

A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFECT OF KIRATATIKA KASHAYA AND PANCHAVALKALA KASHAYA DHAVANA IN THE MANAGEMENT OF DUSTAVRANA

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ABSTRACT

Wound healing is a natural process, but factors like slough, infection and foreign body, affect the normal process of healing. Hence, good wound healing with minimal scar formation is the prime motto. In Ayurvedic texts a number of drugs and technique are explained about Shodhana and Ropana of Vrana. Dushta vrana is one such long standing ulcer with profuse discharge and slough where removing the debris and enabling drug to reach healthy tissue, which is more important. Acharya Sushruta has mentioned Dhavana as Shasti Upakrama for principles of management of Dushta vrana. Hence, a study is planned. To evaluate and compare efficacy of Dhavana with Kiratatikta Kashaya & Panchavalkala Kashaya in Dushta Vrana along with internal medication as Triphala Guggulu, Gandhaka Rasayana and Asanadi Kwatha and Dressing within both groups. It is a Comparative clinical study, grouped into two groups of 20 patients each. Group A was treated with Kiratatikta Kwatha & Group B was treated with PanchavalkalaKashaya as Vrana Dhavana respectively.

KEYWORDS: DushtaVrana, Dhavana, KiratatiktaKashaya, PanchavalkalaKashaya, Wound Healing.

INTRODUCTION

Skin, the largest organ in the human body, plays a crucial role in the sustenance of life through the regulation of water and electrolyte balance, thermo regulation, and by acting as a barrier to external noxious agents including micro-organisms. When this barrier is disrupted due to any cause - ulcers, burns, neoplasm or trauma - these functions are no longer performed adequately. It is therefore vital to restore its integrity as soon as possible.

Wounds are everywhere, occurring in the young and elderly, in hospital and at home, and affect patients in every clinical

specialty around the world. While there are few Indian studies on the epidemiology of chronic wounds, one study estimated the prevalence at 4.5 per 1000 population¹. These ulcers last on average 12 to 13 months, recur in up to 60% to 70% of patients, can lead to loss of function and decreased quality of life, and are a significant cause of morbidity^{2,3} Two of the most important cornerstones in the care of any ulcer are (1)debriding healable wounds by removing non-viable, contaminated, or infected tissue (through surgical, autolytic, enzymatic, mechanical,

or biological methods and (2) assessing and treating the wound for increased bacterial burden or infection. The basic objective of any health care system is to provide better physical and mental health across the communities through effective interventions. The vast medical knowledge of ancient Ayurveda practically remains unexplored yet, and any undertaking which has the objective of making that terra incognita, known to the scientific world is bound to be welcome by the public. Sushruta – the Father of Indian surgery in his treatise Sushruta Samhita, has explained Vrana (Ulcers), its complication and management in great detail.

The Ayurveda pharmacopoeia contains over 200 herbs, minerals, animals and fat preparations that are used for skin care, which have the potential to be used for wound healing⁴.

In Ayurveda for healing of Vrana, local treatment is also important along with oral medications. There are numbers of drugs mentioned to treat different types of Vrana (Ulcers). Among them the Panchavalkala Kashaya⁵ and Kiratatikta Kashaya,⁶ as **Dhavana**⁷ which is mentioned in Sushruta Samhita is selected for the study.

AIM AND OBJECTIVES

-To compare the Vrana shodana and Ropana effect of Kiratatikta Kashaya Dhavana and Panchavalkala Kashaya Dhavana in Dusta Vrana.

MATERIALS AND METHODS

GROUP A- Kiratatikta Kashaya Dhavana is done followed by dressing of wound.

GROUP B – Panchavalkala Kashaya Dhavana is done followed by dressing of wound.

Methodology of intervention - Dhavana Poorva Karma:

Kwatha Choorna was prepared as per reference in Sushruta Samhita.

Kiratatikta Kwatha Choorna was prepared on R.A.M.C pharmacy, Bangalore

Pradhana Karma

Kwatha Preparation by 1 part of Yava-kutta Kwatha Choorna is mixed with 16 parts of water and boiled till 1/8th of total quantity is remained and filtered in cloth. 200 ml of kwatha is used for Parishekha. The warm kwatha is poured over Dushta Vrana by using sterile gauze or pad for about 15 minutes then the Vrana is mopped with dry sterile gauze.

Paschat Karma- Dressing done with dry sterile gauze and pad and bandaging was done.

Internal medication:

-Tab. Triphala Guggulu 450 mg one tid

-Tab. Gandhaka Rasayana 250 mg one tid

-Asanadi kwatha 50 ml bd

Duration of treatment: 30 days

Observation period

Observation period was 2 weeks. Assessment criteria was recorded on day 1 (before treatment), day 7, day 15, Day 30, and findings was assessed clinically and statistically.

Follow up period

First on 7th day and later on 15 day and 30th day of treatment to record assessment criteria and observe for any other findings.

ASSESSMENT CRITERIA:

Subjective parameters

- Itching sensation.
- Burning sensation.
- Smell/ odour.
- Tenderness.

