

# A Study of Effect of *Shirobhyanga* (applying oil on hair and scalp) with *Kaidarya siddha Narikela taila* (Coconut oil medicated with *Murraya koenigii* (L.) Sprengel) in the Management of *Khalitya* (hair fall): A Randomized Controlled Trial

## Research Article

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## Abstract

**Background:** In India about 40% of male and 25% female suffer from hair fall. Oil which is used for *Shirobhyanga* is medicated with specific herb, beneficial for hair, then it becomes more effective. **Aim:** To assess the effect of *Shirobhyanga* with *Kaidarya (Murraya koenigii* (L.) Sprengel) *siddha Narikela taila* in the management of *Khalitya*. **Material and Methods:** Clinical study was carried out on 100 patients, 50 patients in each trial group and control group who had symptoms of *Khalitya* and of age group between 15 to 45 years were taken in this study. Trial group was treated with *Kaidarya Siddha Narikel taila Shirobhyanga* and Control group was treated with *Narikel Taila Shirobhyanga* for 40 days. Result was analyzed on the basis of parameters of *Khalitya* like Hair texture, Hair fall, Dandruff and Itching of scalp. **Result:** Data of before treatment and after treatment of both the groups were analyzed by Wilcoxon Signed-rank test. Significant difference was observed between mean of before treatment and after treatment score. Comparison of the data of trial group and control group was done by Mann Whitney Test, significant difference was observed between the mean of difference of Group A and Group B in Hair fall, dandruff, itching of scalp and hair texture. Mean difference score of Group B (Trial) is more than that of Group A (Control). **Conclusion:** *Shirobhyanga* done with *Kaidarya siddha Narikela taila* is more effective than *Shirobhyanga* done with *Narikela taila* in the management of *Khalitya* (Hair fall).

**Key Words:** *Kaidarya, Khalitya, Narikel taila, Shirobhyanga.*

## Introduction

Today's world is full of glamour. Beauty of a person gets more attention. Beautiful, healthy and lustrous hair play a vital role in the personality of an individual. Hair also have protecting functions in our body. They protect scalp from external factors, so keeping healthy hair is a necessity as well as duty of everyone. Along with hair fall, Dandruff, itching of scalp and dry, rough, dull hair are also the common problems. Lack of proper nutrition, increased stress, faulty dietary habits, increased pollution, unhealthy life style like sleeping during day time, sleeping late at night, rejection of applying oil to hair, improper cleaning are the supportive causes which leads to hair problems like hair fall, greying of hair, dryness of scalp,

itching of scalp and dandruff. In India about 40% of male and 25% female suffer from hair fall (1). Loss of 100 strands per day is a physiological phenomenon and it is considered normal (2).

In Ayurveda *Kesha* is said to be the *Updhatu* of *Majjadhatu* and *mala* of *Asthidhatu*. Gradual loss of hair is termed as *Khalitya*, which comes under *Shiroroga* according to *Charaka. Acharya. Sushruta* has described *Khalitya* in *Kshudraroga* and explained *Shirobhyanga* is the effective therapy for controlling hair fall and other hair problems (3). In most of cases *Shirobhyanga* is the choice of treatment for all hair problems. The therapy or treatment, which should be done to maintain healthy hair and to treat hair diseases are the same. A person who applies oil on his head on daily basis is not susceptible to headache, baldness, greying and falling of hair (4). *Shirobhyanga* brings back the vitality of hair and scalp and balances the mind, body and spirit.

The *Bhrajak Pitta* situated in the skin absorbs drugs applied externally in forms of massage, bath, paste etc. If the oil which is used for *Shirobhyanga* is medicated with specific herb which is beneficial for hair, then it becomes more effective. *Kaidarya*

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(*Murraya koenigii* (L.) Sprengel) is an easily available and commonly used herb in India. According to Ethnopharmacology, chemical constitution of leaves of this plant are effective in hair growth, prevent hair from greying also reduces hair fall (5). If oil is medicated with this herb it can act as hair tonic. *Kaidarya* is very easily available and commonly known plant.

