

A CLINICAL STUDY OF WOUND HEALING IN DIABETIC'S WITH VARIOUS AYURVEDIC THERAPEUTIC PROCEDURE.

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ABSTRACT

India is developing country and it is getting a dubious distinction as diabetic capital of world. Many patients come with presenting complaint of non-healing wound and then diagnosed as diabetics. Diabetic wound is difficult to heal even after controlling blood sugar levels and controlling infection, because of mechanism of wound healing doesn't occur in proper order in these patients. For proper wound healing, wound should be cleaned and rendered devoid of any contamination, still in some patients it was observed wound healing was not as good & as fast it should have been. Wound cleansing with Panchvalkal kwath not only helps as shudhikaran but promotes wound

healing (shodhan and ropan). Panchvalkal kwath is good for diabetic wound cleansing (shodhan) as it contains dravya which are Kashay rasatmak. Besides it requires a procedure or medicine which promotes good blood circulation. Present study of 5 patients of non-healing diabetic wound encompasses multi dimensional approach toward diabetic wound healing, which includes wound cleansing with panchvalkal kwath, Kshar application, Vasant-kusumakar ras orally and leech application at wound site and dressing the wound with ropan tail. As it is a ongoing clinical study, presently completing 5 no. of patients 2 no. of patients wound healed completely and 3 no. patients require very few days of further treatment. Hence, in conclusion diabetic wound healing require multiple treatment modalities besides blood sugar level control.

KEYWORDS: Diabetic wound, desloughing, shodhan, ropan, micro-desloughing.

INTRODUCTION

Diabetics as per progress chronically invites complication like neuropathy, vasculopathy & delayed or non healing of wound. Often this wound get infected. wound healing becomes difficult in diabetics, even after bringing BSL level to normal & using proper antibiotics known causes for this are infections, impaired blood circulation altered local tissue response & lowered immunity. Sometimes it is a nightmare for treating surgeon & physician. Every attempt is made to desloughing the infected area of the wound & stimulate fresh blood circulation, subsequently promote the wound healing. Ayurveda & Sushrut samhita specically has described 60 procedures for wound healing. Few of which are proved useful in diabetics patients. Ayurveda therapeutic procedure – Kshar-karm helps in micro desloughing mechanism & rendered wound healthy (shodhan). For further dressing shodhan & ropan tail proved effective. In case of those diabetic patients in whom impaired blood flow or inflammation are the cause of wound not healing then leech application improves fresh blood circulation along with inflammatory debris material sucked out.

OBJECTIVES

To disinfect the wound by desloughing it by various Ayurvedic procedure & promote healing.

- To improve micro-circulation in wound area & its periphery by local Ayurvedic procedures.
- To reduce the period of wound healing.
- To avoid deformity.

MATERIAL AND METHODS

Study Type - Prospective, Non comparative, Open – clinical study.

No. of patients - Total 30 pts. Were included in this study.

Inclusion criteria

- Age up to 80 yrs, Male & Female
- BSL – Fasting up to 250

PP up to 400.

- HbA1c – up to 13
- infected wound anywhere except genitals
- wound area up to 25 cm².

Exclusion criteria

- gangrenous wound
- diabetic pt. with highly infected wound and high fever and toxicity.
- altered immunity (HbsAg + ve, HIV + ve)
- Hb % less than 8

METHODS

- If required surgical desloughing was done.
- Everyday wound dressing was done by pancha-valkal- kwath dhavan.
- For micro desloughing, if required, kshar- karm with Apamarg kshar was done.
- For improving blood circulation in & around wound area jaluakavacharan was done twice in week.
- Everyday wound dressing was done by shodhan tail and later on by ropan tail.
- Orally Vasant-kusumakar ras 250 mg BD & as per necessity suitable antibiotic was given.

Procedure of Kshar-application

1. Sprinkle Apamarg Kshar with sterile gloved hand, forming thin layer allowing ot stay till 100 counts i.e.upto 90 seconds.
2. Immediately after count the wound was washed with lemon juice (amla-ras)
3. Wound dried with sterile guaze and dressed with dry gauze.
4. Kshar application done daily for first 3 days
5. Kshar application done alternately for last 7 days till there is no slough.

