

A Case Study on Management of Tinea Barbae by Senna Alata Ointment

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Abstract— Fungal diseases are the one of most common cause of human illness. In the current period due to, hot and humid climatic situation, unhygienic condition, poverty, sharing personal items, faulty food habits, the incidence of fungal infection is quite high specially in tropical climatic condition like India. Among the various fungal infections, dermatophytosis also known as Ringworm or tinea is very common. Tinea Barbae is a superficial dermatophytic infection that is limited to the bearded areas of the face and neck and occurs almost exclusively in male. The Causative organisms are *T. mentagrophytes* and *T. verrucosum* which is more inflammatory. Sharing personal items like towels, combs, shaving cream, or razor blades are the causes of spread. In relation to Ayurveda majority of Twak Vikaras classified under broad term “Kushtha Vikara” Symptoms of fungal infection closely resembles with Dadru Kustha. Modern Antifungal molecule is becoming resistant day by day which is the major concern so medicines from other sources or pathies should be tried. In this relation in Assam a herb known as Kharpat which scientific name is *Senna alata* (L) Roxb has been using since long time in different Fungal skin diseases by the traditional healers and they claim that after application of its leaf juice or paste in the skin fungal patches gets recovered very soon. For this scientific validation ointment prepared from the leaf extract of the plant was made and applied in a diagnosed case of *T. Barbae*. In this article a case study on management of Tinea Barbae by Senna alata ointment will be studied below in detail.

Keywords— Dadru, Tinea Barbae, Senna alata, Dermatophytes, Fungal Infection, Fungicidal, KOH study.

I. INTRODUCTION

The skin is the body's largest organ, accounting for roughly 15% of total adult body weight¹. It serves a variety of critical tasks, including defense against external physical, chemical, and biologic agents, as well as prevention of excessive water loss and thermoregulation also protection of important body organs, bones, muscles, nerves by making an external sheath or covering. Fungal diseases are the one of most common cause of human illness. Mycosis is a general definition of fungal infection of animals including humans. Of the large number of known fungi only a few are infective and many of fungal infections are opportunistic. Based on primary site of infection Fungal diseases can be classified into four classes namely Superficial mycoses, Cutaneous mycoses, Subcutaneous mycoses, Systemic mycoses². Majority of fungal infection seen falls under Superficial mycoses, Cutaneous mycoses. Between these two Cutaneous variant is seen more. This group ie (Cutaneous mycoses) the infection is related to Dermatophytes. Dermatophytosis also known as Ringworm or tinea, is a chronic infection of the skin, hair or nail caused by dematophytes. These group of fungi invade the superficial layer of epidermis and skin i.e. on the keratin of skin, hair and nail. They spread from human to human (By sharing of clothes, and personal articles), animal to human (By close contact with pets) and from soil to human (Contact with soil). It is extremely common in our country due to tropical climate. Tinea infection occurs from head to toe. According to site of affection they are named tinea corporis, tinea barbae, tinea cruris, tinea facie etc.

Usually impacted are adults, children, and people in their middle years. The risk factors for these infections include being overweight, having diabetes mellitus, having high

tendency to sweat, working in an environment with high temperatures (such as next to boilers or furnaces), wearing damp or thick or non-absorbent clothing or footwear in a humid environment, and sharing personal items like towels. Sharing combs, shaving cream, or razor blades are the cause of spread³.

Tinea Barbae is a superficial dermatophytic infection that is limited to the bearded areas of the face and neck and occurs almost exclusively in male. The main site of infection is Bearded areas of face and neck. The Causative organisms are *T. mentagrophytes* and *T. verrucosum* which is more inflammatory. Sharing personal items like towels. Sharing combs, shaving cream, or razor blades are the causes of spread as mentioned earlier. There are three types of clinical presentations observed¹.

- Inflammatory type: Nodular and boggy lesions associated with seropurulent discharge and crusting. They are commonly seen on the chin, neck, maxillary and submaxillary areas.
- Circinate or spreading type: With central scaling and Vesiculopustular lesions are seen at the periphery. Clinical picture is identical to that of ringworm of the glabrous skin.
- The superficial type: Manifest as diffuse erythema with perifollicular papules and pustules and resembles bacterial folliculitis.

