

## EFFECT OF VRANASODHAK KWATH AND VRANA ROPAK KALKA IN THE MANAGEMENT OF CHRONIC WOUND – A CLINICAL STUDY

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### ABSTRACT

**Purpose of the study:** In Sushruta Samhita, detailed descriptions of aetiopathogenesis, clinical presentations and treatment are found for '*Dusta vrana*'. *Vranasodhana* and *vrana ropana* are the two integral parts of the wound care in ancient India. A *vrana sodhak*, *kasaya* and *vrana ropak kalka* have been used in this study for the management of *Dustavrana*. **Materials and Method:** In this study 60 patients of *Dusta Vrana* were registered from the Shalya Tantra department of Govt. Ayurvedic College Hospital, Guwahati and were planned for open clinical trial. The study is designed depending upon the different subjective and objective parameters. **Result:** The results were found satisfactory in terms of reduction of discharge, pain and surface area of the wound. **Conclusion:** Ayurvedic dressing materials for irrigation of wound and local applications are found effective in the management of *Dusta Vrana*.

**Keywords:** *Dusta Vrana*, *Vrana Sodhak kasaya*, *Vrana Ropak Kalka*, Chronic infected wound.

### INTRODUCTION

Sushruta Samhita, the treasure house of surgical research of ancient Indian civilization described various modalities of treatment of '*dusta vrana*' i.e. chronic wound. Though there is description of *dustavrana chikitsa* found in other treatises like Charaka Samhita, Astanga Samgraha and Astanga Hridaya, the descriptions available in Sushruta Samhita seems to be very much useful in present era of surgical practices. The main principles of *Dusta vrana* (chronic infected wound) *Chikitsa* is to convert it into the stages of *Suddha Vrana* (clean wound) followed by *ruhyaman*

*vrana* (healing wound) and *ruhyavartma vrana* (healed ulcer) respectively. The basic principles of management of *dusta vrana* are use of different methods of *vrana sodhana* and wound bed preparation with the use of *vrana ropaka kalka*. The wound debridement of chronic wound in ancient India were achieved with the application of irrigation of the wound with different *Vrana sodhak (praksalana) kasaya, ksharodak* etc.

After cleaning, application of different types of *Vrana ropaka kalka* were an integral part of the treatment

plan for infected wound<sup>1,4</sup>

## OBJECTIVE

To explore and re-establish the clinical efficacy of *Vranan Sodhak Kashaya* and *Vrana Ropak Kalka* as described in Sushruta Samhita for the treatment of *Dusta Vrana*.

## MATERIAL AND METHODS:

30 numbers of patients of diagnosed case of chronic wound attending the Out Patient Department and casualty of Govt. Ayurvedic College Hospital, Guwahati have been selected on open, randomly basis for the study. Detailed history has been taken in a pre-designed proforma for collection of different data of subjective and objective parameters in this study. The wounds were irrigated with the *Vrana Sodhak Kasaya* on daily basis following all aseptic measures. *Vrana Sodhak Kasaya* will be prepared from *Aragvadha* (*Cassia fistula* Linn.), *Patha* (*Cissampelos pareira* Linn.), *Nimba* (*Azadirachta indica* A. Juss), *Guduchi* [*Tinospora cordifolia* (Willd) Miers ex Hook. f. & Thomas], *Indrayava* [*Holarrhena antidysenteria* (Linn) Wall], *Kiratatikta* (*Swertia chirayita* Roxb ex Flem), *Surasa (tulasi)* (*Ocimum sanctum* Linn.)<sup>2</sup> and *Vrana ropak kalka* will be prepared from *Lajjalu/Samanga* (*Mimosa pudica* Linn), *Sarala* (*Pinus roxburghii* sargent), *Somabalka* (*Acacia suma buch. ham*), *Rakta Chandan* (*Pterocarpus santalinus* Linn f), *Guduchi* (*Tinospora cordifolia*), *Yastimadhu* (*Glycyrrhiza glabra* Linn), *Soma* (*Ephedra gerardiana* wall), *Kakoli* (*Roscoea procera* wall).<sup>3</sup> Then *Vrana Ropak Kalka* was applied followed by use of suitable bandaging technique.

### Inclusion criteria:

1. Age- 18 to 65 years.
2. Both the sexes.
3. Fresh or treated cases.
4. Wound with discharge of pus, smell and pain.

### Exclusion criteria:

1. Diagnosed malignant ulcer, Tubercular ulcer, syphilitic ulcer etc.
2. HIV, Hep B and Hep C positive cases.

3. Uncontrolled diabetic patients with multiple complications like nephropathy, neuropathy and retionopathy etc.
4. Patients with bleeding disorder.
5. Medicolegal cases.

**Treatment group:** Patients treated only in one group containing 30 numbers of cases.

### Selection of cases

Thirty numbers of cases of chronic wound attending the OPD of Shalya Tantra department selected for this study with proper history taking, physical examination and investigations. All the routine investigations like TC, DC, Hb%, ESR, BS (Fasting, PP), B. urea, S. Creatinine, Urine for R/E, Viral profile (HIV, HBsAg, Anti HCV) were done. The cases were selected considering both exclusion and inclusion criteria.

