

A CLINICAL STUDY ON RAKTAMOKSHANA (PRACHCHHAN) AND NIMBA KSHAR PRATISARANEYYA IN THE MANAGEMENT OF DADRU KUSHTHA W.S.R. TO RINGWORM

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Article Received on 15 March 2026,
Article Revised on 05 April 2026,
Article Published on 10 April 2026,

<https://doi.org/10.5281/zenodo.19592173>

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How to cite this Article: ¹*Dr. Arvind Kumar Lohar, ²Prof. Mahesh Dixit, ³Prof. Hari Mohan Meena. (2026). A Clinical Study on Raktamokshana (Prachchhan) and Nimba Kshar Pratisaraneeya in the Management of Dadru Kushtha W.S.R. To Ringworm. World Journal of Pharmaceutical Research, 15(8), 504-518.

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ABSTRACT

Skin diseases are a major health problem affecting a high proportion of the population in India. The patients of skin disease are additionally prone to experience physical, emotional & socio-economic embarrassment in the society due to disfigured appearance. Normally 10 -15% of the general practitioners encounter with skin disorders in their day to day practice. In contemporary medical science, management of Ringworm is carried out with usage of topical or systemic antifungal, corticosteroids. Long lasting usage of these drugs produces the adverse effect also. Here this study in planned to evaluate the efficacy and advantage of *Prachchaan Karma* along with the *Nimba Kshar Pratisaraneeya* in the management of *Dadru Kushtha* wsr to Ringworm.

KEYWORDS: Dadru Kushtha, Ringworm, Prachchan Karma, Kshar Karma, Nimba Kshar, Pratisaraneeya Kshar.

INTRODUCTION

'Ayurveda' is a natural healing system of medicine to maintain health of a healthy person and curing the ailments of an ailing person. *Shalya Tantra* is a branch of Ayurveda which deals with surgical as well as para surgical procedures like *Kshar Karma*, *Agni Karma* & *Raktamokshana*, but gives equal emphasis on Bhaishja Chikitsaa also. All the skin diseases in Ayurveda have been classified under the broad heading of '*Kushtha*' which are further

classified in to *Maha Kushtha* and *Kshudra Kushtha*. *Acharya Charaka* has included *Dadru* in *Khsudra Kushtha*, where *Acharya Vagbhata* and *Acharya Sushruta* have maintained it under *Maha Kushtha*.

Kandu, *Raag*, *Pidaka*, *Utsanna Mandala*, are the manifestation of *Dadru*. *Dadru*, is a *Pitta Kapha Pradhan Vyadhi* and the management of which includes *Prachchaan* and *Pratisaraneeya Kshar* according to *Sushruta Samhita Sutra Sthaan* 11th chapter.

After doing proper inspection of an affected site suitable for *Kshar Karma*, that is, *Lekhan Karma* on the *Vat-dushta* place, *Gharshan* on the *Pitta-dushta* place and *Prachchaan Karma* on the *Kapha-dushta* place before applying *Kshar*. One should observe till the count up to 100 is spoken. The following reference is found in *Charak Samhita Kushtha Chikitsa Sthaan* for *Kshar Karma* in the management of the *Dadru Kustha* (Ringworm). On the basis of presenting symptomatology most of the scholars have simulated *Dadru* with Ringworm through modern perspective. Ringworm can affect skin on almost any part of the body as well as fingernails and toenails. The symptoms of ringworm often depend on which part of the body is infected, but they generally include:

- Red, itchy, or scaly patches.
- Patches that develop blisters or pustules.
- Patches that may be redder on the outside edges or resemble a ring.
- Patches with edges that are defined and raised.
- Hair loss in the affected area.

Ringworm can be caused by the following ways: It spreads by skin contact with an infected person. The fungus causing ringworm might be found on clothes, comb, towels and brushes.

These fungi are mainly present in the spores of soil. Coming into contact with such soil will result in an infection. *Acharya Sushruta* had clarified this in *Sushruta Samhita Kushtha Nidaan* about 4000 years ago today.

