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Research Article

EVIDENCE BASED CLINICAL AYURVEDIC MANAGEMENT OF *DADRUKUSHTA* (DERMARTOPHYTOSIS) BY *CHAKRAMARDA TAILA*

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ABSTRACT

Dadru is one of the most common dermatological conditions encountered in clinical practice. Most of skin diseases in Ayurveda are described under the heading of *Kushta*. In general clinical practice around 10-20% patients suffer from skin disorders and out of them, fungal infections constitute up to 20%. *Dadru* is a variety of *Kushta* with *Rasa, Rakta* and *Mamsadhatu* involvement, manifesting with *Kandu*, *Mandala, Ruja, Raaga, Rookshata* and *Pidaka. Chakramarda* possesses *Katu rasa, Laghu, Rukshaguna, Kapha Vatahara*, *Varnya, Vishagna, Vranaropana* and *Kushtagna* properties. *Chakramardhataila* is an *Anuboota yoga* employed in management of *Dadrukushta*. Current study includes 42 Patients from O.P.D. of S.D.M. College of Ayurveda and Hospital, Hassan diagnosed to have *Dadrukushta* based on signs and symptoms. Therapeutic effect was evaluated before, in between and after treatment. The present clinical study has shown Symptoms of *Kandu, Raaga* and *Twakrukshata* reduced after application of *Chakramarda taila, which* were statistically highly significant with P value 0.001. Symptoms of *Uthsanna mandala* reduced after application of *Chakramarda taila*. It was also statistically significant with P value 0.002. *Pidaka* between before treatment to after treatment showed reduction with P value 0.005 which is statistically significant. After *Chakramarda taila* application on lesion of *Dadru Kushta* has demonstrated decrease in pathognomonic signs and symptoms *Kandu, Raga, Twakrukshata* which was statistically highly significant with P value 0.001 and reduction in *Uthsanna mandala*, *Pidaka which* is statistically significant. Hence, application of *Chakramarda Taila* is an effective treatment modality in management of *Dadru Kushta.*

KEYWORDS: *Dadru Kushta*, Dermatophytosis, *Chakramarda Taila, Kushtagna* property.

INTRODUCTION

Skin is a protective organ which reflects the health of the individual[1]. It is target organ for many infections. In general clinical practices around 10-20% patients suffer from skin disorders of which, fungal infection constitutes up to 20%[2]. *Dadru* is a variety of *Kushta* with *Rasa, Rakta, Mamsadhatu* involvement[3]. Its aetiology includes *Aharaja, Viharaja, Chikithsaapacharaja, Upasargaja* and *Krimija* factors[4]. In the present study *Krimi* can be considered in relation to fungi capable of causing skin *Dadru* changes, identified as Tinea or Dermatophytosis[5]. Tinea is a group name for a highly contagious, segmented mycelia fungus. *Sushrutasamhita* mentions[6], *Nidanas* like *Prasanga, Gatra-samsparsha, Nishwasa, Sahabojana, Vastramalyanulepana* causes *Upasargajarogas* and is one among them. Tinea is analogues to *Dadru* in contemporary science[7]. *Acharya Sushruta* describes the colour of the lesions in *Dadru,* copper or the flower of *Atasi* and mentions that its *Pidaka* are in the forms of *Parimandala* having spreading nature (*Visarpanshila)* but slow in progress or chronic in nature (*Chirrottham*) with *Kandu.*

Chakramarda possesses *Katu rasa, Laghu, Rukshaguna, Kapha Vatahara, Varnya, Vishagna*, *Vranaropana* and *Kushtagna* properties[8]. The drug *Chakramarda* is indicated in *Dadru Kushta, Varnya, Vishaghna, Vranaropana* and *Kushtaghna* properties. In *Nighantus* of *Dhanvantari, Raja, Madanapala, Kaiyadeva* and *Bhavaprakasha* have mentioned *Chakramarda* is having *Kaphavatahara, Kandughna, Krimighna,* and *Dadrughna* properties. *Chakramarda Taila* is used as *Anuboota yoga* as a management modality in patients suffering from *Dadrukushta* by application on skin lesion.

Objective of the Study

To evaluate the effect of *Chakramarda Taila* (external application) in *Dadru Kushta*.

Source of Data: OPD of S. D. M. College of Ayurveda and Hospital, Hassan.