Criteria for Assessment**Subjective**

- | | |
|-----------------------|-------------|
| 1. Slough | 4. Pain |
| 2. Granulation tissue | 5. Swelling |
| 3. Discharge | |

➤ SLOUGH

Absent -0

Slough covered up to 25% of wound -2

Slough covered up to 25-50% of wound -3

Slough covered up to 50-75% of wound -4

➤ GRANULATION TISSUE

Healthy granulation tissue	-0
75% wound covered with granulation	-1
50% wound covered with granulation	-2
Unhealthy granulation with slough	-3
Granulation Absent	-4

➤ DISCHARGE

Absent	-0
Serous	-1
Sero-purulent	-2
Purulent	-3
Purulent discharge with foul smelling	-4

➤ PAIN: As per VAS(Visual analogue scale)

No pain	-0
Mild pain (nagging, annoying) & no Analgesic required	-1
Moderate Pain(interferes ADLs)	-2
Sever Pain, Analgesic required (disabling, unable to perform ADLs)	-3

➤ SWELLING

Mild Swelling<2cm	-1
Moderate Swelling 2-5cm	-2
Severe Swelling>5 cm	-3
Inflamed margin	-4

OBJETIVE**1. Wound size-by Simple measurement**

The simple and cheapest method is calculate the wound surface area by measuring it's linear dimension with a tape measure or ruler. However, this two-dimensional method assumes that the wound has geometric surface shape.

For example a rectangle (length/width), a circle (diameter/diameter) or an oval (maximum diameter/maximum diameter perpendicular to first measurement)

When measuring depth

1. Place a cotton –tip applicator into deepest part of wound bed.
2. Grasp the applicator by the wound margin and place it against the ruler.

Assessment of result

- **Cured** –76% to 100 % relief in signs and symptoms.
- **Markedly improved** – 51% to 75% relief in signs and symptoms.
- **Improved** –26% to 50% relief in signs and symptoms.
- **Unchanged** –up to 25% relief in sign and symptoms.

RESULT

Cured/Moderately relieved (Improved)/Mild relieved (Not improved)/Not relieved (Worse)

Assessment of effect of Therapy

Cured - 76 to 100% relief in signs & symptoms of patients

Markedly improved - 51 to 75% relief in signs & symptoms of patients

Improved - 26 to 50% relief in signs & symptoms of patients

Unchanged - 0 to 25% relief in signs & symptoms of patients

INVESTIGATIONS

1. Blood:-
 - a. CBC
 - b. ESR
 - c. BT
 - d. CT
2. BSL
 - a) Fasting
 - b) Post prandial
 - c) HbA1C
3. LFT
4. RFT
5. Urine
 - a) Routine
 - b) Microscopic
6. HBsAg

7. HIV I and II
8. X-ray chest PA-view
9. X-RAY Of local part (sos)

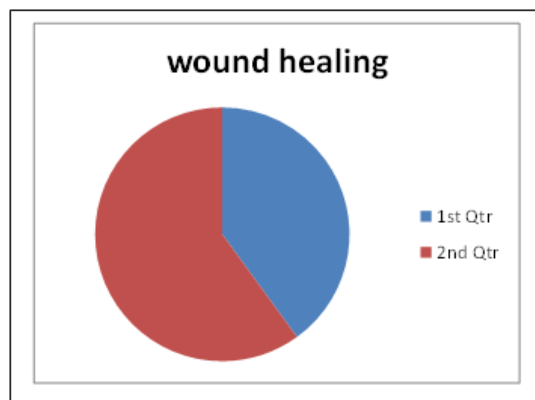
CRF

A Case record form to meet all requirement of the study has been designed by self. Every follow up will be meticulously recorded in the CRF.

RESULT

Total no of patients 5, out of that 2 patients Cured completely i.e wound healed completely, 3 no. of patients required very few days of further treatment i.e. markedly improved.

1. indicate – completely healed wound
2. indicate – markedly improved wound



1 st day



4 th day



7 th day



After 3 week

First Case-A 60 yr old male known case of DM since last 10 yr under oral medication , history of trauma by stone on 4 th toe right foot complaining of non healing wound since 3 months with discharging pus with Hb1Ac 9 & !. BSL –F 188, PP- 250 2. BSL – F 140, PP - 200 3. BSL –F 140, PP - 180



1 st day



A 40 year old male complaining of discharging wound and swelling since 15 days he don't know about previous history of trauma , after blood investigations he found BSL –F- 350, pp – 454, & Hb1Ac – 13.4 . in treatment part surgical debridement done followed by panchavalkal kwath dhawan & dressing by ropan tail .

DISCUSSION

Total no. of 5 male patients.

No. of patients	Age	Case of	Affected Body part	Treatment modality	Result
1	60 yr	Truama by stone	4 th toe rt foot	C & D	cured
2	40yr	Not giving proper history	Lt hand wrist jt.	Surgical debridement	cured
3	72 yr	bedsore	Gluteal region	jaluakavacharan	Markedly improved
4	61 yr	blister	Rt ankle jt.	C & D	Markedly improved
5	58	boil	Lt. foot	C & D	Markedly improved

CONCLUSION

From the above study, it can be concluded that various Ayurvedic therapeutic procedure, is a safe and effective conservative treatment in improving sign and symptoms diabetic foot ulcer. However, there is need for a larger scale clinical trial to further evaluate its efficacy on large no. of patients of diabetic foot ulcer.

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