



Original Research Article

CLINICAL EFFICACY OF PRATISARANEeya KSHARA KARMA ON DUSTA VRANA (CHRONIC ULCER)

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Abstract: Dusta vrana (Chronic ulcer) is one of the conditions which have prolonged healing time depending on existing primary cause. Many clinical researches are carried out in the management of dusta vrana. Kshara (caustics alkali) is deemed among the instruments because of specific properties like chedana (excision), bhedana (incision), lekshana (scraping), and ability to alleviate vitiated three doshas. Acharya Sushruta, explains kshara karma as one of the sixty procedures for management of ulcer and it can also be indicated in dusta vrana. In clinical practice, it was noted that even after prakshalana (spraying), dressing and other measures of vranaropana (healing measures), vrana remained without healing. Understanding its importance, initiations have been tried to establish the efficacy of pratisaraneeya kshara in dusta vrana through a clinical trial. In this study, five patients have been selected from the OPD/IPD of Shalyatantra Department of Sri Kalabyraweshwara swamy Ayurvedic Medical College Hospital and Research Center, Bangalore, between January 2014 to June 2014, After the approval from the institutional ethical committee. In this study a clinical trial was made on dusta vrana by the application of Apamarga kshara (caustics prepared from *Achyranthes aspera*) to initiate the process of healing. Under aseptic precautions, pratisaraneeya kshara was applied on the dusta vrana, Then observed for 100 matra kala (around 35 sec to 1 min) followed by washing of vrana with fresh lemon fruit juice. Following this, dressing was done with yastimadhu gritha. It was observed that the areas of hypertrophied granulation tissue become soft and the unwanted tissues were separated from their base which was easily removable. Discharges from the wound reduced remarkably, initiating the growth of healthy granulation tissue. The results obtained were found very encouraging.

Key Words: Dusta vrana, Pratisaraneeya kshara karma, Vrana ropana.

INTRODUCTION

Ayurveda the indigenous system of medicine is an integral part of Indian culture. The ancient *acharyas* from centuries had used polyherbal and herbo-mineral formulations for prevention and treatment of various ailments. In the present era, there is noted insurgence demand among the consumers because of holistic approach.

Dushta vrana (chronic ulcer) is a common condition which we see in current surgical practice, which is raising problem and challenge to practicing surgeon, “Kshara” means any substance possessing the property of destroying or hurting body tissue and pacifying the lesion. It is of two kinds *Paneeya Kshara* (internal administration) and *Pratisaraniya Kshara* (for external application)¹. *Paneeya Kshara* is usually *mridu kshara* (mild) and thus can be used internally, where as *madhyama* and *teekshna kshara* are stronger in potency which are used for *pratisaranara* propose and used for external application.

Acharya Sushruta, in the chapter *Dwivraneeya chikitsa*, explains *kshara karma* as one of the *shasti upakrama* (sixty procedures for management of ulcer) and describes that *kshara* is applied in condition of

chronic ulcer other way known as *pratisaraneeya kshara* with symptoms like indurations, and itching, which are hard to clean and have raised hypertrophied granulation tissue² hence, these features are very much similar to *dusta vrana*. Acharya Sushruta described definite process in order to access the best clinical result by adopting specifically processed kshara. The brief process of developing kshara is mentioned as below³.

The Whole part of *dried apamarga* (*Achyranthes aspera*) approximately of 10 kg was taken which are incinerated into ashes, and then it was allowed to cool by itself. The whole ash (approx 1 kg) was collected and mixed with six times of water and stirred well, and later allowed to settle overnight. Then this is filtered through double folded sterilized muslin cloth for twenty one times and residue was discarded. The filtrate which usually looked amber color was heated on slow controlled continuous heat till it is reduced to half (*Kshara Jala*). Later one hundred gram of *Shukti* (*Ostrea edulis*) heated till it becomes red colour and later mixed with $\frac{1}{3}$ rd *Kshara Jala* with continuous stirring for making a homogenous mixture and allowed to be kept on hot plate (avapa stage). Meanwhile 10 gm of *Citrakamula Kalka* (*Plumbago*

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zeylanica) was added to the boiling *Kshara Jala*. Later is allowed to boil for a few more minutes, when the content attained consistency with minimal total dissolved solids (TDS) as described by Acharya Sushruta at a stage of not too liquid or too solid. Then it is removed from fire and transferred into separate container with lid and stored for use. pH value of the *Kshara* obtained was 13.5.

Aims and objectives

- To evaluate efficacy of the *Apamarga pratisaraneeya kshara karma on dusta vrana* for wound healing.
- To standardize the procedure of preparation *pratisaraneeya kshara*.

MATERIALS AND METHODS

Prepared *Kshara*, a composite of many drugs, alleviates the *tridosha*. Being white in colour it is plain. Because of their composition with properties of pungent, hot, sharp, digestive and suppurative, it has actions like cauterizing, digesting and splitting. When used externally it has cleansing, heating, absorbent, and scraping activities and when used internally it act against worms, skin diseases, poison and obesity. The processed *kshara* will be having specific properties which are explained in the below table (table I).

