

MANAGEMENT OF *DUSHTA VRANA* BY *JATYADI GHRITA* FOLLOWED BY *JALAU-KAVACHARNA*

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ABSTRACT

Background and objectives Ulcer is a discontinuity of skin exhibiting loss of epidermis and portion of the dermis and even sub-cutaneous fat is assumed as the term Ulcer. Under normal physiological condition healing is inevitable. The process of healing is divided in to four phases' viz. hemostasis, inflammation, proliferation and remodeling of skin. *Vrana* stated in *Ayurveda* simulates Ulcers or wound; which may get converted in to *Dushta Vrana* after get infected i.e. Infectious or complicated wound in due course of time. The management of *Dushta Vrana* has been described in various *Ayurvedic* texts i.e. *Charak samhita*, *Sushruta Samhita* etc. Many formulations and surgical & parasurgical procedures are in use for centuries. One of these is a polyherbal drug *Jatyadi Ghrita*. On the other hand *Raktamokshana* is also mentioned in different stages of *Dushta Vrana*. The objective of the present study is to evaluate the effect of *Jatyadi Ghrita* followed by *Jalaukavaharana* on the basis of relief in signs and symptoms of *Dushta Vrana*. **Methods** The effect of *Jatyadi Ghrita* followed by *Jalaukavaharana* was studied on 30 patients of *Vrana* on the basis of relief obtained on subjective and objective parameters and assessing the result applying t-test & percentage of relief on the signs and symptoms of *Dushta Vrana*. Duration of the Study was 45 days; for initial one week daily dressing was planned and for the next 38 days weekly dressing was prescribed followed by regular follow up for 2 months. **Results** The results observed based on the relief obtained on the subjective and objective parameters taken for consideration for this study viz. Size of ulcer, Discharge, Foul Smell, Pain, Burning Sensation, Itching Sensation, Granulation and Sloughing and were found significant ($P < 0.05$) on all the above parameters on applying paired t-test. **Conclusion** It showed that *Jatyadi Ghrita* followed by *Jalaukavaharana* significantly helped in reduction of the signs and symptoms of the *Dushta Vrana*, enhancing wound healing process and reducing the morbidity of the patients.

Key words: *Dushta Vrana*, *Jatyadi Ghrita*, oxygenation, t-Test, *Jalaukavaharana*, Ulcer, *Vrana*

INTRODUCTION

Dushta Vrana is one of the conditions which have been managed by human being from starting of civilization. The first thing which the men came across was the injury from different sources which caused him the *Vrana* (wound). The concept of *Vrana* is as old as human life. 'Vrana' from the starting of life is described as a common and major problem faced by human. The earliest reference of *Vrana* is found in *Vedic* literature in context of injuries during wars. Basic concept of wound cleansing, closure and splitting has been described in various medical systems. *Vrana* is the most important and widely described chapter of *Shalya Tantra* by *Sushruta*¹. *Sushruta* has described *Vrana* very precisely and in scientific manner with reference to *Satkriyakala*, types², sub types², *Sasti Upakrama*⁷ (60 procedures for *Vrana* management), *Vrana upadrava* (Complications), *Sadhya*⁵-*Asadhatya* (Prognosis), *Vranavastu* etc. He has clearly mentioned that the *Vranavastu* (scars) of a *Vrana* (wound) never disappear after complete healing and its imprint persists lifelong, that lesion is called *Vrana*¹⁰.

Acharya Sushruta has scientifically classified *Vrana* as traumatic wounds², *Shuddha Vrana*³, *Nadi Vrana*⁴, *Sadhya Vrana*⁵, *Dagdha Vrana*⁶ etc. *Ayurvedic* treatises have classified the *Vrana* as *Nija Vrana* and *Aagantuja Vrana*^{11, 12, 13} It is further classified into 16 subtypes (*15 Doshaja Prakaras + 1 Shuddha Vrana*³). *Sushruta* has classified *Vrana* on the basis of characteristics like *Aakriti*, *Shabda*, *Dosha*, *Varna*, *Suchikitsya* (*Aayata*, *Chatusara*, *Vritta*, *Tripataka*)¹⁴ *Durchikitsya* (*Shakti*, *Dhwaja*, *Ratha*, *Kunta*, *Vaji*, *Varana*, *Gau*, *Vrisha*).

