



# A COMPARATIVE CLINICAL STUDY OF *DURVADI TAIL* AND *NIMBAADYA TAIL* APPLICATION AFTER *JALAUKAVCHARNA* IN THE MANAGEMENT OF *DUSHTA VRANA*

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## ABSTRACT

*Acharya Sushruta* describes the concepts of Vrana (wound) principles such as causes, classification, stages, examination, treatment, bandaging, complication, etc. *Dushtavrana* resembles modern parlance. Vrana has a foul smell, continuously flowing putrid pus along with blood, with a cavity, for a long time etc.; Vrana Lakshana is high intensity, and which is almost opposite to Shuddha Vrana is Nothing but Dushta Vrana. We can understand it as a non-healing or contaminated wound in this context. Sixty patients are randomly selected in Group A (Trial Group), where patients will be treated with Durvadi Tail and Group B (Control Group) with Nimbaadya Tail after one sitting of Jalaukavacharna. It is concluded that 25% of patients had cured entirely, 26.66% of patients got marked improvement, 33.33% showed moderate improvement, and 15% got mild improvement. None of the patients in this series remained unchanged. For the shodhana and ropana of vrana, both local and oral treatment are explained by Sushruta. Planning cost-effective, reliable & technical simple management is the need of the day. The current problem, the Efficacy of Durvadi Taila and Nimbaadya Taila application after Jalaukavacharna in Dushtavrana management, is an effort in that direction.

DOI Number: 10.48047/nq.2022.20.22.NQ10358

NeuroQuantology 2022;20(22):3571-3579

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## INTRODUCTION

The knowledge of *dushtavranas* has been known since antiquity. The concepts of Vrana (wound) principles, such as causes, classification, stages, examination, treatment, bandaging, complication, etc., told by *Acharya Sushruta*, remain unchanged even in this 21st century. A wound (*Vrana*) that refuses to heal or heals very slowly, despite best efforts by *Chikitsa Chatushpada* viz., *Bhishaka*, *Dravya*, *Upsthata* and *Rogi*, is known as *Dushta Vrana* (Infected wound). *Acharya Sushruta*, the father of Surgery, explained Vrana as "*Gaatra*" means tissue (body tissue or part of body)."

*Vichurnane*" means destruction, break, rupture and discontinuity of the body tissue. The body tissue's destruction/ break /rupture/ discontinuity is called *vrana*.<sup>[1]</sup> *Dushtavrana* is a long-standing ulcer with profuse discharge and slough, where removing the debris and enabling the drug to reach the healthy tissue is more important. Many times, non-healing Vrana poses a problem in surgical practice. Healing of Vrana is a natural process, but due to the interference of vitiated *Doshas*, Vrana becomes *Dushta*, and the normal healing process gets delayed. Achieving better wound healing with minimal scars and controlling the pain effectively



are the prime motto of every surgeon. The body undertakes a series of actions collectively known as 'wound healing processes to heal a wound. Most clean, open wounds do not require antibiotics unless the wound is contaminated or the bacterial cultures are positive. Bacterial infection of wounds can impede healing and lead to life-threatening complications. Hence, we feel the need for a new therapy to overcome this. Acharya Sushruta has described sixty procedures, i.e., Shashthi Upakramas, in treating Vranas. These Shashthi Upakramas are divided broadly into 3 significant groups. 1. Vranashodhana 2. Vrana Ropana 3. Vaikritapaham

Out of these three types first Upakrama, that is, Shodhana, is a must for the management of dushtavrana, and after that, Ropana is essential for vrana; many scientists all over the world are working on several preparations which may help in achieving complete Vrana Shodhana (debridement of the wound) and ultimately Vrana Ropana (wound healing). Sixty patients are randomly selected in Group A (Trial Group), where patients will be treated with Durvadi Tail and Group B (Control Group) with Nimbaadya Taila after one sitting of Jalaukavacharna. It is concluded that 25% of patients had cured entirely, 26.66% of patients got marked improvement, 33.33% showed moderate improvement, and 15% got mild improvement. None of the patients in this series remained unchanged. For the follower of Shalyatantra, Ayurvedic effective management for wound healing is needed. As discussed in the review, Sushruta has used various techniques to achieve wound healing. For the shodhana and ropana of vrana, both local and oral treatment are explained by Sushruta. Planning cost-effective, reliable & technical simple management is the need of the day. The current problem, the Efficacy of Durvadi Taila and Nimbaadya Taila application after Jalaukavacharana in dushtavrana management, is an effort in that direction.

