

A CLINICAL STUDY ON EFFICACY OF SIYAKKAI (*ACACIA CONCINNA*) HAIR WASH ON *DARUNAKA* (PITYRIASIS CAPITIS)

Sujatha Ediriweera¹ A.M.H.Y Perera² K.K.V.S. Peshala³ K. M. S.P. Perera⁴ E.R.H..S.S.Ediriweera⁵

ABSTRACT:

Background: Skin constantly renews itself. Dead cells fall off as new cells form beneath them. In Pityriasis capitis, this process is abnormally accelerated. Its signs and symptoms are: cells shedding in clearly visible flakes, small white or grey scales accumulating on the scalp, itching and dry or greasy hair. *Darunaka* is disease described in Ayurveda under Ksudra Roga. Signs and symptoms of *Darunaka* are: *Daruna* (cracked scalp), *Kandura* (itching of the scalp) and *Ruksha* (dryness of the scalp). *Darunaka* can be correlated with Pityriasis capitis. **Aim:** Sri Lankans use Siyakkai (*Acacia concinna*) hair wash (SHW) as an effective home remedy for Pityriasis capitis. No known scientific study has been undertaken to evaluate the efficacy of SHW. Hence, the present study was undertaken **Methods:** SHW is prepared by adding 10g of powdered pods of *Acacia concinna* to 240ml of boiled water. Seventy patients having *Darunaka* were selected and randomly divided into two groups, named as Groups A and B. Group A, consisting of thirty five patients, was treated with 240ml of SHW every alternative day, for twenty eight days. Group B, consisting of thirty five patients, was treated with placebo, in the same regimen. Response to treatment was recorded and therapeutic effects were evaluated through symptomatic relief. **Results:** Patients treated with SHW showed a significant symptomatic relief in scaling, itching, dryness and greasiness of scalp after treatment. Interval between scaling also became longer. Some patients treated with SHW complained of rhinorrhea. **Conclusion:** It is concluded that *Darunaka* (Pityriasis capitis) can be relieved with Siyakkai Hair Wash.

Key Words: *Darunaka*, Pityriasis capitis, Siyakkai, *Acacia concinna*, hair wash.

INTRODUCTION:

Darunaka is a disease which is described under the *Kshudra Roga* in Ayurvedic texts. It is occurred by vitiation of *Kapha* and *Vata Doshas*. According to Ayurveda signs and symptoms of *Darunaka* are, *Daruna* (cracked scalp), *Kandura* (itching of the scalp) and *Ruksha* (dryness of the scalp)^{[1][2]}. *Darunaka* is correlated to Pityriasis capitis (Dandruff); a disease described in modern medicine. Though it is not a life threatening disease, it may become a cosmetic problem during second and third decades of life. There are two varieties of Pityriasis capitis; namely dry variety and greasy variety. Signs and symptoms of dry variety are dry hair, small white or gray scales with mild itching or without itching. Signs and symptoms of greasy variety are; greasy hair, yellow thick scales with moderate or severe itching^{[3][4]}. *Acacia concinna* (Family: Leguminosae; Sanskrit name: *Saptala*; Tamil name: Sheeyakay; English name: Soap pod) is a climbing or scandent shrub, that grows in tropical jungles throughout India. It is a plant which is used as an aperients, expectorant and a detergent^[5]. *A. concinna* is used by Sri Lankans as a natural substance to clean and wash hair as a home remedy for *Darunaka* (Pityriasis capitis). But, no scientific clinical study has been conducted to evaluate the efficacy of *A. concinna* in *Darunaka* (Pityriasis capitis). So, present study was undertaken to evaluate the effect of *A. concinna* in *Darunaka* (Pityriasis capitis).

MATERIAL AND METHODS:

Study design: A randomized single blind, parallel, placebo controlled clinical study.

Selection of drug:

Sri Lankans use *Siyakkai* (*Acacia concinna*) hair wash as an effective home remedy to manage the disease *Darunaka* (Pityriasis capitis). Hence SHW was selected for this study.

Preparation of Siyakkai hair wash:

Pods of the *A. concinna* were brought from the market and authenticated. The pods were powdered and stored in an airtight container. To prepare the hair wash, 240 ml of boiled water is added to 10g of powder of *A. concinna*, and allowed

¹MD (Ayu). Banaras Hindu University, Varanasi, India.

²Professor, Institute of Indigenous Medicine, University of Colombo, Rajagiriya, Sri Lanka.

^{3,4,5}Medical officer, Department of Ayurveda, Sri Lanka.

