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## Preparation of *Apamarga Pratisaraneeya Kshara* and its Physico-chemical Analysis

Sweta KM,<sup>1</sup> Vijay Ukhalkar,<sup>2</sup> Ramesh Bhat,<sup>3</sup> Manoj Kumar Samantaray.<sup>4</sup>

<sup>1</sup>Associate Professor, <sup>3</sup>Professor & H.O.D, Department of Shalya Tantra, <sup>4</sup>Associate Professor, Department of Rasashastra and Bhaishajya Kalpana, Sri Sri College of Ayurvedic Science and Research Hospital, Bangalore, Karnataka, India, <sup>2</sup>Professor, Govt. Ayurveda Medical College, Nanded, Maharashtra, India.

### ABSTRACT

**Introduction:** *Kshara* is described in *Anuyantras* and *Anushastras* according to Acharya Sushruta. It is considered to be *Pradhana* among *Shashtra* and *Anushashtra* because of its *Chedana*, *Bhedana*, *Lekhana* property, as well as it is said to be *Tridoshaghna* and used for the special procedures. *Pratisaraneya Kshara* is been indicated externally for various disorders such as *Arsha*, *Bhagandara*, *Kilasa*. **Materials and Methods:** *Pratisaraneeya Kshara* with the drug *Apamarga* is prepared as per Acharya Sushruta's description with 12 kg of *Apamarga Panchanga*. **Results:** Physico-chemical analysis: iron as Fe - 0.043%, sodium- 0.63%, potassium - 9.19%, ph value - 13.88, acid insoluble ash - 9.69%, loss on drying at 110 degree c - 64.24%, total ash - 47.03%, colour - white. **Discussion:** Physicochemical analysis shows ph value as alkaline, amount of insoluble ash, iron, sodium and potassium. **Conclusion:** The method of preparation of *Pratisaraneeya Kshara* holds good even for today's era and can be considerd as standard protocol for *Teekshana Pratisaraneeya Apamarga Kshara*.

Key words: Kshara, Pratisaraneeya, Chedana, Lekhana, Apamarga, Tridoshaghna.

#### **INTRODUCTION**

The word *Kshara* is derived from the root *'Kshara'* meaning, that which is related to mobilization and burning.<sup>[1]</sup>

Dictionary meaning of Kshara - to flow, melt away. [2]

**Etymological meaning of** *Kshara***:** It is called *Kshara* as it is capable of melting away or destroying.

**Importance of** *Kshara* **(caustics):** The caustics are superior to the sharp instruments and their

#### Address for correspondence:

Dr. Sweta KM

Associate Professor, Department of Shalya Tantra, Sri Sri College of Ayurvedic Science and Research Hospital, Bangalore, Karnataka, India.

E-mail: dr.swetatyagi1882@gmail.com

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substitutes because of their capability to perform excision, incision and scraping, because of their power to alleviate all the three *Doshas* and as they can be used for some special procedures.

Properties of Kshara: being a composit of many drugs it alleviates the 3 Doshas, being white in color it is Sowmya, capable of doing Dahana, Pachana, and Bhedana. It has Katu (pungent), Ushna (hot), Teekshana (sharp), Pachaka (digestive), Vilayaka (liquefier), Shodhaka (cleansing effect), Ropaka (healing), Shoshana (absorbant), Stambhana (styptic) and Lekhan (scraping) properties.

**Types:** *Pratisarana* (external application) and *Paneeya* (internal use).

Indications for external use of Kshara: Kushtha, Kitibha, Dadru, Mandala Kushtha, Kilasa, Bhagandara, Arbuda, Arshas, Dushtavrana, Nadi, Charmakeela, Tilakalaka, Nyaccha, Vyanga, Mashaka, Bahya Vidradhi, Krimi, Visha Mukha Roga, Upjihwika, and Rohini.

Indications for internal use of Kshara: used for Gara Visha, Gulma, Udara, Agnisanga, Ajirna, Arochaka,

Anaha, Sharkar Ashmari, Abhyantaravidradhi, Krimi, Visha.

Contraindications for internal use: in persons with haemorrhagic conditions, *Pitta Prakriti*, *Bala*, *Vriddha*, *Durbala*, *Bhrama*, *Mada*, *Moorcha* and with diminished vision.<sup>[3]</sup>

#### **Description of** *Apamarga***:**

- Botanical name: Achyranthes aspera
- Family : Amaranthaceae
- Synonyms: Shikhari, Mayuraka, Kinhi, Markati, Pratichiniphala, Kharamanjari.
- Habit: An erect or semi-erect much branched diffuse biennial shrub.
- Habitat: throughout India, as a weed.
- Chemical composition: Betaine, achyranthine, Achyranthes saponins A,B,C,D
- Rasapanchaka: Katu, Tikta Rasa, Laghu, Ruksha, Teekshna Guna, Ushna Veerya, Katu Vipaka, Kaphavatahara.
- Karma: Shirovirechana, Deepana, Pachana, Medohara, Rochana
- Indications: Hridruja, Adhmana, Arshas, Kandu, Shoola, Udara, Apachi, Chardi, Krimi, Sidhma, Mutrakrcchra, Sadhyo Vrana.
- Part used: Moola, Beeja, Patra, Panchanga, Kshara.<sup>[4]</sup>

