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Ayurvedic management of *Dushta Vrana* w.s.r. to diabetic foot ulcers

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ABSTRACT

Diabetic foot is one among the leading cause for morbidity and mortality in present era. Global prevalence rate of diabetic foot is 6.3%. In comparison to females, males are commonly affected. The Patients with Type 2 diabetes mellitus are more commonly affected than Type 1. Diabetic foot is one of the major complication of diabetes mellitus, which may lead to infection, amputation and even death. In *Ayurveda* we can compare this disease with *Dushtavrana*, as the *Lakshanas* of the disease are similar to *Dushtavrana*. In *Sushruta Samhita* different modalities of treatment has been described for the management of the *Dushtavrana*. Modern science led to development of newer techniques in diabetic foot management but still more is to be done. In this study attempt has been made to review *Ayurvedic* management of *Dushtavrana*.

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

INTRODUCTION

Diabetic foot is a common complication affecting approximately 15% of diabetic patients. Among those 6% suffers from infection. Diabetes is the leading cause for non-traumatic lower extremity amputations. The cause for diabetic foot includes diabetes, insulin dependence, obesity, alcoholism & smoking.

Increase in blood sugar prevents nutrients and oxygen from energising cells, declines immunity, increases inflammation in the body cells & peripheral

neuropathy. All these together slowdown wound healing mechanism in diabetic patients. Peripheral neuropathy causes damage to the nerves and vessels which inturn causes loss of sensation. Mainly hands and feet are affected. This is the cause for foot ulcers in diabetic patients.^[1]

The studies showed that 60-80% of the patients will heal, 10-15% of the patients remain active and 5-24% of them lead to limb amputation. Neuropathic wounds takes longer time to heal & more often leads to amputation. Modern line of treatment to heal *Vrana* includes oral, parenteral, local antibiotics, anti-inflammatory drugs, analgesics and antiseptic dressings, which prevent infections, reduces pain and inflammation. All these drugs are effective to certain extent but have multiple side effects. Moreover they have no role in accelerating the natural healing process.

The evidence led to a decline in the popularity of antibiotics and antiseptics for wound healing and never ending efforts started to develop effective & newer antimicrobial agents. Many of clinical researchers started looking back into medical history and re-examined ancient techniques of *Ayurveda*. In

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Ayurveda many master techniques has been described in the classical text like *Sushruta Samhita*.

“*Vrana Gaatravichurnane Vranayati Vrana*” means destruction, break, rupture and discontinuity of the body or tissue.^[2]

According to *Avastha* the *Vrana* is divided into *Dushtavrana*, *Shuddha Vrana*, *Ruhyamana Vrana* and *Rudha Vrana*. The first stage, when wound is unclean is known as *Dushtavrana*. By proper management it becomes clean wound.^[3]

Examination of Vrana

Shanmoola - The causative factors *Vata*, *Pitta*, *Kapha*, *Sannipata*, *Rakta* and *Aagantuja*.

Ashta Parigraahi - Eight *Vrana Adhithanas* are *Twak*, *Maamsa*, *Sira*, *Snayu*, *Sandhi*, *Asthi*, *Kostha* and *Marma*.

Pancha Lakshana Lakshitaha - Features of *Vataja*, *Pittaja*, *Kaphaja*, *Sannipaataja* and *Aagantuja Vranas*, as well as *Varna*, *Sraava*, *Gandha*, *Vedana*, *Aakruti* and also 60 *Upakramas* for the proper management of *Vrana*.^[4]

Further it is said that these four *Shanmoola*, *Ashta Parigraahi*, *Pancha Lakshana* & *Shashsti Upkrama* are to be thoroughly understood by the *Vaidya* before treatment, along with the *Chikitsa Chatushpaadha*, so that the treatment of ulcer becomes easier.

According to *Acharya Charaka* examination of *Vrana* & patient suffering from this ailment is to be carried out in 3 different ways, namely *Darshana*, *Sparshana* & *Prashna*.

Darshana: By *Darshana Pareeksha* age of patient, site of *Vrana*, *Aakruti*, *Varna*, condition of *Vrana*, etc. can be elicited.