Corresponding author email: ayurvedadocsujatha@yahoo.com

Access this article online: www.jahm.in

Published by Atreya Ayurveda Publications, Ilkal-587125 (India) all rights reserved.

Received on: 19/09/14, Revised on: 21/09/14, Accepted on: 22/09/14

to cool in the normal temperature.

Preparation of placebo:

Permitted brown food colouring was added to 240ml boiled and cooled water.

Selection of patients

Sampling: Randomization was done by using a random numbers table.

Sample size: 70 patients

Study setting:

The patients suffering from *Darunaka* (Pityriasis capitis), were selected from Ayurveda Teaching Hospital, Borella, Sri Lanka from July 2007 to September 2009

Diagnostic criteria:

Cracking and itching in the scalp, excessive flaking and abnormal shedding of the skin, and dryness or greasiness in the scalp are the diagnostic criteria of *Darunaka* (Pityriasis capitis).

Inclusion criteria:

The patients with *Darunaka* (Cracking of the scalp), *Kandu* (Itching of the scalp), *Ruksha* (Dryness of the scalp) Greasiness of hair, hair falling and scaling of the scalp were included in the present study.

Exclusion Criteria:

Patients suffering from psoriasis, allergic conditions of the scalp and nutritional disorders were excluded from the research. Some patients who are affected with dandruff suffer from self-esteem problems and seemed to be anxious or depressed due itching and/or large amounts of ungainly flaking. Such patients were also excluded from the study.

Grouping

In this study, the patients were randomly divided in to two groups namely as Group A and Group B and each group consisting of thirty five patients.

These patients were instructed to take their normal diet and to avoid use of shampoo and soaps in hair washing during the treatment period.

After selection of patients, they were informed about the study and their written consent was obtained. Further, patients were made to understand that they are able to withdraw from the study any time without prior notice.

Lab Investigation:

Routine examination on blood (WBC/DC, Hb %) and urine Full report were done but no special laboratory investigation were carried out.

Intervention

Group A-

Drug: Siyakkai Hair Wash

Dose: 240ml of *Siyakkai* hair wash was applied on the scalp and hair, kept for 20 minutes and rinse off with portable water.

Duration: Every alternative day, for 28 days

Follow up: One month

Group B

Drug: Placebo for *Siyakkai* Hair Wash

Dose: 240ml of placebo for *Siyakkai* Hair Wash was applied on the scalp and hair, kept for 20 minutes and rinse off with rectify water

Duration: Every alternative day, for 28 days

Follow up: One month

Criteria for Assessment

Responses to the treatment were evaluated by using a specially prepared grading scale for clinical features. Grading of the Signs and Symptoms of *Darunaka* (Pitiriasis capitis) are given below.

A) *Darunaka* (Cracking of the scalp)

- 0 = No Cracking
- 1 = Cracking is limited to 5-10cm area
- 2 = Cracking is limited to 10-20cm area
- 3 = Cracking is limited to 20-30cm area
- 4 = Cracking can be seen all over the scalp

B) *Kandu* (Itching of the scalp)

- 0 = No Itching
- 1 = Occasionally feels Itching sensation
- 2 = Intermittently feels Itching sensation
- 3 = Often feels Itching sensation
- 4 = Always feels Itching sensation

C) *Ruksha* (Dryness of the scalp)

- 0 = No Dryness
- 1 = No Dryness in appearance but slight Dryness can be felt in the scalp
- 2 = Mild Dryness in the scalp that can be seen and felt
- 3 = Moderate dryness in the scalp that can be easily seen and felt
- 4 = Coarse dryness in the scalp that can prominently be seen and felt

D) Scaling of the Scalp

4a) Grading according to Duration of recurrence of scaling

- 0 = No Scaling from Scalp
- 1 = Scaling at four day intervals
- 2 = Scaling at three day intervals
- 3 = Scaling at two day intervals
- 4 = Scaling daily

4b) Grading according to the scaled area of the scalp

- 0 = No Scaling of the Scalp
- 1 = Scaled area limited to 5-10cm² of the scalp
- 2 = Scaled area limited to 10-15cm² of the scalp
- 3 = Scaled area limited to 15-20cm² of the scalp

4 = Scaled area is more than 20cm²

4c) Grading according to the size of the Scales

0 = No Scaling of the Scalp

1 = powder like scales are visible

2 = 1 mm scales are visible

3 = 1-2mm scales are visible

4 = Scales are larger than 2mm in size

E) Greasiness of Hair

0 = Normal hair

1 = Normal in appearance but feel slightly greasiness to touch.

