WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.453
Volume 14, Issue 8, 933-941. Case Study ISSN 2277–7105

AN AYURVEDIC APPROACH IN THE MANAGEMENT OF CELLULITIS – A CASE REPORT

Giri Prashanth K. G.[a], Rakshitha R. Rao[b]* and Shivamanjunatha M. P.[c]

[a]Professor, Department of P.G. Studies in Dravyaguna, Sri Sri College of Ayurvedic Science and Research, Bengaluru, India.

[b]Post Graduate Scholar, Department of P.G. Studies in Dravyaguna, Sri Sri College of Ayurvedic Science and Research, Bengaluru, India.

[c]Senior Scientist, Department of P.G. Studies in Dravyaguna, Sri Sri College of Ayurvedic Science and Research, Bengaluru, India.

Article Received on
26 February 2025,

Revised on 19 March 2025,
Accepted on 08 April 2025

DOI: 10.20959/wjpr20258-36257

***Corresponding Author**
Rakshitha R. Rao
Post Graduate Scholar, Department of P.G. Studies in Dravyaguna, Sri Sri College of Ayurvedic Science and Research, Bengaluru, India.

1. ABSTRACT

Cellulitis is a common condition witnessed in both outpatient departments as well as in emergency. This poorly demarcated localized inflammation of skin and subcutaneous tissue can be life threatening when the infection involves blood, bone, heart or brain. The case presented here had typical presentations of cellulitis. The management was planned with Ayurveda approach using *Lepa* of *Aragwadha Patra* externally. The results were promising in terms of reduction of discoloration, swelling and itching. The *Tridoshagna Guna*, *Karmas* of *Aragwadha Patra* like *Kushtaghna, Kandughna* and *Krimighna* were the basis for selecting the drug in order to manage cellulitis according to the principles of Ayurveda.

KEYWORDS: Ayurveda, Cellulitis, *Aragwadha Patra lepa*, *Cassia fistula* Linn.

2. INTRODUCTION

Cellulitis is one among the most common conditions witnessed in both outpatient departments as well as in emergency. It is estimated that around 1-14% of emergency room visits and 4 -7% of hospital admissions are diagnosed as Cellulitis.[1] It is a poorly demarcated local inflammation involving the skin and subcutaneous tissue. Streptococci, Staphylococci and Clostridia are the organisms frequently associated with cellulitis and can progress to life

threatening complications when the infection involves blood, bone, heart or brain. To avoid such complications like sepsis, osteomyelitis, lymphangitis, endocarditis, meningitis and others, management of cellulitis is aimed at giving a quick relief. This is attempted in the modern medical science using antibiotics, anti-inflammatory, antipyretic and analgesic drugs and supportive management based on symptoms.[2]

Aragwadha, botanically identified as *Cassia fistula* Linn. of Caesalpinaceae family,[3] is a drug commonly mentioned in the context of skin diseases. *Lepa* of *Aragwadha patra* (application of paste made of leaves of *Cassia fistula* Linn.) is mentioned specifically in the context of skin disorders as an external treatment.[4] It has been previously researched for its anti-inflammatory,[5] antibacterial[6] and anti-fungal[6] activities. Thus, *Aragwadha Patra* was taken as a single drug medicine in the form of *Lepa* (external application) in a case of Cellulitis.

3. AIMS AND OBJECTIVES

Management of cellulitis with single drug treatment in the form of *Lepa.*

4. Trial drug

Aragwadha patra – Leaves of *Cassia fistula* L.

Mode of administration – External application over B/L legs and foot.

Dose – Quantity sufficient

Duration – 7 days.

5. Patient information

We present here, the case of a 70 years old female patient who visited the OPD during the month of February 2021, at Sri Sri College of Ayurvedic Science and Research Hospital, Bengaluru, with the complaints of itching and blackish discoloration of right leg associated with swelling over bilateral foot since 1 month. The patient had associated complaints of low back ache and pain over thighs since a month.

