



## Research Article

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### CLINICAL STUDY ON DOORVADI TAILA IN MANAGEMENT OF DUSHTA VRANA

Jetesh Ray <sup>1\*</sup>, Richa Singh <sup>2</sup>, Gopikrishna BJ <sup>3</sup>, Avnish Pathak <sup>4</sup>, Prasanna N Rao <sup>5</sup>

<sup>1</sup>PG Scholar, Department of Shalya Tantra, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan-573201, Karnataka, India

<sup>2</sup>PG scholar, Department of Kayachikitsa, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan-573201, Karnataka, India

<sup>3</sup>Professor and HOD, Department of Shalya Tantra, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan-573201, Karnataka, India

<sup>4</sup>Associate Professor and Pro HOD, Department of Shalya Tantra, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan-573201, Karnataka, India

<sup>5</sup>Professor and Principal, Department of Shalya Tantra, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan-573201, Karnataka, India

Received on: 19/06/18 Accepted on: 24/10/18

#### \*Corresponding author

E-mail: jeteshray131@gmail.com

DOI: 10.7897/2277-4343.096166

#### ABSTRACT

Background: Wound management is a common problem, encountered by medical practitioners all over the world. Without early and optimal intervention, the wound can rapidly deteriorate, leading to amputation of the affected limb. *Doorvadi Taila* is oil used in the management of chronic infected wounds mentioned in *Ayurveda*. Study has been undertaken to evaluate the effectiveness of *Doorvadi Taila* in *Dushta Vrana* (ulcer), to study the effect of *Jatyadi Taila* in the management of *Dushta Vrana* and to compare the effectiveness of *Doorvadi Taila* with *Jatyadi Taila* in the management of *Dushta Vrana*. Methods: Among the 40 registered patients of *Dushta Vrana*, 38 of them completed the course of treatment. Randomly selected 20 were registered for *Doorvadi Taila* group and 20 were taken up for *Jatyadi Taila* group. They were applied with *Taila Pichu* (oil bandage) once in 24 hour and properly bandaged for a period of 37 days. Patients were assessed by Friedman's test followed by Wilcoxon signed rank as Post Hoc after applying Bonferroni correction and repeated measure of ANOVA. Results: There were statistically highly significant improvements in the signs and symptoms of *Dushta Vrana* ( $p < 0.05$ ) observed in both group. Conclusion: *Doorvadi Taila* is effective and useful in the management of signs and symptoms of *Dushta Vrana* significantly. *Doorvadi Taila* has *Kapha Vata Hara* property and because of its *Ushna* (hot) and *Teekshna* (passionate) *Guna*, it helps in early *Shodhana* (purification) by mere application. The added qualities like *Kandu hara* (reduced itching) and *Shoola Hara* (reduced pain), helps in bringing relief in all discomforts suffered by the patients and by its *Ropana* (healing) effects, It helps in the prompt healing of the wound.

**Keywords:** *Ayurveda, Dushta Vrana, Doorvadi Taila, Jatyadi Taila, Wound.*

#### INTRODUCTION

The life starts with the cutting of umbilical cord. So, treatment for healing of the wound is of prime importance. *Dushta Vrana* is a commonly encountered problem faced in surgical practice. In India, a recent study estimated a prevalence rate of chronic wounds at 4.5 per 1000 population. The incidence of acute wounds was more than double at 10.5 per 1000 population. The etiology of these wounds included systemic conditions such as diabetes, atherosclerosis, tuberculosis, leprosy, venous ulcers, pressure ulcers and trauma<sup>1</sup>.

An ulcer is defined as the break in the continuity of the surface epithelium<sup>2</sup> and usually seen affecting the human being at any age. *Vrana Ropana* is a natural process, but due to various factors the *Vrana* becomes *Dushita* (infected) and the healing becomes complicated and delayed.

For *Acharya Sushruta* "health was not a disease-free state, but a normal state of mind, body and soul<sup>3</sup>. In present day wound is said to be healed when epithelialization is complete, but as per *Sushruta's* view he emphasized on the point '*Vaikritapaham*'<sup>4</sup> that means the measure which will bring the normal colour, surface and hair growth of the skin. For that he has mentioned 60 upakramas<sup>5</sup> for *Vranachikitsa*. Each modality has got its own prime importance in which *Taila Pichu* is one which has got

*Shodhaka* (detoxification) and *Ropaka* action based on the ingredients used in the preparation.