Keeping all these things in mind, the present study was done to evaluate the effect of *Shirobhyanga* with *Kaidarya siddha Narikela taila* in the management of hair related problems like *Khalitya*, itching of scalp, dandruff and to improve hair texture.

### Aim of the study

To assess the effect of *Shirobhyanga* with *Kaidarya (Murraya koenigii* (L.) Sprengel) *siddha Narikela taila* in the management of *Khalitya*.

## Material and Methods

### Sources of Data

Patients of OPD of *Swasthavritta* department of Shri Ayurved Mahavidyalaya, Nagpur were taken having symptoms of *Khalitya* (hair fall) with or without associated symptoms like Dandruff, Itching of scalp and rough hair texture. Present study was done after approval from the institutional ethical committee.

### Sample Size

Considering Dropout rate, total 104 patients were taken in this study. Two groups were made, first was control group and second was trial group. In Each group 52 patients were taken out of which 4 patients discontinued the treatment, 2 from each group. **So, the sample size was 100. In each group 50 patients were taken.**

### Sampling Technique

Probability Sampling was done by Simple random method.

### Inclusion Criteria

- Patients of age group between 15 to 45 years having clinical symptoms of *Khalitya* (hair fall), Dandruff, Itching of Scalp and hair dryness were included in the study.

### Exclusion Criteria

- Patients having history of hair loss due to injury, having endocrine disorders, severe scalp skin infection, those who are on hormone therapy or chemotherapy, patients of Alopecia areata, Alopecia totalis, Tinea capitis, *Arunshika* and *Indralupta* and who were using any other treatment for *Khalitya* were excluded.

### Drug Authentication and Standardization

*Kaidarya* leaves were collected from the local area. The authentication and Standardization of *Kaidarya* leaves was done by the Botanist of Nagpur University.

## Preparation of *Kaidarya siddha Narikel taila* and analysis of end product

- *Kaidarya Siddha Narikel taila* was prepared in the department of *Rasshastra* and *Bhaisajyakalpana* of *SAM, Nagpur* by *Sharangdharokta Taila pak vidhi* and good manufacturing practice was followed and *Taila siddhi lakshanas* were observed.

### Screening Method

104 patients were taken in this study. Patients were examined for Hair fall, dandruff, itching of scalp and hair texture and data was recorded. In laboratory investigation hemoglobin count was noted before starting intervention.

### Study Design

The study was a randomized controlled trial. It was a single blind study. 52 patients were enrolled in trial group and 52 patients were enrolled in control group. Randomization proposed was simple random method and allocation concealment was done through sealed envelope method.

### Parameters for the Assessment

**Assessment of Hair fall** was done by 60 seconds hair combing test. Gradation was done on the basis of number of hair strands falling in 1 minute. Gradation of dandruff and itching of scalp was done on the basis of absent, mild, moderate and severe. Gradation of hair texture was done on the basis of smooth and rough hair texture.

**Hair fall:** 60 seconds combing test was done

**Table No.1: Parameters for Hair Fall**

Hair fall	Grade
Falling of up to 10 strands	0
Falling of 11 to 40 strands	1 (Mild)
Falling of 41 to 70 strands	2 (Moderate)
Falling of more than 70 strands	3 (Severe)

**Table No.2: Parameters for Dandruff**

Dandruff	Grade
Absent	0
Occasionally seen	1 (Mild)
Moderate (Seen after 2 to 3 days of hair)	2
Severe (Permanent seen)	3 ( Severe)

**Table No.3: Parameters for Itching of Scalp**

Itching	Grade
Absent	0
Coming 1 to 2 episodes in a day	1 (Mild)
Coming 3 to 4 episodes in a day	2 (Moderate)
Coming more than 5 episodes	3 ( Severe)

**Table No.4: Parameters for Hair Texture**

Hair texture	Grade
Smooth hair surface	0
Occasional rough hair surface	1
Slight rough hair surface	2
Rough hair surface	3

### Method for data collection

Hair fall of patient was counted by 60 second hair combing test. In this test combing was done to the patient's hair for 60 seconds, starting with the comb at the back top of the scalp and moving the comb forward to the front of scalp. Then hair fall were counted. Data for dandruff and itching of scalp were collected by interviewing the patient as per assessment criteria. Hair texture was examined by local examination of patient's scalp and hair. Records of all subjects were documented and follow up were mentioned in case record form, before and after completion of the study.