Sparshana: It helps in eliciting the hardness or softness of *Vrana*, increase or decrease of local temperature etc.

Prashna: By *Prashna Pareeksha* the cause for *Vrana*, type of *Vedana*, *Agni Bala*, *Saatmya* etc. are to be examined.^[5]

Dushta is one in which there is localization of *Doshas* or *Dushta* means getting vitiated by *Doshas*. *Vrana* which smells badly (foul odour), has abnormal color with profuse discharge, intense pain and takes longer period to heal is said to be *Dushta*. The feature of *Dushtavrana* will vary according to predominant *Doshas* present in it.

The *Dushta Vrana* has been described by different *Acharya's* in their text.

Sushruta Samhita

Extremely narrow or wide mouthed, too soft, elevated or depressed, black or red or white colored, too cold or hot, full of slough or pus or veins or flesh or ligaments or putrid pus. Upward or oblique course of suppuration. Pus runs into cavity & fissures, having cadaverous smell, burning sensation, redness, itching, pustules crop up around, secrete with blood.^[6]

Charaka Samhita

No specific *Lakshanas* have been mentioned by *Acharya Charaka*, but by classification it is characterized in 12 -White, Depressed path, Too thick path, Too yellow, blue, blackish, grey, Black foul smelling, Wide cavity filled with pus & Narrow mouth.^[7]

Astanga Hrudaya

Too hard / Too soft, Too elevated / Too inverted, Too hot / Too cold, Colour of *Vrana* is red / *Paandu* / black, severe painful, burning sensation, inflammation, redness and itching is present and is chronic in nature.^[8]

Madhava Nidana

Purulent profuse blood stained discharge, large cavity, foul smelling, severe painful, *Lakshanas* opposite to that of *Shudha Vrana*.^[9]

Sharangdhar Samhita

Lakshanas opposite to that of *Shudha Vrana*.

Diabetic foot ulcer

Ulceration in diabetes may be precipitated by Ischemia due to diabetic atherosclerosis, infection or

diabetic peripheral neuritis or combination of all these factors.

Neuropathic ulcers - Seen in 35% of cases with sensory loss, pinkish in colour surrounded by callus, warm with bounding pulse, dry skin & fissuring and occurs at weight bearing areas of the foot.

Ischemic - Seen in 15 % of cases painful, necrosis common, pale and sloughy with poor granulation, cool with absent pulses, delayed healing, occurs at the tips of toes, nail edges and lateral border of the foot.

Neuro-ischemic - Seen in 50 % of cases with degree of sensory loss, minimal callus prone to necrosis, poor granulation, cool with absent pulses, high risk of infection, occurs at the margins of foot and toes.

Modern Management

The standard treatment for the diabetic foot includes;

Surgical debridement - Debridement should be sharp.

Dressing - Dressing to facilitate a moist wound environment & exudate control.

Wound off - loading - Shoe modifications, boots and orthotic walkers can be used for off – loading.

Vascular assessment - Examine the patient to rule out any arterial insufficiency.

Infection - In mild infection antibiotics for - 1-2 wks. & in moderate to severe infections- 2-3 wks.

Good glycaemic control - To achieve proper wound healing optimize blood glucose level.^[10]

Ayurvedic Wound Management

Acharya Sushruta has advised *Saptopakramas* as the basic treatment principles for *Vrana* where he has incorporated various procedures viz. *Shashti Upakramas* in them.

Saptopakramas are 1) *Vimlaapana* 2) *Avsechana* 3) *Upanaaha* 4) *Patana Kriya* 5) *Shodhana* 6) *Ropana* and 7) *Vaikrutaapaham*.

Ayurvedic Chronic Wound/ Dushta Vrana Management

“Dushta vrana vidhi kaaryo meha kustha vraneshvapi”

Vrana developed from the *Prameha* and *Kustha* should be treated as *Dushtavrana Chikitsa*.^[11]

Vamana Shirovirechana - *Urdhva Sharira Shodhana* with *Kashaya Dravyas* in case of *Kaphaja Vrana*

Virechan - *Adha Sharira Shodhana* with *Kashaya Dravyas* in case of *Pittaja Vrana*.

