CASE REPORT

Clinical effect of *Apamarga Kshara Taila* and adjuvant drugs in the management of Diabetic wound – A Case Report.

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ABSTRACT:

Diabetic foot ulcer is a serious devastating complication of diabetes mellitus (DM) when it involves deep tissues and bone which may require amputations. In this case report a 70-year-old male patient presented with non healing ulcer of sized (3.5 *3.2) cm² at dorsum of the left foot since last 4 years. The ulcer was on the dorsum having most movable part in daily activity so it was reluctant to heal by all means of conventional management. So patient consulted to *Ayurveda* OPD and he was treated with local dressing of *Apamarga Kshara Taila* till wound healing for 50days. Along with local dressing patient prescribed with *Haritaki Churna* 5gm at night with luke warm water and *Punarnavashtak Kwatha* 40ml twice in a day on empty stomach for 50 days. Inj. wosulin 12 units thrice in day and Inj. basalog 14 units at night were continued simultaneously as prescribed by diabetologist during the treatment. Complete wound healing was achieved within 50days with unit healing time 4.46 day/cm². This single case report showed wound healing potential of *Ayurvedic* medicine in diabetic wound.

Key words: *Apamarga Kshara Taila*, Diabetic wound, *Vrana*

INTRODUCTION

Diabetic wounds can be correlated with *Madhumehjanya dushta Vranarana* which account into *Krichsadhya Vrana* (difficult to treat). Globally diabetic foot ulcer prevalence was 11.6%. ¹ In India diabetic foot ulcer affect 15% of

diabetics during their lifetime. ² If proper foot care is not taken it can lead to amputation. Factors which influence the wound healing are poor blood supply, old age, infection, malnutrition and radiation. In *Ayurveda* *Madhumehjanya Vrana* which is treated with proper

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cleaning with *Triphala Kashaya* (medicated decoction), debridement of dead tissue, dressing with oil or *Ghrita* prepared from herbal *Dravyas* with oral medications to control diabetes and for *Amapachan* as well as to promote healthy tissue growth which has better result in wound healing.³ *Acharya Sushruta* has mentioned sixty *Upakrama* of *Vrana* according to condition of wound, *Prakriti* of patient and involvement of *Dosha* and *Dushya*.⁴ In this case, patient was treated with *Ayurvedic* oral medicines and regular dressing with *Apamarga Kshara Taila* along with antidiabetic medicines.

PATIENT INFORMATION

A 70-year-old male diabetic patient with diabetic foot ulcer visited in *Shalya Tantra* opd(OPD) with complain of non-healing wound at dorsum of left foot since last 4 years, swelling and hyper pigmentation of skin at left leg.⁵ Patient was known case of Diabetes mellitus and Hypertension since last 15 years and took inj. Wosulin 30/70 (Biphasic isophane insulin injection) 12units before breakfast, before lunch, before dinner while inj. Basalog (Insulin glargine injection) 14 units at night since 5years Tablet Ecosprin AV (150/20) once in a day, tab Enalapril-5mg at morning, tab nervigen at afternoon, tab. frusemide 40mg three times in a day from last 15years. Patient had history of leg pain before 4years so he did sudation with hot water bag on both legs. Due to excessive sudation, he got burn on the dorsum of both feet. Ulcer on the right foot healed by regular dressing with povidone iodine ointment and oral antibiotics tablet amoxicillin (500mg) and clavulanic acid 625mg twice in a day for 5days but he didn't get any relief ulcer of left foot. So, patient came for *Ayurvedic* management of wound. Patient has positive diabetic history in second degree relative (brother) was present.

CLINICAL FINDINGS

In General examination, Pallor-absent, Icterus-absent, Cyanosis-absent, Clubbing-absent, Lymphadenopathy-no any enlarge lymph node, Oedema- pitting oedema on left lower limb. On systemic examination: Respiratory system- Bilateral air entry equal no any added sound were present. Cardiovascular system: S₁S₂ heard normally, Central nervous system examination: patient was well oriented to time place and person. On local examination: site: dorsum of left foot, size: (3.5 x 3.2) cm² Shape: irregular, Floor: slough, Margin: irregular and fibrosed, Edge: ill define, Discharge: serous discharge, surrounding skin: hyperpigmented, oedematous, Odour- slight foul, Lymph node: no any lymph node palpable atand inguinal region. Pulsation: dorsalis

pedis- feeble, posterior tibial artery pulsation-feebleedema; (table 1).

