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# A Clinical Evaluation of *Amlika Patra Swaras* (*Tamarindus Indica* Juice) in the Treatment of Twacha Rog (Skin Disease) With Specific Reference to Fungal Infection

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***Abstract*: Ayurveda stands as one of the most ancient and well-documented systems of medicine, maintaining its relevance in contemporary healthcare. The objective of Ayurveda is to achieve homeostasis within the body's tissues, thereby promoting health. However, Ayurveda often faces scrutiny regarding the rationality of its prescriptions. Drug research, which is an integral part of Ayurveda, is one of the important divisions in the field of research, which is ever progressing without frontiers. Now a days people are very much conscious about their health and personality. The skin disease will not only affect their physique but also disturbs their mental status. In Ayurveda *Kushtha* is considered as the *Rakta pradoshaja vikara*. Many formulations given by *Archaryas* in *kushtha Chiktsa*, while many *Shaman Lepa* is indicated in the *Kshudra kushtha Chikitsa*. *Amlika* is mentioned *Bhavaprakasha.*[6] Amlika Patra Swarasa Lepana is used in the treatment of *Dadru*[7] which is mainly having *Kaphavataghna* properties. As this chapter stands very important in many ways for a physician or a research scholar, we had taken the *Amlika Patra Swaras* for the study. This clinical study has been found beneficial for the society.**

***Keywords*: Clinical Evaluation, Skin Disease, Fungal Infection.**

## 1. Introduction

Nowadays skin diseases are very common. Though skin diseases are common at any age of the individual, they are particularly frequent in the elderly. The patients always experiences physical, emotional & socio-economic embarrassment in the society. Normal 10 - 15% of the General Practitioners work is with skin disorders & it is a second commonest cause of loss of work.

All the skin diseases in Ayurveda *Acharya Charaka* have been classified under the broad heading of *'Kushtha'* which are further categorized in to *Mahakushtha & Kshudrakushtha*.[1] Acharya *Vriddha Vagbhatta* has mentioned 18 types of *Kushtha* and mentions that *Dadru Kushtha* is *Kaphapittaja* variety of *Kushtha*.[2] *Acharya Kashyap* demarcated *Dadru* as a skin disease having "*Vridhimanta Mandala*," i.e., disseminating discoid lesions with intense itching, burning sensation and discharge from it. Sometimes these lesions are dry, which is a crucial point through practical aspect.[3]

As per modern perspective disease *Dadru* comes under "Superficial fungal infection of skin" the most common dermatological manifestation affecting most of the world's population in all age group. Clinically, signs such as *Pidaka*, *Kandu, Raga, and Mandala* of *Dadru* closely resemble features observed in the clinical presentation of Tinea infection/ dermatophytosis/ ringworm infection. Tinea corporis was likewise found to be the most common form of the infection in India, accounting for 35.4% of cases, followed by Tinea cruris and Tinea capitis each accounting for 16.8% of cases.[4]

In modern Tinea is usually treated with antifungal drugs and corticosteroids, which cure the disease within a few days, but there are maximum chances of reoccurrence.[5] The body may become resistant to long-term use of topical antifungal drugs along with corticosteroids which may also be accompanied by some complications. Hence study planned as "A Clinical evaluation of *Amlika Patra Swaras* (Tamarindus indica juice) in the treatment of Twacha Rog (Skin Disease) W.S.R. To Fungal Infection".

### *A. Aims and Objectives*

A Clinical Evaluation of *Amlika Patra Swaras* (*Tamarindus Indica Juice*) in the Treatment of *Twacha Rog* (Skin Disease) w.s.r. To Fungal Infection.

### *B. Objectives*

1. To explore the data related to *Dadru (twak rog)* in Ayurvedic and Modern texts in detail.
2. To study the review of *Amlika* and its mode of action in skin diseases w.s.r. to fungal infection.

## 2. Review of Literature

### *A. Etymology*

कुष् निष्कषणे + कत् The word "Kushtha' is derived from - 'Kus nishkarshane' + 'Kta' which implies 'to destroy', 'to scrap out' or to deform, by adding the suffix 'kta' which stands for firmness or certainty. Thus, the word Kushtha means that which destroys with certainty. *Dadru* is type of kshudra kushtha According to Charak samhita, *Dadru* is said to be located in the

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4th layer of twacha.

