



Review Article

A LITERATURE REVIEW: THE ROLE OF KSHARA IN AYURVEDA

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ABSTRACT

Ayurveda depends largely upon the medicinal plants for the therapy. Among the four *Vedas* - *Rig-Veda*, *Yajurveda*, *Samaveda*, and *Atharvaveda* - the *Atharvaveda* is considered to be one from which *Ayurveda* is derived and several medicinal plants are mentioned that can be used as a drugs. *Kshara* is the herbal extracts of plants, According to *Sushruta*, in *Kshara Paka Vidhi Adhyaya* has mentioned 23 drugs plants as: *Mushkka*, *kutaj*, *Palash*, *Ashwakarna*, *Paribhadrak*, *Bhibitaka*, *Aragvadha*, *Tilwaka*, *Arka*, *Snuhi*, *Apamarga*, *Patla*, *Naktamal*, *Vrusha*, *Kadali*, *Chitraka*, *Putika*, *Asphota*, *Ashwamarak*, *Saptachanda*, *Agnimantha*, *Gunja*, *Koshataki* from which *Kshara* can be prepared. *Kshara* can be a multiple combination of many herbs or may be from single herb. *Kshara* is useful in internal medicines in different formulation. i.e., *Kshara Gutika* (tablet), *Vati*, *Ksharavleha*, *Kshara-Ghrita*. *Kshara* is also useful in external application directly as *Ksharapichu* (gauze-piece), *Kshara Sutra*, *Ksharavarti*. This alkaline preparation has many therapeutic usages and many surgical procedures. *Ksharakarma* is useful as the substitute of surgical instruments, because they can be used safely on the patients who are afraid of surgery. It has been proved to be effective in treating many disorders like *Dushta Vrana* (wounds), *Bhagandara* (Fistula-in-ano), *Arsha* (haemorrhoids), *Charmakeela*, *Ashmari* (Stone), *Gulma Udara* (ascites), *Kushtha* (leprosy), *Rohini* etc. External application of *Kshara* is indicated in children, weak persons and decrepit. *Ksharakarma* has been considered as a wealth and a strong weapon in *Ayurvedic Pharmacopeia*. In this paper we have described Preparation, classification, properties, *Guna*, *Dosha*, Indication, contra-indication, different formulae used in medicine, *Matra*, chemical composition and assessment.

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INTRODUCTION

Kshara is a caustic chemical, alkaline in nature obtained from the ashes of medicinal plants. *Acharya Sushruta* has described in detail regarding *Kshara* by dedicating a separate chapter *Kshara Paka vidhi Adhyaya* which no other author has made. The prepared drug substance is called *Kshara* because it causes *Ksharana* (Destruction of tissue) to *Mamsa* and other *Dhatu*.^[1] *Acharya Sushruta* defines the *Kshara* as the substance possessing *Ksharana* and *Kshanan* (Destruction) properties^[2]. *Kshara* is described as one among the *Anushastras*^[3] and one of the *Upakrama* for *Vrana* (Wound)^[4]. It is the superior most among the sharp and subsidiary instruments because of performing *Chedana* (excision), *Bhedana* (incision), *Lekhana* (scraping) and destroys the *Tridoshaja* disorders^[5]. In successive literature like *Puranas*, there is description of *Kshara* in two forms i.e., oral and local application. *Ksharakarma* is more effective than the other modalities of treatment, because they can be administered both internally and externally. The classification of *Kshara* can be done in various ways on the basis of administration i.e., *Paneeya*

and *Pratisaraneeya*^[6], concentration i.e., *Mrudu*, *Madhyama* and *Teekshna*^[7]. *Sushruta* mentioned different plants as: *Mushkka*, *kutaj*, *Palash*, *Ashwakarna*, *Paribhadrak*, *Bhibitaka*, *Aragvadha*, *Tilwaka*, *Arka*, *Snuhi*, *Apamarga*, *Patla*, *Naktamal*, *Vrusha*, *Kadali*, *Chitraka*, *Putika*, *Asphota*, *Ashwamarak*, *Saptachanda*, *Agnimantha*, *Gunja*, *Koshataki*^[8]. It has been proved to be effective in treating many disorders like *Dushta Vrana* (wounds), *Bhagandara* (Fistula-in-ano), *Arsha* (haemorrhoids), *Charmakeela*, *Ashmari* (Stone), *Gulma Udara* (ascites), *Kushtha* (leprosy), *Rohini* etc^[9]. In *Harit Samhita*, *Kshara karma* is included in the eight important types of treatment. It is not too sharp, not too mild, too white, smooth, slimy, nonspreading, wholesome and quickly acting. Because of its whiteness it is prominent in soma in spite of its potency for burning, digestion, tearing etc. nit antagonized due to prominence of properties of igneous drugs, it is pungent, hot, sharp, destroys worms, *Ama*, *Kapha*, poisons and fat. Excessive use may lead to impotency. Excessive use of *Kshara* leads to *Pumsatvaupagatha*. *Charaka* said *Kshara* helps in

digestion but excessive use cause impairment of vision. *Vagbhata* described that due to *Katurasa*, *Kshara* is injurious to *Hridaya*, *Kesha*, *Chakshu*, *Ojus* and *Shukra*.

