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ROLE OF AYURVEDA IN THE MANAGEMENT OF DIABETIC FOOT ULCER- CLINICAL EVIDENCE A CASE STUDY

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ABSTARCT

Diabetic foot ulcer is one of the major complications of uncontrolled Diabetes Mellitus and may ultimately lead to limb amputation if not managed properly. The raising prevalence of Diabetic complications has become a significant burden on society. The number of amputations is rising steadily, highlighting the urgent need for more effective wound management strategies for patients suffering from non-healing diabetic ulcers. Diabetic foot ulcers may occur due to pathological complications, trauma, resulting in chronic wounds. In *Sushruta Chikitsa Sthana*, Acharya Sushruta has described sixty *Upakramas* for the management of *Vrana*, which includes various local and systemic therapeutic measures using different drugs. A 68-year-old female patient with a history of Diabetes Mellitus for past ten years presented with a non-healing foot ulcer of 5 months and was managed as *Dushta Vrana* using *Sthanika Parisheka*, *Kshara karma*, *Avachoornana* and *Jatyadi taila Kavalika*, resulting in satisfactory wound healing. At present, the prevention of limb amputation and effective management of diabetic foot ulcers is major healthcare challenges. A treatment approach is essential to achieve better outcomes in diabetic wound healing.

KEYWORDS: Diabetic foot ulcer, *Dushta vrana, Sthanika Parisheka, Kshara karma, Yashada Bhasma Avachoornana* and *Jatyadi taila Kavalika.*

INTRODUCTION

Diabetes mellitus comprises group of metabolic disorders, with an increasing incidence worldwide.[1] Foot ulcers and infections are also a major source of morbidity in individuals with DM. The reasons for the increased incidence of these disorders in DM involve the interaction of several pathogenic factors: neuropathy, abnormal foot biomechanics, peripheral arterial disease, and poor wound healing.[2] The peripheral sensory neuropathy interferes with normal protective mechanisms and allows the patient to sustain major or repeated minor trauma to the foot, often without knowledge of the injury. Disordered proprioception causes abnormal weight bearing while walking and subsequent formation of callus or ulceration. Motor and sensory neuropathy lead to abnormal foot muscle mechanics and to structural changes in the foot (hammer toe, claw toe deformity, prominent metatarsal heads, Charcot joint). Approximately 15% of individuals with DM develop a foot ulcer, and a significant subset will ultimately undergo amputation (14 to 24% risk with that ulcer or subsequent ulceration). Risk factors for foot ulcers or amputation include: male sex, diabetes -10 years' duration,peripheral neuropathy, abnormal structure of foot (bony abnormalities, callus), peripheral arterial disease, smoking, history of previous ulcer or amputation, and poor glycemic control.[3]

The management of DFUs is complex and requires a multidisciplinary approach. Optimal glycaemic control, wound debridement, and suitable dressings, infection management with appropriate antibiotics, revascularization, amputation.[4] Therapeutic modalities such as negative pressure wound therapy, hyperbaric

oxygen therapy, engineered skin allograft substitute, use of local growth factors have shown promising results in enhancing wound healing.[5] Despite these advancements, DFUs remain a major cause of lower-limb amputation, emphasizing the need for effective, accessible, and cost-efficient treatment strategies.

In Ayurveda, diabetic foot ulcers can be correlated with *Madhumehajanya Dushta Vrana*. Acharya *Sushruta*, described *Shashti Upakrama* - sixty therapeutic measures for the management of various types of *Vrana*, incorporating both local and systemic interventions.[6] These principles emphasize wound cleansing, healing promotion, and tissue regeneration. The present case study aims to explore the role of Ayurvedic management in the treatment of a diabetic foot ulcer, highlighting its potentiality as a cost-effective outpatient-based therapeutic approach.

CASE REPORT

Chief complaints: Patient complaints of non-healing wound over the plantar aspect of metatarsal head of her left foot in the past 5 months, associated with foul-smelling, pus discharge since 1month.