## MATERIALS AND METHODS

### MATERIALS

**Drug:** Group A (Trial Group): In this Group, the patient will be treated with Durvadi Tail as a local application after one sitting of Jalaukavacharna for 21 days.

Group B (Control Group): In this Group, the patient will be treated with Nimbaadya Taila after one sitting of Jalaukavacharna for 21 days.

**Drug contents:** Nimbaadya Tail, as cited in bhelasamhita, contain tender leaves of Nimba, Amra, Amalaki, Madhuka, Bala and Gomayaras and Tilataila. Durvadi Taila Contains Murva, Kamal, Lodhra, Ahifen, Nagarmotha, Chandan and Tila tail.

**Drug Preparation:** Durvadi Tail and Nimbaadya Tail: This drug was prepared in our college rashshastra department and was applied over dushtavrana after one sitting of Jalaukavacharna.

**Ethical clearance:** Before starting clinical trials on patients with Dushta Vrana, the ethical committee approved this dissertation, and permission was granted.

Then clinical trials were conducted for the study in 2 groups.

**Sample Size:** 60 patients were randomly selected from the O.P.D. of the Shalyatantra department at M S Ayurvedic medical college, Kudwa Gondia College and allotted between two groups, Groups A and B, respectively.

## METHODOLOGY

### Plan of Work:

A minimum of 60 patients of either sex were included in the study. Prior, informed written consent from the patient has been taken. History and localized examination of all the patients have been taken thoroughly with the help of a particular case paper format. Patients diagnosed as 'Dushta Vrana' were selected for study from Shalya Tantra O.P. Dept. Group A was treated with a Durvadi tail. At the same time, group B was treated with Nimbadi tail. Both groups were treated for a maximum period of 21 days. Those who improved were continued for a maximum period of three weeks if there were a progressive improvement. Those who did not come for follow-up were treated as dropouts.

### Intervention

Durvadi Taila and Nimbaadya Taila was used as external local application over Dushta Vrana after the first sitting of Jalaukavacharana.

### INCLUSIVE CRITERIA –

Vrana, which is restricted to a localized area. Patients are presenting classical signs of DusthaVrana. The patients between the age group of 18-60 years will be selecting irrespective of sex, Prakriti, occupation, race, Vrana which are not secondary to systemic diseases.

#### **EXCLUSIVE CRITERIA**

Age below 18 years and above 60 are excluded from the study. Ulcer secondary to any malignancy, Osteomyelitis, Patients with systemic infection and those with the local lymphatic spread of infection, Gangrenous ulcer, Diabetes mellitus., chronicity and socio-economic status.

#### **Clinical Examination:**

An exhaustive clinical proforma was specially prepared, including all prominent signs and symptoms. Relevant history was recorded. Assessment of graded signs and symptoms were recorded on days 0<sup>th</sup>, 3<sup>rd</sup>, 7<sup>th</sup>, 10<sup>th</sup>, 15<sup>th</sup> and 21<sup>st</sup>. The signs and symptoms were graded on a four-point scale of 0,1,2,3,4. Enquiry of any other signs and symptoms or any adverse reaction which developed during the trial was noted and entered in the clinical profarma. Informed consent has been signed by every patient before treatment.

**Place of study:** O.P.D. and I.P.D. of Shalya Tantra department.

The change in Wound area after the treatment and gram staining were used as objective criteria for assessing the drug effect. Additionally, Vedana, Kandu, Strava, and Gandha were observed before & after treatment & noted on Case Record Form.

#### **OBSERVATIONS and RESULT**

A total of 60 patients were studied in two different groups as follows:

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Group A: 30 patients were treated with Durvadi tail.  
Group B: 30 patients were treated with Nimbaadya tail.

