

A COMPARATIVE CLINICAL STUDY ON THE EFFECT OF JATYADI TAILA IN VARICOSE ULCER AND DIABETIC ULCER

Satheesh V Dev¹, Shailaja S V², Vishwanath Sharma³

¹P.G. Scholar, ²Professor & H. O. D, ³Lecturer

Dept. of P.G. Studies in Shalya Tantra, SKAMCH & RC, Bangalore, Karnataka, India

ABSTRACT

Vrana is a very common problem encountered by medical practitioners. Healing of *vrana* is a natural process, but due to interference of vitiated *doshas*, *vrana* becomes *dushta* and normal healing gets delayed. *Dushta vrana*, being a chronic ailment causes long-term suffering and needs some effective treatment. This condition has been recognized as difficult to treat both in Modern and Ayurveda. A clean wound in normal body heals earlier with minimum scar as compared to contaminated wound. Therefore in present study all efforts are directed to keep the wound clean and to promote healing. *Sushruta*, *Vagbhata* and *Charaka* have mentioned the *lakshanas* of *Dushta vrana* along with its *chikitsa*. In the management of *vrana*, *Acharya Susruta* has mentioned 60 different *upakramas* for *vrana*, *Taila upakrama* is one among them for *shodhana* and *ropana*. The objective of the study was to evaluate the effect of *Jatyadi taila* in the management of *Dushta vrana* w.s.r to Diabetic ulcer and varicose ulcer. Clinically diagnosed 10 patients of *Varicose ulcer* and *Diabetic ulcer* were selected and treated with *Jatyadi taila* application. The study revealed that both group showed highly significant results.

Key words: *Dushta vrana*, *Jatyadi taila*, *Vrana upakrama*, Diabetic ulcer,

INTRODUCTION

The knowledge about the wound was known to man since antiquity. Treatment of wounds is probably the first medical problem faced by the human being. Frequency of injuries is more often than any other diseases.

Healing of *vrana* is a natural process, but due to interference of vitiated *doshas*, *vrana* becomes *dushta* and normal healing gets delayed. The presence of *Dushta vrana* worsens the condition of the patient's psychological and physical state to a greater extent. *Dushta vrana*, being a chronic ailment causes long-term suffering and needs some effective treatment. This condition has been recognized as difficult to treat both in Modern and *Ayurveda*.

Dushtavrana can be considered as chronic non healing ulcers like venous ulcer, diabetic ulcer, arterial ulcer or infected ulcers can be considered. Chronic venous ulcer is 5 to 7times common than arterial ulcer. Its overall prevalence was given 0.18% and mainly reported in women in western countries. The incidence may be more in our country as here patient do not seek early medical advice because of limb covering apparel, scanty financial resources and disregard for disfigurement of limb. Diabetic foot ulcer is a major complication of diabetes mellitus, and probably the major component of the diabetic foot. It occurs in 15% of all patients with diabetes and precedes 84% of all lower leg amputations.

In diabetes slight injury to the glucose laden tissue may cause chronic infection and ulcer formation¹. Ulceration in diabetes may be precipitated by ischaemia due to diabetes atherosclerosis, infection or polyneuritis. The toes are commonly affected.

Venous ulcer² is the commonest ulcer of the leg. It is also called gravitational ulcer. Precipitating factors are venous stasis and tissue anoxia. Deep vein thrombosis also an important cause of venous ulcer where in valves is either destroyed or incompetent due to damage. Sustained venous pressure results in extravasation of cells, activation of capillary endothelium resulting in release of free radicals. These free radicals cause tissue destruction and ulceration. The basic cause venous ulcer is abnormal venous hypertension in lower third of the leg, ankle and dorsum of the foot. Typically ulcers are situated just above the medial malleolus, are oval, superficial with pigmentation all around, the dilated veins above the ulcer gives the clue to diagnosis.

Shalya tantra an ancient Indian surgery gives more importance to different kind of wounds and their management. While explaining the scope of *Shalya tantra*, *Sushruta* has mentioned *Vrana Vinishcayartham*³ (management of different kinds of ulcer) as a major part of *Shalya tantra*. The concepts and principles of *vrana* such as causes, classification, examination, treatment, bandaging, complications etc told by *Acharya Sushruta* remain unchanged in this 21st century also. *Ayurveda* the age old and holistic system of medicine offers various tools for management of *Dushtavrana*. The conditions have changed over the period of time along with advanced technologies but the basic principles remain same.

