



“To Evaluate the Shodhana Effect of Kampillak Churna Avachurnan in Dushtavrana.”

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Abstract

Vrana being a very important issue in the branch of surgery which demands special attention. The study of wound care is continuously upgraded and updated, with newer modalities, to reduce the possible complications, side effects during the course of treatment and also to reduce a time taken for complete healing of the wound with minimal cicatrisation. *Ayurveda* has a big list of plants, which are attributed with *Vranashodhana* and *Ropana* (wound healing) activity. *Avachurnan* is feasible which it can also be done by the patient at home without any medical supervision. Hence a search for more effective and safe method of *Vranashodhana* and *Ropana* is a demand for management of *Vrana*. Falraj (Hairs of Fruit) and other parts of Kampillak are used externally to promote the healing of ulcers and wounds as it has property of *Vranashodhana*, *Ropana*, *Shleshma*, *Kruminashak*. Aim is to study the Shodhana effect of *Kampillak Churna Avachurnan* in *Dushtavrana*. And then it is statistically analyzed the efficacy based on collected data. The study includes inclusion and exclusion criteria and two groups (Group A and Group B), 30 patients each group. Significant reduction seen in all 6 symptoms. So we can conclude that *Kampillak Churna Avachurnan* offers distinct advantages in *Dushtavrana Shodhana Churna* gives beneficial effects as conservative management in spite of surgical interventions such as debridement procedure.

KEYWORDS: - Shodhana, Dushtavrana, Wound, Kampillak Churna, Avachurnan.

INTRODUCTION

The term wound is break in the continuity of soft parts of body structures caused by violence or trauma to tissues. In Ayurvedic classical texts term used for wound is *Vrana* and defined as ‘The discontinuity of body tissue /disruption/ break/ rupture//a part of body’. The fast lifestyle of today's society, unhealthy diet such as fast food, alcohol, unhealthy diet are causative factors for *Dosha Dushti* i.e. *Nija Vrana*. *Sushruta* describes *Vrana* as it covers the site and the scar even after healing. *Sushruta* has described two types of *Vrana* i.e. *Nija* and *Agantuj*. [1]

The classics have described *Atisanvruto*, *Ativivruto*, *Atikathino*, *Atimrudu*, *Utsanna*, *Avasanna*, *Atisheeta*, *Atiushna*, *Krishna*, *Rakta*, *Peeta*, *Shukla Varna*, *Vedana*, *Daha*, *Paka*, *Raga*, *Kandu*, *Shopha*, *Pidaka*, *Dushta-shonitsravi*, *Dirghakalanubandhi*, *Putipuyasravi*, *Atigandhadiyukta* as the symptoms of **DUSHTAVRANA**. In *Sushrut Samhita*, *Vrana* along with its complication and management have been discussed in detail in the *Vranitopaasaneeya Adhyaya*. [1]

In *Shasti upakarma* one of the most important upakarma is *Avachurnan*. *Vranachurnan* *Avachurnan* is local application of *Churna*. As mentioned in Ayurveda Samhitas, it is powder of medicines has been spread over the wound.[1]

Kampillak (*Mallotus phillippensis* Muell Arg.) belongs to Family *Euphorbiaceae*. [2] *Sushruta* has describe multiple *Avachurnan* *Dravyas* in his *Sutrasthan* in which he has mentioned *Kampillak* and form the group known as the *Shyamadi Gana*. [Su.Su 38/29]

According to various Samhitas and Nighantus like *Dhanvantri* and *Bhav Prakash Nighantu*, *Kampillak* has been been as *Vrana Nashak* *Dravya* in *Dusta Vrana*. [4]

AIM AND OBJECTIVES:-

AIM: Shodhana Effect of *Kampillak Churna Avachurnan* on *Dushtavrana*.

