



Research Article

TO STUDY THE EFFICACY OF *SHARPUMKHAMOOL LEPA* IN MANAGEMENT OF *DUSHTAVRANA* Dnyaneshwar Chavan^{1*}, Pankaja Choudhari², Shende Krushnadev³, Vijaykumar Pandey⁴

¹Associate Professor, Dept. of Shalyatantra, Dr.G.D.Pol Foundation YMT Ayurved College, Kharghar, Navi Mumbai, India.

²Associate Professor, Dept. of Kriyasharir, Dr.G.D.Pol Foundation YMT Ayurved College, Kharghar, Navi Mumbai, India.

³Assistant Professor, Dept. of Kayachikitsa, Dr.D.Y. Patil Ayurved College, Pune, M.S. India.

⁴Assistant Professor, Dept. of Shalyatantra, LRP Ayurved College, Islampur, Sangli, M.S. India.

KEYWORDS: *Sharpumkhamool Lepa*, *Dushtavrana*, Healing process.

ABSTRACT

The life of every individual starts with the healing of the wound of the cut umbilical cord. So, treatment for healing of this wound is of prime importance. While explaining the scope of Shalya Tantra. Even though healing of *Vrana* is a natural process of the body, the *Vrana* should be protected from *Dosha Dushti* and from various micro organisms, which may afflict the *Vrana* and delay the normal healing process. So, for the early and uncomplicated healing of *Vrana*, treatment is necessary. 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. Though the herbal drugs are prescribed with high appreciation for healing purpose but it needs scientific evaluation with proper study design. Keeping all these things in view, drugs like *Sharpumkha* and *Madhu* has been selected after reviewing the literature. This study is designed to conduct an experimental as well as a clinical study thoroughly.

The study is entirely based on clinical observation and assessment of selected 60 patients attending OPD/IPD were selected randomly and subjected to clinical trial. Duration of study for 12 days administered with *Madhuyukta Sharpumkhamoola lepa* and Betadine ointment.

*Address for correspondence

Dr. Dnyaneshwar Dattarao Chavan

Associate Professor
Dept. of Shalyatantra,
Dr.G.D.Pol foundation YMT
Ayurved College, Kharghar,
Navi Mumbai, M.S., India
Email:
dnyanesh7373@gmail.com
Mobile: 09822221585

INTRODUCTION

Science is not merely a collection of facts & relationship but is more than a composite of these facts, accumulated & systematically correlated over the ages. Classics of Ayurveda has emphasized at various places to take care of wounds which occurs either as a result of vitiated *Doshas* or of traumatic in origin. The life of every individual starts with the healing of the wound of the cut umbilical cord. So, treatment for healing of this wound is of prime importance. While explaining the scope of Shalya Tantra.

Even though healing of *Vrana* is a natural process of the body, the *Vrana* should be protected from *Dosha Dushti* and from various micro organisms, which may afflict the *Vrana* and delay the normal healing process. So, for the early and uncomplicated healing of *Vrana*, treatment is necessary.

During the early part of the century, research on wound healing was largely concerned with qualitative descriptions of histological emergence & changes in the macroscopic appearance of the wound during its

progression towards formation of the final and fine scar. For carrying out such a responsibility of a surgeon, thorough knowledge of all types of wounds and its management is of utmost importance.

The task of the wound healing is to increase our basic understanding about the molecular and cellular events of the repair and healing processes and to use this information as the basis for developing new therapies that can minimize the adverse consequences of wounds.

To treat a wound is to bring out the process of repair of the tissues in the manner most conducive to the present and future welfare of the patients. Such an important responsibility can't be carried out without thorough and adequate knowledge of *Vrana Shodhan* & *Ropana* (Wound Healing) along with the modern medical doctrines. Better wound healing with minimal scar formation with least pain effectively is the prime motto of every surgeon.

The history of medical science starts with the art and skill of wound healing. Treatment of the wound is

probably the first medical problem faced by human beings. The frequency of injuries is more common than any other disease. Centuries ago, injury in the battle field due to hit by arrows was one of the common problems, along with contamination of the wound. Falling from trees, fall from heights, crushing against stone or hard materials, animal bites were the other causes for injury. The contamination of the wound due to various micro organisms delayed the process of wound healing. Bleeding and pain were and are the main complications of a wound which require immediate treatment.

Usage of various types of leaves or soil was the treatment to arrest bleeding. Quest for knowledge by ancient peoples led to many investigations and assumptions. Gradually things with better results were selected and tried with different forms. Ayurveda, more a science of life than only a medical science, gives more importance to preventive measures and complete curing of a disease with a minimum chance of recurrence.

