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Research Article

Effect of Madhuka taila nasya with and without Japaakusuma lepa in akaalapalitya – A comparative clinical study

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Abstract

Introduction: Healthy hair is a sign of beauty and wellbeing. The appearance of a person is significantly altered by hair colour. Hair greying is a visible sign of ageing. Premature greying has negative effects on the appearance, self-confidence, self-esteem, and social acceptance of the affected individual. *Akaalapalitya* is a burning problem faced by youth today worldwide. *Acharya Charaka* has mentioned *Nasya* followed by *Lepa* application is the best treatment for *Akaalapalitya.* This study was designed to compare the effect of *Madhuka taila nasya* over *Madhuka taila nasya* and *Japaakusuma lepa* in *Akaalapalitya*. Aim: To study the effect of *Madhuka taila nasya* in the management of *Akaalapalitya*. To study the effect of *Madhuka taila nasya* and *Japaakusuma lepa* in the management of *Akaalapalitya*. To compare the efficacy of *Madhuka taila nasya* with and without *Japaakusuma lepa* in the management of *Akaalapalitya*. Materials and Methods: A randomised controlled trial was conducted with 40 patients of *Akaalapalitya* selected from O.P.D and I.P.D of K.A.M.C after fulfilling the inclusion and exclusion criteria. Participants were divided in to two equal groups. Group A received *Madhuka taila nasya* in *ashtabindu pramana* for 7 days. Group B received *Madhuka taila nasya* in *ashtabindu pramana* for 7 days followed by *Japaakusuma lepa* for 7 days. Baseline and post treatment evaluation was done on day 0 and day 8 for group A. It was done on day 0 and day 15 for group B. Both the groups were compared at follow up on day 21.Results: Comparative analysis of the overall effect of the treatment in both the groups was done statistically with unpaired t test. The test shows that the treatment is significant in Group B with overall result of 88.54%. Conclusion: *Madhuka taila nasya* with *Japaakusuma lepa* showed significant efficacy over *Madhuka taila nasya* alone in management of *Akaalapalitya.*

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Keywords: *Akaalapalitya, Japaakusuma lepa, Madhuka taila nasya*, Premature greying of hair

Introduction

Akaalapalitya is a common condition encountered in clinical practice now a days. *Akaalapalitya* is mainly due to vitiation of *vata* and *pitta*. In almost all ancient ayurvedic texts *panchakarma* has been given special importance. *Acharya Charaka* has indicated *panchakarma* therapy extensively for most of the diseases. The most important therapeutic module among the *panchakarma* specially for *urdhwajatrugata vyadhi, Palitya* is *Nasya karma*.

Indians are genetically black haired and head with black hair is preferred by all. Hair plays an important role in the personal identity of an individual. Healthy black hair is an attribute to individual's beauty. Premature greying is a burning problem faced by youth today due to altered life style and stressful occupation. According to W.H.O the incidence is high in the age group of 20–30 years. Urbanization and industrialization have contributed to pollution and contamination of air and water causing a definite increase in the incidence of premature greying of hair. The depletion of melanocytes leads to premature hair greying. Pathological greying of hair is of rapid onset. No systemic treatment is effective and patient must resort to hair dyes(1). Hair dyes due to harsh chemicals cause damage to hair and scalp leading to hair fall. Hence there is a need for ayurvedic intervention for finding safe and effective remedy for the management of *Akaalapalitya*. *Madhuka taila* has been indicated for *Nasya* in *Akaalapalitya* in *Charaka Samhita* and *Chakradatta*(2). *Madhuka taila* is *vata pitta shamaka, keshya. Japaakusuma lepa* has been mentioned in *Chakradatta* for *Akaalapalitya*(3). *Japaakusuma lepa* is *pittahara, kesharanjaka*. Previously works have been done on the effect of *nasya* with different medicaments, the combined effect of *shiroabhyanga* and *nasya* and the effect by difference in dosage of *nasya* in management of *Akaalapalitya*. In this work a comparative clinical study of *Madhuka taila nasya* with and without *Japaakusuma lepa* in *Akaalapalitya* is carried out and observations made are statistically evaluated.

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Materials and methods

Drugs used for study: *Murchita tila taila, Ushna jala, Madhuka taila* for *nasya, Haridra ghrita dhooma varti, Japaakusuma lepa* for *shirolepa*.

Collection of drugs: The drugs required for preparation of *Madhuka taila* such as *tila taila* and *yashtimadhu choorna* were procured from the dispensary of KAMC. *Goksheera* was collected freshly from milk dairy. *Bhringaraja* and *Japaakusuma* were collected freshly from garden. Fresh *Aamalaki* fruits were purchased from vegetable market. *Loha Bhasma* was purchased from pharmaceuticals.

Preparation of *Madhuka taila*: Ingredients: *Tila taila* - 190ml, *Yashti madhu choorna* - 48 grams made in to *kalka*, *Bhringaraja swarasa* – 770 ml, *Goksheera* - 770ml. The quantity of ingredients were taken as mentioned in *Chakradatta.* The *mridu paaka* of *Madhuka taila* was prepared according to *taila paaka vidhi* in the department of *Rasashastra* and *Bhaishajya Kalpana,* K.A.M.C Mangalore.

