



Role Of Karanjadi Rasakriya In The Management Of Dustavrana With Special Reference Chronic Non-Healing Ulcer : A Case Study

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ABSTRACT

Background: Vrana is an interruption of continuity of body tissue or part by physical, microbial, chemical or immunological causes, typically associated with loss of function. Vrana can be correlated with wounds and ulcers. Normally, Vranas are healed by itself if kept clean. The presence of infection, insufficient blood supply, tissue tension, radiation, malnutrition, diabetes, consumption of steroids etc. are the important factors which delay the wound healing process. Dushta Vrana is one of the Vranas which needs time for its healing. Acharya Sushruta mentioned Rasakriya under Shasti Upakramas for management of Vrana. Any drug formulation should possess two qualities for proper wound healing i.e., Vrana Shodhana (Making free from undesirable wound factors) and Vrana Ropana (The factors which promotes wound healing). Many formulations are in use for centuries. One of them is Karanjadi rasakriya. The objective of the present study is to evaluate the effect of Karanjadi rasakriya on the basis of relief in signs and symptoms of Dushta Vrana. **Materials and Methods:** In this study, Lepa of Karanjadi rasakriya was applied on affected part of 20 patients selected from Shalya OPD, TGAMC&H, Ballari, for the management of Vrana. **Results:** The results observed based on the changes obtained on the subjective and objective parameters taken for consideration for this study viz. Pain, Size of ulcer, Discharge, granulation tissue and were found not significant on all the above parameters. **Conclusion:** It showed that Karanjadi rasakriya is not significantly helped in reduction of the signs and symptoms of the Dushta Vrana.

Key words: Vrana, Dushta Vrana, Karanjadi rasakriya, Wound Healing

INTRODUCTION

It is said that Vrana is that which covers the skin and the Vranavastu, that is scar tissue remains on body till the person survives. Vranavastu can be said as scar or a mark that is seen remaining only in broad and deep wounds but not in thin and superficial ones. He elaborates derivation of word Vrana in Dwivraniyachikitsa^[1]

Acharya Dalhana also mentions meaning of Vrana as causing discolouration of the body or its parts^[2] Vrana can be co-related with wound and ulcers. An ulcer is break in the continuity of the covering epithelium, skin or mucus membrane. It may either follow molecular death of the surface epithelium or its traumatic removal. Chronic wounds are defined as wounds that fail to proceed through the normal phases of wound healing in an orderly and timely manner.

The common causes are venous disease, arterial disease, and neuropathy. Less common causes are metabolic disorders, haematological disorders and infective diseases.^[3]

Classification of Vrana^[4]

Vrana are classified into two main types on the basis of Hetu:

(A). Nija vrana:

- prolonged or excessive inflammation, persistent infections, formation of drug resistant microbial bio-films, and the inability of dermal and/or epidermal cells to respond to reparative stimuli.

(B). Agantujavrana:

- It is caused by external factors like Vadha, Bandha, fall or injury due to fangs, bites etc. It is of 6 types:
 1. Chinna (Incised wound)
 2. Bhinna (Lacerated wound)
 3. Vhiddha (Punctured wound)
 4. Kshata (Lacerated wound)
 5. Picchita (Contused wound)
 6. Ghrishta (Abrasion)

Vrana can also be classified according to the involvement of Doshas (Dosha Prasara):

(A). Shuddhavrana

(B). Ashuddhavrana:

It can be classified into 15 types:

1. Vataj
2. Pittaj
3. Kaphaja
4. Raktaj
5. Vata-Pittaj
6. Vata-Kaphaj
7. Pitta-Kaphaj
8. Vata-Raktaj,
9. Pitta-Raktaj
10. Kapha-Raktaj
11. Vata-Pitta-Raktaj
12. Vata-Kapha-Raktaj
13. Pitta-Kapha-Raktaj
14. Vata-Pitta-Kaphaj
15. Vata-Pitta-Kapha-Raktaj

Chronic wounds can be classified as vascular ulcers (e.g., venous and arterial ulcers), diabetic ulcers, and pressure ulcers. Some common features shared by each of these wounds include prolonged or excessive inflammation, persistent infections, formation of drug resistant microbial bio-films, and the inability of dermal and/or epidermal cells to respond to reparative stimuli.