Sampling Method: Convenience sampling method was adopted.

Criteria For Selection of Patient

Inclusion Criteria

Patients fulfilling diagnostic criteria between age group of 15 -75 years of either sex.

Exclusion Criteria

1. Patients associated with other type of *Kushta.*

2. Patients below 15 years and above 75 years of age.

3. Patients presenting with *Dadru Kushta* suffering with any other systemic disorders.

4. Lesions with secondary infections.

5. Patients taking immunosuppressive medicines.

Diagnostic Criteria: Patients presenting with *Uthsanna mandala* (elevated margin), *Kandu* (itching) and positive

for Dermatophytes (by 10% of KOH, microscopic examination) and with or without following symptoms such as *Ruja* (Pain), *Twakrukshata* (Dryness of skin), *Raga* (Erythema), *Vivarnatha* (Discolouration), *Pidaka* (Eruption).

Assessment Criteria: Assessment was done before intervention, on 8th day and on 15th day based on grading's given for signs and symptoms of *Dadrukushta*.

Method of Clinical Study: Patients fulfilling the diagnostic and inclusion criteria were included for the study. Among included patients, skin scraping was evaluated for presence of Dermatophytes with 10% KOH and observed under microscope. Detailed history was recorded in specially designed case proforma. In the same patients *Chakramarda taila* was given for external application on lesion and changes were assessed. *Chakramarda Taila* was applied on the site of *Dadru Kushta* (Tenia) lesion (quantity sufficient) externally, two times a day, in morning and evening for 15 days. Assessment was done before intervention, on 8th day and on 15th day based on grading's given for signs and symptoms of *Dadru Kushta*.

Kandu (Itching)

  0- No *Kandu*
  1- *Kandu* on & off
  2- Continuous *Kandu* without disturbance in routine works
  3- Continuous *Kandu* with disturbance in routine works

Mandala (Elevated Margin)

  0 - No elevation
  1 - Slight elevation that cannot be felt
  2 - Elevation can be felt
  3 - Elevated in all lesions but soft

Rukshata (Dryness of Skin)

  0- No Line on scrubbing by nails
  1- Faint line on scrubbing by nails
  2- Lines on scrubbing by nails
  3-Wards can be written on scrubbing by nails

Raaga (Erythema)

  0- Normal skin colour
  1- Faint or near to normal skin colour
  2- Light reddish colour
  3- Moderate reddish colour

Pidaka (Eruption)

  0- No *Pidaka*
  1- *Pidaka* disappears but discoloration persists
  2 - *Pidaka* in < 3 sqcms in whole affected area
  3 - *Pidaka* between 3-8 sqcms in whole affected area.

Method Of Preparation

Seeds of *Chakramarda* weighing 6 kgs was taken and washed under tap water in order to remove physical impurities from the drug. The Cleaned & dried Seeds of *Chakramarda* was pulverized to obtain coarse powder.

From above, 5 kgs of coarse powder of *Chakramarda* was taken. To this 40 litres of Purified water was added and heated on gas stove on *Mandagni* till it reduced to 1/4th. Then the *Kashaya* was filtered through a single folded clean cotton cloth. Thus 10 litres of *Kashaya* was prepared.

To this *Kashaya, Chakramarda Kalka* (625g) and *Tilataila* (2.5 l) were added and subjected to *Snehapaka*. Heating was continued on *Mandagni* for one hour on the first day and allowed for cooling, covered with plate to avoid any contamination. Second day heating was continued for six hours and allowed for cooling and later covered with the plate. In the same way on the third day heating was continued for four hours, till the *Samyak siddha lakshanas* were obtained. This warm *Taila* was filtered. Before bottling, *Taila* was checked for the presence or absence of micro-organisms by culture and microscopic examination. 60 ml of *Taila* was bottled & labeled as *Chakramarda Taila*.

Sneha Siddhi Lakshana

1) *Sneha Kalka* became wick like structure when rolled between fingers

2) No cracking sound from oil and *Kalka* when put over the fire

3) Appearance of *Kalka* was like black thick foam

4) Colour of oil - Greenish yellow

Volume of *Tilataila* taken: 2500ml

Volume of *Chakramarda taila* obtained: 2300ml

Loss of *Chakramarda taila* on preparation: 200ml

Volume loss: 8%

RESULTS

For the present study total 42 patients were screened, out of which 34 patients of *Dadru Kushta* were registered, among them 30 patients completed the treatment and 04 were drop out. Hence, results of 30 patients are given below.