Sushruta, the Father of Indian surgery in his book Sushruta Samhita, has explained *Vrana*, its complication and management in great detail. In the *Vranitopaasaneeya Adhyaya* he has explained that, If the *Rakshaa Karma* of *Vrana* is proper then the Nis`aacara"s leave the patient, in the same way as the *Mrugaas* (deer) run away from the jungle terrified by a lion.

For Sushruta health was not merely a freedom from disease, but a normal state of mind, body and soul. He conceived of a total management of the disease from the earliest stage of vitiation of *Dosha* to total recovery in which he insisted on bringing back the site of the lesion to normalcy in all respects. Thus it may well be said that Sushruta"s management was more thorough than even conceived today.

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.

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.

Though the herbal drugs are prescribed with high appreciation for healing purpose but it needs scientific evaluation with proper study design. Keeping all these things in view, drugs like *Sharpumkha* and *Madhu* has been selected after reviewing the literature. This study is designed to conduct an experimental as well as a clinical study thoroughly.

The study is entirely based on clinical observation and assessment of selected 60 patients attending OPD/IPD were selected randomly and

subjected to clinical trial. Duration of study will be for 12 days. They were administered with *Madhuyukta Sharpumkhamoola lepa* and Betadine ointment. The results are encouraging. This study has opened a new avenue for further exploration in the field.

AIMS AND OBJECTIVES

AIMS

1. Study the effect of *Madhuyukta Sharpumkhamool lepa* in management of *Dushta vrana*.
2. To decide the etiological factors both local as well as systemic responsible for the non-healing of the wound.

OBJECTIVES

1. Study the details of *Dushta vrana* and *Sharpumkha* as per Ayurvedic treatise.
2. Correlation of *Dushta vrana* as per modern text.
3. To collect the comprehensive data about *Sharpumkha* and *Madhu*.
4. To compile the data about *Pralepa*.
5. To evaluate the role of *Sharpumkhamoola Lepa* in the management of *Dushta Vrana*.
6. To compare the effect of *Sharpumkhamoola Lepa* with Betadine ointment.

MATERIALS AND METHODS

The descriptions of wounds show separate entity from the time of Hippocrates. The management for this problem has been varying from age to age, now with the help of new advance techniques and methods of microscopic and experimental studies to confirm pathophysiology of this subject is more appreciated.

The recipe *Sharpumkhamool lepa* mentioned in Bhaishjyarnawali is selected for local application to study its effect on the healing process of *Dushta Vrana*. For the local management of wound, *Sharpumkha* and *Madhu* are well known drugs due to antimicrobial, antibiotic, anti inflammatory and analgesic effect. According to Ayurveda, these drugs are having the properties of *Vrana Shodhana*, *Vrana Ropana* and *Shothaghna* etc. The *Madhu* is recommended as one of the best *Yogavahi* drug and for the local application as a vehicle.

In the modern era, there are so many preparations available for the management of wound. Povidone Iodine is a well known drug for local application and being widely used. It is available in many forms like ointment, solution, gel, gargling, mouth wash, scrub etc. The ointment form was taken as standard control in this present study. Though the prime importance in Ayurveda has been given to wound healing, the very fact that the subject of wound healing is under study from the days of Sushruta.

There are no wonder that many research scholars in all over the world are working to know the remedies which are more effective in wound healing, but the final answer is yet awaited. Keeping all these points in mind the present clinical trial entitled –To study the efficacy of *Sharpumkhamool lepa* in management of *Dushta vrana* has been carried out.

A) MATERIALS

No of Patients: 30 in Each group

Selection of patients: From the hospital's O.P.D and I.P.D

Group A (Trial group): 30 patients with *Madhuyukta Sharpumkhamool lepa*.

Group B (Control group): 30 Patients with Betadine ointment.

Technique & Methods for - Measuring size of wound
Transparent graph paper, Magnifying lens, marker was used to get its measurements and it was measured in mm/2.

B) METHODS

Medium of study: English which is supplemented by Ayurvedic terminology wherever necessary in sanskrit.

Type of study: It was an open controlled Randomised study in which patients were divided randomly in two groups.

A. Trial Group

1. 30 patients were selected for *Madhuyukta Sharpumkhamool lepa*.
2. *Madhuyukta Sharpumkhamool lepa* was applied appropriately and the changes during the span of study was noted on 0, 4, 8, and 12th day. B.

CONTROL GROUP

1. 30 patients were treated with Betadine ointment.
2. Betadine was applied appropriately and the changes during the span of study was noted on 0, 4, 8 and 12th day.

Method of preparation of Drug

Raw materials were purchased directly from the market. The drugs were checked for the authenticity. *Madhuyukta Sharpumkhamool lepa* was prepared by the standard method given in the Sharngadhar samhita.