Preparation of *Japaakusuma lepa*: Ingredients: *Japaakusuma, Aamalaki, loha bhasma* in equal quantity. Fresh *Aamalaki* is made in to a paste by grinding. It is mixed with equal quantity of *loha bhasma* and kept for 24 hours. It is then mixed with equal quantity of *japaakusuma* flower paste and kept for 4 hours before application.

Method

Study design: A randomized comparative clinical study.

Source of data: Patients complaining of *palitya* were randomly selected from O.P.D, K.A.M.C, Mangalore after following the inclusion and exclusion criteria.

Method of collection of data: 40 patients who fulfilled inclusive criteria were selected randomly irrespective of sex, religion, occupation and economic status and made in to two groups. The readings before and after the treatment, on follow up were assessed for result. Diagnostic criteria: Diagnosis is made on the basis of the classical signs and symptoms as mentioned in ayurvedic classics like split/ broken hair (*sputitha*), hair resembling water(*jala prabha*), ash coloured hair(*dhoosara*), yellowish hair (*peetabha*), brownish(*shyava*), white hair (*shukla*).

Inclusion criteria: Patients who have classical signs and symptoms of *Akaalapalitya*, patients aged between 18 – 40 years irrespective of sex with premature greying of hairs, patients fit for *nasya karma*.

Exclusion criteria: Hereditary diseases like albinism and vitiligo, patients with harmonal diseases like thyroid disorders, nutritional deficiencies like vitamin B12, pernicious anaemia, patients above 40 years of age and below 18 years of age, patients unfit for *nasya karma.*

Posology: *Nasya* 8 *bindu pramana* (Approx 4ml) of *Madhuka taila* in each nostril in the morning in empty stomach[4]. Adequate quantity of *Japaakusuma lepa* is taken and applied with thickness of ¼ *angula pramana*[5].

Study duration: 7 days of *Nasya* in group A. 7 days of *Nasya* followed by 7 days of *Japaakusuma lepa* in group B.

Follow up: 0n 21st day.

Assessment of result: Assessment of result was done on the basis of readings of subjective and objective parameters. In group A efficacy of *Madhuka taila* before and after treatment was assessed on day 0 and day 8. In group B efficacy of *Madhuka taila nasya* and *Japaakusuma lepa* before and after treatment was assessed on day 0 and day 15. Both the groups were assessed before treatment and on follow up on day 0 and day 21 and the results were compared.

Subjective Parameters: The below four parameters were taken as subjective parameters for the assessment of results.

Table 1: Showing the subjective parameters

1	Colour of hair (*Kesha varna*)	Assessment	Score
		Krishna varna(Black)	0
		Dhusara(Ash colour)	1
		Shyava(Brown colour)	2
		Shweta(White colour)	3
2	Dry splitted hair (*Rooksha Sputitha*)	Assessment	Score
		Normal	0
		Dryness visible	1
		Dryness felt by touch	2
		Dryness felt with splitted hairs	3
3	Unctuous thick hair (*Snigdha Sthula*)	Assessment	Score
		Normal	0
		Unctuous visible	1
		Unctuous felt by touch	2
		Unctuous felt with splitted hairs	3
4	Burning sensation	Assessment	Score
		No burning sensation	0
		Mild (Localized burning without disturbed sleep)	1
		Moderate (Localized burning with disturbed sleep)	2
		Severe (Burning all over the scalp with disturbed sleep)	3

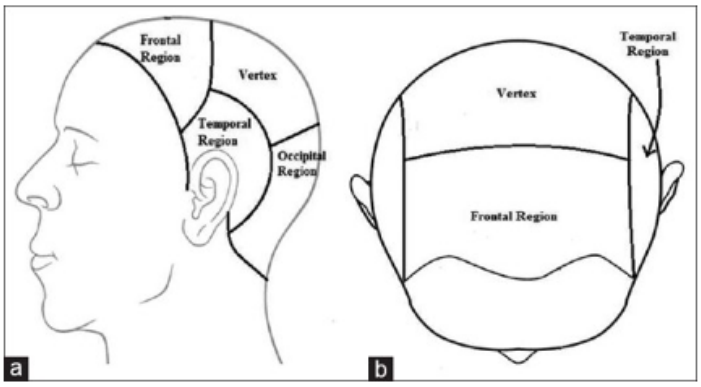
Greying severity score[6]: The extent of greying is evaluated by taking in to account five representative sites from the scalp. The entire scalp surface is divided in to 5 zones - frontal region, vertex region, right and left temporal regions, and the occipital region. By visual examination maximum greying was identified in each of these zones and one cm^2 area is marked. Within this square area grey hair were counted. In all the five zones area is marked and grey hair is counted in a similar way. Based on the hair count a score was assigned to each zone according to the number of grey hair in each square. Calculation was done and scored as: Score 1 (assigned to under 10% grey hair/cm^2); Score 2 (10%–30% grey hair/cm^2); and Score 3 (more than 30% grey hair/cm^2. By taking a sum of the scores at the five representative sites the GSS objective score is calculated.The objective scores were further graded as Mild (score of 0–5); Moderate (score of 6–10); and Severe (score of 11–15).

