

**AYURVEDIC HERBS IN DADRU WITH SPECIAL REFERENCE TO RINGWORM - A REVIEW ARTICLE**Chakraborty Subhrajyoti<sup>1</sup>, Shalini<sup>2</sup>, Sah Mahesh Prasad<sup>3</sup>, Singh O. P<sup>4</sup><sup>1</sup>PhD Scholar, Department of Kayachikitsa, Banaras Hindu University, Varanasi, Uttar Pradesh, India<sup>2</sup>Assistant Professor, Department of Kayachikitsa, Banaras Hindu University, Varanasi, Uttar Pradesh, India<sup>3</sup>H.O.D & Professor, Department of Panchakarma, IOM Tribhuvan University, Nepal<sup>4</sup>H.O.D & Professor, Department of Kayachikitsa, Banaras Hindu University, Varanasi, Uttar Pradesh, IndiaEmail: [ayurvedacharyasubhra@gmail.com](mailto:ayurvedacharyasubhra@gmail.com)<https://doi.org/10.46607/iamj0807142020>

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**ABSTRACT**

Skin is an important and most visible organ of our body. Any disease related to skin can create physical as well as psychological problems in an individual. In recent years there has been increase in the incidence of skin problems in the tropical and developing countries like India due to various factors like pollution, unhygienic condition etc. In Ayurveda all the skin disease considered in *Kustha*, which are further categorized into *Mahakustha* and *Kshudrakustha*. *Dadru* is one of the most common but miserable variety of *Kustha* affects the population of all age groups and it stands as a challenge to different medical systems inspite of many advances. *Dadru* is a *Kapha Pitta Pradhan Vyadhi* and the management of which includes *Shodhana*(elimination), *Shamana* (alleviation) and *Bahirparimarjana* (external application) *Chikitsa*. *Dadru* can be correlated with Ringworm in modern terminology. Ringworm is a common fungal skin infection otherwise known as tinea. Ringworm most commonly affects the skin on the body (tinea corporis), the scalp (tinea capitis), the feet (tinea pedis), or the groin (tinea cruris). It is the commonest single fungus group infections found in an unhygienic environment. In modern various antifungal agents like Fluconazole, Miconazole, Itraconazole etc. have been used for the treatment of these infections. In

Ayurveda, so many herbs like *Cakramarda*, *Bakuchi*, *Karanja*, *Rasona*, *Haridra* etc. having antifungal activity which are experimentally proved to control and treat *Dadru Kustha* without any adverse effect.

**Keywords:** *Dadrukustha*, *Ringworm*, *Ayurvedic drugs*, *Antifungal activity*.

## INTRODUCTION

Skin is the largest organ of human body. Its size and external location makes it susceptible to wide variety of disorders. In Ayurveda all the skin diseases are described under broad heading of '*KusthaRoga*', which are further categorized into *Mahakustha* and *Kshudrakustha*. Seven materials affected morbidly are the causative source of *Kustha* such as three *Dosha* (*Vata*, *Pitta*, *Kapha*) vitiated by etiological factors and four *Dusya* (*Twak*, *Mamsa*, *Rakta* and *Lasika*) affected with affliction by *Dosha*<sup>1</sup>. Ayurvedic classics have considered each type of *Kustha* to be a *Tridoshaja* manifestation. *Dadru* is one among the *Kustha*<sup>2</sup>. Acharya Charaka has included *Dadru* in *Kshudra Kustha*<sup>3</sup>, whereas Acharya Sushruta and Acharya Vagbhata have explained under *Mahakustha*<sup>4,5</sup>. The reason may be that they realized the severity of the disease. Clinically, *Dadru* looks like *Kshudra Kustha*, which is easily curable by simple application also. But if it is neglected, it goes into deeper tissues and take the shape of *Mahakustha*. At this stage *Dadru* is not easily curable. This is the reason why Charaka included *Dadru* in *Kshudra Kustha* while Sushruta and Vagbhata included it in *Mahakustha*. It involves the clinical features like *Kandu*, *Deerghapratana*, *Utsanna*, *Mandala*, *Raaga*, *Pidakas* which exhibits involvement of *Kapha* and *Pitta*. Acharya Vagbhata especially mentioned *Dadru* as *Anusangika*<sup>6</sup>. According to Ayurveda, *Dadru* can be treated with *Shodhana*(elimination), *Shamana* (alleviation) and *Bahirparimarjana* (external application) *Chikitsa*. According to Charaka, *Dadru* is characterized by raised patches associated with itching, redness and papules<sup>7</sup>. Modern science explained that the dermatophytosis is Keratinophilic, so they grow in the Keratin of the Stratum Corneum, layer of skin. Clinical features of Dermatophytosis are intense itching, annular erythematous scaly lesions, the active border consist of papulovesicular lesions and in advancing stage the