### Therapeutic intervention:

The selected cases treated either on the basis of OPD level care or IPD level care depending upon the need and severity of the cases. During the daily dressing, assessment of subjective and objective parameters were assessed and recorded. Assessment of the criteria for different parameter is as follows-

1. Pain :
  - No pain – 0
  - Mild pain or bearable – 1
  - Moderate pain – 2
  - Sever pain – 3
2. Discharge :
  - No discharge – 0
  - Scanty & little discharge – 1
  - Seropurulent discharge – 2
  - Profuse purulent discharge with slough – 3
3. Smell :
  - Smell is evident on entering the room (6-10 feet or 2-3 meters from the patient) with the dressing removed – 3
  - Smell is evident of close proximity to the patient when the dressing is intact – 2
  - Smell is evident at close proximity to the patient when the dressing is removed – 1
  - No smell is evident, even at the patient's beside with the dressing removed – 0.

4. Colour – (Macroscopic study) :

- Red, healthy granulation tissue with epithelisation – 0.
- Healthy granulation tissue without epithelisation – 1.
- Unhealthy granulation tissue without slough in the surrounding – 2.
- Unhealthy granulation tissue with slough in the surrounding – 3.

5. Size and shape :

- Complete epithelisations – 0
- $0.1\text{ cm}^3 - 5\text{ cm}^3 - 1$
- $5.1\text{ cm}^3 - 10\text{ cm}^3 - 2$
- $> 10\text{ cm}^3 - 3$

**Statistical method:**

1. Mean and standard deviation of all the variables calculated.
2. In the group of 30 patients, paired t-test has been done for each parameter.

**OBSERVATION AND RESULTS:**

In this group male and female ratio was 19:11 and maximum number of cases found in the age group from 21 to 50 years (80%) which indicates in this working age group, males suffers more from external trauma followed by wound infection. Amongst the 30 patients 63% are in service sector and house maker. Out of 30 patients, distribution of site of wounds is as – 57% in the foot followed by 20% and 40% in leg and perianal region respectively.

Distribution of patient according to types of wounds are as – 80% of the wound are of infective origin, 14% diabetic, 3% vascular and 3% nurogenic in origin.

In 25% of the patients pus culture found positive for staphylococcus, 6% E.coli, 6% Pseudomonas and 50% sterile.

57% patients are poor, 30% are of lower middle, 7% upper middle and 2% upper class.

**RESULTS**

Result of paired t-test in the group are as follows –

**Criteria-1 (Gandha): Table 1**

$X_{BT}$	$X_{AT}$	SD <sub>BT</sub>	SD <sub>AT</sub>	SE	t <sub>29</sub>	P
2.4	0.13	0.57	0.31	0.11	20.9	<0.001

t<sub>29</sub> = 20.9, p<0.001, hence result is highly significant, it implies, the effect of the drug in *gandha* is highly significant.

**Criteria-2 (Varna): Table 2**

$X_{BT}$	$X_{AT}$	SD <sub>BT</sub>	SD <sub>AT</sub>	SE	t <sub>29</sub>	P
2.6	0.1	0.47	0.44	0.01	25.0	<0.001

t<sub>29</sub> = 25.0, p<0.001, hence result is highly significant, it implies, the effect of the drug in *varna* is highly significant.

**Criteria-3 (Srava): Table 3**

$X_{BT}$	$X_{AT}$	SD <sub>BT</sub>	SD <sub>AT</sub>	SE	t <sub>29</sub>	P
2.36	0.26	0.48	0.45	0.019	21.0	<0.001

t<sub>29</sub> = 21.0, p<0.001, hence result is highly significant, it implies, the effect of the drug in *srava* is highly significant.

**Criteria-4 (Ruja): Table 4**

$X_{BT}$	$X_{AT}$	SD <sub>BT</sub>	SD <sub>AT</sub>	SE	t <sub>29</sub>	P
2.3	0.06	0.54	0.16	0.1	22.4	<0.001

t<sub>29</sub> = 22.4, p<0.001, hence result is highly significant, it implies, the effect of the drug in *ruja* is highly significant.

**Criteria-5 (Akriti) : Table No. 5**

$X_{BT}$	$X_{AT}$	SD <sub>BT</sub>	SD <sub>AT</sub>	SE	t <sub>29</sub>	P
2.4	0.16	0.5	0.3	0.10	22.4	<0.001

t<sub>29</sub> = 22.4, p<0.001, hence result is highly significant, it implies, the effect of the drug in *Akriti* is highly significant.

**DISCUSSION**

The character of *dustavrana* are excessively narrowed or with wide floor, excessive induration or very soft and loose tissue which may be elevated or depressed along with discharge of pus and sloughing material causing pain, burning sensation, itching and non-healing for prolonged duration. The principles of treatment for *dustavrana* are *Vranasodhan* and *Vranaropan*. In this study, *Vranasodhak kashay* and *Vranaropak kalka* is applied in 30 numbers of cases of *dustavrana*. The result of this study is analysed with standard statistical methods.

The results of paired t-test for *gandha*, *varna*, *srava*, *vedana* and *akriti* are found highly significant as the p-value is <0.001 in all parameters. The Ayurvedic procedure for irrigation of chronic wound by *vrana sodhak kasaya* and application of *vrana ropak kalka* are found effective for the management of '*Dusta vrana*'. Most of the patients improved dramatically within 42 days of the therapy in terms of reduction of smell, discharge, pain, and size of the wound surface along with evidence of formation of healthy granulation tissue.

**CONCLUSION**

After the statistical analysis of the data for subjective and objective parameter, it can be concluded that Ayurvedic dressing material may be useful for the management of the chronic infected wound. The description available for *Dusta Vrana* found identical to the chronic infected wound. Different herbal prepara-

tions as water-extract may be useful in modern era of surgery after scientific revalidation.

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