Dushta Vrana Lakshanas: *Durg* and *hita*, *Pooyayukta*, *Atipooyasrava*, *Utsangi*, *Chirkali*,

Dooshita, *Atigandha Varna-Srava*, *Vedanayukta*, *Suddha lakshanaviparita*.¹⁵

Suddha Vrana lakshanas³: *Jivhatala samana*, *mrudu*, *Shlakshana*, *Snigdha*, *Alpavedana yukta*, *Niyamit*, *Sravaviheen*.¹⁵

“The term wound is break in the continuity of soft parts of body structures caused by violence of trauma of tissue.”¹⁶ Ulcer is defined as “A local defect or excavation of the surface, of an organ of tissue produced by sloughing of necrotic tissue.”¹⁷ “Ulcer word is derived from Latin word “ulcus”. It means an open sore or lesion of the skin or mucous membrane accompanied by sloughing or inflamed necrosed tissue.”¹⁸ Ulcer is a discontinuity, often excavation of skin exhibiting loss of epidermis and portion of the dermis and even sub-cutaneous fat. Despite the fact that wound healing is a natural process it is influenced by both and systemic factors, like micro organism, growth factors, vascularity, and debris. The management of *Dushta Vrana* has been described in various *Ayurvedic* texts. Many formulations are in use for centuries. Among these *Jatyadi Ghrita*^{8,9} described in *Bhaishajya Ratnavali* is most widely used in various types of *Dushta Vrana* & *Jalaukavacharana* is also described for *Shodhana* & *Ropana* of *Dushta Vrana* by *Acharya Shusrutha*.

Many investigations and experiments have been carried out in medical science to understand the phenomenon of wound healing in non healing ulcers. There are analgesics, antibiotics and antiseptics like Povidone iodine, Silver sulphadiazine etc. are in use for the treatment of wounds, but in some cases they don't provide better result with so many adverse effects. The mission of the wound healing is to increase our basic understanding of the mo-

lecular and cellular events of the cellular repair and wound healing processes, and to use this information as the basis for developing new therapies that minimize the adverse consequences of wound healing. Such novel therapies could enhance cellular repair, promote rapid wound closure, minimize hypertrophic scarring, or control scar contracture.

Aims & Objectives of study

- To study in detail about the ailment 'Vrana'.
- To study the efficacy of *Jatyadi Ghrita* followed by *Jalaukavacharana* and its role in the management of *Dushta Vrana*.

MATERIAL AND METHODS

This study was carried out at Shivayogeeshwar Rural Ayuvedic Medical College and Hospital, Inchal and treated with *Jatyadi Ghrita* followed by *Jalaukavacharana*. Sample size of 60 patients was taken for the convenience of study.

Procedure:

Normal saline was used to achieve local hygiene. Raktamokshana was done with *Jalauka* in single sitting. After *Jalaukavacharana* dress-

ing was done by gauze dipped in *Jatyadi Ghrita* followed by as to keep the *Vrana* moist and to help in healing process by virtue of its ingredient drugs with following properties of both *Shodhana & Samana Chikitsa*:

- Capable of good *Vrana Ropana* properties.
- Capable of increasing granulation tissue and thus enhancing wound healing.
- Easily available.
- Cost effective.
- *Jalaukavacharana* is a O.P.D. level procedure.

Duration of the Study was 45 days; for initial one week daily dressing was planned and for the next 38 days weekly dressing was prescribed followed by regular follow up for 2 months. The results were observed based on the relief obtained on the subjective and objective parameters taken for consideration for this study. The effect of *Jatyadi Ghrita* followed by *Jalaukavacharana* was analysed using paired t-test & percentage of relief on the signs and symptoms of *Dushta Vrana*.