lesions spread peripherally with central clearing and pigmentation<sup>8</sup>. Similarly, *Madhukoshkara*, a commentator of '*Madhavanidana*' stated *Dadru* which occurs superficially having *Lakshanas- Kandu*(itching), *Raga*(redness), *Pidaka* (pimples) and *Udagatamandala* (raised patch)<sup>9</sup>.

Thus, from the above statements, one can say that the *Dadru Kustha* according to Ayurveda and Dermatophytosis of modern science shows symptoms wise resemblance between each other. So, Ringworm (Dermatophytosis) can be correlated with *Dadru Kustha*.

Ringworm or Tinea caused by dermatophytes and are often severe as well as recurrent. Dermatophytes are fungi capable of causing superficial skin infections known as ringworm or dermatophytosis. The causative fungi belong to three genera (*Microsporum*, *Trichophyton* and *Epidermophyton*). They can originate from the soil or animals or be confined to human skin. Clinical forms of cutaneous infection include tinea corporis (involvement of the body), tinea capitis (scalp involvement), tinea cruris (groin involvement), tinea pedis (involvement of the feet) and onychomycosis (nail involvement)<sup>10</sup>. It usually occurs in adult wearing clothes made up of synthetic material which tend to accumulate heat and humidity. Recognition and proper treatment of dermatophyte reduces morbidity, discomfort and lessen the possibility of transmission.

Tropical antifungal drugs, oral antifungal drugs and steroids are used to treat ringworm at various stages. Now a day, resistance is increasing to antifungal modern drugs. There is no sufficient data regarding Ayurvedic treatment of ringworm (*Dadru*).

So, there is a need to search the effective, safe and affordable Ayurvedic treatment for the management of *Dadru* (ringworm).

### Aim & Objectives:

1. To analyze about Dadru *Kustha* with special reference to Ringworm.
2. To show the importance of Ayurvedic herbs in the management of *Dadru Kustha*.

### Materials & Methods:

**Material-** Relevant literature is referred in *Samhitas*, *Sangrahas* and contemporary literature along with personal experience.

**Methodology-** Review study

Literature related to the title is explored from all reliable Ayurvedic and Modern journals from internet.

Conclusion has been drawn from systemic analysis, comparison and rationale.