Patient was apparently normal 4 years ago. She then gradually developed recurrent ulceration and itching in right foot and later developed discoloration of right leg and foot along with swelling of both feet which has intensified over the last 1 month.

Patient was a known case of Hypothyroidism since 25 years, Bronchial Asthma since 2 years. Patient had a history of carcinoma of endometrium treated with hysterectomy, chemotherapy and radiation 3 years ago. Patient had a surgical history of herniotomy for Umbilical hernia 3 years ago.

6. Clinical findings

➢ Local examination

Inspection

- Swelling – right leg ++ ; left leg +; (Swelling was more in the right leg).
- Hyperpigmentation present over lower one third of the legs (Right more than left leg)(Fig 1.) without distinct margin, more on the antero-medial aspect.
- Shiny wet appearance of the skin in right leg.

Palpation

- Warm on touch.
- No tenderness.

Fig. 1: Before treatment.

➢ Systemic examination

CNS – Conscious, well oriented to time, place and person

CVS – S1S2 heard, NAD

RS – NVBS heard, RR 22 cpm, Mild wheezing sounds heard on auscultation.

- ***Ashta sthaana pariksha***

Table No. 1: Findings of *Ashta sthaana Pariksha.*

Pariksha	***Findings***
Nadi	*Prakritha*
Mala	*Mild constipation*
Mutra	*Prakritha*, 3-5 times a day
Jihwa	*Alipta*
Shabdha	*Prakritha*
Sparsha	*Ushna*
Drik	*Prakritha*
Akriti	*Pravara*

The findings of *Ashta sthaana Pariksha* are tabulated above.

7. Therapeutic intervention

The patient was treated on IPD basis. Initially, *Sadhyovirechana* was given followed by *Matra Basti* with *Ashwagandha Gritha.*

Externally, *Moorchitha Tila Taila Sthanika Dhara* was done over both legs for 8 days.

This was followed by *sthanika Lepa* with *Aragwadha Patra* (regional external application of paste of *Cassia fistula* leaf) once daily for 7 days.

The changes with respect to swelling, discoloration and itching were noted.

Fig. 2a: Application of *Aragwadha Patra Lepa.*

Fig. 2b: Application of *Aragwadha patra lepa.*

8. Out come and follow up

The patient reported a reduced frequency of itching sensation from the 2nd day of *Lepa* application which gradually reduced further with repeated applications.

In comparison to the initial presentation, the changes in discoloration and swelling were noticed evidently from day 3 of *Lepa* application (Fig 3.). The inflamed and discolored appearance of the right leg had started to reduce by 3 days. The discoloration had significantly reduced by the end of 7 days of Lepa (Fig 4.). The swelling of feet and lower one third of leg had noticeably reduced by the 3rd day. On the upper two thirds of the leg, the discolored skin can be seen to have started to heal and dry without any fluid filled shiny look by the end of 7th day (Fig 4.).

Fig. 3: Reduced swelling observed after 3 days of *Lepa.*

Fig. 4: Reduced discoloration and healing on 7th day of *Lepa.*

The patient was advised to come for follow up after 1 month during which there was no further progress or recurrence of symptoms seen.

9. DISCUSSION

Cellulitis is a common bacterial skin infection with inflammation of the deep dermis and surrounding subcutaneous tissue that typically presents as a poorly demarcated, warm, erythematous area with associated oedema and tenderness on palpation. The infection is without an abscess or purulent discharge. It can develop in any area of the body but most often affects the lower extremities and is rarely bilateral.

The skin, 1st line of defence against normal skin flora and other microbial pathogens, prevents the entry of these into the subcutaneous tissue and lymphatic system. These pathogens gain entry into dermis and deeper tissues when there is a discontinuity of the skin. Risk factors for cellulitis includes any culprit that can induce a breakdown in the skin continuity such as skin injuries, surgical incisions, intravenous site punctures, fissures between toes, insect bites, animal bites, and other skin infections, with higher risk of developing Cellulitis in patients with comorbidities such as diabetes mellitus, venous insufficiency, peripheral arterial disease, and lymphedema. The introduction of these bacteria below the skin surface can lead to an acute superficial infection affecting the deep dermis and subcutaneous tissue, causing cellulitis.