MATERIAL AND METHODS

The topic of the study, together with the case proforma, was submitted to the Institutional Ethical Committee (IEC/ACA/2021/5126-5274) the university. The significance of the aims and objectives, methodology, and probable outcome of the study were clarified to the committee, and ethical clearance was obtained for the conduction of the study. The trial has

been registered in CTRI with the reference no. CTRI/2022/08/045058.

SAMPLE SIZE – 30 patients were suffered from Dadru Kushtha (ringworm) fulfilling the inclusion criteria.

SOURCE – Patients will be selected from the OPD and IPD. Patients were also selected from Madan Mohan Malaviya Government Ayurvedic College and Hospital, Udaipur; Government Ayurvedic Hospital, Hathi Pole, Udaipur; and through special camps organized from time to time.

SELECTION CRITERIA

A) Inclusion Criteria

- Patients were fulfilling the following general and diagnostic criteria were selected for the present study.
- Patients were presenting with the classical and modern signs and symptoms of Dadru Kushtha(ringworm).
- Patients with a history of Dadru Kushtha above 6 months.
- Patients were aged between 16 to 60 years.
- The size of ringworm is less than 2 inches.
- All diseases that were suitable for Prachchhan Karma and Pratisaraneeya Karma, according to Ayurvedic textbooks.

B) Exclusion Criteria

- Patients who did not agree to written consent.
- Uncooperative patients.
- The infection of ringworm on the head, front of the neck, and groin region.
- Any malignancy.
- Uncontrolled hypertension and diabetes mellitus.
- HIV, immune deficiency syndrome, etc.
- Heart disease like M.I., C.A.D., I.H.D., etc.
- Immunosuppressive medication users not involved in any other present undergoing clinical trial.
- Patients with a history of Dadru Kushtha less than 6 months.
- Severe anemic patients.
- Patients who were taking blood thinner medicine.

- Bleeding disorder like dengue fever, etc.
- All congenital bleeding disorders like Von Willebrand disease, etc.
- The size of ringworm was more than 2 inches.
- All diseases that are not suitable for Prachchhan Karma and Pratisaraneeya Karma, according to Ayurvedic textbooks.

C) Withdrawal Criteria

- If the patient himself/herself wants to withdraw from the trial.
- If any serious condition or any serious adverse effect occurs, this requires urgent management.

INVESTIGATIONS: As required

- Hb gm%, ESR, TLC, DLC, BT, CT, HIV, HbsAg.

LOCAL EXAMINATION

- A wood lamp examination had been done to select the patient.
- Disposable measuring tape: to measure the size of *Dadru Mandala* (ringworm).

STUDY DESIGN

Allocation: In an open-label clinical trial, the patients were randomly divided into two groups using a computer-generated randomization sampling method.

Group	Group A	Group B	Group C
Procedure	Prachchhan Karma	Pratisaraneeya Kshar Karma (Mridu)	Prachchhan Karma along with the Pratisaraneeya Kshar Karma (Mridu)
Drugs		Nimba Pratisaraneeya Kshar (Mridu)	Nimba Pratisaraneeya Kshar (Mridu)
Application	For Local Application once per week	Local Application once per week	Local Application once per week
Duration	28 days	28 days	28 days

OBSERVATION

Age: 30 patients of Dadru Kushtha were registered for this study. The present study observed that the age group of 31–40 years had the highest number of cases, with 10 patients, which represented 33.33% of the total. followed by the age groups of 21–30 years and 41–50 years, 8 patients (26.66%) in each group. This was followed by the age group of 16–20 years, which

had 0 patients, representing 0% of the total. The age group of 51–60 years had 4 patients, making up 13.33% of the total cases. Though the Dadru Kushtha can be happen to anyone at any age.

Gender - The majority of cases registered for the current study, were males 23 patients (76.66%), and followed by 07 patients (23.33%) females. According to modern science, male and female both are equally affected by *Dadru Kushtha*." These variations may be due to small sample size.

Marital status - The highest number of patients were married, which accounted for 25 (83.33%) of the total, followed by those who were not married, which accounted for 5 (16.66%) of the total. The patients registered in this study were from the age group of 16 to 60 years. It may be the cause of higher percentage of married patients in present trial. There was no study which can claim that marital status is related with the Dadru Kushtha.

Religion - The present study shows that the all the registered patients were Hindus. This may happen due to the geographical predominance of the Hindu in the study area.

