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 age.\(^4\) Pathognomonic ‘exclamation mark’ hairs are seen (broken hairs, tapering towards scalp) during active hair loss.\(^5\) 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 affected with the disease in comparison to children and women.\(^7\) 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 raktadosha 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.[11] Among these measures Dhatura patra swarasa lepa (the application of the juice extracted from the leaves of Dhatura plant over head) is one mentioned by Vagbhata in Ashtanga Hridaya.[13]

AIMS AND OBJECTIVES
To evaluate the effect of Dhatura 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.
- 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
Dhatura 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.

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 - 0
- Mild (hair fall on washing) - 1
- Moderate (hair fall on combing) - 2
- Severe (hair fall on simple strengthening) - 3

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

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 (Khalītya) 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 Raksatā), 80% had thin hairs (Kesha Tanutva), 56% had burning sensation in the scalp (Keshabhoomi Daha), 48% had cold (Prattishyaya), 40% had foul smelling from the scalp (Keshabhoomi daurgandha), 32% had stiffened hairs (Kesha Kallhinya), 16% had greying of hairs (Palītya).

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

<table>
<thead>
<tr>
<th>Effect of Therapy on Symptoms</th>
<th>BT</th>
<th>AT</th>
<th>MD</th>
<th>% of relief</th>
<th>SD</th>
<th>SE</th>
<th>t value</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hair loss</td>
<td>1.32</td>
<td>1.04</td>
<td>0.28</td>
<td>21.21</td>
<td>0.47</td>
<td>0.15</td>
<td>1.96</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Hair falling (Khalītya)</td>
<td>1.91</td>
<td>0.45</td>
<td>1.46</td>
<td>76.19</td>
<td>0.52</td>
<td>0.16</td>
<td>9.24</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Dandruff (Darunaka)</td>
<td>1.73</td>
<td>0.2</td>
<td>1.53</td>
<td>88.43</td>
<td>0.74</td>
<td>0.26</td>
<td>6.18</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Itching over head (Shirakandu)</td>
<td>2.00</td>
<td>0.33</td>
<td>1.67</td>
<td>83.50</td>
<td>0.45</td>
<td>0.20</td>
<td>9.00</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

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

After the completion of the treatment of Dhatura patra swarasa lepa for 30 days, the effect on the cardinal symptoms of Indralupta (AA) showed highly significant relief in Hair falling (Khalītya – 76.19%), Dandruff (Darunaka – 88.43%) and Itching over the head (Shirakandu – 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.

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

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 Rakshata (61.90%), Keshaboomi Daha (93%), Keshaboomi Daurgandha (90%) and Pratisbyaya (72.31%) while it provided insignificant relief (P>0.1) in Kesha Tanutva (11.11%), Paliyta (16.67%) and Kesha kathinya (40%).

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 habitude to consume the Gura (heavy food stuffs), Snigdha (oily food stuffs) and Ushna Gana 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 (Prajagarama), 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 Dhatura 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 Dhatura patra swarasā

Even though the seeds of Dhatura 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. Dhatura leaves have bitter taste and similar characteristic odour like Dhatura seeds. The leaves are used in preparing herbal plasters. These are also used as anodyne and antispasmodic. 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. Dhatura 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. Ayurveda strongly suggests that a saline made from Dhatura 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.

Dhatura is having the properties like Twak dosahara, Jantughna, 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 it promotes the hair growth and may help in eradication of fungus and bacterial infection affecting the skin.

CONCLUSION

In etiopathological study Lavona (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), Prajagaravana (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 Dhatura patra swarasā (juice of Dhatura leaves) has been found to be effective in the condition of hair fall.

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