Patient information: A 68-year-old, female approached our Shalya tantra OPD with a non-healing ulcer below the first metatarsal head of plantar aspect of the left foot for past 5 months. She gave a history of an unnoticed minor injury to the left foot 5 months prior to presentation, following which a small ulcer developed. She presented with mild pain at the wound site, which gradually increased in size. Additionally, she had been experiencing burning sensation and numbness in both lower limbs for the past two years. There was no history suggestive of deep tissue involvement, such as severe pain, exposure of tendon or bone. And also, patient reported swelling of the left foot for one month, for which she consulted in allopathic hospital and was advised with antibiotic, opioids and alternate day dressing with normal saline. The ulcer had remained non-healing despite prior treatment with antibiotics and regular dressings and didn't find any relief so she approached our hospital for further management.

Past History

K/C/O DM Type II in the past 9 years.

Personal History

Appetite –moderate
Bowel –constipated
Micturition –6times /day, 1-2times/night
Sleep –disturbed.

General Examination

Blood pressure -120/70 mmHg
Pulse rate -72bpm
Respiratory rate - 17cpm
Pallor-mild
Icterus, Cyanosis, Clubbing, Lymphadenopathy and Oedema were absent.

Systemic Examination

CNS - Conscious and well oriented to time, place and person.
CVS - S1, S2 heard, no cardiac murmur heard.
RS- Normal vesicular breath sound present, no added sound heard.
P/A-Soft, Non-tender, elastic, no organomegaly present.

Local examination

Site – below first metatarsal head in planter aspect of left foot
Number-one
Size – 2cm x2 cm x5mm
Shape - spherical
Discharge – present
Odour – foul smelling, present
Floor -slough is present
Margin - well defined
Edge -punched out
Base - Muscle
Sinus tract -present
Surrounding skin – callus with blackish discoloration
Tenderness - present
Pulsation - dorsalis pedis and posterior tibial artery anterior tibial artery were palpable.

Sensory Examination

Touch and pain sensations were diminished over the affected foot.
Superficial sensations including light touch, temperature, and pressure were reduced.
Deep sensations and motor function were preserved.
Plantar reflexes – Areflexia
Based on clinical assessment, the patient presented with a Wagner Grade II diabetic foot ulcer and diminished protective sensation.

Results of the blood investigations are reported in the table.

Si no	Investigation	Before treatment	After treatment
1	Hb%	9.2g/dl	10g/dl
2	WBC	7000 cells/cu mm	5000 cells/cu mm
3	ESR	45mm/hour	10mm/hour
4	FBS	200mg/dl	106mg/dl
5	PPBS	250mg/dl	165mg/dl
6	Hba1c	11%	6.2%

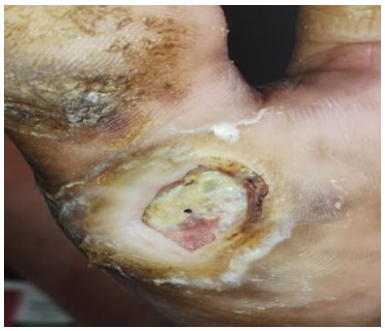
TREATMENT

The treatment was planned on the basis of Ayurvedic principles for *Dushta Vrana*.

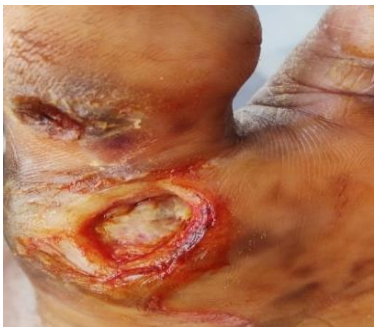
DAYS	THERAPEUTIC PROCEDURE	ORAL MEDICATIONS
1-7 days	• *Arka Kadali Kshara* was applied over the callosity at the wound edges and slough for *shatamatrakala* and washed with *nimbu swarasa* followed by *Lekhana karma.* • *Vrana Parisheka* was performed using *Panchavalkala Kashaya.* • Subsequently *Yashada Bhasma Avachoornana* and *Jathyadi Taila Kavalika* were applied, daily dressing was performed.	• *Nishamalaki Choorna* 1tsp -0-1tsp (B/F) with lukewarm water • *Kaishora guggulu* 1-0-1 (A/F) • *Haritaki choorna* ½ tsp at bed time • *Dhatri loha* 1-0-1(A/F)
8-16 days	• *Vrana Parisheka* was performed using *Panchavalkala Kashaya* • Subsequently *Yashada Bhasma Avachoornana* and *Jathyadi Taila Kavalika* were applied, daily dressing was performed	• *Mahamanjistadi Kwatha* 20ml-0-20ml (B/F) with lukewarm water • *Nishamalaki Choorna* 1tsp -0-1tsp (B/F) with lukewarm water • *Kaishora guggulu* 1-0-1 (A/F) • *Haritaki choorna* ½ tsp at bed time • *Dhatri loha* 1-0-1(A/F)
17-40 days	• *Vrana Parisheka* was performed using *Panchavalkala Kashaya* • Subsequently *Yashada Bhasma Avachoornana* and *Jathyadi Taila Kavalika* were applied, alternate day dressing was performed	• *Mahamanjistadi Kwatha* 20ml-0-20ml (B/F) with lukewarm water • *Nishamalaki Choorna* 1tsp -0-1tsp (B/F) with lukewarm water • *Kaishora guggulu* 1-0-1 (A/F) • *Haritaki choorna* ½ tsp at bed time • *Dhatri loha* 1-0-1(A/F)