Venous Ulcers: In venous disease, ulcers are usually located in the gaiter area between the ankle and the calf, often on the medial aspect of the leg. Venous ulcers arise from venous valve incompetence.

Arterial Ulcers: Arterial ulceration typically occurs over the toes, heels, and bony prominences of the foot i.e. ulcer appears “punched out” with well-demarcated edges and a pale, non-granulating and necrotic base. These occur as a result of reduced arterial blood flow and in turn, reduced tissue perfusion.

Diabetic Ulcers: Diabetic patients are at higher risk for arterial diseases and neuropathy, therefore, can develop ulcers due to both entities. In addition, hyperglycemia poses the risk of ulcers secondary to neuropathic impairment of sensory, motor, and autonomic function, typically in the hand and foot, or “stocking and glove” distributions.

Pressure Ulcers: Pressure ulcers are, as their name implies, caused primarily by unrelieved pressure. They usually occur over bony prominences such as the sacrum or the heel but can occur on any part of the body subjected to pressure.^[5]

Stages of Vranaropana (Wound Healing)^[6]

- 1. Shuddhavrana (Clean Wound):** The Vrana which is soft, smooth, color like tongue, painless with clear margins and without discharge is termed as Shuddhavrana.
- 2. Rhuhyamaanavrana (Healing Wound):** The wound having color like pigeon, without any discharge, firm and full of granulation tissue is termed Rhuhyamaanavrana.
- 3. Samyakrudhavrana (Healed Wound):** The wound without any swelling, pain, any sign of inflammation, color similar to surrounding skin and a flat scar without any granulation is termed as Samyakrudhavrana.

Management of Vrana Wound healing completes in three phases:

Inflammatory, proliferative and remodelling. Granulation, collagen maturation and scar formation are some of the other phases of wound healing but are independent of each other.^[7] Normally wound factors delay wound healing.

The presence of infection is one of the important factors which delay the wound healing process. Dushta Vrana is one of the Vranas which needs time for its healing. For healing, it is necessary to remove the maximum Dushti by virtue of Shodhana and Ropana.

Management of Dushta Vrana includes Shodhana (cleaning) both external and internal and Ropana chikitsa (wound healing). For Antah Shodhana, all types of Panchakarma help depending upon the Dosha involvement. Bahya Shodhana means cleaning of wound by using Kashaya of Shodhanaga Dravyas, Varti, Kalka, Ghruta, Taila, Churna and Rasakriya.

Vrana Ropana should be done using drugs having healing properties. Ropana is always associated with Shodhana in Ayurveda because a wound cannot be healed if it is not Shuddha, so healing is only possible factor if Vrana is clean.^[8] Even though healing is a natural process, it is inhibited by various factors. Acharaya Sushruta has mentioned Shastikupramas for the management of Vranas. One of these is Rasakriya.^[9]

Preparation of Rasakriya

Rasakriya is the form of preparation of the aqueous extract of the plant materials used.

Ayurvedic Rasakriya is indicated for Shodhana and Ropana effects:

1. Shodhana Rasakriya is applied to Sthiramamsi and Dushta Vrana.
2. Ropana Rasakriya is applied to Sandhisthita, Pittaja, Raktaja and Abhigata Vrana.^[11]

Karanjadi Rasakriya:

Sl.no	Name of drugs	Quantity
1	Karanja twak	1 part
2	Triphala churna	1 part each
3	Shuddha manashila	
4	Shuddha haritala	
5	Shuddha sphatika	
6	Shuddha kasisa	
7	Jala	16 parts
8	Madhu	q.s
9	Nimbu swarasa	q.s