Kustha is a tridosaja vyadhi that manifests by bahya rogamarga. As it is durvijñeya, suduštara and dārūna in nature so its considered as mahagada. Kustha's samprapti begins due to the of interactions between tridosha with tvak, rakta, mamsa, and lasika, and progressively spreads to successive dhatus, depending on the strength of samprapti. Almost all skin diseases are narrated under heading of Kustha. There are

7 types of Mahakustha and 11 types of ksudrakustha. Almost all the acharyas had given the same number of mahakustha and ksudrakustha which are of 11 & 7 types respectively⁴.

Though Tinea infection or Tinea Barbae like disease was not mentioned by any acharyas. However, looking its etiology, signs, symptoms, tinea infection or Tinea Barbae can be compared with Dadru kustha that was mentioned by all acharyas. As there is no specific Hetu and Samprapti of Dadru Kustha available in text hence Hetu and Samprapti of Kustha is considered. Though different hetus were mentioned in the Samhitas but as it is known to all that all tinea infection spreads through contact or using infected personal items so these all causes or hetus can be compared with Aupusargik Nidan/hetu mentioned by Susrut acharyas in nidanathana. It means any disease that spread through Prasangaat (Sexual intercourse), Gatrasamsarsaat (Physical contact with humans or animals), Nishwasa (Respiration and Droplet infection), Sahabhojana (Taking food together with the infected person), Sahasayana (Sleeping or sitting on common use of bed with the infected person) comes under Aupusargik Nidan/hetu⁵.

Different acharyas had given Dadru Definitions; According to Charak Patches that are itchy in nature, reddish in colour with development of pimples or papular lesion around the patch and which is circular in shape such skin lesions are termed as Dadru⁶. While according to Susrut resembling the colour of Atasi flower or having coppery coloured lesions, and spreads quickly characterized by elevated skin eruptions is Dadru⁷. While Vagbhat explained kustha that looks longer, reticulated, and patches resembles like to the leaf of Durva plant and colour of the patches resembles to Atasi flower; with elevated circular margins accompanied with intense itching and doesn't leave the patient easily is dadru⁸. Its doshik predominancy is Pitta-kaphaja according to Charak and Vagbhat while according to susrut it is Kaphaja.

Thus, Dadru and Tinea shares some similar sign and symptoms like Raga (Erythema), kandu (Itching), Pidika (Papules), Ustana Mandal (Elevated patches) so they are it can be said that dadru or Tinea infection are the same disease.

Besides in relation to treatment aspect as its is known to all that Modern Antifungal molecule is becoming resistant day by day. Everyday a new molecule get discovered by it gives similar result resistant over few month. So, medicine from alternative system can be tried. In Assam a herb known as Kharpat which scientific name is Senna alata (L) Roxb has been used since long time in different Fungal skin diseases by the traditional healers and they claim that after application of its leaf juice or paste in the skin fungal patches gets recovered very soon. So keeping the view in the mind scientific study of this herb is highly needed for the benefit of the society. To see its therapeutic efficacy ointment was prepared and applied in a diagnosed patient of T. Barbae; the detailed case report will be discussed below.

II. PATIENT INFORMATION

46 year old male patient presented in Govt. Ayurvedic College and Hospital, Roganidan OPD with chief complain of Round itchy patches at the right side of the face since 6 months. He was Businessman by profession. He visited two

local doctor and took medicine but temporarily he gets relief but the lesion again got relapse. On asking about his past illness the 46 year old gentleman said that he was suffering from Type 2 Diabetes Mellitus since 2.5 years and was on medication Enquiring about his diet history he was non-vegetarian in nature and frequently takes fast foods in restaurants. He had no any addiction history but sometime he takes gutka and panmasala. On examining the lesion it was seen that round isolated macular patch around 3-4 cm diameter was seen in the right side of face region with central clearing and papules at the periphery with severe itching and mild crusting. So, he visited to Roganidan OPD for ayurvedic treatment.