OBJECTIVES:

- Evaluation of the effect of *Kampillak Churna Avachurnan* in *Dushtavrana*.
- Comparison of *Kampillak Churna Avachurnan* with Povidone-iodine ointment given in *Dushtavrana*.
- Statistically analyse the Shodhana effect of *Kampillak Churna*

Table no.1 shows properties of *Kampillak* [5]

Avachurnan based on collected data.

MATERIAL AND METHODS:-

A) MATERIALS-

- 1) Drug – *Kampillak Churna*

Guna	Rasa	Virya	Vipak	Karma	Parts Used
Laghu, Ruksha, Tikshna	Katu	Ushna	Katu	Kapha-Vata Shamaka	Glands and hair of fruit

1. **Selection** of patient – Patients was diagnosed with Dushtavrana and selected for the study after proper consent.
2. **Utilization** – *Kampillak Churna Avachurnan* has been done in patients diagnosed with *Dushtavrana*.

The above mentioned churna was used for the study.

2) POVIDONE-IODINE OINTMENT (POVIDONE-IODINE OINTMENT) [6]

- Povidone iodine, which is a polyvinyl Pyrrolidone complexed with iodine. It is a rapidly acting broad spectrum (bacteria and fungi) germicide.
- It has variable action against bacterial spores and tubercle bacilli, thus Povidone Iodine makes a nearly ideal disinfectant/antiseptic.

B) METHODS

1) TYPE OF STUDY

- A) Open randomised clinical study.
- B) Observational study before and after treatment.

2) PLACE OF STUDY

OPD/IPD- Shalya department of BHARATI VIDYAPEETH (DEEMED TO BE) UNIVERSITY

AYURVED HOSPITAL, KATRAJ,PUNE, INDIA.

3) SAMPLE SIZE

Patients diagnosed with dushtavrana has been selected for the study. Total Number of patients-60

As per prevalence of number of patients in OPD and IPD of ShalyaTantra Dept. total 60 patients has been selected.

- 1) Group A (Trial group) - 30 patients.
- 2) Group B (Control group) - 30 patients.

4) STUDY GROUPS

Selected patients will divided into two groups

- I. Group A - Trial group.
- II. Group B - Control group

And randomised method has been used.

5) STUDY DESIGN

- I. Age: No age limit has been considered.
- II. Sex: Either sex.
- III. Dosage: Depending on wound size.

Table no.2 shows CRITERIA FOR ASSESSMENT:-

INCLUSION CRITERIA:	EXCLUSION CRITERIA:
Dushtavrana.	Dagdha Dushtavrana, e.g. Electrical shock, Rasaynik, Agnidagdha.
Shashtra karmottar Dushtavrana.	Danshjanit Dushtavrana, e.g. Shwandansh, Sarpadansh etc.
Diabetic wound.	HIV positive patients. HBsAg positive patients.
	Osteomyelitis.
	Compound fracture.

Table no. 3 shows PLAN OF WORK:-

Group A - Trial group	Group B – Control group
<ul style="list-style-type: none"> Sample size – 30 patients 	<ul style="list-style-type: none"> Sample size –30 patients
<ul style="list-style-type: none"> Cleaning of the wound has been done by normal saline. 	<ul style="list-style-type: none"> Cleaning of the wound has been done by Povidone-Iodine solution
<ul style="list-style-type: none"> <i>Kampillak Churna Avachurnan</i> has been done on <i>Dushtavrana</i> 	<ul style="list-style-type: none"> Povidone-Iodine ointment has been applied on <i>Dushtavrana</i>
<ul style="list-style-type: none"> Sterile dressing pad has been kept and bandage has been done as per requirement. 	<ul style="list-style-type: none"> Sterile dressing pad has been kept and bandage has been done as per requirement.
<ul style="list-style-type: none"> Follow up – Daily dressing has been done till 21 days or sign of <i>Shuddha Vrana</i> whichever occurs first. 	<ul style="list-style-type: none"> Follow up – Daily dressing has been done till 21 days or sign of <i>Shuddha Vrana</i> whichever occurs first.