*B. Definition*

*Dadru* is a type of *Kushtha* roga, which is characterized by the cardinal symptoms like Kandu, Utsannamandala, Raaga and Pidaka and the lesions resembling the skin of a tortoise.[9]

According to *Acharya Sushruta*, the skin disease which is having spreading nature, papules with bluish tint or copper colour is known as *Dadru* Kushtha.[11]

*Acharya Kashyapa* has clearly dened *Dadru* as a skin disease having "Vriddhimant Mandals" i.e. disseminating discoid lesions with intense itching, burning and secretions from it. The lesions are sometimes dry in nature which is a very important point through practical aspect.[12]

सकण्डूरागनिडकं दद्रुमण्डलमुद्गतम्॥ च ि च. 7/23

अतसीनुुुष्पवणाषनि ताम्राि ण वा ि वनसीि ण निडकावन्ति च दद्रुकुष्ठानि; तयोद्ृषयोरप्युत्सन्नता नुररमण्डलता

कण्डूनिरोत्थानुत्वं चेि त सामान्यानि रूनुुाि ण ॥८॥ सु नि. 5/8

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उत्सन्नमण्डला दद्रूनुुि ः कण्डूमन्तयुषनिणी॥२४॥ अह्ह नि. 14/24

*C. Types of Dadru*

*Acharya Dalahan* has mentioned two types of *Dadru*- sita *Dadru* and asita *Dadru*.

*1) Rupa*

Lakshanas of *Dadru Kushtha* which are fully manifested in Vyaktavastha of Kriyakala. Those Lakshanas are Kandu, Daha, Durvavat Deergha Pratana. Ruksha, Raga, Pidaka, Utsanna Mandalas, Strava, Atasipushpa Varnani, Tamra Varnani, Anushangini, Visarpani and Chirrottama.

*D. Modern Review*

The infection is commonly designated as ringworm or Tinia. The term literally means insects' larva. Ringworm infection is commonly found in stratum corneum of skin, hair and nail. They are also referred as Dermatophytosis or Tinia. Ringworm is caused by twenty species of Dermatophytes fungi which are grouped into three genera: Trichophyton, Microsporum, and Epidermophyton.

*Etiology:* Transmitted from one person to another person or by contaminated objects e.g., Clothes, hats, hairbrushes etc.

*E. Previous Work*

1. Kamble Avinash Baburao"A Comparative Study of Rajika Taila and Gandhaka Malahara in Management of *Dadru*." MUHS, 2014.
2. Atram Ravindra Baban, Assessment of Durvadi Lepa Chikitsa in *Dadru* Roga W.S.R. To Fungal (Tinea) Infecation. MUHS, 2015.
3. Salunkhe Harshad Laxman. To Study the Effect of Shrunghberadi Lepa in the Management of *Dadru* Kushtha. MUHS, 2015.

## 3. Methodology

*A. Material*

Basic raw drugs required for the preparation was collected from the authenticated dealers and Pharmacognostic study was carried out in Dept of Dravyaguna, of our institute.

*Drug details Taxonomical order:*

Kingdom: Plantae
Subkingdom: Tracheobionta
Super division: Spermatophyte Division: Magnoliophyta
Class: Angiospermae (Magnoliopsida)
Subclass: Dicotyledonae (Rosidae)
Super order: Rosanea
Order: Fabales
Family: Leguminosae (Fabaceae)
Sub family: Caesalpiniaceae
Genus: Tamarindus L.
Species: Indica
Tribe: Detarieae

*Vernacular names:*

Arabic: Daralsida
Assam: Tamar, Teteli
Bengal: Tetula, Nuli, Tintil, Tinturi
Brazil: Jubay, Tamarindo
Coorg: Pulinje
Dutch: Tamrinden boom
English: Tamarind tree
French: Tamarindien
German: Tamarindenbaum
Gujarat: Amli, Ambli
Hindi: Amli, Imli
Italian: Tamarindo
Kannada: hunise, imli.
Malayalam: Puli, valampuli, kolpuli.
Marathi: Ambali,
Mysore: Amli Asam, Hunese
Nepal: Titri
Persian: Ambalah
Portugese: Tamarindo
Punjab: Imbli
Sanskrit: Amlika, Chincha, Tinthidi, Chukra
Sind: Amri, Gidamri
Telugu: Amlika, sinja, Tinthrini
Urdu: Imli
Uriya: Tentuli

*B. Methods*

*1) Method of collection of data*

1. *Field Work:* The selected plants were collected from Botanical gardan. The voucher specimen was collected and deposited at the herbarium/museum of the department.
2. *Pharmacognostical studies:* Quantitative microscopy for carrying out the measurement of tissues was done by using stage and ocular micrometers.