Table 1: Properties of *kshara*

<i>Rasa</i>	: <i>Katu</i>
<i>Veerya</i>	: <i>Ushna</i>
<i>Varna</i>	: <i>Shukla</i>
<i>Guna</i>	: <i>Somya, Thiksna, agneya.</i>
<i>Doshagna</i>	: <i>Tridoshaghna</i>
<i>Karma</i>	: <i>Dahana, Pachana, Darana, Vilayana, Shodhana, Ropana, Shoshana.</i>

Other supporting materials used those include *apamarga pratisaraneeya kshara, yashtimadhu ghritha, gauze, Scissors, cotton swab, roller bandage, artery forceps, gloves, kidney tray, stop watch, measuring scale, lemon fruit juice squeezer.*

Five patients with presenting *dushta vrana* features are randomly selected from the OPD/IPD of the Department of Shalya of SKAMCH & RC Bangalore after following the inclusion and exclusion criteria. Written informed consent was taken from all patients prior to embarking on the examination and treatment. The enrolled subjects were examined and investigated as per the protocol with proper fill up of CRF. After following all sterile procedures, the wound was/were carefully examined and cleaned with sterile gauze. *Apamarga pratisaraneeya kshara* was applied on the *dusta vrana* under observation of 100 *matra kala* which will be around 35 sec to 1 min with help of stop watch.

Followed by the ulcer was washed with fresh Lemon fruit juice. After that dressing was done with *Yastimadhu gritha*. This procedure was followed once week for three consecutive weeks. The follow up was done one week after the treatment.

Table II: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Patient of age group between 20-70 years, Suffering from chronic non healing ulcer with indurate, itching, which are hard to clean and have raised hypertrophied granulation tissue.	Patients with uncontrolled diabetes and hypertension, Patients diagnosed with malignancy, tuberculosis and other sexually transmitted ulcers were excluded from this study.

Withdrawal criteria were development of severe drug reactions, profuse bleeding, or occurrence of any other serious illness.

Laboratory investigations

Hb%, TLC, DLC, ESR, CT, BT, RBS, lipid profile, HIV, HbsAg, Urine routine and microscopy.

Criteria for assessment

The subjective parameters and objective parameters were recorded on the basis of the score adopted with grading minimum to maximum (0, 1, 2 and 3) as shown in table. III and table IV respectively.

Table III: Subjective criteria for assessment

Symptoms	Grades			
	0	1	2	3
Pain	No pain	Localized feeling of pain during movement, but tolerable.	Localized feeling of pain which restrict movement.	Localized feeling of pain during rest.
Burning sensation	No burning sensation	Intermittent burning sensation.	Continuous burning sensation not disturbing sleep.	Continuous burning sensation disturbing sleep.
Itching	No itching	Slight localized itching sensation	More localized itching sensation but not disturbing sleep.	Continuous itching disturbing sleep.

Table IV: objective criteria

Signs	Grades			
	0	1	2	3
Size	Healed completely	Reduced 2/3 rd the size	Reduced 1/3 rd size	Size as before treatment
Tenderness	No tenderness	Tenderness after palpating with pressure	Tenderness palpating with finger	Tenderness on touch with soft object
Discharge	No discharge	The gauze is slightly moist	The bandage completely within 24 hours but not need to change	The bandage completely within 12 hours and bandage need to be changed
Granulation tissue	Healthy granulation	Moderate granulation	Unhealthy granulation	No granulation

Table V: Distribution of age

Age (in years)	Numbers	Percentile
20-30	0	0%
30-40	1	20%
40-50	0	0%
50-60	3	60%
60-70	1	20%

Table VI: Distribution of Gender

Gender	Number	Percentile
Male	3	60%
Female	2	40%

Table VII: Occupation wise Distribution

Occupation	Number	Percentile
Sedentary	2	40%
Moderate	2	40%
Strenuous	1	20%

Table VIII: Distribution according to chronicity

Chronicity	Number	Percentile
<6 months	0	0%
6 months-1yr.	1	20%
1yr.-2yr.	1	20%
>2yr	3	60%

Table No IX: Distribution according to Type of vrana

Type of ulcer	No. of patients	Percentile
Chronic diabetic ulcer	3	60%
Chronic varicose ulcer	1	20%
Chronic nonspecific ulcer	1	20%