III. DIAGNOSTIC ASSESSMENT

Assessment, Progression and improvement is done creating Subjective Criteria and Objective Criteria along with grading. The table made below describes the parameters with Grading

Sl No	Parameters	Description With Grading
Subjective Parameters		
1	Itching	<ul style="list-style-type: none"> ❖ If itching disturbs the whole day especially night-3 ❖ If itching occurs throughout the day but not in night -2 ❖ If no disturbances in activities and sleep but only complains of itching-1 No itching-0
2	Size of Lesions	<ul style="list-style-type: none"> ❖ Large annular patches of size (≥ 5cm) in diameter present all over the body-3 ❖ Annular patches of size (2-4cm) in diameter with presence all over of skin-2 ❖ Smaller in size (≤ 1cm) diameter only present over localised of area -1 Size of lesion reduced completely -0
3	Swelling of Lesions	<ul style="list-style-type: none"> ❖ Swelling of Lesions (≥ 1cm) in length-3 ❖ Swelling of Lesions (≤ 9mm) in length 2 ❖ Swelling of Lesions (1-8mm) in length-1 Swelling of lesion reduced completely-0
Objective Parameter		
4	Koh Mounting	<ul style="list-style-type: none"> ❖ Negative KOH – 0 ❖ Positive KOH – 1

IV. THERAPEUTIC INTERVENTION

Preparation used

Ointment prepared from the ethanolic extract of the leaf of Senna alata plant

Composition of the ointment

The materials used in preparation of the ointment was wool fat, Hard paraffin, Cetosteryl alcohol taken in 5gm, with 85 gm of White soft paraffin mixed with 1% Ethanolic extract of the trial drug for a batch of 100gm ointment preparation.

Preparation of Ointment

Hard paraffin and Cetosteryl alcohol were melted on a water bath. To this hot mixture, wool fat and white soft paraffin was incorporated while maintaining the temperature

with continuous stirring until all ingredients melted. The mixture was stirred and brought to room temperature.

Route of Administration and duration

External Application or Local application on effected lesion twice to thrice daily for 14days.

Pathya-Apathya and Vihar

Mutually contraindicated foods, fishes, meat, use to too much of spicy and oily food, Milk and milk products, restaurant foods along with excessive sweet dishes, salty food, and sour items is contraindicated.

Vihar

Maintain Proper hygiene, avoid tight clothing, to wear loose cotton clothes, regular washing of clothes was advised.

V. FOLLOW-UP AND OUTCOMES

Using the prescribed medicine for 14days, and following appropriate Pathya and Vihar advices the patient got significant improvement within 14days. The table described below shows the improvement of the parameters in 14days. Besides photographs, of the patient documented before and after treatment is also displayed below.

*Note:- AT₇:- After 7days of treatment; AT₁₄:- After 14days of treatment

Parameters											
Itching			Size of Lesions			Swelling of Lesions			Koh Mounting		
BT	AT ₇	AT ₁₄	BT	AT ₇	AT ₁₄	BT	AT ₇	AT ₁₄	BT	AT ₇	AT ₁₄
3	1	0	2	1	0	2	1	0	1	1	0



apathya along with viharja advices resulted in a satisfactory results explained in pervious section.

Probable reasons of Significant Antifungal activity of the ointment may be due to presence of amount of Tannin, Alkaloids, Flavanoids, Protein, Saponin in the leaves found in various analytical study. Bioactive substances such as anthranols, anthrones, phenols, anthracene derivatives are found in the leaves, flowers, and bark which show strong dermatophytic activities⁹. In relation to Ayurvedic view this plant is not explained by any acharyas in their samhitas. However, JLN sastry explains that the therapeutic activity of this plant is similar to the Chakramarda¹⁰. Due to the Katu Ras, Laghu and Ruksha guna, ushna Veerya, katu Vipak, the plant gave a significant relief in the disease as Dadru is Pitta-kaphaja or Kaphaja dominancy.

