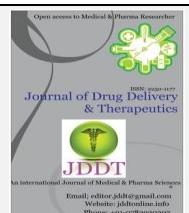


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Review Article

## Expository aspect for action of *Ksharaplotra*

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### ABSTRACT

*Kshara Karma* or chemical cauterization described in *Ayurveda* as one of the *Anushastras* (Minimum Assess Surgery). It is considered superior in all types of *Anushstra* due to its efficacy in conditions where all other measures failed to cure diseases or surgical interventions. Healing of wounds and cuts is a very difficult if wound or cuts becomes worse and turned to *Dushta Varna* due to negligence and the inappropriate approaches of treatment. However wound healing is a natural defense mechanism of body but in complicated and severe cases there are need of therapeutic practices to boost healing mechanism of body. Father of Indian surgery *Sushruta* mentioned use of dressing materials such as; *Pichu*, *Plota*, *Kawalika* and *Vikeshika* for the management of *Dushta Vrana*, *Plota* used to clean & covers the *Vrana* very deeply and helps to removes debris of wounds effectively. Considering these all facts present article emphasized mode of action of *Ksharaplotra* (Alkaline Medicated Gauze) for exploring its surgical significance with logical interventions.

**Keywords:** *VranaShodhana*, *VranaRopana*, *DushtaVrana*, Action of *Ksharaplotra*, *Alkaline Medicated Gauze*.

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### INTRODUCTION

*Ayurveda* is a divine science of medicine which described various principles and theories of management of wound or other traumas and cuts. *Ayurveda* mentioned *Vranashodhana* and *Vranaropana* drugs for the management of cuts or wounds along with different dressing techniques such as; *Pichu*, *Plota* and *Kawalika* etc<sup>1-5</sup>. *Plota* is very efficient healing technique for wound care since it helps to clean and cover the wound. *Ksharaplotra* (Medicated Gauze) is one of such dressing method used for the management of infected and chronic wounds. *Ksharaplotra* is prepared by using *Snuhikshira* (Milk of *Euphorbia nerifolia* Linn.), *Apamargakshara* (Ash of *Achyranthesaspera* L.) and *Haridra* (*Curcuma longa* L.). These drugs applied as single coating gauze (*Plota*) over open wounds and ulcers<sup>4-8</sup>. This *Ksharaplotra* offers excellent *VranaShodhana* and *Ropana* properties in the treatment of *DushtaVrana*. *Ksharaplotra* is a simple and safe technique with minimal invasion may also utilize for effective management of *Dushtavrana* (Infected wound /ulcer).

### Preparation of *Ksharaplotra*

Material required for preparation of *Ksharaplotra* is mentioned below.

1. *Snuhikshira* (*Euphorbia nerifolia*)

2. *Apamarg Kshara* (*Achyranthus aspera*)
3. *Haridra* powder (*Curcuma longa*)
4. Single layer Gauze piece
5. Wooden Ring
6. Cabinet
7. Polythene Bag (12 x 8 cm)

### Method of *Ksharaplotra* preparation

Round gauze piece, 23cm in diameter is fixed in the doubled layered circular wooden ring. This gauze piece is made so tight that the coating can be done uniformly. Initially on 1<sup>st</sup> day *Snuhikshira* 50 ml was applied with the help of small cotton swab over the gauze on its whole circumference. The hands should be gloved before smearing. The wet coated gauze with rings should be placed inside cabinet. It was then dried for a day, on the 2<sup>nd</sup> day dried gauze was again smeared with 50 ml of *Snuhikshira* and followed by 20 gm of *Apamargakshara* with cotton swab, let it be dried in a cabinet for a day. On the 3<sup>rd</sup> day dried gauze was smeared with 50 ml *Snuhikshira* followed by 20 gm of *Haridra* powder which was then allowed to dry in the cabinet for a day 1 coating of *Snuhikshira* required 50 ml quantity, so total quantity of *Snuhikshira* in *Ksharaplotra* was 150ml, 20 gm of

*Apamaragkshara* and 20 gm of *Haridra* powder.

In this way a single coating of each *Snuhikshira*, *Apamargakshara* & *Haridra* powder were applied to the gauze and cut into 6cm. x 6 cm. pieces of *Ksharaplotra*, it was then sealed in polythene packs. *Ksharaplotra* should be placed in a cabinet under ultra-violet light for safety storage as well as sterilization. The ingredient used to prepare *Ksharaplotra* mentioned in **Figure 1**.



