

A CLINICAL EVALUATION OF EFFECTIVENESS OF THE *KHASKHAS BEEJA LEPA* IN THE MANAGEMENT OF *DARUNAKA* (PITYRIASIS SICCA)

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ABSTRACT

Background: *Darunaka* is a common scalp disorder described in classical Ayurvedic texts, closely correlating with Pityriasis sicca (dry dandruff) in modern dermatology. Driven primarily by the vitiation of *Vata* and *Kapha* Doshas, it manifests as scalp itching (*Kandu*), dryness (*Rukshata*), scaling (*Twak Sphutana*), and hair loss (*Keshachyuti*).

Objective: To clinically evaluate the therapeutic efficacy and safety of topically applied *Khaskhas Beeja* (Papaver somniferum seed paste) with *Godugdha* (cow's milk) in the management of *Darunaka*.

Methods: A prospective clinical trial was conducted on 20 patients aged 18–50 years presenting with cardinal symptoms of *Darunaka*. Patients applied 2 grams of *Khaskhas Beeja* paste processed with *Godugdha* externally to the scalp 30 minutes before hair washing, twice weekly for a total duration of 14 days. Clinical assessments were recorded on Day 0, Day 7, and Day 14. Hematological parameters (Hb, TLC, DLC, ESR) were evaluated pre- and post-treatment to monitor systemic safety.

Results: Treatment resulted in statistically significant reductions across all primary parameters: **Pruritus (*Kandu*):** Reduced by 65.00% ($p < 0.001$), **Dryness (*Rukshata*):** Reduced by 56.41% ($p < 0.001$), **Scaling (*Twak Sphutana*):** Reduced by 52.50% ($p < 0.001$), **Hair loss (*Keshachyuti*):** Reduced by 13.51% ($p < 0.05$). No adverse reactions or significant post-treatment hematological changes were observed.

Conclusion: External application of *Khaskhas Beeja Lepa* with *Godugdha* is a safe, highly effective, and non-invasive Ayurvedic intervention for relieving acute scalp itching, dryness, and flaking associated with *Darunaka* (Pityriasis sicca).

KEYWORDS: *Darunaka*, Pityriasis sicca, *Khaskhas Beeja*, Papaver somniferum, *Godugdha*, *Ayurveda*, Dandruff.

INTRODUCTION

Darunaka is a prominent scalp condition categorized under *Shiropaga* in classical Ayurvedic literature. While Acharya Vagbhata classifies it among the nine *Shiropagalara* (diseases of the scalp), Acharya Sushruta places *Darunaka* under the umbrella of *Kshudraroga* (minor ailments). Primarily affecting the *Kapala* (scalp region), this condition significantly compromises scalp health and hair growth. It is driven predominantly by the vitiation of *Vata* and *Kapha* Doshas, manifesting through four cardinal symptoms: *Shirapadeshi Kandu* (scalp itching), *Rukshata* (dryness), *Shirotwaka Sphutanam* (scaling/cracking of scalp skin), and *Keshachyuti* (hair fall).

In modern dermatology, *Darunaka* correlates with Pityriasis Sicca, commonly known as dry dandruff. Epidemiological studies indicate that Pityriasis Sicca affects nearly 50% of the global adult population, with estimates in the United States citing roughly 50 million sufferers annually. In South Asia and India specifically, the prevalence is substantially higher, affecting approximately 60.00% to 70.00% of the population—ranging from ~56.00–60.00% in western states to over 69% in high-humidity eastern regions. The condition peaks in adolescents and young adults, further exacerbated by urbanization, pollution, and lifestyle shifts. Pathogenically, Pityriasis Sicca stems from microbial proliferation (chiefly *Malassezia* species) along with non-microbial factors like altered sebum composition, stratum corneum barrier disruption, skin irritation, oxidative stress, and localized immune suppression.