Table 2: Showing GSS Severity score

GSS Severity score	Assessment	Score
	Less than10% gray hair per cm^2	Score 1
	10 – 30% gray hair per cm^2	Score 2
	More than 30% gray hair per cm^2	Score 3

Scoring- Mild (0 – 5) Moderate (6 -10) Severe (11 – 15).

Figure 1: Showing division of scalp for calculating GSS SEVERITY SCORE



Random hair count: One square centimetre area of scalp was chosen where more grey hairs are present. From this site grey hairs were counted before and after the treatment.

Table 3: Random hair count Assessment

	Assessment	Score
Random hair count	No grey hairs	0
	1 - 10 grey hair	1
	More than 10 and less than 25 grey hairs	2
	More than 25 grey hairs	3

Procedure(7): The patients were examined on the previous day and explained about the procedures of *Nasya* and *Shiro lepa* briefly and were asked to bring extra clothing, napkin, towel etc. The time given was morning hours before food.

***Poorvakarma*:** Materials required are collected. Patient is examined for *yogya* and *ayogya.* Preparation of the patient: - Patient is advised to pass the natural urges and is advised to lie down on *droni*(table). *Abhyanga* is done with *moorchita tila taila*. Forehead, eyebrows, nose, chin and maxillary area is massaged with linear thumb movements. Cheek and temporal region is massaged with circular movements of the palm in both clockwise and anticlockwise direction. Anterior of the neck is massaged by moving the flat of the palms from the base of the neck to the mandible. *Pata sveda*(fomentation by cloth) for face and neck was done. The towel is soaked in boiling water, the water is squeezed out, the warm towel is then waved, touched and pressed on the face and anterior neck. The heat is then applied to the face and neck by momentarily touching these areas with warm towel.

Pradhana karma - Administration of *Nasya yoga* - Patient is made to lie in supine position extending the arms and legs and head slightly extended upto 45-degree angle. *Madhuka taila* to be administered is placed in a vessel and then made lukewarm by placing it in a vessel containing hot water. The tip of the patient nose is elevated with the left thumb and then drop the *taila* from the *gokarna* into each nostril one after the other. Patient is asked to inhale the medicine with moderate force and to spit out through mouth.

***Paschat karma*:** Patient should lie in supine position for 100 *matrakala*. Region of ear, forehead, scalp, cheek, nape of neck, shoulders, palms and soles are massaged. *Dhumapana* with *haridra ghrita varti* is given till all medicament is brought out through mouth. *Kavala* with hot water is done to get the mouth and throat cleaned.

Methodology for *Shiro lepa*

***Poorva karma*:** Materials required are collected. Patient is advised to pass natural urges and sit on a chair comfortably.

***Pradhana karma*:** *Lepa* is applied on *shiras* with a thickness *mahishaadra charma*(8).

***Paschat karma*:** After two hours patient is told to wash the *lepa* with *sheeta jala*. Patient is advised not to apply hair oil during the study period.

Observation and results

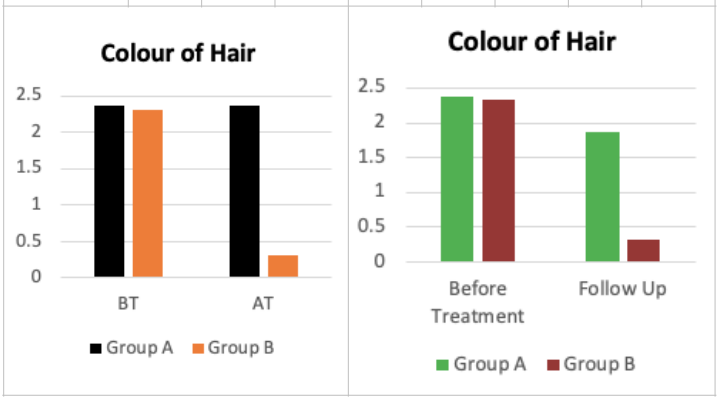
Effect of *Madhuka taila nasya* on Group A, effect of *Madhuka taila nasya* and *Japaakusuma lepa* on Group B is observed. In this study 19 patients were studied in group A as one patient discontinued nasya from 2nd day as she could not tolerate the dose. 20 patients were studied in group B.

Table 4: Effect on colour of hair in group – A and B before treatment and after treatment

Symptom	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	AT	BT-AT					
Colour of Hair	Group A -8th day							
	2.35	2.35	0.00	0.00	0.000	0.000	0.000	0.00
	Group B- 15th day							
	2.30	0.30	2.00	86.96	0.858	0.197	8.238	<0.05

Table 5: Effect on colour of hair in group – A and B before treatment and on follow up -21st day

Symptom	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	FU	BT-FU					
Colour of Hair	Group A							
	2.35	1.85	0.50	21.28	0.889	0.204	1.48	>0.05
	Group B							
	2.30	0.30	2.00	86.96	0.858	0.197	8.24	<0.05



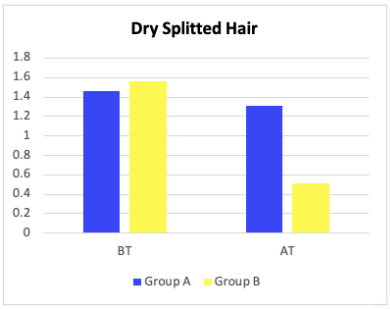
Effect on Colour of Hair: In Group A, statistical analysis showed no significance after treatment. The mean score which was 2.35 before the treatment was reduced to 1.85 on follow up with 21.28% improvement and it is not statistically significant (P>0.05). In Group B, statistical analysis showed that the mean score which was 2.30 before the treatment was reduced to 0.30 after the treatment with 86.96% improvement and was observed on follow up. It is statistically significant (P<0.05).

