIA:

- Patients aged between 20-60 yrs, having the classical signs and symptoms and also based on the assessment criteria were selected for the study. Patients without any other major complications like skin carcinomas and having good faith and tolerance towards the medicine we selected.

EXCLUSION CRITERIA:

- Patients aged below 20 yrs and above 60 yrs with major or fatal complications or the patients who are not interested to continue the medicine were excluded from the study.

Medicine used:

Nirgundi taila prepared as per the classical reference. (2) Fresh *Nirgundi* leaves were collected from the local vicinity of Tirupati and the sesame oil was purchased from the

market after ensuring its quality. Then oil was prepared as per the classical reference from *Sharngdhara Samhita Taila prakarana* (2) and is preserved in air tight plastic bottles and used for dispensing to the patients.

Dosage: Sufficient quantity of the oil to cover all the lesions.

Timeline of the study: March 2022 to June 2023

Place of the study: Multicentric

Duration of the treatment: 2 months

Assessment of the disease severity through PASI Scale:

The patients were assessed with the Psoriasis Area and severity Index (PASI) assessment scale (3). According to this, three major clinical symptoms are taken into consideration and are graded as follows. The clinical features are assessed before and after the treatment and the changes were recorded.

Table 1: Grading of Clinical features of Psoriasis based on the PASI scale.

	Erythema (redness)	Induration (thickening)	Desquamation (Scaling)
0	No erythema	0 mm induration	No scaling
1	Light redness	0.25 mm	Fine scaling with some lesions covered
2	Redness but not deep red	0.5 mm	Coarse thick scaling, most lesions covered
3	Very red	1 mm	Coarse thick rough scaling covering most of the lesions
4	Extremely red	1.25 mm	Very thick coarse scales covering all lesions

The percentage of the body involved is also evaluated based on the following criteria:

Head – 10%;

Arms – 20%;

Trunk – 30%;

Legs – 40%.

Based on the above percentage of the involvement, the before treatment and after treatment was also assessed and graded as follows:

Table 2: Grading according to the percentage of the skin involved.

Grade:	Percentage
Grade 0	0%
Grade 1	<10%
Grade 2	10-29%
Grade 3	30-49%
Grade 4	50-69%
Grade 5	70-89%
Grade 6	90-100%

Statistical assessment:

Statistical assessment of the clinical features was done with the Graphpad Prism Quick Calcs software and the statistical values like students paired “t”

test and the probability was assessed and results thus obtained are presented further. The overall effect of the therapy is assessed based on the relief in the clinical features and are indicated as follows:

Table 3: Showing the features of the overall effect of therapy

Complete remission	Complete absence erythema, induration and scaling
Moderate improvement	Complete absence induration and scaling with erythema or discoloration
Mild improvement	Decrease in the erythema, induration and scaling
No improvement	No change in the lesions.

OBSERVATIONS AND RESULTS: 34 patients suffering from psoriasis were selected for the study based on the clinical features and the specially prepared case sheet. Out of the 34 patients 4 patients did not follow up, hence, they were discarded from the study. 30 patients completed study completely and the data of these 30 patients was used for the assessment.

Out of the 30 patients studied, 11 (36.67%) were having grade 5 skin involvement before treatment and 2 (6.67%) after the treatment. 12 (40%) and 2 (6.67%) were

having grade 4 skin involvement before and after the treatment respectively. 5 (16.67%) and 4 (13.33%) were having grade 3 before and after treatment respectively. No patient was having grade 1 skin involvement before treatment, but after the treatment 12 (40%) patients were having grade 1 skin involvement. No patient was found to be having the grade 6 involvement of the skin. This shows that almost all the patients have responded positively for the treatment.

Table 4: Showing the percentage involvement of the skin before and after treatment

	MEAN		SD		SEM		DF	‘t’ VALUE	‘P’ VALUE
	BT	AT	BT	AT	BT	AT			
Percentage of skin involved	4.07	2.07	0.91	1.20	0.17	0.22	29	9.8319	<0.0001

Statistical assessment of the skin involvement showed that mean before the treatment was 4.07 and after the treatment

was 2.07 with p value <0.001 showing an extremely statistically significant change.

Table 5: Showing the statistical assessment of various clinical features before and after treatment

	MEAN		SD		SEM		DF	't' VALUE	'P' VALUE
	BT	AT	BT	AT	BT	AT			
Erythema	2.90	0.93	1.03	0.87	0.19	0.16	29	9.8099	<0.001
Induration	2.53	1.30	1.07	0.95	0.20	0.17	29	8.2663	<0.001
Scaling	3.00	1.03	0.98	0.89	0.18	0.16	29	11.6094	<0.001

Assessment of the erythema, induration and scaling showed an extremely statistically significant change with respect to the before treatment and after the treatment assessment. Showing that there

is a significant change in the clinical features. Thus, indicating that Nirgundi tail was effective in suppression of the cardinal symptoms of psoriasis.

Table 6: Showing the overall results of the therapy

Complete remission	0	0
Moderate improvement	7	23.33%
Mild improvement	19	63.33%
No improvement	4	13.33%

Overall effect of the therapy showed that no person was having complete remission of the symptoms. But moderate improvement was seen in 7 (23.33%), mild improvement was observed in 19 (63.33%) and no improvement 4 (13.33%) of the patients. Thus, indicating that even though *Nirgundi taila* is having statistically significant effect on the signs and symptoms of the psoriasis, overall relief is only mild to moderate. Complete remission was not achieved.