**Table No.5: Treatment details**

	Group A	Group B
Drug	<i>Narikel taila</i>	<i>Kaidarya Siddha Narikel Taila</i>
Dose	Minimum 6 ml	Minimum 6 ml
Time	At Morning	At Morning
Method	Apply locally on the scalp	Apply locally on the scalp
Follow up	10 <sup>th</sup> , 20 <sup>th</sup> & 40 <sup>th</sup> day.	10 <sup>th</sup> , 20 <sup>th</sup> & 40 <sup>th</sup> day.

### Statistical Methods

Statistical analysis before and after treatment in the same group was done by Wilcoxon Signed-rank Test. Statistical analysis for Comparison of both the group was done through Mann Whitney Test.

### Observation and Results

All the patients were assessed before and after treatment. Changes in all the parameters were recorded according to the proforma of the case sheets. Out of 104 patients, 100 patients completed the treatment while 4 patients left the treatment. Out of 100 patients 13% were of age group 15 to 25 years, 44% were of age group 26 to 35 years and 43% were of age group 36 to 45 years. 38% were Male, 62% were Female. In the present study 68% patients were married, 32% patients were unmarried. Out of 100 patients 1% patient had education of SSC, 4% had education HSC and 95% were Graduate. In this study 20% were from lower class, 71% were from Middle class, 9% were from upper middle class. Out of 100 patients, 5% were businessman, 28% were house wives, 44% were in Service, and 23% were students. In the present study 38% patients were Vegetarian, 62% were taking mix diet. Out of 100 patients 25% had habit of *Diwaswap*, 26% had habit of *Ratrijagaran*, 30% were prone to *Rajdhoomsevan*, and 19% had habit of *Vegdharan*. In the present study 16% patients had addiction of Alcohol, 6% patients had addiction of Gutkha, 38% patients had addiction of Tea, 6% patients had addiction of Tobacco and 34% patients had no addiction. Out of 100 patients, 11% were having *Kaphapitta Prakruti*, 8% were having *Kaphavataj Prakruti*, 16% were having *Pittakaphaj Prakruti*, 33% were having *Pittavataj Prakruti*, 10% were having *Vatakaphaj Prakruti*, 22% were having *Vatapittaj Prakruti*. In the present study 44% patients were having *Alpa Nidra*, 33% patients were having *Madhyam Nidra*, 23% patients were

having *Ati Nidra*. Out of 100 patients, 42% were Stressed, 58% were unstressed. Out of 100 patients 35% patients were having hereditary factor present, 65% patients were having hereditary factor absent. In the present study 17% patients were having habit of *Alpa lavan ras sevan*, 51% patients were having habit of *Madhyam lavan ras sevan*, 32% patients were having habit of *Ati lavan ras sevan*. Out of 100 patients, 38% were Mild Anaemic, 11% were Moderate Anemic, 4% were severe Anemic and 47% were non Anemic.

### Incidence of Symptom

The incidence of *Khalitya* showed that out of 100 patients taken for the study all the patients (100%) were having hair fall. The incidence of dandruff 65%, the incidence of itching of scalp was 77 %. This data shows that dandruff and itching of scalp have the association with *Khalitya*.

### Statistical Analysis: In Group A and in Group B (By Wilcoxon Signed-rank Test)

**Table No.6: Wilcoxon Signed-rank test for hair fall: in Group A and in Group B**

Group	BT/AT	N	Mean	Median	W	P
Group A	BT	50	2.240	2	990	<0.0001
	AT	50	1.060	1		
Group B	BT	50	2.160	2	1176	<0.0001
	AT	50	0.640	1		

**Table No.7: Wilcoxon Signed - rank Test for Dandruff: in Group A and in Group B**

Group	BT/AT	N	Mean	Median	W	P
Group A	BT	50	1.320	2	435	<0.0001
	AT	50	0.620	1		
Group B	BT	50	1.420	2	595	<0.0001
	AT	50	0.360	0		