The obtained results were interpreted in the statistical term as highly significant (HS); $P<0.001$ and significant (S); $P< 0.01$ -0.001. N= Number of patients, Negative rank- Decrease in symptoms, Positive rank - Increase in symptoms, Ties – No changes, BT- Before treatment, AT – After treatment.

Effect of *Chakramarda Taila* on *Kandu* (Itching)

Table1: Showing the Wilcoxon test results in reduction of *Kandu*

Parameters	Negative Rank			Positive Rank			Tie	Total	Z Value	P Value	Significance
	N	MR	SR	N	MR	SR					
Kandu BT – 8th	07	4	28	0	0	0	23	30	2.646	0.008	S
Kandu 8th - 15th	12	6.5	78	0	0	0	18	30	3.364	0.001	HS
Kandu BT- AT	19	10	19	0	0	0	11	30	3.905	0.001	HS

Symptoms of *Kandu* reduced from before treatment (BT) to 8th day with z=2.646 and P value 0.008 which is statistically significant. When *Kandu* was compared on 8th day with 15th day (Z= 3.364, P value 0.001) which is statistically highly significant and on comparison of reduction in *Kandu* between before treatment to after treatment (Z=3.905, P value 0.001) is statistically highly significant.

Effect of *Chakramarda Taila* on *Twak Rukshata*

Table 2: Showing the Wilcoxon test results in reduction of *Twakrukshata*

Parameters	Negative Rank			Positive Rank			Ties	Total	Z Value	P Value	Significance
	N	MR	SR	N	MR	SR					
Twakrukshata BT - 8th	8	4.5	36	0	00	00	22	30	2.828	0.005	S
Twakrukshata 8th- 15th	12	6.5	78	0	00	00	18	30	3.464	0.001	HS
Twakrukshata BT- AT	20	10.9	210	0	.00	.00	10	30	4.041	0.001	HS

Symptoms of *Twakrukshata* reduced from before treatment (BT) to 8th day with Z=2.828 and P value 0.005 which is statistically significant. When *Twakrukshata* was compared on 8th day with 15th day (Z= 3.464, P value 0.001) which is statistically highly significant and on comparison of reduction in *Twakrukshata* between before treatment to after treatment (Z=4.041, P value 0.001) which is statistically highly significant.

Effect of *Chakramarda Taila* on *Raaga* (Erythema)

Table 3: Showing the Wilcoxon test results in reduction of *Raaga*

Parameters	Negative Rank			Positive Rank			Ties	Total	Z Value	P Value	Significance
	N	MR	SR	N	MR	SR					
Raaga BT – 8th	4	2.5	16	0	0	0	26	30	1.852	0.064	NS
Raaga 8th - 15th	8	4.5	36	0	0	0	22	30	2.828	0.005	S
Raaga BT- AT	12	6.5	78	0	0	0	18	30	3.464	0.001	HS

There was no reduction observed in Symptoms of *Raaga* from before treatment (BT) to 8th day with Z=1.852 and P value 0.064 which is statistically non-significant. When *Raaga* was compared on 8th day with 15th day (Z= 2.828, P value 0.005) which is statistically significant and on comparison of reduction in *Raaga* between before treatment to after treatment (Z=3.464, P value 0.001) which is statistically highly significant.

Effect of *Chakramarda Taila* on *Uthsanna Mandala*

Table 4: Results in reduction of *Uthsanna mandala*, after treatments

Parameters	Negative Rank			Positive Rank			Ties	Total	Z Value	P Value	Significance
	N	MR	SR	N	MR	SR					
Mandala BT – 8th	03	2	6	0	.0	.0	27	30	1.732	0.083	NS
Mandala 8th - 15th	07	4	28	0	.0	.0	23	30	2.646	0.008	S
Mandala BT- AT	10	5.5	55	0	.0	.0	20	30	3.162	0.002	S

There was no reduction observed in Symptoms of *Uthsanna mandala* from before treatment (BT) to 8th day with Z=1.732 and P value 0.083 which is statistically non-significant. When *Uthsanna mandala* was compared on 8th day with 15th day (Z= 2.646, P value 0.008) which is statistically significant and on comparison of reduction in *Uthsanna mandala* between before treatment to after treatment (Z=3.162, P value 0.002) which is statistically significant.