Education - The educational status has been categorized into illiterate, primary, middle, higher secondary, graduate, and postgraduate groups. The majority of cases registered for the current study were graduates: 11 patients (36.66%), then the middle school group 6 patients (20%), 6 patients (20%) were in the high secondary group, 2 patients (6.66%) were postgraduates, 2 patients (6.66%) were illiterates, and 3 patients (10%) were in the primary group. This may happen due to the location of the hospital. The education level in the urban area is quite good and educated individuals are more aware of skin diseases.

Occupation: The occupations of the patients have been categorized into student, service, business, housewife, and labourer groups. The majority of cases registered for the current study were from the following service groups: 11 patients (36.66%), followed by the labourer group: 7 patients (23.33%), 6 patients (20%) were housewives, 4 patients (13.33%) were students, and 2 patients (6.66%) were businessmen. Occupations sometimes play a significant role in Dadru Kushtha. Many studies have suggested that a many professions, especially those involving outdoor activities, are associated with increased environmental exposure to pathogenic fungi and direct inoculation through minor skin lesions are the most common mechanisms of fungal infection.

Socio-economic status: Most of the cases registered for the study belonged to the middle class 25 patients (83.33%), 4 patients (13.33%) from the lower class, and 1 patient (3.33%) from the upper class. This disease can be occurred in any category of people irrespective of income levels. The study took place in the government hospital and the people from higher income group avoid government hospitals.

Habitat: In the present study, 12 patients (40%) were from urban habitats, and 18 patients (60%) were from rural habitats. This may happen due to the lack of hygiene and sanitation and poor access to healthcare, especially specialty services increase the risk of skin diseases.

Food habits: In the present clinical study the majority of cases registered were of mixed food habits 18 patients (60%) and the remaining 12 patients (40%) were of vegetarian food habits. It can be assumed that the Dadru Kushtha (ringworm) can affect the persons with vegetarian and mixed food habits.

Diet habits - The diet habits of the patients have been categorized into Samashana, Adhyashana, Vishamashana, and Anashana groups. The majority of cases registered for the current study were from the Vishamashana group of 16 patients (53.33%), followed by the Samashana 9 patients (30%) and Adhyashana groups of 5 patients (16.33%). No registered patient belonged to the Anashana group. This observation indicates that diet habits are directly related with the disease.

Appetite - The majority of patients registered for the study have a moderate appetite (23 patients, or 76.66%), followed by patients with a good appetite (05 patients, or 16.66%), and 2 patients with a poor appetite (0.66%).

Dominant Rasa taken in diet - The study shows the maximum number of patients having a diet predominant in Madhura and Lavana Rasa 25 patients (83.33%) were taking Madhura Rasa, 3 patients (10%) were taking Lavana Rasa, and 2 patients (6.66%) were taking Amla Rasa. None of the patients were found to have an attraction towards Katu, Tikta, or Kashaya Rasa dominant rasa in their diet. It indicates that Madhura and Amla Rasa cause Kapha Prakopa and Amla Rasa causes Rasa, Rakta Dushti, and as a result of all these the Dadru Kushtha occurs.

Koshtha - The majority of cases registered for the current trial belonged to patients with Kroor Koshtha (15 patients or 50%), followed by Madhyam Koshtha (14 patients or 46.33%),

and Mridu Koshtha (1 patient or 3.33%).

Addiction: The majority of cases registered for the current trial had an addiction to tea or coffee: 17 patients (56.66%), followed by the tobacco and alcohol groups: 01 patients (3.33%) each. and there were a minimum of 2 patients (6.66%) who were smoking. There were 9 patients (30%) registered in the no-addiction group. Dadru Kushtha is a Rakta Pradoshaja Vyadhi, and Ushna Annapan causes Rakta and Pitta Doshas Dushti.

Nidra: In the majority of cases, 11 patients (36.66%) had Swabhavik Nidra, followed by 09 patients (30%) with Visham Nidra, 02 patients (6.66%) with Alpa, and 8 patients (26.66%) with Prabhut Nidra. Vishama Nidra Due to Itching caused by Dadru Kushtha.

