

## AYURVEDIC MANAGEMENT OF DERMATOPHYTOSIS (*DADRU*)- A CASE REPORT

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### ABSTRACT

Skin is the largest organ of the body. It protects us from invading pathogens and other environmental hazards. Any change in skin reflects a lot about your physical and mental well-being. Intrinsic and extrinsic factors affect the integrity of skin, resulting in skin diseases. Among skin diseases, Dermatophytosis (superficial mycotic infections) is a major health problem causing considerable morbidity and is prevalent in tropical and subtropical countries. Dermatophytosis, as per clinical manifestation, has close resemblance with *Dadru Kustha* mentioned in Ayurvedic text. Here we present a single case study of a 29-year-old male patient diagnosed with *Dadru Kustha*, managed successfully with an Ayurvedic line of treatment.

**KEYWORDS:** Dermatophytosis, *dadru kustha*, *chakramarda*, antifungal, Ayurvedic.

### INTRODUCTION

Skin is our first line of defense which guards us from infections and other environmental hazards. The disease manifested by skin has significant impact on our quality of life, productivity and mental health.<sup>[1][2]</sup> The Global Burden of Disease (GBD) Study 2013 found skin disease to be the fourth cause of disability worldwide.<sup>[3]</sup> Among skin diseases, dermatophytosis is currently a disease of world-wide importance and a major public health problem in many parts of the world, particularly in developing countries.<sup>[4][5]</sup> According to WHO, the prevalence rate of superficial mycotic infection worldwide has been found to be 20-25%.<sup>[6]</sup> In dermatophytosis, *Tinea corporis* is a superficial fungal infection that may involve the trunk, neck, arm and legs. Patients usually present with itchy red rashes on exposed skin. On physical examination, single or multiple lesions are usually circular or ovoid in appearance.

with patches and plaques. These annular lesions demonstrate sharp margination with a raised erythematous scaly edge that may contain vesicles. The degree of inflammation is variable.<sup>[7][8][9]</sup>

Most of the skin diseases in Ayurveda are classified under the 'Kustha' which is further grouped as *MahaKustha* and *Kshudrakustha*.<sup>[10]</sup> *Dadru* is one type of *Kustha*. *Acharya Charaka* has mentioned *Dadru* in *Khsudra Kustha*, whereas *Acharya Vagbhata* and *Acharya Sushruta* have explained it under *MahaKustha*.<sup>[11] [12] [13]</sup> It involves the clinical features like *kandu* (itching sensation), *raga* (redness), *utsana mandala* (circular patches with elevated edges), *pidakas* (eruptions). It is *tridoshaja vyadhi* with predominant vitiation of *pitta* and *kapha dosha*.<sup>[14]</sup>

As per clinical presentation *Dadru* can be correlated to dermatophytosis (superficial fungal infection of skin). In contemporary science, management of fungal infections is carried out with usage of topical or systemic antifungal, corticosteroids. Their long lasting usage may produce the adverse effect along with resistance. Herein case study of a patient diagnosed with *Dadru kustha* successfully managed with Ayurvedic treatment is reported.

## CASE REPORT

A 29 yrs male patient visited the skin OPD of All India Institute of Ayurveda, Delhi, presented with chief complaints of dry reddish lesions with severe itching sensation over hand, thigh and legs since past 6 months. (fig 1) History revealed that initially he developed a round patch over thigh with severe burning and itching sensation, which gradually spread over legs and hand also. He had earlier visited dermatologist where he was diagnosed with *Tinea corporis*. He took allopathic treatment but got only symptomatic relief. Then he came to AIIA skin OPD for better treatment. No family history was known for same.

### Past history

No H/O any major illness

No H/O any drug allergy or any previous surgery

### Personal history

Appetite – average

Bowel – regular (once a day, well formed stool)

Bladder- regular

Sleep – normal (6-8 hrs)

**General Examination**

P.R.- 78/min, Regular

Pallor – absent

Icterus –absent

Clubbing – absent

Cyanosis- absent

Lymphadenopathy – absent

R.R.- 16/min

**Dermatological examination**

On examination, there was single circular (5-6cm in diameter), erythematous plaque with some vesicular eruptions over the right hand. Another single circular raised and scaly plaque, 3-4 cm in diameter, was present on the anterior aspect of left knee. 4-5 erythematous lesions were present in both thigh also. (Fig.1 a,b,c) Other physical parameters were normal.