Asthapan Basti - *Kashaya Dravyas* are used for *Abhyantra Shodhana*.

Vishoshana (Langhana) - For *Aama Pachana*.

Ahara - *Tikta, Katu, Kashaya Dravyas*

Raktamokshana-

- *Shringa* - In *Vata Dushti* & *Twakgata Rakta Dushti*
- *Jalouka* - In *Pitta Dushti*
- *Alaabhu* - In *Kapha Dushti* & *Twakgata Rakta Dushti*.^[12]
- *Prachana* - Blood-letting should be done by this method, in case of clotted /thickened blood.^[13]
- *Siravyadha* - Venous puncture, in case of *Rakta Dushti* in complete body.

Vranaprakshalana - With *Kashaya* of *Aragvadi* and *Sursaadigana Dravyas*.

Avsechana – With *Taila* prepared from *Aragvadi* & *Sursaadigana Dravyas*.

Taila prepared from the *Kalka* of *Kshardravyas* for *Vrana Shodhana*.^[14]

Shodhana Taila & *Ghrita* prepared from *Shodhana Dravyas*.^[15]

Shodhana & Ropana Chikitsa - *Shodhana* is one of the most important therapy in the management of *Dushtavrana*. *Shodhana* helps in removal of slough and discharge which delays healing process. Among sixty methods of *Vrana* management, *Kashaya, Varti, Kalka, Ghrita, Taila, Rasakriya, Avachurnana* are the different methods for *Shodhana*.

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.^[16] Although *Bandhana* is contraindicated in Vrana of *Kustha* & *Madhumeha*, but *Acharya* also commented that, this has to be decided by expert *Vaidya*.^[17]

Ropana

Ropana drugs are the one which helps in the healing of the Vrana. It is indicated usually after the *Shodhana* of the Vrana. For the *Ropana* various *Kashaya*, *Rasakriya*, *Varti*, *Lepa*, *Avachurnana* etc. are mentioned.

In the treatment of *Dushtavrana*. *Shodhana Dravyas* like *Dravanti*, *Karanja*, *Danti*, *Chitraka*, *Mangrela*, *Nimbapatra*, *Kasisa*, *Tutha*, *Trivrta*, *Malkangni*, *Nili*, *Haridra*, *Daruharidra*, *Sindhav* *Lavana*, *Tila*, *Gorakhmundi*, *Suvaha*, *Shukakhya*, *Kalihari*, *Mainshil*, *Katutumbi*, *Madyanti*, *Mrigadini*, *Snuhi*, *Murva*, *Arka*, *Vidanga* & *Hartala* can be used in the form of *Kalka*.

Ghrita prepared from Shodhana Dravyas^[18]

Vataja Dushta Vrana - *Kalka* of *Saindhava* *Lavana*, *Trivrata* & *Eranda Patra*

Pittaja Dushta Vrana – *Tila Yukta Kalka* of *Trivrata*, *Haridra* & *Mulethi*

Kaphaja Dushta Vrana - *Kalka* of *Tila*, *Malkangni*, *Danti*, *Svarjika*, *Chitraka*.^[19]

Parisheka

Parisheka is one among the *Shashthyupakrama*. The *Doshaagni Shamana* occurs by *Parisheka* like the fire extinguishes by pouring water. In *Vataja Vrana Sarpi*, *Taila*, *Dhaanyaamla*, *Maamsarasa*, *Vatahara Aushadha* and *Kwaatha* in *Asheeta* form should be used for *Parisheka*. For the Vrana produced due to *Pitta*, *Rakta*, *Abhigaata* and *Visha*, *Ksheera*, ghee, honey, sugar water, sugarcane juice, *Madhuraushadha*, *Ksheeri Vraksha Kashaya* in *Anushna* form should be used for *Parisheka*. In case of *Kaphaja Vrana Taila*, *Mutra*, *Kshaarodaka*, *Suraa*, *Shukta*, *Kaphaghna Aushadha Kashaya* in *Asheeta* form should be used for *Parisheka*.^[20]

Kashaya

In case of Vrana associated with *Durgandha*, *Kleda* and *Picchilata*, *Kashaya* is indicated for *Shodhana* using various drugs. If Vrana is associated with *Sthira*

Maamsa, in that condition *Shodhana Kashaya* is indicated, which is made up of various *Shodhana* drugs. In case of *Shuddha Vrana* for the purpose of *Ropana*. *Ropana Kashaya* is prescribed which is made up of various *Ropana* drugs.^[21]

This shows the importance of *Kashaya* as both *Shodhaka* and *Ropaka*, due to the combination of different drugs.