Above 60 patients were treated and observed, and an assessment was done. The data collected from all patients were summarized and statistically represented in terms of the following:

1. Vital statistics, 2. Observations and results, 3. Statistical analysis.

#### **VITAL STATISTICS**

Vital statistics of 60 patients treated under research study in 2 groups are summarized as follows –

**The age group: (Table no.1)** It was observed that a maximum percentage of patients, i.e. 36.66%, were seen in age groups between 33-45, 46-60 years and 26.66% were seen in age groups between 18-32 years in group A. Similarly, a maximum % of patients i.e. 36.66% were seen in the age group 18-32 and 46-60 years, and 26.66% were seen in the age group between 33-45 years in group B.

**Site: (Table no.2)** The site of Dushtavrana of patients in trial group (A) and control group (B) were 03 (10%) and 02 (6.66%) respectively at back, 16 (53.33%) and 18 (60%) at lower extremity, 07 (23.33%) and 06 (20%) at upper extremity and 02 (06.66%) and 02 (06.66%) at abdomen, 02 (06.66%) and 2 (06.66%) at chest.

#### **OBSERVATION**

**Effects of therapy on signs and symptoms by gradation:**

Evaluation of the effect of therapy by gradation was followed as per the assessment criteria. The assessment was done with Strava, Wound area of vrana, vedana (Severity of pain), kandu (Itching), gandh (Smell), Tenderness, and gram staining.

**Effects of therapy on Vedana (Table no.3)**

**Effects of therapy on Srava : (Table no.4)**

**Effects of therapy on Tenderness: (Table no.5)**

**Effects of therapy on Gandh : (Table no.6)**

**Change in Total Score (Table no.7)**

**Gradation for the healed wound (Table no.8)**

#### **DISCUSSION**

**Discussion on the clinical study:**

During the clinical study, 60 patients of DushtaVrana were selected from the O.P.D. department of Shalyatantra. These patients were studied in the following two groups:-

Group A - 30 patients were selected in this Group irrespective of their age, sex, religion and socio-economic status and having textual signs and symptoms of Dushtavrana. Dressing with Durvadi Taila was repeated daily during the first 5 days and on alternate days after that for a maximum of 21 days. This Group was named Group A.

Group B 30 patients were selected this Group irrespective of their age, sex, religion and socio-economic status and having textual signs and symptoms of Dushtavrana. Dressing with Nimbaadya Taila was repeated daily during the first



5 days and on alternate days after that for a maximum of 21 days. This Group is Group B. Before dressing wound was cleaned with Distilled water in each Group.

#### **DISCUSSION ON OBSERVATION:**

**Age:-** From the above study, it is observed that the age group between 31-40 years were more prone to dushtavrana in group A that is 43.33% and between 20-30 years in group B that is 40.33% as this age group is more active and because of long working duration and stressful life they frequently affected by the traumas which may cause dushtavrana.

**Site of Wound:-** From the above study, it is observed that 10% of the dushtavrana in the back, 56.66% in the lower extremity, 20% in the upper extremity, 3.33% in the abdomen and 10% in the buttocks. It shows that the lower limb is more prone. It may be due to work in wet places and muddy places. The lower class person, this can cause wounds to be infected.

#### **Discussion on Observation Parameters:**

**Effect on pain:** The analysis shows that in the case of Pain reduction percentage in Group A after 21 days of treatment was 64.33 %. In group B it was 75 %. The mean score in Group A was 2.433 before treatment, which was reduced to 0.8667 after treatment. The mean score in Group B was 2.4 before treatment and reduced to 0.60 after treatment. It was relieved as per the property of *NimbaadyaTaila*, it having *Vatahara*, *Vedanasthapana* (Analgesic). The pain was relieved in Group A but less than in Group B. Though in both Group A and B, the reduction of pain was significant comparing these two groups, there is not much difference in the groups.

**Effect on Discharge-**The analysis shows that the discharge reduction percentage in Group A after 21 days of treatment was 76.27%. In group B it was 81.48 %. The mean score in Group A was 1.967 before treatment and was reduced to 0.4667 after treatment. The mean score in Group B was 1.8 before treatment and reduced to 0.3333 after treatment. Though in both Group A and B, the reduction of discharge was significant comparing these two groups statistically, there is not much difference.

