



ROLE OF *DHATURA PATRA SWARASA* IN THE MANAGEMENT OF *INDRALUPTA* (ALOPECIA AREATA)

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ABSTRACT

Introduction: Alopecia areata (AA) is silent but distressing problem which may occur to a healthy person also. In Ayurvedic approach, this condition has close resemblance with '*Indralupta*'. For treating this devastating condition, *Dhatura patra lepa* has been mentioned as one among the formulations in *Ashtanga Hridaya*. The main objective of the study was to evaluate the efficacy of *Dhatura Patra Swaras lepa* in the management of *Indralupta*. **Methods:** 22 out of 25 subjects suffering from *Indralupta* who attended the O.P.D. of K.A.T.S. Ayurvedic College and Hospital, Ankushpur, Odisha, completed the treatment protocol. These subjects were administered with *Dhatura Patra Swaras Lepa* over the scalp (quantity sufficient) applied once a day for a period of 30 days. These results were analyzed statistically. **Results:** The trial drug was found to be effective and showed significant results in reducing the symptoms of *Indralupta*. **Conclusion:** As per the data obtained we can conclude that the trial drug was found to be effective in the condition of *Indralupta*.

KEYWORDS: *Indralupta*, *Dhatura patra*, *Lepa*, Alopecia areata.

INTRODUCTION

In Ayurvedic texts, there are four types of life (*Ayu*), among these Happy life (*Sukhayu*) is the most important variety. *Sukhayu* deals with the life without physical and mental disorders and the people with *Sukhayu* are endowed with youth (*Yauvana*), strength (*Bala*), virility (*Virya*), boldness (*Parakrama*) etc along with beauty (*Saundarya*)^[1] We know the famous quotation "A thing of beauty is joy forever." So, the concept of beauty (*Saundarya*) is gaining more and more attention globally and hair plays an important role in it, as it has been said that hair is a barometer of one's beauty. Healthy, beautiful, long and attractive hairs add charm to the personality. Hair is regarded as crowning glory of human being and is one of the defining characteristics of mammals. Humans have around more than 2 million hair follicles which have both positive as well as negative effect on skin health.^[2] The changes in hair follicle density, size and/or changes to the hair growth cycle are the fundamental causes of hair disorders.^[3] Nowadays the cases of hair loss and other hair related complaints are reported increasingly due to the lifestyle changes of food habits and mental stress etc.

Alopecia areata (AA) is a complex autoimmune condition that causes nonscarring hair loss. It typically presents with sharply demarcated round patches of hair loss and may present at any age⁴. Pathognomonic 'exclamation mark' hairs are seen (broken hairs, tapering towards scalp) during active hair loss⁵. Its prevalence in general population was estimated at 0.1-0.2% with a lifetime risk of 1.7%.^[6] Male was reported to be more affected with the disease in comparison to children and women, but it cause more emotional problems in woman and children due to cosmetic concern.^[7] Its main treatment in contemporary science is Corticosteroids which is having harmful side effects and not advisable for long term use. So, world is expecting some remedies from Alternative medical sciences.^[8] *Ayurveda* offers different effective treatment modalities for the management of different autoimmune diseases.^[9]

Hair loss is silent but devastating problem which may occur to a healthy person also. It has been regarded as geriatric physiological phenomena, generally after the mid forties. Early hair fall has been attributed to be the result of varied factors like hormonal imbalance, faulty hair care, pollution etc. In the present scenario, AA in younger age is increasing by leaps and bounds. In this

age an effective as well as long lasting treatment is the need of the hour. To solve the above query and to find out a promising remedy the present study has been undertaken.