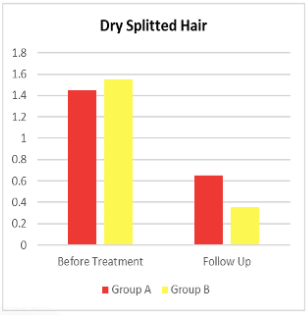
Table 6: Effect on dry splitted hair in group – A and B before treatment and after treatment

Symptom	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	AT	BT-AT					
Dry Splitted Hair	Group A -8th day							
	1.45	1.30	0.15	10.34	0.489	0.112	0.435	>0.05
	Group B – 15th day							
	1.55	0.50	1.05	67.74	0.826	0.189	4.018	<0.05

Table 7: Effect on dry splitted hair in group – A and B before treatment and on follow up -21st day

Symptom	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	FU	BT-FU					
Dry Splitted Hair	Group A							
	1.45	0.65	0.80	55.17	0.523	0.120	2.69	<0.05
	Group B							
	1.55	0.35	1.20	77.42	0.834	0.191	4.63	<0.05





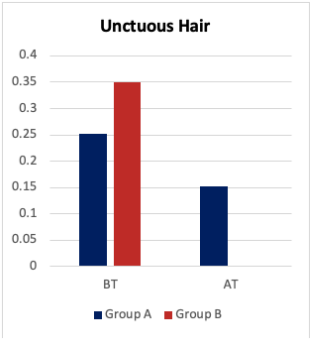
Effect on Dry Splitted Hair: In Group A, statistical analysis showed no significance after treatment. The mean score which was 1.45 before the treatment was reduced to 0.65 on follow up with 55.17% improvement and it is statistically significant (P<0.05). In Group B, statistical analysis showed that the mean score which was 1.55 before the treatment was reduced to 0.50 after treatment with 67.74% improvement and is statistically significant(P<0.05). Statistical analysis showed that the mean score which was 1.55 before the treatment was reduced to 0.35 on follow up with 77.42% improvement and it is statistically significant(P<0.05).

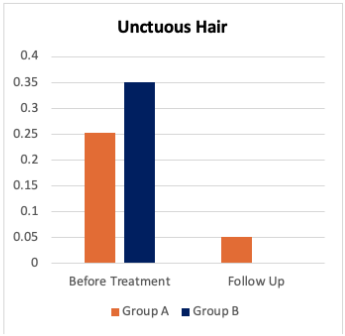
Table 8: Effect on unctuous hair in group – A and B before treatment and after treatment

Symptom	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	AT	BT-AT					
Unctuous Hair	Group A – 8th day							
	0.25	0.15	0.10	40.00	0.718	0.165	0.607	>0.05
	Group B – 15th day							
	0.35	0.00	0.35	100.0	0.745	0.171	2.101	<0.05

Table 9: Effect on unctuous hair in group – A and B before treatment and on follow up-21st day

Symptom	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	FU	BT-FU					
Unctuous Hair	Group A							
	0.25	0.05	0.20	80.00	0.410	0.094	1.51	>0.05
	Group B							
	0.35	0.00	0.35	100	0.745	0.171	2.10	<0.05





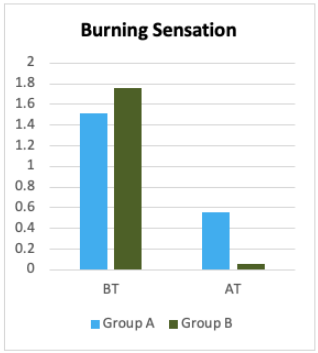
Effect on Unctuous Hair: In Group A, statistical analysis showed that the mean score which was 0.25 before the treatment was reduced to 0.15 after treatment and 0.05 on follow up and it is not statistically significant (P>0.05). In Group B, statistical analysis showed that the mean score which was 0.35 before the treatment was reduced to 0.00 after the treatment with 100% improvement and was observed on follow up. It is statistically significant (P<0.05).

