



## Research Article

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### EXPLORATORY STUDY ON THE EFFICACY OF PANCHATIKTAKA GHRITA IN THE MANAGEMENT OF ATOPIC DERMATITIS IN CHILDREN

Arya TU<sup>1</sup>, Shailaja U<sup>2</sup>, Arun Raj GR<sup>1\*</sup>, Sharvari S Deshpande<sup>1</sup>

<sup>1</sup>PG Scholar, Department of PG Studies in Kaumarabhritya, SDM College of Ayurveda and Hospital, Hassan, Karnataka, India

<sup>2</sup>Professor, Department of PG Studies in Kaumarabhritya, SDM College of Ayurveda and Hospital, Hassan, Karnataka, India

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#### \*Corresponding author

Dr Arun Raj GR, Final year Post graduate scholar, Department of Kaumarabhritya, SDM College of Ayurveda and Hospital, Hassan - 573201, Karnataka, India E-mail: drdrarunraj26@gmail.com

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#### ABSTRACT

The aim of this study was to investigate the effect of Panchatiktaka Ghrita in the management of Charmadala (Atopic Dermatitis) in children. Thirty two patients between the age group of one year to six years were taken for this study. The drug was given in a dose of 2.5 ml for 1-3 years age group and 5 ml for 4-6 years age group twice daily before food along with external application (same ghrita) twice daily after bath and at bed time for 2 months and progress or changes have been recorded periodically once in every 15 days and evaluation was made as per the criteria for assessment. There was statistically significant effect of Panchatiktaka Ghrita ( $p < 0.001$ ) on reduction of overall signs and symptoms of Charmadala. There was significant effect in AEC and ESR. The trial drug was found to be very effective in treating Charmadala.

**Keywords:** atopic dermatitis, charmadala, panchatiktaka ghrita

#### INTRODUCTION

Ayurveda emphasizes skin disorders with detail description of its causative factor, symptoms and treatment. The disease Charmadala has been explained in detail by Acharya Kashyapa<sup>1</sup> and its prevalence is seen more in children, during Ksheerada and Ksheeranada Avasta. The child develops the features like Kandu (itching), Rakta Varnata of Twak (reddish discoloration of skin) and Twak Rookshata (dryness of skin) with pidaka (papule) formation. It is mainly due to Vata Dosha. He further classified the disease into four types i.e. Vataja, Pittaja, Kaphaja and Sannipataja. This description closely resembles that of Atopic Dermatitis. The word Charmadala is mentioned under the heading of Kushta, that denote all skin disorders in Ayurvedic classics.<sup>2-5</sup> Atopic Dermatitis is one among them and is the most common dermatological conditions of infancy and early childhood. It is comprised of 28.46 % of the total pediatric skin diseases. It is a common chronic or relapsing dermatitis characterized by severe pruritis, occurring primarily in infants and children. The disease starts early with 35 % to 60 % of symptoms manifesting in the first year of life and 47 % to 85 % by 5 years of age.<sup>6</sup> Most of the Indian children develop the disease in infancy. There is increasing evidence that the prevalence of Atopic Dermatitis in children has increased over the past 30 years, although the reasons for this increase are unknown. The current prevalence is estimated to be between 10.0 % - 15.6 %.<sup>7</sup> Changes in environmental pollutants, breastfeeding pattern and urbanization are some of the reasons cited for this disease.<sup>8</sup>

#### MATERIALS AND METHODS

##### Objectives of the Study

To study the effect of Panchatiktaka Ghrita administered internally and externally in the management of Charmadala (Atopic Dermatitis) in children.

##### Source of Data

Total 32 numbers of patients diagnosed as Charmadala (Atopic Dermatitis) were selected from the out-patient and in-patient department of Kaumarabhritya, S.D.M College of Ayurveda and Hospital, Hassan, Karnataka, India. Ethical clearance was obtained from Institutional Ethic committee of SDM College of Ayurveda and Hospital, Hassan, Karnataka, India (IEC No. SDMAH/IEC/60/11-12 dated 01-04-2012).

##### Methods of Collection of Data

Patients who fulfilled the criteria for diagnosis and inclusion were selected for the study.

