

# ROLE OF *ANKOLADITAILA* IN CHILDHOOD SEBORRHEIC DERMATITIS W. S. R. TO *ARUMSHIKA*

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## INTRODUCTION-

Scalp skin and hair plays an important part in the personality and appearance hence a play a vital part in enhancing the beauty of the child. Increasing incidence and prevalence of scalp skin and hair disorders such as Seborrheic Dermatitis in children has been emerging as real challenge in paediatric age group. Hence need of the hour isto discover effective and safe drugfor management of childhood Seborrheic Dermatitis. Seborrheic Dermatitis can be comparedwith *Arumshika* explained in Ayurveda, which is categorised as *Shirokushtha*. In an Ayurvedic text *Sahastrayogam*, *AnkoladiTail* has been mentioned a good remedy for *ShiroKushtha*, and same was taken in the present clinical study to evaluate efficacy of *AnkoladiTail* in themanagement of Seborrheic Dermatitis in paediatric practice.

In the present world today, people are more conscious about their children's health and appearance. Scalp skin and hair plays an important part in the personality or the appearance of the people. Today, changed life style and junk food habits resulting in such type of problems. Over conscious parents with increased awareness regarding hair care, and indulgence in faulty treatment modality for fast cure might have been the cause for same.<sup>1</sup> seborrheic dermatitis and pityriasis capitis (cradle cap) are common in early childhood. According to one survey of 1,116 children', the overall age and sex adjusted prevalence of seborrheic dermatitis was 10 percent in boys and 9.5 percent in girls. The highest prevalence occurred in the first three months of life, decreasing rapidly by one year of age, and slowly decreasing over the next four years. Most patients (72 percent) had minimal to mild seborrheic dermatitis. Pityriasis capitis occurred in 42

percent of the children examined (86 percent had a minimal to mild case). Prevalence estimates for older persons are consistently higher than estimates for the general population.<sup>2</sup> The prevalence rate of Seborrheic Dermatitis is 3-5%, with a worldwide distribution. Dandruff, the mildest form of this dermatitis, is probably far more common and is present in an estimated 15-20% of the population<sup>3</sup>. The prevalence of Seborrheic Dermatitis in HIV-positive and AIDS patients is between 34%<sup>4</sup> and 83%<sup>5</sup> as opposed to 3% in the general population.

Seborrheic Dermatitis is a common chronic inflammatory papulosquamous condition that usually occurs in sebum rich areas, including the scalp, face, upper chest, trunk and back. Dandruff is a mild form of Seborrheic Dermatitis. It is also common during infancy, known as cradle cap involving the scalp. Cradle cap usually resolves by eight to 12 months of age. Intermittent, active phases of Seborrheic Dermatitis manifest with burning, scaling, and itching, alternating with inactive periods. In modern medicine Dandruff/Seborrheic Dermatitis is treated by multiple antifungal or topical steroidal anti-inflammatory agents but this line of management has limitations, due to the cost factor, poor domesticity, and adverse effects of steroidal agents, relapsing nature of disease. This generates a requirement to discover and employ ancient knowledge of *Ayurveda* to locate accurate solution of the disorder which is easy to use in children, preventive as well as curative, cost effective, long lasting, devoid of adverse effect. Because ideal treatment is one which cures the disease completely and does not give any side effects which may be the cause of another disease. Due to discoloration and disfiguration of skin is basic requirement for categorization under *Kushtha* practically but predominantly it is occurred over

scalp (*Kapala/Murdha Pradesha*) so it can be counted under *Shiro Kushtha*. Review of different classical references infers that, *Arumshika* can be classified under the heading of *Shiro Kushtha*.

Trial drug (*Ankoladi Taila*) in present study was taken from *Sahastrayogam* book a famous clinical oriented reference book from Kerala written on the base of experiences of *Astha Vaidhya's* of Kerala. (*Phalashruti* was given as "*Shiro Kushtha Vinashanam*"). This book quote effectiveness of *Ankoladi Taila* in *Shirokushtha* which can be better correlated with *Arumshika*. In the light of above background, the present study aimed to evaluation of the efficacy of *Ankoladi Taila* in the management of Seborrheic Dermatitis in paediatric practice.

#### AIMS & OBJECTIVES-

Evaluation of the efficacy of *Ankoladi Taila* in the management of Seborrheic Dermatitis in paediatric practice.