Table No.1: CONTENTS OF "JATYADI GHRITA"¹⁹

S.No.	Sanskrit Name	Part used	Quantity
1	Jati Patra	Leaf	44.28g
2	Nimba Patra	Leaf	44.28g
3	Patola Patra	Leaf	44.28g
4	Katuka	Rhizome	44.28g
5	Daruharidra	Stem	44.28g
6	Haridra	Rhizome	44.28g
7	Sariva	Root	44.28g
8	Manjista	Root	44.28g
9	Usira	Root	44.28g
10	Madhuka	Root	44.28g
11	Karanja	Seed	44.28g
12	Siktha		44.28g
13	Tutha		44.28g
14	Sarpi		2304 g
15	Jala		9.21 lt

DESCRIPTION ABOUT JALAUKA

Introduction:-

The clinician who knows all about the *Jalauka*, habitat, their method of collection varieties, storage and method of application is successful in treating in the disease amenable to them.²⁰

Jalauka:-

The word *Jalauka* is a compound word with two components- *Jala* + *Ayu*.,ie the animal having water as its life .The term *Jalauka* can be divided into *Jala* +*oka* which means water dwelling animal. There are two types of *Jalaukas* are described in *Ayurveda*.²¹

1. *Savisha Jalauka*
2. *Nirvisha Jalauka*

Application of Jalauka²²:-

It is divided in 3 procedures-

1. *Poorva karma*
2. *Pradhana karma*
3. *Paschata karma*

1. *Poorva karma*:-

- A. Examination of the patient who is fit to undergo *Jalaukavacharana*.
- B. *Shodhana* of *Jalauka*-Before the application of *Jalauka*, It should be kept in the *Haridra* mixed water for one minute and cleaned with the help of pure water.²³
- C. Preparation of the Patient-The part of the application should be cleaned and if there is oil on the skin than that oil should be removed properly because it's difficult for *Jalauka* to catch on oily surface.

If *Jalaukavacharana* is going to be applied on *Vrana* then only surface should be cleaned with pure water.

2. *Pradhan karma*:- *Jalaukavacharana*-

The patient must be prepared as stated above. The *Jalauka* will be too much unctuous and *picchila* and soft and as a result it slips off from the hand. It is better to catch *Jalauka* either with the gauze or after wearing the rubber gloves. Then the *Jalauka* should be taken out of their receptacles and sprinkled over the cater. *Jalauka* attach to the skin by two muscular suckers before biting with three teeth inside their anterior suckers. Blood is sucked into the stomach by peristalsis. Each *Jalauka* will ingest nearly ten times its body weight before falling off. The middle portion of *Jalauka* is swollen, as soon as it starts sucking the blood. It sucks only impure blood first. If the patient notices the pain at the time of sucking the blood by *Jalauka*, it should be noted that the *Jalauka* is sucking the pure blood. It should be removed instantaneously by pouring *Saindhava Lavana* at its mouth.²⁴ If they slightly refuse to stick to the desired spot, then the affected part should be sprinkled over with drops of milk or blood. Otherwise other *Jalauka* should be applied. Even when the preceding measuring should prove ineffective.²⁵

Inference of Sucking:-

The *Jalauka* having stuck to the affected part may be inferred from the mouths of the *Jalauka* assuming the shape of horse claw and raised and arched position of their neck after they had attached to the seat of the disease. While sucking is started, the *Jalauka* should be constantly sprayed over with cold water.²⁶

Clinical finding of fresh sucking:-

Some *Jalauka* suck the fresh even after the vitiated blood is completed from the seat .In order to save the fresh blood and to know the same *Sushruta* has given some notable findings which

can be ascertained from the patient only , which are given below-

- Itching sensation on the seat of application.
- Pain at the seat of application.