**Effect on Tenderness:** The analysis shows that in the case of tenderness reduction Epercentage in Group

A after 21 days of treatment was 79.36%. In group B it was 91.80 %. The mean score in Group A, 2.1 before treatment, was reduced to 0.4333 after treatment. The mean score in Group B was 2.033 before treatment, which was reduced to 0.1667 after treatment. Though in both Group A and B, tenderness reduction was significant, comparing these two groups statistically, there is not much difference in the groups. As *NimbaadyaTaila* is *ushnaveerya* and *Kaphavataghna* action it is *sothagana*, that might have improved the Tenderness, while *DurvadiTaila* is *vataghna* hence reduces Tenderness but less than compare to *NimbaadyaTaila*.

**Effect on Itching:** Most patients have physiological itching during *Rhuyamanawastha*, i.e., during healing and scar formation, but that was considered physiological itching. The analysis shows that in the case of Itching reduction percentage in Group A after 21 days of treatment was 86.79%. In Group B, it was 91.67%. The mean score in Group A was 1.033 before treatment and reduced to 0.1667 after treatment. The mean score in Group B was 0.8 before treatment and was reduced to 0.0666 after treatment. Though the reduction was significant in both Group A and B, comparing these two groups statistically there is not much difference in both groups. As *Nimbaadyataila* is *Tikta rasa*, *Krimighna*, and *Kandughna*, that might have reduced the itching.

**Effect on Gandh** - On days 0, 3<sup>rd</sup>, 7<sup>th</sup>, 10<sup>th</sup>, 15<sup>th</sup>, 21<sup>st</sup> Mann Whitney Z test P- values are 1.0, 0.643, 0.756, 0.442, 0.690, and 0.643, statistically non-significant. Group A and B change is near, i.e., exact on days 0, 3<sup>rd</sup>, 7<sup>th</sup>, 10<sup>th</sup>, 15<sup>th</sup>, and 21<sup>st</sup>. It observed nearly the same improvement in signs & symptoms in both groups. The overall percentage of relief was almost equal in both groups. Mann statistically evaluated the comparison between the two groups concerning symptoms score – Whitney Z test. No significant difference was found between the two groups, i.e., both drugs are equally effective.

#### **The overall effect of the DURVADI TAILA and NIMBAADYA TAILA :**

The patient's overall response to *DurvadiTaila* and *NimbaadyaTaila* shows that 26.66% patients were cured completely, 30% of patients markedly

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improved, 30% moderately improved, and 13.33% marginally improved.

Based on the above results, it can be concluded that DurvadiTaila and NimbaadyaTaila application helps heal Dusthavrana and significantly relieves all its symptoms.

A thorough observation of the above results reveals that DurvadiTaila is better than NimbaadyaTaila, but there is not much difference between the groups.

Statistical analysis of these findings indicates that response to treatment was markedly significant after comparing the means of the two groups.

### CONCLUSION

In this study total of 60 cases of DushtaVrana were treated with Durvadi Tail and NimbaadyaTaila after one sitting of Jalaukavacharna. Based on observation and results of the study following conclusions can be drawn. Both DurvadiTaila and NibaadyaTaila have shown vranashodhaka, vranalekhana, putihara, vedanasthapaka, vranaropaka and jantughna properties in management of dushtavrana. DurvadiTaila and NibaadyaTaila both are almost effective in dushtavrana. However, marginally based on subjective criteria and based on wound healing, DurvadiTaila is markedly more effective in managing dushtavrana in all aspects. This study shows that DurvadiTaila and NibaadyaTaila are readily available in tribal areas, have abundant supply around the year and are economical. DurvadiTaila and NibaadyaTaila is a good option with properties close to an ideal Dushtavrana dressing. It is easy to prepare the dressing since it does not require any particular skill, use as a home remedy and is cost-effective.