In *Sushruta Samhita* the detailed management of ulcers, encompassing 60 upakramas⁴ covering all aspects from the points of its occurrence to its total healing is mentioned. *Taila* is one among them for *shodhana* and *ropana*⁵. Other *upakramas* are mentioned for *shodhana* and *ropana* are *Kashaya*, *Varti*, *Kalka*, *Sarpi*, *Rasakriya* and *Avachurnana*⁶. Among these *tailaupakrama* has its own specific indications in the management of *vrana*. In *Sharangadhara Samhita Madhyamakhandha Jatyadi taila*⁷ has been mentioned in *vishaktavrana*, *sadhyovrana* etc for the purpose of *shodhana* and *ropana*. It contain the drugs possessing *shodhana* and *ropana* properties thus considered as the good measures for local treatment of *Dushta vrana*.

AIMS AND OBJECTIVES

- To evaluate the efficacy of Jatyadi taila application in the Management of Diabetic ulcer and Varicose ulcer.
- To compare the efficacy of Jatyadi taila application in the management of Diabetic ulcer and varicose ulcer.

MATERIALS AND METHODS

Sampling:

The present study was performed on selected patients a

DIAGNOSTIC CRITERIA

Patient with signs and symptoms of Diabetic ulcer and Varicose ulcer having a chronicity of minimum 4 weeks.

INCLUSION CRITERIA

- Patients having signs and symptoms of Diabetic ulcer and varicose ulcer.
- Patients of either sex will be taken.
- Ulcer occurring in extremities.
- Patients aged between 20-70 years.

EXCLUSION CRITERIA

- Ulcer occurring in other than extremities.
- Other systemic diseases interfering with the course of the study.

RESEARCH DESIGN:

It is a single arm open clinical study. A special case performa containing all the necessary details pertaining to the study was prepared. The data obtained from the group was recorded, tabulated, and statistically analyzed using **paired t test** within the group and **unpaired t test** between the groups.

METHODOLOGY

The ingredients and pharmacological action of *Jatyadi taila* is mentioned in table no 1.

- Dressing done by using *Jatyadi taila* daily.

After wearing sterile gloves the wound was carefully examined and slough, pus discharge etc were cleaned with sterile gauze. Then *vrana prakshalana* done with *panchavalka kashaya* and *Jatyadi taila* was applied to sterile gauze and placed it over the wound and bandaging done. The quantity of taila was depending on the size of the vrana.

The bandaging is done to prevent the contamination from surrounding area and to protect the part from external trauma and to keep the medicament on the lesion for longer duration. Depending upon the quantity of oozing and odor dressing was done either daily or twice in a day and it was continued for a maximum of 21 days. The follow up was done one week after the treatment.

DURATION OF TREATMENT

The duration of treatment was for maximum of 3 weeks.

OBSERVATION PERIOD:

The changes in the ulcer were observed once in a week as per case performa.

FOLLOW UP PERIOD– One week

ASSESSMENT CRITERIA

The patient's responses were assessed on the basis of subjective and objective criteria by assigning the suitable score to each parameter. The method

adopted for scoring was given in table no:2. The subjective parameters of pain, burning sensation, itching, smell and objective parameters of size, tenderness, discharge, granulation tissue formation were recorded on the basis of score adopted with grading (0,1,2,3). After completion of treatment, assessment of scar was done on the basis of gradation (0,1,2,3).

OBSERVATION AND RESULTS:

The overall observation in the present study revealed that the maximum of patients belonged to the age group of 51-70 years (80 %). Maximum patients were males (85%), 75% of the patients are Hindus, 50% of the patient belonged to lower middle class, 70% of the patients were having mixed food diet and 70 % patients were having wound chronicity between 1-3 months.

Table no 3 & 4 shows the effect of therapy on different signs and symptoms in patients of Group A and Group B respectively. *Jatyadi taila* shows significant results in the management of both varicose ulcer and diabetic ulcer. But in group B patients shows comparatively better result than group A. Thus *Jatyadi taila* is showing better result in the management of varicose ulcer than diabetic ulcer.

Mode of Action of Jatyadi Taila:

Most of the ingredients of *Jatyadi taila* are having *tikta, kashaya rasa* and *laghu,ruksha gunas*. *Kashaya rasa* does *shoshana* and hence helps in *vrana-ropana*. *Tikta rasa* does *twak –mamsa shtireekarana & lekhana*, it might help in increasing tensile strength of the wound. *Katu Rasa* has *vrana shodhana & avasdana* properties.