Clinical diagnosis of cellulitis is by the presence of spreading erythematous inflammation of the deep dermis and subcutaneous tissue characteristically presenting as erythema that

worsens with time, oedema, warmth and tenderness. Presence of two out of four signs mentioned above shall uphold the diagnosis of cellulitis.[7]

Rubor (redness), Dolor (pain), Tumor (swelling), Calor (heat), the classical signs seen in cellulitis can vary in intensity and spread. The spectrum of severity ranges from localised erythema in a systemically well patient to the rapidly spreading erythema and fulminant sepsis seen with necrotising fasciitis. The finding of bilateral lower limb erythema in an afebrile patient with normal inflammatory markers prompts the clinician to consider the diagnosis of cellulitis[8] as was seen in this case presented, with a non-purulent skin and soft tissue infection.

Here the patient had presentations of Warmth, erythema and oedema in legs, unilaterally more pronounced along with history of recurrent ulcerations. Although there were no ulcers noted at the time of treatment, the entry of infectious agent could have happened at an earlier stage when there was some tissue discontinuity leading to inflammation. These factors imply the diagnosis of the case as that of cellulitis.

Ashta Sthaana Pariksha was carried out to help in planning the course of treatment based on the state of *Doshas*.

Matra Basti and *Dhara* were adopted in the treatment plan for the management of complaints of low back ache and pain in thighs.

Acharya Sushruta has mentioned *Lepa* (paste) (local application) as the treatment of *Kushtha*, as it is a type of *Shodhana* (purification). *Lepa* (paste) pacifies provoked local *Dosha* by local application. Furthermore, *Acharya Charaka* has described *Lepa* (paste) as "*Sadyah Siddhi Karaka* (providing instant effect)." Application of ingredients in the form of *Lepa* (paste) enters into *Romakupa* (hair follicle) and further gets absorbed through *Svedavahi Srotasa* (channels of sweat) and *Siramukha* (opening the skin pores) leading to desired effects.[9]

Transdermal drug absorption can significantly alter the drug kinetics and has an advantage over other routes because it provides a controlled release of the medication into the patient and enables a steady blood level profile resulting in reduced systemic side effects.[9] *Lepa* is said to increase micro circulation and improve the blood flow and thus aid in the removal of

metabolic by-products that are otherwise stagnant in the region affected, reduces inflammation and fluid retention in extracellular spaces and improves healing.

Aragwadha Patra has *Tridoshaghna, Kushtagna, Krimighna, Kandughna* actions along with *Kapha Pitta Pradhana Tridosha Shamana*[10] property.

The drug chosen for *Lepa*, that is leaves of *Aragwadha* are known to have anti-inflammatory, anti-bacterial and anti-fungal actions.

By these pharmacological potentials, it may have acted in the present condition in reducing the inflammation, swelling and itching that were seen in the patient. It helped in reducing the discoloration which may be attributed to the *Kushtagna Karma* that the drug possesses.

10. CONCLUSION

The *Lepa* of *Aragwadha Patra* helped in reducing the itching, swelling and discoloration seen in the patient. The reduction in symptoms of cellulitis can be attributed to the *Kapha Pitta shamaka, Kushtaghna,* Anti-bacterial and anti-inflammatory actions of the *Aragwadha patra* used in the form of *Lepa* which adds on to the management by benefits like improvement of circulation. The usage of *Aragwadha Patra Lepa* for the management of cellulitis was found to be effective in the present case report.

11. **Patient perspective –** Patient was very happy with the changes noted with respect to reduced itching and discoloration along with the reduction of swelling.

12. **Informed consent –** informed consent was taken from the patient after explaining the treatments in detail.

13. **Source(s) of funding** - This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

14. **Conflict of interest –** nil.

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