In Ayurvedic approach, hair loss or Alopecia areata is termed as *Indralupta*. It has been mentioned under the broad heading of *Kshudra Rogas* (some of them are coming under Cosmetic disorders) except Vagbhata,^[10] who has mentioned it under *Kapala Rogas* (diseases of scalp). It is characterized by loss of hair with poor replacement. According to Vagbhata,^[10] and Acharya Sushruta,^[11] vitiated *pitta* associated with *vata* gets localized in the *roma kupa* (hair follicles) and causes the hair fall, later on vitiated *kapha dosha* associated with *rakta* causes the obstruction to the hair roots and restricts their growth. It is also regarded as one of the types of *Khalitya* (loss of hairs) where hair loss occurs in patches¹². *Ayurveda* suggests many preventive and curative treatment measures for *Indralupta* like *Moordha taila*, *Shirolepa* and *Rasayana*,^[12] Among these measures *Dhatu patra swaras lepa* (the application of the juice extracted from the leaves of *Dhatu* plant over head) is one mentioned by Vagbhata in *Ashtanga Hridaya*.^[13]

AIMS AND OBJECTIVES

To evaluate the effect of *Dhatu Patra Swaras lepa* in *Indralupta*.

MATERIALS AND METHODS

Total 25 Patients had been registered for the present clinical study as per the selection criteria set for *Indralupta* out of which 3 patients were dropped out as they left the treatment schedule in the middle. The setting was done in the O.P.D. and I.P.D. of K.A.T.S. Ayurvedic College and Hospital, Ankushpur, Ganjam, Odisha, as per the criteria mentioned below irrespective of their age, sex, religion etc.

Inclusion Criteria

- Patients aged above 18 years & below 50 years were included without any bar of caste, religion and occupation.

Gradation of Hair Loss (Localized or Overall)

- *Keshabhoomi* (scalp) not seen by naked eye - 0
- *Keshabhoomi* (scalp) slightly seen by naked eye - 1
- *Keshabhoomi* (scalp) more appropriately seen by naked eye - 2
- *Keshabhoomi* (scalp) can be seen by naked eye - 3

Gradation of Hair Falling

Symptoms

- Absent
- Mild (hair fall on washing)
- Moderate (hair fall on combing)
- Severe (hair fall on simple strengthening)

Gradation

- 0
- 1
- 2
- 3

For other associated symptoms like *Darunaka* (Dandruffs), *Keshabhoomi Daha* (burning sensation in

- Patients of either sex.
- *Indralupta* occurring in patches over the scalp.

Exclusion Criteria

- *Indralupta* covering the scalp in total.
- Patient associated with other systemic disorder.
- Infectious alopecia.
- Patients having hereditary history of baldness or having history of hair loss due to injury or having the *Asadhya lakshana* were not included in this study

Investigations

- Routine haematological investigations were carried out to assess the present status of patients as well as exclude in the pathological conditions.
- Stool and urine routine and microscopic examination.
- Biochemical investigation (like F.B.S., S. Cholesterol, S.Creatinine, S.Uric acid, S.Calcium, S.Albumine etc.)

Grouping

Single group with 25 patients.

Posology

Dhatu patra swaras lepa used once a day (quantity sufficient).

Treatment Duration

30 days

Criteria For Assessment

To facilitate the statistical analysis of the effect of therapy, scoring system was adopted. Regeneration of Hair in localized or overall Hair loss and Cessation of hair fall was counted as the main feature to assess the effect of therapy.

the scalp), *Keshabhoomi Kandu* (itching sensation in the scalp), *Kesha Kathinya* (rough hairs), *Kesha Tanutva*

(thin hairs) etc. the same scoring pattern (i.e., Absent – 0, Mild – 1, Moderate – 2, Severe – 3) is followed.