Sharirika Prakriti: Sharirika Prakriti wise distribution shows that the majority of cases registered for the current study belonged to Pittaja-Kaphaja Prakriti 08 patients (26.66%), followed by 7 patients (23.33%) were having Vattaja-Pittaj and VattajKaphaj Prakriti in each group. 4 patients (13.33%) and 3 patients (3.33%) were having Pittaj and Kaphaj Prakriti. minimum patients were found of Vataj Prakriti 01 patients (3.33%). Despite the fact that Dadru Kushtha is a Pitta-Kaphaja Vyadhi, the dominance of Pitta-Kaphaj Dosas are seen in Dadru Kushtha, which is verified by Dadru Kushtha's symptomatology.

Emotional Status: Emotional Status wise distribution shows that the majority of cases registered for the current study belonged to the Normal group 24 patients (80%), followed by the Anxious and Depressed group 02 patients (6.66%) in each. 1 patient (3.33%) were from anger and phobic group in each.

Satva: In the present study, 14 patients (46.66%) were have Madhyam Satva, 12 patients (40%) were have Avara Satva, and 4 patients (13.33%) were have Pravara Satva. According to observations, the Madhyam Satva and Avara Satva persons, who live in cities, are considerably more vulnerable to illness. It is often noticed that Madhyam Satva person's fast and stressful lifestyle affects Mansika Nidana, such as Chinta, Shoka, Bhaya, Krodha etc., which contribute to Agni and Dosha vitiation.

Family history - This present clinical study shows that 28 patients (93.33%) have no family history of Kushtha, while two patients (6.66%) have a family history. With this small number of datas we can't say anything about the relation between family history and Dadru Kushtha. Dadru Kushtha is a contagious disease, its cause has nothing to do with heredity.

RESULTS

Percentage of difference after treatment.

S. no.	Variable	% Diff. in Group-A	% Diff. in Group-B	% Diff. in Group-C
1	Kandu (Itching)	26.08%	45.45%	48%
2	Raga (Erythema)	23.33%	37.93%	41.37%
3	No. of Mandala (lesion)	20%	24.13%	25.92%
4	Avg. size of Mandala (lesion)	25.92%	41.66%	44%
Average % relief		23.63%	36.54%	39.62%

Percentage relief in Kandu (Itching): The analysis of the relief percentage of the Kandu (Itching) shows that the percentage of relief for Group A patients was 26.08 %, the relief for group B was 45.45%, the relief for group C was 48.00%. Kandu (Itching) assessment of therapy better results were observed by Group C therapy over the Group A and Group B.

Percentage relief in Raga (Erythema): The analysis of the relief percentage of the Raga (Erythema) shows that the percentage of relief for Group A patients was 23.33%, the relief for group B was 37.93 %, the relief for group C was 41.37%. Raga (Erythema) assessment of therapy better results were observed by Group C therapy over the Group A and Group B.

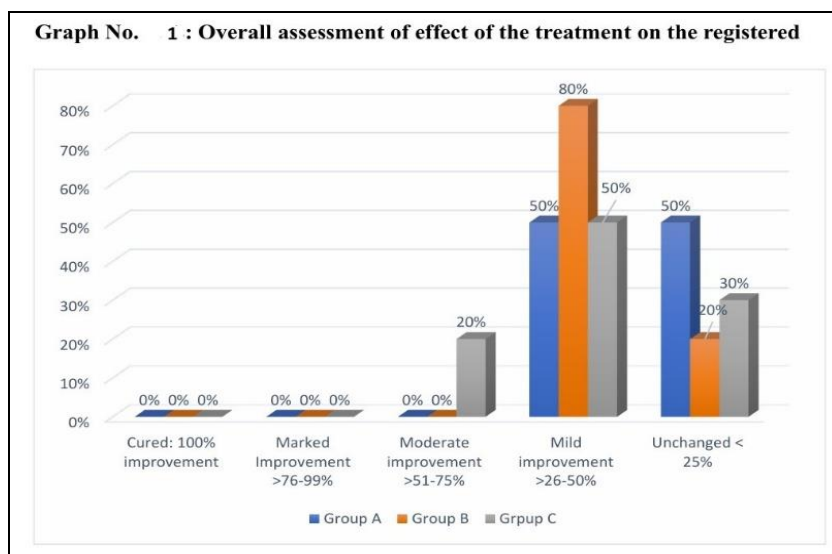
Percentage relief in No. of Mandala (Lesion): The analysis of the relief percentage of the numbers of Mandala (Lesion) shows that the percentage of relief for Group A patients was 20.00 %, the relief for group B was 24.13%, the relief for group C was 25.92%. numbers of Mandala (Lesion)assessment of therapy better results were observed by Group C therapy over the Group A and Group B.