- Raw drugs are collected from Karjaker Pharmacy Belgaun Karnataka. Karanjadi Rasakriya is prepared under the supervision of Dept Of PG studies in Dravyaguna, Rasashastra & Bhaishajya kalpana of Taranath Government Ayurveda Medical College & PG Center Ballari.
- Haratala, Manashila, Kasisa, Sphatika are taken in measured quantity, and done shodhana as described in classical texts.
- Haratala shodhana: Sthapana with churnodaka for 48 hrs (2 days)
- Manashila shodhana: Sthapana with churnodaka for 72 hrs (3 days)
- Kasisa shodhana: Bhavana with nimbu swarasa for 8 hrs
- Sphatika shodhana: Bharjana
- One part of coarsely powdered Karanja twak churna, Triphala churna, is boiled with 16 parts of water over mild fire. Till it reduces to 1/8th part.
- Filter the kwatha, and again keep for boiling until it becomes semisolid consistency.
- Add the prakshepaka dravyas i.e shuddha sphatika, shuddha kasisa, shuddha manashila, shuddha haritala in equal quantity. i.e in a proportion of 1 shana each
- Again heat it over mild fire till it gets semisolid consistency.

- Off the flame an keep it for swanga sheeta.
- Add madhu an mix it well until it become the lepa consistency.
- Store in a air tight container
- Add quantity sufficient of nimbu swarasa while application of rasakriya over ulcer.

AIM AND OBJECTIVES

1. To evaluate the effect of Karajnadi Rasakriya in the management of dusta vrana.

MATERIAL AND METHODS

20 patients above 18 years of age who had chronic non healing pedal ulcers (Dushtavrana) persisting for a duration more than 6 weeks were selected after informed consent for the study. All the patients underwent uniform assessment that included detailed medical history, local ulcer examination and systemic examination. Some basic blood tests were conducted, including tests for ESR, CBC, HIV, HbsAg, HCV and wound cultures to look for wound infections. A wound biopsy and a detailed immunologic assay were not conducted owing to a variety of factors like the patient's financial constraints, fear of further wound healing delay, and lack of specificity in a definitive diagnosis.

Application:

The wound is cleaned with normal saline. After drying with sterile gauze, Vranalepa is applied over the wound followed by sterile pads as absorbent layer. The dressing is secured with bandages without compromising the circulation.

Inclusion Criteria

1. Patients between the age of 18-70 years were selected for the study.
2. Patients irrespective of their sex, occupation, were selected for the study.
3. Patients having clinical features of Nija/Agantuja Dushta Vrana i.e., foul smell, pus discharge, pain, burning sensation and edema were selected for study.

Exclusion Criteria

1. Patients suffering from systemic diseases like uncontrolled Diabetes mellitus were excluded from the study.
2. Patients with co-existing medical conditions such as heart failure, chronic liver disease, chronic renal disease, and chronic infectious diseases like tuberculosis (TB), HIV, hepatitis B, and hepatitis C were excluded from the study.
3. Patients suffering from grave conditions like malignant ulcers, Marjulin ulcers etc. were also excluded.
4. Patients on prolonged medication with corticosteroid, antidepressants, anticholinergics, immune suppressants, estrogen replacement therapy etc. or any other drugs that may have an influence on the outcome of the study.

Duration of treatment

Total 21 days were taken for each patient with first follow-up after 28 th days.