## DISCUSSION

The present article aimed at finding a safe and effective drug for managing *Dadru Kustha*. *Dadru* is manifested by appearance of discoid lesions within tractable itching. These diseases are chronic in nature, relapses after successful treatment is common and hence difficult to cure. It mostly occurs in those people who don't follow the hygienic norms or those who are immune compromised. *Dadru* is *Kapha* dominant disease besides its *Rasagata* manifestation<sup>11</sup>. Hence considering this Acharya Sushruta has described their treatment as application of *Shodhana Lepa*<sup>12</sup> in the form of *Bahirparimarjana Chikitsa* and internal medicines like *Kwath*. *Bahyarogamarga* disease involves *Rasavaha&Raktavaha Srotas*, *Tridoshas* (mainly *Kapha Pittapradhan*), *Twak*, *Rakta*, *Lasika*, *Swedushyas* and *Twakadhisthan*. *Dadru* involves only *Rasavaha&RaktavahaSrotas* without further involvement of successive *Srotas*. Acharya Sushruta describes the colour of lesions in *Dadru* more specifically like that of copper or like flower *Atasi* (linseed) and mentioned that its *Pidaka* are in the form of *Parimandala* having spreading nature (*Visarpanshila*)<sup>13</sup> but slow in progress or chronic (*Chirrottham*) in nature with *Kandu*. Acharya Dalhana classified *Dadru* into *Sitha* and *Asitha*<sup>14</sup>. Acharyas not explained separate *Nidana*(etiology) for *Dadrukustha*. According to Acharya Charak among the six layers of six, *Dadru* occurs in 4<sup>th</sup> layer<sup>15</sup> and Acharya Sushruta

mention *Kustha* in 4<sup>th</sup> layer (*Tamra*) and 5<sup>th</sup> layer (*Vedini*) among the 7<sup>th</sup> layers of skin<sup>16</sup>.

Ringworm (*Tinea*) is a fungal skin disorder. The number of invasive fungal infections has dramatically increased in both developed and developing countries. An antifungal drug is used to treat fungal infection but use of such type of drug in large way makes the unusable due to resistance and its toxicity, so people move towards herbal drugs which are safer. There are numerous medicinal plants which play important role in antifungal activity.

**Cassia Tora-** Commonly known as *Cakramarda* or Ringworm plant. It contains quercetin, obtusin, fistucacidin, emodin, cassiaside etc as major chemical constituents. It possesses *Katu rasa*, *Laghu&Rukshaguna*, *Usnavirya* indicated in *Dadru* and *Kandu* etc. It has established antibacterial and antifungal activity which helps to combat different *Twakroga*(skin disease)<sup>17</sup>. The leaf extract has shown the significant antifungal activity to inhibit the growth of *Candida albicans*, *Aspergillus niger*, *Saccharomyces cerevisiae* and *Trichophyton mentagrophyte*<sup>18</sup>. It shows antifungal activity due to chrysophenol and chrysophanic acid-9 enthrone and other anthraquinones such as emodine, physcion and rhein<sup>19</sup>.

**Pongamiapinnata-** Commonly known as *Karanja* or Indian beech which contain karanjin, pongapin, pongol, kanjone, glabrin, pongamin etc as major chemical constituents. It has *Tikta*, *Katu*, *Kashaya rasa*, *Laghu*, *Rukshaguna* and *Usnavirya* indicated for *Kustha*, *Kandu*, *Krimi* etc. The essential oil from *P. pinnata* showed antifungal activity<sup>20</sup>. The petroleum ether extract exhibited strong inhibitory activity against *Candida albicans* and *Aspergillus niger*. Methanol extract showed moderate antifungal activity against *Aspergillus fumigates* and mild antifungal activity against *Microsporiumgypseum* and *Trichophyton rubrum*<sup>21</sup>.

**Azadirachtaindica-** Commonly known as *Neem* or *Margosa* tree. It contains azadirachtin, nimbin, nimbidin, margosinolide, azadirachtolite etc as major chemical constituents. It possesses *Tikta*, *Kashaya rasa*, *Laghu*, *Rukshaguna* and *Kapha-Pittahara* action (*Karma*) which is indicated for *Kustha*, *Kandu*, *Krimi* etc. It is found effective in case of acute eczema,

ringworm infestation and scabies. The antimicrobial activity of different neem extracts is well documented<sup>22</sup>. The ethanol extracts of neem leaves showed Minimum inhibitory Concentration (MIC) and Minimum Fungicidal Concentration (MFC) against *T. rubrum* and *M. nanum*. Hexane extracts of neem leaves showed antifungal activity against *T. mentagrophytes*<sup>23</sup>.