##### Research Design

Thirty two patients between the age group of one year to six years attending the Kaumarabhritya OPD and IPD of SDM College of Ayurveda and Hospital, Hassan, Karnataka, India with complaints of Charmadala were taken up for the study after following the criteria laid as above. Out of a total number of 32 patients taken for the study, three dropped out in the middle and did not continue treatment. The left out 29 patients were studied. Complete history and clinical examination of all these patients were carried out and recorded in a specially designed proforma.

### Diagnostic Criteria

The diagnosis was mainly based on the features of Charmadala as well as of Atopic Dermatitis, in Ayurveda and modern medicine respectively. Based on features such as,

- Kandu
- Raktavarnata
- Rookshata of Twak
- Charma Avadarana
- Pidaka formation

Based on Hanifin and Rajka's criteria for the diagnosis of Atopic Dermatitis, mentioned in API Text book of Medicine i.e.,

- Pruritis
- Typical morphology and distribution i.e. Distribution on the face and convexities in infants under the age of two and over flexures in older children
- Chronic or chronically relapsing dermatitis
- Personal or family history of atopy (e.g.:- Asthma, Allergic rhinitis, Atopic Dermatitis)

### Inclusion Criteria

The children of either gender between the age of one year and six year were included in the study.

### Exclusion Criteria

- Weeping eczemas, infected lesion were excluded from the study.
- Children having any other associated illness like diarrhea, acute respiratory infections and acute febrile or other disorders were excluded from the study.

### Mode of Administration of Drug

All patients were administered the drugs as follows,

1. Panchatikta Ghrita was given orally twice daily before food with honey as Anupana. The dose was fixed with respect to age i.e.
  - Children of 1 year to 3 years of age were given 2.5 ml
  - Children of 4 years to 6 years of age were given 5 ml
2. External application of the same Ghrita were given twice daily i.e. after bath and at bed time over the skin lesions.

### Duration of the study

The period of study was for 2 months and progress or changes have been recorded periodically once in every 15 days and evaluation was made as per the criteria for assessment.

### Assessment Criteria

- A scoring schedule was prepared based on number of eruption, intensity of itching, intensity of redness and area of skin lesion, and scoring was given initially and each during successive visit.
- Color photographs have been taken initially and at every further visit i.e. once in every fortnight. These photographs made main base for assessment which is detailed in Table 1.

Table 1: Assessment criteria and its scoring

Signs and symptoms		Score
<b>Kandu (Itching)</b>	No itching	0
	Itching present rarely	1
	Disturbing patients attention	2
	Severe itching disturbing patients sleep	3
<b>Srava (discharge)</b>	No srava	0
	Occasional srava after itching	1
	Mild srava after itching	2
	Profuse srava making clothes wet	3
<b>Pidaka (Papule)</b>	Absent	0
	1-2 pidaka in one affected part	1
	3-4 pidaka in one affected part	2
	More than 4 pidaka in one affected part	3
<b>Vaivarnyatha (Discoloration)</b>	Normal skin color	0
	Brownish red discoloration	1
	Blackish red	2
	Blackish	3
<b>Rookshatha (Dryness)</b>	No dryness	0
	Dryness with rough skin	1
	Dryness with scaling	2
	Dryness with cracking	3
<b>Daha (Burning sensation)</b>	Absent	0
	Rarely present	1
	Continuous	2
	Disturbing sleep	3
<b>Number of patches</b>	No patch	0
	1-2 patches	1
	3-4 patches	2
	More than 5 patches	3
<b>Area of patches</b>	In between 0-10 sq cm	1
	In between 10-20 sq cm	2
	More than 20 sq cm	3

### Follow up

Follow up was done for one more month after the completion of the treatment.

### Laboratory Investigations

Hemoglobin percentage, Total and Differential Leukocyte Count, Absolute Eosinophil Count

### Statistical Analysis of the Result

Statistical analysis was done using spss version 16. The completed 29 patients were taken for statistical analysis excluding the three drop outs. Friedman's test was used to analyze the significance of change in subjective parameters. Post hoc analysis with Wilcoxon signed rank test was conducted with a Bonferroni correction. This was done on parameters which show significance in Friedman's test, to interpret the time of significant change. Paired t test was done for analyzing the significance of objective parameters.