**Diagnosis-** As there was presence of *kandu* (itching sensation), *raga* (redness), *utsana mandala* (circular patches with elevated edges), *pidakas* (eruptions) the case was diagnosed as *Dadru kustha* (*Kapha-pitta* –dominant) based on the manifested symptoms and clinical findings.

**Therapeutic intervention**

In this diagnosed case of *Dadru Kustha*, based on the involved *doshas* and *samprapti* (pathogenesis) *pitta-kapha shamaka* line of treatment was adopted. *Samshamana chikitsa* along with dietary restriction was suggested. The internal and external medications are listed in table 1-Table 1-

Sr. No.	Type of treatment	Formulations	Dose
1)	Internal medication	<i>Ushirasava</i>	15 ml twice a day with equal water after meal
2)	External medication	<i>Chakramardadi lepa</i> ( <i>chakramarda beeja+Rala+Kampillaka churna</i> in equal quantity)	6-8 hrs. at night with <i>Takra</i> (Q.S.)
		<i>Suhaga</i> powder (borax)	at day

## Assessment criteria (Grading to assess symptoms)

Table 2: Assessment criteria.

Sr. No.	Clinical features	Grade 0	Grade1	Grade 2	Grade 3
1)	<i>Kandu</i> (itching)	Absent	Occasionally, Doesn't disturb rotoutine activity and sleep, Duration-4-6 min, Frequency-recurs 1-2 times in 12 hrs.	Frequent, Disturb routine activity but not sleep Duration-7- 9 min, Frequency-recurs 3-4 times in 12 hrs.	Intense and constant, Disturb sleep and routine activity,  Duration-10-12min., Frequency- recurs 8-10 times in 12 hrs.
2)	<i>Raga</i> (Erythema)	Absent	Faint normal colour of skin	Blanching Red colour	Reddish discoloration
3)	<i>Utasana Mandala</i> (elevated circular patches)	Absent	1-2 patches, Size 1-2 cm	3-5 patches, size-5-10 cm	>7 patches, Size >15 cm
4)	<i>Pidika</i> (eruption)	Absent	1-3	4-7	>7
5)	<i>Rukshata</i> (dryness)	Absent	Dryness present, but relieves on applying unctous substance	Dryness present, persists even after application of unctous substance	Dryness present with roughness

## OBSERVATION AND RESULT

Table 3: Evaluation of symptoms before and after treatment.

Sr. NO.	Clinical features	Before treatment (fig.1)	After 2 weeks of treatment (fig. 2)	After 4 weeks of treatment (fig.3)
1)	<i>Kandu</i> (itching)	3	2	0
2)	<i>Raga</i> (erythema)	2	1	0
3)	<i>Utasana mandala</i> (elevated circular patches)	2	1	0
4)	<i>Pidika</i> (eruption)	3	2	0
5)	<i>Rukshata</i> (dryness)	2	1	0

The symptoms were assessed on the basis of scoring pattern, which was given before and after treatment (during follow up). After 2 weeks of treatment relief in symptoms like *Raga*, *Daha*, *Utasana Mandala* was remarkable. Colour of the lesion got faded.(Table 3), (fig. 2 a,b,c) The symptoms totally subsided after second follow up. (Table3), (fig.3a,b,c) Similar treatment was continued for 1 month. No adverse drug reaction was noticed during treatment and follow up period. During and after the treatment photographs were taken for record.



Figure 1(a,b,c)- Before Treatment.