Tutha: It is one among the ingredients of *Jatyadi taila*, having *lekhana karma*. Even in current surgical practice copper sulphate is used in the removal of slough. *Tila taila* helps in reaching the

minute channels by means of its *sookshma*, *vyavayi*, *vikasi gunas* and helps in reducing *vedana*. As *Jatyadi taila* includes the drugs which possess both *shodhana & ropana* qualities it helps in proper healing of *vrana*.

DISCUSSION

After the overall analysis of the drug *Jatyadi taila* it is inferred that because of *tikta rasa* all the drugs *Jati*, *Nimba*, *Patola*, *Naktamaala*, *Siktaka*, *Madhuka*, *Kusta*, *Haridra*, *Dhaaruharidra*, *Katurohini*, *Manjistha*, *Padmaka*, *Lodhra*, *Abhaya*, *Nilotpala*, *Tutha*, *Saariva*, *Taila (Tila)* are having *Vrana Shodhana*, *Ropana*, *Pootihara*, *Vedana Sthapana*, *Tridoshagna* action which are directly helping in wound healing. The severity of *vedana* is mainly due to *vata dosha*. *Tila taila* is the base of *Jatyadi taila* which has *vata hara* property. Among the ingredients of *Jatyadi taila*, *Daru haridra* and *Padmaka* have *vedana sthapana* property and *Patola*, *Jati*, *Katuki*, *Lodra*, *Sariva* has *daha shamana* and *shotha hara* properties and thereby reduces the *daha*. Among the ingredients of *Jatyadi taila*, *Patola*, *Naktamala* have *kandughna* properties and *haridra* have *durgandha hara* action which helps to remove foul smell. The ingredients of *Jatyadi taila* like *Jati*, *Kushta*, *Padmaka*, *Daru haridra*, *Lodra* having *kashaya*, *tikta rasa*, *lekhana*, *kleda shoshana* properties and hence reduces *srava*. Adding to these properties Salicylic acid present in *Jati* is antibacterial, antifungal, antiviral and anti-inflammatory etc. Glycyrrhizin of *Madhuka* is having wound healing property. Curcumin is present in *Haridra* and it is also anti inflammatory, antiseptic, antibacterial and antimicrobial etc. *Lekhana karma* and *shulahara* property of *Shodhita Tutha* ($\text{CuSO}_4 \cdot 7\text{H}_2\text{O}$) helps in wound debridement and relieving the pain in wound site. By promoting the

angiogenic property *Tutha* helps in wound healing. Sesamolol.7- tocopherol is antioxidant and present in sesame oil provides better results in tissue injury. Sesame oil acts as good vehicle in bringing out pharmacological actions of other ingredients in the formulation. In this way all the drugs which were used for the clinical trials are contributing for the cleansing and healing of wound. This may be the reason that *Jatyadi taila* has shown significant cleansing and healing effect on the patients of Varicose ulcer and Diabetic ulcer, which is a significant finding. However the diabetic ulcer shown comparatively less healing than Varicose ulcer. This may be due to the presence of glucose laden tissue which delays the healing and basic pathology of the varicose ulcer can be reduced by keeping the leg in elevated position. This can be the reason for better result in varicose ulcer group.

CONCLUSION

Dushta vrana can be understood as non-healing chronic ulcers and contaminated wounds in view of the contemporary science. *Jatyadi taila* showed significant results on the subjective and objective parameters such as *vrana vedana*, *kandu*, *daha*, *gandha*, *srava*, reduction in the size of the *vrana*, tenderness and granulation tissue formation. By the virtue of *shodhana*, *kleda shoshana*, *lekhana*, *krimihara* properties and *Jatyadi taila* do *vrana shodhana* actions. By virtue of *vrana ropana* action *Jatyadi taila* does the wound healing. *Jatyadi taila* helps to achieve *vrana shodhana* and facilitate wound debridement. The drug initially acts as a debriding agent-removing slough and necrotic tissues and form granulation tissue leading to healing of ulcer. On the basis of the observation and results from the present study it can be concluded that in case of *Jatyadi Taila* is having good wound

healing property and it shows better healing in Varicose ulcer compared to Diabetic ulcer.

