



## CASE REPORT

# Topical application of *Gopyadi ghritha* in diabetic ulcer-A case report

Harsha Haridas<sup>1</sup>, M M Abdul Shukkoor<sup>2</sup> & Deepa Jose<sup>3</sup>

<sup>1</sup>Final year PG Scholar, Department of Shalyatantra, Govt. Ayurveda College and Hospital, Tripunithura, Ernakulam, Kerala, India

<sup>2</sup>Professor and HOD, Department of Shalyatantra, Govt. Ayurveda College and Hospital, Tripunithura, Ernakulam, Kerala, India

<sup>3</sup>Associate Professor, Department of Shalyatantra, Govt. Ayurveda College and Hospital, Tripunithura, Ernakulam, Kerala, India

\*Email: [harshajijesh@gmail.com](mailto:harshajijesh@gmail.com)

## ARTICLE HISTORY

Received: 09 March 2025

Accepted: 03 April 2025

Available online

Version 1.0 : 31 March 2025

## Keywords

diabetic ulcer, *Gopyadi ghritha*, *vrana ropana*, healing

## Additional information

**Peer review:** Publisher thanks Sectional Editor and the other anonymous reviewers for their contribution to the peer review of this work.

**Reprints & permissions information** is available at <https://keralajournalofayurveda.org/index.php/kja/open-access-policy>

**Publisher's Note:** All Kerala Govt. Ayurveda College Teacher's Association remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

**Copyright:** © The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited (<https://creativecommons.org/licenses/by/4.0/>)

## CITE THIS ARTICLE

Harsha H, Shukkoor MMA, Deepa J. Topical application of *Gopyadi ghritha* in diabetic ulcer-A case report. Kerala Journal of Ayurveda. 2025;4(1):29-34.  
<https://doi.org/10.55718/kja.389>



## Abstract

Diabetic ulcers represent a prevalent complication associated with diabetes, typically manifesting on the dorsal surfaces of the toes and the plantar regions of the metatarsal heads and heels. While these ulcers are frequently observed on the feet, they can develop in various locations throughout the body. The etiology of diabetic ulcers is linked to factors such as inadequate blood circulation, elevated blood glucose levels (hyperglycemia), nerve damage, and the presence of irritated or injured feet, which may ultimately necessitate lower limb amputation. Patients with diabetes often experience diminished microvascular circulation, hindering the ability of phagocytic cells to reach infected areas and facilitate healing. Consequently, infections in these individuals are notoriously difficult to treat. The occurrence of diabetic ulcers can be associated with *pramehajanya dushtavrana*. In the *Susrutha Samhitha*, Acharya *Susrutha* discusses *Shashtirupakaramas* for the management of *vrana*. Among these, *Ghritha* is utilized as a topical treatment to promote healing. Specifically, *Gopyadi ghritha*, referenced in *Sahasrayogam* within the *ghrithaprakaranam*, exhibits a *ropana* effect even in *marmasthana prameha vrana* and was employed in this case report. A 69-year-old female patient with a known diagnosis of type 2 diabetes mellitus presented to the outpatient department of GAVC Tripunithura, reporting a non-healing ulcer measuring 4x2.5 cm at the base of the second and third right toes, along with a 1.2x0.5 cm ulcer on the anterolateral aspect of the right ankle joint, persisting for six months. The management involved the application of *Gopyadi ghritha* topically for 42 days, alongside internal medications aimed at controlling diabetes and infections. Remarkably, the ulcer completely healed within this timeframe, with no complications or recurrence noted even after one year. This case underscores the potential for managing diabetic foot ulcers (up to 10x10 cm in size) without infections through the application of *Gopyadi ghritha*, resulting in expedited and effective healing with minimal scarring within 42 days.

## Introduction

Diabetic ulcers are a common complication of diabetes, predominantly found on the dorsal surfaces of the toes and the plantar aspects of the metatarsal heads and heels. However, these ulcers can occur in any region of the body<sup>1</sup>. The development of diabetic foot ulcers is generally attributed to a combination of three primary factors: ischemia due to atheroma, peripheral neuropathy leading to trophic changes in the skin, and immunosuppression resulting from elevated tissue glucose levels, which predisposes individuals to infections. Patients with diabetes often exhibit reduced microvascular circulation, complicating the arrival of phagocytic cells to the site of infection and impeding the healing process. As a result, treating infections in these patients can be particularly difficult<sup>2</sup>.