Acharya Sushruta emphasizes on the fact that, when the *Kshara* administered by an ignorant physician can harm the body like *Agni*, *Shastra* and *Vajra* or death itself. While the same *Kshara* when administered by an intelligent and well skilled physician can prove potent enough to subside all serious and most troublesome disease rapidly in which it is indicated. Thus *Kshara* karma has been considered as a wealth and a strong weapon in Ayurvedic Pharmacopeia.

Further *Sushruta* observes that *Kshara* may be ineffective, if used in *Ksharasadyavyadhi* if it is complicated by edema, 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. *Guna* and *Karma* of *Kshara* mentioned:

Table 1: Properties of Kshara^[10]

Rasa	<i>Katu</i>
Virya	<i>Ushna</i>
Varna	<i>Shukla</i>
Guna	<i>Saumya, Teekshna, Agneya</i>
Doshaghna	<i>Tridoshaghna</i>
Karma	<i>Dahana, Pachana, Darana, Vilayana, Shodhana, Ropana, Shoshana</i>

Literature Survey

Literary references will be compiled after thorough screening of Ayurvedic text books. Previous

research works, Article and Journals will also be screened for information regarding the subject.

Charaka has mentioned two types of *Kshara* preparation. In *Vimanshan* 1st chapter definition, general properties and adverse effects of *Kshara* are mentioned^[11]. Apart from that in surgical description also *Kshara* has been mentioned as "*Shastra pranidhana*"^[12].

Chakradutta also told *Kshara sutra* using in *Bhagandara*. Acharya Sushruta has narrated *Kshara* as an *Anushastra*, *Upanyantra*, *Agropaharaniya* and one of the *Upakrama* of *Vrana*.

Dalhana, the eminent commentator of *Sushruta Samhita* explained the word "*Ksharana*" as one which mobilizes and removes the deformed flesh, skin and removes the vitiated *Doshas* from their location. *Kshara Karma* comes under the scope of *Shalya Tantra* while Acharya Charaka has considered it as one of the three fold treatment i.e., *Shashtra Pranidhana*.

In *Harit Samhita*, *Kshara karma* is included in the eight important types of treatment.

Acharya Sushruta emphasizes on the fact that, when the *Kshara* administered by an ignorant physician can harm the body like *Agni*, *Shastra* and *Vajra* or death itself. While the same *Kshara* when administered by an intelligent and well skilled physician can prove potent enough to subside all serious and most troublesome disease rapidly in which it is indicated.

Many article published in different formulation and different disease on *Kshara*.

Table 2: Kshara Guna^[13]

Sr.No.	Properties	Charaka	Sushruta	Vagbhata	Rasatarangini
1	<i>Teekshna</i>	+	-	-	+
2	<i>Ushna</i>	+	-	-	+
3	<i>Laghu</i>	+	-	-	-
4	<i>Rooksha</i>	+	-	-	-
5	<i>Kledi</i>	+	-	-	-
6	<i>Pakta</i>	+	-	-	-
7	<i>Vidaarana</i>	+	-	-	-
8	<i>Daahakaaraka</i>	+	-	-	-
9	<i>Deepana</i>	+	-	-	-
10	<i>Chhedana</i>	+	-	-	-
11	<i>Agnisaadrishya</i>	+	-	-	-
12	<i>Naatiteekshna</i>	-	+	+	-
13	<i>Naatimridu</i>	-	+	+	-
14	<i>Shukla</i>	-	+	-	-
15	<i>Sita (Shwetavarna)</i>	-	-	+	-
16	<i>Daahaka</i>	-	-	-	+
17	<i>Slakshna</i>	-	+	+	-
18	<i>Krimighna</i>	-	-	-	+
19	<i>Picchila</i>	-	+	+	-
20	<i>Paachaka</i>	-	-	-	+
21	<i>Avishyandi</i>	-	+	+	-
22	<i>Daaraka</i>	-	-	-	+
23	<i>Shivam</i>	-	+	-	-
24	<i>Sukhanirvaapya</i>	-	-	+	-
25	<i>Shodhana</i>	-	-	-	+
26	<i>Sheeghrakari</i>	-	+	-	-

