

MANAGEMENT OF DUSHTA VRANA BY JATYADI GHRITA

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ABSTRACT :

Background and objectives: Ulcer is a discontinuity, often excavation of skin exhibiting loss of epidermis and portion of the dermis and even subcutaneous fat. Under normal physiological condition healing is inevitable. The process of healing is divided in to four phases' viz. hemostasis, inflammation, proliferation and remodeling. Among various factors affecting process of healing oxygenation, infection, age and sex hormones, stress, diabetes, obesity, medications, alcoholism, smoking, and nutrition of which infection is our prime concern. *Vrana* stated in *Ayurveda* simulates Ulcers or wound; which may get converted in to *Dushta Vrana* i.e. infectious or complicated wound in due course of time. Precise management of *Dushta Vrana* has been described in various *Ayurvedic* texts. Many formulations are in use for centuries. One of these is a poly herbal drug *Jatyadi Ghrita*. The objective of the present study is to evaluate the effect of *Jatyadi Ghrita* on the basis of relief in signs and symptoms of *Dushta Vrana*.

Methods: The effect of *Jatyadi Ghrita* was studied on 30 patients of *Vrana* on the basis of relief obtained on subjective and objective parameters and assessing the result applying paired t-test & percentage of relief on the signs and symptoms of *Dushta Vrana*. Duration of the Study was 45 days; initially daily dressing done for one week and next 38 days weekly dressing was done followed by regular 2 months follow up was done.

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 by applying paired t-test .

Conclusion: It showed that *Jatyadi Ghrita* significantly helped in reduction of the signs and symptoms of the *Dushta Vrana*, enhancing wound healing process and reducing the morbidity of the patients.

Keywords: *Dushta vrana*, *Jatyadi ghrita*, oxygenation, remodeling, paired t-test, Ulcer, *Vrana*

INTRODUCTION: *Shalya Tantra* is one of the important branches of *Ayurveda* in which surgical and parasurgical techniques have been described for management of various surgical diseases. *Dushta Vrana* is one of them 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. Thus, description of

Vrana is found in most of literature related with human health. The earliest reference of Vrana is found in Vedic literature in context of injuries. 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 is known for excellence in surgical procedures. He 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. Every aspect about Vrana is described very beautifully and coherently.

Acharya Sushruta has scientifically classified Vrana as traumatic wounds², *Shuddha Vrana*³, *Nadi Vrana*⁴, *Sadhya Vrana*⁵, *Dagdha Vrana*⁶ etc., their prognostic evaluation and management in the form of sixty *upakramas*⁷. Ayurvedic treatises have classified the Vrana as *Nija Vrana* and *Aagantuja Vrana*.^{11, 12, 13} It is further classified into 16 sub-types (15 *Doshaja Prakara* + 1 *Shuddha Vrana*³)

Sushruta has classified Vrana on the basis of characteristics like *Aakriti*, *Shabda*, *Dosha*, *Varna*, *Suchikitsya* (*Aayata*, *Chatusara*, *Vritta*, *Triputaka*)¹⁴ *Durchikitsya* (*Shakti*, *Dhwaja*, *Ratha*, *Kunta*, *Vaji*, *Varana*, *Gau*, *Vrisha*).

Dushta Vrana Lakshana: *Durgandhita*, *Pooyayukta*, *Atipooyasrava*, *Utsangi*, *Chirkali*, *Dooshita*, *Atigandha Varna*-

Srava, *Vedanayukta*, *Suddha lakshanaviparita*.¹⁵

Suddha Vrana Lakshana³: *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 subcutaneous 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*.

The goal of the study is to increase our basic understanding of wound healing at the molecular and cellular levels, 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* and its role in the management of *Dushta Vrana*.

MATERIAL AND METHODS: This study was carried out at Shivayogeeswar Rural Ayurvedic Medical College and Hospital, Inchal and patients were treated with *Jatyadi Ghrita*. Sample size of 30 patients was taken for the convenience of study.

Procedure: Normal saline was used to achieve local hygiene. Dressing was done by gauze dipped in *Jatyadi Ghrita* as to keep the *Vrana* moist and to help in healing process by virtue of its ingredient drugs with following properties:

- Capable of good *Vrana Shodhana* and *Vrana Ropana* properties.

- Capable of increasing granulation tissue and thus enhancing wound healing.
- Easily available.
- Cost effective.

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* was analysed using paired t-test & percentage of relief on the signs and symptoms of *Dushta Vrana*.