Day 0 = Enrolment Day

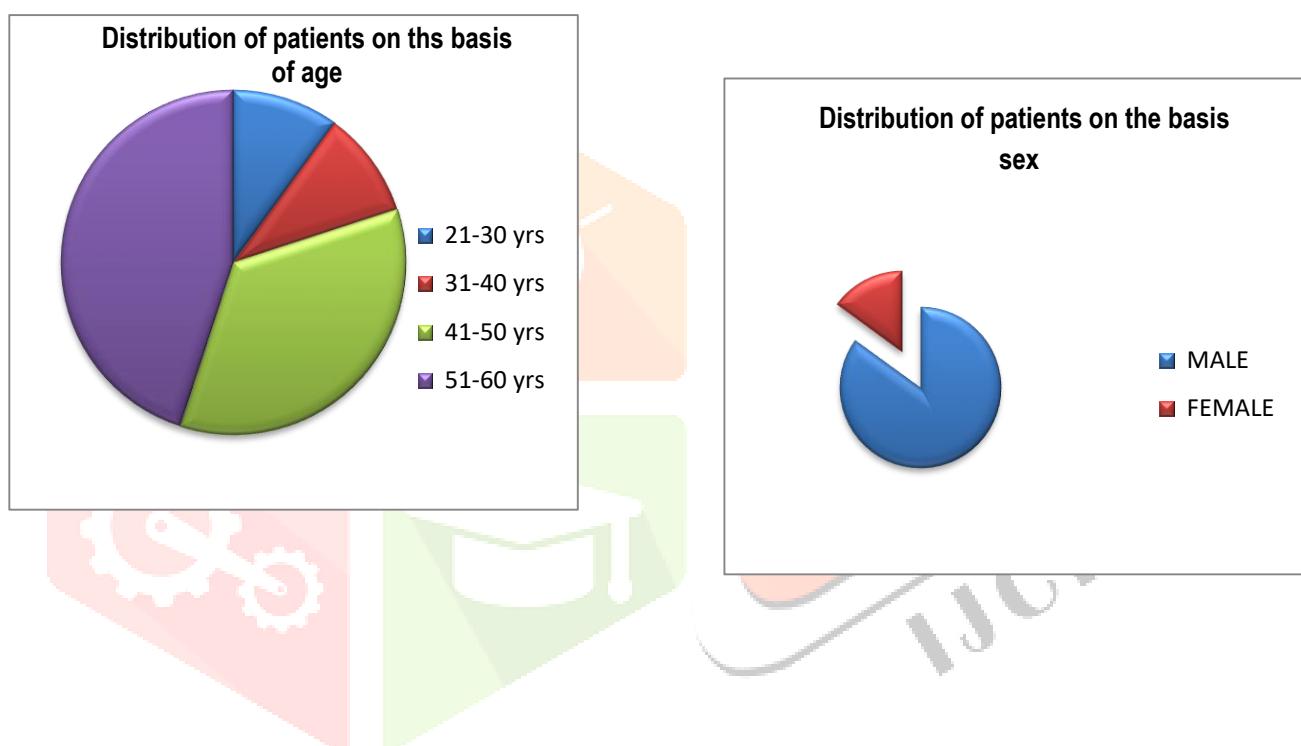
Day 7 = observation

Day 21 = First follow-up

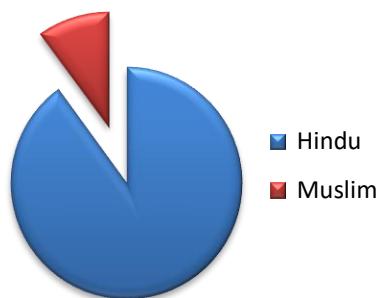
Dressing was done every day for 21days.

Statistical data of the selected patients

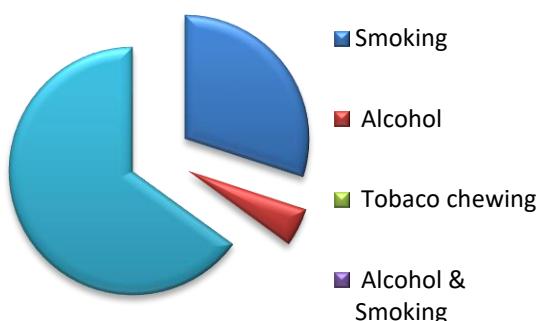
The clinical observations from different aspects of the treatment have been represented showing the statistical analysis according to various factors like occupation, Gender, Age, type of ulcer and Addiction.