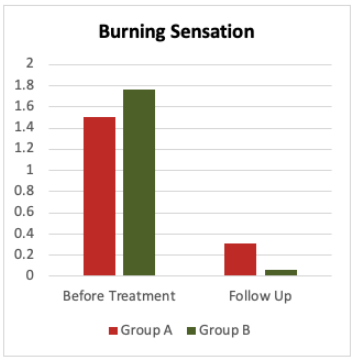
Table 10: Effect on burning sensation in group – A and B before treatment and after treatment

Symptom	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	AT	BT-AT					
Burning Sensation	Group A – 8th day							
	1.50	0.55	0.95	63.33	0.394	0.090	4.371	<0.05
	Group B – 15th day							
	1.75	0.05	1.70	97.14	0.571	0.131	11.235	<0.05

Table 11: Effect on burning sensation in group – A and B before treatment and on follow up -21st day

Symptom	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	FU	BT-FU					
Burning Sensation	Group A							
	1.50	0.30	1.20	80.00	0.616	0.141	5.64	<0.05
	Group B							
	1.75	0.05	1.70	97.14	0.571	0.131	11.24	<0.05





Effect on Burning Sensation: In Group A, statistical analysis showed that the mean score which was 1.50 before the treatment was reduced to 0.55 after the treatment with 63.33% improvement and is statistically significant(P<0.05). On follow up the mean score was reduced to 0.30 with 80% improvement and it is statistically significant (P<0.05). In Group B, statistical analysis showed that the mean score which was 1.75 before the treatment was reduced to 0.05 after the treatment with 97.14% improvement

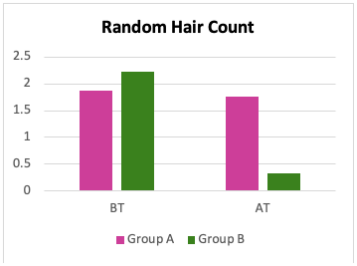
and was observed on follow up also. It is statistically significant (P<0.05).

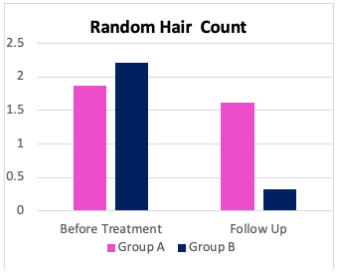
Table 12: Effect on random hair count in group – A and B before treatment and after treatment

Symptom	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	AT	BT-AT					
Random Hair Count	Group A – 8th day							
	1.85	1.75	0.10	5.41	0.308	0.071	0.413	>0.05
	Group B – 15th day							
	2.20	0.30	1.90	86.36	0.447	0.103	10.970	<0.05

Table 13: Effect on random hair count in group – A and B before treatment and on follow up on 21st day

Symptom	Mean score			%	S.D (±)	S.E (±)	t value	p value
	BT	FU	BT-FU					
Random Hair Count	Group A							
	1.85	1.60	0.25	13.51	0.444	0.102	1.05	>0.05
	Group B							
	2.20	0.30	1.90	86.36	0.447	0.103	10.97	<0.05





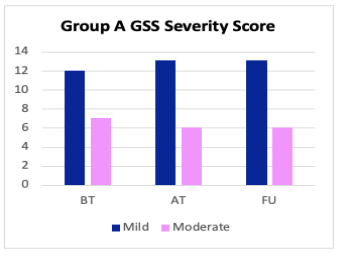
Effect on Random Hair Count: In Group A, statistical analysis showed that the mean score which was 1.85 before the treatment was reduced to 1.75 after treatment and 1.60 on follow up with 13.51% improvement and it is not statistically significant (P>0.05). In Group B, statistical analysis showed that the mean score which was 2.20 before treatment was reduced to 0.30 after treatment with 86.36% improvement and was observed on follow up.It is statistically significant (P<0.05).

Table 14: Group A, GSS Severity Score

	BT	%	AT	%	FU	%
Mild	12	63	13	68	13	68
Moderate	7	37	6	32	6	32

Table No 15, Group B, GSS Severity Score

	BT	%	AT	%	FU	%
Mild	9	40	20	100	20	100
Moderate	11	60	0	0	0	0



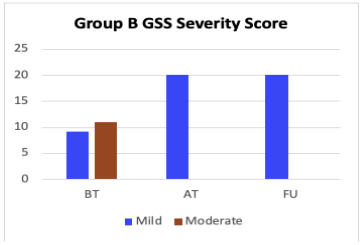
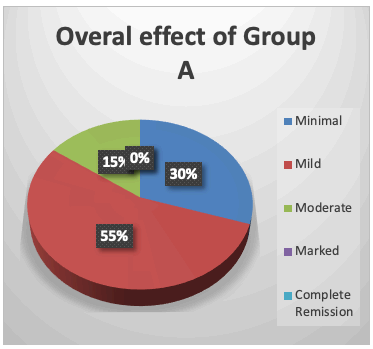
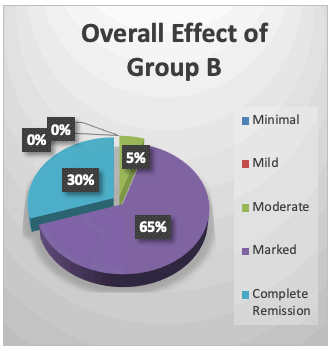


Table 16: Assessment of total effect of therapy

Effect of treatment on			
		Group A	Group B
Class	Grading	No of patients	No of patients
0-25%	Minimal	6	0
26%-50%	Mild	11	0
51% - 75%	Moderate	3	1
76% - 99%	Marked	0	13
100%	Complete Remission	0	6

