

REVIEW ARTICLE**Ayurvedic Management of Diabetic Foot Ulcer: A Case Study****AUTHOR DETAILS:**

Mr. Vijay Dudhram Jadhav¹, Ms. Monika Pritam Vora², Ms. Madhavi Namdev Khandekar³,
Mrs. Aishwarya Nichal⁴, Mr. Kuldeep Hemraj Remteke⁵, Ms. Minakshi Londhe⁶

¹Department of Pharmaceutics, Samarth Institute of Pharmacy, A/P Belhe, Tal. Junnar, Dist. Pune.

²Quality Assurance Techniques Department, Shikshan Prasarak Mandal's College of Pharmacy, Malewadi Akluj 413101

³Shikshan Prasarak Mandal's College of Pharmacy, Malewadi Akluj 413101

⁴Quality Assurance Techniques Department, Shankarrao Ursal College of Pharmacy, Diploma, Kharadi Pune 411014

⁵Department of Pharmaceutics, Samarth Institute of Pharmacy, A/P Belhe, Tal. Junnar, Dist. Pune.

⁶Department of Pharmaceutics, Shankarrao Ursal College of Pharmacy, Diploma, Kharadi Pune 411014

ABSTRACT:

In present scenario due to the sedentary lifestyle, diabetes mellitus has become common disease. Diabetic foot ulcer is a complication of diabetes mellitus which is the leading cause of lower limb amputations. It occurs in 15% of all patient with diabetes mellitus and precedes 84% of patients with diabetic foot ulcer which needs lower leg amputation. The management of diabetic foot ulcer requires blood sugar control, debridement, advanced dressing and offloading modalities.

In Ayurvedic literature, Acharya Sushruta has described sixty treatment modalities. He has given more importance to Vranashodhana and Ropana. Acharya Vagbhatta has explained that Vranas which are caused by Madhumeha can be treated with Aragwadhadigana Dravyas. In the present study for Vrana Shodhanartha Prakshalana with Triphala Kwatha and Vrana Dhoopana by Guggulu, Nimba Choorna, Haridra selected and for Vrana Ropanartha Jatyadi Taila was selected.

INTRODUCTION

Vrana means discontinuity in the skin and other tissues (1). Dushta Vrana has the features such as Durgandha (bad smell), Pooyayukta (pus filled), Utsangi (elevated), Chirakali (chronic), Dooshita (afflicted by Tridosha vitiation), Atigandha Varna Srava (discharge with excessive odour and coloured), Vedanayukta (painful) and opposite to Shuddha Vrana (healing wound). There are many

varieties of Vrana mentioned by various authors, among them Sushruta has quoted mainly 2 varieties namely Nija Vrana and Agantuja Vrana based on the cause. The Nija Vrana caused by the aggravation of the Dosha by various reasons. Whereas, the Agantuja Vrana caused by assault by humans, animals, falling from heights, pressing and squeezing, hit, fire injury, alkalies, poison, strong penetrating drugs, splints of wood, potsherd, horns of animals, disc, arrow, axe, Dushta Vrana is nothing but the non-healing ulcer (2). Where, the features depend upon the cause and the area of location of the ulcer. But usually has the features of spreading nature, surrounding active inflammation, purulent discharge, foul smelling, slough, and also necrotization of skin usually in arterial ulcer.

Management of Dushta Vrana includes Shodhana (cleaning) both external and internal and Ropana chikitsa (wound healing). For Antah Shodhana, all types of Panchakarma help depending upon the Dosha involvement. Bahya Shodhana means cleaning of wound by using Kashaya of Shodhanaga Dravyas, Varti, Kalka, Ghruta, Taila, Churna and Rasakriya. Vrana Ropana should be done using drugs having healing properties (3).

CASE PRESENTATION

1) Present complaints: A 60-year-old female patient presented with complaints of fever with chills, generalized weakness and giddiness for 2 days. Ulcer over the Right Forefoot in the groove between the big toe and 2nd toe since 15 to 20 days. Pain, swelling and pus discharge from the ulcer region for 7 days.

2) History of present illness: Alleged history of trauma over the Right foot a month ago visited nearby physician. The patient was given Injection Tetanus Toxoid and Analgesics. There was symptomatic relief. A week later patient developed small wound which was ignored by patient later developing into ulcer with pus discharge. Symptoms aggravated in next few days with redness, pain and swelling of right forefoot. Hence patient came to LKR Hospital for further management.

3) History of Past illness: K/C/O type 2 DM under regular medication Tab Switglim-M 2/500 {Glimepiride (2mg) + Metformin (500mg)} since 2 years.

S/H/O Hysterectomy 10 years ago.

No other known comorbidities.

4) Family History: No known TB, haematological, cardiac or vasculitis related illness.

5) Physical Examination

- Skin - Trophic changes of lower extremity
- Eyes - No icterus, pink palpebral conjunctiva
- Oral cavity – Normal
- Neck - Normal
- Fingers and Nails - no clubbing, no swelling or deformity

VITAL SIGNS: Afebrile, PR- 80/min, BP- 130/80 mm Hg and RR- 15/min.