DISCUSSION: Psoriasis, being a skin disorder characterized by itchy, scaling lesions on the skin and broader areas of involvement especially in the extensor surface of the skin, disturbs the routine activities and also cause cosmetic disturbances to the patients. This is a psycho-somatic disorder and also affects the physical and mental status of the individuals. The treatment for the disease takes longer time and relapses are more common. Thus, it is important to continue the treatment for a longer time and

requires lot of patience. Chronic disease may lead to psoriatic arthritis and fibrosis of the skin. So, response at appropriate time with suitable medicine can provide considerable relief to the patients.

Psoriasis is considered as one of the *kushta rogas* mentioned in Ayurvedic texts. It is comparable with *kitibha kushta* and *eka kushta*. The line of the treatment of this involves the general line of the management of *Kuhsta rogas* like *shodhana cikitsa*, *shamana cikitsa* and external applications like *lepa*, *taila* and *ghrita kalpanas*. As there is lot of dryness and scaling in the cases of psoriasis, it is important to maintain proper unctuousness to prevent the scaling. Ayurveda also mentions that the surface becomes rough (*khara sparsha*) and to make it *mrudu sneha* (oil or cream based) preparations play a major role. There is involvement of *vata* and *kapha dosha* making the skin dry and because of the *kapha* sometimes oozing and itching will be observed. Hence it is ideal to select a drug which is

vata hara and should not increase *kapha*, but should cause slight unctuousness to the skin. Hence for the present study *Nirgundi* (*Vitex negundo* L.) was selected which is having *vata kapha hara* properties (6,7,8) and for the convenience of the application, it has been prepared as oil-based medicine, *Nirgundi taila*. As per *Dhanvantari Nighantu*, *karaviradi varga*, *Nirgundi* is having *katu tikta rasa*, *ushna virya*, reduces *vata* and *shleshma (kapha)* and reduces *kushta*, *krimi*, *ruja*, *pliha roga*, *gulma* and *aruci* (6). These properties helped for the selection of the medicine for the study.

The present work was studied on 30 patients having the clinical features of psoriasis and the medicine was suggested to be applied regularly for 2 months as mentioned in the materials and methods. After the completion of the study duration, the results were assessed with at most care and was found that there was a significant reduction in the percentage of the skin involved before and after the treatment ($p < 0.001$). Erythema ($p < 0.001$), induration ($p < 0.001$) and scaling ($p < 0.001$) also reduced extremely significantly indicating that psoriasis reduced significantly in most of the cases. Overall results showed that moderate improvement was seen in 7 (23.33%), mild improvement was observed in 19 (63.33%) and no improvement 4 (13.33%) of the patients. Complete remission was not observed in any of the cases as the changes in the color of the skin was noticed at the site of the lesions, but in most of the cases erythema, induration and scaling reduced completely. As the study is for a limited period of time i.e., 2 months, the major clinical features were reduced and the patients were feeling comfortable. Continuing the follow up

further could have shown much better results and also complete remission. 4 (13.33%) patients did not get any relief as there was more percentage of involvement of the skin. Hence, it was taking a longer duration of the time for the improvement. Most of the patients have shown mild to moderate improvement where in the symptoms like scaling, induration and erythema reduced but, the lesions were still visible prominently or to a mild extent. This may be because of the short duration of the treatment. These studies are consistent and comparable with many of the previous research works conducted on the psoriasis with Ayurveda based treatment procedures and medicine. In most of the cases significant reduction in the symptoms of psoriasis were observed but complete remission was not found. (9, 10, 11, 12, 13, 14). Thus, from the above study the effect of psoriasis was studied and the results obtained are comparable to some of the previous researches done with various *shamana*, *shodhana cikitsas*. This shows that even though the medicine selected for the study is *Nirgundi taila* as single medicine and as external application only, the medicine showed significant changes in the clinical features as compared to the previous trials done with *shodhan* and *shamana cikitsa*. Hence this drug may be given as a single remedy where the *shodhan* and *shamana cikitsa* are contraindicated or where the patient is not willing to take *shodhana* and *shamana cikitsa*. As the medicine is simple to prepare and is easily available, this can be an alternative for children, pregnant woman and elderly people, as no internal medicine needs to be administered and only external application is used. As this *taila* is being used for ages as an external

application with no reported adverse reactions, this can be a simple and effective remedy for the vulnerable patients.

CONCLUSION: From the study it can be concluded that *nirgundi taila* is effective in reducing the clinical features of psoriasis i.e., scaling, induration and erythema effectively, but the lesions did not disappear completely during the study period. A longer duration of the treatment may show complete reduction in the lesions as well and may prove effective in the management of psoriasis. The relief felt by the patients was considerable and statistically significant, indicating that the *Nirgundi tail* as an external application can be a choice of medicine for the effective management of Psoriasis.

Limitations of the study: As the study was taken up with limited time frame of 2 months, the same may be extended for 6 months and also followed up for 12 months and also in a greater number of cases to prove the efficacy more effectively and statistically.

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