#### MATERIAL & METHODS-

The present clinical study was a randomized control trial. 2 groups, Interventional study type, open label masking, sample size of 40 patients (20 in each group).

#### Inclusion criteria-

1. Patients of infantile age to 16 years was selected.
2. Patients with pigmentary changes in the scalp region with associated with scalp infection.
3. Patients with secondary bacterial infection and candidiasis localized scalp involvement and devoid of systemic manifestation.

*Ankoladi Taila* (Batch No.-A0069). The medicine was manufactured at National institute of Ayurveda pharmacy. The control drug (coconut oil) was also provided by pharmacy

#### Assessment criteria-

- A Standard grading system was developed to assess the improvement in treated cases based on symptomology of the Seborrheic Dermatitis.
- Photographic evidences were made to assess the pigmentary changes & overall improvement.

To grade dandruff/ Seborrheic Dermatitis severity, the scalp is divided into six anatomical sections (frontal, right parietal, left parietal, right temporal, left temporal, occipital). Shaving of scalp or a

#### Exclusion criteria-

1. Patients above 16 years of age.
2. Extensive involvements of deeper skin tissue and tendency towards Psoriasis was excluded.
3. Patients associated with other generalized skin disorders of varied etiology and manifestations was excluded from the study.
4. Skin disorders with hereditary, metabolic, other chronic disorders and secondary lesions was excluded.
5. Patients who are on long term drug therapies was excluded.
6. Patients with Seborrheic Dermatitis extending to face shoulder & neck region was excluded.

#### STUDY DESIGN AND DURATION-

The present clinical study was a randomized control trial with 2 groups, Interventional study type, open label masking, and sample size of 40 patients (20 in each group). The duration of treatment was 60 days.

- Group A- In this group Trial drug *Ankoladi Taila* (*Sahastrayogam Taila Prakarana*) used for External application, twice daily 10ml/day for the affected part of the scalp after shaving the scalp hairs.
- Group B -In this group control drug (coconut oil) used for external application twice daily 10ml/day for the affected part of the scalp after shaving the scalp hairs.

comb is used to part the hair in each area to give a clear view of the scalp. Each section was assessed for 6 subjective parameters i.e. 1) Flakes, 2) Redness, 3) Itching, 4) Burning, 5) Discharge, 6) Boils that are adhering to the scalp skin using a 0 to 3 scale. Loose flakes in the hair are not considered in the grading. The final, or total score is the sum of the grades for all six scalp sections, which results in a scale ranging from 0 to 18

**Table no. 1 Assessment criteria-**

| S.NO. | Symptom         | Criteria  | Severity | Grading |
|-------|-----------------|---|----------|---------|
| 1.    | Flaking/Scaling | No flaking  | No       | 0       |
|       |                 | Slightly flaking                                    | Mild     | 1       |
|       |                 | Flakes with erythema                                | Moderate | 2       |
|       |                 | Scaly pimples appear                                | Severe   | 3       |
| 2.    | Redness         | No redness  | No       | 0       |
|       |                 | Mild redness at site                                | Mild     | 1       |
|       |                 | Redness with elevated edge at the site and erythema | Moderate | 2       |
|       |                 | Redness with congestion and swelling                | Severe   | 3       |
| 3.    | Itching         | No Itching  | No       | 0       |
|       |                 | Rarely itching                                      | Mild     | 1       |
|       |                 | Itching subside after application of oil            | Moderate | 2       |
|       |                 | Itching does not subside after application of oil   | Severe   | 3       |
| 4.    | Burning         | No burning  | No       | 0       |
|       |                 | Mild type of burning in localized area              | Mild     | 1       |
|       |                 | Burning in localized area and adjacent area         | Moderate | 2       |
|       |                 | Continuously burning in generalized area            | Severe   | 3       |
| 5     | Discharge       | No discharge  | No       | 0       |
|       |                 | Watery oozing from lesion                           | Mild     | 1       |
|       |                 | Oozing with thick purulent                          | Moderate | 2       |

|   |       |   |          |   |
|---|-------|---|----------|---|
|   |       | discharge                                       |          |   |
|   |       | Continuous thick purulent blood mixed discharge | Severe   | 3 |
| 6 | Boils | No boil formation                               | No       | 0 |
|   |       | 1-2 boils at site of itching                    | Mild     | 1 |
|   |       | Multiple boils(crops) clear fluid               | Moderate | 2 |
|   |       | Multiple-boils(crops) with exudate              | Sever    | 3 |

### Statistical analysis-

●The information gathered on the basis of observation made about various parameters was subjected to statistical analysis in terms of Mean, Standard Deviation and Standard error (SE). All the results calculated by using software: Graph Pad In Stat 3.