This would give rise to the presumption that fresh blood is being sucked and the *Jalauka* forth with removed. *Vagbhata* has stated regarding the role of sucking of *Jalauka* giving an ideal example that the Swan only drinks the milk from the pot of milk mixed with water. The water is only left in the pot while the milk is received. It is its natural action.²⁷

Similarly the *Jalauka* have some power to suck the vitiated blood only, from the body.

Direction to remove the *Jalauka*:-

Some *Jalauka* refuse to fall off even after the appearance of the disease sign, sticking to affected part, out of their fondness for the smell of blood. They should be sprinkled with the dust of powdered *Saindhava*.²⁸ Then they would give up the sucking within a while, after that the post operative care should be taken for the *Jalaukas*.

***Paschat karma*:-**

It consists of two things-

1. Management of *Jalaukas*.
2. Management of Patients.

1. Management of *Jalaukas*:-

Management means for *Jalauka* means to expel out the sucked blood. Hence the following methods should be applied.

Method of emesis of sucked blood:-

After falling off the *Jalauka* should be dusted over with rice powder and their mouth should be lubricated with a composition of oil, common salt. Then they should be caught by the tail end with the thumb and the fore finger of left hand and their back should be gently rubbed with the same finger of the right hand from tail upwards

to the mouth with a view to make them eject the full quantity of blood, they had sucked from the seat of disease. This process should be repeated until they manifest the fullest symptoms engorging. Then *Jalauka* should be kept in a separate pot containing pure water.²⁹

Treatment of Patient:- Usually, the blood will not clot due to the property of anticoagulant “Hirudin”. As soon as the *Jalauka* is removed from the body of patient an application of Shatadhauta Ghrita should be applied on the wound, or pichu dipped Shatadhauta Ghrita should be kept on it. In case of improper letting by a *Jalauka*, the wound must rubbed with honey, and cold water or else it should be bandaged or astringent sweet, greasy and cold paste should be applied over the wound.³⁰

Inclusion criteria:

1. Patients irrespective of age, sex, occupation, were selected for the study.
2. Patients having clinical features of *Dushta Vrana* i.e. foul smell, pus discharge, pain, burning sensation and edema were selected for study.
3. The patients who were fit for *Jalaukavacharana* were included for study.

Exclusion criteria:

1. Patients suffering from systemic diseases like uncontrolled Diabetes mellitus, Tuberculosis etc. were excluded from the study.
2. Patients suffering from grave conditions like malignant ulcer and other severe illness like HIV, HbsAg were excluded.
3. The patients who were unfit for *Jalaukavacharana* were excluded.

Assessment criteria:

The assessment of the result is purely based on signs and symptoms (local) presented before and after the completion of the treatment. Objective parameters as Size of ulcer, Discharge, Foul smell, Granulation, Sloughing; and Subjective parameters as Pain, Burning sensation, Itching were used as assessment criteria. On the basis of degree of relief and condition of patient the clinical features of *Vrana* were assessed in the form of scores as follows:

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Table No. 2

S. No.	Objective parameters	Subjective parameters
1.	Size of ulcer	Pain
2.	Discharge	Burning sensation
3.	Foul smell	Itching

Table No. 3

PARAMETERS	NIL-0	MILD-1	MODERATE-2	SEVERE-3
Size of ulcer	Healed	Upto 4x4 cms	Upto 6x6 cms	More than 8x8 cms
Granulation tissue	More than 50% wound surface covered with granulation tissue.	25-50% wound surface covered with granulation tissue.	Upto 25% wound covered with granulation tissue.	No granulation tissue.
Slough tissue	No slough tissue.	Upto 25% wound surface covered with slough tissue.	25-50% wound surface covered with slough tissue.	More than 50% wound surface covered with slough tissue.
Pain	No pain	Localized pain during movement & not during rest	Localized pain during rest but no disturbed sleep due to it	Continuous pain
Discharge	No discharge	Scanty occasional	Often discharge with blood on dressing	Profuse, continuous
Smell	No smell	Bad smell	Tolerable unpleasant	Foul smell which is intolerable
Burning sensation	No Burning	Little localized and sometime felling of burning sensation	More localized and often burning sensation which does not disturb sleep	Continuous burning with disturbed sleep
Itching sensation	No itching	Slight, localized itching sensation which is relieved by rest	More localized and often itching but not disturbed sleep	Continuous itching with disturbed sleep