The *Sushruta Samhita* establishes a connection between diabetic foot ulcers and the condition known as *madhumehajavrana*. In cases of *madhumeha*, the vascular integrity of the lower limbs is compromised, resulting in an inability to eliminate doshas. This dysfunction leads to the accumulation of doshas, including *meda* and *rakta*, as well as other *doshas* and *dushyas*. Consequently, this accumulation results in the development of *prameha pidaka*, which subsequently undergoes putrefaction, culminating in the formation of a diabetic ulcer<sup>3</sup>. *Madhumehajavrana* is characterized by a *tridosha prakopa*, accompanied by *raktadushti* and a chronic manifestation, necessitating treatment in accordance with the principles of *dustavrana chikitsa*<sup>4</sup>.

*Ropana*<sup>5</sup> refers to a factor that enhances or accelerates the healing process. Various interventions, including antiseptic solutions and antibiotics, are employed to address infections, while numerous agents are utilized to eliminate slough or necrotic tissue, thereby reducing the inflammatory phase and facilitating healing. Currently, the contemporary medical system lacks treatments that significantly promote healing beyond anti-infective and debridement agents. *Acharya Sushruta*, a distinguished surgeon of his time, provided comprehensive insights into *vrana*, including its etiopathogenesis, classifications, management principles, and sixty procedures (*sashtirupakrama*). He also detailed both locally applied and systemically administered medications for wound care, alongside strategies for cosmetic scar management. Among the *sashtirupakrama*, the use of *ghritha* for *ropana* stands out as a crucial therapeutic approach. The application of *ksheera siddha ghritha* demonstrates potent *ropana* properties, particularly in cases of *pitta-raktha dosha* and *gambheera vrana*, making it a promising option for effective wound management<sup>6</sup>.

*Gopyadi ghritha*<sup>7</sup> is referenced in the *Sahasrayogam* within the *Ghrithaprakaranam* section. It exhibits a healing effect on *marmasthana prameha vrana*, particularly those that are classified as *krichrasadya*, or challenging to manage. The formulation of *Gopyadi Ghritha* includes *Ghritha*, *Krishna Sariva*, *Utpala Kanda*, *Maduka*, *Chandana*, and *Nalpamara* (comprising *Vata*, *Ashwata*, *Plaksha*, *Udumbara*, and *Shrunga*), along with *Usheera*, *Durva*, and *Dugda*. Each component possesses *Madura*, *Kashaya*, and *Tikta Rasa*, as well as *Snigdha Guna* and *Sheeta Veerya*, thereby functioning as both as *Vrana Shodhaka* and *Vrana Ropaka*.

The implementation of conservative management techniques, including *vrana sodhana*, *ropana*, *nidanaparivarjana*, and the alleviation of symptoms, along with the adherence to suitable dietary guidelines (*pathya*) and the avoidance of detrimental substances (*apathya*), is likely to yield a complete resolution of *pramehavrana*. As *pramehavrana* arises from the disturbance of *kaphapittarakthakopa*, the use of topical treatments to rectify the imbalanced doshas, in conjunction with internal medications such as *kaphamedohara* drugs for diabetes and *pitta-rakthahara* drugs for controlling infections, will be beneficial.

In this case study, the intervention involved the topical use of *Gopyadi ghritha* over a period of 42 days, in conjunction with internal medications to manage diabetes and its related infections. This report illustrates the effectiveness of conservative Ayurvedic treatment for diabetic ulcers, achieved in a relatively short duration.

## Case history

A 69-year-old female patient, house wife, with known case of type 2 DM, visited to outpatient department of GAVC Tripunithura with complaints of non-healing ulcer 4x2.5cm over the base of 2 and 3<sup>rd</sup> right toe and a 1.2 x 0.5 cm ulcer on anterolateral part of right ankle joint since 6 months. She was having grade 3 tenderness of ulcer (ischemic due to vascular insufficiency), bleeding was absent and there was no neurological symptoms. She took allopathic treatment but got no relief. So, she consulted in our OPD and was admitted in our IPD for further management.