Table No X: Distribution according to size of the vrana

Size(in cm)	Number	Percentile
1 x 1	0	0%
2 x 2	1	20%
3 x 3	3	60%
>3 x 3	1	20%

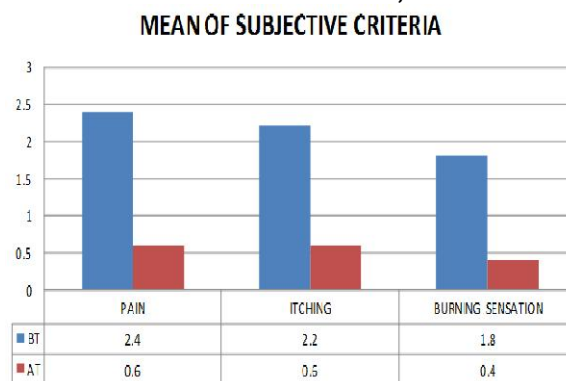
RESULTS

Among the five patients studied (n=5), male patients were 60% and 60% of them were found in the age group of 50-60 years. Wound size measured 3 x 3 cm in maximum number of patients (60%) along with features of non- healing with indurate, itching, raised

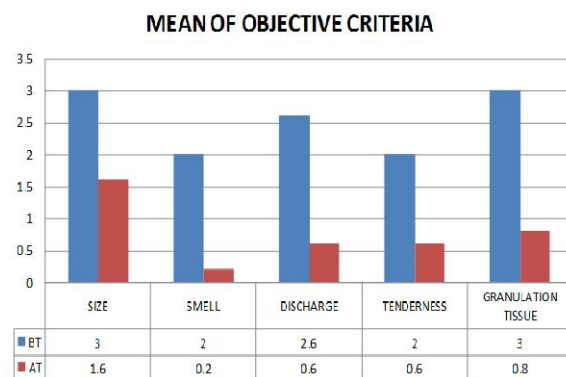
hypertrophied granulation tissue, non edematous margin, bed covered with slight slough with unhealthy granulation tissue and having mild discharge. This study was carried on maximum number (60%) of chronic diabetic ulcers among the types of ulcer. (Table no. V, VI, VII, VIII, IX, and X)

When *kshara* was applied it was observed that the ulcer slowly turned into blackish blue colour with mild pain and burning sensation during *kshara karma* which was reduced after application of lime juice and dressing with *yastimadhu gritha*. Mild pain and burning sensation was also observed for the next two days after *kshara karma* procedure with serous discharge at the ulcer site. The areas of raised hypertrophied granulation tissue become soft, white unhealthy granulation tissue converted into blackish red colour the unwanted tissues were separated from their base which was easily removable, discharges from the wound reduced remarkably, initiating the growth of healthy granulation tissue and signs of healing were noted in successive visits. Mean difference of grading between before and after treatment in subjective and objective criteria is given in graph I and graph II respectively.

Graph I: Mean difference of grading between before treatment and after treatment in subjective criteria.



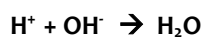
Graph II: Mean difference of grading between before treatment and after treatment in objective criteria.



DISCUSSION

After reviewing classical texts, above mentioned method of preparation was found to be ideal in *Pratisaraneeya Kshara* treatment. *Kshara karma* without anesthesia on painful chronic ulcer is very challenging to perform due to pain and burning sensation which is noticed during and after *kshara karma* but in chronic ulcers such as diabetic ulcer, it was comparatively easy because of diabetic neuropathy. The burning sensation which is noticed at ulcer site is might be due to *Ushna veerya* of *apamarga* and *kshara*.

Lime juice neutralizes *kshara* because; the *kshara* is considered to have all taste expect sour, pungent is the predominant here and salt is the secondary one. When the pungent and salt taste are treated with sour, they become neutral (sweet) and devoid of sharpness⁴. Chemically pH of *kshara* was found be 13.5 and pH of lime fruit juice was about 2.3. Hence, according to the Arrhenius theory of acids and base, the acids are the substance which produces hydrogen ions and base produces hydroxide ions. So, neutralisation happens because hydrogen ions and hydroxide ions react to produce water.



Kshara has significant role in wound healing, after *kshara karma* there was fast epithelization, increase collagen deposition and hydroxyproline in granulation tissue, increase tensile strength of wound, hence there was reduced exudates of wound and decreased edema and *kshara* reduces excessive exudates, necrotic tissues, local discharge and facilitates granulation tissue formation which is necessary for wound healing. *Apamarga* possess properties like *Katu*, *Tikta rasa*, *Ushna veerya*, *Tikshna Ruksha*, *Laghu guna* and *Katu vipaka* hence acts as wound debridement and it's known for antioxidant properties and antimicrobial activities⁵. All these properties of drug and formulation help in faster healing of wounds. But its application appears to be most effective in a prepared wound bed, which essentially is provided by debridement.

Hence, it can be said that *Kshara* is very effective deriding agent as there was significant reduction in discharge and slough tissue of wound which was observed during clinical study. Healing after debridement by *apamarga pratisaraneeya kshara karma* can also be seen by significant reduction in surface area and faster unit healing time of wound.

CONCLUSION

The results obtained were found very encouraging. Hence, application of *pratisaraneeya kshara* can be effective intervention in the management of chronic ulcer. As the sample size was very small it needs further clinical evaluation to standardize the drug and procedure.

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