



Research Article

A COMPARATIVE CLINICAL STUDY ON APPLICATION OF *YASHADA BHASMA LEPA* AND *JATYADI GHRITA* IN THE MANAGEMENT OF *DUSHTA VRANA* W.S.R. DIABETIC ULCER

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ABSTRACT

Introduction: Wounds and their management are fundamental to the practice of surgery. In surgery of trauma, wound is frequently a primary pathology. In elective surgery, it is through the wound that access is obtained to deal with the underlying pathology. In both situations surgeon's task is to minimize the adverse effects of wound, remove or repair damaged structures and harness the process of wound healing to restore function.

Objectives: The study is aimed to know the comparative efficacy of *Yashada Bhasma Lepa* and *Jatyadi Ghrita* in the management of *Dushta Vrana*.

Method: Clinically diagnosed 30 patients of *Dushta Vrana* were randomly divided into two groups, each group consisting of 15 Patients. First (A group) is treated by *Yashada Bhasma Lepa* and second (B group) is treated by *Jatyadi Ghrita* for 21 days.

Result: On the basis of assessment criteria and on the overall result of treatment the patients of *Yashada Bhasma Lepa* group showed better relief when compared to *Jatyadi Ghrita*.

Interpretation: *Yashada Bhasma Lepa* having the properties of *Tikta, Kashaya, Katu, Rasa* predominance thus had action of *Kapha Pitta Shamana, Netra Roga, Pandu, Bahumootra Roga, Kasa, Swasa, Rajayakshma, Ratrisweda, Vranasrava Avarodaka, Prameha, Sankochakara*.etc. Thus this help for *Shodhanaand Ropana*.

Conclusion: *Yashada Bhasma Lepa* has provided better relief in maximum signs and symptoms of the patients of *Dushta Vrana*, in comparison to *Jatyadi Ghrita*. Its overall effects were also better in comparison to *Yashada Bhasma Lepa* with *Jatyadi Ghrita* and dressing reduces the infection.

KEYWORDS: *Dushta Vrana*, Diabetic Ulcer, *Jatyadi Ghrita*, *Yashada Bhasma Lepa*.

INTRODUCTION

Treatment for healing of this wound is of prime importance. While explaining the scope of *Shalyatantra*, *Sushruta* has mentioned *Vrana Vinishcayartham* as a major part of *Shalya Tantra*.^[1] Even though healing of *Vrana* is a natural process of the body, the *Vrana* should be protected from *Dosha Dushti* and from various microorganisms, which may afflict the *Vrana* and delay the normal healing process. So, for the early and uncomplicated healing of *Vrana*, treatment is necessary.^[2]

Sushruta's classification of traumatic wounds, their prognostic evaluation and management, insistence on primary suturing in clean wounds, avoidance of sepsis etc., correspond remarkably with the modern outlook of wounds and wound-management.^[3]

In healing of *Vrana*, local treatment is also important along with oral medications. *Dushta vrana* is a long standing ulcer with profuse discharge and

slough, where clearing slough and enabling drug to reach the healthy tissue is more important. Slough can be cleared by using surgical instruments or oxidizing agents where healthy granulation tissues are damaged. In recent years, various efforts were made in the field of wound healing, especially as local treatments but healing remains the prime objective of the physicians.

Detail description of *Vrana* with its management is mentioned in *Brihatrayee* and *Laghutrayee*. 36 therapeutic measures were explained in *Charaka* where as *Sushruta* has mentioned 60 therapeutic measures for *Vrana*. Description about *Vrana* is also mentioned in *Bhela Samhita*, *Kaashyapa Samhita*, *Gadha Nigraha*, *Chakradatta*, *Yogaratanakara*, *Bhaishajya Ratnavali*.^[4]

Almost all the *Acharyas* have classified *Vrana* into two categories i.e., *Nija* and *Agantuja* depending upon the causative factors. The *Doshas* get

vitiated by their own causative factors or by the external agents.