**Figure 1:** Ingredients used to prepare *Ksharaplotra*.

### Therapeutic action of *Ksharaplotra* dressing

- ❖ It helps in curetting, draining and healing of wound.
- ❖ It removes unhealthy tissue.
- ❖ Promotes healing due to caustic action.
- ❖ Controls infection due to aseptic and its anti-microbial action.
- ❖ Separate debris and clean wound thus boost natural process of tissue healing.
- ❖ Offer anti-inflammatory effect thus relieves pain.

### Probable Mode of action of *Ksharaplotra*

*Ksharaplotra* composed of *Snui* & *Apamaraga* has *Ksharan* and *Kshanana* properties, *Apamargakshara* also cauterize tissue by its *Ksharana Guna* while *Haridra* offers *Krimighana* & *Ropana* properties thus provides *VranaShodhana* & *VranaRopana* effect. Chemical properties of *Ksharaplotra* remove unhealthy tissue and alkaline nature of *Kshar* offers aseptic and antimicrobial effect thus reduces chance of secondary infection<sup>3-7</sup>.

*Snui* component of *Ksharaplotra* provides moisturizing effect due to its sticky property which ultimately promotes epidermal migration resulting enhanced synthesis of connective tissue. The *Snui* latex having binding property therefore retains surgical benefits (debridement, scrapping, hemostatic, aseptic, antiseptic and healing effect) of *Apamargakshara* for longer time.

*Snuhikshira*, *Apamargakshara* and *Haridra* support biological action of each other and not contraindicated when applied together. Sustained release action of *Ksharaplotra* medication releases ingredient slowly and make available medicine for longer duration to achieve complete healing of chronic wound<sup>6-10</sup>.

### Contribution of *Ksharaplotra* ingredient towards its mode of action:

*Ksharaplotra* overall possess penetrating, scrapping, draining, debridement, sclerosing, healing, antibacterial and anti-inflammatory effect in the management of wound and cuts<sup>9-13</sup>.

All three ingredients contribute significantly towards mode of action as follows:

1. *Snui* (Latex of *Euphorbia nerifolia*) *Kshira* possess properties such as; *Lekhana*, *Vedanasthapana*, *Rakthashodhak* and *Vishaghana* due to *Katu* & *Tikshana Rasa* and *Ushna Virya*. The latex of plant also found to have rubifacient, irritant and powerful caustic action when applied to a raw surface; it also offers analgesic, anti-inflammatory, wound healing and antibacterial activity. It is believed that *Euphorbia nerifolia* enhances wound healing process by promoting tensile strength, epithelization and angiogenesis.
2. *Apamarga* (*Achyranthus aspera*) *Kshara* offers *Lekhana*, *Chedana*, *Bhedana*, *Ropana*, *Kushtaghma*, *Shodhana* and *Krumighana* properties due to *Katu* & *lavana Rasa* and *Ushna Virya*. *Katu Rasa* contributes towards *Shonit Sanghat Bhinnati* action of *Apamarg Kshara* which breakdown pus pockets and blood clots at the site of *Vrana*. *Apamarg Kshara* also possesses analgesic, anti-inflammatory, hemostasis and antibacterial activity which offers symptomatic relief in *Vrana*.
3. *Tikta* & *Laghu Guna* and *Ushanya Virya* of *Haridra* (*Curcuma longa*) provides *Varnya*, *Sandhana*, *Vedanashamaka*, *Raktastambak*, *Raktashuddhikar* and *Lekhana* properties. It enhances capillaries vasodilation when applied locally thus facilitates wound debridement (*Shodhana*) and wound healing (*Ropana*) process. It also possesses anti-inflammatory, analgesic and antibacterial activity.

### Role of *Kshara Plota* ingredients for its action

*Kshara* having *Ushna*, piercing and scraping nature it also possessing *Ksharana* and *Kshanana* properties thus help to destroy lesion. *Ksharana* properties mobilize deformed skin & flesh thus removes unwanted tissue debris and offers cleansing effect. *Ushna*, *Tikshna*, *Sukshma* and *vyavayi* properties of *Ksharaplotra* help to remove blockage of *strotorodha*, stimulates process of *Dathvagni* and provides *Amapachana* effects thus removes toxins. *Ashukari* property of *Kshara* resulted instant initiation of healing effect. *Ushna* *Veerya* and *Vyavayi*, *Tikshnaguna* also help in drug penetration and control vitiated *Doshas* internally.<sup>10-14</sup> Long term application of *ksharaplotra* releases ingredients continuously to the applied area and transmitted to *Tvak*, *Sirasnayu*, *Asthi* and *Sandhi* according to *Uapasnehana Nyaya* thus offers complete relief. Strangulation of the blood vessel offers ischemic necrosis and debridement of unhealthy tissue which prevents formation of slough and boosts natural process of tissue repair<sup>15-20</sup>. The overall mode of action of *Ksharaplotra* depicted in **Figure 2** as follows:

