

KSHARA IN CLINICAL PRACTICE

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ABSTRACT

Kshara karma is one among the four curative measures propagated by Acharya Sushruta. It is a procedure where in Chedana, Lekhana, Dahanakarmas are performed by employing some specially formulated Yogas called Kshara (Caustic alkali). Kshara is described as one among the Anu Sastras or Upayantras. Kshara is one which scrapes the abnormal tissue from destroy it because of corrosive nature, because of its corrosive nature. Even in modern chemistry the Caustic alkali are studied and analysed in detail. Hence an effort is made in this paper to study in detail the guna, lakshana, bheda, karma of kshara and their utility in clinical practice.

KEYWORDS: Kshara, caustic alkali.**INTRODUCTION**

Ayurveda is like an ocean of knowledge which has many concepts in concise form. Ayurvedic system of medicine do not limit itself to just fulfilling the needs of primary health care, but also reach out to certain specialized areas and one such specialization is Shalyatantra, which is one among Ashatanga Ayurveda. Acharya Sushruta is considered as pioneer in this field and his work Sushruta Samhitha establishes this. In Sushruta Samhitha, we come across many concepts which are really thought provoking and when we study them in detail we also see that these are very effective and relevant even in this current era. His surgical diseases description and techniques are praised across the world because of its scientific, logical and practical utility even after centuries. Hence he is considered as Father of Surgery. One such unique magnificent concept of Acharya Sushruta is Kshara karma- Alkaline material, when we go through Sushruta Samhitha there is description of kshara and Acharya Sushruta has attributed separated chapter on Kshara and described it in detail. Kshara has wide range of indications and Acharya has praised it as sastraanussastrabhyam kshara pradhanatamaha^[1] i.e Among sastra and anusatra kshara is superior because of its incising, excising and scraping actions, its ability to pacify Tridoshas and also its administration as special treatment as said by Acharya and he has given various indications for this Kshara and many Ayurvedic Doctors are using these kshara in different forms like Paneeya kshara and Pratisaraneeya kshara in different conditions and are getting good results with this. Hence here an attempt is made to describe the kshara, its types indication, preparation

explained in classics and modified preparation in current day with its practical Applicability.

In post-vedic literature only *kshara* is mentioned. The detailed description of its preparation, classification, indication and contraindication are available in *Sushruta Samhita*. *Kshara* is described as one among the *Anusastras* or *Upayantras*.^[2] Especially while describing different *chikitsaprakaras* for *Arshas*, *kshara* has a special mentioning.

The word "*kshara*" has different derivations. *Kshara* means *Shatana* or destruction. It destroys unhealthy tissues. Derivation from *ksharanam* means violence i.e. violence on unhealthy tissues. *Shabdakalpadruma* explains that it is derived from the root *char*, which means to move. In *Amarakosa*, *kshara* has been used in the sense of "*kacha*"; it may also mean '*chapala*' rasa. The "*kacha*" is derived from the root meaning to fasten or to shine. In *Amrakosa*, *kshara* also means "*ash*".

Acharya Sushruta has defined "tatraksharanatkshananadva kshara".^[3] The drug which has the characteristics of *kshanan* or *ksharan* literally means that which destroys fleshy mass either healthy or unhealthy.^[4] *Acharya Caraka* says *kshara* is one which scrapes the abnormal tissue from its location and destroys it after dissolving it, because of its corrosive nature. Classification of *kshara* can be done in various ways like:

Types of Kshara^[5, 6, 7]

Kshara can be divided under various types as follows:

I. According to **Origin**A. *Vanaspatijanya*

- B. *Pranijanya*
C. *Khanijajanya*

According to their **mode of administration**

- A. *Pratisaraneeya* (Used Externally)
B. *Paniya* (Used Internally)

Acharya Vagbhatta opinions the same for them by naming as;

- a. *BahyaParimarjaniya*
b. *AntahParimarjaniya*

II. The *pratisaraneeya Kshara* has been further subclassified into trifolds according to its potential and method of preparation

- A. *Mrudu* (*Samvyuhim*)
B. *Madhya*
C. *Tikshna* (*Pakya*)

Pratisaraneeyakshara

This term consists of two words in it, '*Pratisarana*' and *Kshara*. The term *kshara* is already been defined. *Pratisarana* is *Aupakrama*, *Garshana*. It is also used to denote, healing or dressing the edges of a wound or an instrument used for anointing a wound. The term *Pratisarana* consists of two words in it. '*prati*' meaning every or opposite, '*Sarana*' meaning to spread, to stretch. In this context *Pratisarana* is used to mean local application.