## Personal History

The patient's dietary preferences include a mixed diet, with a particular inclination towards sweet and spicy foods, such as pickles. Appetite is reported to be good, bowel movements are normal, and urination is within normal limits. However, sleep is disturbed due to pain. There are no notable habits or addictions, and the patient has no known allergies. Additionally, there is no family history of diabetes mellitus.

## Physical examination

A general evaluation of the patient's condition reveals a moderate severity of illness, with localized infection and compromised tissue integrity. The mental state is stable, with the patient being fully conscious and oriented. The physical build is assessed as moderate and the nutritional state is also moderate. The patient's attitude is normal; however, an antalgic gait is observed, along with a blackish discoloration of the skin in the surrounding area. There are no skin eruptions noted. Vital signs are normal, with a pulse rate of 70 beats per minute, a respiratory rate of 20 breaths per minute, a temperature of 98.6 degrees Fahrenheit and blood pressure recorded at 110/80 mm Hg. The patient is identified as having a Kapha Pitta constitution.

## Lab investigation (28/05/2023)

The laboratory results indicate a Fasting Blood Sugar (FBS) level of 106 mg/dl and a Postprandial Blood Sugar (PPBS) level of 164 mg/dl. The hemoglobin concentration is measured at 11.2 gm%, with an Erythrocyte Sedimentation Rate (ESR) of 25 mm/hr. The total White Blood Cell (WBC) count is 9,100 per cubic millimeter, with a differential count comprising 57% neutrophils, 38% lymphocytes and 5% eosinophils. The platelet count is recorded at 4.09 lakhs per cubic millimeter.

The urine routine examination reveals no albumin or sugar present. The pus cell count is noted as 2-3 per high power field (HPF), and the epithelial cell count is 1-2 per HPF.

## 1. Ulcer examination (right lower limb) (29/05/2023)

	Ulcer 1	Ulcer2
<b>Position</b>	over the base of 2 and 3 <sup>rd</sup> right toe	on anterolateral part of right ankle joint, 3cm above and lateral to medial malleolus
<b>Size</b>	4x2.5cm	1.2 x0.5 cm
<b>Shape</b>	oval	irregular
<b>Edge</b>	sloping	sloping
<b>Floor</b>	Pale granulation tissue	Pale granulation tissue
<b>Discharge</b>	Blood mixed	Blood mixed
<b>Surrounding area</b>	Blackish discoloration	Blackish discoloration
<b>Whole lower limb</b>	Deformity of foot present	Deformity of foot present
<b>Palpation:</b>		
<b>Tenderness</b>	Grade3	Grade 3
<b>Margin</b>	Well defined	Well defined
<b>Base</b>	muscle	muscle
<b>Depth</b>	0.1cm	0.1 cm
<b>Bleed on touch</b>	present	present
<b>Surrounding skin</b>	Thickened and edematous	Thickened and edematous
<b>Relations with deeper structures</b>	Not deeper to bone	Not deeper to bone

Table. 1: Ulcer Examination-right lower limb

## 2. Examination based on vrana pareeksha and dosha predominance

Parameter	Observation in Case	Dosha predominance
<b>Color (Varna)</b>	Blackish discoloration	<b>Vata-Pitta</b>
<b>Shape &amp; Edges</b>	Irregular, rough edges	<b>Vata</b>
<b>Pain (Vedana)</b>	Severe pain, Grade 3 tenderness	<b>Vata-Pitta</b>
<b>Discharge (Srava)</b>	Purulent, yellow discharge	<b>Pitta</b>
<b>Odor (Gandha)</b>	Foul odor present	<b>Pitta</b>
<b>Infection (Paka)</b>	Inflamed with pus	<b>Pitta</b>
<b>Moisture (Ruksha/Snigdha)</b>	Dry with black edges	<b>Vata</b>

● **Predominant Dosha: Vata-Pitta**

● **Secondary Dosha: Possible Kapha** (if slough is present).

● **Diagnosis: Vata-Pitta Pradhana Dushta Vrana** (Diabetic ulcer with ischemic and inflammatory components).