Drug: *Madhuyukta Sharpumkhamool lepa* (Bhaishjyاراتnawali), Betadine ointment.

Dose: As per requirements

Equipments: Transparent graph paper, Magnifying lens, marker

Method: Open method of dressing was adopted.

Follow up: Daily dressings were done, but for the purpose of the study findings were recorded on CRF *Madhuyukta Sharpumkhamool lepa* was applied appropriately and the changes during the span of study was noted on 0, 4, 8 and 12th day.

Duration of treatment: 12 days.

Plan of Clinical Trial

- 1) **Ethical Clearance:** Ethical clearance was sought from the ethical committee of the hospital.
- 2) **Consent:** An understanding of the procedure was given to the patients about the trial and a written consent was taken from the patients prior to participation in the trial.
- 3) **Clinical examination:** Complete general and clinical local examination of *Vrana* was carried out for diagnosis and assessment.

Criteria for selection

INCLUSION CRITERIA

1. Non specific ulcers
2. Age group 12yrs to 60yrs will be included.
3. Ulcer having duration ≤ 6 months.

EXCLUSION CRITERIA

1. Specific ulcer like tuberculosis, leprosy, malignant etc.
2. Bleeding disorder, Diabetes etc.
3. HIV, HCV, HBsAg.

Investigations

To rule out other pathology before treatment by routine as well as microscopic blood were carried out like i.e., CBC, ESR, CT, BT, RBS.

Microscopic examination- Other investigations like tuberculin test, pus culture etc. were done as per requirement.

Criteria for assessment

Improved

1. No pain
2. Serous discharge
3. Granulation $\geq 75\%$
4. Ulcer decreased in size

Not Improved

1. Pain
2. Pus discharge
3. Granulation $\leq 25\%$
4. Ulcer not decreased/or increased in size.

Scores of clinical features

Scoring of all signs & symptoms according to severity were given marks (0-3) as

Pain

- 0 - No pain.
1 - Occasional pain during movement only (once or twice in a day).
2 - Intermittent pain even during rest (every 2 to 3 hrly).
3 - Continuous pain & not relieved by rest.

Discharge

- 0 - No discharge.
1 - Scanty occasional discharge & little wet dressing.
2 - Often discharge & with blood on dressing.
3 - Profuse, continuous discharge which needs frequent dressing.

Granulation

- 0 - Complete granulation.
1 - More granulation ($\geq 75\%$), less pus.
2 - Equal granulation ($> 50\%$) & pus.
3 - Less granulation ($\leq 25\%$), more pus.

Size

- 0 - Size of the wound 0.
1 - Size of the wound > 0.1 mm-5 mm.
2 - Size of the wound > 5.1 mm-10 mm.

3 - Size of the wound > 10mm.

CRITERIA FOR ASSESSMENT OF OVERALL EFFECT

Marked Improvement- 76 to 100% relief in signs and symptoms along with healing of wound.

Moderate Improvement- 51-75% relief in signs and symptoms along with healing of wound.

Mild Improvement- 26-50% relief in signs and symptoms along with healing of wound.

No Improvement- Upto 25% relief in signs and symptoms without healing of wound.

The patients were gauged individually & percentage of score reduction in the symptomatology was

determined by mathematical calculations.

OBSERVATIONS AND RESULTS

OBSERVATIONS

Clinically diagnosed 60 Patients of *Dushta Vrana* were selected and assigned in two groups of 30 Patients each randomly for the study. Group A patients were treated with *Madhuyukta Sharpumkhamool lepa* for 12 days as trial group. The patients of second Group named as Group B were treated with Betadine for 12 days. All the 60 patients of this study, details of which are presented here in tabular form with brief description of each finding:

Table 1: Distribution of 60 patients of *Dushta Vrana* based on Age

Age (Years)	Group A (<i>Sharpumkha</i>)	Group B (Betadine)	Total	%
12-25	4	4	8	13.33
26-40	20	22	42	70
41-60	6	4	10	16.66

Age: Out of 60 patients, maximum patients i.e. 70% were from the age group of 26-40 years, 16.66% from the age group of 41-60 years and minimum number i.e. 13.33% of the patients was from 12-25 years.

Table 2: Distribution of 60 patients of *Dushta Vrana* based on Sex

Sex	Group A (<i>Sharpumkha</i>)	Group B (Betadine)	Total	%
Male	21	22	43	71.66
Female	9	8	17	28.33

Sex: Out of 60 patients, maximum patients i.e. 71.66% were male and 28.33% were female.