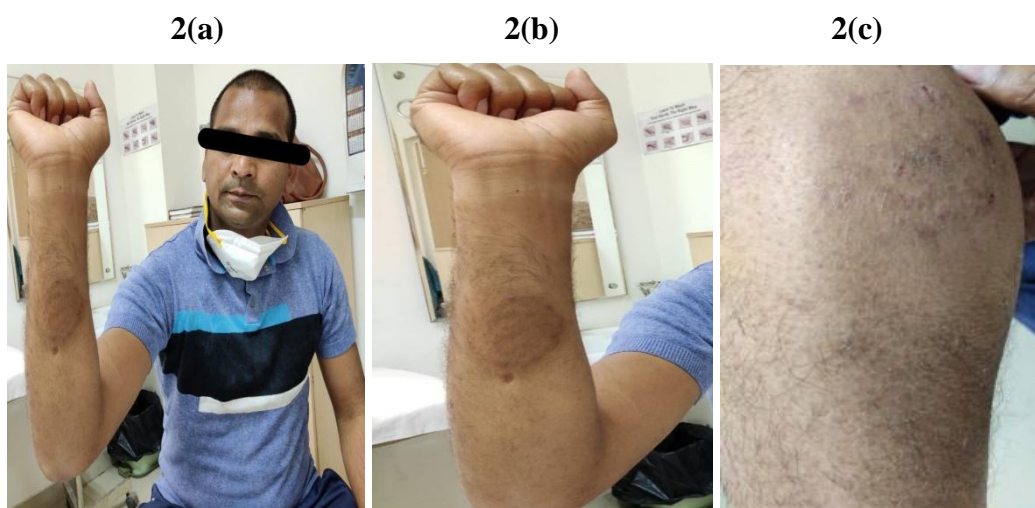


Figure 2(a,b,c)-After two weeks of treatment.

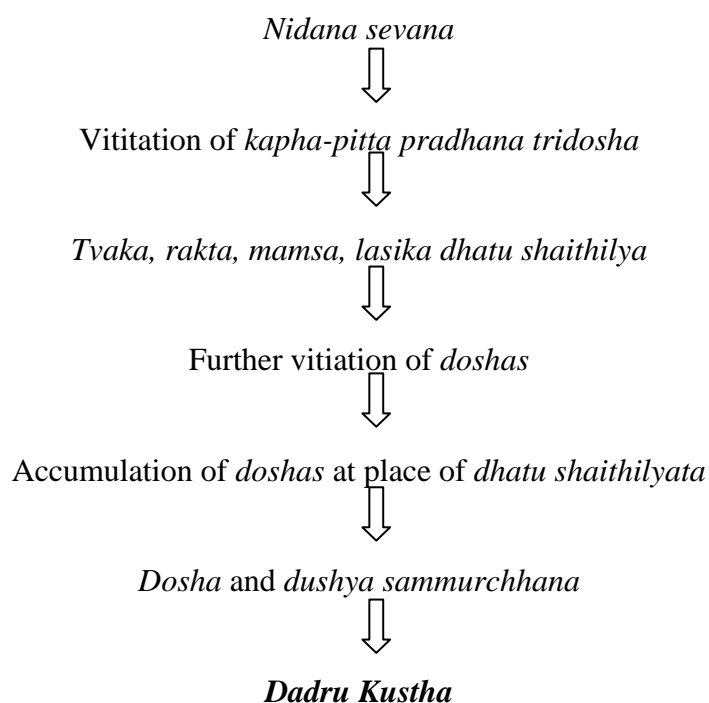


Figure 3(a,b,c)- After four weeks of treatment.



## DISCUSSION

The main causative factor in manifestation of pathology of *Dadru kustha* is *pitta-kapha pradhana tridosha* that vitiates *Tvaka (Rasa dhatu), Rakta, Mamsa, Lasika (lymph)* i.e. *kustha dravya sangraha* (seven fold pathogenic substance of *kustha*).<sup>[15]</sup> Due to consumption of *nidana* simultaneous vitiation of *doshas* and *shaithilyata* (looseness) in *dhatu* (*tvaka, rakta, mamsa, lasika*) occurs. Vitiating *doshas* gain momentum to vitiate *shithila dhatus* leading to manifestation of *kustha*.<sup>[16][17]</sup> The *nidana* (causative factors) is intake of incompatible and contaminated food, suppression of natural urges, drinking cold water just after exposure to sun or after doing physical work, excessive intake of salty or acidic food items, haphazard intake of food with hot and cold properties, improper administration of *panchakarma* therapies, sleep during day time or indulge in sinful acts.<sup>[18]</sup> In present case patient was regularly having incompatible food and sleep during day that contributed to vitiation of *doshas*. The morbid *doshas* further vitiating *dhatu* thus manifested as *Dadru kustha*.