## Therapeutic management

The composition of *Gopyadi Ghrita* consists of various ingredients, which are: 1. *Nannari (Krishna sariva)*, 2. *Nirkizhangu (Utpala kanda)*, 3. *Madhuka*, 4. *Malayaja (Chandana)*, 5. *Kustha*, 6. *Nalpamaranam Mottum (which includes Vata, Ashwatha, Plaksha, and Udumbara sringa)*, 7. *Ramaccha (Usira)*, 8. *Sneha Dravya: Go-Ghrita*, and 9. *Drava Dravya: Durva Swarasa and Go-Ksheera* according to *Sahasra Yoga*. After the collection of all necessary components, the preparation of *Gopyadi Ghrita* is executed based on the specifications outlined in the *Sarangadhara Samhita*, adhering to the general *snehapaka* procedure, which applies a proportion of 1/8:1:4 for *kalka, ghrita, and milk with durvaswarasa*.

Table. 2: The chemical analysis of *Gopyadi ghrita*

SI.NO	PARAMETERS	RESULT
1	Colour	Greenish white
2	Odour	Characteristic
3	Touch	Unctuous
4	Transparency	Opaque
5	Rancidity	Slightly rancid
6	Appearance	Granular, oily
7	Melting point	39°C
8	Specific Gravity	0.9150
9	Refractive Index	1.456
10	Acid value	3.0
11	Iodine value	7.25





Figure.1. Gopyadi Ghritha

Table. 2: Therapeutic interventions done

Date	Internal Medication	Procedures
29.05.2023-09.07.2023	1. Nisakathakadi kashayam- 90ml bd before food twice daily 2. Pramehoushadi 2-0 2 a/f 3.Guggulupanchapalachoor nam- 10 gram at bedtime 4.Diabecon DS 1bd A/F	After cleaning the ulcer with distilled water, Topical application of Gopyadi ghritha done over the ulcer. After the recommended duration, the dressing was removed, and the ulcer was cleaned with distilled water before being covered with a sterile gauze pad and gauze roll



Cleaning with distilled water



Gopyadi ghritha smeared gauze pad



Gauze pad stabilized with gauze roll

Figure. 2: Procedure of Gopyadi Ghritha application

Advised pathya and apathya

Pathya

Vit C rich Fruits, e.g. pineapple, gooseberry pomegranate apple, orange

Vegetables, e.g. peas, carrot, cucumber, cauliflower, tomatoes, spinach

10 glasses of water intake

Protein-rich foods such as eggs

Apathya

Avoid hot and spicy food items, fried, salty and processed foods, caffeinated drinks.

Result

The documented enhancement in granulation tissue development, epithelial regeneration, and decrease in ulcer dimensions substantiates the therapeutic efficacy of Gopyadi ghritha. This intervention facilitated a more favorable healing process characterized by minimal scarring, thereby enhancing patient satisfaction, with no adverse effects noted. The ulcer achieved complete healing within a span of 42 days, and no recurrences were observed even after one year.



BEFORE TREATMENT



AFTER TREATMENT

Figure. 3: Results of Topical application of Gopyadi Ghritha (0<sup>th</sup>,14<sup>th</sup>,28<sup>th</sup>,42<sup>nd</sup> day)

## Discussion

Diabetic ulcers are a significant complication linked to diabetes, primarily found on the dorsal surfaces of the toes and the plantar regions of the metatarsal heads and heels. While these ulcers are most seen on the feet, they can also develop in various other areas of the body. The underlying causes of diabetic ulcers include insufficient blood circulation, elevated blood glucose levels (hyperglycemia), and nerve damage, which can ultimately result in lower limb amputations. The effective management of diabetic foot ulcers centers on infection prevention to ensure rapid healing, pain alleviation, reduction of discharge and minimizing discoloration after healing. Various treatment modalities are available for diabetic ulcers, but each has its own limitations. *Acharya Sushruta* articulated the principles of *vranachikitsa* in *sashtirupakrama*, advocating for the local use of medicated *ghritha*, recognized for its healing properties, as a superior method for wound management.