Sushruta and *Charaka* have also mentioned *Vrana* as *Dushta* and *Shuddha* but not as a type of classification. *Charaka* has also described 12 characteristic features indicating the advanced stage of morbidity of *Vrana*. These morbid conditions are also classified into 24 categories depending upon their causative factors like *Snaayu Kleda* etc.

Shaarangadhara classified *Vrana* under 4 major groups they are *Aagantu*, *Dehaja*, *Shuddha*, *Dushta*. These are further classified into 15 types.^[5]

Depending upon the stages of healing *Vrana* is classified into *Ruhyamaana Vrana* and *Roodha Vrana*.

According to shape *Sushruta* classified *Vrana* into 4 types they are: *Aayatha*, *Vrutha*, *Tripataka*, *Chaturasra*.

According to prognosis based on location, type of *Vrana* and discharge *Vrana* is classified as *Sukhasaadhya*, *Kruchrasaadhya*, *Yaapya* and *Asaadhya*.

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 long period to heal is said to be *Dushta*. The features of *Dushta Vrana* will vary according to the predominant *Dosha* present in it.

If proper treatment is not done *Saadhya Vrana* becomes *Yaapya*, *Yaapya* becomes *Asaadhya* and *Asaadhya* may kill the patient.

Among 36 *Upakramas* mentioned by *Charaka*, *Shopaghna* i.e. treatment of *Vrana Shopha* which involves *Rakta Avashechana*, *Langhana*, *Sneha*, *Pralepa*, *Pradeha*, *Upanaaha* etc., can be incorporated under 11 *Upakramas* mentioned by *Sushruta* for *Vrana Shopha*. *Shastra Karmas* mentioned by *Sushruta* can be incorporated under 6 measures mentioned by *Charaka* even though he has told *Eshana* separately and *Aharana* has been covered under 6 surgical measures only. *Shodhana*, *Ropana*, *Vaikrutaapaham* mentioned by *Sushruta* can also be incorporated under those mentioned by *Charaka* i.e. like *Shodhana-Kashaaya*, *Taila*, *Ghrita*, *Ropana-Kashaaya*, *Taila*, *Ghrita*, *Utsaadana*, *Avasaadana*, *Aalepana (Maardhavakara & Kaatinyakara)* etc. So from the above it becomes evident that 60 *Upakramas* mentioned by *Sushruta* can be incorporated in 7 *Upakramas* of *Vrana Shopha* and most of them among 60 can be incorporated under 36 *Upakramas* mentioned by *Charaka*.^[6]

Diabetic Ulcer (Foot Ulcer)

Diabetic foot ulcers occur as a result of a variety of factors. Such factors include mechanical

changes in conformation of the bony architecture of the foot, peripheral neuropathy, and atherosclerotic peripheral arterial disease, all of which occur with higher frequency and intensity in the diabetic population. Nonenzymatic glycosylation predisposes ligaments to stiffness. Neuropathy causes loss of protective sensation and loss of co-ordination of muscle groups in the foot and leg, both of which increase mechanical stresses during ambulation. The foot is often the first part of the body to show the adverse effects of diabetic neuropathy and circulatory problems.^[7]

Diabetic or non diabetic persons may develop atherosclerotic disease of large sized and medium sized arteries, such as aorto-iliac and femoro-popliteal atherosclerosis. However, significant atherosclerotic disease of the infra-popliteal segments is particularly common in the diabetic population. Underlying digital artery disease, when compounded by an infected ulcer in close proximity may result in complete loss of digital collaterals and precipitate gangrene. The reason for the prevalence of this form of arterial disease in diabetic persons is thought to result from a number of metabolic abnormalities, including high low-density lipoprotein (LDL) and very-low-density lipoprotein (VLDL) levels, elevated plasma Von Willebrand factor, inhibition of prostacyclin synthesis, elevated plasma fibrinogen levels, and increased platelet adhesiveness.