Investigations:-

1. Hb, TLC, DLC, ESR and RBS.
2. HIV.

3. Hbs Ag
4. Any other relevant investigation as per necessity.

Table No.4: Score of overall effect on result:

% Relief in clinical features	Overall results
100 %	Cured
<100%	Improved

Statistical analysis:-

All information which was based on various parameters was gathered and statistically analysis was carried out in terms of- Mean(X), Standard error (S.E.), ‘t’-test and finally results were ex-

pressed in terms of probability ‘p’ as Insignificant ($p > 0.05$), Significant ($p < 0.05$).

OBSERVATIONS AND RESULTS

Table 5: Age wise distribution of 30 patients of *Vrana*

Age (Years)	Group	%
21-30	6	20%
31-40	13	43.33%
41-50	6	20%
51-60	3	10%
61-70	2	06%
TOTAL	30	100%

Table 6: Sex wise distribution of 30 patients of *Vrana*

Sex	Group	%
Male	21	70%
Female	9	30%
Total	30	100%

Table 7: Occupation wise distribution of 30 patients

Occupation	Group	%
Farmer	9	30%
Labour	11	36.66%
Student	1	3.33%
Housewife	6	20%
Service	3	10%
Total	30	100%

Table 8: Addiction wise distribution of 30 patients of *Vrana*

Addiction	Group	%
Smoking	7	23.33%
Tobacco	4	13.33%
Alcohol	7	23.33%
No Addiction	12	40%
Total	30	100%

Table 9: Ulcer size wise distribution of 30 patients

Size of Ulcer	Group	%
4x4 cm	8	26.66%
6x6 cm	19	66.33%
8x8 cm	3	10%
Total	30	100%

Table 10: Education wise distribution of 30 patients

Education status	Group	%
Literate	17	50.00%
Illiterate	13	50.00%
Total	30	100%

Table 11: Marital status was distribution of 30 patients.

Marital status	Group	%
Married	27	86.66%
Unmarried	3	13.33%
Total	30	100%

Table 12: Religion wise distribution of 30 patients

Religion	Group	%
Hindu	29	96.66%
Muslim	1	3.33%
Total	30	100%

Table 13: Socio-Economic status 30 patients

Economical status	Group	%
LIG	20	66.67%
LMIG	10	33.33%
HMIG	0	0%
HIG	0	0%
Total	30	100%

Table 14: Diet wise distribution of 30 patients of *Vrana*.

Diet	Group	%
Veg	09	30%
Mix	21	70%
Total	30	100%

Table 15: Dwelling status wise distribution of 30 patients

Dwelling Status	Group	%
Rural	23	76.66%

Urban	07	23.33%
Total	30	100%

Table 16: Healing status wise distribution of 60 patient of Vrana

Healing status	Group	%
Completely healed ulcer	28	93.33%
Incompletely healed ulcer	2	06.66%
Total	30	100%

Table 17: Group (Effect of Therapy by Jalaukavacharana along with Jatyadi Ghrita):-

Symptoms	Mean score BT	Mean score AT	% Relief
Size of ulcer	1.83	0.10	96.17%
Discharge	2.36	0.03	98.22%
Foul Smell	2.06	0.03	98.54%
Pain	2.00	0.06	97%
Burning sensation	1.46	0.10	93.15%
Itching sensation	1.16	0.00	100%
Granulation tissue	2.76	0.06	97.82%
Slough tissue	2.63	0.06	97.71%