**Table No.8: Wilcoxon Signed -rank Test for Itching of scalp: in Group A and in Group B**

Group	BT/AT	N	Mean	Median	W	P
Group A	BT	50	1.800	2	666	<0.0001
	AT	50	0.760	1		
Group B	BT	50	1.820	2	780	<0.0001
	AT	50	0.240	0		

**Table No.9: Wilcoxon Signed -rank Test for Hair Texture: in Group A and in Group B**

Group	BT/AT	N	Mean	Median	W	P
Group A	BT	50	2.060	2	861	<0.0001
	AT	50	1.040	1		
Group B	BT	50	2.240	2	1035	<0.0001
	AT	50	0.780	1		

As value of p is less than 0.05 in both the groups, significant difference was observed between mean of BT and AT score in Hair fall, dandruff, itching of scalp



and hair texture of both groups. Hence it is concluded that *Narikela Taila Shirobyanga* and *Kaidarya siddha Narikela Taila Shirobyanga* are significantly effective to reduce hair fall, dandruff, itching of scalp and improve hair texture.

**Statistical Analysis: Comparison Group A and Group B (By Mann Whitney Test)**

**Table No.10: Mann Whitney Test: Comparison of hair fall in Group A and Group B**

Group	N	Mean	Sum of Ranks	U	P
Group A	50	1.180	2198	923	0.0227
Group B	50	1.520	2852		

**Table No.11: Mann Whitney Test: Comparison of dandruff in Group A and Group B**

Group	N	Mean	Sum of Ranks	U	P
Group A	50	0.700	2238	963	0.0467
Group B	50	1.060	2812		

**Overall Effect of Therapy According Relief in percentage**

**Table No.14: Overall Effect of Therapy according percentage Relief**

Sr. No.	Criteria	Improvement Grade	No. of patients		No. of symptoms	
			Gr. A	Gr. B	Gr. A	Gr. B
1	75% to 100%	Marked	5	25	0	1
2	50% to 74%	Moderate	29	23	3	3
3	25% to 50%	Mild	15	2	1	0
4	00% to 24%	Poor	1	0	0	0

**According to statistical analysis**

**Table No.15: Overall Effect of Therapy: Statistical analysis**

Sr. No.	Subjective Parameters	Within Groups (Wilcoxon test)		Comparison (Mann-Whitney's test)
		Group A	Group B	
1	Hair fall	Significant	Significant	Significant (B > A)
2	Dandruff	Significant	Significant	Significant (B > A)
3	Itching	Significant	Significant	Significant (B > A)
4	Hair texture	Significant	Significant	Significant (B > A)

**Discussion**

Hair are present in whole body except palms and soles (6). Hair growth cycle consist of 4 phases, Anagen, Catagen, Telogen, Exogen. Anagen is the growth phase and this phase lasts for 3 to 6 years. Catagen is the stage of regression and this stage lasts for 14 to 21 days. Telogen is the resting phase and it is of 30 to 90 days and Exogen is the shedding phase. The duration of these phases may be slightly different in each individual and it depends upon many factors such as nutritional factors, hormonal factor and other physiological and pathological condition (7). Increase in number of hair fall is the cardinal symptom of *Khalitya* (8). Vitiated *Pitta dosha* along with *Vata dosha* reaches into *romkupa* and causes hair fall. *Rakta dhatu* along with *Kapha dosha* goes into *romkupa* and obstruct the *romkupa* and stop the regeneration of new hair and this is known as *Indralupta, Khalitya and Ruhya* (9).

In *Ashtang hrudya Acharya Vagbhata* has explained 4 types of *Khalitya* they are *Vataj, Pittaj, Kaphaj* and *Sannipataj Khalitya* (10). *Shirobhyanga* is

**Table No.12: Mann Whitney Test: Comparison of itching of scalp in Group A and Group B**

Group	N	Mean	Sum of Ranks	U	P
Group A	50	1.040	2142.5	867.5	0.0081
Group B	50	1.580	2907.5		

**Table No.13: Mann Whitney Test: Comparison of hair texture in Group A and Group B**

Group	N	Mean	Sum of Ranks	U	P
Group A	50	1.020	2098.5	823.5	0.0031
Group B	50	1.460	2951.5		