Overall, people with diabetes have a higher incidence of atherosclerosis, thickening of capillary basement membranes, arteriolar hyalinosis, and endothelial proliferation. Calcification and thickening of the arterial media (Mönckeberg sclerosis) also are noted with higher frequency in the diabetic population, although whether these factors have any impact on the circulatory status is unclear.^[8]

Except for chronic osteomyelitis, infection in patients with diabetes are caused by the same microorganisms that can infect the extremities of those without diabetes. Gas gangrene is conspicuous because of its low incidence in patients with diabetes, but deep skin and soft tissue infections, which are due to gas-producing organisms, frequently occur in patients with diabetes. In general, people with diabetes have infections that are more severe and take longer to cure than equivalent infections in other people.

In patients with diabetes, superficial skin infections such as cellulitis are caused by the same organisms as those in healthy hosts, namely group A streptococci and *S. aureus*. However, in unusual epidemiological circumstances, organisms such as *Pasteurella multocida* (e.g., from dog or cat bites or

scratches) may be noted and should always be considered.

Usually located on the heels or soles of the feet or on the bony areas of the toes or other areas subject to repetitive trauma or stress from walking Diabetic ulcers are most often found on the plantar aspect (sole) of the foot (usually the ball of the foot) and the metatarsal head under the heel. Peripheral pulses, especially pedal pulses, may be absent. It is a deep penetrating ulcer and attains chronicity due to constant re-infection. The size and shape may vary. The edge is inflamed and slightly indurated. The floor may contain slough with sero-purulent discharge and the base may be fixed to the deeper tissues. Surrounding skin is relatively healthy and pigmented. It may spread fast resulting in gangrene. Muscular involvement is accompanied by loss of reflexes and deformities of the limb in long standing cases. Presence of sugar in urine and high blood sugar will confirm diagnosis.

MATERIALS AND METHODS

Method of collection of data

30 patients were selected from OPD and IPD of S.J.G Ayurveda Medical College, Hospital, PG studies and research center, irrespective of sex, religion and socio- economic status.

Study design

It is single blind, randomized, comparative clinical trial.

Sample size & grouping

1. Group A - 15 patients of *Dushta Vrana* are applied with *Yashada Bhasma Lepa*.
2. Group B - 15 patients of *Dushta Vrana* are applied with *Jathyadi Ghrita*.

Inclusion Criteria

- Patients suffering from Diabetic ulcer will be selected for this study.
- Patients will be selected irrespective of sex, age, religion, occupation, economic and educational status.

Exclusion Criteria

- Patients with disorders like Malignancy, Tuberculosis, Leprosy, HIV and HBsAg positive and underlying bony lesions will be excluded.

Assessment of results

- The patients will be assessed on the basis of subjective and objective parameters before and after the treatment will be compared and statistically analyzed.

a) Subjective parameters

Vrana Gandha

Vranavarana

Vrana Vedana

Daha

Kandu

b) Objective parameter

Vrana Srava (Quantity of discharge)

Vrana Akriti (Size of the ulcer)

c) Laboratory Investigations

Blood

Hemoglobin %

Total Leucocyte count

Differential count

Erythrocyte Sedimentation Rate

FBS / PPBS

Urine

Urine Routine & Microscopy

FUS / PPUS

Other Investigations

1. Culture and Sensitivity test of wound discharge (wherever necessary).
2. Histopathological Examination (wherever necessary).