Table 18: Overall effect of Therapy:-

Result	Group	
	No of Patients	%
Cured	28	93.33%
Improved	02	06.67%
Total	30	100%

Table 19: Results

S. No	Symptom	Mean + SE	t value	p value	Remarks
1	Size of ulcer	1.73+0.095	18.23	< 0.05	Significant
2	Discharge	2.34+0.12	19.34	< 0.05	Significant
3	Foul Smell	2.03+0.15	13.10	< 0.05	Significant
4	Pain	1.93+0.15	12.79	< 0.05	Significant
5	Burning sensation	1.36+0.13	9.78	< 0.05	Significant
6	Itching sensation	1.16+0.12	9.14	< 0.05	Significant
7	Granulation tissue	2.70+0.085	31.73	< 0.05	Significant
8	Slough tissue	2.50+0.10	24.74	< 0.05	Significant

DISCUSSION

In classics it has mentioned that without Vrana Shodhana it is difficult to get Vrana Ropana. 93.33% patients showed complete healing within 45 days followed by 06.67% patients

with improved healing. The amazing effect might be due to of Jalaukavacharana followed by Jatyadi Ghrita application which was performed in Group.

INFERENCE:

Probable mode of action of *Jatyadi Ghrita*:-

For this study, patient of *Dushta Vrana* is treated with *Jatyadi Ghrita* which is mentioned in Astanga Hridaya and Bhaishajya Ratnavali for the treatment of *Vrana*. In classics *Jatyadi Ghrita* is indicated for *Dushta Vrana* and *Nadi Vrana*. Maximum dravyas of *Jatyadi Ghrita* have *Tikta Rasa, Katu, Vipaka, Laghu Guna, Ushna Veerya* and *Ruksha guna pradhanata*.

Tikta rasa has the property of *twak-mamsa sthireekarana* and *lekhana*. It may help in increasing tensile strength of *Vrana* and removing slough tissue. *Katu vipaka* has *Vrana Shodhana* and *avasadana* properties. Due to *Laghu guna* the *Vrana* gets *laghuta* and *dosha pachana* occurs. *Ushna Veerya* helps to penetrate the drug upto the site of *Vrana*. *Tutha* is one among the ingredients of *Jatyadi Ghrita*. It is having *lekhana karma* properties. So it may help in removal of slough. Even in current surgical practice copper sulphate is used in removing slough from the ulcers. *Siktha* is *Jantughna, Vrana Ropana* and *sandhaniya* properties.

Leech saliva contains following chemical substances which having above mentioned effect on *Dushta Vrana*. *Bdellins* is found to have anti-inflammatory action at the wound site. *Hyaluronidase* is found to have antibiotic property over the tissues. *Carboxypeptidase A* – inhibitors increase the blood flow at the wound site. *Histamin* and *Acetylcholine* like substances present in saliva of *Jalauka* are found to act as *Vasodilatation* on the smaller vessels over the site of application. All the properties like anti-inflammatory, antibiotic, *vasodilatation* increase blood flow and are very much helpful to heal a wound. All these properties are present in the

saliva of leech which helps in proper nourishment, oxygen supply and removing the toxic substances from the site of wound. May be because of these actions present in leech saliva Group B showed better results than Group where *Jatyadi Ghrita* was applied followed by *Jalaukavacharana*.

CONCLUSION

On applying the test over the observation, it was found that the result of *Jatyadi Ghrita* followed by *Jalaukavacharan* on all the parameters were significant. It showed that *Jatyadi Ghrita* followed by *Jalaukavacharan* significantly helped in reduction of the signs and symptoms of the *Dushta Vrana*, enhancing wound healing process and reducing the morbidity of the patients.

The present study is carried out in small numbers of subjects. Here we suggest further study to be conducted in large number of patients so as to get still more correct values.

The Materials and methods consist of broad distribution of total 30 patients according to their age, sex, complaints etc. They were treated with the *Jatyadi Ghrita* followed by *Jalaukavacharan*. The study was completed and their data related to the effect of therapy was plotted after statistical calculation.

The observations and results contains distribution of patients according to Age, Sex, Occupation, Education, Marital status, Religion, Socio-Economic status, Diet, Dwelling status, Healing status and results were discussed.

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