Preparation of *Pratisaraneeya Kshara*^[8]

Acharya Susruta has dedicated the whole of 11th Chapter of *Sutra Stana* to describe *Kshara*. After reviewing classical texts, *Acharya Susruta's* technique is found to be ideal in *Pratisaraneeyakshara* treatment. The physician who prepares the *Kshara* should have a clean bath early in the morning of autumn season and has to observe fast on the same day. It must be an auspicious day. He should go up the hills and look for such plants which are middle aged and free from ravages or insects. The *Panchangas* of plants should be collected, dried up and made into small pieces. Then these are burnt with limestone. While burning the dispersed parts of the

plants are kept with the help of *Tilnala*. When the ash cools down it should be separated from the residue of lime stone and *Bhasmasharkara*. The collected ash should be mixed well with six times of water or cow's urine, then filtered twenty one times in a big vessel through a piece of cloth. The residual portion is thrown away and the filtrate (*Ksharodhaka*) should be kept on *Mandagni* and continuously stirred well until it reduces to 1/3rd. This is *Mrudukshara*. From this eight *palas* has to be taken and mixed with *Shankanabhi*, *Shukti* And *Kata Sharkara*, each in eight *palas*, to make *Prativapa*. In the meantime, heating should continue and *Prativapa* should be mixed. Care should be taken that it is not too liquid or too dried up. The solution thus obtained is known as *Madhyamakshara*.

Madhyamakshara should be heated up again by adding some medicinal plants such as *Danti*, *Chitraka*. With this thick solution is obtained which is known as *Tikshnakshara*. If *Tikshnakshara* losses its potency then it should be mixed with new *Khsara* and heated again to maintain sufficient concentration.

Properties of *kshara*^[9]

<i>Rasa</i>	:	<i>Katu</i>
<i>Veerya</i>	:	<i>Ushna</i>
<i>Varna</i>	:	<i>Shukla</i>
<i>Guna</i>	:	<i>Sowmya, thiksna, agneya.</i>
<i>Doshagna</i>	:	<i>Tridoshagna</i>
<i>Karma</i>	:	<i>Dahana, pachana, darana, vilayana, shodana, ropana, shoshana.</i>

Prepared *kshara*, being a composite of many drugs, alleviates three *doshas*. Being white in colour it is plain. In spite of placidity its actions like cauterising, digesting and splitting is carried out as it is made of drugs having the property of pungent hot, sharp, digestive and suppurative. When used externally it has cleansing, heating, absorbant, and scraping. When used internally it destroys worms, *amadosha*, *kapha*, skin diseases, poison and obesity. Further, if used in excess it can result in impotency.

Table No. 1: Plants which are mixed to Mridu Kshara to make it Madhyama Kshar.^[8]

#	Sanskrit Name	Source
1	BhasmaSarkara	Secreted drops form plant edges during burning became solid form
2	Kata or SudhaSarkara	Unburnt, semi burnt pieces of limestone (CaO)
3	Sukti	Animal product
4	SankhaNabhi	Animal product (CaCo3)

Table No. 2: Medicinal plants which are mixed to make Madhyama to Tikshna Kshara.^[10]

#	Sanskrit Name	Latin Name	Family
1	Danti	Baliospermum montanum	Euphorbiaceae
2	Dravanti	Crotan tiglium	Euphorbiaceae
3	Chitraka	Plumbago zeylanica	Plumbazinaceae
4	Langali	Gloriosa superba	Liliaceae
5	Hingu	Ferrulanarthax foetida	Apiaceae
6	Vaca	Achorus calamus	Araceae
7	Sukti	Mytilus margariferens	Pearl (Oyster)