2 = Mild greasiness that can be seen and felt

3 = Moderate greasiness that can be seen and felt

4 = Heavy greasiness making the hair excessively greasy to touch and in appearance

Statistical analysis:

Statistical analysis was done by using Mann–Whitney U test.

Table 1: Percentages of symptomatic relief during the treatment with Siyakkai Hair Wash and Placebo in *Darunaka* (Pityriasis capitis)

SYMPTOMS	Placebo Group			Treated Group		
	Completely relieved	Partially relieved	Unchanged	Completely relieved	Partially relieved	Unchanged
<i>Daruna</i> (cracking of the scalp)	00.00%	00.00%	100.00%	62.85%	37.15%	00.00%
<i>Kandu</i> (itching of the scalp)	5.00%	10.00%	85.00%	73.33%	26.67%	00.00%
<i>Ruksha</i> (dryness of the scalp)	10.00%	20.00%	70.00%	83.87%	6.45%	9.68%
Greasiness of the hair	00.00%	00.00%	100.00%	100.00%	00.00%	00.00%

Table 2: Symptomatic relief during the treatment with Siyakkai Hair Wash and Placebo in *Darunaka* (Pityriasis capitis).

Symptom	Placebo group (mean ± SE)		Treated group (mean ± SE)	
	Before treatment	After treatment	Before treatment	After treatment
<i>Daruna</i> (cracking of the scalp)	3.40 ± 0.16	3.40 ± 0.16	3.40 ± 0.16	0.49 ± 0.12 *
<i>Kandu</i> (itching of the scalp)	1.23 ± 0.21	1.14 ± 0.21	2.06 ± 0.20	0.26 ± 0.09 *
<i>Ruksha</i> (dryness of the scalp)	1.54 ± 0.18	1.29 ± 0.17	1.63 ± 0.17	0.14 ± 0.09 *
Greasiness	0.31 ± 0.15	0.31 ± 0.15	0.23 ± 0.14	0.23 ± 0.14

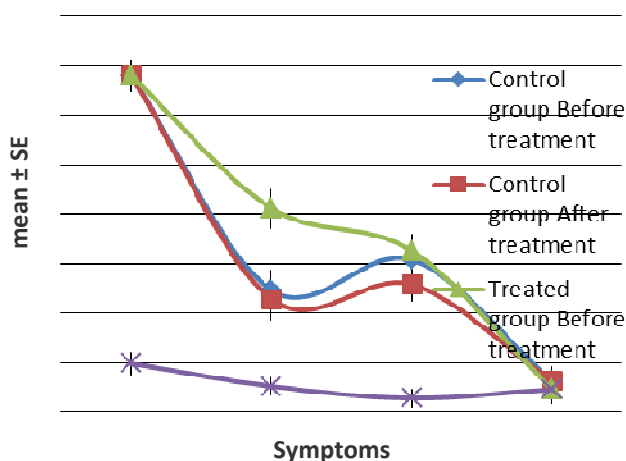
* p < 0.05 compare to control

Observations and results

These patients differ from each other in many ways such as *Prakriti* (body constitution), psychique and habits. They complained mostly of scaling, itching and dryness of the scalp and also of hair falling. The therapeutic effect was evaluated through symptomatic relief and results are given in Table 1, 2 and Fig. 1. In Group A, 62.85% of patients treated with Siyakkai Hair Wash reported complete absence of scaling after the treatment. Among the rest of the patients in Group A, the size of the scales was reduced to fine powder after the treatment. Longer time span between scaling was observed. Among the most patients in Group A, abnormal hair falling was stopped. More than 70% of patients treated with Siyakkai Hair Wash reported complete absence of itching, dryness and greasiness of the scalp after the treatment. 18.4% of patients treated with Siyakkai Hair Wash complained about rhinorrhoea and three patients gave up the treatment due to rhinorrhoea.

The follow up of the patients was done for one month after discontinuing the treatment. Recurrent attacks were not observed in the patients who were completely relieved during the follow up period.

Figure 1: Symptomatic Relief during the treatment with Siyakkai hair wash and Placebo in *Darunaka* (Pityriasis capitis) (mean ± SE)



DISCUSSION:

The patients treated with placebo did not show statistical significant symptomatic relief in scaling, itching of the scalp, dryness and greasiness of the scalp after the treatment.