### Observations and Results

Age wise distribution of 32 patients showed that, maximum of 75 % (n = 24) were in the age group of 1 to 3 years followed by 25 % (n = 8) were in the age group of 4 to 6 years. Maximum of 56.2 % (n = 18) were belonging to male and 44 % (n = 14) were belonging to female. 94 % (n = 30) were belonging to Hindu religion followed by 3.1 % (n = 1) from Muslim and Christian community. 47 % (n = 15) were belonging to lower class followed by 22 % (n = 7) belonging to lower middle

class, 16 % (n = 5) were belonging to upper middle class, 9.40 % (n = 3) were belonging to upper lower class and 6.20 % (n = 2) were belonging to upper class. 59.4 % (n = 19) were residing in urban area and 41 % (n = 13) were residing in rural area. 56.2 % (n = 18) were belonging to mixed and 44 % (n = 14) patients were from vegetarian dietary habit. 62.5 % (n = 20) of patients were having disturbed pattern of sleep, followed by 37.5 % (n = 12) were with sound sleeping pattern. 44 % (n = 14) of patients were having regular bowel, followed by 37.5 % (n = 12) were with constipated bowel and 19 % (n = 6) were having irregular bowel pattern. 53 % were belonging to Vatakaphaja Prakruthi followed by 31 % patients were Vatapittaja Prakruthi and 16 % were belonging to Pittakaphaja Prakruthi. 44 % (n = 14) of patients were having poor hygienic condition followed by 31.2 % (n = 10) with moderate and 25 % (n = 8) were with good hygienic condition. 59.4 % (n = 19) were belonging to Ksheerannada followed by 41 % (n = 13) belonging to Annada avasta. 59.4 % (n = 19) of patients were having onset less than 1 year, while 31.2 % (n = 10) less than 2 year and 9.4 % (n = 3) showed onset less than 3 year. 69 % (n = 22) of lesions were over face and extremities, followed by 16 % (n = 5) of lesions over the trunk and 16 % (n = 5) of lesions were observed all over the body. 100 % (n = 32) of patients were having features like Kandu, Vaivarnyatha and Rookshatha, 78.12 % (n = 25) were having Charma Avadharana, 59.5 % (n = 19) were having Pidaka, 37.5 % (n = 12) were having Srava and 25 % (n = 8) were having Daha as Lakshana. 87.5 % (n = 28) were suffering from severe Kandu followed by 12.5 % (n = 4) suffering from moderate Kandu. Srava was absent in 65.6 % (n = 21) and 34.4 % (n = 11) were suffering from moderate Srava. Pidaka was absent in 41 % (n = 13) and

34.4 % (n = 11) were suffering from moderate Pidaka, 19 % (n = 6) were with severe and 6.2 % (n = 2) were suffering from mild Pidaka. 53.1 % (n = 17) were having moderate Vaivarnyatha followed by 47 % (n = 15) suffering from severe Vaivarnyatha. 78.1 % (n = 25) were suffering from severe Rookshatha followed by 22 % (n = 7) having moderate Rookshatha. Daha was absent in 75 % (n = 24), 19 % (n = 6) were having moderate Daha and 6.2 % (n = 2) were suffering with mild Daha. 81.2 % (n = 26) were having moderate Patches followed by 12.5 % (n = 4) having mild patches and 6.2 % (n = 2) were having severe patches. Spreading nature was present in 84.4 % (n = 27) of patients while spreading nature was absent in 16 % (n = 5) of patients. 37.5 % (n = 12) were having the dietary pattern of intake of curd at night, followed by 12.5 % (n = 4) were having the habit of eating fried fish and egg, 28.1 % (n = 9) were consuming all the three (curd, fried fish and egg) and 22 % (n = 7) were not having any specific dietary pattern. 56.2 % (n = 18) of patients were having cold climate as aggravating factor followed by 34.4 % (n = 11) as nothing specific and 9.4 % (n = 3) as hot climate. 75 % (n = 24) of patients were having medication as relieving factor followed by 25 % (n = 8) as nothing specific. 53.1 % (n = 17) patients had positive past history for some allergy and the remaining 47 % (n = 15) of patients gave no past history. 59.4 % (n = 19) patients had positive family history for some allergy and the remaining 41 % (n = 13) of patients had negative family history. The effect of Panchatiktaka Ghrita on Kandu, Srava, Pidaka, Vaivarnyatha, Rookshatha, Daha, Number of Patches, Area of Patches, biochemical parameters in Charmadala patients are detailed in Table 2 to Table 18. The overall effect of Panchatiktaka ghritha on 29 patients of Charmadala is shown in Table 19.

