

## Literature review on Dushta Vrana W.S.R. to diabetic foot ulcer

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### ABSTRACT

15% of diabetic patients may develop diabetic foot ulcers during their lifetime, making it one of the most prevalent consequences of diabetes mellitus. Early, efficient treatment of DFU can lessen the severity of consequences including avoidable amputations and potential mortality while also enhancing general quality of life. According to Ayurvedic literature, these ulcers are known as Dushtavrana and several treatment modalities, including oral medication, bloodletting, wound debridement, etc., have been recommended for their care. The management of diabetic foot ulcer required based on blood sugar control, debridement, advanced dressing and offloading modalities. Modern science led to development of newer techniques in diabetic foot management but still more is to be done. Aacharya sushrutahas outlined sixty different vrana therapy procedures in the literature of ayurveda. An effort has been made in this study to review dushtavrana'sayurvedic perspective. For the management of thedushtavrana various therapy approaches are given in the sushrutasamhita.

**Key words:**Dushta Vrana, Diabetic Foot Ulcer.

### I. INTRODUCTION

Diabetes mellitus is a major public health problem worldwide. The number of patients with diabetes mellitus was 285 million in 2010 and estimated if the situation continues, 439 million people by 2030 will have diabetes mellitus.<sup>[1]</sup> Patients with diabetes are prone to multiple complication and most common complication is diabetic foot ulcer. High blood glucose levels for longer durations damage blood vessels leading to reduced blood flow to the foot. This poor blood circulation contributes to the formation of ulcers and impairs wound healing. Elevated blood glucose levels over time can damage the nerves of foot, decreasing person's ability to notice pain and pressure. Loss of sensation further lead to develop pressure spots and accidently injure the skin, soft

tissues and bone. Nerve damage, poor circulation and chronically high blood glucose levels increase the risk of foot ulcer. Diabetes is a serious chronic disease that needs attention.<sup>[2]</sup>previous studies have indicated around 15% to 25% of patients with diabetes mellitus will develop a diabetic foot ulcer during their lifetime.<sup>[3]</sup>Diabetes patients frequently experience impaired wound healing, which is also the main reason for amputations of the lower extremities. In diabetic patients, at least 40% of amputations can be prevented by using the appropriate wound care techniques.

Slight injury to glucose laden tissue may cause chronic infection and ulcer formation. Ulceration in diabetes may be precipitated by ischaemia due to diabetic atherosclerosis. More prone to infection of glucose laden tissue may cause ulceration. Diabetic polyneuropathy or peripheral neuritis may also cause ulcer formation. Toes and feet particularly the sole is the commonest site. Leg is also affected. Any other part of the body may be affected.<sup>[4]</sup>

### Ayurvedic perspective of diabetic ulcer-

"Vrana Gaatravichurnane Vranayati Vrana" means destruction, break, rupture and discontinuity of the body or tissue.<sup>[5]</sup> According to avastha the vrana is divided into dushtavrana, shuddhavrana, ruhyamanavrana and rudhavrana. The first stage, when the wound is unclean is known as dushtavrana. With proper management it becomes a clean wound.<sup>[6]</sup>

In ayurveda, prameha has been described as a mahavyadhi by all acharyas and 20 types of pramehas are mentioned. Ayurvedic perspectives on diabetic ulcers can be compared with madumehajadustavrana as described by Aacharya sushrutaha. Due to weakness of rasayani (channels / vessels), the aggravated dosas will not go upwards in prameha patients, and hence pidaka /vrana /vidradhi/ulcer occurs in lower part of the body in mdhumehapatent.<sup>[7]</sup>

The dushta vrana lakshana has been described by different acharya's in their text.

#### Sushruta Samhita [8]

Atisamvrita ativivruta atikatina or atimrudu utsanna avasanna atiseeta or ushna. Having one of the colours of krushna rakta peeta sukla etc. Filled with pootipooya maamsa sira snayu etc. moving in oblique track (unmargi) Having amanoghna darsana, atigandha, veadanayuktha, associated with daaha, paaka, raga, kandu, sopha, pidaka etc. discharging excessively dushta sonita, deergha kalanubandhi.

#### Charaka Samhita [9]

Mentioned 12 characteristic features indicating the advanced stages of morbidity of vrana. svedatva avasanna, vartmatva, athisthoola varmathva, ati pinjaratva, neelatva, syaavata, ati pidakatva, rakta krushnatva, ati pootitva, ropyatva kumbhikamukhatva. Vranas with pooti gandha vivarna, bahu sraava, maharaja.

#### Astanga Hradaya [10]

Either samvrutha or vivrutha katina mrudu, atyutsanna avasanna atyushna atiseeta raktatva pandutva discharges pooti pooya covered with poooti maamsa sira snayu associated with atiruk daha swayathu kandu and other complications deergha-kalanubandhatha.

#### Astanga sangraha [11]

Either atisamvrutha or ativivrutha atimrudu or ati katina athyutsaadha avasadha atiseeta or ushna rakta krushna or pandutha covered with poothi maamsa, sira snayu etc discharges pooti pooya, daha, paka kandu svayathu vedana pitaka etc appearing as upadravas deergha kalanubandha.