Effect of *Chakramarda Taila* on *Pidaka*

Table 5: Results in reduction of *Pidaka*, after treatments

Parameter	Negative Rank			Positive Rank			Ties	Total	Z Value	P Value	Significance
	N	MR	SR	N	MR	SR					
Pidaka BT –8th	03	2	6	0	.0	.0	27	30	1.732	0.083	NS
Pidaka 8th - 15th	05	4	20	0	.0	.0	25	30	1.134	0.057	NS
Pidaka BT- AT	08	4.5	36	0	.0	.0	22	30	2.828	0.005	S

There was no reduction observed in *Pidaka* from before treatment (BT) to 8th day with Z=1.732 and P value 0.083 and on 8th day with 15th day with Z= 1.134 and P 0.057 which are statistically non-significant. When Symptoms of *Pidaka* between before treatment to after treatment (Z=2.828, P value 0.005) which is statistically significant.

DISCUSSION

Chakramarda taila is an *Anubhoota* yoga used as external application in the management of *Dadrukushta* (Dermatophytoses). In the context of *Chikithsa* for *Dadru Kushta, Bahirparimarjana* type of treatment is mentioned in the Ayurveda text. In Ayurveda literature, especially Nighantus of Dhanvantari, Raja, Madanapala, Kaiyadeva and Bhavaprakasha have mentioned drug *Chakramarda* to possess *Varnya, Vishaghna, Vranaropana Kushtaghna Kaphavatahara, Kandughna, Krimighna*, and *Dadrughna* properties. *Chakramarda beeja* possess *Laghu, Ruksha, Teekshnaguna, Katu, Tikta rasa, Ushnaveerya* and *Katuvipaka*. It has *Kandughna, Kushtaghna, Krimighna, Dadrughna* and *Kaphavatahara* properties. The base of *Chakramarda taila* is *Tilataila* which is *Tridoshahara*.

The *Rasa* plays important role in the *Karma* of *Dravya. Chakramarda* is *Katu, Tikta rasa pradhana*. They exhibit *karma* due to *Panchabhoutic* composition. The

Tikta and *Katu rasa* are *Vayu, Agni* and *Akashapradhana*. *Chakramarda* has *Laghuguna* and *Katu, Tikta rasa* is *Kaphanashaka*. *Dadru Kushta* is *Kapha pitta pradhanavyadhi*. *Chakramarda* possess *Ushnaveerya*. *Ushnaveerya* of *Chakramarda* bestow *Kaphashamaka* property. These *Rasa, Guna, Veerya* and *Karma* of *Chakramarda* play an important role on *Dadru Kushta* by *Vighatana* of *Samprapti* which further checks the manifestation of *Dadru Kushta*. *Laghu, Ruksha, Teekshna* properties of *Chakramarda taila* acts on *Kaphaja* attributes like *Kandu, Uthsannamadala*. Effect on *Raaga* and *Pidaka* is due to *Varnya, Vishaghna* properties of *Chakramarda taila*. *Kandughna, Kushtaghna, Dadrughna* properties of *Chakramarda taila* acts on the cardinal symptoms of *Dadru Kushta*.

30 Subjects were assessed before, in between and after treatment and analyzed statistically using Wilcoxon signed Rank test. The effectiveness of *Chakramarda taila* on the individual signs & symptoms of *Dadrukushta* is being discussed here as follows.

Kandu- Symptoms of *Kandu* was complained by all 30 patients. Assessment of *Kandu* was done before treatment and on 8th day. *Kandu* reduced on 8th day and on application of statistics Wilcoxon signed rank test, no patients were distributed in positive rank showed that there is no aggravation of *Kandu.* 07 patients were distributed in negative rank shows that *Kandu* reduced after application of *Chakramarda taila*. Further it was statistically significant with P value 0.008. Hence 8 days application of *Chakramarda taila* is effective in reducing *Kandu*. When *Kandu* was compared on 8th day with 15th day, 12 patients were distributed in negative rank shows that *Kandu* further reduced after application of *Chakramarda taila*. It was statistically highly significant with P value 0.001 and on comparison of reduction in *Kandu* between before treatment to after treatment, 19 patients were distributed in negative rank shows that *Kandu* further reduced after application of *Chakramarda taila*. It is also statistically highly significant with P value 0.001.

