

International Journal of Research in AYUSH and Pharmaceutical Sciences

Review Article

AYURVEDIC APPROACH OF DIABETIC FOOT ULCER

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Keywords: *Diabetic Mellitus, Prameh pidika.*

ABSTRACT

Diabetes Mellitus is disease known from the dawn of civilization. Sedentary life style, lack of exercise, faulty dietary habits, improper medication and urbanization precipitate the disease. It is estimated that the total number of people with diabetes will rise from 171 million in 2000 to 366 million by 2030. Diabetic foot is one of the common complications of diabetes. Approximately 5-10% of all diabetics develop foot ulcer at least once in their time and more than 50% of non-traumatic amputations of lower limbs are foot complications in diabetic patients. Amputation of a part of lower limb is 15 times more common in diabetics as compares to general populations. In Ayurvedic text it is widely described by Acharya charak and Sushrut under *Prameh pidika* with its complication and treatment.

INTRODUCTION

The morbidity and cost of treating foot complications is extremely high. In a developing and poor country like India, where very people are covered by health insurance, such as expensive treatment is out of reach of most of the people. Thus there is an urgent need to focus attention on prevention of diabetes foot. The major factors involved in the causation are ischemia, neuropathy, infection and delayed wound healing. Most of the patients with diabetic foot have chronic poorly controlled metabolic status. The atherosclerotic process in diabetics is accelerated, dyslipidemia and tobacco consumption if present, further worsen the problem.

Pathogenesis of diabetic foot³

Diabetic peripheral neuropathy leads to impaired sensations in the lower limb. This makes the foot more vulnerable to trauma due to mechanical, chemical and thermal factors leading to ulceration. The inability to perceive pain, due to loss of sensation, allowed the continued utilization of the foot, resulting in deterioration of the damage. Simultaneously increased perfusion in the affected region is observed, through an abnormal opening of arteriovenous anastomoses, which result in increased absorption of bone. The body tries to restore the damage, but this is done without

organization, due to the continuous loading of the foot. The final result can be big deformities of foot.

Autonomic neuropathy leads to dry fissured skin offering portals of entry for micro organisms. The foot infections are the major cause of limb loss. Mixed infections are common and often staphylococci are associated with aerobic or anaerobic streptococci or with enterobacteriaceae.

Classification system of diabetic ulcer⁵

There are two classification system for the severity of the ulcers. Traditionally, classification by Meggitt-Wagner was considered as the 'classification of choice'. A new classification system was proposed by the University of Texas in the USA, which is considered to be superior.

Wagner Grading System

- A. Grade 1: Superficial Diabetic Ulcer
- B. Grade 2: Ulcer extension
 1. Involves ligament, tendon, joint capsule or fascia
 2. No abscess or Osteomyelitis
- C. Grade 3: Deep ulcer with abscess or Osteomyelitis
- D. Grade 4: Gangrene to portion of forefoot
- E. Grade 5: Extensive gangrene of foot

The university of Texas ulcer Classification System

A. Stages

1. Stage A: No infection or ischemia
2. Stage B: Infection present
3. Stage C: Ischemia present
4. Stage D: Infection and ischemia present

B. Grading

1. Grade 0: Epithelialized wound
2. Grade 1: Superficial wound
3. Grade 2: Wound penetrates to tendon or capsule
4. Grade 3: Wound penetrates to bone or joint

Management of Diabetic Foot

It requires multidisciplinary approach and needs to be individualized depending upon a case. Those who are non toxic and afebrile at presentation and in those who do not have deep seated infection. Osteomyelitis or gangrene, can be treated on outpatient basis with oral antibiotics, rest, elevation of affected part and appropriate wound care. Specific guidelines are available for diabetic foot care.

Guidelines for diabetics patients who are in danger of developing ulcer in their feet⁵

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 (2) or three (3) 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.

Ayurvedic view^{6,7}

In Ayurvedic text also Diabetic Foot ulcer is considered as a chronic complication of diabetes. A complication of diabetes is described as occurrence of *Trishna, Atisar, Dah, Daurbalya, Arochak, Vipak, Putimanspidika, Alaji, Vidradhi* etc. In this context '*Putimanspidika*' is of two kind *Pakkav* and *Apakkav*. According to Acharya Sushrut line of treatment of both kinds are specific and different. *Apakkav pidika* is treated as *Shofa* while *Pakkav pidika* is treated as *Vrana*. Though it was accepted that these kinds of ulcers was difficult to treat. However, in Ayurvedic text it is clearly mentioned that these foot ulcer should be treated as '*Dusht vrana*',

Treatment in Ayurveda

- Local application or dressing with *Jatayadi tail* and *Priyangavadi tail*.
- *Raktamokshan* (leech therapy) is considered to be very effective.
- *Vrana prakshalan* (washing of wound) with *Panchvalkal kashay* or *Aaragvadhadi kashay*
- *Kalka* (Paste of) *Bhringraj, Chameli* and *Ghritkumari* and for local application of wound.
- In oral preparations, *Arogyavardhani Vati* 2BD, *Kaishore Gugglu* 2BD, *Sarivadiaasav* 20ml BD, *Mahamanjishtadi Kwath* 20ml BD.

CONCLUSION

Diabetic foot lesions are common in developing country like India. They drastically increase burden of the diabetic patients and their family. A massive patient and primary physician education programme for prevention and treatment at primary care level is the need of the day. Allopathic as well as Ayuvedic management of the disease should be included in clinical practices for proper care and treatment.

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Cite this article as:

Bhawana Sharma. Ayurvedic Approach of Diabetic Foot Ulcer. International Journal of Research in AYUSH and Pharmaceutical Sciences, 2018;2(7):269-271.

Source of support: Nil, Conflict of interest: None Declared

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