

AYURVEDIC MANAGEMENT OF DIABETIC FOOT ULCER – A SINGLE CASE STUDY

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ABSTRACT

The present era is full of chaos, stress and strain. Lifestyle modifications, change in dietary habits, urbanization and industrialization leads to upsurge of various metabolic disorders. Diabetes mellitus is one of the metabolic disorder of multiple etiologies, characterised by escalated Glycemic Index. This chronic hyperglycemia gives rise to different microvascular and macrovascular complications. Diabetic foot ulcer is one of them where chronic hyperglycemia damages the blood vessels leading to reduced blood flow to the foot. This poor blood circulation contributes to the formation of ulcers and impairs wound healing. Diabetic patients have up to 25% lifetime risk of developing a foot ulcer. In *Ayurveda*

Prameha has been described as a *Mahavyadhi* by all *Acharyas*. And *Vrana* may be considered as an *upadrava* of *Prameha*. *Pramehajanya vranas* mostly fall into category of *dustha vrana*. A 68 years/male patient having complaints of wound at right foot since 2 months, pus discharge from wound site and patient was taking modern medicines for the DM since 8 years with moderate glycemic control. Patient took allopathic treatment for wound but had no relief. Patient was treated with *Ayurvedic kalpa* like *Amrutadi Guggul*, *Kinshuktwagadi gutika* and *Sarivadyaasava* along with daily dressing of wound with *Panchavalkal kwath* and some *Ayurvedic* antiseptics. After 15 days of *Ayurvedic* treatment diabetic foot got healed with good glycemic control. So it can be concluded that *Ayurvedic* management with diet modifications give significant results in non-healing diabetic foot.

KEYWORDS: Diabetes Mellitus, Prameha, Dustha Vrana, Diabetic foot ulcer, Mahavyadhi.

INTRODUCTION

Today, Stress is a part of our lives. Because of invention of new technology, people become more mechanical. Due to this materialistic world and increasing stress levels we are heading towards various physical and psychological diseases like Hypertension, Dyslipidemia, Heart diseases and Diabetes Mellitus etc. And it is considered as one of the most common lifestyle disorder. Diabetes mellitus is fastly becoming the world's largest silent killer. India has been projected by WHO as the country with the fastest growing population of diabetic patients. Though Diabetes mellitus is a disease known since ancient times to the mankind, its upsurge is quite alarming. Morbidity and mortality occur due to its micro vascular and macro vascular complications. Diabetic foot is one among the major complication.

In Ayurvedic classics *Prameha (Madhumeha)* a type of *Vataj Prameha* can be symptomatically correlated with Diabetes Mellitus. It is one among the *Asthomahagada* and also the last stage of *Prameha* which is *yapya* (challenging to cure) type of disease.^[1] *Vrana* may be considered as an *upadrava* of *Prameha (Madhumeha)*. *Pramehajanya vranas* fall into the category of *Dustha Vrana*.^[2]

According to WHO, diabetic foot is “ulceration or infection or destruction of deeper tissues which are associated with neurological abnormalities, peripheral vascular disease and metabolic complications.”^[3] Diabetic wounds become stuck in the inflammatory and proliferative stages of healing which delays closure. Debridement is often required more than once as the healing process stop or slow down allowing further devitalized tissue to develop. Treatment with recombinant growth factors is expensive with risk of infection transmission with chances of 30% recurrence.^[4] So there is need for a comprehensive approach to tackle the stigma of ulcer leading to amputation by cost effective and time bound management with least recurrence rate with an enhanced immunity system. *Ayurveda* has detailed protocol for ulcer management (*Vranopachara*) after examination of the patient for routine pathology. The present case study is of a diabetic ulcer managed through *Ayurvedic* principles of *Dushta Vrana Chikitsa*.^[5]

AIM AND OBJECTIVES

To evaluate the efficacy of *Ayurvedic* management in Diabetic foot ulcer.

CASE HISTORY

A male patient of age 68 years, attended opd of *Kayachikitsa* department having complaints of wound at right foot since 2 months, pus discharge from wound site and on taking brief history patient had a history of wound due to shoe bite. Patient was found to be under treatment of allopathic medicines for type 2 diabetes mellitus since 8 years. But there was moderate control of sugar level. Also he had taken treatment for the diabetic ulcer but no relief. So that patient decided to take Ayurvedic treatment and he came to our hospital for further management.

Name – xyz Age- 68 years

Occupation – farmer

PAST MEDICAL HISTORY

K/C/O – DM II since 8 years

Tb. Glimy M 1 1-0-1 (Before food)H/O – Shoe bite 2 months back.