OBSERVATION AND RESULT

	BEFORE TREATMENT	AFTER TREATMENT
WOUND SIZE	2cm x 2cm x 5mm	ABSENT
SINUS TRACT	PRESENT -1.5cm	ABSENT
DISCHARGE	PRESENT	ABSENT
ODOUR	PRESENT	ABSENT
SLOGH	PRESENT	ABSENT
TENDERNESS	PRESENT	ABSENT



Before treatment



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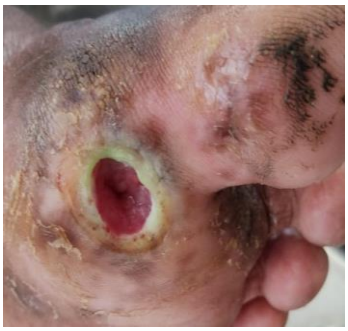

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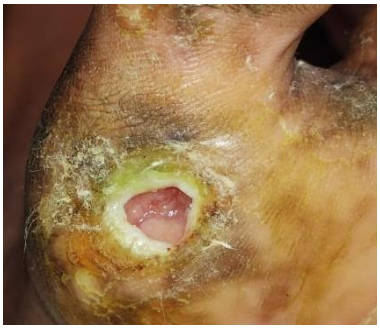

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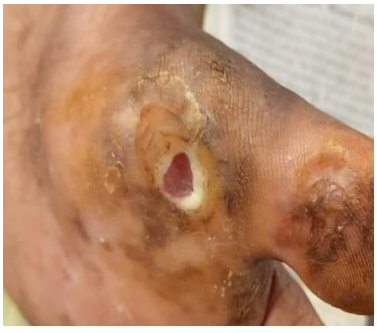

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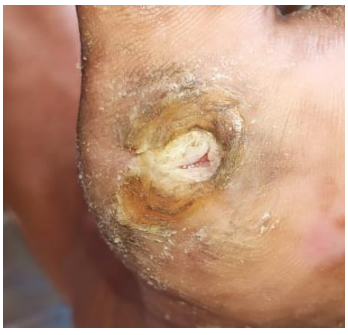

Day 29

Follow-up
No recurrence of the foot ulcer was observed during the 6-month to 1-year follow-up period.

DISCUSSION
The DFUs associated with neuropathy and ischemia need specialized care and appropriate treatment. The primary goal was to achieve complete wound healing along with maintaining the blood sugar level. The second aim was to prevent the further degradation of wound conditions as Diabetics are highly vulnerable to infections.

During the complete course of treatment, the patient was advised *Pathya - Apathya* to enhance wound healing and prevent further complications. The patient was also told to wear diabetic micro cellular rubber (MCR) footwear.

Arka kadali kshara *- "क्षरणात् क्षपणाद् क्षारः" — Kshara* is described as an *Anushastra*, Acharya Dalhana defines *Ksharana* as a property that removes deformed or necrotic tissue due to the alkaline corrosive action, facilitating wound cleansing and debridement. *Arka* (Calotropis procera) has *Katu, Tikta Rasa, Laghu, Ruksha, Tikṣṇa Guṇa, Ushṇa Virya, Katu Vipaka, Kapha–Vatahara, vedhanastapana, Kadali (Musa paradisiaca)-Kaṣāya Rasa,Guru, Picchila guna, sheeta Virya, Madhura Vipaka, Ropaṇa, Stambhana Karma. Arka Kadali kshara* which has above said properties, that aid in the removal of devitalized tissue and prepare the wound bed for healing by granulation tissue formation, enhances epithelialization, control discharge and oozing, reduces burning sensation and inflammation.