<ul style="list-style-type: none"> Observations have been noted before treatment and after treatment. 	<ul style="list-style-type: none"> Observations have been noted before and after treatment.
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INVESTIGATIONS -

- Haemogram with ESR.
- BSL-1) fasting 2) post prandial.
- HIV
- HBsAg.
- X-Ray of specific part (if required).

PARAMETERS OF ASSESSMENT**A) Method of assessment of subjective parameters-**

- PAIN -Pain has been calculated on **visual analogue scale** and scored as 1 to 10.

B) Methods of assessment of objective parameters-

- DISCHARGE/VRANASRAV –

Normal	0	Absent
Mild	1	slightly wet gauze
Moderate	2	partially wet gauze
Severe	3	fully wet gauze

- Table no. 4 shows NATURE OF DISCHARGE –

DISCHARGE	GRADE
Serous	0
Sanguineous	+
Serosanguineous-Seropurulent	++
Purulent	+++

- SIZE –

Size has been measured in Length x Width x Height before treatment and after treatment.

- Table no. 5 shows VRANATALA (Slough/Necrotic Tissue)-

GRADE	
0	Smooth, regular and with healthy granulation
1	Smooth, irregular, slight discharge, less granulation
2	Rough, regular wet with more discharge and with much slough needs dressing.
3	Profuse discharge, with slough, needs frequent dressing.

- Table no. 6 shows ODOUR/VRANAGANDHA

GRADE	
0	No smell
1	Tolerable unpleasant smell
2	Bad smell
3	Foul smell which is intolerable

- Table no. 7 shows COLOUR/ VRANAVARNA

GRADE	
0	Pinkish red
1	Slight Pinkish red
2	Slight Whitish/ Yellowish
3	Whitish/ Yellowish

OBSERVATIONS AND RESULTS:-

The data collected and compiled from this clinical trial is sorted out and processed

further by various statistical methods. The observations found are as follows:

Table no. 8 shows Age Distribution:-

Age Group	Group A		Group B	
	Frequency	Percentage	Frequency	Percentage
< 20 Years	1	3.3	3	10.0

20-30 Years	1	3.3	6	20.0
30-40 Years	7	23.3	4	13.3
40-50 Years	5	16.7	8	26.7
50-60 Years	8	26.7	4	13.3
> 60 Years	8	26.7	5	16.7
TOTAL	30	100.0	30	100.0

Table no. 9 shows analysis of Variance of Gender between group A and group B

Gender	Group A		Group B	
	Frequency	Percentage	Frequency	Percentage
Male	21	70.0	21	70.0
Female	9	30.0	9	30.0
TOTAL	30	100.0	30	100.0

Table no. 10 shows analysis of Variance of Occupation between group A and group B

Occupation	Group A		Group B	
	Frequency	Percentage	Frequency	Percentage
Driver	2	6.7	4	13.3
Farmer	4	13.3	7	23.3
Housewife	8	26.7	7	23.3
Police	2	6.7	0	0.0
Private Job	4	13.3	8	26.7
Retired	0	0.0	1	3.3
Student	2	6.7	3	10.0
Worker	8	26.7	0	0.0
TOTAL	30	100.0	30	100.0

Table no. 11 shows analysis of Variance of Discharge between group A and group B

DISCHARGE	Median		Wilcoxon Rank Test	Signed	P-Value	% Effect	Result
	BT	AT					
Group A	3	0	-4.887 ^a		0.000	71.0	Significant
Group B	3	0	-4.900 ^a		0.000	76.6	Significant

Table no. 12 shows analysis of Variance of Pain between group A and group B

PAIN	Median		Wilcoxon Rank Test	Signed	P-Value	% Effect	Result
	BT	AT					
Group A	6	0	-4.806 ^a		0.000	70.5	Significant