●All data was nonparametric so Wilcoxon matchedpairs signed ranks test was used, and results calculated in each group.

● For calculating the inter group comparison, MannWhitney Test was used. The result was interpreted as-

□ Non-significan:  $P > 0.05$

□ Significant:  $P < 0.05$

□ Highly significant:  $P < 0.001, P < 0.001, P < 0.0001$

●9-12 years age group was the most affected group. (55%)

● Males were more prone to Seborrheic Dermatitis as compared to females. (57.5%)

●Maximum number of cases were belonging to urban area, Hindu religion, vegetariandiet, middle socioeconomic status and graduated family. (57%)

●Maximum number of cases exhibited Chronicity of 1-2year, no family history, and aggravation in winter season and relieved by local measures. (37.5%)

●Maximum patients of trial were Vata-Kaphaja Prakriti, Mandagni, Madhyama Koshtha, and excess intake of Lavana- Amla Rasa. (77.5%)

●Maximum patients of trial belongsto poor personal hygiene, irregular head wash and frequently change their hair oil for Shiro Abhyanga. (77.5%)

●The present study shows maximum patients were belongs to positive history of Infantile Seborrheic Dermatitis (Cradle Cap). (72.5%)

●Maximum patients done their first hair cut in less than one year of age. (67.5%)

●Maximum patients had flaking as a chief Complaint followed by itching, redness discharge andBoil. Incidence of flaking/scaling observed maximum in left parietal area of scalp while Boils wasmaximum in

Right Parietal and occipital area of scalp.(65% )

- *Ruksha* hair quality and occasionally hair fall was observed in maximum patients of trial. (62%)
- Maximum patients were belong to dry/Scaly lesion, irregular border, normal to dull red in colour and rough skin texture. (57%)

**Table No. II: Showing effect of therapy in subjective parameters. (Wilcoxon matched paired single ranked test)**

| variable  | Group | Mean BT | Mean AT | DIFF. | % Relief | SD(+) | SE(+) | P       | S  |
|-----------|-------|---------|---------|-------|----------|-------|-------|---------|----|
| Flaking   | Gr.A  | 6.20    | 0.70    | 5.50  | 88.70    | 2.14  | 0.47  | <0.0001 | HS |
|           | Gr.B  | 7.05    | 3.40    | 3.65  | 51.77    | 1.84  | 0.41  | <0.0001 | HS |
| Redness   | Gr.A  | 3.35    | 0.10    | 3.25  | 97.01    | 3.09  | 0.69  | <0.0001 | HS |
|           | Gr.B  | 3.35    | 1.25    | 2.00  | 61.53    | 1.85  | 0.41  | <0.0001 | HS |
| Itching   | Gr.A  | 7.45    | 6.95    | 6.95  | 93.28    | 3.22  | 0.71  | <0.0001 | HS |
|           | Gr.B  | 7.70    | 4.33    | 4.33  | 56.23    | 2.27  | 0.43  | <0.0001 | HS |
| Burning   | Gr.A  | 1.00    | 0.95    | 0.95  | 95       | 1.50  | 0.33  | <0.05   | S  |
|           | Gr.B  | 0.45    | 0.25    | 0.25  | 55.55    | 0.63  | 0.14  | >0.05   | NS |
| Discharge | Gr.A  | 1.85    | 1.80    | 1.80  | 97.29    | 2.62  | 0.58  | <0.01   | HS |
|           | Gr.B  | 2.60    | 1.40    | 1.40  | 53.84    | 2.03  | 0.45  | <0.01   | HS |
| Boil      | Gr.A  | 2.05    | 1.50    | 1.50  | 73.17    | 2.54  | 0.56  | <0.05   | S  |
|           | Gr.B  | 2.10    | 0.95    | 0.95  | 45.23    | 1.57  | 0.35  | <0.05   | S  |

In intergroup comparison highly significant gain was seen in group A over group B at the level of ( $P < 0.01, < 0.0001$ ) for flaking/scaling, redness, itching and discharge. Whereas non-significant ( $P > 0.05$ ) gain was found in group A over B, for symptoms like Burning and Boils.