Table 3: Distribution of 60 patients of *Dushta Vrana* based on Marital status

Marital Status	Group A (<i>Sharpumkha</i>)	Group B (Betadine)	Total	%
Married	23	22	45	75
Unmarried	7	8	15	25

Marital Status: Out of 60 patients 75% were married and 25% were unmarried.

Table 4: Distribution of 60 patients of *Dushta Vrana* based on Occupation

Occupation	Group A (<i>Sharpumkha</i>)	Group B (Betadine)	Total	%
Service	18	16	34	56.66
Housewife	5	4	9	15
Education	3	3	6	10
Farming	4	7	11	18.33

Occupation: Out of 60 patients, maximum patients i.e. 56.66% were doing job by nature of work, 18.33% were farmer, 15% were Housewife and 10% were studying.

Table 5: Distribution of 60 patients of *Dushta Vrana* based on Habitat

Habitat	Group A (<i>Sharpumkha</i>)	Group B (Betadine)	Total	%
Urban	14	14	28	46.66
Rural	16	16	32	53.33

Habitat: Out of 60 patients 53.33% were from rural area and 46.66% were from urban area.

Table 6: Distribution of 60 patients of *Dushta Vrana* based on Socio-economic status

Socio-economy	Group A (<i>Sharpumkha</i>)	Group B (Betadine)	Total	%
Poor	19	18	37	61.66
Middle	9	10	19	31.66
Rich	2	2	4	6.66

Socio-economic Status: Out of 60 patients, maximum patients i.e. 61.66% were of Poor group and 31.66% were from middle Class group and only 6.66% were Rich.

Table 7: Distribution of 60 patients of *Dushta Vrana* based on Diet

Diet	Group A (<i>Sharpumkha</i>)	Group B (Betadine)	Total	%
Mixed	24	23	47	78.33
Vegetarian	6	7	13	21.66

Diet: Out of 60 patients, maximum patients i.e. 78.33% were having mixed type of diet, minimum i.e. 21.66% were having vegetarian diet.

Table 8: Distribution of 60 patients of Dushta Vrana based on Religion

Religion	Group A (Sharpumkha)	Group B (Betadine)	Total	%
Hindu	30	29	59	98.33
Muslim	0	1	1	1.66

Religion: Out of 60 patients, maximum patients i.e. 98.33 % were Hindus and minimum i.e. 1.33 % were Muslims.

Table 9: Distribution of 60 patients of Dushta Vrana based on Site of wound

Site	Group A (Sharpumkha)	Group B (Betadine)	Total	%
Head & neck	6	5	11	18.33
Upper limb	8	9	17	28.33
Lower limb	6	7	13	21.66
Middle body	7	7	14	23.33
Other	3	2	5	8.33

Site of wound: Out of 60 patients, maximum patients i.e. 28.33% were having wound in upper limb, 23.33% in middle body and 21.66% were having wound at lower limb and minimum 8.33% at other area (perianal region).

Table 10: Distribution of 60 patients of Dushta Vrana based on Aetiology of wound

Type	Group A (Sharpumkha)	Group B (Betadine)	Total	%
Nija	12	12	24	40
Agantuja	18	18	36	60

Aetiology of wound: Out of 60 patients, the Aetiology for Nija Vrana was 40% and also 60% for Agantuja Vrana.

Table 11: Distribution of 60 patients of Dushta Vrana based on onset

Onset	Group A (Sharpumkha)	Group B (Betadine)	Total	%
Gradual	20	18	38	63.33
Sudden	10	12	22	36.66

Onset: Out of 60 patients, 63.33% had gradual onset and 36.66% had sudden onset.

Table 12: Distribution of 60 patients of Dushta Vrana based on Chronicity of wound

Duration	Group A (Sharpumkha)	Group B (Betadine)	Total	%
Up to 3wks	8	7	15	25
>3wks-1mnth	6	7	13	21.66
>1mnth-2mnth	8	11	19	31.66
>2mnth-3mnth	6	3	9	15
>3mnth-6mnth	2	2	4	6.66

Chronicity of wound: Out of 60 patients, maximum Patients i.e. 31.66% had >1mnth-2mnth of chronicity of wound. 25% had up to 3wks and 21.66% had >3wks-1mnth as wound period. 15% had >2mnth-3mnth and 6.66% had >3mnth-6mnth the period of chronicity of wound.

Table 13: Distribution of 60 patients of Dushta Vrana based on Addiction

Addiction	Group A (Sharpumkha)	Group B (Betadine)	Total	%
None	12	13	25	41.66
Tobacco	8	11	19	31.66
Smoking	8	7	15	25
Alcohol	8	6	14	23.33

Addiction: Out of 60 patients, maximum patients i.e., 41.66% were not indulged in smoking or alcohol, 31.66% in only tobacco, 25% only in smoking and minimum i.e. 23.33% were indulged both in alcohol.