CONTENTS OF "JATYADI GHRITA"¹⁹

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

Method of Preparation of *Jatyadi Ghrita*

Preparation of *Kalka*: Washed green leaves of ingredients *Jati patra*, *Nimba patra* and *Patola patra* of the formulation composition were taken in *Khalwa Yantra* and *kalka* was prepared (paste).

Preparation of *Kwatha*: Decoction was prepared according to *Sharangdhara*

Samhita's (Ma.Kh.) by mixing coarse powder (Content No 4-11) of the drugs with water in the ratio of 1:16. The mixture was then heated at medium temperature, till it reduces one eighth of its original quantity.

***Ghrita paka*:** *Murcchita Ghrita* was taken in clean wide mouthed stainless steel

vessel. The vessel was placed over mild fire till *Ghrita* becomes hot. Then above prepared *Kalka* and the prepared *Kwatha* were added in the *ghrita*. In *Sharagdhara Samhita* the ratio of *Kalka*, *Ghrita* and *Kwath* is mentioned as 1:4:16. *Ghrita* was prepared on mandagani for about three hours and with constant stirring till the froth was subsided and *Ghrita Siddha lakshana* was checked.

Ghrita was filtered using white muslin cloth and small pieces of *siktha* were added. The *Ghrita* was measured and packed in a tightly closed airtight sterile glass container to protect from light and moisture.

Inclusion Criteria:

1. Patients irrespective of age, sex, occupation, were selected for the study.
2. Patients having clinical features of *Nija/Agantuja Dushta Vrana* i.e. foul smell, pus discharge, pain, burning

sensation and edema were selected 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.

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:

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

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.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5



Fig. 6



Fig. 7

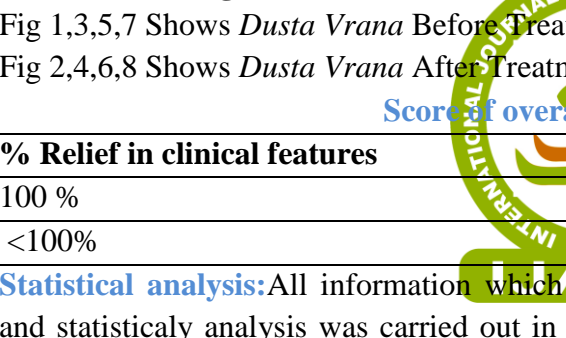


Fig. 8

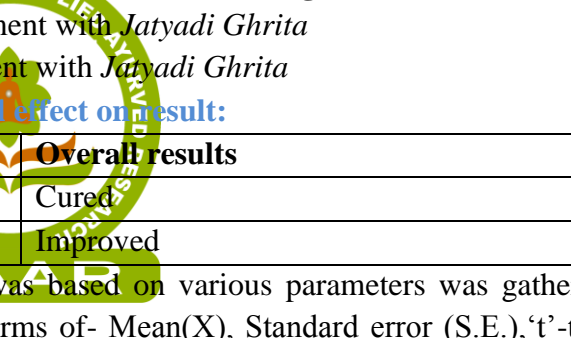


Fig 1,3,5,7 Shows *Dusta Vrana* Before Treatment with *Jatyadi Ghrita*
 Fig 2,4,6,8 Shows *Dusta Vrana* After Treatment with *Jatyadi Ghrita*

Score of overall effect on result:

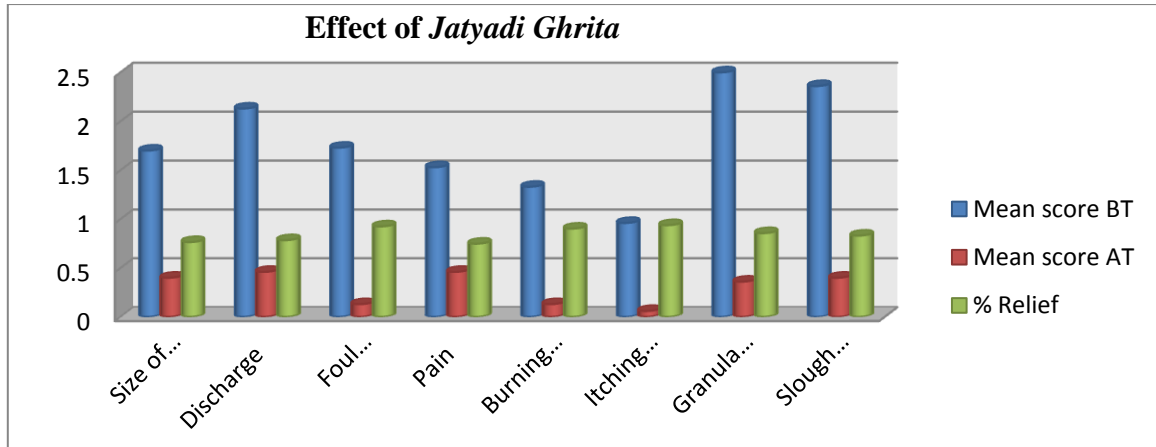
% Relief in clinical features	Overall results
100 %	Cured
<100%	Improved