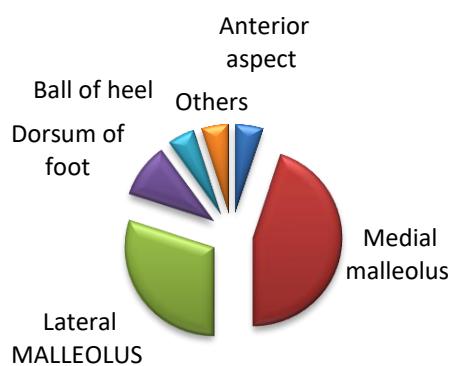
Distribution of patients on the basis of religion



Distribution of patients on the basis of habits



site of ulcer



Distribution of patients on the basis of shape of ulcer

Out of 20 patients 11(55%) of patients were having oval shaped ulcer, 06(30%) of patients were having circular shaped ulcer, 03(15%) of patients were having irregular shaped ulcer.

Assessment criteria

Pain

Grade	Visual Analog Pain Scale
0 (0)	No pain
1(1-3)	Mild pain
2(4-7)	Moderate pain
3(8-10)	Severe pain

Itching

Grade	Kandu (Itching)
0	Absent
1	Present

Objective Parameters

Size of Ulcer

Grade	Size (Parimana)
0	Healed
1	1-3 cms
2	3.1-6 cms
3	6.1-10 cms

Margins

Grade	Margins
0	Well defined
1	With advanced border of epithelium
2	No advancing border of epithelium
3	Not well defined

Discharge (Srava)

Grades	Discharge
0	No discharge
1	Wets 2x2 cm gauze
2	Wets 4x4 cm gauze
3	Wets more than 6x6 cm gauze

Floor (Granulation tissue)

Grade	Floor
0	Complete epithelialization, well defined granulation tissue
1	Complete epithelialization, poor granulation tissue.
2	No epithelialization, granulation tissue poorly formed.
3	No epithelialization. No granulation tissue formed.

Surrounding skin

Grade	Surrounding skin
0	Twak sama varna
1	Kapota varna
2	Shweta rakta varna
3	Krishna varna

OBSERVATIONS AND RESULTS

PAIN

Groups	Before treatment				After treatment			
	Mean	SD	Median	IQR	Mean	SD	Median	IQR
Group A	1.8	1.2	2.0	1.3	2.4	0.7	2.0	0.5

ITCHING

Groups	Before treatment				After treatment			
	Mean	SD	Median	IQR	Mean	SD	Median	IQR
Group A	0.5	0.5	0.0	0.5	0.4	0.5	0.0	0.5

FOUL SMELL

Groups	Before treatment				After treatment			
	Mean	SD	Median	IQR	Mean	SD	Median	IQR
Group A	0.9	0.3	1.0	0.0	0.5	0.5	0.0	0.5

SIZE OF THE ULCER

Groups	Before treatment				After treatment			
	Mean	SD	Median	IQR	Mean	SD	Median	IQR
Group A	1.6	0.7	1.0	0.5	2.0	0.7	2.0	0.3

MARGINS OF THE ULCER

Groups	Before treatment				After treatment			
	Mean	SD	Median	IQR	Mean	SD	Median	IQR
Group A	3.0	0.2	3.0	0.0	2.9	0.4	3.0	0.0

DISCHARGE FROM ULCER

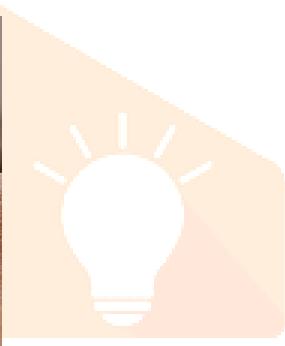
Groups	Before treatment				After treatment			
	Mean	SD	Median	IQR	Mean	SD	Median	IQR
Group A	2.1	0.7	2.0	0.3	1.9	0.7	2.0	0.5