OBSERVATION AND RESULTS

In the present study 25 patients registered and out of which 22 completed the treatment and 3 patients left the treatment before it was completed and were regarded as LAMA. Maximum number of patients were males (56%); 40% of the cases were belonging to 36-45 years age group; 84% of the cases were Hindus; 32% were graduates; 32% were having business while 28% were housewives; 76% were married; 28% each of the cases had the chronicity of less than 1 year and in between 1-2 years; 60% had the positive family history; 78% of them had mixed pattern of diet; 36% of each had *Vata-Pitta* and *Pitta-Kapha prakriti* (physical constitution); 36% each had the habit of smoking and consuming alcohol; 64% of the cases had *Samagni* (normal digestive power); 68% had proper sleep patterns (*Samyak nidra*);

On considering the etiological factors of the *Indralupta* (AA) the present study revealed that on dietary basis, majority of the patients i.e., 76% were taking *Katu Rasa* (pungent) in their diet, while 56% had *Lavana Rasa* (salty), 68% *Amla Rasa* (sour) and 40% had dominancy of *Madhura Rasa* (sweet) in their routine diet. On considering the data of the present series, it was observed that maximum numbers of patients i.e. 76% were taking *Ushna Pradhana Ahara* (hot food stuffs), followed by *Guru* (heavy food articles) in 64%, *Kshara* (alkaline food stuffs) and *Snigdha* (oily food stuffs) in 56% patients each. Apart from these, other regimens like day *Divaswapna* (sleeping) was seen in 84%; *Atapasevana* (exposure to sunlight) and *Rajasevana* (exposure to dust) were seen in 44% and 36% respectively; *Prajagara* (being awakened at night) was seen in 32%.

Psychological causes like anxious thoughts (*Chinta*) were seen in 60%, anger (*Krodha*) was observed in 56% of the patients while only 16% had worries (*Shoka*).

Among the hair care details, 60% had the habit of applying coconut oil over head while 28% had the habit of applying the medicated oil; 52% of the cases reported with applying the oil twice in a week; 52% of the cases used to comb in wet hair condition whereas remaining 48% of the cases used to comb with force; 56% were using henna and 36% were using colouring material; 76% of the cases used to bath with cold hard water; maximum numbers of patient (60%) were using shampoo as hair washer, while 40% of the patients were using soap for hair washing.

Microscopical examination revealed that majority of the patients i.e. 76% had rough hair, 24% patients had smooth hair; 44% patients reported to have few spores in hair roots and shaft, 20% patients observed having many spores in hair roots and shaft and remaining 36% patients reported to have occasional spores in hair and root and shaft.

As per the symptom wise distribution of 25 patients, 100% of the cases reported with hair loss and hair fall (*Khalitya*) as well, 60% had dandruffs (*Darunaka*) whereas 36% reported with itching over head (*Shirakandu*). Among associated complaints, maximum numbers of patients e.g. 88% were suffering from Dry hairs (*Kesha Rukshata*), 80% had thin hairs (*Kesha Tanutva*), 56% had burning sensation in the scalp (*Keshabhoomi Daha*), 48% had cold (*Pratishyaya*), 40% had foul smelling from the scalp (*Keshabhoomi daurgandha*), 32% had stiffened hairs (*Kesha Kathinya*), 16% had greying of hairs (*Palitya*).

Table 1: Effect of therapy on Cardinal features of *Indralupta*.

Effect of Therapy on Symptoms	BT	AT	MD	% of relief	SD	SE	t value	P
Hair loss	1.32	1.04	0.28	21.21	0.47	0.15	1.96	<0.05
Hair falling (<i>Khalitya</i>)	1.91	0.45	1.46	76.19	0.52	0.16	9.24	<0.001
Dandruff (<i>Darunaka</i>)	1.73	0.2	1.53	88.43	0.74	0.26	6.18	<0.001
Itching over head (<i>Shira kandu</i>)	2.00	0.33	1.67	83.50	0.45	0.20	9.00	<0.001

Effect of therapy on Cardinal features of *Indralupta* of 22 patients

After the completion of the treatment of *Dhatra patra swarasa lepa* for 30 days, the effect on the cardinal symptoms of *Indralupta* (AA) showed highly significant relief in Hair falling (*Khalitya* – 76.19%), Dandruff (*Darunaka* – 88.43%) and Itching over the head (*Shira kandu* – 83.50%), whereas the effect of the *lepa* on hair loss was proved to be effective (21.21%) and is statistically significant at P<0.05 level (table no. 1).