#### Samprapti Ghataka

Dosa: Tridosaja

Dusya: Tvacha, Mamsa, Sira, Snayu, Sandhi, Koshta and Marma.

Srotas: Annavaha, Rashavaha, Raktavaha, Mamsavaha, Svedavaha.

Agni: Mandya, Visama.

Marga: Sangha.

Adhisthana: As Dusya.

Udbhavasthana: Anywhere in the body.

Pratamy Lakshana: Gatravichurnane.

#### Treatment principle

The modern line of treatment for vrana comprises oral, parenteral, local antibiotics, anti-inflammatory medications, analgesics and antiseptic dressings, which prevent infections, reduce inflammation and relieve pain. Although all of these medications have a number of negative effects, they are all somewhat effective. Additionally, they play no part in quickening the body's natural healing process. Modern line of treatment for vrana comprises oral, parenteral, local antibiotics, anti-inflammatory medications, analgesics and antiseptic dressings, which prevent infections, reduces inflammation and relieve pain. Although all of these medications have a number of negative effects, they are all somewhat effective. Additionally, they play no part in quickening the body's natural healing process.

The evidence led to a decline in the popularity of antibiotics and antiseptics for wound healing and ongoing research was put into creating more potent and advanced antimicrobial agents. Many clinical researchers have re-examined traditional ayurvedic procedures and began going back into the history of medicine.

In classical texts like the sushruta samhita, numerous ayurvedic treatment modalities are described. Acharya sushruta provided the most scientifically accurate descriptions of wound care, including shastiupakrma's<sup>[12]</sup> (60 procedures) and the recommendation to use "Dushta vrana vidhi kaaryo meha kustha vraneshvapi." It is best to treat the vrana that was created from the prameha and kustha as dushtavrana chikitsa.<sup>[13]</sup> In the treatment of vrana sopha, Acharya mentioned 7 upakramas<sup>[14]</sup>, which are thoroughly explained in the 60 upakramas. Among shastiupakrma shodhan, dhavan, ropan and raktmokshan are specially advised for dushtvrana by acharya sushruta.

Shodhana & Ropana Chikitsa - Shodhana is one of the most important therapies in the management of dushtavrana. Shodhana helps in removal of slough and discharge which delays healing process. Ropana drugs are the one which helps in the healing of the vrana. It is typically mentioned following the shodhana of the vrana. The many techniques for shodhana and ropana among the sixty methods of managing vrana are kashaya, varti, kalka, ghrita, taila, rasakriya, and avachurnana. After shodhana different types of lepa i.e. Pralepa, Pradeha, Aalepa has to be applied over the vrana and then bandhana should be done for the protection of the wound. Bandhana helps in shodhana & ropana of vrana.<sup>[15]</sup> Although bandhana

is contraindicated in vrana of kushtha & madhumeha, but acharya also commented that, this has to be decided by expert vaidya.<sup>[16]</sup>

If wound cannot be cleaned by above mentioned shodhana measures, surgical intervention is needed. For that among astavidh shastra karma (8 type of surgical procedure), suitable surgical procedure should be carried out i.e. lekhan (scrapping of slough), vistravana (drainage of pus) etc.

Kshara karma - "Tatra ksharnatakshannadava kshara"<sup>[17]</sup>. It destroys the unwanted tissue. The pratisarniya kshara is indicated in dushtavrana. Kshara, is superior among all shastras and anushastras, so we can use pratisarniya kshara for local application, as it pacifies all the doshas present in the chronic wound because of its chedna, bhedana and lekhan action. Kshara can be easily applied to those wounds where instrumentation is not possible.<sup>[18]</sup>

#### Guidelines for diabetic patients who are in danger of developing ulcer in their feet.<sup>[19]</sup>

1. Daily inspection of feet (dorsum, sole, region between the toes). Inspection of the soles can be performed by another person or with the use of a mirror.
2. Avoid walking barefoot (without shoes or slippers), even inside the house.
3. Never wear without socks even for small intervals.
4. Buy the right size of shoes. Individuals with neuropathy get used to buying footwear of smaller size, so that they press their feet a lot.
5. Not wear new shoes for more than one hour per day. After taking off the shoes, they should inspect their feet carefully.
6. Wash their feet daily and dry them carefully. Particular care (cleanness and dryness) is required for the regions between the toes.
7. Cut the nails straight (not in the sides of nails).
8. Check their feet carefully for presence of minute trauma after walking for a long time.
9. Keeps the blood flowing to feet. Put your feet up when sitting. Wiggle your toes and move your ankles up and down for 5 minutes, two or three times a day. Don't cross your legs for long periods of time. Smoking should be avoided.
10. Take care of diabetes. Blood sugar level should be controlled.

## II. CONCLUSION

Diabetic foot lesions are common in developing country like India. They significantly

raise the strain on diabetic patients and their families. The current situation calls for a huge patient and primary care physician education effort for prevention and treatment at the primary care level. Ayurvedic treatment of an ulcer, two steps in ayurveda are very important which are the shodhana and ropana and they have similar concept with debridement, dressing and elevation of wound as mentioned in modern medicine. Allopathic as well as Ayurvedic management of the disease should be included in clinical practices for proper care and treatment.

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