***Cassia fistula***- Commonly known as *Aragvadha* or *Amaltas* which contain fistulin, kaempferol, fistulic acid, rhein, sennosides A & B as major chemical constituents. It has *Kapha – Pittahara karma* indicated for *Kustha*. Out of the five glycosides tested, CFRI (one of the glycosides) alone exhibited marked antifungal activity<sup>24</sup>. The cassia leaf extracts are inhibitory towards pathogenic fungi (*T. rubrum*, *M.gypseum* and *P.marneffeii*). These confirm the therapeutic claims to treat Ringworm and Skin diseases<sup>25</sup>.

***Psoraleacorylifolia***- Popularly known as *Bakuchi* or *Avalguja* which contains psoralen, corylifolin, psoralidin, bakuchiol, corylinetc as major chemical constituents. It has *Katu, Tikta rasa, Laghu, Rukshaguna* and *Usnavirya* acts as *Kapha-Vatahara* indicated in *Kustha, Krimi* etc. The essential oil shows antibacterial and antifungal activities which was already documented<sup>26</sup>.The methanol seed extract of *P.corylifolia* comprise of a promising antifungal activity against *M.furfur*, *Candida albicans* and *A. niger* as compare to seed oil<sup>27</sup>.

***Curcuma longa***- Commonly known as *Haridra* or *Turmeric* which contains curcumene, curcumenone, curcone, curcumins, cineole etc as major chemical constituents. It possesses *Tikta, Katu rasa, Ruksha, Laghuguna* and *Usnavirya* properties. It acts as *Kapha- Vatahara* and indicated for *Kustha, Kandru, Krimi* etc<sup>28</sup>. The international literature reports on fungi control properties of turmeric pertaining to the plants extracts, the essential oil and certain bioactive constituents of the plants which may prove it as an effective fungicidal in fumigation. Arturmerone constituted 87% of the fungotoxic component of the oil. The purified ar-turmerone showed antifungal activity similar to the crude oil<sup>29</sup>.

***Acorus calamus***- Commonly known as *Vacha* or *Sweet flag* which contain acolamone, acoramone, acorone, cis-asarone, eugenol, calamine as major chemical constituents. It possesses *Katu, Tikta, Laghu, Tiksnaguna, Usnavirya* which act as *Kapha – Vatahara*. Cis- asarone showed antifungal activity against *Helmintho-sporium oryzae*<sup>30</sup>.

***Allium sativum***- Commonly known as *Rasona* or *Garlic* which contain number of chemical constituents like alliin, ajoene, allylmethylselenide, asparagic acid, allinase etc. It has *Madhura, Lavana, Katu, Tikta* and *Kashayarasa, Snigdha, Tiksnaguna* and *Usnavirya* act as *Kapha- Vatahara* indicated for *Kandru, Krimi* etc. Diallyl trisulphide showed antimicrobial activity<sup>31</sup>. Fresh aqueous extract of garlic showed antifungal activity specifically against some *Aspergillus* spp. Including *A.fumigates*, *A.terreus*, *A.nidulans* and *A.niger*. The inhibitory effects of fresh aqueous extract of garlic against *Aspergillus* spp. Were revealed in different concentrations. The inhibitory effects of allicin against *Trichophyton*spp are more pronounced than those of the essential oils derived from other plants<sup>32</sup>.

***Syzygiumaromaticum***- Commonly known as *Lavanga* or *Clove*. It has eugenol, eugenine, eugenone, caryophellene oxide etc as major chemical constituents. It possesses *Tikta, Katu rasa, Laghu, Snigdha* and *Sita virya* which acts as *Kapha- Pittahara*. Eugenol, the major component of clove oil, is a phenolic compound- a naturally occurring antioxidant which prevents foods from turning rancid. Its bactericidal and fungicidal properties favour its use in human medicine as an antiputrescent<sup>33</sup>.