*Doorvadi Taila* from *Bhaishajya Ratnavali* is a unique formulation made in mustard seed oil base prescribed for *Dushta Vrana* where in all other forms of treatments have failed. Hence drug was selected.

#### OBJECTIVES

In the present study, *Doorvadi Taila* was taken as the drug for trial. In this regard the objective proposed in the study was:

- To study the effect of *Doorvadi Taila* in the management of *Dushta Vrana*.
- To study the effect of *Jatyadi Taila* in the management of *Dushta Vrana*.
- To compare the effectiveness of *Doorvadi Taila* with *Jatyadi Taila* in the management *Dushta Vrana*.

#### MATERIALS AND METHODS

##### Source of data

Patients were recruited from outpatient and inpatient unit of Department of Shalya Tantra, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka, India.

### Methods of collection of data

Patients were screened and selected based on the screening form. A case report form was prepared with all points of history taking, physical signs and symptoms of *Dushta Vrana*. The selected patients were subjected to detail clinical history and complete physical examination before undergoing the clinical study. Institutional ethics clearness was obtained from Institutional Ethics Committee, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan (SDM/ICE/64/2014-2015 dated 01-04-2015) and study was registered in Clinical Trials Registry of India (CTRI/2016/09/007272).

### Diagnostic criteria

Diagnosis will be made on the basis of *Lakshanas* of *Dushta Vrana* like *Poothi Pooya* (Pus discharge), *Ateeva Vedana* (Very painful), *Daha* (Burning sensation), *Kandu Shophya* (Itching and Edema), *Shonita Srava* (Bloody discharge) and *Deergha Kaleena* (Chronicity).

### Inclusion Criteria

Patient suffering from diabetic mellitus with Glycated Hemoglobin 6%, *Dushta Vrana* within size of 7 X 7 cm (length x

breadth), patient of either gender, irrespective of socio-economic status and patient who are ready to participate and sign the informed consent form.

### Exclusion criteria

Patients suffering from disorders like Tuberculosis, Malignancy, Human Immunodeficiency Virus, Hepatitis B, Berger's disease, Osteomyelitis are excluded.

Patients who are not ready to participate and willing to sign the informed consent form.

### Intervention: Method of application

*Vrana* will be cleaned with normal saline. Then sterile gauze impregnated with *Doorvadi Taila* will be applied on *Dushta Vrana* once in a day, over it a sterile pad will be placed, and dressing will be done. This procedure will be done until the proper healing is achieved. If the bandage becomes wet completely before 24 hours, re-bandaging will be carried out. Same method to be followed for *Jatyadi Taila* also.

(A) The trial drug *Doorvadi Taila* is taken from *Vranashothadhikara* of *Bhaishajya Ratnavali* for the management of *Dushta Vrana*

Table 1: List of ingredients, Latin names, part used and quantity

Sr.no	Sanskrit Name	Botanical Name	Part Used	Proportion
1.	<i>Durva</i>	<i>Cynodon dactylon</i>	Panchanga	33 Parts
2.	<i>Kampillaka</i>	<i>Mallotus philippensis</i>	Fruits	1Part
3.	<i>Daruharidra</i>	<i>Berberis aristata</i>	Tawaka	1 Part
4.	<i>TilaTaila</i>	<i>Sesamum indicum</i>	Seed	8 Parts

*Doorvadi Taila* is *Tikta* (bitter), *Katu* (pungent), *Madhura* (sweet) in *Rasa*, *Laghu* (light) *Ruksha* (dry) in *Guna*, *Veerya* is *Ushna* (hot), *Vipaka* is *Katu* and *Doshagnatha* is *Kapha Pitta Samaka*. *Doorvadi Taila* is beneficial in *Dushta Vrana* which does *Lekhana* to the constant *Kleda Utpatti* and has a pleasant odour to overcome symptoms of *Dushta Vrana*.

### Method of preparation of Doorvadi Taila

*Doorvadi Taila* contains 4 ingredients namely *Tila Taila*, *Doorva Swarasa*, *Kampillaka Churna*, *Daruharidra Twaka Churna* as of which first *Kampillaka Churna* 1 part is taken and have to undergo *Shodhana* as explained in Classics. Then *Daruharidra*

*Tawaka Churna* and *Kampillaka Churna* are taken in equal quantity i.e. 1 part, mixed together and pounded. *Doorva Swarasa* and *Kalka* mixed and *Paka* should be done on mild flame. After drying of watery content, the pot should be taken off from burner, after cooling it should be stored in glass vessel.<sup>7</sup>

**Packaging:** Once the oil has cooled by itself, it is collected in an air tight plastic container of 100ml each and is ready for use in this study.