VI. DISCUSSION

Antimicrobial agents are one of greatest discovery ever discovered by humans against infections, and they have greatly improved human health since their discovery. However these health benefits, have come into a threat in recent decades as these antimicrobials had been becoming more and more ineffective due to unscientific and irrational use leading to the resistance against organisms. Any medicinal herbal origin plant is rich in secondary metabolites which include tannins, terpenoids, alkaloids, flavonoids, glycosides, and others that have been shown to have antibacterial activities in vitro. Man has been aware of herbal treatments since ages. Traditional medicine practitioners have highlighted the therapeutic usefulness of several indigenous plants for a variety of diseases.

Senna alata linn commonly known as Ringworm senna or KHARPAT locally found in Assam. The plant's leaf or its other parts have been claimed to have many therapeutic effects and use widely in folk or traditional practices. According to folk practioners it has excellent activity in skin disease mainly of fungal origin. In order to validate the fact its scientific study need to be done where the ointment made from ethanolic extract of the plant was applied in diagnosed patient of the T.barbea and results was observed.

The ointment was advised to used topically in the effected area for three times a day for 14 days. Assessment was done in weekly interval in 7days interval for two weeks using subjective parameters namely itching, size of lesion and swelling of lesion along with objective study which is KOH study. The details was described earlier. Continuously using the ointment for 14th days thrice daily and following patha

VII. CONCLUSION

Thus, it be concluded that, Senna alata plant had a significant antifungal activity which was seen from the marked improvement of patient itching, size and swelling of lesion. Besides by laboratorial studies after 14days the lesion shows negative KOH study. Thus, the treatment not only comprised of symptomatic relief of symptoms but also involved complete fungicidal activity. Hence it can be concluded that ointment prepared from Senna alata leaf is very effective in treatment of T. Barbea.

REFERENCES

- [1]. Clinicopathological study of Fungal skin disease in Ayurveda with special reference to Laboratorial parametres by Dr.Neha Roy guided by Dr. Swapan Kumar Chakraborty ,Govt. Ayurvedic College and Hospital ,Guwahati ,Year-2017.
- [2]. Text book on Microbiology by Ananthanarayan and Paniker,10thedition, Part -5 , Page -595
- [3]. Joglekar Nikhil, Datye Arati, A successful case study on Ayurvedic management of Dadrukustha w.s.r. to Tinea Infection, Journal of Ayurveda and Integrated Medical Sciences,2022, Vol 7(2), Page 120-124
- [4]. Sastri .Pt.Kashinath and Chaturvedi Dr GoranathNath– (2018) ,The Charak Samhita of Agnivesha revised by Charak and Drdhbala,Vol-2, Ci 7/16th, Page 250.



- [5]. Thakral Krishna Kevel (2016), Susrut Samhita of Maharshi Susrut, Chaukhamba Sanskrit Sansthan, Vol-1, Ni 5/33-34th, Page 761.
- [6]. Sastri .Pt.Kashinath and Chaturvedi Dr GoranathNath-(2018), The Charak Samhita of Agnivesha revised by Charak and Drdhabala, Vol-2, Ci 7/23th, Page 252
- [7]. Thakral Krishna Kevel (2016), Susrut Samhita of Maharshi Susrut , Chaukhamba Sanskrit Sansthan ,Vol-1, Ni 5/8th, Page 748
- [8]. Tripathi, Dr. Brahmennad, Astanga Hridayam of Srimadvagbhata Chakhamba Sanskrit Sansthan, Varanasi; (2017), Ni, 14/28 · Page 530
- [9]. Oluwole Solomon Oladeji, Funmilayo Enitan Adelowo, Abimbola Peter Oluyori, and Deborah Temitope Bankole, Ethnobotanical Description and Biological Activities of Senna alata, Evidence-Based Complementary and Alternative Medicine, February, 2020, Article, Page-1-12
- [10]. Dravaguna Vijnana VOL-2 by Dr. JLN Sastri, Reprint Edition-2015