Grading and Score

Gandha

0 - No smell

1 - Mild smell

2 - Moderate smell

3 - Severe smell

Varna

1 - Pinkish red

2 - Red

3 - Pale

Vedana

0 - No pain

1 - Mild pain

2 - Moderate pain

3 - Severe pain

Srava

0 - No discharge

1 - Mild discharge

2 - Moderate discharge

3 - Severe discharge

Akriti

0 - Smooth

1 - Smooth, regular, slight discharge

2 - Smooth, irregular, slight discharge

3 - Rough, irregular floor with profuse discharge

Vrana in Sq.Cm

1 - 0-3CM

2 - 4-9CM

3 - 10-12CM

Granulation tissue

- 1 – No granulation
- 2- Healthy granulation
- 3 – Hyper granulation

Kandu

- 0 – no itching
- 1 –Mild itching
- 2 –Moderate itching
- 3 –Sever itching

OBSERVATIONS

The clinical trial of the present study include 30 patient of *Dushta Vrana* (diabetic ulcer) which were divided into two groups Group A (*Yashada Bhasma Lepa*) and Group B (*Jathyadi Ghrita*) each of 15 patients were treated.

30 patients of Diabetic ulcer were treated with *Yashada Bhasma lepa* and *Jathyadi Ghrita* in divided manner of 15 patients each group.

In this comparative study, after duration of treatment both groups showed equal results but in follow up *Yashada Bhasma lepa* showed significant result.

Effect of *Yashada Bhasma lepa* on *Gandha*: The mean score of *Gandha* before treatment was 2.07 it reduced to 1.00 showing 51.61% of improvement with significant at the level of $P<0.001$

Effect of *Yashada Bhasma lepa* on *Varna*: Before the treatment all the patients had *Vikruta Varna*, after treatment it showed highly significant $P<0.001$ improved the colour of *Varna* by 41.94%

Effect of *Yashada Bhasma lepa* on *Vedana*: All patients were having pain at beginning. The mean score of *Vedana* before treatment was 1.73 it reduced to 0.67 showing 61.54% of improvement with significant at the level of $P<0.001$

Effect of *Yashada Bhasma Lepa* on *Srava*: All patients were having *Srava* at beginning in various grades¹⁰.

The mean score of *Srava* before treatment was 2.07 it reduced to 0.73 showing 64.52% of improvement with significant at the level of $P<0.001$

Effect of *Yashada Bhasma Lepa* on *Akriti*: All patients were having different *Akriti* at beginning in various grades.

The mean score of *Akriti* before treatment was 2.40 it reduced to 1.13 showing 52.78% of improvement with significant at the level of $P<0.001$

Effect of *Yashada Bhasma Lepa* on Area of *Vrana* in sq.cm: All patients were having different size of *Vrana* at beginning.

The mean score of area of *Vrana* in sq.cm before treatment was 2.07 it reduced to 1.13 showing 35.48% of improvement with significant at the level of $P<0.001$

Effect of *Yashada Bhasma Lepa* on granulation tissue: All patients were having poor granulation tissue at beginning.

The mean score of granulation tissue before treatment was 0.4 it increased to 1.27 showing 68.42% of improvement with significant at the level of $P<0.001$

Table 1: Effect of *Yashada Bhasma lepa* on Diabetic ulcer patients

<i>Yashada Bhasma</i> (Group A)	Mean		Change %	±SD	±SE	T	P
	B.T.	A.T					
<i>Gandha</i>	2.07	1.00	51.61	0.26	0.07	16.00	<0.001
<i>Varna</i>	2.07	1.20	41.94	0.35	0.09	9.54	<0.001
<i>Vedana</i>	1.73	0.67	61.54	0.26	0.07	16.00	<0.001
<i>Srava</i>	2.07	0.73	64.52	0.49	0.13	10.58	<0.001
<i>Akriti</i>	2.40	1.13	52.78	0.46	0.12	10.72	<0.001
Area of <i>Vrana</i> in Sq. cm	2.07	1.33	35.48	0.46	0.12	6.20	<0.001
Granulation Tissue ↑	0.40	1.27	68.42	0.35	0.09	-9.54	<0.001

Effect of *Jathyadi Ghrita* on *Gandha*: The mean score of *Gandha* before treatment was 2.27 it reduced to 1.53 showing 32.35% of improvement with significant at the level of $P<0.001$