27	<i>Sheeghragaami</i>	-	-	+	-
28	<i>Ropana</i>	-	-	-	+
29	<i>Shikhari</i>	-	-	+	-
30	<i>Mootrala</i>	-	-	-	+
31	<i>Naatiruk</i>	-	-	+	-

Adequate Qualities of Kshara^[14]

Table 3: The Qualities of Kshara Mentioned in Ayurvedic Classics

Sr. No.	Qualities	Sushruta Samhitaa	Ashtaanga Hridayam
1	<i>Na-atiteekshna</i>	+	+
2	<i>Na-atimridu</i>	+	+
3	<i>Na-atishukla</i>	+	+
4	<i>Slakshnatva</i>	+	+
5	<i>Picchila</i>	+	+
6	<i>Avishyanda</i>	+	+
7	<i>Sheeghrakaaritva</i>	+	+
8	<i>Shivaa</i>	+	-
9	<i>Shikharee</i>	-	+
10	<i>Sukhanirvaapya</i>	-	+

Inadequate Qualities of Kshara^[15]

Kshara can possess some bad qualities apart from its good qualities, if it is prepared improperly. It is necessary to have a thorough knowledge of those bad qualities before treating the patient with Kshara.

Table 4: Bad Qualities of Kshara Mentioned in Ayurvedic Classics

Sr. no.	Bad Qualities	Sushruta Samhita	Ashtanga Sangraha
1	<i>Atimridu</i>	+	+
2	<i>Atishweta</i>	+	+
3	<i>Atiushnataa</i>	+	+
4	<i>Atiteekshnataa</i>	+	+
5	<i>Atipicchila</i>	+	+
6	<i>Ativisarpitaa</i>	+	+
7	<i>Atisandrataa</i>	+	+
8	<i>Apakvataa</i>	+	+
9	<i>Heenadravyataa</i>	+	+
10	<i>Atitanu</i>	-	+

Preparation of Kshara

1. Pratisaraneeya Kshara^[16]

Sushruta's maneuver seems to be ideal regarding the preparation of Pratisaraneeya Kshara. The physician who prepares the Kshara should have a clean bath early in the morning of Sharad Ritu (autumn season) in auspicious day. He should fast on that day and go the hills and look for such plants that are middle aged and free from insects. The Panchangas of plants should be collected, dried up and made into small pieces. Then these are burnt with lime stone. While burning the dispersed parts of the plants are kept with the help of Tilanala. When the ash cools down it should be separated from the residue of limestone and Bhasma Sharkara. 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 (Ksharo-Daka) should be kept on Mandagni and continuously stirred well until it reduces

to 1/3rd. This is Mridu Kshara. From these eight Palas has to be taken and mixed with Shankhanabhi or Shukti 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 Madhyama Kshara. The Madhyama Kshara should be heated up again by adding some medicinal plants such as Danti, Chitraka, Ativisha etc. with this thick solution obtained which is known as Teekshna Kshara.

Paneeya Kshara^[17]

The collected ash should be mixed well with six times of water. Then filtered twenty one times in a big vessel through a piece of cloth. The residual portion is thrown away and the filtrate (Ksharodaka) should be kept on Mandagni and continuously stirred well until it 1/3rd.

Table 5: Classification of Kshara^[18,19]

On the basis of administration	Sushruta: <i>Pratisaraneeya</i> (External application) <i>Paneeya</i> (Oral administration) Charaka: <i>Pratisaraneeya</i> (External application) <i>Paneeya</i> (Oral administration) Vagbhata: <i>Bahya Parimarjan</i> <i>Antaha Parimarjan</i>
On the basis of concentration	1. <i>Mrudu</i> 2. <i>Madhyama</i> 3. <i>Teekshna</i>
On the basis of origin	1. Herbal 2. Mineral 3. Animal
According to preparation	1. <i>Uttama</i> 2. <i>Madhyama</i> 3. <i>Adhama</i>

Indication of Pratisaraneeya Kshara^[20]

Pratisaraneeya kshara is indicated in good number of diseases by ancient Acharyas. *Kushtha* (skin diseases), *Kitibha* (psoriasis), *Kilasa* (vitiligo), *Mandala kushtha*, *Bhagandara* (fistula-in-ano), *Dushtavrana* (infected wounds), *Nadivrana* (sinus), *Bahyavidradhi*, *Dushtavrana* (infected wounds), *Arbuda* (tumor), *Charmakeela* (wart), *Tilakalaka* (mole), *Nyachha*, *Vyanga* (pigmentation of skin), *Mashaka* (nevus), *Saptamukhroga* i.e., *Upajivha*,

Adhijivha, *Upakusha* (gingivitis), *Dantavaidarbha*, *Vataja*, *Pittaja*, *Kaphajarahini*.

