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Study on Samprapti of Khalitya W.S.R to Alopecia and to Evaluate the Upasaya with Bhringarajadi Taila

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ABSTRACT

Khalitya, described in Ayurveda as a Pitta-pradhāna disorder involving Vāta, Kapha, and Rakta Doṣa, leads to hair fall and impaired hair growth. It is classified under Kṣudraroga and correlates with alopecia in modern medicine. This single case study evaluates the effect of Bhringarajadi Taila in the management of Khalitya. A patient presenting with excessive hair fall and scalp dryness was treated with regular local application of Bhringarajadi Taila for a defined period. Assessment was done based on hair fall, hair density, and scalp condition. The treatment showed significant improvement, indicating the potential efficacy of Bhringarajadi Taila in Khalitya management.

Materials and Methods: This was a randomised open-label single-arm clinical trial. 40 patients of Khalitya (hair fall) were randomly selected from the O.P.D. and I.P.D. of Govt. Ayurvedic College and Hospital and Sharadeswari Govt. Ayurvedic Hospital, Balangir. Patients were assessed before and after 30 days of treatment based on hair fall, new hair growth, visibility of scalp, and scalp condition.

Observation and Results: After completion of treatment, 8 (20%) patients showed remarkable improvement, 17 (42.5%) showed moderate improvement, 13 (32.5%) showed mild improvement, and 2 (5%) patients showed poor improvement.

Conclusion: The clinical study concludes that Bhringarājādi Taila was effective in the management of Khalitya (Alopecia) by reducing hair fall and promoting hair growth.

Keywords: Khalitya, Hair fall, Alopecia, Ahara, Vihara, Samprapti.

INTRODUCTION

Hair loss (Khalitya) is a common disorder that adversely affects physical appearance and psychological well-being. In Ayurveda, Khalitya is described as a Pitta-pradhāna Vyādhi with the involvement of Vāta, Kapha, and Rakta Doṣa, resulting in weakening of hair roots and obstruction of hair follicles. Acharya Suśruta[1] & Acharya Madhava kara [9] classified Khalitya under Kṣudraroga and described it as Indralupta or Ruhya. Acharya Charaka explained the condition in Trimarmiya Chikitsa Adhyāya[2] while Acharya Vāgbhaṭa included it under Śiroroga[3] In modern medical science, Khalitya can be correlated with Alopecia. Although various conventional treatment modalities are available, their use is often limited by adverse effects. Ayurveda, on the other hand, offers a holistic and safer approach aimed at correcting the underlying Doṣic imbalance.

AIM & OBJECTIVE OF STUDY:

AIM: -

To study the Samprapti of Khalitya and evaluate the Upasaya effect of Bhringarajadi Taila in patients of Khalitya.

OBJECTIVES: -

- Brief analysis of the Samprapti of Khalitya in parlance with modern science.
- Evaluating the beneficial effect of Bhringarajadi Taila Abhyanga on Khalitya

MATERIALS AND METHODS

Selection of patients

This was an open-label randomised single-arm clinical trial. 40 patients suffering from Khalitya were randomly selected from the OPD and IPD of the Government. Ayurvedic College and Hospital, Balangir, and Sharadeswari Govt. Ayurvedic Hospital, Balangir. Patients were screened using a special proforma including history, clinical examination, and assessment of classic and modern symptoms.

DIAGNOSTIC CRITERIA [4][5]

The patients were diagnosed on the basis of subjective parameters and objective parameters for the diagnosis of Khalitya (Alopecia). The subjective parameters were Kesha Pata, Kesha Bhoomi Rukshata, Kesha Bhoomi Kandu, Darunaka, Hair pull test [6], Pattern of Scalp hair loss, Ludwig Scale & Hamilton Scale [10][11]. The objective parameter was DC, TLC, Hb%, and Potassium hydroxide solution test for hair to rule out the exclusion criteria. Written informed consent was obtained. Treatment efficacy was assessed by comparing the before-treatment (BT) and after-treatment (AT) findings.

INCLUSION CRITERIA:

- Age: 20-50 years
- Sex: Both Male and female.
- Patients having the classical signs and symptoms of hair fall occurring anywhere in the scalp.
- Patient is willing for the trial.

EXCLUSION CRITERIA:

- Age: <20 years & >50 years
- Patients suffering from other dermatological diseases related to scalp.
- Pregnant & Postpartum Ladies.
- Patient suffering from any systemic diseases, patient taking chemotherapy, etc.
- Post Malaria patients.

SELECTION OF DRUGS:

One medicine, Bhringarajadi Taila [12], had been taken for the clinical trial. The drugs of the medicines were identified by the experts of the Dept of Dravya Guna, which was approved by DRC and IEC of Govt. Ayurvedic College and Hospital, Balangir and Sambalpur University.

Bhringarajadi Taila was prepared as per GMP-certified methods in the Mini pharmacy of the college under the supervision of experts of Rasa Shastra & Bhaisajya Kalpana. The sample of Bhringarajadi Taila was sent to the Quality Control Laboratories of Sambalpur University for analytical study.

