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Tankanamrutha Malahara in the Management of Dushta Vrana w.s.r. to Diabetic Foot Ulcer (DFU) - a case study.

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ABSTRACT

DushtaVrana (non-healing ulcer) is a commonly encountered problem in surgical practice. Diabetes is one of the etiology of these wounds. In Ayurveda, *Vrana Shodhana* (purifying the wound) and *Ropana* (wound healing) are the preliminary steps of 60 measures for wound management. *Lepa* (medicated paste) is one among the *Shasthi Upakrama* (60 fold treatment modalities) and it has the effect of *Shodhana* (wound purification). *Tankanamrutha Malahara* has *Shodhana* and *Ropana* properties and is beneficial for all types of *Vrana*.

In this study, we have treated a case of chronic non-healing ulcer of 60 years female over the right third toe with *Tankanamrutha Malahara*.

Keywords: Diabetic foot ulcer; *DushtaVrana*; *Tankanamrutha Malahara*.

INTRODUCTION

Diabetes mellitus is a metabolic endocrine disorder due to an overall deficiency of insulin (Type 1) or defective insulin function (Type 2) which causes hyperglycemia. DFU is one of the serious complications of Diabetes Mellitus. Mortality rates associated with the development of a DFU are estimated to be 5% in the first 12 months, and 5-year mortality rates have been estimated at 42%.¹ Atherosclerosis and diabetic peripheral neuropathy are the two main causes leading to a complication of diabetes such as ulcers. Atherosclerosis leads to decreased blood flow in large and medium-sized vessels secondary to thickening of the capillary basement membrane, loss of elasticity, and deposition of lipids within the walls.² Diabetic foot is characterized by a classical triad of neuropathy, ischemia, and infection.³ The

multidisciplinary approach of DFU management includes surgical debridement, dressings to facilitate a moist wound environment and exudate control, wound off-loading, vascular assessment, and infection and glycemic control.⁴

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CASE REPORT

A female patient of 60 years came to our Out Patient Department (OPD No-034921) with complaints of non-healing ulcer over right third toe (3x2 cm) associated with pain, foul smell and pus discharge from 30 days.

She was apparently healthy before 30 days. Then she developed a wound over the right third toe. At first, it was a small wound and patient neglected it. Gradually wound became bigger associated with pain, foul smell, pus discharge and burning sensation on toes. For the above complaints, she visited a government hospital and the dressing was done for 2 months but she didn't get any relief. So she came to our hospital for further management.

The patient was a known case of Type II Diabetes Mellitus for 2 years under medication. She discontinued medicines from the last one-month. There was no history of trauma.

She had a good appetite and her sleep was proper. She has regular bowel and micturition habits with no complaints.

On local examination, oedema on right third toe, measuring 3x2 cm, 4mm in depth, oval in shape, with the yellowish foul-smelling discharge was seen. Mild tenderness was present on palpation. Posterior tibial artery, Dorsalis pedis artery were palpable. There was no bleeding and no raised local temperature on touch.

INVESTIGATIONS

Haematological investigations were done. Haemoglobin was 11.8 gm/dl, Total counts were normal. Erythrocyte Sedimentation Rate was raised (48 mm/hour), Fasting Blood Sugar was 204.2 mg/dl, Postprandial Blood Sugar was 313.1 mg/dl, Fasting Urine Sugar was 1%, Post Prandial Urine Sugar was 2%, Glycosylated haemoglobin(HBA1C) was 9.8% and Mean Blood Glucose was 240.1 mg%. Renal function test and Liver function test were in the normal range.

On radiological investigation, diffuse soft tissue edema on distal phalanx of third toe suggestive of chronic inflammation was seen on X-ray right foot AP view (figure 1).

RESULTS:

As soon as the external application of *Tankanamrutha Malahara* started, pus discharge from the wound and discolouration got reduced. After 1 week of treatment pain and tenderness got completely subsided (Figure 2d). Oedema gradually reduced as the treatment started and got completely subsided after 2 weeks (Figure 2f). After 25 days of treatment, the wound got healed completely (Figure 2j). The progression of the symptoms was taken into consideration under the grading system according to their severity (Table 1).

Table 1. Clinical improvement of sign and symptoms of the wound.

Variables	Before Treatment	After Treatment
Pain	++	-
Tenderness	++	-
Pus discharge	++	-
Smell	+++	-
Discolouration	Yellowish	Normal
Local temperature	Raised	Normal
Wound size	3x2 cm	Healed

Index: No symptoms: -,Mild: +, Moderate: ++, Severe: +++



Figure 1. Radiological investigation (Xray right foot AP view)

				
2a	2.b	2.c	2.d	2.e
BEFORE TREATMENT	DAY 3	DAY 6	DAY 9	DAY 12
				
2.f	2.g	2.h	2.i	2.j
DAY 15	DAY 18	DAY 21	DAY 24	DAY 30
<p>Figure 2. shows the changes seen on oedema. Figure 2.a initial ulcer Fig 2.d Pus and foul smell subsided Fig 2.h oedema totally subsided Fig 2.i ulcer healed</p>				

DISCUSSION

In a normal wound, the presence of pain is natural. In the due course of treatment wherein, the wound heals, the pain also tends to subside along with it. But in Diabetic patients with very poor glycemic control, they develop neuropathic changes thereby, they are unaware of pain sensation.

Vedana is a predominant feature of Vata due to *Vatanulomana Guna* of *Tila Taila* and *Siktha* and overall traits like *Ushna Veerya*, *Snigdha Guna* and *Krimighna* action, there was a considerable decrease in the symptom of *Vedana*.

The base of preparation of the drug *Tankanamrutha Malahara* is "*Siktha Taila*" which has *Vrana Shodhana Guna* helps in reducing the discharge. Additionally, *SarjaKshara* is said to be *Krimighna* in nature, which helps to reduce the microbial load in *Vrana*.

Unlike the treatment for the healthy wound, which comprises of *Madhura Rasa*, *Sheeta Veerya* and *Snigdha Guna Pradhana Dravyas*, the treatment of *Dushtavrana* requires *Ushna* and *Teekshna Gunas* which helps to check the *Kledatha*. The added benefit of *Krimighna*, *Kandughna*, *Lekhana* qualities, further help for *Shodhana* of *Dushta Vrana* and makes it *Shuddha Vrana* and promotes wound healing.

CONCLUSIONS

Tankanamrutha *Malahara* is effective in the treatment of *DushtaVrana*.

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Consent: The consent was signed by the patient and is attached with it.

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