Despite an array of topical anti-fungal agents and medicated shampoos in mainstream dermatology, conventional treatments often yield temporary relief, high recurrence rates upon cessation, and substantial financial burdens. Consequently, patients increasingly seek long-lasting solutions through *Ayurveda*. Ayurvedic management provides a holistic framework by addressing the root cause through *Nidana Parivarjana* (avoidance of causative factors), *Shodhana Chikitsa* (bio-cleansing therapies), and *Shamana Aushadhis* (pacifying internal remedies). Furthermore, *Sthanika Chikitsa* (local applications like *Lepa* and *Dhavana*) plays a critical role in alleviating acute symptoms and nourishing the hair roots.

This research focuses on *Darunaka* (Pityriasis Sicca) to evaluate its underlying etiological triggers, assess the role of diet (*Ahara*) and lifestyle habits in its progression, and evaluate both the therapeutic efficacy and post-treatment recurrence rates following Ayurvedic intervention.

AIM & OBJECTIVES

AIM: A clinical evaluation of the effectiveness of the *Khaskhas Beeja Lepa* in the management of *Darunaka*.

OBJECTIVES: Conceptual study of *Darunaka* in detail with both ayurvedic and modern perspectives; to observe the side effects of *Khaskhas Beeja Lepa* during the trail; to assess overall wellbeing effect of the drug.

HYPOTHESIS (H₁): *Khaskhas Beeja Lepa* is effective in the management of *Darunaka* (Pityriasis sicca).

NULL HYPOTHESIS (H₀): *Khaskhas Beeja Lepa* is not effective in the management of *Darunaka* (Pityriasis sicca).

SAMPRAPTI

As per etiology, mainly *Kapha* and *Vata* get vitiated. The association of *Pitta* and *Rakta* is mentioned by Videhacharya. *Twak* is formed from *Rakta dhatu* during the time of *Dhatuparinama*. According to *Ashrya Ashrayi bhava* of *Dosha* and *Dushya*, the *Pitta dosha* is related with *Dushya Rakta*. The *Bhrajaka Pitta* is located in the skin. So, when the *Pitta* is vitiated in *Darunaka*, *Rakta* is also vitiated. Here the *Sannikrishta nidana* is the vitiation of *Kapha* and *Vata*. The vitiated *Doshas* circulate through the blood vessels and reach the scalp. The vitiation and circulation of *Doshas* contribute in the progression of disease through *Chaya*, *Prakopa* and *Prasara* stages of the diseases, later in *Sthana samshraya* or stage of manifestation, *Dosha* interacts with *Dushya*. The *Doshas Kapha*, *Vata* and *Pitta* interact with the *Dushyas Rasa*, *Rakta* at *Kapala* in the disease *Darunaka*. As a result, the vitiated *Kapha* and *Vata* produce *Kandu*, *Keshachyuti*, *Rookshata* and *Twak sphutana*, and manifest the disease *Darunaka*.

MATERIALS & METHODS

Treatment	<i>Khaskhas Beeja Lepa</i>
Dose	2 grams
Route of administration	External
Kala	30 minutes before hair wash, twice weekly
Duration of treatment	14 days
Follow up period	0-7-14

Study site: Dermatology OPD, Kayachikitsa Department, College of Ayurveda, Bharati Vidyapeeth (Deemed To Be University), Pune- 411043.

Duration: 14 days.

Sample size: 20 patients (all 20 patients completed the study).

SELECTION CRITERIA

1. Inclusion criteria: Patients presenting with cardinal features of *Darunaka* like *Kandu*, *Twak Sphutana*, *Rukshata*, *Keshachyuti* present on scalp; selection of patients was irrespective of gender, work, & socio-economic status; chronicity less than 3 years; Age group: - patient age more than 18 year up to 50 years.

2. Exclusion criteria: Any specific underlying disease such as Psoriasis, Tinea Capitis, systemic illnesses (Diabetes, TB, severe infections); recent use of topical steroids or anti-fungal therapy.