Group B	6	1	-4.797 ^a	0.000	74.5	Significant
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Table no. 13 shows analysis of Variance of Slough between group A and group B

SLOUGH	Median		Wilcoxon Rank Test	Signed	P-Value	% Effect	Result
	BT	AT					
Group A	2	0	-4.928 ^a		0.000	68.7	Significant
Group B	2	0	-4.973 ^a		0.000	75.5	Significant

Table no. 14 shows analysis of Variance of Foul Smell between group A and group B

FOUL SMELL	Median		Wilcoxon Rank Test	Signed	P-Value	% Effect	Result
	BT	AT					
Group A	3	0	-4.875 ^a		0.000	70.7	Significant
Group B	2.5	0	-4.889 ^a		0.000	75.3	Significant

Table no. 15 shows analysis of Variance of Color between group A and group B

COLOUR	Median		Wilcoxon Rank Test	Signed	P-Value	% Effect	Result
	BT	AT					
Group A	2	0	-5.027 ^a		0.000	72.1	Significant
Group B	2	0.5	-4.876 ^a		0.000	77.6	Significant

Table no. 16 shows Comparison between Group A and Group B.

	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P-Value
DISCHARGE	Group A	30	30.90	927.00	438.000	0.044
	Group B	30	37.60	1128.00		
	Total	60				
PAIN	Group A	30	35.32	1059.50	305.500	0.030
	Group B	30	39.80	1194.00		
	Total	60				
SLOUGH	Group A	30	28.50	855.00	210.000	0.000
	Group B	30	37.50	1125.00		

	Total	60				
FOUL SMELL	Group A	30	30.57	917.00	298.000	0.013
	Group B	30	35.43	1063.00		
	Total	60				
COLOUR	Group A	30	22.35	670.50	394.500	0.031
	Group B	30	32.65	979.50		
	Total	60				

Table no. 17 shows analysis of Variance between group A and group B

Size		Mean	N	SD	SE	t-Value	P-Value	% Effect	Result
Group A	BT	12.77	30	15.46	2.82	4.132	0.000	50.4	Significant
	AT	6.33	30	8.47	1.55				
Group B	BT	6.60	30	6.53	1.19	4.167	0.000	54.0	Significant
	AT	3.03	30	3.24	0.59				

Table no. 18 shows Overall comparison between Group A and Group B

Parameter	% Effect	
	Group A	Group B
Discharge	71	76.6
Pain	70.5	74.5
Slough	68.7	75.5
Foul Smell	70.7	75.3
Color	72.1	77.6
Size	50.4	54

DISCUSSION :-

ON THE BASIS OF AGE-

Maximum patients (26%) seen in trial group were of age group 50-60, and >60 years.

Patients (26%) seen in control group were of age group 40-50 years.

The incidence of *Dushtavrana* being most common in these age groups was due to

dominance of *Pitta and Vata dosha* the process of aging begins. Due to consumption of various Hetu it may add upto delayed healing process.

ON THE BASIS OF GENDER-

Maximum patients (70%) seen in trial group were of male gender.

Maximum patients (70%) seen in control group were of male gender.

ON THE BASIS OF OCCUPATION-

Maximum patients (26%) in trial group were housewife, workers and Maximum patients (26%) in control group were from private job. The above observation comes to the conclusion that workers, housewives and private job were more affected from dushta vrana it show that low income of patients caused late to present in the hospital which cause the wound to be infected

ON THE BASIS OF DISCHARGE (VRANASRAVA)-

The analysis shows that in case of reduction in Discharge in Group A is 71.0 % and Group B is 76.6 %.

The *Ruksha* and *Ushna Guna* leads to *Kleda Shoshan* and *Tikshna Guna* helps to do *Lekhan Karma* of the vitiated Doshas in *Dushtvrana*, which helps to reduce discharge in *Dushtavrana*.

Though in both Group A and Group B reduction of discharge was significant but comparing these two Groups statistically there is no much difference.