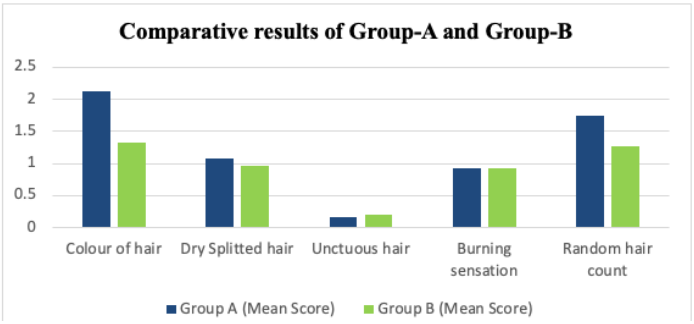




In Group A there were 12 mild cases(63%) and 7 moderate cases(37%) before treatment. After treatment, mild cases were 13(68%) and moderate cases 6(32%) which was observed in follow up also. A reduction in moderate case is seen. In Group B, there were 9 mild cases (40%) and 11 moderate cases (60%) before treatment. After treatment there were no moderate cases and all 20 cases (100%) were mild. It remained same on follow up.

Table 17: Comparative results of individual parameters in Group-A and Group-B

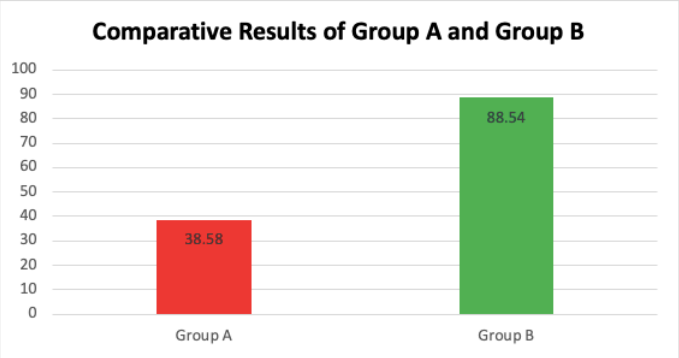
Signs and Symptoms	Group A (Mean Score)	Group B (Mean Score)	SE	T Value	P Value
Colour of hair	2.10	1.30	0.209	3.09	<0.05
Dry Splitted hair	1.05	0.95	0.181	0.39	>0.05
Unctuous hair	0.18	0.15	0.131	0.21	>0.05
Burning sensation	0.90	0.90	0.166	0.00	0.00
Random hair count	1.73	1.25	0.180	2.43	<0.05



There was significant improvement in colour of hair and random hair count in Group B after treatment and it was observed during follow up also. Burning sensation was reduced in both Group A and Group B after treatment which was observed in follow up too.

Table 18: Comparative results of overall effect in Group A and B

Group A	Group B	Mean Difference	SE (±)	T value	P value
38.58	88.54	49.96	4.88	10.78	<0.05



Comparative results of Group A and Group B: Comparative analysis of the overall effect of the treatments in both the groups was done statistically with unpaired t test. The test shows that the treatment is significant in Group B when compared to Group A. Group B overall result is 88.54% and Group A overall result is 38.58%.

Discussion

Acharya Vagbhatta has told "*Nasa hi shiraso dwaram*" which means nose is gate way to head. Hence *Nasya* is considered as the prime line treatment for all *urdhwajatrugata vyadhi.* The drugs administered through nose reaches *Sringataka marma* of head and shows its action. It nourishes the hair follicles. *Acharya Charaka* has mentioned *nasya* followed by *shirolepa* in *chikitsa sutra* of *Akaalapalitya(*9). Drugs used in the work are *Madhuka taila* for *nasya(*10) and *Japaakusuma lepa*(11) for *shiro lepa* mentioned in *Chakradatta*.

Posology: *Navana snehana nasya* as mentioned by *Acharya Charaka* and *Sushrutha* is considered in this study. *Acharya sushruta* has mentioned 8 *bindu pramana* as the *avara matra* of *snehana nasya*(12). *Vagbhatta* in *Astanga Hridaya* has specified(*saptaha*) 7 days for a course of *Nasya*. One *bindu* is equal to the drops of oil that falls when two *parvas*(phalanges) of *Pradeshini anguli* (fore finger) is dipped in oil and taken out. One *bindu* is 0.5 ml approximately. Hence 4ml will be administered in each nostril. *Acharya Sushruta* has mentioned it should be administered in *Abhuktavato annakale* (before food). *Acharya Sharangadhara* has mentioned *doshaghna lepa* has to be applied with thickness of ¼ *angula*(13). One *angula* is 1.76 cm. Hence *Japaakusuma lepa* will be applied with thickness of 0.5cm. Females will require more quantity due to their long hair.