Yashadha Bhasma- *Bhasmas* are Ayurvedic metallic or mineral preparations reduced to ultra-fine nano- or submicron-sized particles through classical purification (*Shodhana*) and incineration (*Marana*) processes, enhancing their bioavailability and efficacy. Among these, *Yashadha Bhasma*, possessing *Kashaya-Tikta rasa, Sheeta guna* acts as a *Shleshmakala sankochaka*, *Daha-shamaka* (relieving burning), *Kandughna* (reducing itching), *Kusthaghna* (anti-ulcer), and *Pitta-kaphahara* – helps to alleviate burning sensation and pus discharge, while its *Ropana* property promotes granulation tissue formation and accelerates wound healing. Furthermore, its topical application is convenient and easy, making *Yashadha Bhasma* an effective agent for enhancing wound repair and granulation tissue development.

Jatyadi Taila- It possesses *Tikta* and *Kashaya rasa* and *Pitta-Kapha* pacifying properties, is widely used for its wound cleansing (*Vrana Shodhana*), healing (*Ropana*), discharge control (*Pootihara*), and analgesic (*Vedanasthapana*) effects. Its efficacy arises from the synergistic action of its herbal components: *Jati* (Jasmine) provides antibacterial, antifungal, and anti-inflammatory effects due to salicylic acid. *Nimba* (Neem) contains margosin, offering antibacterial, anti-inflammatory, and analgesic benefits. *Yashtimadhu* (Licorice) promotes tissue regeneration and wound repair, while Turmeric contributes anti-inflammatory, antimicrobial, and antibacterial activity. *Tutta* (Woodfordia fruit extract) facilitates debridement (*Lekhana Karma*), thus helps in enhancing tissue repair and healing.

Panchavalkala Kashaya - Combination of five astringent drugs, which shows properties such as *Vrana Shodhana* and *Vrana Ropana*, acts as antiseptic, anti-inflammatory, immune-modulatory, antioxidant, antibacterial and antimicrobial. It is a well-known drug for decreasing microbial load and preventing further infection through its antimicrobial activity.

Shamanoushadi - Aimed at effective glycemic control, improving peripheral blood circulation, and wound healing.

CONCLUSION
The management of Diabetic Foot Ulcers was carried out using classical Ayurvedic formulations to promote wound healing. Panchavalkala Kashaya provided antimicrobial, anti-inflammatory, antioxidant, and wound-purifying effects, supporting *Vrana Shodhana* (cleansing) and *Ropana* (healing). *Jatyadi Taila*, with *Tikta-Kashaya rasa* and *Pitta-Kaphahara* properties, contributed additional wound cleansing, analgesic, and tissue-regenerative effects. *Yashadha Bhasma*, a fine zinc has *Sheeta guna* and *Kashaya-Tikta rasa*, regulated excessive wound secretions, reduced burning and pus discharge, and promoted granulation tissue formation. *Arka Kadali Kshara* facilitated chemical debridement of slough and callosity, preparing the wound bed and providing antimicrobial and scraping action. The combined topical application of these therapies created an optimal environment for effective infection control, enhanced tissue repair, and robust granulation, resulting in accelerated wound healing. This approach demonstrates significant potential as a safe and effective strategy for improving clinical outcomes in wound management.

REFERENCES
1. Harrison's principles of internal medicine,16th edition, part 14, section 1, chapter no .323 page no 2152.
2. Harrison's principles of internal medicine,16th edition, part 14, section 1, chapter no .323 page no 2168.
3. Harrison's principles of internal medicine,16th edition, part 14, section 1, chapter no .323 page no 2168.
4. Harrison's principles of internal medicine,16th edition, part 14, section 1, chapter no .323 page no 2169.
5. Bedside clinics in surgery,3rd edition, makhan lal saha, reprint 2014, Jaypee brother's medical publishers, chapter no 8 peripheral vascular disease, page no 376-377.

6. *Suśruta Saṃhitā*, Chikitsāsthāna -Dvivraṇīya Chikitsā Adhyāya. hindi anuvadak krishna takral. Varanasi: Chaukhambha orientalia.2014,reprint 2019 volume 2, su/chi/1/8, page no 169.