Table 1
Rasapanchaka of Amlika

| S.No. | Drug | Latin Name | *Rasa* | *Vipaka* | *Virya* | *Karma* | *Useful part* |
|---|---|---|---|---|---|---|---|
| 1 | *Amlika* | *Tamarindu s indica* | *Amla* | *Amla* | *Ushna* | *Vata Kaphahar* | *Patra* |

Table 2
Assessment of Dadru - Sign and symptoms

| S.No. | Symptoms | Score from 0 day | 7th day | 14th day |
|---|---|---|---|---|
| 1 | *Kandu (itching)* | | | |
| 2 | *Raga (Redness)* | | | |
| 3 | *No. of Mandal (No. of patches)* | | | |
| 4 | *Size of Mandal (Size of patches)* | | | |
| 5 | *Pidika (Painful eruption)* | | | |

Photomicrographs were taken and images captured on computer.

3. *Case record form:* In this study 30 diagnosed patients of *Dadru* were selected irrespective of their sex, caste, religion. A detailed case history of the patients was taken with the help of a specially prepared case record form.
4. *Preparation of Swaras and application of lepa:* Fresh leaves were collected. After washing with clean water the leaves, the juice extracted from a fresh leaf by pounding it and squeezing through cloth. Leaves used for lepa were fresh. The Ayurvedic maneuver suggests that Lepa, i.e.the topical formulations should be gently rubbed in an upward or reverse direction of the hairs over the skin, Lepa should not applied at night. All these rules are addressed for proper absorption and avoiding any ill effects of *Lepa. Aacharya Sushruta* instructed that the Thickness of *Lepa* should be equivalent to moist buffalo's skin,[16] it should be applied uniformly thick over the skin. However, when softening and soothing action is to be elicited, the drug should be applied uniformly thin over the skin.

*2) Amlika Patra Swarasa Lepa*

अन्तिकाऽनुा गुरुवाषतहरी नित्तकफास्रकृत् । नुक्ा तु दीनुनुी रूक्षा सरोष्णा कफवानतुत् ॥११७॥ भावप्रकाश-नुूवषखण्ड-आम्राि दफलवगष िचञ्चानुत्ररसं वा कण्डूिनताशमन्तिन्तच्छ .... प्रिलम्पेत । वैद्य नमोरमा

*Rasapanchaka of Amlika:*

*Chemical constituents:*

Tamarindus indica has many active constituents like phenolic compounds, cardiac glycosides, L(-) mallic acid, mucilage, pectin, tartaric acid, arabinose, galactose, xylose, uronic acid. The aerial part of this plant has tartaric acid, acetic acid, succinic acid, gum, pectin, sugar, tannin, alkaloid, flavonoids, sesquiterpienes, and glycosides.

*Clinical Study Design:*

*Types of study design:* Single arm clinical study

*Duration of study:* 14 Days

*Study design:* Study comprised three phases viz. Diagnostic Phase, Interventional Phase and Assessment Phase.

1. *Diagnostic Phase:* Patients diagnosed as Dadru on the basis of symptoms then selected for study.
2. *Interventional Phase:* A group patients treated with Amlika Patra Swarasa locally for four weeks
3. *Assessment Phase:* Day 0, Day 7, Day 14 observations of both the groups assessed to draw conclusions.

*Setting (location of study):* Selection of patient from OPD & IPD in department of Dravyaguna were selected for the study.

*Study Population:* The regular & camp patients coming to OPD of Ayurved hospital and college was the population.

*Sample size:* total 30 patient were selected for study.

*Method of selection of study subjects (eligibility criteria)*

*a) Inclusion Criteria:*
1. Any individual of Age between 18-60 years.
2. Patients having classical signs and symptoms of *Dadru* were selected irrespective of gender, religion or occupation.

*b) Exclusion criteria:*
1. Patients having systemic diseases like HTN, DM, Asthma
2. Patients suffering from any chronic disease like Ca, Koch's, HIV etc. were excluded from study.
3. Any other skin infection like bacterial, Viral skin disease

c) *Investigations:* For the purpose of assessing the general condition of the patient and to exclude other pathologies the routine Haematological investigations was carried out.

*Observational Criteria:*

Table 2 shows the assessment of Dadru - sign and symptoms.