8	Pravala	Corallium rubrum	Animal product (CaCo ₃)
9	BidaLavana	Navasada	Mineral Product (NH ₄ Cl)
10	SauvarchalaLavana	Rock Salt	Mineral Product (NaCl)

Table No. 3: Medicinal plants useful for the preparation of Mridukashara.^[8]

#	Sanskrit	Latin name	Family
1	Apamarga	Achyranthes aspera	Amaranthaceae
2	Kutaja	Hollarrhena anti dysenterica	Apocynaceae
3	Paribhadra	Erythrina indica	Fabiaceae
4	AsvaKarna	Dipterocarpus turbinatus	Dipterocarpaceae
5	Vibhitaki	Terminalia bellirica	Combrataceae
6	Aragwada	Cassia fistuta	Cesalpinaceae
7	Tilvaka	Seasameum indica	Pedalianceae
8	Arka	Calatropis gigantca	Asclepidaceae
9	Snuhi	Euphoria nerifolia	Euphorbaceae
10	Palasha	Butea monospermo	Leguminaceae
11	Naktamala	Pongamia pinnata	Leguminaceae
12	Vasa	Adathoda vasa	Acanthaceae

Table No. 4: The physical characters of well prepared TeekshnaKshara.^[11, 12]

SI No	Lakshanas	AcharyaSushruta	AcharyaVagbhata
1	Na atiteekshna (not too strong)	+	+
2	Na Atimrudu (Not Too Mild)	+	+
3	Na Atishukala (Not Too White)	+	+
4	Shlakshna (Thin)	+	+
5	Pitchila (Slimy)	+	+
6	Abhishyandi (Unspreading)	+	+
7	Sheeghrakarita (Quick Acting)	+	+
8	Shiva	+	-
9	Shikhari	-	+
10	Sukhanirvapy	-	+
11	Alparakthata	-	+

Table No. 5: The physical properties of improperly prepared kshara, kshara.^[13, 14]

SI no	Lakshanas	AcharyaSushruta	AcharyaVagbhata
1	Atimruduta (too mild)	+	+
2	Atiushnata (too hot)	+	+
3	Atishweta (too white)	+	+
4	Atiteekshnata (too sharp)	+	+
5	Atipitchila (too slimy)	+	+
6	Ativisarpita (too spreading)	+	+
7	Atisandrata (too thick)	+	+
8	Apakwata (uncooked)	+	+
9	Heenadravyata (with less potency)	+	+
10	Atitanu (very thin)	-	+

Indications of Kshara^[15]

Pratisaraneeyakshara is indicated in good number of diseases by ancient Acharyas. Acharya Sushruta indicated it in sixteen conditions, out of which Arshas is also one. Arshas is one among the nine described by Acharya Vagbhata. It is also one among the four diseases described by Acharya Charaka.

Contra indications^[16]

Before the application of kshara it is necessary to observe the fitness of the patient contra indications of kshara can be classified into following groups-

According to diseases: Jwara, Hrudroga, Shiroroga, Panduroga, Arochaka, Sarvangashopha, Raktajagulma, Udararoga are contraindicated in general.

According to physical status: Durbala Balaka Bheeru Grabhinee Vrudha Rutumatee.

According to site: Dhamanee Snayu Gala Pradesh Sandhee Savani AlpaMamsaPradesh, Marma, Vrushna, Nakhantara, Tarunasthi, Medhra Anaya Akshi Roga Sira Nabhi Pradesh.

According to season: *Shita Kala Ushna Kala Varsha Kala Durdina.*

The above contraindications are applicable both for *paneeya* and *Pratisaraneeyakshara*. Out of these few anatomical sites and some diseases may be fit for indications of *Pratisaraneeyakshara*.

Excessive use of *kshara* leads to *pumsatvaupagatha*. *Acharya Charaka* said *kshara* helps in digestion but excessive use cause impairment of vision. *Acharya Vagbhata* described that due to *katurasa*, *kshara* is injurious to *hridaya*, *kesha*, *chakshu*, *ojus* and *shukra*. Further *Acharya Sushruta* observes that *kshara* may be ineffective, if used in *ksharasadyavyadhi* if it is complicated by oedema, pain in the bones, aversion for food, pain in precordial region and joints. However, external application of *kshara* is indicated in children, weak persons and decrepit.