Table 2: Effect on associated symptoms in patients of *Indralupta*.

Effect of Therapy on Associated Symptoms	BT	AT	MD	% of relief	SD	SE	t value	P
Dry hair (<i>Kesha rukshata</i>)	1.91	0.73	1.18	61.90	0.40	0.12	9.69	<0.001
Thin hair (<i>Kesha tanutva</i>)	1.64	1.45	0.19	11.11	0.40	0.12	1.49	>0.10
Stiffened hairs (<i>Kesha kathinya</i>)	1.25	0.75	0.50	40.00	0.58	0.29	1.73	>0.10
Burning sensation in scalp (<i>Keshabhoomi daha</i>)	2.00	0.14	1.86	93.00	0.35	0.13	15	<0.001
Foul smell from scalp (<i>Keshabhoomi daurgandha</i>)	2.00	0.20	1.80	90.00	0.38	0.14	13	<0.001
Greying of hairs (<i>Palitya</i>)	1.50	1.25	0.25	16.67	0.71	0.54	1.0	>0.10
Coryza (<i>Pratishyaya</i>)	2.42	0.67	1.75	72.31	0.44	0.20	9.00	<0.001

Effect on associated symptoms in patients of *Indralupta* of 22 patients:

After the completion of the treatment of shiro lepa for 30 days, its effect on the associated complaints was observed (table no. 2), which have been presented in tabular format. It provided highly significant relief in *Kesha Rukshata* (61.90%), *Keshabhoomi Daha* (93%), *Keshabhoomi Daurgandha* (90%) and *Pratishyaya* (72.31%) while it provided insignificant relief ($P>0.1$) in *Kesha Tanutva* (11.11%), *Palitya* (16.67%) and *Kesha kathinya* (40.00%).

Overall effect of Therapy

Overall effect of therapy shows that among 22 research subjects who completed the treatment schedule 9.09% patients were observed with cured result (2 patients), 45.45% patients were markedly improved (10 patients), 27.27% patients were moderately improved (6 patients) while 4.54% patients had mild improvement (1 patient) and 13.64% of the cases remained unchanged (3 patients).

DISCUSSION

Maximum number of registered patients i.e. 40% belonged to the age group of 36 – 45 years. The reason behind this is that during this age individuals are almost anxious about their career, looks and hair fall damages. Hormonal disturbance, emotional ups and downs are common in this age group. The male gender comprised the majority of the cases registered i.e., 56% proportion. The reason behind this may be that male is more prone towards stress and environment hazards. Androgenic alopecia, commonly called male pattern baldness, was caused by the predominance of the male sex hormone, testosterone, which women also have in trace amounts under normal conditions. The hormonal process of testosterone converting to Dihydrotestosterone (DHT), which then harms hair follicles, happens in both men and women. Majority of the patient i.e., 60% were observed in positive family history. Male pattern baldness sufferer inherits hair follicle which is genetically sensitive to DHT. Those who develop their first patch of AA before the age of thirty have a higher possibility that other family members will also have it.