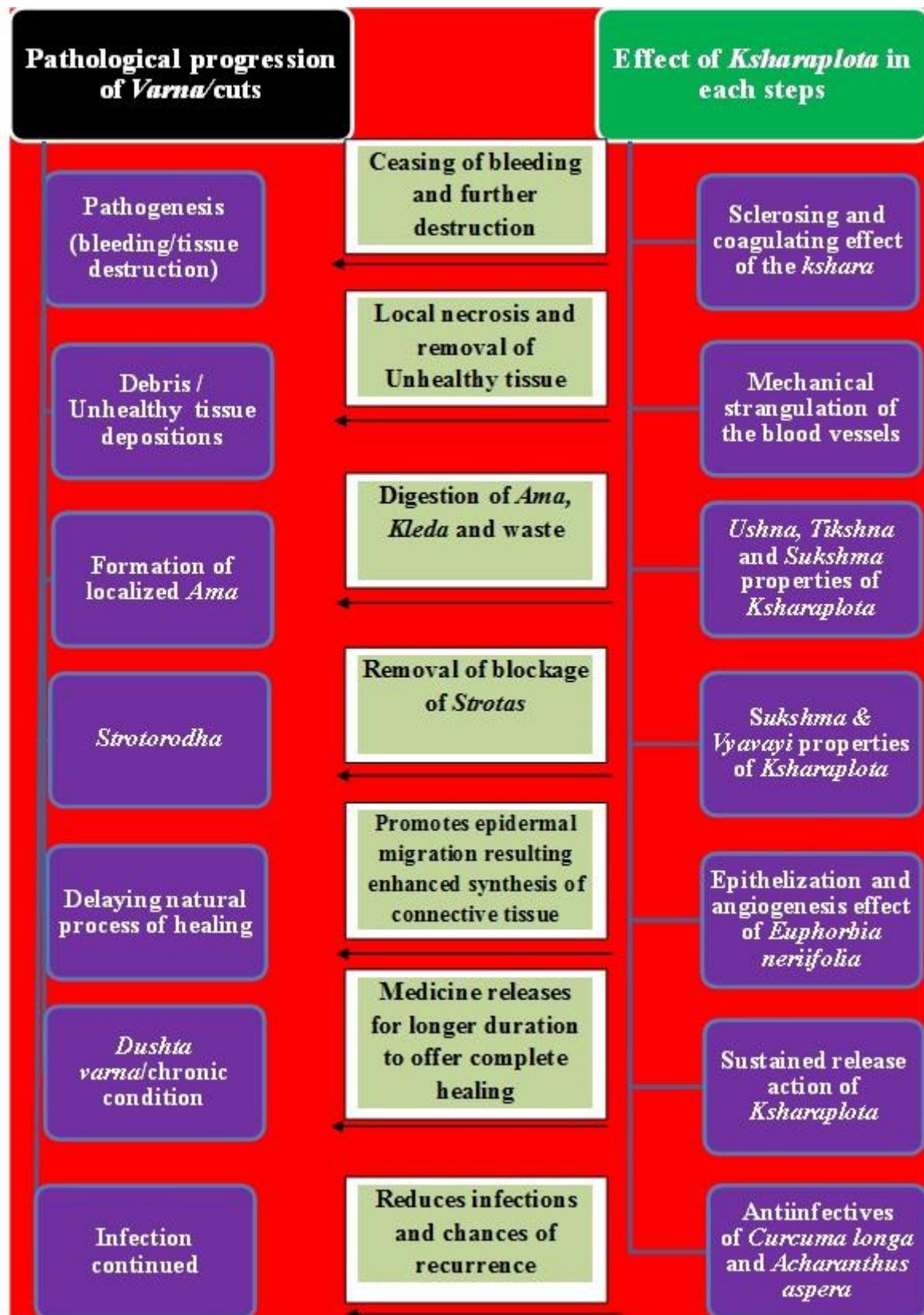


Figure 2: Suggested mode of action of Ksharaplotra.

## CONCLUSION

*Ksharaplotra* is a parasurgical approach used extensively for the management of infected wound. The treatment with *Ksharaplotra* reduces chances of recurrence and it possesses great ability to treating chronic wound. The chemical potency of *Ksharaplotra* offers advantage in the management

of *Vrana* with minimal invasion. Therefore *Ksharaplotra* (Alkaline Medicated Gauze) therapy accepted widely in the management of chronic and infective stages of wound. *Ksharaplotra* also helps in emergency condition as a dressing material for cleaning of infected cuts or wound. The novel and established application of *Ksharaplotra* is an important and efficient modality of *Shalyatantra* in Ayurveda.

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