ASSESSMENT CRITERIA

Pruritus (<i>Kandu</i>)	Grade 0= No itching. Grade 1 (Mild)= Occasional itching, does not disturb daily routine. Grade 2 (Moderate)= Frequent itching, tolerable, slightly disturbs daily routine. Grade 3 (Severe)= Constant, severe itching, intolerable & disrupts daily activities or sleep.
Scaling (<i>Twak Sphutana</i>)	Grade 0= Normal scalp. Grade 1 (Mild)= Fine, dry, powdery scales visible only upon scratching.

	Grade 2 (Moderate)= Loose, dry flakes visible over the scalp & hair. Grade 3 (Severe)= Large clusters of dry flakes falling onto shoulders or clothing.
Dryness of scalp (<i>Rukshata</i>)	Grade 0= Normal moisture level. Grade 1 (Mild)= Slight dryness, scalp feels rough to touch. Grade 2 (Moderate)= Moderate dryness with visible superficial flaking. Grade 3 (Severe)= Marked dryness leading to superficial cracking or fissuring.
Hairfall (<i>Keshachyuti</i>)	Grade 0= Normal daily hair loss (1-5 hairs on combing) Grade 1 (Mild)= Mild hair fall (<20 hairs lost on combing/washing) Grade 2 (Moderate)= Moderate hair loss (20-50 hairs lost on combing/washing) Grade 3 (Severe)= Severe hair loss (>50 hairs lost, or hair easily pulls away with gentle tug)

TREATMENT PROTOCOL

External application of *Khaskhas Beeja Lepa* with *Godugdha* 30 minutes before hair wash, twice a week.

Assessment was done on Day 0, 7, 14.

Safety Parameters: Hb, TLC, DLC, ESR were assessed before and after the study.

RESULT AND OBSERVATION

Analysis of clinical data.

A) Age Group:

Age Group	No. of Patients	%
18-20 years	02	10.00%
21-30 years	12	60.00%
31-40 years	04	20.00%
41-50 years	02	10.00%

B) Sex Ratio:

Gender	No. Of patients	%
Male	10	50.00%
Female	10	50.00%

C) Family History:

Family History	No. Of patients	%
Present	04	55.00%
Absent	16	45.00%

D) Prakruti:

<i>Prakruti</i>	No. Of Patients	%
<i>Vata Pittaj</i>	06	30.00%
<i>Pitta Kaphaj</i>	06	30.00%
<i>Vata Kaphaj</i>	08	40.00%

E) Patient Diet:

Diet type	No. of patient	%
Veg	03	15.00%
Mixed	17	85.00%

F) Addiction:

Type of addiction	No. Of patients	%
Tea/Coffee	12	60.00%
Tobacco	00	0.00%
Alcohol	01	5.00%
Smoking	01	5.00%
No addiction	06	30.00%

G) Skin Type:

Skin type	No. Of patients	%
Dry	06	30.00%
Oily	08	40.00%
Moist	06	30.00%

H) Atap Sevan (Exposure to Sun):

Sun exposure	No. of patients	%
Yes	14	70.00%
No	06	30.00%

I) Symptoms:**1. Pruritus (*Kandu*)****Before Treatment**

Pruritus (<i>Kandu</i>)	No. of Patients	%
Grade 0	00	0.00%
Grade 1	06	30.00%
Grade 2	08	40.00%
Grade 3	06	30.00%

2. Scaling (*Twak Sphutana*)**Before Treatment**

Scaling (<i>Twak Sphutana</i>)	No. of Patients	%
Grade 0	00	0.00%
Grade 1	05	25.00%
Grade 2	10	50.00%
Grade 3	05	25.00%

3. Dryness of Scalp (*Rukshata*) Before Treatment

4. Hairfall (*Keshachyuti*)

Before

Dryness of Scalp (<i>Rukshata</i>)	No. of Patients	%
Grade 0	00	0.00%
Grade 1	06	30.00%
Grade 2	09	45.00%
Grade 3	05	25.00%