Effect of *Jathyadi Ghrita* on *Varna*: The mean score of *Varna* before treatment was 2.53 it reduced to 1.60 showing 36.84% of improvement with significant at the level of $P<0.001$

Effect of *Jathyadi Ghrita* on *Vedana*: All patients were having pain at beginning. The mean score of

Vedana before treatment was 2.20 it reduced to 1.33 showing 39.39% of improvement with significant at the level of $P<0.001$

Effect of *Jathyadi Ghrita* on *Srava*: All patients were having *Srava* at beginning. The mean score of *Srava* before treatment was 2.47 it reduced to 1.53 showing 37.84% of improvement with significant at the level of $P<0.001$

Effect of *Jathyadi Ghrita* on *Akriti*: All patients were having different *Akriti* at beginning in various grades.

The mean score of *Akriti* before treatment was 2.47 it reduced to 1.53 showing 37.84% of improvement with significant at the level of $P<0.001$

Effect of *Jathyadi Ghrita* on area of *Vrana* in sq.cm: All patients were having different size of *Vrana* at beginning.

The mean score of area of *Vrana* in sq.cm before treatment was 2.20 it reduced to 1.67 showing

24.24% of improvement with significant at the level of $P<0.01$

Effect of *Jathyadi Ghrita* on granulation tissue: All patients were having poor granulation tissue at beginning.

The mean score of granulation tissue before treatment was 0.53 it increased to 1.27 showing 57.89% of improvement with significant at the level of $P<0.001$

Table 2: Effect of *Jathyadi Ghrita lepa* on Diabetic ulcer patients

<i>Jathyadi Ghrita</i> (Group B)	Mean		Change %	±SD	±SE	T	P
	B.T.	A.T					
<i>Gandha</i>	2.27	1.53	32.35	0.46	0.12	6.20	<0.001
<i>Varna</i>	2.53	1.60	36.84	0.26	0.07	14.00	<0.001
<i>Vedana</i>	2.20	1.33	39.39	0.35	0.09	9.54	<0.001
<i>Srava</i>	2.47	1.53	37.84	0.26	0.07	14.00	<0.001
<i>Akriti</i>	2.47	1.53	37.84	0.26	0.07	14.00	<0.001
Area of <i>Vrana</i> in Sq.Cm.	2.20	1.67	24.24	0.52	0.13	4.00	<0.01
Granulation Tissue ↑	0.53	1.27	57.89	0.46	0.12	-6.20	<0.001

Overall results of *Yashada Bhasma lepa* and *Jathyadi Ghrita* after the treatment (21days) on diabetic ulcer: Considering over all response to the therapy with both groups showed equal response at granulation of tissues.

After treatment the mean score of *Yashada Bhasma Lepa* and *Jathyadi Ghrita* on *Gandha* were 1.00 and 1.53 respectively with significant at the level of $P<0.05$.

After treatment the mean score of *Yashada Bhasma Lepa* and *Jathyadi Ghrita* on *Varna* were 1.20 and 1.60 respectively with significant at the level of $P>0.05$.

After treatment the mean score of *Yashada Bhasma Lepa* and *Jathyadi Ghrita* on *Vedana* were 0.67 and 1.33 respectively with significant at the level of $P<0.01$.

After treatment the mean score of *Yashada Bhasma Lepa* and *Jathyadi Ghrita* on *Srava* were 0.73 and 1.53 respectively with significant at the level of $P<0.01$.

After treatment the mean score of *Yashada Bhasma lepa* and *Jathyadi Ghrita* on *Akriti* were 1.13 and 1.53 respectively with significant at the level of $P<0.05$.

After treatment the mean score of *Yashada Bhasma lepa* and *Jathyadi Ghrita* on area of *Vrana* in sq.cm were 1.33 and 1.67 respectively with significant at the level of $P>0.05$.