Table 14: Distribution of 60 patients of Dushta Vrana based on Sleep

Sleep	Group A (Sharpumkha)	Group B (Betadine)	Total	%
Good	16	17	33	55
Sound	9	7	16	26.66
Disturb	5	6	11	18.33

Sleep: Out of 60 patients 55% had good sleep, 26.66% had sound awake sleep and minimum 18.33% had disturb sleep.

Table 15: Distribution of 60 patients of Dushta Vrana based on Prakruti

Prakruti	Group A (Sharpumkha)	Group B (Betadine)	Total	%
Vata-pitta	11	12	23	38.33
Vata-kapha	12	11	23	38.33
Pitta-Kapha	7	7	13	21.66
Tridoshaja	0	0	0	0

Prakruti: Out of 60 patients majority of the patients i.e. 38.33% were belonged to Vata Pitta and Vata Kapha Prakruti

followed by 21.66% *Pitta Kapha Prakruti*. Here in this present study no patient was found with *Tridoshaja Prakruti*.

Table 16: Distribution of 60 patients of *Dushta Vrana* based on Agni

Agni	Group A (<i>Sharpumkha</i>)	Group B (<i>Betadine</i>)	Total	%
<i>Manda</i>	6	8	14	23.33
<i>Sama</i>	9	7	16	26.66
<i>Vishama</i>	10	12	22	36.66
<i>Tilshna</i>	5	3	8	13.33

Agni: The data of the table reveals that 36.66% were having *Vishama Agni* whereas 26.66% of the patients were having *Sama Agni*. 23.33% and 13.33% were having *Manda Agni* and *Tikshna Agni* respectively.

Table 17: Distribution of 60 patients of *Dushta Vrana* based on Symptoms

Symptoms	Group A (<i>Sharpumkha</i>)	%	Group B (<i>Betadine</i>)	%	Total	%
Pain	29	96.66	29	96.66	58	96.66
Discharge	28	93.33	29	96.66	57	95
Granulation	30	100	30	100	60	100
Size	30	100	30	100	60	100

In this present clinical study total 96.66% patient were found with pain in group A and group B. Discharge was observed 93.33% in group A and 96.66% in group B. 100% each were observed with granulation and size in both group A as well as in group B.

RESULTS

STATISTICAL ANALYSIS

All information which were based on various parameter were gathered & statistical analysis was carried out in terms of Mean (X), standard deviation (SD), standard error (SE), paired test (t') & finally result were incorporated term of probability P' by using Z test.

The data collected from this clinical research work and arranged for further process by subjecting to various statistical methods and presented for early comprehension. So the obtained data on the basis of observation in each group were subjected to statistical analysis in terms of paired t' test. The t' test used for paired observations before treatment and after treatment. The formula for that is

- 1) t' Calculated = MR/SE, where MR is the mean reduction between gradation of symptoms at two time period.
- 2) MR = $\sum d/n$, where d is the difference between gradation of symptoms at two time period.
- 3) SD of difference = Square root of $\{[\sum d^2 - (\sum d)^2/n]/n\}$, where n is the number of patients in one group.
- 4) SE of difference = SD/ n.

Now two hypotheses were made.

- 1) H0 = where symptoms before treatment and after are same i.e. test is insignificant (MR = 0).
- 2) H1 = where symptoms before treatment and after treatment are different i.e. test is significant (MR ≠ 0).

It was considered at level of P > 0.05 (Insignificant), P < 0.05, P<-0.01 (Significant) and P <

0.001 (Highly significant). The t table at 5 %, 1 %, 0.1% is considered (n-1) DF, to carry out the results.

The obtained data on the basis of observation of two groups were subjected to statistical analysis in terms of z' test as numbers of patients were more than 30. For comparing results in two groups, this test was done. As above, in this test also two hypotheses were made.

- 1) H0= where relief obtained in both groups are same i.e. test is insignificant, means *Sharpumkhamool lepa'* and *Betadine'* is equally effective.
- 2) H1= where relief obtained in both groups are different i.e. test is significant, means *Sharpumkhamool lepa''* is more effective than *Betadine'*.

The formula used is Z calculated = $(x1 - x2)/SE$, where x1 is the mean reduction in group A and x2 is the mean reduction in group B.

SD of mean difference = Square root of $\{(n1 SD1^2 + n2 SD2^2)/(n1 + n2 - 2)\}$

S.E. = S.D. of mean difference x $(1/n1 + 1/n2)$

It was considered at level of P < 0.05 (significant), P < 0.01 (significant); to carry out the results table value of Z at 1 % level of significance is 2.58. Table value of Z at 5 % level of significance is 1.96.