Treatment

Hairfall (<i>Keshachyuti</i>)	No. of Patients	%
Grade 0	00	0.00%
Grade 1	07	35.00%
Grade 2	09	45.00%
Grade 3	04	20.00%

EFFECT OF THERAPY ON THE SYMPTOMS OF *DARUNAKA* (PITYRIASIS SICCA) EFFECT OF THERAPY ON *KANDU*:

Groups	N	Mean		Dif.	% of Diff	SD	SE	T	P
		BT	AT						
<i>Kandu</i>	20	2.00	0.70	1.30	65.00%	0.66	0.15	8.85	<0.001

Kandu was reduced up to 65.00%. The values are statistically extremely significant ($P < 0.001$).

EFFECT OF THERAPY ON *TWAK SPHUTANA*:

Groups	N	Mean		Dif.	% of Diff	SD	SE	T	P
		BT	AT						
<i>Twak Sphutana</i>	20	2.00	0.95	1.05	52.50%	0.69	0.15	6.82	<0.001

Twak Sphutana was reduced up to 52.50%. The values are statistically significant ($P < 0.001$).

EFFECT OF THERAPY ON *RUKSHATA*:

Groups	N	Mean		Dif.	% of Diff	SD	SE	T	P
		BT	AT						
<i>Rukshata</i>	20	1.95	0.85	1.10	56.41%	0.64	0.14	7.67	<0.001

Rukshata was reduced up to 56.41%. The values are statistically extremely significant ($P < 0.001$).

EFFECT OF THERAPY ON *KESHACHYUTI*:

Groups	N	Mean		Dif.	% of Diff	SD	SE	T	P
		BT	AT						
<i>Keshachyuti</i>	20	1.85	1.60	0.25	13.51%	0.44	0.10	2.52	<0.05

Keshachyuti was reduced up to 13.51%. The values are statistically significant ($P < 0.05$).

OBSERVATIONS

Kandu was reduced up to 65.00%. The values are statistically extremely significant ($P < 0.001$).

Twak Sphutana was reduced up to 52.50%. The values are statistically significant ($P < 0.001$).

Rukshata was reduced up to 56.41%. The values are statistically extremely significant ($P < 0.001$).

Keshachyuti was reduced up to 13.51%. The values are statistically significant ($P < 0.05$).

There were no any significant changes in the investigations.

DISCUSSION

• **Demographics & Etiology:** The maximum incidence was observed in the age group of 21–30 years (60.00%), likely due to increased stress levels (70.00% reported stress), urban lifestyle factors, and active sebum

dynamics during young adulthood. A high prevalence was noted in individuals with *Vata-Kaphaja* (40%) and *Vata-Pittaja* (30%) *Prakruti*, confirming the involvement of vitiated *Vata* and *Kapha* in the pathogenesis of *Darunaka*.