PAST SURGICAL HISTORY

Operated for left inguinal hernia i.e., hernioplasty done 3 years back

PRESENT COMPLAINTS

- 1) Wound at right foot since 2 months.
- 2) Pus discharge since 1 month.
- 3) Foul smell since 15 days.
- 4) Mild burning sensation at wound site since 15 days.

FAMILY HISTORY

Mother – Type II DM

GENERAL EXAMINATION

BP – 130/80 mmhgPulse -84/min

Bowel – Satisfactory (1-2times/day)

Bladder – Satisfactory (5-6times/day and 1-2 times/night)

Appetite – NormalNakha – Shwetabh

Netra – Raktabh (No reports regarding retinopathy)Weight – 63 kg

Height – 5ft 4 inches

ASTHAVIDHA PARIKSHA

Nadi – 84/min

Mala – Samyak (1-2times/day)

Mutra – Samyak (5-6times/day and 1-2 times/night) Jivha – Ishat Saam

Shabd – Spastha Drika – Prakrut Aakriti – Madhyam

SYSTEMIC EXAMINATION

CNS- Conscious oriented CVS- S1 S2 Normal

RS – AEBE Clear P/A- Soft non tender.

LOCAL EXAMINATION

Wound present at dorsal aspect of foot.

VRANA PARIKSHA

TYPE – *Dusthavrana*

HETU- *Aagantuj* (Shoe bite)

VRANA AASHRYA (AADHISHTHAN)^[6] – *Twak, Rakt, Sira, Mansa, Meda*.

VRANAPANCHAK

- 1) **Aakruti** – Dimensions- Length – 5.2cm (Approx measured by scale) Breadth – 2cm
Depth- 1cm, Margins – irregular, indurated.
- 2) **Gandha** – Foul smell.
- 3) **Varna** – Reddish black.
- 4) **Strava** – Whitish pus discharge.
- 5) **Vedana**- Mild burning sensation at wound site, pain and tenderness.

METHODOLOGY/ TREATMENT

- **Shodhana (Dhavana)**

Daily wound cleaning with *Panchawalkal kwath* for consecutive 15 days.

- **Ropana**

Daily wound dressing is done with *Shudha madha* (honey) and *Shudha ghrita* (Ghee).

- **Oral Drugs**

Sr.No	DRUG	DOSE	ANUPAN
1)	<i>Amrutadi Guggul</i>	2-0-2 (After food)	Luke warm water
2)	<i>Kinshuktwagadi Gutika</i> ^[7]	3-3-3 (Before food)	Takra (Buttermilk)
3)	<i>Sarivadhyasava</i>	20ml-0-20ml (After food)	Luke warm water

OBSERVATION

Initially blackening of the skin was visible on foot as well as on the lower leg denoting ischemia. After 15 days of treatment the blackness disappeared completely and normal skin colour was regained. The characteristics of *Dustha vrana* like *Ativirita* (blood base), *Bhirava* (ugly look), *Putipuyamansa* (pus discharge), *Durgandha* (foul smell), *Vedana* (pain) were noted in the wound and also decreased their intensity gradually. Deep seated slough started to dissolve from the base and wound became clean and healthy. The healing was started with the formation of healthy granulation tissue. The margin of wound became bluish showing growing epithelium. The wound started to contract by filling of tissue from the base of wound day by day. By the end of 15th day wound was completely healed with minimum scar tissue formation.



At the initiation of treatment



After 1 week of treatment



Diabetic wound after 15 days of treatment

BLOOD INVESTIGATIONS

	Before Treatment	After Treatment
BSL F	221.3 mg/dl	147 mg/dl
BSL PP	284 mg/dl	206.8 mg/dl

RESULT AND DISCUSSION

According to *Sushruta Samhita*, Diabetic foot can be correlated with '*Pramehajanya Vrana.*' During its description, *Sushruta* stated that the management of these *Vranas* is difficult i.e., *Kashta Sadhya*. According to *Sushruta*, *Meda* and *Rakta* along with other *Dosha* and *Dushya* lead to the formation of *Prameha Pidika* which is later converted to non healing wound.

Panchavalkala i.e., group of barks of five trees – *Vata*, *Ashwatha*, *Udumbara*, *Plaksha*, *Parish* are found to be very effective in controlling wound infection when used externally. Due to *Guru Guna* of *Panchavalkala kwatha*, *Vedana* (Pain) might have decreased. Also *Panchavalkala* is a drug with *kashay rasa* and by the action of *Rasa*, it acts as a *Stambhaka* and *Grahi* which results in decreasing the *Strava* (discharge) from the wound. By *Rasa* and *Veerya*, *Panchavalkal kwath* is a *Pittahara* and therefore it decreases the *Raga* (redness), which is mainly due to *Pitta*. *Kashay ras* of the *kwath* acts with *Shodhana* (curative effect) property. So that *Panchavalakala kwath* is used as a cleansing agent.