Discussion on etiological factors: In the present study, 56%, 76%, 56%, 68% and 40% patients were having dominancy of *Kshara Pradhana* (alkaline food stuffs), *Katu* (pungent), *Lavana* (salty), *Amla* (sour) and *Madhura Rasa* (sweet taste) respectively in their routine diet. These *Nidanas* (causative factors) are responsible for the vitiation of *Pitta*, *Vata* and *Kapha*. 64%, 56% and 76% patients were habituated to consume the *Guru* (heavy food stuffs), *Snigdha* (oily food stuffs) and *Ushna Guna Pradhana* (hot in nature) food stuffs respectively in their routine diet. These qualities are responsible for the vitiation of *Kapha* and *Pitta* which leads to falling of hair. 32%, 84% and 44% of patients were having the habit of awakening at night (*Prajagarana*), day sleeping (*Divaswapna*) and exposure to sunlight (*Atapa Sevana*) in their routine habit which is responsible for vitiation of *Vata*, *Kapha* and *Pitta*. 60% and 84% of patients were having anger outbursts (*Krodha*) and anxious thoughts (*Chinta*) respectively, which is responsible for the vitiation of *Pitta* and *Vata*. Thus, Sushruta's version of involvement of *Tridoshas* in the manifestation of *Indralupta* is also vindicated.

Discussion on Effect of therapy

The local application of the juice of *Dhatūra* leaves (*Datura patra swaras*) over the scalp for a period of 30 days has provided the better result in the symptoms of *Indralupta* (AA). Relief of 21.21%, 76.19%, 88.43% and 83.50% in the symptoms of hair loss, hair falling, dandruff and itching over the head respectively are seen with statistically significant results. It provided highly significant relief in dry hairs (61.90%), foul smell from scalp (90%), Coryza (72.31%) and burning sensation in scalp (93%) while it provided insignificant relief in thin hairs (11.11%), greying of hairs (16.67%) and stiffened hairs (40.00%). This shows the local application of *Datura patra swaras lepa* over the scalp is not only beneficial in reducing the symptoms of *Indralupta* (AA) but also improves the quality of the hair. For the treatment of hair loss, the local application in the form of oil massage, *lepa* etc are much beneficial when compared to the oral medications as the absorption of the drugs through hair roots are faster in local applications.

Probable mode of action of *Dhatūra patra swarasa*

Even though the seeds of *Dhatūra* are proven in treating the hair loss, dandruff and lice scientifically, very minimal studies regarding the efficacy of leaves in the treatment of hair loss are available. *Dhatūra* leaves have bitter taste and similar characteristic odour like *Dhatūra* seeds.^[14] The leaves are used in preparing herbal plasters. These are also used as anodyne and antispasmodic.^[14] For the treatment of hair loss, the local application in the form of oil massage, *lepa* etc are much beneficial when compared to the oral medications as the absorption of the drugs through hair roots are faster in local applications. *Lepa* applied over the scalp by the effect of its *rasa*, *guna*, *veerya* and *vipaka* is absorbed by the hair follicles and which in turn causes the pores to open up and by the *prabhava* of the drug hair growth can be observed. *Dhatūra* also plays a pivotal role in promoting hair growth. It holds high significance in promoting blood circulation in the scalp and hair follicles, which in turn enriches the roots by bringing in more nutrients through the blood supply and help in the growth of new hair.^[15] Ayurveda strongly suggests that a salve made from *Dhatūra* juice when applied onto the scalp regularly not only cures male pattern of baldness but also prevents premature greying of hairs, sudden hair fall and different types of scalp infections.^[15]

Dhatūra is having the properties like *Twak doshahara*, *Jantughna*,^[16] anti inflammatory, antioxidant properties and due to these properties the medicine prevents recurrent infections and reduces inflammatory process which may be the cause for the hair loss. Due to the properties like *keshya*, *twak dosha hara*, *kandughna*¹⁶ it promotes the hair growth and may help in eradication of fungus and bacterial infection affecting the skin.

CONCLUSION

In etiopathological study *Lavana* (salty), *Katu* (spicy) and *Kshara Pradhana Dravya* (alkaline food stuffs), *Guru* (heavy), *Snigdha* (oily food stuffs) and *Ushna Guna* (hot foods), *Raja* (exposure to dust) and *Atapa Sevana* (exposure to sunlight), *Prajagarana* (awakening at night), *Divaswapa* (day sleeping), *chinta* (worries) and *Krodha* (anger) are the responsible etiopathological factors for the development of *Indralupta*.