FLOOR OF THE ULCER

Groups	Before treatment				After treatment			
	Mean	SD	Median	IQR	Mean	SD	Median	IQR
Group A	1.1	0.4	1.0	0.0	1.5	0.8	1.0	0.5

SURROUNDING SKIN

Groups	Before treatment				After treatment			
	Mean	SD	Median	IQR	Mean	SD	Median	IQR
Group A	2.9	0.4	3.0	0.0	2.9	0.4	3.0	0.0



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DISCUSSION

- In Karanjadi Rasakriya most of the contents like Karanja, Triphala, Haratala, Manashila, Kasisa, Sphatika, having katu, tikta, kasaya rasa.
- In Charak Samhita it is clearly mentioned that katu rasa has vrana shodhana & lekhana, property as well as it dilates the minute channels of the body due to which microcirculation is improved hence drug gets deeply absorbed. Due to its katu rasa it helps in removing the unhealthy tissue from the wound.
- In Karanjadi Rasakriya most of the ingredients like Haritaki, Vibhitaki, Harala, Manashila, Kasisa, Sphatika, are having ushna, tikshna, and ruksha guna which dries up the discharge from the wound, which simultaneously alleviates foul smell from the wound.
- Karanjadi Rasakriya also contains rasaoushadis like Kasisa, Sphatika which are having properties of vrana shodhana and ropana, which helped in wound debridement, i.e. liquification of slough, which has shown clean floor of wound.
- Karanjadi Rasakriya contains rasaaoushadis like Haratala, Manashila, which are having katu, tikta rasa, ushna, tikshna guna, which aggravates pitta and vata due to which there is increase in the pain, burning sensation, itching in the wound.
- Karanjadi Rasakriya also contains madhu and matulunga swarasa along with other rasaousahdis which are having katu, kasaya, amla rasa, ushna vriya it has been observed that there is increase in burning sensation in the wound immediately after the application of drug, which has lasts more than 2 hours in most of the patients.
- Kasisa i.e. Ferrous sulfate it has blackish color after application over wound due to which it is difficult while washing the wound and to observe the changes in the floor of the wound.
- There is irritation, burning sensation, inflammation of wound margins and reddish to blackish discoloration of surrounding skin of wounds, along with the other inflammatory signs like local raised temp, tenderness, increased pain, observed.
- After proper shodhana of all the rasaoushadis as per the classical methods, there is a severe irritation and burning sensation after application of drug over wounds. There are several other methods of shodhana are explained in the classical texts as per the conditions.

CONCLUSION

Dushta Vrana is such a condition where energetic management is needed. There may be associated diseases which results in their causation and preventing healing. In such conditions the Sodhana of Vrana is becoming difficult. Along with the local factors at ulcer site, associated illness and general immunity of the patient should be taken into account while treating Dushta Vrana.

Vrana is defined as a wound when heals leave a scar which remains till death. When Vrana is vitiated by doshas it is called as Dustavrana.

- The present study where patients treated with application of Karanjadi Rasakriya and the other group daily for 3 weeks. Follow up was 7th day, 14th day and 21st day for all subjective and objective criteria.
- Karanjadi Rasakriya has not shown any significant effect on 21st day on pain, itching, foul smell, of the wound with p value 0.0229, 0.1797, 0.0077 respectively where not shown any significant effect on size, margins, discharge, margins, floor, & surrounding skin of the wound with p value, 0.0117, 0.0679, 0.1797, 0.0277, 1.000 respectively.
- Karanjadi Rasakriya is having mainly katu, tikta rasa ushna and tikshna gunnas, due to which it has not shown any significant effect on shodhana or ropana action.

RECOMMENDATIONS:

- Since the study is based on small sample size i.e. 20 patients in each group. It is not possible to draw the firm conclusion; hence further study on Large subjects is required to draw the concrete conclusions

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