(B) The control drug *Jatyadi Taila* is taken from *Vranashothadhikara* of *Bhaishajya Ratnavali* for the management of *Dushta Vrana*.<sup>8</sup>

Table 2: List of ingredients, latin names, part used and quantity

Sr.no	Sanskrit name	Botanical Name	Part Used	Proportion
1.	<i>Jati</i>	<i>Jasminum officinale</i>	Leaf	1Part
2.	<i>Nimbi</i>	<i>Azadirachta indica</i>	Leaf	1Part
3.	<i>Patola</i>	<i>Trichosanthes dioica</i>	Leaf	1Part
4.	<i>Naktamala (Karanja)</i>	<i>Pongamia pinnata</i>	Leaf	1Part
5.	<i>Siktha (Madhucchista)</i>	<i>Adiantum caudatum</i>		1Part
6.	<i>Madhuka (Yasti)</i>	<i>Madhuca indica</i>	Root	1Part
7.	<i>Kushta</i>	<i>Saussurea lappa</i>	Root	1Part
8.	<i>Haridra</i>	<i>Curcuma longa</i>	Rhizome	1Part
9.	<i>Daruharidra</i>	<i>Berberis aristata</i>	Stem	1Part
10.	<i>Katuohini</i>	<i>Picrorhiza kurroa</i>	Rhizome	1Part
11.	<i>Manjistha</i>	<i>Rubia cordifolia</i>	Stem	1Part
12.	<i>Padmaka</i>	<i>Prunus cerasoides</i>	Heart Wood	1Part
13.	<i>Lodhra</i>	<i>Symplocos racemosa</i>	Stem Bark	1Part
14.	<i>Abhaya</i>	<i>Terminalia chebula</i>	Pericarp	1Part
15.	<i>Nilotpala</i>	<i>Nymphaea nouchali</i>	Flower	1Part
16.	<i>Tutthaka</i>	Copper Sulphate		1Part
17.	<i>Sariva</i>	<i>Hemidesmus indicus</i>	Root	1Part
18.	<i>Naktamala</i>	<i>Pongamia pinnata</i>	Seed	1Part
19.	<i>Tila</i>	<i>Sesamum indicum</i>	Oil	72 Parts
20.	Water			290 Parts

**Table 3: List of subjective and objective parameters**

Subjective parameters	Objective parameters
Vrana Vedana (pain)	Vrana Gandha (smell)
Vrana Daha (burning sensation)	Vrana Varna (color)
Vrana Kandu (itching)	Vrana Srava (pus discharge)
	Vrana Akriti (shape and size)

**Table 4: Demographic Profile of patients**

Geographic observation	Predominance	Percentage	No of patients
Age (range 21-90 years)	41-50 years	25.0%	10
Gender	Male	80.0%	32
Religion	Hindu	90.0%	36
Marital status	Married	90.0%	36
Socio-economic status	Lower middle class	62.5%	25
Education status	Illiterate	42.5%	17
Chronicity	1- 3 months	52.5%	21
Occupation	Agriculture	37.5%	15
Diet	Vegetarian	67.5%	27
Type of Ulcer	Diabetic Ulcer	32.5%	13
Etiology	<i>Nija</i>	67.5%	27
Site of Ulcer	Left lower limb	50.0%	20
Shape of Ulcer	Oval	50.0%	20
Number of Ulcer	One	92.5%	37
<i>Srava</i>	Present	87.5%	35
<i>Gandha</i>	Present	87.5%	35
<i>Kandu</i>	Present	57.5%	23
<i>Daha</i>	Present	85.0%	34
<i>Vedana</i>	Present	90.0%	36

Drug for control group is available at SDM College of Ayurveda and Hospital, Hassan.

**Pathyapthya:** For diet list of included items are as follow old rice, barley, wheat, *Mudga*, cool boiled water, sugar, honey, well ripened fruit of white gourd (Kushmanda), pomegranate (*Dadima*), gooseberry (*Amalaki*) and all bitter juices should be used. Spicy food item should be avoided along with oily and fried items.

**Assessment Criteria**

The patients were assessed on the basis of subjective and objective parameters before and after treatment.

**OBSERVATION**

A total number of 40 patients clinically diagnosed with Dushta Vrana were selected and allocated into two groups. Among 20 patients Doorvadi Taila Pichu and 20 patients Jatyadi Taila Pichu was applied for 37 days.