Paired 't' test: Paired t' test is used to work out mean reduction between first and subsequent days under study and test is significant.

Results obtained are presented in following table. The t' table value at 5% is 2.045, 1% is 2.756 and 0.1% is 3.66.

* P < 0.05, ** P < 0.01, *** P < 0.001.

Table 18: Effect of *Madhuyukta Sharpumkha lepa* on 30 Patients of *Dushta Vrana*

Symptoms	Mean BT	Mean AT	%	S.D.	S.E.	T	P
Pain	1.96	0.566	71.67	0.563	0.103	13.6	<0.001
Discharge	1.46	0.53	70	0.4026	0.0736	12.229	<0.001
Granulation	2.5	1.1	60	0.62	0.11	12.3	<0.001
Size	2.3	0.766	63.89	0.86	0.157	9.749	<0.001

The table shows that the pain was decreased 71.67% in *Sharpumkhamool lepa* treated group which was statistically

highly significant. Discharge was reduced upto 70 % which was statistically highly significant. The granulation was improved upto 60% and statistically highly significant where as size of wound was decreased upto 63.89 % which was highly significant by statistically.

Table 19: Effect of Betadine ointment on 30 Patients of *Dushta Vrana*

Symptoms	Mean BT	Mean AT	%	S.D.	S.E.	T	P
Pain	1.76	0.733	60.55	0.587	0.107	9.315	<0.001
Discharge	1.433	0.733	60	0.4661	0.085	8.215	<0.001
Granulation	2.33	1.233	48.33	0.61	0.11	9.91	<0.001
Size	2.03	1.033	48.89	0.718	0.131	7.36	<0.001

In Povidone Iodine group the pain was decreased 60.55% which was statistically highly significant. Discharge was reduced upto 60 % which was statistically highly significant. The granulation was improved upto 48.33% and statistically highly significant where as size of wound was decreased upto 48.89 % which was highly significant by statistically.

Table 20: Overall result of therapy (Group wise)

Result	Group A (<i>Sharpumkha</i>)	%	Group B (Betadine)	%
Marked Improvement	10	33.33	5	16.66
Moderate Improvement	11	36.66	12	40
Mild Improvement	7	23.33	8	26.66
No Improvement	2	6.66	5	16.66

It was noticed that, 33.33% markedly improved cases were observed in treated group i.e. *Madhuyukta Sharpumkhamool lepa* group followed by 36.66% were moderately improved, 23.33% were mild improved whereas 6.66% remain unchanged.

In standard control group i.e. Povidone iodine group total 16.66% each markedly improved and no improved cases were found while 40.00% were moderately improved and 26.66% were mildly improved.

DISCUSSION

The present study entitled "To Study The Efficacy of *Sharpumkhamool Lepa* In Management Of *Dushtavrana*" was carried out to evaluate the effects of *Madhuyukta Sharpumkhamool lepa* on *Dushta vrana*. The main aim of the study was to evaluate the *Sodhaka* effects of *Madhuyukta Sharpumkhamool lepa* and so the parameters, pain, discharge, granulation and size were taken up for the study. The results of the study drug were found to be significant on all parameters. 60 patients of *Dushta vrana* were selected and divided randomly in two groups. Group A was treated with *Madhuyukta Sharpumkhamool lepa* and Group B with betadine ointment. Patients of age group 12-60 years, of both sex suffering from infected wound were taken up for the study.

To assess hematological stability of the patients, blood investigations were done prior to and after treatment as per necessity. The observations recorded on various days of the study were put to statistical analysis. According to study design 60 patients of *Dushta vrana* were selected from the OPD and IPD of study centre and were divided randomly in both the groups. Group A termed as trial group was treated with *Sharpumkhamool lepa*. Group B, termed as control group was treated with Betadine ointment.

Although healing commences immediately after injury which has been well elaborated by the modern pathologist and surgeon in the light of recent research.

As far as the management of wound is concerned appropriate *Shodhana* and *Ropana* of wound are required at appropriate time.

Process Of Healing

An attempt was made to understand the *Ropana* process in a better way from Ayurvedic point of view:

A) Phase of *Shodhana*: Healing always take place in *Shuddha Vrana* only. *Shodhana* in this context refers to *Sroto-shodhana* and irrigation of the local debris by means of *Lekhana* action and *Laghu*, *Tikshna* and *Sara* properties. This ultimately cleans the *Vrana*.

B) Phase of *Pachana*: *Vrana Dushti* is caused due to formation of *Ama* and then *Khavaigunya* occurs which is the result of local and general *Agnimandhya*. The properties like *Dipana*, *Pachana* and *Vatahara* action will help in regaining the *Agnivardhana* and maintaining the *Samyaavastha*.