Twakrukshata: Symptoms of *Twakrukshata* was complained by 29 patients. Assessment of *Twakrukshata* was done before treatment and on 8th day. *Twakrukshata* reduced on 8th day on application of statistics Wilcoxon signed rank test, no patients were distributed in positive rank showed that there is no aggravation of *Twakrukshata.* 08 patients were distributed in negative rank shows that *Twakrukshata* reduced after application of *Chakramarda taila*. Further it was statistically significant with P value 0.005. Hence 8 days application of *Chakramarda taila* is effective in reducing *Twakrukshata*. When *Twakrukshata* was assessed and compared on 8th day with 15th day, 12 patients were distributed in negative rank shows that *Twakrukshata* reduced after application of *Chakramarda taila*. It was statistically highly significant with P value 0.001 and on comparison of reduction in *Twakrukshata* between before treatment to after treatment, 20 patients were distributed in negative rank shows that *Twakrukshata* reduced after application of *Chakramarda taila*. It was also statistically highly significant with P value 0.001.

Raaga- Symptoms of *Raaga* was complained by all 30 patients. 04 patients were distributed in negative rank from before treatment to 8th day. There was reduction observed in *Raaga* from before treatment to 8th day with P value 0.064 which is statistically non-significant. When *Raaga* was compared on 8th day with 15th day, 08 patients were distributed in negative rank shows that *Raaga* reduced after application of *Chakramarda taila*. It was statistically significant with P value 0.005 and on comparison of reduction in *Raaga* between before treatment to after treatment, 12 patients were distributed in negative rank shows that *Raaga* reduced after application of *Chakramarda taila*. It was statistically highly significant with P value 0.001.

Uthsanna mandala- Symptoms of *Uthsanna mandala* was complained by all 30 patients. 03 patients were distributed in negative rank from before treatment to 8th day. There was reduction observed in *Uthsanna mandala* from before treatment to 8th day with P value 0.083 which is statistically non-significant. When *Uthsanna mandala* was compared on 8th day with 15th day, 07 patients were distributed in negative rank shows that *Uthsanna mandala* reduced after application of *Chakramarda taila*. It was statistically significant with P value 0.008 and on comparison of reduction in *Uthsanna mandala* between before treatment to after intervention, 10 patients were distributed in negative rank shows that *Uthsanna mandala* reduced after application of *Chakramarda taila*. It was also statistically significant with P value 0.002.

Pidaka- Symptoms of *Pidaka* was complained by all 30 patients. 03 patients were distributed in negative rank from before treatment to 8th day with P value 0.083. *Pidaka* was compared on 8th day with 15th day, 05 patients were distributed in negative rank with P value 0.057. There was reduction observed in *Pidaka* from before treatment to 8th day and on 8th day with 15th day. But was statistically non-significant. However *Pidaka* between before treatment to after treatment showed reduction with P value 0.005 which is statistically significant.

From the discussion of above results it is clear that *Chakramarda taila* application for 15 days on lesion of *Dadru Kushta* has demonstrated decreased in pathognomonic signs and symptoms *Kandu, Raga, Twakrukshata* which was statistically highly significant and *Uthsanna mandala*, *Pidaka* showed statistically significant. *Chakramarda taila* possess *Kaphavatashamaka*, *Varnya, Vishaghna, Dadrughna* properties. Therefore *Chakramarda taila* application is effective in reducing pathognomonic of *Dadrukushta.* Hence *Chakramarda taila* application twice daily for 15 days is beneficial in *Dadrukushta* as *Upashaya*.

CONCLUSION

In the present clinical study, *Chakramarda taila* application for 15 days on lesion of *Dadru Kushta* has demonstrated decrease in pathognomonic signs and symptoms *Kandu, Raga, Twakrukshata* which was statistically highly significant and reduction in *Uthsanna mandala*, *Pidaka which* is statistically significant. Therefore *Chakramarda taila* application on *Dadrukushta* lesions for 15 days is beneficial in reducing pathognomonic of

Dadrukushta. Hence, from this study it is concluded that application of *Chakramarda Taila* alone on lesion is an effective modality in management of *Dadru Kushta.*

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