CASE MANAGEMENT

Patient management was done with systemic as well as local management with diet modification for 50days. Case management was done by *Upakramas* like *Langhana* (depletion therapy), *Pachana* (digestion), *Anulomana* (normalization of *Dosha* movement), *Triphala Kashaya* (medicated decoction), *Taila* (medicated oil application), *Avasadana* (debridement of wound), *Utsadana*(induction of granulation), *Vrana Bandhana* (dressing) and *Pathya-Apathya* (Do's and dont's) etc. which are mentioned in *Sushruta Samhita*. With all these management allopathic medicine (inj. wosulin 12 unit thrice in a day and inj. basalog 14unit at night) were continued simultaneously.

SYSTEMIC MANAGEMENT

Langhana (depletion therapy) was done by advising proper diet regimen like *Mudga Yusha* (Green gram soup), *Jirna Odana* (Rice) for 50 days. *Haritaki Churna* 5gm at night with luke warm water was given for *Anulomana* purpose for period of 50 days. *Punarnavashtaka Kwatha* 40ml twice in a day on empty stomach was prescribed to reduce swelling.

LOCAL MANAGEMENT

Local wound management was done by *Triphala Kashaya Prakshalana* (wound washing), *Avasadana* (Debridement) and *Utsadana* (induction of granulation) by *Apamarga Kshara Taila Kavalika* (medicated gauze) followed by *Vrana Bandhana* (wound dressing). Regular aseptic wound dressing was continued for consequently 50 days up to complete wound healing once in a day.

DO'S AND DONT'S FOR PATIENT (PATHYA-APATHYA)

Pathya – patient was advised to take *Mudga Yusha* (green gram soup), *Jirna odana* (Rice) etc. mentioned in text.⁵⁴ Patient was also advised for foot elevation, avoid further trauma to wound site and bare foot walking. *Apathya* – patient was advised to avoid bakery items, fermented food, heavy food, milk and milk products, flour, dairy items, day sleep, night awakening, sexual intercourse, excessive sitting, walking, standing, stress, anger all these were strictly restricted to patient up to complete wound healing.⁶

OUTCOME

Complete wound healing was achieved in 50days.on first day patient presented with non healing ulcer at dorsum of

left foot (Wagner's classification grade II) (fig 1.), on 15th day features of *Shuddha Vrana* noticed that were *Jihvatalabha* (pink colour) *Avedano* (painless) punctate hemorrhage, *Pidakisama* (pin head granulation) (*Pidaki sama*) (fig 2).⁷ On 30th day *Rohit Vrana lakshana* (signs of wound contraction) noticed and three zone of healing like white zone, (blue zone (*Kapotvarna Pratima*), red zone achieved by continues wound dressing with *Apamarga Kshar Taila* (fig 3) and complete wound healing was achieved on 50th day by regular aseptic dressing (fig 4).

MEASUREMENT

Measurement was done by unit healing time.

$$\begin{aligned}\text{Unit healing time} &= \text{Total time taken for complete wound healing} \\ &\quad \text{Initial area of wound (cm}^2\text{)} \\ &= 50/11.2 = 4.46 \text{ day/cm}^2\end{aligned}$$

FOLLOW UP

Patient was advised for follow up every week up to 1 month. No any untoward effect was found in the wound.

DISCUSSION

Pathya (wholesome) food improve the quality of *Ras Dhatu* thus it improves *Anuvartana* of body and maintain *Samvayta*. *Haritaki Churna* (*Terminalia Chebula* Retz.) having *Anulomana* effect as well as *Amapachana* effect.⁸ By *Anulomana* *Haritaki* releases accumulated *mala* from *Koshtha* and *Shakha*. *Ama* which is partially digested food. It decreases *Jatharagni* so, undigested food particles accumulate in circulatory channels thus causing blockage in blood flow and by *Amapachana* this blockage is removed and circulation may begin properly.⁹ *Punarnavashtak Kwatha* consists of drug which have *shothahara* properties it has major role in reduction of the oedema. By diuretic action of drug, it removes toxins and excess fluid from the body. Most of the drugs having *Yakrututtejak* effect so it has effect on *Rakta Dhatu* and prevent anemia. By action on *Rakta Dhatu*, may improve circulation and promotes wound healing.¹⁰ It improves kidney function and increases renin secretion in blood circulation. Renin increases erythropoietin production ultimately it improves hemoglobin level.¹¹ Kusumakshi nayak et. al concluded that *Triphala* has an antimicrobial and antibacterial effect on wound washing and can avoid the major problem of antibiotic resistance.¹² *Apamarga Kshara Taila* has *Shodhana* and *Lekhana* properties which supports for *Avasadana karma* (debridement). *Apamarga Kshara Taila* has pH 7.3 which is alkaline. Due to presence of pus wound has more acidic pH so, it neutralizes the pH and promote wound healing and It has wound debridement property