***Ocimum sanctum***- Popularly known as *Tulasi* or *Holy basil* which contains eugenol, cardinene, camphene, camphor, limonene etc as major chemical constituents. It has *Katu, Tikta rasa, Laghu, Rukshaguna* and *Usnavirya* acts as *Kapha- Vatahara*. Essential oil from leaves showed antifungal activity is reported<sup>34</sup>.*Ocimum sanctum* leaves possessed antifungal activity against clinically isolated dermatophytes at the concentration of 200 µg/mL. MIC and MFC were high with water fraction (200 µg/mL) against dermatophytic fungi used<sup>35</sup>.

**Piper nigrum-** Commonly known as *Maricha* or Black pepper. It contains piperene, citronellol, pinene, camphene, carotene, ascorbic acid, piperide etc. It has *Katu rasa*, *Laghu*, *Tikshnaguna* and *Usnavirya* acts as *Kapha- Vatahara*. Essential oil reported to be antifungal against *Trichophyton terrestre*, *Candida albicans*, *Aspergillus niger* etc<sup>36</sup>.

#### **Probable mode of action-**

The active compounds of the above herbs like eugenol, Cis- asarone, sulfuric compounds, arturmerone, azadiradione, glycosides, linoleic acid, gallic acid, camphor, piperitone, flavonoids, phenolic compounds and tannins derived from it has antifungal effects. All the plants have very good effects against dermatophytosis agents. It found to have growth inhibition or killing effect on dermatophytosis agents and their pathogenicity<sup>37</sup>.

#### **In Ayurvedic prospective-**

Tropical preparation applied might have acted by its *Ruksha* and *Lekhana* property for pacifying the *Kapha Doshas* locally and maintained the equilibrium of other *Doshas*. The *Sukshma* property of drugs used might have penetrated into deeper *Srotas* and dissolved the *Sanga*. After acting locally, the impaired *Dhatwagni* of *Rasa* and *Rakta* might be corrected to some extent by the *Agnideepana* property of the ingredients. By this *Dhatu Shaitihilya* might have resolved and provided nourishment to *Twacha*<sup>38</sup>.

When a *Lepa* is applied over the surface of skin opposite to the direction of hairs on it, through a proper base, the active principles of the ingredients of *Lepa* are released into that base. After that, this combination enters the *Romkupa* and further gets absorbed through the *Swedavahi Srotas & Siramukh* and it does the cutaneous biotransformation which will pacify the *Doshas* and leads to breaking of *Samprapti*. However, it should be kept in mind that the pilosebaceous uptake i.e., absorption of *Lepa* differs as per the site variation, skin condition and more important is the base through which it is applied<sup>39</sup>.

The ingredients having properties like *Agnidipaka*, *Raktashodaka*, *Samsrana*, *Pitta- Kaphahara*, *Kusthaghna* etc., can be used to manage *Dadru*. *Dadru* is *Kapha pradhana Vyadhi*. Thus, formulation

which contains the *Katu*, *Tikta rasa*, *Ushna Virya* which acts as *Kaphahara* can be used. In *Dadrukustha*, *Rasa*, *Rakta*, *Mamsa*, *Ambu* are the main *Dushya* as mentioned above. *Rasa Dhatu Dusti* is produced by *Rasa Dhatwagnimandya* and *Jatharag-nimandya*. Herbs having *Deepana*, *Pachana* and *Agnivardhak* karma will be used for proper *Dhatupaka*. Herbs which are *laghu*, *ruksha* and having *RaktaShodhaka* properties will be used to combat and mitigate the recurrence of this disease.

## **CONCLUSION**

In brief, *Dadru Kustha* is a skin disease which is correlated with the fungal skin disorder in modern medical sciences. The Ayurvedic herbs which are described above have antifungal activity which were mentioned in various researches. Modern medicines, when used for prolonging period shows toxicity and sometime develop resistance. So, for present and future perspective; some Ayurvedic herbs which are safe and effective are described. The present review summarizes some antifungal herbs which are already mentioned in Ayurvedic classics and these are helpful to mitigate the concern issue. So, there is need to do further research studies for developing new drugs in the management of *Dadru Kustha*.

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