Indication of PaneeyaKshara^[21]

Garavisha, *Gulma*, *Udararoga*, *Agnisanga*, *Ajirna*, *Arochaka*, *Aanaha*, *Sharkara*, *Ashmari*, *Aabhyantara vidhradhi*, *Krumiand Arsha*.

Table 6: Contra-indication of Kshara^[22]

Before the *Kshara* using it is necessary to observe the fitness of the patient. The contraindications of *Kshara* can be classified into following groups.

According to diseases	<i>Raktapitta</i> , <i>Praviddha</i> , <i>Jwara</i> , <i>Trishna</i> , <i>Udararoga</i> , <i>Murchha</i> , <i>Hridroga</i> , <i>Prameha</i> , <i>Shiroroga</i> , <i>Panduroga</i> , <i>Sarvaanga Shoph</i> and <i>Raktajagulma</i> .
According to physical and mental state of the patient	Children, phobic persons, aged, menstruating women, pregnant women, <i>Durbala</i> , <i>Ruksha</i> persons, <i>Shukra-ksheena</i> persons.
According to sites	Arteries, joints, vital parts, cartilages, veins, ligaments, throat, umbilicus, penis, insufficient musculature, nailed, testis, all parts of the eye except eye lid.
According to seasons	Summer, autumn and cloudy weather.

The above contraindications are applicable both for *Paneeya* and *Pratisaraneeya Kshara*. Out of these few anatomical sites and some diseases may be fit for contraindications of *Pratisaraneeya kshara*.

Kshara uses in different forms as a medicine

Ksharodaka (water), *Kshara Sutra* (thread), *Ksharavarti*, *Ksharapichu* (gause-piece), *Kshara-anjana*, *Kshara Gutica* (tablet), *Kshara Vatika*, *Ksharavaleha*, *Kshara-Ghrita*, *Kshara-Taila*, *Kshara-rasakriya*, *Kshara-Gandusha*, *Kshara-Basti*.

Kshara Matra:

Paneeya Kshara: ½ Pala- 1 Pala (*Chakrapani*)

Pratisaraneeya Kshara: *Nakhotashedha* (*Sushruta*)

Chemical composition of Kshara

The chemical composition of *Kshara* is mentioned in Indian Tradition of Chemistry and Chemical Technology.

The wood ashes contain potassium and sodium carbonates (K_2CO_3 and Na_2CO_3). Limestone and seashells contain calcium carbonates ($CaCO_3$). On heating strongly carbonate decomposes into calcium oxide (CaO), quick lime and carbon dioxide (CO_2), which escapes into the air. Calcium oxide reacts with water vigorously and gives calcium hydroxide ($Ca(OH)_2$), which is limewater indeed. Calcium hydroxide reacts with potassium/ sodium carbonate and gives rise to calcium carbonate, which comes down as precipitate. Alkali hydroxide (KOH) remains in solution, which may be concentrated by boiling to different extents. This essential chemical reaction can be expressed in terms of the following equations.

- $CaCO_3 \rightarrow CaO + CO_2$
- $CaO + H_2O \rightarrow Ca(OH)_2$
- $K_2CO_3 + Ca(OH)_2 \rightarrow 2KOH + CaCO_3$

Table 7: Assessment of Kshara^[23]

<i>Samyaka Dagdha</i>	<ul style="list-style-type: none"> • Alleviation of symptoms and signs of disease • Without any secretions • Well-being to the patient
<i>Heena Dagdha</i>	<ul style="list-style-type: none"> • Pricking pain • Itching • Numbness • Aggravation of disease
<i>Ati Dagdha</i>	<ul style="list-style-type: none"> • Burning sensation • Redness • Suppuration • Secretions • Body ache • Thirst • Faintness • Even death

CONCLUSION

Acharya Sushruta has mentioned the indication of *Kshara* to treat many diseases like *Vrana*, *Bhagandara*, *Arsha*, *Ashmari*, *Charmakeela* etc. which shows its importance in *Shalya Tantra*. This procedure is simple, very safe, effective and with minimal or no complications, un Hazardous and easily acceptable by the patients. *Kshara* is useful as a medicine external and internal in different formulation. *Kshara* is indicated in children, weak persons and decrepit. There is minimal interference in patient's routine work. *Kshara* has important role in medicine, surgical and para-surgical practice. *Ksharakarma* has been considered as a wealth and a strong weapon in *Ayurvedic Pharmacopeia*. The parasurgical methods which are described by our Acharyas are effective, easily practicable and can avoid the recurrence.

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