As value of p is less than 0.05, significant difference was observed between the mean of difference of Group A and Group B in Hair fall, dandruff, itching of scalp and hair texture. Mean difference score of Group B (Trial) is more than that of Group A (Control). Hence it is concluded that *Kaidarya siddha Narikela Taila Shirobyanga* is significantly effective than *Narikela Taila Shirobyanga* to reduce Hair fall, dandruff, itching of scalp and hair texture in *Khalitya*.

the choice of treatment of *Khalitya*. *Acharya Charaka* has explained that *Vata dosha* is dominant in *sparshanendriya* and it is a site of *twak*, so after doing *Abhyanga, Vat dosha* get subsides, so *abhyanga* is beneficial for skin (11). If *Abhyanga* is done for specific time, it reaches to different *dhatu*. Thus the potency of herb used in the oil is absorbed into the skin. *Dalhan* has also explained that when *snehan* drug reaches upto different *Dhatu*, it subsides the diseases of that particular *Dhatu* (12). *Kesha* is said to be the *Updhatu* of *Majjadhatu* and mala of *Asthidhatu*. So *abhyanga* done for specific period can be useful.

*Shirobhyanga* is helpful in preventing and curing baldness, graying and falling of hair. It gives strength to the head and forehead, so that hair become deep rooted, long, black and lustrous (13).

When *Shiroabhyanga* is done with *Kaidarya siddha Narikela taila*, due to *Tikta, Kashay ras* and *Sheet virya* of *Kaidarya*, it causes *romkupanug Pittashaman* (14). Thus it is helpful in *Khalitya*. Also due to *Snigdha guna* of *taila* it causes *Vatashaman*. Due

to *Katu, Tikta, Kashay ras* and *laghu guna* it is useful in *Kaphadoshashaman*.





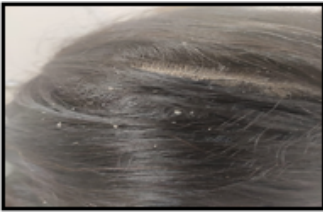


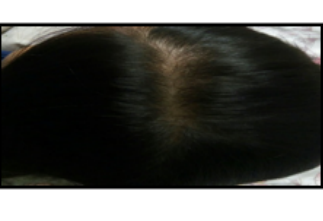
*Kaidarya* is having *Kushthagna* and *kruminashak* property so it is useful in treating Dandruff.

Nutrition deficiency also causes hair fall. *Kaidarya* is having calcium (810 Mg/100 G), Protein (6.1%), Vitamin A (12600 I $\mu$  / 100 G), which provides nutrition to scalp and hair and thus useful for hair (15).

Richness of Vitamin A and calcium in Curry leaf oil is used to improve bone strengthening, used in osteoporosis and calcium deficiency. According to *Charakacharya*, *Kesha* is the *mala* of *Asthidhatu* (16), so *Kaidarya* is useful to improve *Asthidhatu Sarata* and thus to improve hair quality.

## Conclusion

*Shirobhyanga* (applying oil on hair and scalp) done with *Kaidarya siddha Narikela taila* (Coconut oil medicated with *Murraya koenigii* (L.) Sprengel) is more effective than *Shirobhyanga* done with *Narikela taila* in the management of *Khalitya* (Hair fall), dandruff, itching of scalp and to improve hair texture. It is more effective in treating itching of scalp and dandruff as compare to Hair fall. The data obtained in the present study indicate that Dandruff and itching of scalp have the strong association with *Khalitya*. *Shirobhyanga* is the procedure found to be having its own importance in maintenance of healthy hair. Practice of *Shirobhyanga* as a part of *Dinacharya* should be popularized among the people for keeping healthy hair.

PATIENTS OF GROUP A		PATIENTS OF GROUP B	
Figure 1: Hair fall before treatment	Figure 2: Hair fall after treatment	Figure 5: Hair fall before treatment	Figure 6: Hair fall after treatment
			
Figure 3: Dandruff before treatment	Figure 4: Dandruff after treatment	Figure 7: Dandruff before treatment	Figure 8: Dandruff after treatment
			

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