DISCUSSION

Kshara is such a useful thing with the usage of *kshara* many diseases can be managed effectively with less invasive manner, but the complicated preparation have made it difficult to adopt in day to day practice. Hence Dr Ravishankar Pervaje has formulated an easy with current day measurements to prepare *pratisaraneeya kshara*, called Parvaje technique of *kshara* preparation. It follows like this: fresh *Apamarga* (whole plant) to be collected during the month of December and January. After drying *Apamarga* obtained to be made into heap and burnt. After burning, of ash is obtained. This ash is measured in volumetric jar and to which 6 parts of water to be added and stirred well, allowed to settle overnight. Then it should be filtered through double folded cloth for 21 times, residue is thrown out. Amber coloured filtrate will be obtained. This is subjected to *Mandagni*. If the boiling is continued till the liquid evaporates and salt which remain in the bottom is *Paneeyakshara*. If *Teekshana PratisaraneeyaKshara* is needed then, When the content is reduced to half, about $\frac{1}{3}^{\text{rd}}$ of *Kshara jala* to be taken out of the vessel. $\frac{1}{10}^{\text{th}}$ of ash that much quantity of *Shukti* to be heated to red hot and then mixed with $\frac{1}{3}^{\text{rd}}$ *Kshara jala* to dissolve it completely. Thus dissolved *Shukti* is added to boiling *Kshara jala* (*avapa* stage) and continued to boil. Meanwhile $\frac{1}{10}^{\text{th}}$ of *Shukti*, *Citrakamoolakalka* is added to the boiling *Kshara jala* (*prativapa* stage) and allowed to boil for few more minutes, when the content attained consistency as described by *Acharya Sushruta* (not too liquid nor too solid), it should be removed from fire allowed to cool down and transferred to glass container with lid and stored for use. pH value of the *Kshara* obtained will be around 13.5 (pH value of a strong alkali is 7 to 14) Same procedure can be followed for the preparation of *different pratisaraneeyakshara* from different plants mentioned by *Acharya Sushruta*.

Once prepared *Kshara* can be preserved long in glass bottles till the *ksharajala* exists, its potency remains and

it can well used in different conditions as per the indications of *Acharya*. In day to day practice *pratisaraneeya kshara* can be used in wartz, haemorrhoids, wounds, polyps in minor and can prevent from reoccurring of the diseases.

Chemical composition of Kshara

Prof A R VasudevMurthy, describes the chemical composition of *kshara* in his *Indian Tradition of Chemistry and Chemical Technology*, as follows.

The wood ashes contain potassium and sodium carbonates (K_2CO_3 and Na_2CO_3). Limestone and sea shells contain calcium carbonate (CaCO_3). On heating strongly carbonate decomposes into calcium oxide (CaO), quick lime and carbon di oxide (CO_2), which escapes into the air. Calcium oxide reacts with water vigorously and gives calcium hydroxide (CaOH) which is lime water indeed. Calcium hydroxide reacts with potassium/sodium carbonate and gives rise to calcium carbonate which comes down as precipitate. Potassium hydroxide (KOH) remains in solution which may be concentrated by boiling to different extents. These essential chemical reaction can be expressed in terms of the following equations.

- $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2 \uparrow$
- $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2$
- $\text{K}_2\text{CO}_3 + \text{Ca}(\text{OH})_2 \rightarrow 2\text{KOH} + \text{CaCO}_3 \downarrow$

CONCLUSION

Kshara Karma has advantages like minimum hospitalisation, less pain, minimum bleeding, no stricture formation (if correctly applied), no recurrence, cost effective and easy management with local anesthetic agents which enables treating many diseases and even managing pile masses in one sitting. So these concepts of *Ayurveda* should be widely spread, popularized and implemented in the management of such troublesome diseases which is the anticipation of suffers.

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