40 patients were registered for study and were randomly divided in to two groups of 20 patients each. Out of the 20 patients in group A one patient discontinued the course of *Nasya* after a day. The reason for discontinuity was that she was not able to tolerate the dosage of *Nasya*. All the other patients in both groups continued the course of *Nasya* for 7 days. *Shirolepa* was administered for 7 days for 20 patients in group B after initial 7 days of *Nasya*. As *shirasnana* is contraindicated during *Nasya, lepa* was advised after 7 days of *nasya*. The subjective and objective parameters were assessed before treatment and on 8th day after treatment for Group A and on 15th day after treatment for Group B. Patients of both groups were assessed for subjective and objective parameters on day 0 and on follow up on day 21and the results were compared. As *Nasya* is to be administered in empty stomach patients were told to be in hospital by 8 AM. Patients of group B were told to come to hospital at 10 AM and *Shirolepa* was applied and washed off after 2 hours. This prevented the patient from catching cold and was also convenient.

Krodha, shoka, shrama are considered in the *nidana* of *Akaalapalitya.* They are stress factors acting on hypothalamus and is responsible for secretion of corticotropin releasing hormone(CRH) and adrenocorticotropic hormone (ACTH). ACTH triggers the adrenal glands to release cortisol,the stress hormone. ACTH acts directly on the melanocyte to enhance melanogenesis. Reduced secretion of ACTH and CRH in turn causes melanocyte stimulating hormone(MSH) reduction causing decreased pigmentation. Hence Nasya plays a vital role in management of *Akaalapalitya.*

Akaala palitya is a *urdhwajatrugata vyadhi* caused due to *vata* and *pitta prakopa*. Hence the drugs which are *vata pittahara* are used for *Nasya* treatment. *Madhuka taila* told by *Chakradatta* has *Yashtimadu kalka,* equal quantities of *Goksheera* and *Bhringaraja swarasa*, *Tila taila. Yashtimadhu* is *vatapittahara. Charakacharya* has mentioned it as *rasayana* and *snehopaga*. According to *Bhavaprakasha* it is *snigdha, keshya, pittanilahara. Acharya Sushrutha* mentions it as *rasayana. Goksheera* is *vata pittahara* and *rasayana* according to *Sushruta*. Cow's milk is a rich source of calcium. Calcium pantothenate is used in the treatment of premature grey hair(14). *Yashtimadhu* and *Goksheera* are *vatahara* because of *guru, snigdha guna, madhura rasa* and *madhura vipaka. Yashtimadhu* and *Goksheera* are *pittahara* due to its *madhura rasa, madhura vipaka* and *sheeta veerya*. *Bhringaraja* synonym is *Markava* which means prevents premature greying of hair. It is *vata hara* because of its *ushna veerya*.It alleviates *pitta* because of its *tikta rasa*. According to *Bhavaprakasha* it is *keshya, rasayana*. According to *Rajanighantu* it has *kesha ranjana* property. *Tila taila* is *vatahara* because of *guru, snigdha guna, madhura rasa* and *madhura vipaka, ushna veerya*. It is *keshya, snehana. Yashtimadhu* and *Goksheera* are *vatahara* because of *guru, snigdha guna, madhura rasa* and *madhura vipaka. Yashtimadhu* and *Goksheera* are *pittahara* due to its *madhura rasa, madhura vipaka* and *sheeta veerya*.

Japaakusuma lepa contains *Aamalaki* fruit pulp, *loha bhasma* and *Japaakusuma* paste in equal quantities. *Acharya Charaka* has mentioned when *loha bhasma* is trichurated in sour substances like *Aamalaki* it forms excellent *kesha ranjaka*. *Japaakusuma*(Hibiscus)-*Acharya Bhavaprakasha* has said it is *kesha ranjaka*. It is *pittahara* because of *kashaya, tiktha rasa, sheeta veerya*. It is *keshya*. Anthocyanin is the natural pigment present in hibiscus responsible for hair dyeing. *Aamalaki*(Gooseberry)- It is *Tridoshashamaka*, has *lavana varjita pancha rasa, laghu guna, sheeta veerya, madhura vipaka*. It is *vatahara* because of *amla rasa, madhura vipaka*.It is *pittahara* due to *kashaya ,tikta, madhura rasa, madhura vipaka* and *sheeta veerya*. According to *Acharya Charaka* it is *rasayana*.It is *dahahara* because of *sheeta veerya*. It promotes pigmentation of hair and maintains hair colour. It helps in absorption of calcium which is essential to prevent premature greying of hair. Fruits of *Aamalaki* are rich in iron, calcium, tannin, vitamin C. Emblicanins and ellagic acid found in fruits of *Aamalaki* are used as dyes. *Loha bhasma*- is a micro fine powder of iron oxide. It is *pittahara* because of *tiktha, madhura, kashaya rasa, sheeta veerya*. The interaction of iron oxide with grinded *Aamalaka* paste produces fused black particles(chelates) capable of dyeing hair. Ferrous increases the colour retention. Here *Japaakusuma lepa* acts as hair

dye which masks the white colour of hair and also pacifies the *vata* and *pitta prakopa*. It acts on texture of hair making it soft and smooth.

Acharya Charaka has said that *Lepa* should be freshly prepared daily and *Lepa* once used should not be reused. This ensures better action of drug. *Acharya Vagbhatta* in *Ashtanga sangraha* has told smearing of paste of medicinal plants in *pratiloma gati*. This ensures *Lepa* sticks properly and enters hair follicle.