The powder of *A.concinna* is slightly acidic and contains saponine which helps to cleanse the scalp without stripping of natural oils. *Darunaka* is a disease which occurs due to vitiation of *Vata* and *Kapha Dosha*. According to Ayurveda, *A. concinna* has the properties of *Kashaya Rasa*, *Ruksha Guna* and *Katu Vipaka* [6]. These properties of *A.concinna* pacifies vitiated *Kapha Dosha*. This plant also has the property of *Guru Guna*, [6] which pacifies vitiated *Vata Dosha*. *A. concinna* pacifies vitiated *Vata* and *Kapha Dosha* in the body. Pacification of *Vata* and *Kapha Dosha* in *Darunaka* would result in significant symptomatic relief in scaling, itching of the scalp, dryness and greasiness of the scalp after the treatment with Siyakkai Hair Wash.

Wuthi-udomlert and Vallisuta [7] reported that ethanolic and chloroform extract from Soxhlet extractor, and lyophilized extract and macerated ethanolic extracts of *Acacia concinna* possess average inhibitory zone diameter (IZD) compared to that of ketoconazole's. From the averaged IZDs of all fungal isolates, the antifungal effectiveness of lyophilized, chloroform, ethanolic (Soxhlet) and ethanolic (macerated) extract was at 18.38, 18.34, 16.67 and 14.06 mm, respectively. Natarajan, V. and Natarajan, S. [8] were recorded that ethanol, ethyl acetate and hexane extracts of pods of *Acacia concinna* possess significant antidermatophytic against the dermatophytes *Trichophyton rubrum*, *Trichophyton*

mentagrophytes, *Trichophyton violaecum*, *Microsporum nanum* and *Epidermophyton floccosum* with the MIC value of 62.5µg/ ml. According to findings of Wuthi-udomlert et al. and Natarajan et al., *A. concinna* has the properties to control *Darunaka* (Pitiriasis capitis).

Some patients treated with Siyakkai Hair Wash complained about rhinorrhea. *A.concinna* has the property of *Sheeta Veerya* and this may cause rhinorrhea among some patients

CONCLUSION:

It can be concluded that the Siyakkai Hair Wash completely or partially relieves the *Darunaka* (Pityriasis capitis), especially scaling, itching of the scalp, dryness and greasiness of the scalp

REFERENCES:

1. Susruta, Susruta Samhita, *Nidanasthana, Ksudra Roga Adhyaya* 13/35, Srikantha, K.R.(ed and trans), Chaukhambha orientalia,India, 2000;550.
2. Bhavamisra, Bhavaprakasa Vol 11, *Madhyama Kanda, Ksudra Roga Adhyaya* 61/15, Srikantha,K.R(edand trans),Chowkhambha Krishnadas Academy, India, 2005; 654
3. Dawber, R. and Neste, D.V., *Hair and scalp disorders*, Martin dunitz Ltd, London, United Kingdom, 1997; 191-193.
4. Behl, P.N., Agraval, A.and Srivastava,G., *Practice of dermatology*, CBS publishers, India, 2004; 403.
5. Nadkarni, K.M., *Indian Materia Medica*, Popular prakashan private ltd., Mumbai, India, 1996; 13-14
6. India curry.com, Shikakai (*Acacia Concinna*), 2012, [Cited 2012 July 12], Available from: www.indiacurry.com/ayurveda/shikakai.htm
7. Wuthi-udomlert, M. and Vallisuta, O., *In vitro* Effectiveness of *Acacia concinna* Extract against Dermatophytic Pathogens, *Pharmacognosy Journal* [serial on the Internet] 2011, [cited 2014 Sept 21]; 3 (19): 69-73 Available from: <http://cabdirect.org/abstracts/20113319625.html>
8. Natarajan, V. and Natarajan, S., Antidermatophytic Activity of *Acacia concinna*, *Global Journal of Pharmacology* [serial on the Internet] 2009, [cited 2014 Sept 21]; 3 (1): 06-07 Available from: [www.idosi.org/gjp/3\(1\)09/2.pdf](http://www.idosi.org/gjp/3(1)09/2.pdf)

Cite this article as: Sujatha Ediriweera, A.M.H.Y Perera, K.K.V.S. Peshala, K. M. S.P. Perera, E.R.H..S.S.Ediriweera. A Clinical Study on efficacy of *Siyakkai* (*Acacia Concinna*) Hair Wash on *Darunaka* (Pitiriasis Capitis). *J of Ayurveda and Hol Med (JAHM)*; 2014;2(7):14-17.

Source of support: Nil, Conflict of interest: None Declared