Preparation of mulaka (*Raphenus sativus* linn.) Kshara - a practical approach

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**Kshara Chikitsa** (alkaline therapy) is the herbal extracts of plants like *Mulaka* (*Raphenus sativus* Linn.), *Snuhi* (*Euphorbia nerifolia* Linn.), *Aragwada* (*Cassia fistula* Linn.), *Kutaja* (*Holarrhena antidysenterica* Linn.), *Vasa* (*Adhatoda vasica* Linn.) and *Arka* (*Calotropis gigantea* Linn.). *Kshara* can be a compound or mixture of many herbs or may be from single herb. *Mulaka Kshara* is a caustic alkaline preparation of the drug *Mulaka* (*Raphenus sativus* Linn.), indicated in diseases like *Mutrakrchra, Mutrashmari, Gulma* etc. There is wide range of description available about *Kshara* as told by *Acharya Sushruta* and many other authoritative classics. This alkaline preparation has many therapeutic usages and even has replaced many surgical procedures and proved to be effective in treating many disorders. The internal use of *Kshara* is advised in *Mutrashmari*, external application in *Arshas* (hemorrhoids) and in the form of *Kshara Sutra* in *Bhagandhara* (fistula in ano). The paper details the most practical way of preparing Mulaka Kshara for clinical use.


1. Introduction

*Acharya Sushruta* defines “Tatraksharanatkshananadva Kshara” [1]. The drug which has the characteristics of *Kshanam* or *Ksharan*, literally means that which destroys fleshy mass either healthy or unhealthy as *Kshara*. *Acharya Charaka* says “Chitvachitwaashyathksharahaksahartyadaha” i.e. *Kshara* is one, which scars the abnormal tissue from its location and destroys it after dissolving it, because of if its corrosive nature. *Mulaka Kshara* has been explained in *Susruta Samhita Uttara Tantra* [2] in the context of “GulmaPrathishediyaadhyaya” which is a powdered preparation of *Mulaka Bhasma and Jala*.

The classification of *Kshara* can be done in various ways on the basis of:

- **Admistration- Paneeya and Prathisaraneeya** [1]
- **Concentration- Mrudu, Madhyama or Teekshna** [1]
As per preparation Kshara is a caustic material obtained from ashes after distillation and are alkaline in nature. Kshara derived from the combination of different kinds of drugs only is repository of all tastes with combination of Katu (pungent) and Lavana (salt) Rasa possess properties which are penetrating and hot in potency, besides performing the action of Dahana, Pachana, Vidharana, Vilayana, Shodhana, Ropana, and Krimiamamedovishanashaka. It is considered to be best among all the Shastra and Anushashtras (major & minor sharp instruments) and is fit to be used in place where sharp instruments can be used with difficulties like nasal polyp, malignant tumours etc. where treatment by Shashtras is not advised. The mentioning of Kshara is found only in post-Vedic literature. The Charka Samhita only refers to Kshara [3], while the detailed description of its preparation, classification, indication and contraindications are available in Sushruta Samhita [1]. Success can even be obtained by its use even in disease which are difficult to cure and also because it can be used in form of drink [4]

Properties of Kshara: [1]
Rasa : Katu, Lavana
Veerya : Ushna
Varna : Shukla
Guna : Sowmya, tiksna, agneya.
Doshagna : Tridoshagna
Karma : Dahana, pachana, darana, vilayana, shodana, ropana, shoshana.

2. Drug Review: Mulaka (Raphenus sativus Linn.) [5-6]
It is a fresh whole plant, an annual herb, cultivated throughout India. The fresh Mulaka is shown in figure 1. As per Ayurvedic classical literature available, it is evident that drug Mulaka is having much significant importance, being extensively used for its varied benefits. Almost all Acharyas of Ayurveda have referred this drug for its multiple benefits in therapeutics.

Botanical name: Raphenus sativus Linn.
Family: Crucifera
Parts used: Mulakakanda (tuberous root)

Properties of Raphenus sativus Linn.: Rasa - Katu, Tikta
Guna - Laghu, Teeksha
Dosha Karma – Tridoshahar [5]
Karma - Deepana, Pachana, Svarya, Hrdya, Mutrala, Ashmaribhedana. [3]

2.1 Procedure for preparation of Mulaka Kshara:
100 kilograms of fresh mature Mulaka was taken, cut into small pieces (shown in figure 2) and subjected to dry in sunlight till all water content got evaporated (shown in figure 3), Then it is burnt to white ash (shown in figure 4, 5 and 6) and water added to the ash (shown in figure 7 and 8) in volume by volume ratio i.e. 1:6. It is then kept overnight and the next morning, liquid part decanted (shown in figure 9) and filtered for 21 times (shown in figure 10) to obtain Gomutra varna (colour of cow’s urine). Later the same is subjected to heat on Mandagni till water gets evaporated (shown in figure 11, 12, 13 and 14) to obtain flakes of Kshara from bottom of vessel and grind to fine powder form (shown in figure 15 and 16).
Fig 2: Mulaka being chopped into slices

Fig 3: After drying under sunlight

Fig 4, 5 and 6: Dried Mulaka subjected for burn to ashes

Fig 7 and 8: weight of ash obtained in grams and litres
**Fig 9:** Subjected for soaking in 6 parts of water

**Fig 10:** Gomutra Varna on filtering for 21 times

**Fig 11, 12, 13 and 14:** Subjected for heating on Mandagni till all water content get evaporated

**Fig 15 and 16:** Kshara obtained at bottom of vessel and quantity at end of preparation
2.2 Observation
- 100 kilogram Mulaka took 20 days to dry under sunlight
- Product after drying was 5 kilogram
- Ash obtained after burning was 735 grams
- 1:6 ratio water added (for 1.5 liters of ash 6 parts of it water added)
- After filtering for 21 times Gomutra Varna was seen, which was subjected for heating to obtain Kshara
- 284 grams of Kshara was obtained at end of procedure
- So, procedure set forth determines amount of volatile matter (i.e. water drying off from drug)
- The Kshara preserved in cool place in tightly closed container protected from light & moisture as it is Hygroscopic in nature to prevent its evaporation.
- Dosage: 1 gram daily in divided doses [7-8]
- Anupana: water
- Therapeutic usage: Mutrkrcchra (dysuria), Ashmari (calculus), Gulma (abdominal lump) [7-8].

3. Discussion
As per Ayurvedic classics, Kshara can be given in various disorders and Ashmari being one among them. Kshara is hygroscopic and so it must be preserved in closed container. As it has “Ksharana” property, it gradually erodes vitiated Kapha and brings it down. Kshara is more effective in Kapha Doshas and is better suits to person of Kapha Prakruti. Kapha is responsible for formation of Ashmari. The properties of Kshara like Rooksha, Laghu, Teekshna will reduce the growth of or chance of nidus formation, hence reducing the growth of stone by inhibiting binding property of Kapha Dosha.

4. Conclusion
Paneeya Kshara can be given in various disorders and Ashmari is one among them. Due to its Ashmarigna, Chedhana and Bhedana and Mutrara property, the drug might act on Ashmari by changing the pH value.

5. References