**Table 2: Results of Friedman test for Kandu in patients of Charmadala**

Parameter	N	Mean	Std. Deviation	Mean Rank	X <sup>2</sup> (4)	p value	Remarks
Kandu BT	29	2.83	0.384	4.48	105.78	<0.001	S
Kandu 15 <sup>th</sup> day	29	2.72	0.591	4.31			
Kandu 30 <sup>th</sup> day	29	1.97	0.421	2.98			
Kandu 45 <sup>th</sup> day	29	1.38	0.561	1.97			
Kandu 60 <sup>th</sup> day	29	0.90	0.489	1.26			

**Table 3: Results of Wilcoxon signed rank test for Kandu in patients of Charmadala with Bonferroni correction**

Parameter	Negative ranks			Positive ranks			Ties	Total	Z Value	p value	Remark
	N	MR	SR	N	MR	SR					
Kandu BT- Kandu 15 <sup>th</sup> day	3	2.00	6.00	0	.00	.00	26	29	-1.732	0.083	NS
Kandu 15 <sup>th</sup> day – Kandu 30 <sup>th</sup> day	22	11.5	253.00	0	.00	.00	7	29	- 4.690	<0.001	S
Kandu 30 <sup>th</sup> day- Kandu 45 <sup>th</sup> day	17	9.00	153.00	0	.00	.00	12	29	- 4.123	<0.001	S
Kandu 45 <sup>th</sup> day – Kandu 60 <sup>th</sup> day (AT)	14	7.50	105.00	0	.00	.00	15	29	- 3.742	<0.001	S
Kandu 60 <sup>th</sup> day (AT) – Kandu BT	29	15.0	435.00	0	.00	.00	0	29	- 5.010	<0.001	S

**Table 4: Results of Friedman test for Srava in patients of Charmadala**

Parameter	N	Mean	Std. Deviation	Mean Rank	X <sup>2</sup> (4)	p value	Remarks
Srava BT	10	2.00	0.000	4.25	34.420	<0.001	S
Srava 15 <sup>th</sup> day	10	2.00	0.000	4.25			
Srava 30 <sup>th</sup> day	10	1.40	0.516	3.00			
Srava 45 <sup>th</sup> day	10	1.10	0.316	2.35			
Srava 60 <sup>th</sup> day	10	0.30	0.483	1.15			

**Table 5: Results of Wilcoxon signed rank test for Srava in patients of Charmadala with Bonferroni correction**

Parameter	Negative ranks			Positive ranks			Ties	Total	Z Value	P value	Remarks
	N	MR	SR	N	MR	SR					
Srava 15 <sup>th</sup> day – Srava BT	0	0.00	0.00	0	.00	.00	10	10	0.000	1.000	NS
Srava 30 <sup>th</sup> day – Srava 15 <sup>th</sup> day	6	3.50	21.00	0	.00	.00	4	10	- 2.449	0.014	NS
Srava 45 <sup>th</sup> day – Srava 30 <sup>th</sup> day	3	2.00	6.00	0	.00	.00	7	10	- 1.732	0.083	NS
Srava 60 <sup>th</sup> day – Srava 45 <sup>th</sup> day	8	4.50	36.00	0	.00	.00	2	10	- 2.828	0.005	S
Srava BT– Srava 60 <sup>th</sup> day (AT)	10	5.50	55.00	0	.00	.00	0	10	- 2.919	0.004	S