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 expressed in terms of probability "p" as Insignificant ($p > 0.05$), Significant ($p < 0.05$).

OBSERVATIONS AND RESULTS:

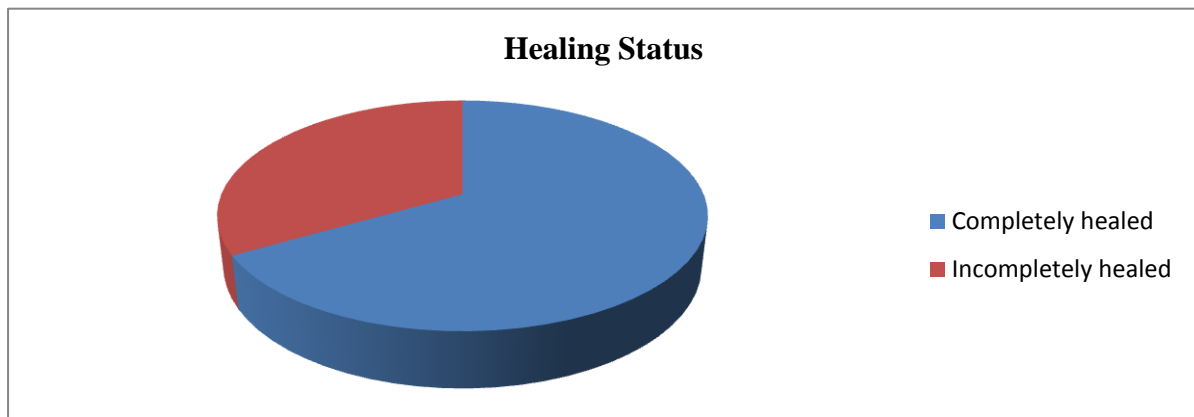
Effect of therapy by *Jatyadi Ghrita* on various parameters

Symptoms	Mean BT	Mean AT	Relief
Size of ulcer	1.7	0.4	76.47%
Discharge	2.13	0.46	78.40%
Foul smell	1.73	0.13	92.48%
Pain	1.53	0.46	74.82%
Burning sensation	1.33	0.13	90.22%
Itching sensation	0.96	0.06	93.75%
Granulation	2.50	0.36	85.60%
Slough tissue	2.36	0.40	83.05%



Healing status wise distribution of 30 patients

Healing status	Group-A	%
Completely healed ulcer	20	80%
Incompletely healed ulcer	10	20%
Total	30	100%



STATISTICAL RESULT:

S. No	Symptom	Mean + SE	t value	p value	Remarks
1	Size of ulcer	1.3 + 0.085	15.28	< 0.05	Significant
2	Discharge	1.66+0.15	10.81	< 0.05	Significant
3	Foul Smell	1.6+ 0.15	10.25	< 0.05	Significant
4	Pain	1.06 + 0.09	11.25	< 0.05	Significant
5	Burning sensation	1.2+0.12	9.84	< 0.05	Significant
6	Itching sensation	0.9+0.1	9.00	< 0.05	Significant
7	Granulation	2.1+0.14	14.26	< 0.05	Significant
8	Sloughing	1.9+0.14	13.32	< 0.05	Significant

DISCUSSION: In classics it has mentioned that without *Vrana Shodhana* it is difficult to get *Vrana ropana*. *Jatyadi Ghrita* significantly helped in reduction of the signs and symptoms of the *Dushta*

Vrana, ultimately creating an atmosphere to enhance wound healing process.

Discussion on predisposing factors:In present study, the patients irrespective of age were included where maximum

numbers of patients were from the age group of 31-40 years.

The possible cause for increased incidence of wounds in this age group may be because of high exposure to changing external environment.

73.33% of the patients were males in the sample; this only indicates a sampling variation due to the small size of the sample.

83.33 % of the patients were married which has no relation with the causation or predisposition to the illness of *Dushta Vrana*. 96.67% of the patients in this sample were Hindus and 3.34% were Muslims. The high incidence of illness in Hindu is merely a demographic distribution and doesnot predict anything.