Numerous agents have been utilized topically for the treatment of chronic ulcers over the years, with various plant-derived formulations playing a significant role in the healing process. *Gopyadi Ghritha*, referenced in the classical text *Sahasrayogam*, is specifically indicated for the healing of wounds located in *marmasthana*, particularly in cases of *mehavrana*. The formulation of *Gopyadi Ghritha* is detailed in *Sahasrayoga*, particularly within the *ghrithayoga* section. The components of *Gopyadi Ghritha* include *Ghritha*, *Krishna Sariva*, *Utpala Kanda*, *Maduka*, *Chandana*, and *Nalpamara* (which consists of *Vata*, *Ashwata*, *Plaksha* and *Udumbara Shrunga*), along with *Usheera*, *Durva*, and *Dugda*. *Ghritha*. It is recognized as one of the 60 *Upakramas* outlined by *Acharya Sushruta* for *Vranashodhana* and *ropana*. In this formulation, *Go-Ghritha* acts as a *snehadravya*. It is well-established that lipid-soluble medications can penetrate cell membranes more rapidly than those that are water-soluble, thereby promoting swift absorption into the bloodstream.

*Nalpamaram* comprises four pharmacologically active compounds sourced from *Ficus* species, which are well-documented for their anti-inflammatory and antioxidant effects. These compounds exhibit synergistic interaction, thereby amplifying their therapeutic potential across various formulations. *Durva*<sup>21</sup> is particularly noted for its efficacy in wound healing, while *Yashtimadhu*<sup>13</sup> and *Chandana*<sup>14</sup> provide analgesic benefits and support ulcer healing by promoting epithelialization. *Bhumichampa*<sup>12</sup> (*Kaempferia rotunda*) is recognized for its ability to enhance wound contraction, re-epithelialization and collagen deposition, with its extracts demonstrating both anti-inflammatory and analgesic

properties. The antimicrobial activities of *Kusta*<sup>15</sup>, *Useera*<sup>16</sup> and *Sariba*<sup>11</sup> are instrumental in reducing discharge and alleviating pain. *Goksheera* (cow's milk) is vital for stimulating fibroblast proliferation, collagen synthesis and the maturation of collagen fibers, thereby improving tissue homogeneity. The combined effects of these components in *Gopyadi ghritha* promote effective ulcer healing. The formulation of *Ghritha* with these ingredients allows it to leverage the advantageous properties of each component while maintaining its unique characteristics.

*Gopyadi ghritha* is composed of *madura*, *kashaya*, *tiktha rasa*, *snigdha guna*, and *sheeta veerya*, which confer upon it the abilities of *vraha ropaka*, *pittasamaka*, and *shothahara*. The medicinal agents present in *Gopyadi ghritha* are recognized for their anti-inflammatory, analgesic and healing properties<sup>9</sup>. The combination of *pittasamaka* and *sheeta veerya* promotes the healing of *madhumehaja vrana*. Therefore, this case study illustrates that *Gopyadi ghritha* achieves superior, rapid and effective healing with minimal scarring in a short period for the management of diabetic ulcers.

## Conclusion

This case study demonstrated that a diabetic foot ulcer measuring 10x10 cm, devoid of infection, can be effectively treated with *Gopyadi ghritha*, resulting in improved, rapid, and healthy healing with minimal scarring over a period of 42 days.

## Study Limitations:

This report is based on a single case; further investigation involving a larger cohort is necessary to establish scientific validation.

## Strength of Study:

This case report introduces a novel approach to the Ayurvedic conservative management of diabetic ulcers.

## Acknowledgment:

I express my gratitude to my teachers and colleagues for their invaluable insights and unwavering support.

## ETHICAL CONSIDERATIONS

The patient has provided written informed consent for the treatment as well as for the publication of relevant data and images. Measures have been taken to ensure the confidentiality of this information. Ethical clearance has

been obtained from the Institutional Ethics Committee at Government Ayurveda College, Tripunithura, dated May 24, 2024, with the reference number 05/SL-AR/IEC/2024.

**Conflict of interest and Guarantor:** The author states that there are no conflicts of interest pertaining to this research. The corresponding author is designated as the guarantor for the article and its associated content.

**Source of support:** This case report being a part of my thesis, I would like to thank CCRAS for providing me with the PG-STAR scholarship for the smooth conduct of my study.