Dose: Bhringarajadi Taila was given 2.5-5ml (quantity required as per area of scalp), applied once daily.

OBSERVATION AND RESULTS

The subjective and objective parameters were observed during the clinical Study. The percentage improvement was also assessed after the clinical trial. After observation of subjective and objective parameters, the statistical analysis of parameters was assessed by the help of statistical methods.

DISCUSSION:

Table 1: DISCUSSION ON SUBJECTIVE PARAMETER & OBJECTIVE PARAMETER:

Subjective parameters		Mean	Median	SD	SE	Wilcoxon W	P-Value	% Effect	Result
Kesha Cyutih	BT	2.50	3.0	0.55	0.08	-5.518^{b}	<0.001	58.00	Sig
	AT	1.05	1.00	0.67	0.10				
Kesha Bhoomi Rukshata	BT	1.90	2.0	0.67	0.11	-5.23^{b}	<0.001	76.32	Sig
	AT	0.45	0.00	0.64	0.10				
Kesha Bhoomi Kandu	BT	1.82	2.00	.75	0.12	-5.021^{b}	<0.001	63.01	Sig
	AT	0.67	1.00	0.69	0.11				
Kesha Bhoomi Darunaka	BT	1.77	2.00	0.62	0.09	-5.23^{b}	<0.001	63.38	Sig
	AT	0.65	1.00	0.62	0.09				
Hair Pull Test	BT	2.30	2.00	0.51	0.08	-5.38^{b}	<0.001	57.61	Sig
	AT	0.97	1.00	0.62	0.09				
Pattern Of Scalp Hair Loss	BT	1.30	1.00	0.46	0.07	-4.386^{c}	<0.001	50	Sig
	AT	0.65	1.00	0.58	0.09				
Ludwig Scale	BT	0.43	0.00	0.71	0.11	-2.306^{b}	0.02	41.18	Sig
	AT	0.25	0.00	0.44	0.07				
Norwood/Hamilton Scale	BT	1.30	1.00	1.16	0.18	-2.59^{b}	0.009	15.38	Sig
	AT	1.10	1.00	1.03	0.16				
KOH Solution test	BT	2.00	2.00	1.01	0.16	9.31 (t-value)	<0.001	45	Sig
	AT	1.10	1.00	1.03	0.16				

In Kesha Cyutih, Kesha Bhoomi Rukshata, Kesha Bhoomi Kandu, Kesha Bhoomi Darunaka, Hair Pull Test, Pattern of Scalp Hair Loss, Ludwig Scale, Norwood/Hamilton Scale, KOH Solution test, the percentage of effect were 58.00%, 76.32%, 63.01%, 63.38%, 57.61%, 50%, 41.18, 15.38 and 45% respectively, P- value less than 0.05 and which were significant result.

Table 2: DISCUSSION ON VIRUDHA AHARA VIHARA

Table 2.1: Virudha Ahara

Virudha Ahara	Frequency	Percentage (%)
Guru	26	65
Amla	24	60
Lavana	32	80
Vidahi	40	100
Viruddha	33	82.5
Adhyashana	11	27.5
Asatmyahara	28	70

In the present study, Vidāhi Āhāra was observed in 100% of patients, indicating universal consumption of spicy and oily food causing Pitta–Rakta vitiation. Viruddha Āhāra intake was seen in 82.5%, reflecting frequent use of incompatible combinations such as milk with fish or reheated food. Lavaṇa Rasa Pradhāna Āhāra [7] was reported by 80%, showing excess salt intake leading to Pitta aggravation. Asātmyāhāra (non-suitable food) was noted in 70% of cases, suggesting poor dietary adaptation and resultant Āma formation. Guru Āhāra consumption was found in 65%, indicating a preference for heavy food, causing Agni-māndya. Āmla Rasa Pradhāna Āhāra was reported by 60%, also contributing to Pitta increase. Adhyāśana (improper eating before the digestion of the previous meal) was observed in 27.5%, leading to digestive imbalance.

The data indicate that Vidāhi, Viruddha, and Lavaṇa-dominant diets were most prevalent among the study group. These habits cause Pitta and Rakta Dosa vitiation, supporting their key role in the etiopathogenesis of Khalitya. Hence, regulation of dietary habits is essential in both the prevention and management of this condition.

Table 2.2: Virudha Vihara

Viruddha Vihar	Frequency	Percentage (%)
Malinata	35	87.5
Divaswapna	19	47.5
Ratrijagarana	28	70
Vega Dharana	18	45
Atapasevana	24	60
Sheetasparsha	16	40
Abhyanga Tyaga [8]	35	87.5
Viruddha Vihar	37	92.5

In the present study, Viruddha Vihāra in general was found in 92.5% of patients, showing a high prevalence of improper lifestyle practices. Malinta (improper bowel habits) and Abhyanga Tyāga (neglect of oil massage) were each observed in 87.5%, indicating poor daily regimen and self-care. Rātri-jāgaraṇa (night awakening) was noted in 70%, and Ātapa-sevana (excessive sun exposure) in 60%, both causing Pitta aggravation. Diva-Svapna (daytime sleep) was reported in 47.5%, and Vega-dharana (suppression of natural urges) in 45%, leading to disturbed metabolism and vitiation of Vāta–Pitta Dosa. Śīta-sparśa (exposure to cold) was found in 40%, also influencing scalp circulation and hair health.