6) Local examination: Single ulcer located between the Right Big Toe and 2nd Toe. Ulcer - irregular margins, sloping edge, floor containing pus discharge & Slough, base of phalanx & tarsometatarsal joint. Measurement of ulcers -5×2×2cm.

Ulcer classified according to Wagner grading system Grade 2: Ulcer penetrates deeper tissue, potentially reaching tendon, capsule, or bone.



6. https://www.easyayurveda.com/2012/11/28/neem-in-ayurveda-benefits-usage-side-effects-fullreference/#neem_properties 7. <https://www.easyayurveda.com/2013/10/23/turmeric-curcuma-longa-usage-dose-side-effects/> dated 24/04/2023.

Pulsations: Dorsalis pedis, posterior tibial artery well felt on both legs. Discharge: Pus discharge, Foul smelling Ischemic skin covering the ulcer.

7) Systemic Examination

Respiratory system - Bilateral vesicular breath sounds heard

Abdomen and perineum - Soft, non-tender, no visceromegaly, normal bowel sounds heard.

Perineal examination normal.

Cardiovascular system - S1S2 heard.

No abnormal sounds heard Central Nervous system and spine- Normal

8) INVESTIGATIONS

HB-9.5 gm%

WBC - 19560 cells/uL

RBS-250 mg/dL

9) TREATMENT

On admission due to raised WBC counts started on following treatment

- Inj Pipzo 4.5 gm {Contains Piperacillin (4000mg) + Tazobactam (500mg)} IV TDS
- Inj pan 40 mg IV BD
- Inj Emset 4mg IV BD
- Inj PCM 1gm IV BD
- Insulin 6units-6units-6units

Daily cleaning and dressing of wound.

Above protocol was followed for 5 days till infection subsided. Wound debridement done.

1) First 14days Tab.

Shivagutika 1-0-1 before food Tab

Chitrakadi vati 1-1-1 before food

Manjistadi Kashaya 20ml 1-0-1 after food with water

Wound debridement Triphala Kashaya parisheka Jatyadi taila application and bandaging.

Vrana dhupana with Nimba twak, Guggulu and Haridra.

2) Next 1 month

Tab. Triphala guggulu 2-2-2 after food

Tab. Shivagutika 1-0-1 before food

Tab. Chandraprabha vati 1-0-1 before food

Triphala Kashaya parisheka

Jatyadi taila application and bandaging.

Vrana dhupana with Nimba twak, Guggulu and Haridra.

RESULTS

After 50 days of treatment the Ulcer size reduced with presence of healthy granulation tissue. The erythema and tenderness were reduced over the course of treatment with no such symptoms after completion of treatment. There was no pus discharge from ulcer region. The previously uncontrolled blood glucose levels were under control with the above oral medications.



DAY 1



DAY 25



DAY 50

DISCUSSION

Early treatment of Grade 2 ulcer led to avoidance of further deterioration of the ulcer. Triphala scavenges the free radicals and decreases the oxidative stress, thus it helped in preventing up of infection and also helped in wound healing (4). Jatyadi Taila has its main indication in wound healing, the ingredients are also having the property of Rakta Shodhaka, as Taila contains more of Tikta Dravyas which also helped in reducing the infection and helped early healing (5). Nimba has the main property of Tikta (bitter), Agni Vatakrut (decreases Pitta and Vata) whereas, Haridra removes the blocks in the channels created by Pitta and Kapha, this helps to reduce the inflammation. Dhupana has the property of disinfection and also by Nimba and Haridra added the efficacy on disinfection and thus keeping the wound clean and non-infected (6,7). Oral medications such as Chitrakadi Vati given in the initial days to clear Ama. Shivagutika was given as it has wide range of indications in all systems and specially used to control diabetes and to improve vascular patency. Manjistadi Kashaya was given as blood purifier. Chandraprabha Vati was given mainly in view of controlling diabetes as its main indication in diabetes and urinary disorder. Triphala Guggulu was given to reduce the pain from the wound. The planning and changing of the treatment are purely based on the patient's symptoms at that point of time.

REFERENCES

1. Sushruta Samhita, prof. K R Shrikanta Murthi, English translation, vol 2, chikitsa sthana, chapter 1, page -4, sloka 6.
2. Sushrut Samhita, prof. K R shrikanta Murthy, English translation, vol 2, chikitsa sthana, chapter 1, page -3, sloka 3
3. Dr. Syed Mohammed Jaludheen, Text book of outline of Shalya tantra, vol 1 &2, chowkanbha Sanskrit samsthan, Varanasi, chapter 21, page 307 to 309.

4. Pandey M, Worlikar PS, Ghosh A, Bondekar AA, Chetan S. Comparison of wound healing activity of Jethimadh with Triphala in rats. Int J Health Allied Sci 2012; 1:59-63

5. <https://www.ayurvedinfo.com/2021/06/0/jatyadi-oil-benefits-how-to-use-ingredients-sideeffects/amp/#Contents>

6. https://www.easyayurveda.com/2012/11/28/neem-in-ayurveda-benefits-usage-side-effects-fullreference/#neem_properties

7. <https://www.easyayurveda.com/2013/10/23/turmeric-curcuma-longa-usage-dose-side-effects-dated-24/04/2023>.