68.34% of patients belonged to lower income grade; inadequate health care and low income may be contributory in the causation of illness.

65% of the patients registered in this study had mixed dietary habit. Vegetarian and mixed dietary habit may have no role in predisposing the illness *Dushta Vrana*.

36.66% of patients were labours; labour work and low income may be contributory in causing illness. 46.66 % of the patients recorded in this study were illiterate; less awareness of hygiene and inappropriate treatment after the trauma causes *Dushta Vrana*.

11.67% patients were addicted to tobacco chewing and 25% had addiction to smoking; Addiction to smoke and alcohol hinderance in the wound healing due to hampered vasoconstrictor, angiogenesis & fibroplasias the important stages of proliferative phase of wound healing.

81.67% of patients belonged to rural area; inadequate health care, low

income and due to field work may be contributory in causing illness.

Discussion on therapeutic effects of medication and procedure:The response to the application of *Jatyadi Ghrita* was analysed on various subjective and objective parameters by applying paired t-test. By adapting standard methods, the subjective symptoms and objective signs are scored. Patients were assessed before and after treatment to know the favourable response.

Effect on Size of Ulcer: The mean grade of Size of Ulcer was reduced from 1.7 to 0.4. Difference in means after treatment was 1.3, mean \pm SE was 1.3 ± 0.085 and 'p' value was < 0.05 which showed it is significant statistically.

Effect on Discharge: Noticeable remission in severity of Discharge was observed in patients treated with *Jatyadi Ghrita* where the mean difference was 1.67 & relief of percentage was 78.40% after the treatment, mean \pm SE 1.66 ± 0.15 and 'p' value was < 0.05 which showed it's significant statistically.

Effect on Foul Smell: Noticeable remission in severity of Foul Smell was observed in patients treated with *Jatyadi Ghrita* where the mean difference was 1.6 & relief of percentage was 92.48% , mean \pm SE 1.6 ± 0.15 and 'p' value was < 0.05 which showed it's significant statistically.

Effect on Pain: Noticeable remission in severity of Pain was observed in patients treated with *Jatyadi Ghrita* where the mean difference was 1.07 & relief of percentage was 74.82%, mean \pm SE 1.06 ± 0.09 and 'p' value was < 0.05 which showed it's significant statistically.

Effect on Burning sensation: The Burning sensation reduced in patients treated with *Jatyadi Ghrita*. The burning

sensation showed a reduction by 1.2 and the change observed before and after the treatment is statistically significant. mean \pm SE 1.2 \pm 0.12 and 'p' value was <0.05 which showed it's significant statistically.

Effect on Itching sensation: An assessment states that itching sensation on patients of Dushta Vrana was 0.96 and 0.06 before and after treatment respectively, mean \pm SE 1.2 \pm 0.12 and 'p' value was <0.05 which showed it's significant statistically.

Effect on Granulation tissue: The mean score of Granulation tissue was observed from 2.5 to 0.36. Difference in means after treatment was 2.14, mean \pm SE 2.1 \pm 0.14 and 'p' value was <0.05 which showed it's significant statistically.

Effect on Slough tissue: The mean grade of Slough tissue was reduced from 2.36 to 0.40. Difference in means after the treatment was 1.96, mean \pm SE 1.9 \pm 0.14 and 'p' value was <0.05 which showed it's significant statistically.

Discussion on overall effect of the therapy: It was noticed that in Group A, maximum 66.37% were cured by complete healing occurred within 45 days and improved cases were 33.33%.

It is very clear from the above discussion that the present study (both group) has a definite role in the management of *Dushta Vrana* statistically.

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.

The Constituents of the *Jatyadi Ghritas* property action are mentioned below:-

Goghrita is having the property of *Sheeta Veerya*, *Madhura Rasa* & *Tridoshahara*. *Goghrita* has *Samskara anuvartana* property. Through *yogavahi guna* it carries the active principle of the drugs at the level of body tissue.

As *Jatyadi Ghrita* includes the drugs which possess both *Shodhana* and *Ropana* qualities it helps in proper healing of *Dushta Vrana*.

CONCLUSION: On applying Paired t-test, it was found that the result of *Jatyadi ghrita* was found significant on parameters taken for study viz. size of ulcer, discharge, foul smell, pain, burning sensation, itching sensation, granulation tissue and slough tissue. *Jatyadi Ghrita* 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*. 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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Declared