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Age (Years)	Trial Group (A)		Control Group (B)	
	No. of patients	Percentage	No. of patients	Percentage
18-32	08	26.66%	11	36.66%
33-45	11	36.66%	08	26.66%
46-60	11	36.66%	11	36.66%
Total	30	100%	30	100%

**Table 1. Age-wise Distribution**

**Table 2. Showing Distribution of patients according to their site of DushtaVrana is as follows:**

Site	Trial Group (A)		Control Group (B)	
	No. of patient	Percentage	No. of patients	Percentage
Back	03	10.00%	02	06.66%
Lower Extremity (L.E.)	16	53.33%	18	60.00%
Upper Extremity (U.E.)	07	23.33%	06	20.00%
Abdomen	02	06.66%	02	06.66%
Chest	02	06.66%	02	06.66%
Total	30	100%	30	100%

**Table 3. Effects of therapy onVedana:**

Vedana	Group	Mean Score	Sd	Mann Whitney Z	P
D-0	A	2.77	.679	0.108	0.914NS
	B	2.80	.551		



D-3	A	2.07	.583	0.884	0.494 NS
	B	2.17	.379		
D-7	A	1.63	.615	1.349	0.183 NS
	B	1.83	.531		
D-10	A	1.33	.547	0.613	0.540NS
	B	1.27	.450		
D-15	A	.77	.626	0.0	1.0 NS
	B	.77	.626		
D-21	A	.37	.556	1.212	0.225 NS
	B	.20	.407		

**Table 4. Effects of therapy onSrava :**

Srava(Dischrge)	Group	Mean Score	Sd	Mann WhitneyZ	P
D-0	A	2.63	.615	1.977	0.048 Sig
	B	2.90	.305		
D-3	A	1.93	.521	1.278	0.201 NS
	B	2.10	.481		
D-7	A	1.67	.547	1.169	0.242 NS
	B	1.80	.407		
D-10	A	1.33	.479	0.0	1.0 NS
	B	1.33	.479		
D-15	A	.73	.640	2.052	0.04 Sig
	B	.40	.498		
D-21	A	.10	.305	0.463	0.643 NS
	B	.07	.254		

**Table 5. Effects of therapy onTenderness :**

Tenderness	Group	Mean Score	Sd	Mann WhitneyZ	P
D-0	A	2.70	.596	0.137	0.891 NS
	B	2.73	.450		
D-3	A	2.07	.583	0.684	0.494 NS
	B	2.17	.379		
D-7	A	1.57	.568	1.880	0.06 NS
	B	1.83	.531		
D-10	A	1.33	.547	0.613	0.540 NS

	B	1.27	.450		
D-15	A	.50	.572	0.869	0.385 NS
	B	.37	.490		
D-21	A	.20	.407	0.687	0.492 NS
	B	.13	.346		

**Table 6. Effects of therapy onGandh :**

Gandh	Group	Mean Score	Sd	Mann WhitneyZ	P
D-0	A	1.00	.000	0.0	1.0 NS
	B	1.00	.000		
D-3	A	.93	.254	0.463	0.643 NS
	B	.90	.305		
D-7	A	.80	.407	0.311	0.756 NS
	B	.77	.430		
D-10	A	.53	.507	0.769	0.442 NS
	B	.43	.504		
D-15	A	.13	.346	0.399	0.690 NS
	B	.10	.305		
D-21	A	.10	.305	0.463	0.643 NS
	B	.07	.254		

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**Table 7. Change in Total score:**

Total Score	Group	Mean Score	Sd	Mann WhitneyZ	P
D-0	A	10.533	2.0296	0.323	0.747 NS
	B	10.833	1.5554		
D-3	A	7.8333	1.7237	0.717	0.473 NS
	B	8.1667	1.3152		
D-7	A	6.2667	1.9640	1.225	0.221 NS
	B	6.9000	1.9537		
D-10	A	4.7667	1.8879	0.798	0.425 NS
	B	4.4667	1.8888		
D-15	A	2.2333	1.9241	1.079	0.281 NS
	B	1.7333	1.7603		
D-21	A	.8667	1.5916	1.122	0.262 NS





	B	.5333	1.3321		
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**Table 8. Gradation for healedwound:**

Grade	Group A	Group B
<b>1</b> (76 to 100% healed)	17	<u>16</u>
<b>2</b> (51 to 75% healed)	13	<u>13</u>
<b>3</b> (26 to 50% healed)	00	<u>01</u>
<b>4</b> (0 to 25% healed)	00	<u>00</u>