C) Phase of *Ropana*: Action of *Dhatu Poshana*, *Prinana* and *Balya* in medication are effective to its maximum content by way of letting the wound becomes heal. To achieve the main goal of healing, it is necessary to remove the maximum local *Dushti* or Debridement at the site of *Vrana*. By the virtue of *Lekhana*, *Putihara*, *Dahahara*, *Kandughana*, *Vrana Shodhana* and *Vrana Ropana* properties of *Sharpumkha* and *Madhu*, the local *Dhatu Dushti* is ceased. The second step in the path of healing is to enhance the healing, for this purpose *Madhu* made easy way.

There are various type of chemical substances have been established for their properties of wound healing agents. Several herbal products and Ayurvedic traditional Yoga are mentioned and used for the management of wound. For this study, treated group is given *Sharpumkha mool lepa* as a trial drug which is mentioned in Bhaishajya Ratnavali and Bhavprakash in *Vranashotha Roga Adhikara* for the treatment of *Vrana*.

Discussion on general observation of patients

Age: It is seen that 70% of patients belonged to age group 26 to 40 yrs followed by 16.66% of age group 41

to 60 yrs. This factor may be due to mainly earning occupational age and external exposure also. Hence here we can see that maximum no of the patients were Young. Sex: 71.66% of patients in the study were males and rest were females. This reveals that the incidence of *Dushta vrana* is more in males due to external exposure and nature of work.

Occupation: Majority of the patients were labourer by occupation (56.55%) and hence the wounds were found more than any other occupation group.

Diet: 78.33% of patients followed mixed diet pattern in the study. It can be said that the non-veg diet plays a significant role in the etio-pathogenesis of *Dushta vrana*. It leads to *Agnimandya* and hence vitiation of *Doshas* leading to *Dushta vrana*.

Duration of Vrana: 31.67% and 25% of patients in the study had *Vrana* from 1-2 month and within 3 week respectively. This shows that the patients seek treatment early for the *Vrana* thereby revealing the health orientation and awareness of the patients.

Symptoms wise distribution: Most of the patients had pain, discharge and unhealthy granulation in the wound. This reveals that the *Dushta vrana* is always accompanied by discharge and unhealthy granulation.

Site wise distribution of patients: 28.33% and 21.66% of patients had wound on upper limbs and lower limb indicating that the *Dushta vrana* is more common on extremities. Reason for this factor may be that maximum patients were observed with manual natural of work.

Aetiology wise distribution of patient: 60% of the patient had *Agantuja* type of *Vrana* which reveals that *Dushta vrana* is mainly caused due to some foreign matter.

Also Maximum no of the patients were Hindu (98.33%) and married (75%). Though there is no direct relation with wound but the area where study has been carried out persist higher number of Hindus.

Maximum patients were found with regular sleep (55%). Maximum no of the patients were having *Vata Pitta* and *Vata Kapha Prakruti* (38.33%). However these factors were not responsible mainly for happening of wound.

Both the groups have shown highly significant result on all clinical symptomatology of wound, because trial drug and standard drugs promoted the natural healing process and checked the disease

Dushta Vrana

Pain: The pain was decreased 71.67%. In Betadine group the pain was decreased 60.55% which was statistically highly significant in both groups.

Discharge: Discharge was reduced 70% in *Sharpumkhamool lepa* group while in Betadine group it was reduced 60%. Both were statistically highly significant.

Granulation: The granulation was improved 60% whereas in Betadine group relief was 48.39% while it was highly significant in both groups.

Size: In *Sharpumkhamool lepa* group size was decreased

63.89% and in Betadine group 48.89%. They were highly significant statistically in both groups.

Probable mode of action

Sharpumkha and *Madhu* is having *Tikta*, *Kashaya* and *Madhura*, *Kashaya rasa* respectively as well as both are *Katu vipaka* therefore it is *Shothahara*, *Kushthaghna*, *Jantughna*, *Vishaghna*. *Ushna guna* causes *Pachan* of *Sama dosha*, thereby promoting the *Samyak dhatu utpatti*. *Tikshana guna* causes *Pachana* of *Aama*. Being *Kledanashan Sharpumkha* is *Vranashodhak*, *Ropaka* and *Rakta stambhaka*. *Sharpumkha* alleviates inflammation, benefits in skin diseases and posses bactericidal, wound healing, haemostatic, antidote effect. Honey possesses nutritive properties so it provides *Dhatu Poshana* (Nutrition) to skin and all *Dhatu*. Liquid honey does not spoil. Because of its high sugar concentration, it kill bacteria by plasmolysis. It has been shown *Vrana Shodhana*, *Lekhana*, *Ropana* and *Vishaghna* properties also. There for it helps to remove microbes from wounds and prepare in *Shuddha Vrana*. These drugs are *Stambhana* and *Raktashodhaka* also there for it checks bleeding and discharge from wounds and shows haemostatic action very well.