Out of total 40 patients in group A and group B maximum were in the age group of 20 – 30 years (62.5%). The reason may be due to the predominance of *pitta* in middle age. Due to sudden increased use of cosmetics, lack of personal hair care, erratic food habits, increased responsibility leading to stress and inturn causing canities. Maximum patients in the study were females(62.5%). Females are prone to mental tension, worries owing to their sensitive and emotional nature.They use cosmetics more. The variation in endocrinal secretion also play a role in occurance of *palitya* more in women. In the study majority of patients were having *alpa nidra*(57.5%). This leads to *vata prakopa* leading to initiation of disease. Maximum number of patients were of *vata pitta prakruti* (50%) followed by *pitta kapha prakruti* (42.5%). *Vata* and *pitta* are the main *doshas* which play a role in occurance of *palitya*. *vata* and *pitta prakruti* individuals are more prone to *palitya* by slight indulgence in etiological factors. It is also mentioned by *Acharya charaka* and *sushruta* that *pitta prakruti* persons are prone to *akaalapalitya*. *Vagbhata* has mentioned that *vata prakruti* individuals will have *ruksha, alpa kesha* and get disturbed psycologically fast. Majority of patients had *rooksha kesha* (83%). It may be due to increased use of cosmetics and lack of hair care. *Kapala daha* (77.08%) was the *anubandha vedana* in majority. It can be attributed to involvement of *pitta.* Maximum patients used hot water (36.25%) for head bath and all used hard water (50%). Hard water and hot water may lead to increased dryness of hair leading to *Akaalapalitya.* Majority of patients used shampoo (72.5%) followed by soap (27.5%) for hair wash. The harsh chemicals in shampoo and soap may be the causative factor for *Akaalapalitya.* Hair oil was used occasionally(60%) by majority of patients. This indicates that lack of hair care, not doing *abhyanga* regularly leads to *Akaalapalitya.* Maximum patients used chemical hair dyes (52.5%) which might have worsened the condition of cavities as it contains harsh chemicals.

Overall response of patients

In Group A who were treated with *Madhuka taila nasya,* complete remission was not observed in any patient. Moderate improvement was seen in 3 patients (15%). Mild improvement was observed in 11 patients (55%). Minimal improvement was appreciated in 6 patients(30%).In Group B who were treated with *Madhuka taila nasya* followed by *Japaakusuma lepa* complete remission was observed in 6 patients (30%). Marked improvement was seen in 13 patients(65%). Moderate improvement was appreciated in 1 patient (5%). *Madhuka taila* as *snehana nasya* is effective and treats the disease at root level. Though the improvement in hair colour is not much appreciated immediately after *nasya* treatment, improvement is seen in associated parameters like dry splitted hair, burning sensation of scalp. Application of *Japaakusuma lepa* acts as an excellent natural hair dye and masks the hair colour. *Nasya* and *Shirolepa* can be practiced at OPD level with due precaution. Hence it is ideal in management of *Akaalapalitya.*

Figure 2: Raw Drugs for Madhukataila Preperation

Figure 3: Madhukataila preparation

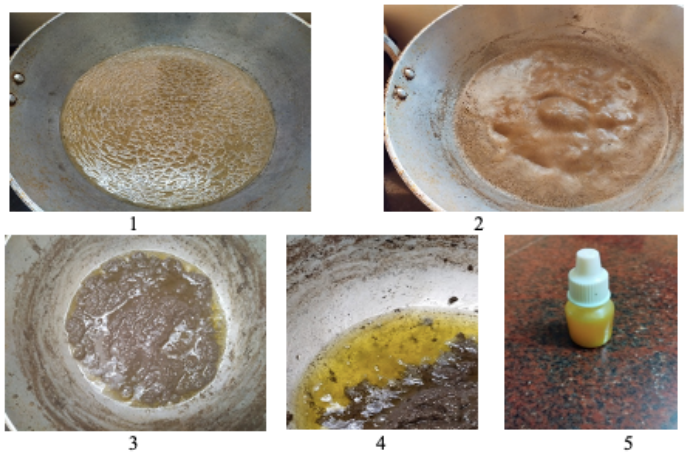


Figure 4: Raw drugs for japaakusuma lepa

Figure 5: **Requirements for *Nasya***

Figure 6: *Nasya* Procedure

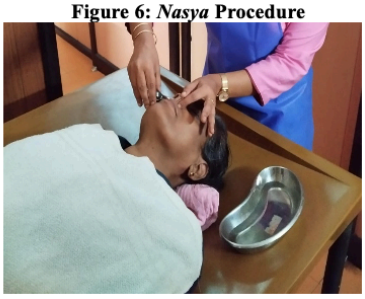


Figure 7: Application of *Lepa*

Before *lepa* application

After *lepa* application

Figure 8: Efficacy of *Madhuka taila nasya* and *japaakusuma lepa*

Before treatment

After treatment

Conclusion

It was concluded from the study that *nasya* with *madhuka taila* followed by application of *japaakusuma lepa* as mentioned in *chikitsa* of *Akaalapalitya* in *Charaka samhita* has significant efficacy in managemet of *Akaalapalitya.*

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