Vaikrutaapaham

It is the special method told by *Acharya Sushruta*. Even after complete healing of Vrana, restoration of the normal color and shape are necessary. For this *Krishnakarma*, *Pandukarma*, *Romasanjanana* & *Lomaapaharana* are mentioned.

Conservative treatment

According to *Ayurveda* dietary and lifestyle plays an important role in the management of disease. First step in the management is to control blood sugar level and bring the patient to normal values.

Along with other measures, *Pathya Apathya* is one of the important therapies according to our classics. Vrana patient should not consume *Nava Dhanya*, *Mastu*, *Sarshapa*, *Kalaaya*, *Kulatha* and *Nishpaana*. He should also avoid food materials prepared out of *Haritaka Shaaka*, *Amla*, *Lavana*, *Katu Dravyas*, *Shushka Maamsa*, *Shushka Shaaka*, *Maamsa* of *Aja*, *Aavi*, and *Aanoop Maamsa*, fatty substances, *Ati Sheeta Jala Sevana*, *Krashara*, *Dahi*, *Dugdha* etc. The Vranita should avoid *Vata*, *Aatapa*, *Raja*, *Dhooma*, *Ati Bhojana* and also harmful products in diet, unpleasant noises and scene, jealousy, rage, fear, grief, meditation, *Raatri Jaagarana*, irregular food habits, sleeping on an uneven bed, *Langhana*, heavy exercise, standing for a long time, *Adhyashana*, *Ajeerna* etc.

Patient of Vrana eating diet consisting of old rice and boiled *Shaali* rice, not extremely liquefied and *Snigdha*, taken with cooked meat of animals of *Jaangala* species soon get rid of the disease. A diet consisting of boiled rice, *Tanduleeyaka*, *Jeevanti*, *Vatsaka*, *Moolaka*, *Patola*, *Kaaravella*, fried with *Saindhava* and mixed with the juice of *Daadima* and *Aamalaka*. *Mudagha* soup treated as above is also

prescribed. Barley powder, *Vilepi*, *Kulmaasha* and boiled water should also be given to the patient for food and drink.

Vrana patient should perform protective measures against affecting stars and spirits. He should strictly follow the *Yama* and *Niyama*. All these right performances help in early healing of *Vrana*.^[22]

Surgical Treatment

Asthavidha Shastra Karma - Chedana, Bhedana, Lekhana, Aaharana, Eshana, Vyadhana, Visraavana, Seevana are the eight types of surgical methods.

Kshara Karma - "Tatra ksharnatakshannadava Kshara"^[23] It destroys the unwanted tissue.

The *Pratisarniya Kshara* is indicated in *Dushtavrana*. *Kshara*, is superior among all *Shastras* and *Anushastra*, 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 *Lekhana* action. *Kshara* can be easily applied to those wounds where instrumentation is not easy/possible.^[24] *Kshara* should be applied after careful examination of *Vrana*. In case of *Vata Dushti-Lekhana, Pitta Dushti- Gharshana, Kapha Dushti, Prachana* should be carried out then apply *Kshara* for 100 count.^[25]

CONCLUSION

Even after following standard treatment, subsequent Diabetic foot ulcers are common, with a high recurrence rate. Poor hyperglycaemic control lead to vascular & neuropathic deformities and ulceration, several adjuvant therapies have been studied so far to reduce Diabetic foot ulcer healing time and amputation rates, but there is still space for improvement in Diabetic foot ulcer management. Hence by adopting ancient wound management, the risk of ulceration and its associated morbidities can be reduced.

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