Percentage relief in avg. size of Mandala (Lesion): The analysis of the relief percentage of the avg. size of Mandala (Lesion) shows that the percentage of relief for Group A patients was 25.92 %, the relief for group B was 41.66.%, the relief for group C was 44.00%. avg. size of Mandala (lesion).



Overall assessment of effect of the treatment on the registered Patients of *Dadru Kushtha* (ringworm) of the all groups

Result	Group A		Group B		Group C		Total	
	No. of Patients	%	No. of Patients	%	No. of Patients	%	No. of Patients	%
Cured: 100% improvement	0	0%	0	0%	0	0%	0	0%
Marked Improvement >76-99%	0	0%	0	0%	0	0%	0	0%
Moderate improvement >51-75%	0	0%	0	0%	2	20%	2	6.66%
Mild improvement >26-50%	5	50%	8	80%	5	50%	18	60%
Unchanged < 25%	5	50%	2	20%	3	30%	10	33.33%



Group-A: Group B Grpup C In the group-A; 5 patients (50%) were show Mild improvement and 5 patients (50%) were remain unchanged. Group-B: In the group-B; 8 patients (80%) were shown mild improvement and 2 patient (20%) was remain unchanged. Group-C: In the group-C; 2 patients (20%) were shown moderate improvement, 5 patients (50%) were shown mild improvement and 3 patient (30%) was remain unchanged.

DISCUSSION

Discussion is the process of carefully analyzing and putting together literary material and clinical findings to build an accurate representation of reality. The sections below give a full analysis of the current study, which is called "A clinical study on Raktamokshana (Prachchhan) and Nimba Kshar Pratisaraneeya in the management of Dadru Kushtha w.s.r. to Ringworm."

Discussion on the disorder entity

Dadru Kushtha is a skin condition characterized by the appearance of circular or ringlike rashes on the skin. It is similar to ringworm, which is a fungal infection that can affect the skin on various parts of the body, including the scalp, feet, and groin. *Dadru Kushtha* has a major influence on quality of life of the patients. The classification, prognosis and treatment of *Dadru Kushtha* is described in Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya and many other Ayurveda books. In the modern medicine the *Dadru Kushtha* has poor prognosis and no satisfactory treatment. There are several causes for *Dadru Kushtha* mentioned in Ayurveda. According to Ayurveda, the *Dadru Kushtha* needs an immediate and complete approach for the treatment. The use of internal and external medications on a regular basis is mentioned in the management of this disease. Multiple formulations for the treatment of *Dadru Kushtha* are mentioned in classical texts. Pathya Ahara and Vihara are the part of the treatment of the *Dadru Kushtha*. So, Ayurveda has a big scope in the management of *Dadru Kushtha* with a comprehensive way of treatment.

Discussion on drug & procedure

In modern medicine antifungal therapy and corticosteroids are mainly used to cure *Dadru Kushtha*. These therapies and medicine have serious adverse effects such as skin burn, erythema with pain and may increased risk of squamous cell carcinoma. As a result, there is a pressing need to find a safe and efficient treatment for *Dadru Kushtha*, and Ayurveda is always a ray of hope in this regard. In present study the selected drugs are "A clinical study on Raktamokshana (Prachchhan) and Nimba Kshar Pratisaraneeya in the management of

Dadru Kushtha w.s.r. to ringworm."