- **Effect on Pruritus (*Kandu*):** *Kandu* showed a statistically significant reduction of 65.00% ($P < 0.001$). This marked relief from itching can be attributed to the *Kandughna* and *Kapha-Vatashamaka* properties of *Khaskhas Beeja* combined with the soothing *Sheeta Virya* and *Pitta-Vatashamaka* attributes of *Godugdha*.
- **Effect on Scaling (*Twak Sphutana*) and Dryness (*Rukshata*):** *Twak Sphutana* was reduced by 52.50% ($P < 0.001$) and *Rukshata* by 56.41% ($P < 0.001$). The *Guru-Snigdha Guna* and *Madhura Rasa* of both *Khaskhas Beeja* and *Godugdha* work synergistically to counteract localized scalp dryness (*Rukshata*) and skin cracking (*Sphutana*). From a modern perspective, the rich essential fatty acid (e.g., linoleic acid) content and emollient properties of poppy seeds help restore stratum corneum barrier function and soothe inflamed skin.
- **Effect on Hair Loss (*Keshachyuti*):** *Keshachyuti* exhibited a mild yet statistically significant reduction of 13.51% ($P < 0.05$). Since hair fall is a secondary result of *Dosha-Dushya Sammurchhana* damaging the *Keshabhoomi* (hair roots), the 14-day duration was sufficient to clear local scalp pathology but may require longer treatment to show dramatic structural hair regrowth.
- **Mode of Action of Drug:** From an Ayurvedic perspective, *Khaskhas Beeja Lepa* with *Godugdha* targets *Darunaka* by breaking its *Vata-Kapha* pathogenesis (*Samprapti Vighatana*) at the scalp level (*Shirokapala*). *Khaskhas Beeja* (possessing *Madhura-Tikta Rasa*, *Guru-Snigdha Guna*, and *Sheeta Virya*) works synergistically with *Godugdha* (*Madhura Rasa*, *Snigdha Guna*, and *Vata-Pitta Shamaka*). Their combined unctuous (*Snigdha*) and heavy (*Guru*) properties counteract *Vata*-induced dryness (*Rukshata*) and flaking (*Twak Sphutana*) by deeply hydrating the scalp tissue (*Keshabhoomi*). Simultaneously, the bitter taste (*Tikta Rasa*) and anti-pruritic (*Kandughna*) action of *Khaskhas Beeja* unblock scalp microchannels (*Srotoshodhana*) to relieve *Kapha*-induced itching (*Kandu*). The cooling energy (*Sheeta Virya*) of both ingredients pacifies localized *Bhrajaka Pitta* and *Rakta Dhātu* irritation, soothing hair roots to reduce hair fall (*Keshachyuti*). From a modern dermatological perspective, the formulation acts by repairing the cutaneous epidermal barrier and suppressing inflammation. *Papaver somniferum* seeds are rich in essential fatty acids—primarily linoleic acid—which serve as critical precursors for ceramide synthesis in the stratum corneum. Topically applying these lipids restores the intercellular lipid matrix, reduces Transepidermal Water Loss (TEWL), and normalizes skin shedding to eliminate scaling and dryness. Antioxidant polyphenols and phytosterols in poppy seeds, alongside the natural lipids in *Godugdha*, soothe local nerve endings and suppress inflammatory pathways to relieve pruritus. Additionally, lactic acid in *Godugdha* provides mild enzymatic scale clearance and normalizes scalp pH, stabilizing the follicular micro-environment to decrease secondary hair shedding.
- **Safety & Tolerability:** No adverse reactions were observed during the trial, and pre- and post-treatment hematological parameters (Hb, TLC, DLC, ESR) showed no significant abnormal shifts, validating the local safety of *Khaskhas Beeja lepa*.

CONCLUSION & SUMMARY

- The maximum incidence was observed in the age group of 21–30 years (60.00%), likely due to increased stress levels (70.00% reported stress), urban lifestyle factors, and active sebum dynamics during young adulthood. A high prevalence was noted in individuals with *Vata-Kaphaja* (40.00%) and *Vata-Pittaja* (30.00%) *Prakruti*, confirming the involvement of vitiated *Vata* and *Kapha* in the pathogenesis of *Darunaka*.
- The therapy demonstrated maximum clinical improvement in relieving scalp itching (*Kandu* – 65.00%), scaling (*Twak Sphutana* – 52.50%), and dryness (*Rukshata* – 56.41%) with statistically significant results ($P < 0.001$).
- Moderate efficacy was noted in reducing hair fall (*Keshachyuti* – 13.51%, $P < 0.05$).
- No local side effects or systemic hematological toxicities were recorded during or after the 14-day intervention.
- *Khaskhas Beeja lepa* with *Godugdha* is a safe, highly effective, and non-invasive external Ayurvedic therapy for managing *Darunaka* (Pityriasis sicca).
- Based on these findings, the Null Hypothesis (H_0) is rejected and the Alternative Hypothesis (H_1)—that *Khaskhas Beeja lepa* is effective in the management of *Darunaka*—is accepted.

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