In clinical study, *Shirolepa* (application over the scalp) with *Dhatūra patra swarasa* (juice of *Dhatūra* leaves) has been found to be effective in the condition of hair fall.

REFERENCES

1. Agnivesha; Charaka Samhita, revised by Charaka and Dridhabala with Sanskrit Commentary Chakrapani's Ayurveda deepika, edited by Vaidya Jadavaji Trikamji Acharya; Chaukhambha Sanskrit Sansthan, Varanasi; 4th edition, 1994; 187.
2. Yu M., Hair follicles and their role in skin health; Exp. Rev. Dermatol, 2006; 1: 855-871.

3. Borakhade Vasundhara R, Khot Varsha S: 'Treatment of Indralupta with Local Jalukavacharana and Application of Gunja beeja; International Journal of Herbal medicine, 2015; 3(2): 24-25.
4. Evan Darwin, Penelope A Hirt, Raymond Fertig; "Alopecia areata – Review of Epidemiology, clinical features, pathogenesis and new treatment options"; International J of Trichology, 2018; 10(2); 51-60.
5. Ralston Stuart H., Penman Ian D., Strachan Mark W.J., Hobson Richard P; Hair Disorders; Davidson's principles and practice of medicine; Elsevier Ltd, Edinburgh; 23rd edition, 2018; 1258-1259
6. Tan E, Tay YK, Goh CL, Chin Giam Y; The pattern of Alopecia areata in Singapore – A study of 219 Asians; Int J Dermatol, 2002; 41: 748-53.
7. Al-Mutairi N, Eldin ON; Clinical profile and impact on quality of life; Seven years experience with patients of Alopecia areata; Indian J of DermatolVenereolLeprol, 2011; 77: 489-93.
8. Seetharam KA; Alopecia areata – An update; Indian J DermatolVenereolLeprol, 2013; 79: 563-75.
9. Shingadiya RK, Sapkota YR, Bedarkar PB, Patgiri BJ, Prajapati PK; Efficacy of Ayurvedic Classical and Modified Formulations on Skin Disorders; Rasamrita, 2017; 1-17.
10. Vagbhata; Ashtanga Hridayam with Sanskrit commentaries Sarvangasundara of Arunadatta and Ayurvedarasayana of Hemadri, collated by Anna Moreswar Kunte and Krishna Ramchandra Shastri Navre; Rashtriya Sanskrit Sansthan, New Delhi; Reprinted edition, 2002; 859.
11. Sushruta; Sushruta Samhita with Sanskrit commentary Nibandha Sangraha of Dalhana, edited by Vaidya Jadavji Trikamji Acharya and Narayan Ram Acharya; Chaukhambha Orientalia, Varanasi; 8th edition; 2005; p. 322
12. Srikanth Murthy SR; Ashtanga Hridaya; 5th edition; Chaukhambha Krishnadas Academy, Varanasi; 2009; 222-229
13. Vagbhata; Ashtanga Hridayam with Sanskrit commentaries Sarvangasundara of Arunadatta and Ayurvedarasayana of Hemadri, collated by Anna Moreswar Kunte and Krishna Ramchandra Shastri Navre; Rashtriya Sanskrit Sansthan, New Delhi; Reprinted edition, 2002; 862.
14. Priyanka soni et al; Pharmacological properties of Datura stramonium L. as a potential medicinal tree – an overview; Asian Pacific Journal of Tropical Biomedicine; Dec., 2012; 2(12): 1002-1008.
15. "Datura: Benefits, Uses, Formulations, Ingredients, Method, Dosage and Side Effects"; <https://www.netmeds.com/health-library/post/datura-benefits-uses-formulations-ingredients-method-dosage-and-side-effects> (as cited on 10.06.2020).
16. Sharma P.V.; Dravyaguna Vijnana, Vol. II; Chaukhambha Bharati Academy, Varanasi; Reprinted edition, 2003; 500-502.