After treatment the mean score of *Yashada Bhasma lepa* and *Jathyadi Ghrita* on granulation tissue were 1.27 and 1.27 respectively with significant at the level of $P0$.

Table 3: Overall results of *Yashada Bhasma lepa* & *Jathyadi Ghrita* after the treatment of diabetic ulcer

After Treatment	<i>Yashada Bhasma</i> (Group A)				<i>Jathyadi Ghrita</i> (Group B)				t	P
	n	Mean	± S.D.	±SE	N	Mean	± S.D.	±SE		
<i>Ghandha</i>	15	1.00	0.76	0.20	15	1.53	0.64	0.17	2.09	<0.05
<i>Varana</i>	15	1.20	1.01	0.26	15	1.60	0.51	0.13	1.37	>0.05
<i>Vedana</i>	15	0.67	0.49	0.13	15	1.33	0.72	0.19	2.96	<0.01
<i>Srava</i>	15	0.73	0.46	0.12	15	1.53	0.83	0.22	3.26	<0.01
<i>Akriti</i>	15	1.13	0.35	0.09	15	1.53	0.52	0.13	2.48	<0.05
Area of <i>Vrana</i> in sq.cm.	15	1.33	0.49	0.13	15	1.67	0.72	0.19	1.48	>0.05
Granulation tissue↑	15	1.27	0.46	0.12	15	1.27	0.46	0.12	0.00	0

Table 4: After treatment the mean score of Group A and B

After Treatment	Mean of Group A	Mean of Group B
<i>Ghandha</i>	1.00	1.53
<i>Varana</i>	1.20	1.60
<i>Vedana</i>	0.67	1.33
<i>Srava</i>	0.73	1.53
<i>Akriti</i>	1.13	1.53
Area of <i>Vrana</i> in sq.cm.	1.33	1.67
Granulation tissue↑	1.27	1.27

Results of Follow up study of *Yashada Bhasma Lepa* application:

The mean score of *Gandha* before treatment was 2.07 it reduced to 0.27 after the follow up showing 87.10% of improvement with significant at the level of P<0.001.

The mean score of *Varna* before treatment was 2.07 it reduced to 0.27 after the follow up showing 87.10% of improvement with significant at the level of P<0.001.

The mean score of *Vedana* before treatment was 1.73 it reduced to 0.07 after the follow up showing 96.15% of improvement with significant at the level of P<0.001.

The mean score of *Srava* before treatment was 2.07 it reduced to 0.13 after the follow up showing 93.55%

of improvement with significant at the level of P<0.001.

The mean score of *Akriti* before treatment was 2.40 it reduced to 0.27 after the follow up showing 88.89% of improvement with significant at the level of P<0.001.

The mean score of area of *Vrana* in sq.cm before treatment was 2.07 it reduced to 0.20 after the follow up showing 90.32% of improvement with significant at the level of P<0.001.

The mean score of granulation tissue before treatment was 0.40 it increased to 2.53 after the follow up showing 84.21% of improvement with significant at the level of P<0.001.

Table 5: Results of Follow up study of *Yashada Bhasma Lepa* application

<i>Yashada Bhasma</i> (Group A)	Mean		Change %	±SD	±SE	t	P
	B.T.	FU					
<i>Gandha</i>	2.07	0.27	87.10	0.56	0.14	12.44	<0.001
<i>Varna</i>	2.07	0.27	87.10	0.56	0.14	12.44	<0.001
<i>Vedana</i>	1.73	0.07	96.15	0.49	0.13	13.23	<0.001
<i>Srava</i>	2.07	0.13	93.55	0.70	0.18	10.64	<0.001
<i>Akriti</i>	2.40	0.27	88.89	0.52	0.13	16.00	<0.001
Area of <i>Vrana</i> In Sq.Cm.	2.07	0.20	90.32	0.64	0.17	11.30	<0.001
Granulation Tissue↑	0.40	2.53	84.21	0.83	0.22	-9.91	<0.001

Results of Follow up study of *Jathyadi Ghrita* application:

The mean score of *Gandha* before treatment was 2.27 it reduced to 0.93 after the follow up showing 58.82% of improvement with significant at the level of P<0.001.