**Table 6: Results of Friedman test for Pidaka in patients of Charmadala**

Variable	N	Mean	Std. Deviation	Mean Rank	X <sup>2</sup> (4)	p value	Remarks
Pidaka BT	17	2.24	0.664	4.26	59.326	<0.001	S
Pidaka 15 <sup>th</sup> day	17	2.06	0.556	3.94			
Pidaka 30 <sup>th</sup> day	17	1.88	0.332	3.59			
Pidaka 45 <sup>th</sup> day	17	1.18	0.636	1.97			
Pidaka 60 <sup>th</sup> day	17	0.65	0.493	1.24			

**Table 7: Results of Wilcoxon signed rank test for Pidaka in patients of Charmadala with Bonferroni correction**

Parameter	Negative ranks			Positive ranks			Ties	Total	Z Value	P value	Remarks
	N	MR	SR	N	MR	SR					
Pidaka 15 <sup>th</sup> day – Pidaka BT	3	2.00	6.00	0	.00	.00	14	17	-1.732	0.083	NS
Pidaka 30 <sup>th</sup> day – Pidaka 15 <sup>th</sup> day	3	2.00	6.00	0	.00	.00	14	17	-1.732	0.083	NS
Pidaka 45 <sup>th</sup> day – Pidaka 30 <sup>th</sup> day	12	6.50	78.00	0	.00	.00	5	17	-3.464	0.001	S
Pidaka 60 <sup>th</sup> day – Pidaka 45 <sup>th</sup> day	9	5.00	45.00	0	.00	.00	8	17	-3.000	0.003	S
Pidaka BT– Pidaka 60 <sup>th</sup> day (AT)	17	9.00	153.00	0	.00	.00	0	17	-3.739	<0.001	S

**Table 8: Results of Friedman test for Vaivarnyatha in patients of Charmadala**

Variable	N	Mean	Std. Deviation	Mean Rank	X <sup>2</sup> (4)	p value	Remarks
Vaivarnyatha BT	29	2.48	0.509	4.34	103.634	<0.001	S
Vaivarnyatha 15 <sup>th</sup> day	29	2.45	0.506	4.29			
Vaivarnyatha 30 <sup>th</sup> day	29	1.83	0.539	3.14			
Vaivarnyatha 45 <sup>th</sup> day	29	1.21	0.412	1.95			
Vaivarnyatha 60 <sup>th</sup> day	29	0.69	0.471	1.28			

**Table 9: Results of Wilcoxon signed rank test for Vaivarnyatha in patients of Charmadala with Bonferroni correction**

Parameter	Negative ranks			Positive ranks			Ties	Total	Z Value	p value	Remarks
	N	MR	SR	N	MR	SR					
Vaivarnyatha 15 <sup>th</sup> day – Vaivarnyatha BT	1	1.00	1.00	0	.00	.00	28	29	-1.000	0.317	NS
Vaivarnyatha 30 <sup>th</sup> day – Vaivarnyatha 15 <sup>th</sup> day	18	9.50	171.0	0	.00	.00	11	29	-4.243	<0.001	S
Vaivarnyatha 45 <sup>th</sup> day – Vaivarnyatha 30 <sup>th</sup> day	18	9.50	171.0	0	.00	.00	11	29	-4.243	<0.001	S
Vaivarnyatha 60 <sup>th</sup> day – Vaivarnyatha 45 <sup>th</sup> day	15	8.00	120.0	0	.00	.00	14	29	-3.873	<0.001	S
Vaivarnyatha BT – Vaivarnyatha 60 <sup>th</sup> day(AT)	29	15.0	435.0	0	.00	.00	0	29	-4.881	<0.001	S

**Table 10: Results of Friedman test for Rookshatha in patients of Charmadala**

Variable	N	Mean	Std. Deviation	Mean Rank	X <sup>2</sup> (4)	p value	Remarks
Rookshatha BT	29	2.83	0.384	4.45	103.719	<0.001	S
Rookshatha 15 <sup>th</sup> day	29	2.72	0.455	4.31			
Rookshatha 30 <sup>th</sup> day	29	1.97	0.421	2.90			
Rookshatha 45 <sup>th</sup> day	29	1.52	0.509	2.09			
Rookshatha 60 <sup>th</sup> day	29	0.97	0.421	1.26			