Objective parameters

- Discharge: Gauze bandage.
- Size of wounds: scale in mm.
- Floor: Amount of granulation tissue.
- Pain :Visual Analogue scale

RESULTS

VARIABLE	GROUP A	GROUP B	TOTAL	Z VALUE	P VALUE
SIZE					
Before treatment	4.9±0.82	5.01±0.71	4.95±0.76	-0.257	0.797
After treatment	2.35±0.7	3.67±0.71	3.01±0.96	-4.286	<0.001**
SMELL					
Before treatment	2.45±0.51	2.55±0.51	2.5±0.51	-0.624	0.532
After treatment	0.2±0.41	1±0.46	0.6±0.59	-4.399	<0.001**
PAIN					
Before treatment	2.25±0.44	2.55±0.51	2.4±0.5	-1.912	0.056
After treatment	0.15±0.37	1.4±0.5	0.78±0.77	-5.299	<0.001**
BURNING SENSATION					
Before treatment	2.3±0.47	2.4±0.5	2.35±0.48	-0.655	0.513
After treatment	0.2±0.41	1±0.32	0.6±0.55	-4.725	<0.001**
ITCHING					
Before treatment	2.3±0.47	2.5±0.51	2.4±0.5	-1.275	0.202
After treatment	0.05±0.22	1.05±0.22	0.55±0.55	-5.879	<0.001**
COLOUR					
Before treatment	2.35±0.49	2.55±0.51	2.45±0.5	-1.255	0.209
After treatment	0.5±0.51	1.15±0.37	0.83±0.55	-3.781	<0.001**
DISCHARGE					
Before treatment	2.15±0.37	2.2±0.41	2.18±0.38	-0.411	0.681
After treatment	0±0	0.9±0.31	0.45±0.5	-5.649	<0.001**
FLOOR					
Before treatment	2.45±0.51	2.4±0.5	2.43±0.5	-0.316	0.752
After treatment	0.05±0.22	0.9±0.45	0.48±0.55	-4.989	<0.001**
TENDERNESS					
Before treatment	2.35±0.49	2.5±0.51	2.43±0.5	-0.947	0.343
After treatment	0±0	0.7±0.47	0.35±0.48	-4.583	<0.001**

Significant figures

+ Suggestive significance (P value: 0.05<P<0.10)

* Moderately significant (P value:0.01<P ≤ 0.05)

** Strongly significant (P value : P≤0.01)

DISCUSSION

Kiratikta has antibacterial, wound healing and antioxidant properties necessary for management of infected dermal wounds. Kiratikta not only destroys these pathogens

from the wound environment but it also acts as a stimulant for wound healing due to the presence of xanthonenes, tannins⁸, terpenoids, flavonoids, Mangiferin, alkaloids, and lignin as active constituents. **Xanthonenes** which acts as anti-allergic, anti-inflammatory, anti-bacterial, anti-fungal activities, **Terpenoids** mainly use their lipophilicity to destroy the cell membrane of bacteria. **Flavonoids**⁹ scavenges the radical effectively and reduces the oxidative stress; this decreased oxidative stress lowers the inflammatory response and inhibits the transcription of nuclear factor antioxidant activity of Kiratatikta helps to inhibit Reactive oxygen species on infected wound and enhance healing. **Mangiferin** present in the stem of the plant which helps in reduction of maltase, sucrose, glucose, isomaltase and aldose reductase¹⁰

Pathya- Apathya¹¹

Pathya

-Vranita should consume Jeerna Shaali, Odhana which is made warm unctuous & taken with Jaangala Maamsa.

-Soup prepared from Tanduliyaka, Jeevanti, Vaartaaka, Patola, Kaaravellaka, Daadima, Aamalaka etc.

-He should not sleep during day, should remain inside house devoid of breeze etc.

-He should remain devoid of undesirable nails; hairs should be clean, resort to observance of propitiatory and auspicious rites.

Apathya

-Vranita should not consume Navadhaanya, Maasha, Tila, Kalaaya, Kulattha, Nishpaava, Hareetaka shaaka, Katu, Amla, Lava rasa substances, Guda, Sushka shaaka, eatable made from Pishta, Ajaa, Avika, Anoopaa maamsa, Sheetaudaka, Krishara, Paayasa, Dadhi, Dugdha, etc.

-Person who is habitual to drinking madhya should avoid using Maireya, Arista, Aasava, Seedhu etc. Vrana rogi should avoid Vaata, Aatapa, Raja, Dhooma, Atibhojana, Bhaya Shoka, Krodha, Raatri jaagarana, Vishamaashana, Vyayaama, Upavaasa, Chankramana etc.

Effects on Size of the ulcer between the groups-

Group A treated with Kiratatikta Kashaya Dhavana showed, Length 52%, Breadth 47%, Depth 78% improvement whereas, Group B treated with Panchavalkala kwatha showed, Length 27%, Breadth 23%, Depth 39%, overall **59%** in Group A and **30%** in Group B improvement after 30th day of treatment. Wound contraction was faster in Group A comparing to group B because the drugs in Group A contains xanthonenes, terpenoids, and flavonoids, are main chemical constituents that having anti-inflammatory in action, reduces microbial load and promotes the healing process by wound contraction with increased neoangiogenesis.