Table: 1 Ingredients and pharmacological action of Jatyadi taila

Dravya	Latin name	Part used	Rasa	Guna	Virya	Vi-paka	Karma
1.Jati	<i>Jasminum grandiflora</i>	Pathra	Tikta, Kashaya	Laghu, Snigdha, Mridu	Ushna	Katu	Vranaropana, Vedanastapana
2.Nimba	<i>Azadirachta indica</i>	Pathra	Tikta, Kashaya	Laghu	Sheeta	Katu	Krimighna kushtaghna Vranaropana Vranashodhana
3.Patola	<i>Trichosanthes cucumerina</i>	Pathra	Tikta	Laghu, Ruksha	Ushna	Katu	Kandughna
4.Naktamala	<i>Pongamia pinnata</i>	Pathra	Tikta, Katu, Kashaya	Laghu, Tikshna	Ushna	Katu	Kanduhara Twakdoshahara
5.Siktha (bee wax)	Wax	Madhuchista	Kashaya, Madhura	Guru, Snigdha	Sheeta	Katu	Vrana ropana, Sandhanakara, Bhutagna
6.Yastimadhu	<i>Glycyrrhiza glabra</i>	Moola	Madhura	Guru, Snigdha	Sheeta	Madhura	Dahashamaka, Vedanastapana
7.Kusta	<i>Saussurea lappa</i>	Moola	Tikta, Katu, Madhura	Laghu, Ruksha, Tikshna	Ushna	Katu	Twachaya, Vishaghna
8.Haridra	<i>Curcuma longa</i>	Kanda	Tikta, Katu	Ruksha, Laghu	Ushna	Katu	Varnya, Raktastambhaka, Vranashodana
9.Daru haridra	<i>Berberis aristata</i>	Kanda	Kashaya	Laghu, Ruksha	Ushna	Katu	Shothahara, Vedanastapana
10.Katurohini	<i>Picrorrhiza kurroa</i>	Kanda	Tikta	Ruksha, Laghu	Sheeta	Katu	Raktashodhaka Dahaprashamana, Shothahara
11.Manjistha	<i>Rubia cordifolia</i>	Kanda	tikta, kashaya, madhura	Guru, Rooksha	Ushna	Katu	Stambhana, Sothaghna
12.Padmaka	<i>Prunus cerasoides</i>	Kanda sara	Kashaya, Tikta	Laghu	Sheeta	Katu	Varnya, Raktastambaka
13.Lodhra	<i>Symplocos</i>	Tvak	Kashaya	Laghu, Ruksha	Sheeta	Katu	Shothahara, Raktastamb-

	<i>racemosa</i>						<i>haka Varnya, Vishaghna, Dahaprashamana</i>
14.Abhaya	<i>Terminalia chebula</i>	<i>Phala</i>	<i>Pancha rasa (Lavanavarjita)</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Shothahara, Vedanastapana, Vranaropana</i>
15.Nilotpala	<i>Nymphaea stellata</i>	<i>Puspa</i>	<i>Madhura, Kashaya, Tikta</i>	<i>Laghu, Snigdha, Pichhila</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Pittashamaka</i>
16.Shodhita Tutthaka	<i>Blue vitriol (CuSO₄.7 H₂O)</i>	<i>Mineral</i>	<i>Kashaya</i>	<i>Guru</i>	<i>Ushna</i>	<i>Katu</i>	<i>Shulahara</i>
17.Sariva	<i>Hemidesmus indicus</i>	<i>Moola</i>	<i>Madhura, Tikta</i>	<i>Guru, Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Shothahara</i>
18.Naktamala bija	<i>Pongamia pinnata</i>	<i>Beeja</i>	<i>Tikta, Katu, Kashaya</i>	<i>Laghu, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Bhedana, Pittavardhaka, Krimihara, vranashothahara</i>
19.Tila	<i>Sesamum indicum</i>	<i>Tila taila</i>	<i>Madhura, Kashaya</i>	<i>Guru, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>MedoLekhaniya, Stroto-Shuddhikara</i>

Table: 2 PARAMETERS FOR THE ASSESSMENT OF ULCER

PAIN	
0	No pain
1	Localized feeling of pain during movement, but tolerable.
2	Localized feeling of pain which restrict movement.
3	Localized feeling of pain during rest
BURNING SENSATION	
0	No burning sensation.
1	Intermittent burning sensation.
2	Continuous burning sensation not disturbing sleep.
3	Continuous burning sensation disturbing sleep.
ITCHING	
0	No itching.
1	Slight localized itching sensation.
2	More localized itching sensation but not disturbing sleep.
3	Continuous itching disturbing sleep.
SMELL	