The mean score of *Varna* before treatment was 2.53 it reduced to 1.00 after the follow up showing 60.53% of improvement with significant at the level of P<0.001.

The mean score of *Vedana* before treatment was 2.20 it reduced to 0.67 after the follow up

showing 69.70% of improvement with significant at the level of P<0.001.

The mean score of *Srava* before treatment was 2.47 it reduced to 0.73 after the follow up showing 70.27% of improvement with significant at the level of P<0.001.

The mean score of *Akriti* before treatment was 2.47 it reduced to 1.07 after the follow up showing 56.76% of improvement with significant at the level of P<0.001.

The mean score of area of *Vrana* in sq.cm before treatment was 2.20 it reduced to 0.87 after the

follow up showing 60.61% of improvement with significant at the level of P<0.001.

follow up showing 60.61% of improvement with significant at the level of P<0.001.

The mean score of granulation tissue before treatment was 0.53 it increased to 2.00 after the

Table 6: Results of Follow up study of Jathyadi Ghrita application

Jathyadi Ghrita (Group B)	Mean		Change %	±SD	±SE	t	P
	B.T.	FU					
Gandha	2.27	0.93	58.82	0.62	0.16	8.37	<0.001
Varna	2.53	1.00	60.53	0.52	0.13	11.50	<0.001
Vedana	2.20	0.67	69.70	0.83	0.22	7.12	<0.001
Srava	2.47	0.73	70.27	0.59	0.15	11.31	<0.001
Akriti	2.47	1.07	56.76	0.51	0.13	10.69	<0.001
Area of Vrana in Sq.Cm.	2.20	0.87	60.61	0.49	0.13	10.58	<0.001
Granulation Tissue ↑	0.53	2.00	73.33	0.52	0.13	-11.00	<0.001

Overall results of Yashada Bhasma Lepa and Jathyadi Ghrita after the follow up study on diabetic ulcer:

After treatment the mean score of Yashada Bhasma Lepa and Jathyadi Ghrita on Gandha were 0.27 and 0.93 respectively with significant at the level of P<0.01.

After treatment the mean score of Yashada Bhasma Lepa and Jathyadi Ghrita on Varna were 0.27 and 1.00 respectively with significant at the level of P<0.01.

After treatment the mean score of Yashada Bhasma Lepa and Jathyadi Ghrita on Vedana.

After treatment the mean score of Yashada Bhasma Lepa and Jathyadi Ghrita on granulation tissue were 2.53 and 2.00 respectively with significant at the level of P<0.001.

Table 7: Overall results of Yashada Bhasma Lepa & Jathyadi Ghrita after the follow up study on diabetic ulcer

FU4	Yashada Bhasma (Group A)				Jathyadi Ghrita (Group B)				t	P
	N	Mean	± S.D.	±SE	n	Mean	± S.D.	±SE		
Gandha	15	0.27	0.46	0.12	15	0.93	0.59	0.15	3.44	<0.01
Varana	15	0.27	0.46	0.12	15	1.00	0.76	0.20	3.21	<0.01
Vedana	15	0.07	0.26	0.07	15	0.67	0.62	0.16	3.47	<0.01
Srava	15	0.13	0.35	0.09	15	0.73	0.59	0.15	3.37	<0.01
Akriti	15	0.27	0.46	0.12	15	1.07	0.26	0.07	5.90	<0.001
Area of Vrana In Sq.cm.	15	0.20	0.41	0.11	15	0.87	0.64	0.17	3.39	<0.01
Granulation Tissue↑	15	2.53	0.52	0.13	15	2.00	0.00	0.00	-4.00	<0.001