SUMMARY

Ayurvedic review comprises etymology and definition of *Vrana*. Then some synonyms and classification of *Vrana* were discussed. The classification was mentioned according to Sushruta Samhita, Charaka Samhita, and Ashtangahrudaya. Various etiological factors were presented. *Samprapti* of *Vrana* according to Ayurveda with its *Ghatakas* were defined, *Shadvidha Kriyakala* given by Sushruta was discussed in case of *Vrana*. Then *Rupa*, *Upadrava* and *Chikitsa* were described.

The second section includes the modern aspect of *Vrana* in the form of wounds. The process of wound healing and its management and types were discussed simultaneously.

The third section consists of a brief description about the selected drugs viz. *Sharpumkhamool lepa* and Betadine. In this section description of ingredients of the selected drugs and their pharmacological action has also been incorporated.

Materials and method consists of broad classification of total 60 patients into age, sex, and their complaint wise. They were randomly divided into 2 groups and treated with the trial drug *Sharpumkhamool lepa* and Betadine as local application for the duration of 12 days.

They were studied and their data related to effect of therapy was mentioned simultaneously in tables of observation and result.

Further chapter contains some valuable and fruitful discussion about the disease and the probable mode of action of the selected drug. Then the data obtained after the clinical trial were discussed carefully.

Lastly total study was summarized briefly and a conclusion was drawn in fifth chapter. In this research study total 60 patients were registered and treated in

two groups, among them 30 patients in *Sharpumkhamool lepa* group and 30 patients in Povidone iodine group. On the basis of this study the following conclusion can be drawn.

- Maximum no. of the patients was from the age group of 26 to 40 years (70%).
- Maximum no. of the patients was Males (71.66%).
- Maximum no. of the patients were Hindu (98.33%).
- Maximum no. of the patients were from poor class (61.66%) by social and economical status.
- Maximum no. of the patients was serviceman (56.66%) by occupation.
- Maximum no. of the patients was married (75%).
- Maximum no. of the patients had gradual onset (63.33%).
- Maximum no. of the patients had wounds at upper limb (28.33%).
- Maximum no. of the patients had the wounds with pain(96.33%), discharge (95%),granulated wound bed (100%).
- Maximum no. of the wounds was *Agantuja* (60%).
- Maximum no. of the patients was having mixed diet (78.33%) and *Vishamagni* (36.66%).
- Maximum no. of the patients was having good sleep (55%).

Effect of *Sharpumkhamool lepa* Group (Treated Group): In this group 71.67%, 70%, 60%, and 63.89% relief was obtained in pain, discharge, granulation and size respectively. The statistical data reveals that highly significant result was achieved in size, pain, discharge, and granulation.

Effect of Betadine Group (Standard Group): In this standard control group 60.55% relief was obtained in pain, 60% relief was observed in discharge. Rest of the symptoms like granulation and size were relieved upto 48-50%. The statistical data mentions that highly significant result was observed in pain, discharge, granulation and size.

Overall result of therapy (group wise): It was noticed that, 33.33% markedly improved cases were observed in treated group while Povidone iodine group total 16.66% markedly improved. 36.66% were moderately improved in trial group while 40.00% were moderately improved in control group. In trial group 23.33% were mild improved whereas 26.66% mildly improved in control group. 6.66% and 16.66% remain unchanged in trial group and control group respectively.

CONCLUSION

On the basis of clinical observations it can be concluded that the trial drug *Sharpumkhamool lepa* possess analgesic, anti inflammatory and anti bacterial properties. There are no unwanted effects found during the course of treatment. It is found better in the management of wounds due to its effectiveness and low cost. The present research work was aimed to find out the effective therapy for *Vrana* with the help of Ayurvedic and modern procedures.

After the present study, it can be concluded that

Sharpumkhamool lepa (Trial drug) has shown better statistical results than Betadine (control drug). It is noted that, *Sharpumkhamool lepa* group - A (Trial drug) has shown better result in all symptoms of *Dushtavrana* than Betadine (control drug).

From the study, it can be concluded that administration of *Sharpumkhamool lepa* is an effective treatment modality for *Dushtavrana*. More detail study may be conducted in this regard to establish the efficacy of *Sharpumkhamool lepa* in management of *Dushtavrana*. Though, the results are very good, but further study on large number of patients with longer duration of therapy is need to achieve a definite conclusion.

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