DISCUSSION ON PROBABLE MODE OF ACTION OF TRIAL DRUGS

BHRINGRAJADI TAILA

The ingredients of Bhringarajadi Taila (Bhringraj, Triphala, Sariva, Tila Taila & Lohakitta) when analysed based on Rasa Panchak, collectively act on the Samprapti of Khalitya by pacifying Doṣas, purifying Rakta, nourishing hair follicles, and improving scalp circulation.

Bhringarāja (Wedelia chinensis), with Tikta–Kaṭu Rasa and Rasāyana–Keshya properties, pacifies Pitta and Vāta, purifies Rakta Dhātu, and rejuvenates hair follicles. Its antioxidant and anti-inflammatory constituents protect follicular cells and promote hair regrowth.

Triphala acts as a Tridoṣha Śāmaka and Rasāyana. It removes Āma, clears Srotorodha, improves Rasa–Rakta Dhātu quality, and creates a healthy scalp environment for hair growth.

Sarivā (Hemidesmus indicus), possessing Madhura–Tikta Rasa and Śīta Vīrya, acts as a Rakta Śodhaka and Pitta Śāmaka. It cools the scalp, reduces inflammation, and prevents heat-induced follicular damage.

Tila Taila, being Snigdha, Guru, and Vātahara, counteracts scalp dryness, strengthens hair roots, and serves as an effective Sneha Dravya, facilitating deeper penetration of active principles into hair follicles.

Lohakitta, with Kaṭu Rasa and Tikṣṇa Guna, enhances Rakta Dhātu and scalp microcirculation, supporting hair pigmentation and root strength.

Samprapti Vighatana -

Bhringarajadi Taila exhibits Vāta–Pitta Samana, Rakta Śodhana, Srotoshodhana, and Keshya Rasāyana actions. Its Snigdha and Madhura attributes nourish and strengthen hair roots, while Tikshna and Rukṣa qualities remove follicular obstruction and enhance blood supply. Thus, it effectively breaks the Samprapti of Khalitya, prevents further hair fall, and promotes healthy hair regrowth.

From a modern pharmacological perspective, Bhringarajadi Taila acts as a synergistic herbal formulation with antioxidant, anti-inflammatory, and hair follicle–stimulating properties beneficial in Alopecia. Bhringraj promotes follicular proliferation and delays apoptosis, while Tila Taila enhances scalp microcirculation and transdermal absorption through its antioxidant constituents. Triphala counters oxidative stress and supports follicular rejuvenation, Sariva soothes inflammation, and Lohakitta improves follicular oxygenation. Its physicochemical properties, including scalp-compatible pH and good absorbability, facilitate sustained release of bioactive compounds. Integrating Ayurvedic Dosa Samana and Dhatu Poshana with modern mechanisms such as improved circulation, reduced inflammation, and oxidative stress control validates Bhringarajadi Taila as an effective holistic therapy for Khalitya (Alopecia).

Table 3: DISCUSSION ON STATISTICAL ANALYSIS

Overall Effect	Single Group	
	N	**%**
Remarkable Improvement	8	20%
Moderate Improvement	17	42.5%
Mild Improvement	13	32.5%
Unsatisfactory/Poor Improvement	2	5%
TOTAL	40	100.00%

Statistical analysis was done based on the signs and symptoms of both subjective (i.e., Kesha Pāta, Kesha Bhoomi Rūkṣhatā, Kandu, and Darunaka, also hair pull test, pattern of hair loss, and clinical grading scales -Ludwig and Norwood/Hamilton) and objective parameters, i.e., KOH solution test. The test of significance showed that both trial drugs were statistically significant at the 5% level, with P values <0.05, improving all signs and symptoms after 30 days of treatment. It was found that the maximum number of patients (17) had moderate improvement following mild improvement (13).

CONCLUSION:

The present study evaluated the Samprapti of Khalitya and the Upaśayātmaka effect of Bhringarajadi Taila from Ayurvedic and modern perspectives. Khalitya was observed as a Pitta–Vāta–Pradhan disorder involving Rasa, Rakta, Meda, and Asthi Dhatus, correlating with modern factors such as oxidative stress, inflammation, and impaired scalp circulation. Bhringarajadi Taila showed significant improvement in hair fall, scalp discomfort, and scalp strength through Dosa–Dhatu–Srotas Samana and Keshya Rasāyana action. Its antioxidant, anti-inflammatory, and follicle-stimulating properties support hair regrowth and Samprapti Vighatana. The study indicates that Bhringarajadi Taila is a safe, economical, and effective therapy for Khalitya; however, larger and long-term studies are required for further validation.

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