**Table 11: Results of Wilcoxon signed rank test for Rookshatha in 29 patients of Charmadala with Bonferroni correction**

Parameter	Negative ranks			Positive ranks			Ties	Total	Z Value	p value	Remarks
	N	MR	SR	N	MR	SR					
Rookshatha 15 <sup>th</sup> day – Rookshatha BT	3	2.00	6.00	0	.00	.00	26	29	-1.732	0.083	NS
Rookshatha 30 <sup>th</sup> day – Rookshatha 15 <sup>th</sup> day	22	11.5	253.00	0	.00	.00	7	29	- 4.690	<0.001	S
Rookshatha 45 <sup>th</sup> day – Rookshatha 30 <sup>th</sup> day	13	7.00	91.00	0	.00	.00	16	29	- 3.606	<0.001	S
Rookshatha 60 <sup>th</sup> day – Rookshatha 45 <sup>th</sup> day	16	8.50	136.00	0	.00	.00	13	29	- 4.000	<0.001	S
Rookshatha BT– Rookshatha 60 <sup>th</sup> day(AT)	29	15.0	435.00	0	.00	.00	0	29	- 5.109	<0.001	S

**Table 12: Results of Friedman test for Daha in patients of Charmadala**

Variable	N	Mean	Std. Deviation	Mean Rank	X <sup>2</sup> (4)	p value	Remarks
Daha BT	08	1.75	0.463	4.38	26.825	<0.001	S
Daha 15 <sup>th</sup> day	08	1.62	0.518	4.19			
Daha 30 <sup>th</sup> day	08	1.12	0.354	3.00			
Daha 45 <sup>th</sup> day	08	0.62	0.518	1.81			
Daha 60 <sup>th</sup> day	08	0.50	0.535	1.62			

**Table 13: Results of Wilcoxon signed rank test for Daha in patients of Charmadala with Bonferroni correction**

Parameter	Negative ranks			Positive ranks			Ties	Total	Z Value	p value	Remarks
	N	MR	SR	N	MR	SR					
Daha 15 <sup>th</sup> day – Daha BT	1	1.00	1.00	0	.00	.00	7	8	- 1.000	0.317	NS
Daha 30 <sup>th</sup> day – Daha 15 <sup>th</sup> day	4	2.50	10.00	0	.00	.00	4	8	- 2.000	0.046	NS
Daha 45 <sup>th</sup> day – Daha 30 <sup>th</sup> day	4	2.50	10.00	0	.00	.00	4	8	- 2.000	0.046	NS
Daha 60 <sup>th</sup> day – Daha 45 <sup>th</sup> day	1	1.00	1.00	0	.00	.00	7	8	- 1.000	0.317	NS
Daha BT– Daha 60 <sup>th</sup> day(AT)	8	4.50	36.00	0	.00	.00	0	8	- 2.640	0.008	S

**Table 14: Results of Friedman test for Number of Patches in patients of Charmadala**

Variable	N	Mean	Std. Deviation	Mean Rank	X <sup>2</sup> (4)	p value	Remarks
No: Of Patches - BT	29	2.00	0.378	4.05	95.664	<0.001	S
No: Of Patches 15 <sup>th</sup> day	29	2.00	0.378	4.05			
No: Of Patches 30 <sup>th</sup> day	29	1.76	0.435	3.52			
No: Of Patches 45 <sup>th</sup> day	29	1.14	0.441	1.98			
No: Of Patches 60 <sup>th</sup> day	29	0.83	0.539	1.40			

**Table 15: Results of Wilcoxon signed rank test for in Number of Patches patients of Charmadala with Bonferroni correction**