0	No Smell.
1	Unpleasant smell
2	Foul smell but tolerable.
3	Foul smell which is intolerable
SIZE	
A sterile gauze is placed over the ulcer and the impression is directly measured.	
0	Healed completely.
1	Reduced 2/3 rd the size.
2	Reduced 1/3 th size.
3	Size before treatment.
TENDERNESS	
0	No tenderness.
1	Tenderness palpating with finger.
2	Tenderness after palpating with pressure.
3	Tenderness on touch with soft object.
DISCHARGE	
0	No discharge.
1	The gauze is slightly moist.
2	The bandage moist completely within 24 hours but not need to change.
3	The bandage moist completely within 12 hours and bandage need to be changed.
GRANULATION TISSUE	
0	Healthy granulation
1	Moderate granulation
2	Unhealthy granulation
3	No granulation

Table 3: Effect of therapy on different signs and symptoms in patients of Group A

Parameter	Mean Score		% re-lief	SD	SE	t - Value	p- Value	Remarks
	BT	AT						
Pain	2	0.1	95	0.83	0.26	7.22	<0.001	HS
Itching	1.2	0.1	92	1.04	0.33	3.2	<0.001	HS
Burning Sensation	1.9	0.1	95	0.87	0.28	6.5	<0.001	HS
Size	3	0.5	83	0.67	0.21	11.77	<0.001	HS
Smell	1.9	0.2	90	0.45	0.14	11.72	<0.001	HS
Discharge	2.5	0.3	88	0.4	0.13	17.38	<0.001	HS
Tenderness	18	0.1	94	0.78	0.25	6.87	<0.001	HS
Granulation Tissue	2.9	0.2	93	0.45	0.14	18.61	<0.001	HS

Table 4: Effect of therapy on different signs and symptoms in patients of Group B

	Mean Score	% re-	SD	SE	t -Value	p-Value	Remarks
--	------------	-------	----	----	----------	---------	---------

Parameter	BT	AT	lief					
Pain	2.7	0	100	0.48	0.15	17.6	<0.001	HS
Itching	1.4	0	100	1.07	0.34	4.11	<0.001	HS
Burning Sensation	2.3	0	100	0.48	0.15	15.04	<0.001	HS
Size	3	0.1	97	0.31	0.1	28.19	<0.001	HS
Smell	1.3	0	100	0.94	0.3	4.3	<0.001	HS
Discharge	2	0	100	0.26	0.1	18.9	<0.001	HS
Tenderness	2.4	0	100	0.52	0.16	14.88	<0.001	HS
Granulation Tissue	2.5	0	100	0.53	0.17	14.99	<0.001	HS

REFERENCES

1. Somen Das, A concise text book of surgery, 8th edition. kolkata, 2012,chapter 1,pp 1358, pg : 127
2. Somen Das, A A concise text book of surgery, 8th edition. kolkata, 2012,chapter 1,pp 1358, pg : 129
3. Sushruta, Sushruta Samhita with Ni-bandha sangraha commentary of Sri Dalhanacharya. edited by Vaidya Yadavaji Trikamji Acharya, Chaukambha Surabharati Prakashan, Varanasi, Reprint – 2010, Sutra Sthana, Chapter- 1 Verse-6, pp-824, pg- 4.
4. Sushruta, Sushruta Samhita with Ni-bandha sangraha commentary of Sri Dalhanacharya. edited by Vaidya Yadavaji Trikamji Acharya, Chaukambha Surabharati Prakashan, Varanasi, Reprint – 2010, Chikitsa Sthana, Chapter-1, Verse-8, pp-824, pg- 397.
5. Sushruta, Sushruta Samhita with Ni-bandha sangraha commentary of Sri Dalhanacharya. edited by Vaidya Yadavaji Trikamji Acharya, Chaukambha Surabharati Prakashan, Varanasi, Reprint – 2010, Chikitsa Sthana, Chapter-1, Verse-9, pp-824, pg- 397.
6. Sushruta, Sushruta Samhita with Ni-bandha sangraha commentary of Sri Dalhanacharya. edited by Vaidya Yadavaji Trikamji Acharya, Chaukambha Surabharati Prakashan, Varanasi, Reprint – 2010, Chikitsa Sthana, Chapter-1, Verse-53-73, pp-824, pg- 401.
7. Sarngadhara, Sharangadhara Samhitha, by Prof. K.R Sreekantha Murthy, Published by Chaukhambha Orientalia,Varanasi.2010,Madhyama khanda, Chapter 9, Verse 168-171, pp -336 ,pg- 132.

CORRESPONDING AUTHOR

Dr. Satheesh V Dev

P.G. Scholar, Dept. of P.G. Studies in Shalya Tantra, SKAMCH & RC, Bangalore, Karnataka, India

Email: satheeshvdev@gmail.com

Source of support: Nil
Conflict of interest: None Declared