which removed the necrosed tissue from the wound floor and it might promote healthy granulation and thus promote the wound healing supports for *Utsadana Karma*.¹³ *Mudga Yusha* (green gram soup) was advised as *Mudga* is *Laghu* (easy to digest) so it is easily digestible and it does not cause *Vata Prakopa*. Dongyan Tan *et.al* stated that green gram possessing antioxidant, anti-inflammatory, antimicrobial activity. By antioxidant activity it prevents wound from cell damage and therefore may promote wound healing.¹⁴ Green gram is good source of protein which supports wound healing. Protein is essential element require for wound healing.

CONCLUSION:

A single case report demonstrates that *Ayurveda* treatment protocol have potential to treat chronic diabetic wound.

Limitation of the study:

The same treatment protocol needs to be tried in more number of cases along with swab culture to know antibacterial effect of *Apamarga Kshara Taila*.

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SOURCE OF SUPPORT: None

Clinical images :

Fig 1. On 1st day

Fig 2. On 15th day

Fig 3. On 30th day

Fig 4. On 50th day

Table 1. clinical and laboratory findings

Finding	Before treatment: day 0	After treatment: On 50 th day
Chief complaints		
Non healing ulcer	Present	Absent
Pain	Absent	Absent
Discharge	Serous discharge Present	Absent
Examinations of ulcer		
Site	Dorsum of Left foot	-
Size	(3.5 cm x3.2) cm ²	Healed wound
Floor	Slough present	Absent
Margin	Fibrosed and irregular	Absent
Edge	Ill defined	No edge
Discharge	Serous	Absent
Tenderness	Absent	Absent
Oedema	Present	Absent
Odor	Slight foul	Absent
Pulsation of dorsalis pedis artery	Feeble	Feeble
Pulsation of posterior tibial artery	Feeble	Feeble
Superficial touch sensation (done with cotton gauze piece)	Absent	Absent
Deep touch sensation (done with touching sharp needle)	Absent	Absent
Wound classification		
Wagner's classification	Grade II	Grade 0
Laboratory investigations		
FBS	153 mg/dl	133 mg/dl
PPBS	130 mg/dl	115 mg/dl
TLC	5300/cu mm	5400/cu mm
DLC-N/L/E/M/B	54/35/05/06/0 %	56.3/29.2/6.9/6.7/0.9 %
Hb%	10.3gm%	11.3gm%
ESR	62 mm/hr	38mm /hr
Total protein	9.09gms/dl	9.23gms/dl

Table 2. Case timeline

Years/days/ week	Relevant medical history and interventions	
2005	Diagnosed as Diabetes mellitus II And Hypertension	Tab glipizide and metformin 5/500 mg BD before meal and tab enalapril 5mg OD, tab. Ecosprin AV 150/20 OD started by allopathic physician
2015	Blood sugar not controlled by same treatment	Inj Biphasic isophane insulin 30/7012 unit before breakfast,before lunch and before dinner and inj. Insulin glargine 14unit at night.

November 2015	Due to excessive sudation on both foot ulcer developed on dorsum of both foot.	A general surgeon treated wound by aseptic wound dressing with povidone iodine ointment, oral antibiotic. Wound on right foot healed but wound on left foot not responded to treatment.
Day of visit	Summaries from initial and follow up visit and descriptions of disease condition	Interventions
10 th December 2020(day 1)	Came to OPD with complaint of non-healing ulcer on dorsum of left foot since last 4 years (Figure 1)	Dressing was started with <i>Apamarga Kshara Taila</i> once in a day Orally <i>Punarnavashtaka Kwatha</i> 40ml BD Before food and <i>Haritaki churna</i> 5 g at night time with luke warm water was started and <i>Pathya-Apathya</i> was explained to patient
24 th December 2020 (15 th day)	Wound has got <i>Shuddha Vrana lakshana</i> like <i>Jihvatalabha</i> , <i>Nirastrav</i> .	Same as above
8 th January 2021 (30 th day)	<i>Rohit Vrana Laskhna</i> like <i>Kapotvarna Prati-ma</i> , <i>Kleda Varjit</i> was achieved	Same as above
28 th January 2021 (50 th day)	Wound completely healed.	All medication stopped.

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