*Treatment Details:*

*Intervention:*

Table 3
Method of intervention

| Subject | Group A |
|---|---|
| Number of patients | 30 |
| Age group | 18-60yrs |
| Drug name | *Amlika patra Swarasa* |
| Dose of drug | As per lesion size Duration- Until it get dry |
| Route of administration | Local |
| Duration | 14 days |
| Follow up | $0^{th}$, $7^{th}$, $14^{th}$ |

## 4. Results

Results were drawn on the basis of data obtained from various observations. After statistical study, it was confirmed.

Table 4
Overall assessment criteria

| S.No. | Class | Percentage of Improvement |
|---|---|---|
| 1 | Excellent improvement | 75-100% |
| 2 | Marked improvement | 50-74% |
| 3 | Mild improvement | 25-49% |
| 4 | Poor improvement | 0-24% |

## 5. Discussion

Tamarindus indica is reported to possess ant diabetic, antimicrobial, antivenomic, antioxidant, antimalarial cardioprotective, hepatoprotective, antiasthmatic, laxative and antihyperlipidemic activity.

Antidiabetic activity: An aqueous extract from Tamarindus indica seeds had a potent antidiabetogenic activity in Streptozotocin – induced diabetic male rats. The aqueous extract of seeds was given to mild diabetic and severe diabetic rats, and hyperglycemia was significantly reduced, measured by fasting blood glucose levels.

Anti-microbial activity: Tamarindus indica has a broad spectrum of antibacterial activity. The aqueous, ethanolic and acetone extracts of leaf showed potent anti-microbial activity against Salmonella paratyphii, Bacillus subtilis, Salmonella typhii, Staphylococcus aureus.

Anti-inflammatory and analgesic activity: Tamarindus indica stem bark ether extract showed significant anti-inflammatory and analgesic effect by using suitable animal models and tests such as hot plate test and acetic acid induced writing test. Preliminary phytochemical investigation showed presence of sterols and triterpenes which might be responsible for analgesic activity.

Hepatoprotective and anti-asthmatic activity:The methanolic extracts of Tamarindus indica leaves exhibited significant anti-histaminic, adaptogenic, and mast cell stabilizing activity in laboratory animals. The aqueous extract of different parts such as tamarindus leaves, fruits and unroasted seeds etc were shown significant hepato regenerative effect.

## 6. Conclusion

Tamarindus indica is a medicinal plant having immense therapeutic potential as per Ayurvedic literature. But many of them are unexplored and are not clinically utilized. The leads in Ayurvedic literature should by assessed and validated by pharmacological and clinical research and can be included in Ayurvedic Pharmacopeia of India. It is a rich source of essential amino acids, phytochemicals and vitamins. Since it is a cheap and easily available, it can help in curing many diseases.. This study showed Tamarindus indica has wide range of potentials like ant diabetic, antimicrobial, antivenomic, antioxidant, antimalarial cardioprotective, hepatoprotective, antiasthmatic, laxative andantihyperlipidemic activity. More and more efforts for the scientific validations of this plant should be encouraged to serve mankind. This paper is a simple step taken to compile the classical literature of Amlika (Tamarindus indica L.) and its clinical uses have been verified through clinical study. It has been found beneficial and shown significant effects on *dadru like twak vikaar* w s r to skin fungal infection.

## 7. Summary

All the skin diseases in Ayurveda *Acharya Charaka* have been classified under the broad heading of *'Kushtha'* which are further categorized in to *Mahakushtha & Kshudrakushtha*. *Acharya Kashyap* demarcated *Dadru* as a skin disease having "*Vridhimanta Mandala*," i.e., disseminating discoid lesions with intense itching, burning sensation and discharge from it. Sometimes these lesions are dry, which is a crucial point through practical aspect. As per modern perspective disease *Dadru* comes under “Superficial fungal infection of skin” the most common dermatological manifestation affecting most of the world’s population in all age group. Clinically, signs such as *Pidaka*, *Kandu, Raga, and Mandala* of *Dadru* closely resemble features observed in the clinical presentation of Tinea infection/ dermatophytosis/ ringworm infection. Amlika Patra Swarasa Lepana is used in the treatment of *Dadru* which is mainly having *Kaphavataghna* properties. Ths study shows that patient got good relief with *Amlika Patra Swarasa* and all patient had significant improvement. After statistical study, it was confirmed . also the different properties of Amlika were also been observed. This clinical study has been found beneficial for the society. Still there is always a scope of improvement in future for other researcher.

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