Parameter	Negative ranks			Positive ranks			Ties	Total	Z Value	P value	Remarks
	N	MR	SR	N	MR	SR					
N.O.P 15 <sup>th</sup> day – N.O.P BT	0	0.00	0.00	0	.00	.00	29	29	0.000	1.000	NS
N.O.P 30 <sup>th</sup> day – N.O.P 15 <sup>th</sup> day	7	4.00	28.00	0	.00	.00	22	29	- 2.646	0.008	S
N.O.P 45 <sup>th</sup> day – N.O.P 30 <sup>th</sup> day	18	9.50	171.00	0	.00	.00	11	29	- 4.243	<0.001	S
N.O.P 60 <sup>th</sup> day – N.O.P 45 <sup>th</sup> day	9	5.00	45.00	0	.00	.00	20	29	- 3.000	0.003	S
N.O.P BT – N.O.P 60 <sup>th</sup> day(AT)	29	15.0	435.00	0	.00	.00	0	29	- 5.058	<0.001	S

**Table 16: Results of Friedman test for Area of Patches in patients of Charmadala**

Variable	N	Mean	Std. Deviation	Mean Rank	X <sup>2</sup> (4)	p value	Remarks
A.O.P - BT	29	2.00	0.267	4.16	91.470	<0.001	S
A.O.P 15 <sup>th</sup> day	29	2.00	0.267	4.16			
A.O.P 30 <sup>th</sup> day	29	1.59	0.501	3.12			
A.O.P 45 <sup>th</sup> day	29	1.07	0.258	1.83			
A.O.P 60 <sup>th</sup> day	29	1.03	0.186	1.74			

Table 17: Results of Wilcoxon signed rank test for Area of Patches in patients of Charmadala with Bonferroni correction

Parameter	Negative ranks			Positive ranks			Ties	Total	Z Value	p value	Remarks
	N	MR	SR	N	MR	SR					
A.O.P BT – A.O.P 15 <sup>th</sup> day	0	0.00	0.00	0	.00	.00	29	29	0.000	1.000	NS
A.O.P 30 <sup>th</sup> day – A.O.P 15 <sup>th</sup> day	14	7.50	105.00	0	.00	.00	15	29	- 3.742	<0.001	S
A.O.P 45 <sup>th</sup> day – A.O.P 30 <sup>th</sup> day	15	8.00	120.00	0	.00	.00	14	29	- 3.873	<0.001	S
A.O.P 60 <sup>th</sup> day – A.O.P 45 <sup>th</sup> day	1	1.00	1.00	0	.00	.00	28	29	- 1.000	0.317	NS
A .O.P BT– A.O.P 60 <sup>th</sup> day(AT)	28	14.5	406.00	0	.00	.00	1	29	- 5.292	<0.001	S

Table 18: Effect of Panchatiktaka Ghritha on Biochemical parameters on patients of Charmadala

Parameter	Paired 't' test							
	Mean B.T	Mean A.T	Mean Difference	S.D. (±)	S.E.M. (±)	't' value	p value	Remarks
Haemoglobin	12.28	12.30	-0.013	0.688	0.127	- 0.108	0.915	NS
Total count	8825.0	8548.1	276.93	864.77	160.58	1.725	0.096	NS
Neutrophil	45.05	45.34	-0.28	4.876	0.905	- 0.316	0.754	NS
Lymphocyte	46.81	45.96	0.85	4.323	0.802	1.061	0.298	NS
Eosinophil	3.32	3.13	0.18	0.601	0.111	1.637	0.113	NS
Monocyte	1.52	1.51	0.003	0.463	0.086	0.040	0.968	NS
ESR	7.86	6.34	1.51	2.585	0.480	3.160	0.004	S
A.E.C	358.86	329.31	29.55	27.993	5.198	5.685	<0.001	S

Table 19: Overall Effect of Panchatiktaka Ghrita on 29 patients of Charmadala

Improvement	Number of patients	Percentage
Complete remission (100 %)	0	0 %
Marked improvement (76 % - 99 %)	2	6.90 %
Moderate improvement (51 % - 75 %)	25	86.20 %
Mild improvement (26 % - 50 %)	2	6.90 %
Unchanged (< 25 %)	0	0 %

## DISCUSSION

While treating Charmadala, the drugs alleviating Vata, Pitta and Kapha doshas, which are having Kushtaghna, Kandughna, Rakthashodhaka, Deepana-Pachana Karma and the drugs possessed with Tikta, Katu Rasas and Ushna Virya should be selected. Also as Charmadala is a Twak Vikara (skin disease), drug which act both internally and externally should be selected. Because, Charmadala is a disease in which all the three Doshas are involved. Coldness once again aggravates Vata and Kapha dosha.