**RESULT**

Friedman's test ( $p < 0.05$ ) was applied to assess the significant change in the symptoms having ordinal data followed by Post hoc analysis with Wilcoxon signed rank tests was conducted with a Bonferroni correction applied, resulting in a significant level of  $P < 0.008$  to interpret the time of significant change.

**Table 5: Parameters of Dushta Vrana with Doorvadi Taila**

Serial No.	Parameter	Chi-Square	P value	Remark
1.	<i>Vedana</i>	68.905	.001	Significant
2.	<i>Srava</i>	47.434	.001	Significant
3.	<i>Gandha</i>	60.528	.001	Significant
4.	<i>Daha</i>	64.039	.001	Significant
5	<i>Kandu</i>	39.887	.001	Significant
6	<i>Granulation</i>	76.544	.001	Significant

To assess the length and breadth of the Vrana **Repeated Measures ANOVA with GREENHOUSE GIESSER** was used.

Serial No.	Parameter	F value	P value	Remark
1.	Length	47.959	.001	Significant
2.	Breath	75.219	.001	Significant



Figure 1: Effect of Doorvadi Taila on Vrana

Table 6: Parameters of Dushta Vrana with Jatyadi Taila

Serial No.	Parameter	Chi-Square	P value	Remark
1.	Vedana	65.292	.001	Significant
2.	Srava	50.761	.001	Significant
3.	Gandha	69.770	.001	Significant
4.	Daha	55.071	.001	Significant
5.	Kandu	41.388	.001	Significant
6.	Granulation	79.618	.001	Significant

To assess the length and breadth of the Vrana **Repeated Measures ANOVA with GREENHOUSE GIESSER** was used.

Serial No.	Parameter	F value	P value	Remark
1.	Length	70.314	.001	Significant
2.	Breath	48.060	.001	Significant

## DISCUSSION

The science of “Vrana” seems to be a serious matter of concern to the ancient healers. This fact can be very well understood while going through the surgical compendium – *Sushruta Samhita* where a good number of chapters deal with the science of Vrana alone.

### On Drug

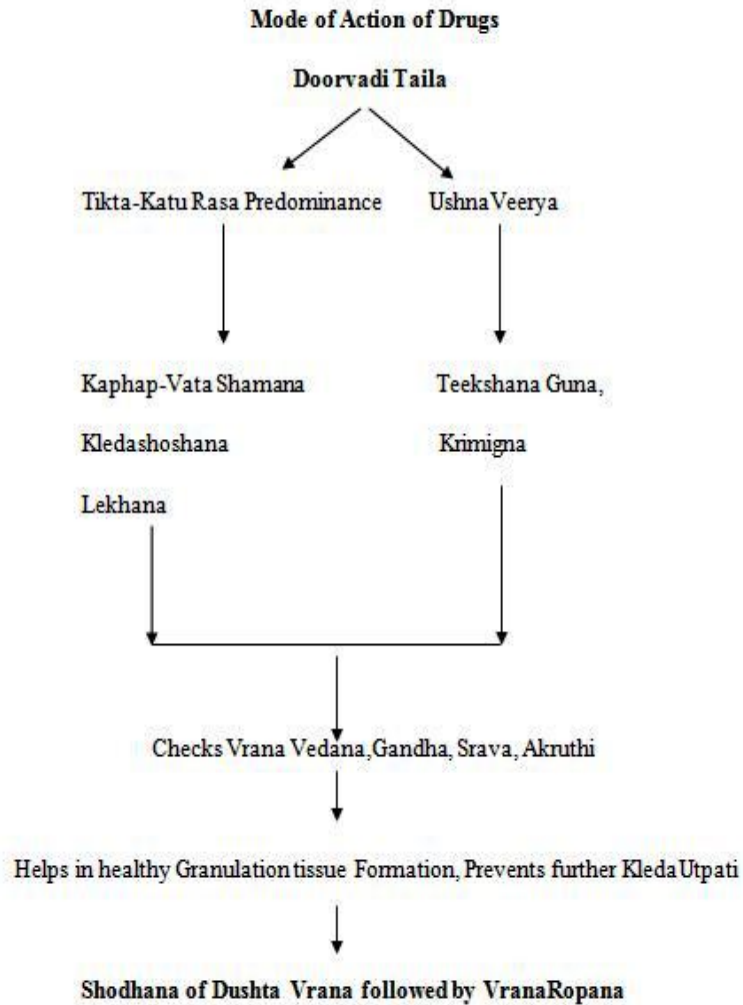
The overview of the ingredients of the drug *Doorvadi Taila* suggests that dominant Rasa of the Combination in whole turns out to be *Tikta Rasa* followed by *Kashaya-Madhura-Katu Rasa*. *Druva* the main content of *Taila* also provides *Dhatu Poshana* (Nutrition) to skin. It has been shown *Vrana Ropana*, *Vishaghna*