In spite of the advances have been made in the modern science, the management of chronic wound is still a challenge. *Madhu* has *Vranaropak* properties as per the principles of the sixty *Upakramas* of *Vrana* described in the *Sushrut Samhita*. *Madhu* is a hyperosmolar medium, preventing bacterial growth.^[8] We had used *Madhu* alongwith *Ghrita* which forms hydrogen peroxide providing antibacterial properties.^[9] At the time of presentation, the patient had pain, discharge, discolouration etc. The *Madhura Rasa* of *Madhu* reduced the vitilified *vata dosha*, leading to reduced pain and enhanced healing. *Madhu* has been described as having the ability to promote phagocytosis, detoxification and proteolyses, all of which assist in the cleaning and healing the wound. *Ghrita* (Cow's ghee) contains several saturated and unsaturated fatty acids which are capable of taking part in the metabolic process involved in wound healing. So together they provide *Vranaropak* property.

Orally *Kinshuktwagadi gutika*, *Amrutadi Guggul*, and *Sarivadyasav* was given to the patient for consecutive 15 days.

Kinshuktwagadi gutika is described in *Sahastrayoga*. It contains *Palash* – 1 part, *Nisha* – 1 part, *Dhatri* – 1 part, *Katak* – 1 part, *Vairi* – 1 part. *Palash* is having *Katu*, *Tikta*, *Kashay Rasa* and *Katu Vipaka* alleviates *Kapha* and *Meda Dosha* involved in *Madhumeha*. *Kashay Rasa* of *Palash* also alleviates *Kapha* and being *Stambhana* it also decreases *Sharir gata kleda*. Its *Ushna Virya* pacifies *Vaat* and *Kapha*. *Nisha* shows properties of *Kapha-vaatshaman*, *Amapachan*, *Kledashoshan* and *Strotomukhavishodhan* with cleaning and sterilizing the interior of ulcer. *Dhatri* is highly valued in *Ayurveda* as a rejuvenating fruit from the times of *Charaka* and *Sushruta*. Due to the *Madhura Vipaka*, it is known to exert *Rasayana Prabhava* too thereby causing *Oja Vardhana* which is being depleted in body of *Madhumehi* owing to chronic exposure to *Vata* in body. Due to *Sheet Virya* and *laghu* – *Ruksha Guna Katak* work as astringent and diuretic with *kledavahana* action. As *Kleda* decreases the diabetic ulcer is

being cured. *Vairi* had proven hypoglycemic activity because of *Kashay*, *Tikta Rasa* and *Katu Vipaka*. Hence *Kinshuktwagadi Gutika* does good glycemic control with *Kledavahana*.

Amrutadi Guggul contains *Amrita* -1 part, *Elaichi* – 2 part, *Vayvidang* – 3 part, *Vatsaka* – 4 part, *Vibhitaki*- 5 part, *Haritaki* – 6 part, *Amalaki* – 7 part and *Shudh Guggul* 8 part respectively. *Katu*, *Tikta* and *Kashay Rasa* are present in maximum drugs. *Katu Rasa* has *Deepana*, *Kleda* – *Sweda*, *Meda Shamak* properties. Also *Tikta Rasa* has also got *Deepana*, *Pachana*, *Shoshana* properties. *Tikta Rasa* by *Rukshata* property helps to decrease *Strava* (Discharge) from the wound. Most of the *Dravyas* in *Amrutadi Guggul* are *Sheet Viryatamaka*, possesses *Vata* and *Kaphahara* property which results in decreasing the *Vedana* (Pain) and *kleda* in the wound. Overall *Amrutadi Guggul* works as a *Srotoshodhana*. *Sarivadyasava* is explained in the *Pramehapidika*.^[10] It contains *Sariva*, *Musta*, *Lodhra*, *Nyagrodha*, *Ashwattha*, *Shati*, *Padmaka*, *Ushira* etc. Almost all the of *Dravyas* in the *Sarivadyasava* are *Madhura* and *Tikta Rasatamka* and *Sheet Viryatamaka* providing *Vaat-pittahara* and *Raktashodhak* properties.

CONCLUSION

This case study has highlighted and proved the potentials of Ayurvedic principles of wound management in diabetic foot ulcer. By judicious use of the Ayurvedic principles of wound management and good glycemic control can heal the diabetic foot ulcers without the use of antibiotics locally or systematically.

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