Table 8: Follow Up treatment the mean score of Group A and B

FU	Mean of Group A	Mean of Group B
Gandha	0.27	0.93
Varna	0.27	1.00
Vedana	0.07	0.67
Srava	0.13	0.73
Akriti	0.27	1.07
Area of Vrana in Sq.cm.	0.20	0.87
Granulation Tissue ↑	2.53	2.00

Table 9: Overall results of *Yashada Bhasma Lepa* and *Jathyadi Ghrita* after the follow up study on diabetic ulcer

Characteristics	Group- A			Group-B		
	Mean score		Percentage	Mean score		Percentage
	BT	FU		BT	FU	
<i>Gandha</i>	2.07	0.27	87.10	2.27	0.93	58.82
<i>Varna</i>	2.07	0.27	87.10	2.53	1.00	60.53
<i>Vedana</i>	1.73	0.07	96.15	2.20	0.67	69.70
<i>Srava</i>	2.07	0.13	93.55	2.47	0.73	70.27
<i>Akriti</i>	2.40	0.27	88.89	2.47	1.07	56.76
Area of <i>Vrana</i> in sq.cm	2.07	0.20	90.32	2.20	0.87	60.61
Granulation tissue	0.40	2.53	84.21	0.53	2.00	73.33

DISCUSSION

Dushta Vrana (non-healing ulcer) is a commonly encountered problem faced in surgical practice. Improper management worsens the condition of the patient there by leads to many complications and becomes fatal. Thus the present study was taken to study the effect of *Yashada Bhasma Lepa* in comparison with the *Jatyadi Ghrita*.

Even though healing is a natural process, it is inhibited by various factors. Alleviating these inhibitory factors is the goal of *Shodhana Chikitsa*. At the end of *Shodhana Chikitsa*, *Vrana* becomes *Shuddha* and *Ropana Chikitsa* has to be followed further for healing of the ulcer.

The probable mode of action of the drug i.e. *Yashada Bhasma* is due to the dominance of three particular *Rasas* in the constituents of trial preparation. They are *Tikta*, *Kashaya*, and *Katu* as it is clearly mentioned in our Ayurvedic text that *Tikta Rasa* is described in our classical text as *Dahashamaka*, *Kandughna* & *Kustaghna*. So it is observed that *Tikta Rasa* is having good action on skin disorders, so will be the drug also. *Tikta Rasa* is alleviating both *Pitta* & *Kapha*. So it leads to decrease in burning sensation and will also decrease the formation of discharge of pus at the wound site. So because of these above properties it will lead to decrease in burning sensation in the wound. It will bring back the normal skin colour fast in wound affected areas. *Kashaya Rasa* as mentioned in our classical text is *Ropaka*, so it leads to the healing property in case of wound. It also alleviates *Pitta* & *Kapha* so it also acts as a factor leading to decrease in burning sensation & discharge. From the above points it become clear that what is the probable mode of action of the study drug i.e. *Yashada Bhasma Lepa*.

All the ingredients present in the drug used for the clinical trial have contributing effect on

Cleaning & Healing of the wound. Thus *Yashada Bhasma Lepa* works wonderfully on patients of diabetic ulcer.

CONCLUSION

Patients with chronic history of diabetes are prone to get diabetic ulcer. In the treatment of diabetic ulcer both medical & wound care is necessary. Diabetic ulcer if not treated properly patient may loose his limb. Regular observations, dressing and blood sugar control is very important in the treatment of diabetic ulcer

Based on the patients reported for the study, rate of occurrence of diabetic ulcer is more commonly found in workers because of work tension, irregular food habits, life style and personal habits. The rate of contamination is higher in such people due to exposure to soil dust and careless about cleaning, dressing and *Pathya Apathya*.

By the end of the treatment there is, 79.66% relief in *Varna*, 96.49% relief in *Vedana*, 93.33% reduction in *Srava*, 98.33% reduction in *Gandha*, 86.66% reduction in *Akriti* was observed.

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