The approach used by the modern medical system to treat ringworm, or Dadru Kushtha, is not always effective and can occasionally have severe side effects. On the other hand, given its long-term effects and variety of regenerative actions without any side effects, the Ayurvedic treatment of Dadru Kushtha (ringworm) seems to be more effective and satisfying. In Ayurveda, Dadru is considered a Pitta-Kapha Dosha disorder, and treatment typically involves according to Sushruta is application of Nimba KsharPratisaraneeya (Mriddu) after doing Prachachan Karma on affected site of the Dadru Kushta. Probable modes of action of the Nimba Kshar Pratisaraneeya (Mriddu) on Dadru

Kushtha

- Dadru Kushtha (ringworm) is an itchy, contagious fungal infection that causes a ring-shaped pattern on your skin and the main symptom of Dadru Kushtha is Kandu(itching). Nimba has Kushtaghana, Kandughana and Kaphaghna property so it may be beneficial in the treatment of Dadru Kushtha (ringworm).
- Dadru is a disease caused by vitiation of Kapha and Pitta Doshas. Pitta and Kapha Shamka Properties of the drugs Nimba:
- To treat Dadru Kushtha, it's essential to remove dead skin cells, fungal debris, and impurities from the affected area. Kshara's alkaline nature can facilitate the exfoliation of dead skin cells and help cleanse the skin, thereby removing the environment conducive to fungal growth. Pratisaraneeya (Mriddu) Kshar is mentioned by Acharya Shushruta and Acharya Vagbhatta in the treatment of Dadru Kushtha (ringworm). Kshar have qualities like Ushna, Tikshna, Pachana, Vilayana, Shodhana, Ropana, Shoshana, Sthambhana, and Lekhana etc. So it can remove Kleda, Ama and Kapha and also can clear Srotodushti. Probable modes of action of the Raktamokshna (Prachchhan Karma) on Dadru Kushtha:
- According to Ayurveda, the cause of all skin diseases is considered to be the impurity of blood, the best treatment of which is called Raktamokshan.
- Dosha Balance: Dadru is a disease caused by vitiation of Kapha and Pitta Doshas and Aashrayee (Asraya) bhavas are present in Pitta and Rakta. The Raktamokshana is the primary and ideal Chikitsa for Pitta Rogas.

CONCLUSIONS

After a detailed observation and discussion on the observed data, the following conclusion

has been drawn:

- The signs and symptoms of *Dadru Kushtha*, which includes *Pitta-Kapha* dominance can be seen.
- The signs and symptoms of *Dadru Kushtha* are related to ringworm.
- The current study represented a modest effort to find a cure for this illness, and it has had some degree of success. This investigation produced some very useful results.
- Assessment of therapy better results were observed by Group C therapy (*Prachchhan Karma* along with *Nimba Kshar Pratisaraneeya (Mriddu)*) over the Group A therapy (*Prachchhan Karma*) and Group B therapy (*Nimba Kshar Pratisaraneeya (Mriddu)*).
- The findings of the present study indicate that the selected management approach could have an effect on the *Dadru Kushtha* condition, while also offering a benefit of being without of any adverse effects.
- There is less need for equipment and resources in the manufacturing of *Nimba Kshar* and the manufacturing process is also cost effective.

Recommendations for future research work

- It is suggested that more patients be included in the study to produce better results because this was the first attempt to treat *Dadru Kushtha* with *Raktamokshana (Prachchhan)* and *Nimba Kshar Pratisaraneeya (Mriddu)*. The medicine currently undergoing clinical trials has produced notable results, but a single trial cannot produce a global management strategy. The following recommendations should be considered when conducting future research, as drug development and standardization require ongoing research and its implementations.
- The current clinical trial is conducted with a small sample size and for a brief period of time; therefore, a longer study with a larger sample size and for a longer duration is necessary to determine the precise mechanism of action of the medications and the significance of the experiment.
- Given that *Dadru Kushtha* (ringworm) is a chronic condition, a longer period of follow-up is advised.
- Higher research and the most objective parameters should be used in the study.
- Seasonal changes play a big role in how ringworm is treated and how bad it gets. hence a treatment schedule lasting continuously up to 1 years is very necessary to avoid relapses.

- In the future, there should be double-blind, multi-center clinical studies to find out how well therapies work overall and, if necessary, to rule out the importance of geography. It is necessary to infer that a direct correlation between any specific Ayurvedic condition and ringworm cannot be established, given the extensive range of clinical symptoms associated with the latter. *Dardu Kushtha* can be partially categorized as ringworm, drawing upon the manifestation of symptoms associated with the condition and the principles outlined in Ayurvedic medicine.

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