Hence opposite Guna of Sheeta i.e. Ushna Virya should be the drug of choice. As the Samprapti tells about Agnimandhya and Amotpatti, Deepana-Pachana drugs should be selected and as there is mentioning of Sanga and Vimargagamana of Doshas, the drugs which dilate the Srotases and those which bring Doshas to normalcy should be selected. The drugs with Kushtaghna properties should be selected, as Charmadala comes under Kushta Vikara (Kshudra Kushta). In children the drugs should not be having too Ushna, Teekshna properties and should be palatable. Considering this honey was taken as Anupana. Above all, Ghrita is the best form of preparation which can be adopted in children as it is indicated since birth. With these all points in mind Panchatiktaka Ghrita was considered for the study.

The formulation comprises of Nimba (*Azadirachta indica* A. Juss), Patola (*Trichosanthes dioica* Roxb.), Vyaghri (*Solanum surattense* Burm.f.), Guduchi (*Tinospora cordifolia* (Thunb.) Miers), Vasa (*Adathoda vasica* Linn.),

Kalka of Haritaki (*Terminalia chebula* Retz.), Vibhitaki (*Terminalia bellerica* (Gaertn. Roxb.), Amalaki (*Emblica officinalis* Gaertn.) and Goghrita (ghee prepared from cow's milk) as the ingredients. Among the ingredients; Nimba, Patola, Vyaghri, Guduchi and Vasa are known for its Kushtaghna and Raktha Shodhaka properties. Haritaki and Amalaki are indicated in Kushta vikaras. Due to the Kandughna property of Nimba, Patola and Guduchi, it helps in alleviating the symptoms of Charmadala. Guduchi, Haritaki and Amalaki are known for its Rasayana (rejuvenative) property, thereby it boosts the immune system through which the immunity of the child can be improved and hence the attack of disease can be reduced. As Nimba, Patola, Vyaghri, Guduchi are having Agni Deepana property, it helps in removing the Ama and there by removes Srothorodha through which the Samprapthi of the disease can be corrected. Vasa is twak Dosahara and is having anti-microbial, anti-viral and anti-spasmodic activity.<sup>9-10</sup> Vyaghri is Kanthya, indicated in Twak Vikaras and possess anti-bacterial, anti-fungal, anti-oxidant<sup>11</sup> and anti-inflammatory activity.<sup>12</sup> Patola is known for its Shodhana (purgative nature) Karma and is having anti-inflammatory, anti-fungal<sup>13</sup> and antibacterial activity.<sup>14</sup> Haritaki is well known for its Lekhana and Anulomana Karma. Nimba is known for its anti-oxidant,<sup>15</sup> anti-microbial,<sup>16</sup> anti-bacterial, anti inflammatory, anti-fungal, anti-viral, analgesic and anti-ulcer activity. Guduchi shows vast range of biological activities like anti-inflammatory, anti-oxidant, anti-microbial, anti-bacterial, immunomodulatory, immunostimulant, and

anti-allergic activity.<sup>17</sup> Haritaki, Vibhitaki and Amalaki are having anti-microbial, anti-fungal and antibacterial activity.<sup>18-19</sup> Amalaki is known for its anti-oxidant, immunomodulatory, anti-ulcer and anti-inflammatory activity.<sup>20</sup> Harithaki, Vibhitaki and Amalaki are the known purgatives through which the Shodhana action can be achieved as Shodhana is known as one of the main line of treatment in Twak Vikaras.

### CONCLUSION

The two months of treatment with Panchatiktaka Ghrita internally and externally showed early reduction in features like Kandu, Rookshatha, Vaivarnyatha, number of patches and area of patches when compared to Pidaka, Daha and Srava. The drug was also effective in reducing the ESR, AEC level. Hence the trial drug (Panchatiktaka Ghrita) was very effective in reducing the signs and symptoms of Charnadala (Atopic Dermatitis) in children.

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