ON THE BASIS OF PAIN (VEDANA)-

The analysis shows that in case of Pain reduction percentage in Group A after 21 days of treatment was 70.5 %. In group B it was 74.5 %, significant reduction effect was observed in both groups. However, there were 4. 0% better pain relief in control group.

An active ingredient of *Kampillak* having *Vatashamak* activity which helps in reducing the pain significantly in trial group (Group A), but marginally less than control group (Group B)

Though in both Group A and Group B reduction of pain was significant but comparing these two Groups statistically there is no much difference.

ON THE BASIS SLOUGH (VRANATALA)-

The analysis shows that in case of decreasing the slough percentage in Group A after treatment was 68.7 and in Group B it was 75.5. P-values for Group A is 0.000 and P-valve for Group B is 0.000, so we can observe that p-values for Group A and Group B are less than 0.05, Hence we conclude that Effect Observed in both groups are significant.

ON THE BASIS OF FOUL SMELL-

Significant reduction is seen in foul smell in both the groups.

ON THE BASIS OF COLOUR

The analysis shows that in case of color percentage in Group A after treatment was 72.1 and in Group B it was 77.6. P-values for Group A is 0.000 and P-valve for Group B is 0.000, so we can observe that p-values for Group A and Group B are less than 0.05, Hence we conclude that Effect Observed in both groups are significant.

ON THE BASIS OF SIZE

The analysis shows that in case of reduction in Size in Group A after treatment 50.4% and Group B 54.0 %. The mean score in Group A was reduced from 12.77 to 6.33 and in Group B mean score was reduced from 6.60 to 3.03 after treatment.

As *Kampillak Avachurnan* not only dries the discharge but doesn't allow new slough to form hence promoting the ropana effect

which leads to healthy granulation tissue formation.

Significant effect was seen in the color of wound before treatment in trial group as well as control group as compared to after treatment.

ON THE BASIS OF STHAN OF VRANA

In the trial group maximum number of patients (65%) were having wound at lower limb followed by 35% of cases were having wound over trunk as in trial group maximum number patient were of *Nija Hetu*. On the contrary in control group maximum number of patient (20%) had wound over trunk i.e *Shastrakarmottar Vrana* while wound at lower limb contribute only 80% of cases.

In both of the group wound site over head and neck contribute minimum number of patients i.e. 5%.*Kampillak* is *Vrana Shodhan* drug too.It act directly on *Krumi*, *Kapha*, *Kushta* and does *Shaman of Vata Dosha* with its *Katu Vipak*. [10]

As *Kampillak* belongs to '*Katuvarga*' it posses all its properties like *Shodhan* of doshas, *Shaman of Kapha* ,*Krumi*, *Visha*, *Kushtha*, *Kandu* which plays important role in *Dushta Vrana Shodhan* .*Katu*, *Kashay*, *Laghu* and *Tikshna* of *Kampillak* also does *Shoshan of Puya* and hence help in *dushta Vrana Shodhana*.and *Chedan* property removes cellular debries from wound. *Kampillak* is one of the drug of '*Tail Varga*' which also posses peculiarity of *Dushta Vranashodhan*. [11]

CONCLUSION

Kampillak Churna Avachurnan showed positive effects in disinfection of infected wounds. [12] It relived pain and foul

smell. *Vranavachurnan* was a simple procedure and cost effective too. But *Vranavchurnan* offers distinct advantages in *Dushtavranshodhan*. *Kampillak Churna* gives beneficial effects as conservative management inspite of surgical interventions such as debridement procedure. It relives pain and foul smell more quickly than any other treatment modalities. *Kampillak Churna Avachurnan* is a rather simple procedure and cost effective too. The endeavour of our study would be best appreciated when it will be bestowed with crown of best and ultimate treatment of infected wound. The quest for knowledge and research in Ayurveda is eternal but we have marked the milestone in it.

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