Effects on Smell of the ulcer between the groups-

Group A treated with Kiratatikta Kashaya Dhavana showed **93%** improvement whereas, Group B treated with Panchavalkala kwatha showed **61%** improvement after 30th day of treatment. Hence study reveals that pain may be better managed with Kiratatikta Kashaya Dhavana. This might due to anti-microbial property of the drug

Effects on Pain of the ulcer between the groups-

Group A treated with Kiratatikta Kashaya Dhavana showed **93%** improvement whereas, Group B treated with Panchavalkala kwatha showed **45%** improvement after 30th day of treatment. Hence study reveals that pain may be better

managed with Kiratatikta Kashaya Dhavana . This might due to the action of the Guna (Property). Having Guru (heavy) Guna it is supposed to be Vatahara and thus might have decreased the Ruja

Effects on Burning Sensation of the ulcer between the groups- - Group A treated with Kiratatikta Kashaya Dhavana showed **92%** improvement whereas, Group B treated with Panchavalkala kwatha showed **58%** improvement after 30th day of treatment .Hence study reveals that Burning sensation may be better managed with Kiratatikta Kashaya Dhavana This might due to Sheeta veerya which might have contributed as dahashamaka

Effects on Itching of the ulcer between the groups- - Group A treated with Kiratatikta Kashaya Dhavana showed **98%** improvement whereas, Group B treated with Panchavalkala kwatha showed **57%** improvement after 30th day of treatment. .Hence study reveals that Itching may be better managed with Kiratatikta Kashaya Dhavana This might due to good Sothahara (that which reduces swelling), due to the Kashaya Rasa of the drug it acts with Peedana (act of squeezing), Ropana (heal) and Shodhana (curative effect) property. Due to these properties, it helps in reducing itching.

Effects on Varna of the ulcer between the groups- Group A treated with Kiratatikta Kashaya Dhavana showed **77%** improvement whereas, Group B treated with Panchavalkala kwatha showed **54%** improvement after 30th day of treatment. .Hence study reveals that Itching may be better managed with Kiratatikta Kashaya Dhavana This might due to it is considered as pittagna that is both by the action of Rasa

and Veerya they are Pittahara and therefore they must decrease the Raga (redness), which is mainly due to Pitta. By virtue of its Kashaya Pradhana Rasa, it must have acted as Rakta Shodhaka, Pitta Shamana, Varnya and Twak Prasadana .

Effects on Discharge of the ulcer between the groups- Group A treated with Kiratatikta Kashaya Dhavana showed **100%** improvement whereas, Group B treated with Panchavalkala kwatha showed **58%** improvement after 30th day of treatment. .Hence study reveals that Itching may be better managed with Kiratatikta Kashaya Dhavana This might due to Kashaya Rasa and by the action of the Rasa; it acts as a Stambhaka and Grahi It also must be Atitwak Prasadaka Due to all these properties, it must have reduced the Srava. The Stambhana effect might also be attributed to the Sheeta Veerya of the drug.

Effects on Floor of the ulcer between the groups- Group A treated with Kiratatikta Kashaya Dhavana showed **98%** improvement whereas, Group B treated with Panchavalkala kwatha showed **63%** improvement after 30th day of treatment. .Hence study reveals that Itching may be better managed with Kiratatikta Kashaya Dhavana This might due to Laghu, *Rooksha*, *Teekshna*, *Kashaaya* and *Shodhana*, *Ropana* property might have helped in improving the quality of granulation tissue. Kledahara , chedana and Raktashodhaka properties of Kashaya Rasa might also had facilitated the pharmacological debridement of the slough and development of granulation tissue to build up the floor of ulcer.

Effects on Tenderness of the ulcer between the groups- Group A treated with Kiratatikta Kashaya Dhavana showed **100%**

improvement whereas, Group B treated with Panchavalkala kwatha showed 73% improvement after 30th day of treatment. Hence study reveals that Itching may be better managed with Kiratatikta Kashaya Dhavana

CONCLUSION

-In Group A the clinical improvement was predominant for the treatment with respect to Healing, Tenderness, Discharge, Floor, Pain, Burning Sensation, Itching and Smell

-Kiratatikta Kashaya Dhavana Karma has shown clinically a very significant effect in Vrana Shodana and ropana in Dusta Vrana

-Kiratatikta Drug shown better results in Diabetic ulcer compared to non-healing ulcer due to presence of active constituent magneferin which acts as a hypoglycemic agent locally.

-In Group B –The clinical improvement was shown for the treatment with respect to the Floor, Tenderness, Discharge, Smell and Burning Sensation.

-The therapeutic results in both the groups, Kiratatikta kashaya (84%) was more effective compared to that of Panchavalkala kashaya(51%) , in both the groups the healing of ulcer shown the significant results. Hence, Statistically both the Kashaya are significant.

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Before treatment



During treatment



After treatment

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