## References

1. S. Das a concise textbook of surgery.11th ed. Kolkata: Dr S Das; 2020.161 p
2. Aradhyamath S, Hiremath S. CONCEPTUAL REVIEW ON MADHU MEHAJA VRANA [Internet]. lamj.in.[cited2022Jul17]. Available from: [http://www.lamj.in/posts/2015/images/upload/3072\\_3080.pdf](http://www.lamj.in/posts/2015/images/upload/3072_3080.pdf)
3. cited2022Jul17].Availablefrom:<http://https://www.ijtra.com/view/management-of-madhumehaj-vrana-a-case-study.pdf>
4. DIABETIC FOOT ULCER - AN AYURVEDIC PERSPECTIVE. World Journal of Pharmaceutical and Medical Research [Internet]. [cited 2022 Jul 27];2018(VOLUME 4, FEBRUARY2). Available from: [https://www.wjpmr.com/home/article\\_abstract/1015](https://www.wjpmr.com/home/article_abstract/1015)
5. Susrutha. Susrutha Samhita. English Translation by Prof. K. R. Srikanta murthy. Reprint ed. Varanasi: Chaukhambha Orientalia; vol 1. 2005 ,4 p
6. Susrutha. Susrutha Samhita. English Translation by Prof. K. R. Srikanta murthy. Reprint ed. Varanasi: Chaukhambha Orientalia ;2005. 6 p
7. Sahasra Yogam, Text with English Translation by Dr.K. Nishteswar and Dr. R. Vidhyantha, Publisher- Chowkhambha Sanskrit Series Office, Varanasi. Reprint2014. Parisishta Prakarana Taila Yoga, Pg. No.-433
8. Halder RN. World diabetes day. Indian J Phys Med Rehabil [Internet]. 2013 [cited 2022 Jul 10];24(3):62–62. Available from: <https://www.who.int/india/Campaigns/and/events/world-diabetes-day>
9. Srinivasa GP, Mamatha HM. Efficacy of gopyadi ghritha matra basti in parikarthika vis-a-vis fissure-in- ano: a randomized single group clinical study. Int J Health Sci Res. 2020;10(8):157–66.
10. S. Das a concise textbook of surgery.11th ed. Kolkata: Dr S Das;2020.236 p
11. Dravya guna vijnana Vol III by Dr Gyanendra Pandey reprint ed. Varanasi: chaukambha orientalia;2012.395 p
12. Manilal K.S, Mohan Ram H.Y, On the English edition of Van Rheede's Hortus Malabaricus, University of Kerala: Thiruvananthapuram;2003, Vol11, p.152
13. Illustrated Dravya guna vijnana Vol II by Dr J L N Sastry reprint ed. Varanasi: chaukambha orientalia;2012.152p
14. Dravya guna vijnana Vol I by Dr Gyanendra Pandey reprint ed. Varanasi: chaukambha orientalia;2012.469 p
15. Dravya guna vijnana Vol II by Dr Gyanendra Pandey reprint ed. Varanasi: chaukambha orientalia;2012.347 p
16. Dravya guna vijnana Vol III by Dr Gyanendra Pandey reprint ed. Varanasi: chaukambha orientalia;2012.740 p
17. Illustrated Dravya guna vijnana Vol II by Dr J L N Sastry reprint ed. Varanasi: chaukambha orientalia;2012.941 p
18. Illustrated Dravya guna vijnana Vol II by Dr J L N Sastry reprint ed. Varanasi: chaukambha orientalia;2012.944 p
19. Illustrated Dravya guna vijnana Vol II by Dr J L N Sastry reprint ed. Varanasi: chaukambha orientalia;2012.946 p
20. Illustrated Dravya guna vijnana Vol II by Dr J L N Sastry reprint ed. Varanasi: chaukambha orientalia;2012.499 p
21. Illustrated Dravya guna vijnana Vol II by Dr J L N Sastry reprint ed. Varanasi: chaukambha orientalia;2012.1037 p
22. Sarangadhara.Sarangadharasamhita, English Translation, Prof. K.R. Srikantamurthy. reprinted. Varanasi: chaukambha orientalia; 2009.madhyama khanda chapter 9;116p
23. Tripathy R, Nair S, Lakshman V, Raj S, Otta S. Wound-healing potential of Nimbadi Kalka in diabetic foot ulcer: a clinical study. J Indian Sys Medicine [Internet]. 2020;8(2):102. Available from: [http://dx.doi.org/10.4103/jism.jism\\_59\\_20](http://dx.doi.org/10.4103/jism.jism_59_20)

§§§