#### Preparation of Pratisaraneeya Kshara

**Procedure**: It is of 3 types *Mridu, Madhyama, Teekshana*.

One who wishes to prepare it should be an auspicious autumn day having become clean and keeping fast, uproot the undamaged mature, well developed black *Mushkaka* plant grown on good soil of table land, the preliminary consecration having been done one day earlier. Then it should be divided into small pieces, heaped together in a place free from draughts of wind and ignited by *Tila* stalks after mixing with pebbles of lime stone. When the fire has burnt out ash should be collected.



Fig. 1: Burning of Apamarga Panchanga



Fig. 2: Showing the filterate after 21 times filtration



Fig. 3: Showing the filtrate after boiling for 15 min.



Fig. 4: 1/3<sup>rd</sup> of filterate kept aside.



Fig. 5: filtrate after mixing red hot Sudha and Shukti



Fig. 6: 1/3<sup>rd</sup> of filtrate being mix with the filtrate subjected to fire.



Fig. 7: Pratisaraneeya Apamarga Kshara final stage.

Plants used for Pratisarneeya Kshara: Kutaja, Palasha, Ashwakarna, Paribhadraka, Bibheetaka, Aragvadha, Tilvaka, Arka, Snuhi, **Apamarga**, Patala, Naktamala, Kadali, Chitraka, Putika, Indravriksha, Sphota, Asvamaraka, Agnimantha and Gunja.

One drone of ash should be dissolved in six drone of water or urine, and should be filtered 21 times. Then it should be treated on fire in a big pan while it is slowly stirred by a ladle. When it becomes clear, red, sharp and slimy, it should be refiltered through a wide

cloth and the filtrate should be placed on fire. One and half *Kudava* of *Kshara* Jala should be kept separated.

There after lime stone, *Bhasmasharkara*, core of conch shell should be made red hot, dipped in the alkaline water kept apart in an iron vessel and a paste should be made of them and it should be mixed to the *Kshara Jala* and further treated and stirred keeping constant vigilance. It should be so processed that it neither should be so thick nor so thin. When it is boiled appropriately it should be then taken down from the furnace and it should be preserved in a wide iron pitcher with its mouth covered. This is the method of moderate variety of *Pratisaraneeya Kshara*. If the same *Kshara* is prepared without adding the conch shell etc. *Dravyas* it is called *Mridu Kshara*.

For *Teekshana Kshara*: 8 tolas of fine powders of *Danti, Dravanti, Chitraka, Langali, Putika, Pravala, Vida, Swarchika, Kanakaksheeri, Hingu, Vacha* and *Ativisha*.<sup>[3]</sup>

### Preparation of *Teekshana Apamarga Pratisaraneeya Kshara*

12kgs of *Apamarga* (*Panchanga*) was collected and dried, and formed into a heap. The whole twig was burnt into ashes and then was allowed to cool by it self. The whole ash was collected (1kg) and mixed with six liters of water and stirred well, allowed to settle overnight. Then it was filtered through cotton cloth for 21 times, the residue was thrown out. Amber colored filtrate was obtained.

This filtrate was subjected to *Mandagni* in an iron vessel and reduced to half. About 1/3<sup>rd</sup> of *Kshara Jala* was taken out of the vessel. 50gms each of *Shukti* and *Sudha* were heated red hot and then mixed with the 1/3<sup>rd</sup> separated *Kshara Jala* till got dissolved in it completely and this mixture was again added back to the boiling *Kshara Jala* and continued to boil.

To make it *Tikshna*, mean while 10 gms of *Chitraka Moola Sukshma Choorna* was added to it and was allowed to boil for few more minutes till it attained to a semisolid consistency. Then it was removed from fire and the finally obtained quantity was 500gm of

Kshara. A part of the prepared Kshara was sent for physicochemical analysis. Later it was transferred into a separate glass container with lid and was stored for use.

#### **Physico-chemical analysis**

10 gm of the prepared *Kshara* was sent for analysis to Bangalore test house and it was assessed there by the references of API and the obtained results were as follows:

Color: white, consistency: semisolid, Iron as fe -0.043%, sodium -0.63%, potassium -9.19%, ph value -13.88, acid insoluble ash -9.69%, and loss on drying at 110°c -64.24%, total ash -47.03%.

#### **CONCLUSION**

From the above study it was proved that the method of preparation of *Teekshana Kshara* explained by Acharya Sushruta holds good even for today's era. The total amount of the *Kshara* from 12kg of *Apamarga* was 500gm. The physicochemical studies have shown the ph value as 13.88 indicating the *Teekshanata* of *Kshara*. Thus it can be stated that this can be taken as the standard procedure of preparation of *Teekshana Apamarga Kshara* used for the purpose of *Pratisarana*.

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