## DISCUSSION-

Maximum content of *Ankoladi Taila* are having *Vata Kapha Shamaka* property. Further *Taila* itself is quite beneficial in pathology of flaking. Redness (Raga) is due to *Pitta Prakopa* and *Rakta Dushti*. *Arumshika* is basically considered as *Shirogata Kushtha*. In present study *Arumshika* is having involvement of *Tridoshas* with *Rakta* and *Pitta* contribute for redness. *Pitta Shamaka* and *Rakta Shodhaka* property of *Ankoladi Taila* is good in counteracting these symptoms. *Twak Avaddharana* mediated by increased *Vata* and *Kledatva* of *Pitta* is responsible for itching (*Kandu*). *Kandu* is caused by vitiated *Kapha*<sup>6</sup> and *Pitta Dosha*<sup>7</sup> and *Ankoladi Taila* due to its *Kandughna* property of *Katu Rasadrugs* present in it, effectively provide relief from above symptoms. In *Arumshika Dahais* one of the major symptoms which is caused by *Pitta* and *Raktadushti*. It has been also attributed to *Pitta Dosha* and its relationship with *Rakta*. Local increase in temperature with increased blood flow and scalp skin due to abnormal *Pitta* will cause burning sensation.

Abnormal *Kleda* when collected in between hairs with poor hygienic care leads to further complications. *Katu Rasa* and *Shoshaka* properties in *Ankoladi Taila* stops the production of *Mala Rupa Kleda* (*Upahanti Kleda*) and *Tikta Rasa* dries up the discharge (*Kleda Upashoshana*)<sup>8</sup>. Drug *Ankoladi Taila* having *Vranaropaka* (*Ankola, Kutha, Tila*) and *Grahi* (*Bakula*) property due to *Katu* and *Tikta Rasa*. Meanwhile *Ankoladi Taila* is known for its *Dahaprashmana* and *Pittashamaka* effect.

| S.N. | Drug              | Part used   | Action and properties   | Indication  |
|------|-------------------|-------------|---|---|
| 1    | <i>Ankola</i>     | Seed        | Antifungals <sup>9</sup><br>antibacterial activity <sup>10</sup>  | <i>Krimi, sarpavisha, swavisha kushthaghna, visarpa, Twagdosha, Jwara</i> |
| 2    | <i>Maricha</i>    | Seed        | Antimicrobial agent <sup>11</sup> anti-inflammatory effect <sup>12</sup>  | <i>Agnimandhya, Shula, Shothavedanayukta Vikara, Krimi, Kushtha</i>       |
| 3    | <i>Kushtha</i>    | Root        | anti-inflammatory <sup>13</sup><br>anti-oxidant effect <sup>14</sup>  | <i>Shotha, Shula, Kushtha, Arnavikara, Agnimandhya</i>                    |
| 4    | <i>Bakula</i>     | leave       | Antibacterial <sup>15</sup><br>Antifungal <sup>16</sup><br>Antimicrobia <sup>17</sup>   | <i>Visha, Krimi</i>   |
| 5    | <i>Jambira</i>    | Fruit juice | antibacterial activity <sup>18</sup><br>Antifungal <sup>19</sup><br>Cytotoxic effect <sup>20</sup><br>antimicrobial activity <sup>21</sup><br>antidandruff activity <sup>22</sup> | <i>Krimi, Agnimandhya</i>   |
| 6    | <i>Tila taila</i> | Seed oil    | Wound contraction <sup>23</sup><br>Insecticidal activity <sup>24</sup><br>Antioxidant activity  | <i>Khalitya, Palitya, Krimi</i>   |

### CONCLUSION-

Hence it can be concluded that *Ankoladi Taila* is highly effective in reducing the severity of symptoms of Seborrhoea Dermatitis or *Arumshika*. Further external route of administration of drug proved to be safe, easy and effective in children. Prior shaving of scalp (*Mundana*) is extremely helpful for getting early and immediate effect of drug. Further study concludes that Incidences of *Arumshika* is quite higher in *Kapha Vataja Prakruti* and those with poor scalp hygiene. No adverse effect of the study drug was observed during the study.

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