and *Dahaprashamana* properties also. *Kashaya* as *Uparasa*, hence it acts as *Stambhaka* and *Raktashodhaka* checks bleeding and discharge from wounds and shows haemostatic action very well.

*Daruharidra* is a well-known and a drug of choice for infection and inflammation because of its *Tikta*, *Kashaya Rasa* and *Ushna Virya*. It has been proven that *Daruharidra* has *Shothahara*, *Raktashodhaka* and *Raktastambhana* properties. Other important property is *Varnya*, provides a natural colour to the skin and scar created by healing of wound.

*Kampikala* is *Katu* in *Rasa*, *Laghu* and *Ruksha* in nature having property like *Krimighna* and *Tila Taila* provides good medium for those substance that have medical properties.

**MODE OF ACTION OF DRUG**



**On Results**

There was significant reduction in the complaints of *Vedana*, *Srava*, *Gandha*, *Daha* and reduced size of *Vrana*. This helps in promoting granulation. *Vedana* is a predominant feature of *Vata*. Due to *Shoolaprasamana* Karma of drugs like *Tila Taila*<sup>9</sup> and overall traits like *Ushna Veerya*<sup>10, 11</sup> and *Snigdha, Guru Guna*<sup>12</sup>, there was considerable decrease in the symptom of *Vedana*. The predominant Rasa of all the drugs in *Doorvadi Taila* including the base of *Tila Taila* is *Tikta Rasa Pradhana* followed by *Kashaya* and *Katu Rasa*. *Tikta Rasa* as *Shoshana Guna*<sup>13</sup> thereby helping in reducing the discharge. Furthermore, *Kampilaka*<sup>14</sup> is said to be *Krimigna* in nature, hence the *Krimi* producing *Pooya* is overcome which simultaneously reduced *Gandha* also. Reduction in *Daha Lakshanas* can be attributed to the *Tikta Rasa*<sup>15, 16</sup> of the oil and *Madhura Vipaka*.

The *Deerga Kalamubandha* of *Dushta Vrana* causes the granulation tissue to turn to *Parishushkata* and becomes *Alpa Mamsa* due to *Vata Prakopa*. This is overcome by *Vata Hara* property of *Tila Taila*<sup>17</sup> of *Doorvadi Taila*. The *Kledamsha* that is predominant in *Mehaja Vrana* is again overcome by the *Ushna*

and *Teekshna* quality. The *Ropana Karma* is facilitated by *Madhura Rasa* and *Vipaka*.

For a wound to heal, factors which are responsible for Non-healing such as *Kleda Utpatti*, *Krimi*, *Pooya* and *Katinatva* have to be overcome which is made possible by the application of *Doorvadi Taila*.

**CONCLUSION**

The whole study which was conducted on 40 patients of *Dushta Vrana*, administering them *Doorvadi Taila* and *Jatyadi Taila* for 37 days with the objective of evaluating the efficacy of the *Doorvadi Taila* in the management of *Dushta Vrana*. It may be concluded that *Doorvadi Taila* is useful in the management of *Dushta Vrana*. 77.33% of patients got healthy granulation tissue, 84.21% of patients got complete relief from *Vedana*, 85.71% of patients got complete relief from *Srava*, 88.23% of patients got relief from *Gandha*, 83.33% of patients got complete relief from *Daha* and 81.81% of patients got relief from *Kandu*. The trial drug dose not manifests any side effects, adverse reaction or untoward events in the patients of *Dushta Vrana*.

## ACKNOWLEDGEMENT

The Authors thank the department of Department of Shalya Tantra, SDM college of Ayurveda and Hospital, Hassan, Karnataka, India.

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### Cite this article as:

Jetesh Ray *et al.* Clinical study on doorvadi taila in management of dushta vrana. Int. J. Res. Ayurveda Pharm. 2018;9(6):22-27  
<http://dx.doi.org/10.7897/2277-4343.096166>

Source of support: Nil, Conflict of interest: None Declared

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