### Probable mode of action of chosen formulations

**Ushirashava-** The majority of ingredients of this formulation are *Tikata, Kashaya-Rasa, Sheeta Virya, Katu- vipaka*, thus pacify *pitta, rakta* (due to *sheeta virya*) and *kapha* (due to *Katu vipaka*). Its *krimihara, shothahara, kusthahara* and *raktapitta shamaka* effect is well documented by *Acharya Govind Das* in *Raktapitta chikitsa*.<sup>[19]</sup>

**Chakramarda beeja** - *Chakramarda* (*Cassia tora* Linn.) drug has *Laghu, Ruksha-Guna, Katu-Rasa, Katu-Vipaka, Ushna-Virya* and *kusthaghna-Prabhava*. Acharya Charaka and Bhava Mishra well documented its *Dadrughna* quality.<sup>[20] [21]</sup> Due to *Laghu, Ruksha Guna* and *Ushna Virya* it reaches to the deeper tissues through *siramukha & swedavahi srotas* (micro-channels), remove *kleda* pacify *kapha* that results in *srotoshodhana* (clearance of channels) and due to *Tikta Rasa, Laghu-Ruksha Guna* it pacify *pitta*. *Kandughna* and *kusthaghna* property of *chakramarda* is mentioned in classical text. Various studies suggested its potent antifungal and antimicrobial action.<sup>[22] [23]</sup>

**Kampillaka churna**- *kampillaka* (*Mallotus philippensis* Muell.) drug possess properties like *Laghu, Ruksha, Tikshna-Guna, Katu-Rasa, Katu-Vipaka* and *Ushna-Virya*. Acharyas has mentioned its *kriminashaka, Vrananashaka* and *kapha, pitta and rakta shamaka* qualities.<sup>[24]</sup> Its antifilarial, antibacterial, antifungal, antiinflammatory, immunoregulatory, antiproliferative and wound healing potential is reported in various studies.<sup>[25]</sup> Due to *Laghu, Ruksha* and *Tikshna Guna* it enters *srotas* (micro-channels) and diffuse fastly. *Katu vipaka* and *Ushna Virya* remove *kleda* from *swedavaha srotas* (channels carrying sweat) which is responsible factor in pathogenesis of *kustha*.

**Rala**- It is exudate of *Shala* (*Shorea robusta* Gaertn). It has *Kashaya, Madhura Rasa, Sheeta-Virya, Katu-Vipaka, and Vednasthapaka-Prabhava*.<sup>[26]</sup> Acharyas highlighted its *Vrana ropaka, krimighna, Dadrughna* and *bhagnasandhankara* properties.<sup>[27]</sup> It has potent binding capacity thus increase bioavailability of formulation.

**Takra (butter milk)** – *Takra* has *Kashaya, Amla-Rasa, Ushna-Virya, Madhura-Vipaka, Laghu, deepana, grahi-Guna*.<sup>[28]</sup> It act as *Vataghna* due to *Amla Rasa* and *Madhura Vipaka, kaphaghna* due to *kashaya Rasa* (astringent taste), *Vikasi* and *Ruksha* qualities and doesn't vitiate *pitta* due to *Madhura Vipaka*. It cleanses channels of circulation due to *Vikasi Guna* and act as a medium to penetrate the formulation. Antimicrobial activity of *takra* is reported by studies.<sup>[29]</sup>

### Mechanism of action of lepa

A lepa (Topical application) when rubbed in upward or reverse direction of hair over the skin the drugs enters the pores and get easily absorbed in capillary network to minor veins and further into circulation<sup>[30]</sup> which will pacify the *Doshas* and it leads to break the *samprapti*. Internal medication show their effect through *jatharagnipaka*(digestive tract) and *dhatwagni*

*paka*(tissue level digestion)<sup>[31]</sup> while external applications skips the above and get absorbed by *bhutagni paka*, hence show quicker relief in symptoms like itching, inflammation and burning sensation etc. as compare to internal administrated drugs.

## CONCLUSION

It is concluded from the study that clinically dermatophytosis has close resemblance with *Dadru kustha*. It can be successfully managed by *bahiparimarjana* (external application) and *shamana chikitsa* based on involved *doshas* and *samprapti* along with dietary restriction. Above treatment is safe, cost effective and reduce recurrence rate as compare to contemporary treatment(antifungal and steroids), which has limitation due to host related adverse reaction and recurrent antifungal resistance.

**Informed consent-** Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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**Conflicts of Interest-**There are no conflicts of interest.

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