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Preparation of Apamarga Kshara and its role in surgical practice

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Abstract

Ayurveda depends mostly upon the medicinal plants for the remedy. In Rig-Veda and Atharvaveda, there are numerous of medicinal plants mentioned to be used as a drug. Kshara is the herbal extracts of plants like Apamarga (*Achyranthes aspera* Lin), Mulaka (*Raphenus sativus* Linn.), Snuhi (*Euphorbia nerifolia* Linn.), Aragwadha (*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. 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 like Dushta Vrana, Bhagandara, Arsha and Charmakeela. This paper deals with the most practical way of preparing Apamarga Kshara and its role in surgical practice.

Keywords: Kshara, *Achyranthes aspera* Lin, Apamarga, Apamarga Kshara

1. Introduction

Kshara is a derivative of plant drug ashes in the form of solutions, powder or crystals, all of which have the basic quality of being alkaline in nature. Acharya Sushruta has explained in detail regarding Kshara by dedicating a separate chapter 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] and told that Kshara have Chedana (Excision), Bhedana and Lekhana (Scraping) properties and also has Tridosahara (Equilibrium of Vaata, Pitta and Kapha) properties [3] and he has narrated Kshara considering its scope in Shalya Tantra. The classification of Kshara can be done in various ways on the basis of administration i.e. Paneeya and Pratisaraneeya [4], concentration i.e. Mrudu, Madhyama and Teekshna [5]. Acharya Sushruta has narrated Kshara as an Anushastra [6] and one of the Upakrama for Vrana [7] and it has been proved to be effective in treating many disorders like Dushta Vrana, Bhagandara, Arsha, Charmakeela. Acharya Sushruta has mentioned many drugs for the preparation of Kshara and Apamarga is one among them [8].

The drug Apamarga (*Achyranthes aspera* Linn) is wild perennial herb which grows 30 – 90 cm in height and having branched tap root. Stem is aerial erect, herbaceous, hairy and green. Leafs are petiolate, opposite and semiorbicularis with suddenly pointed apex. A spike with reflexed flower arranged on long peduncle. Flowers are bisexual, tetracyclic, small, green and actinomorphic. Fruit is indehiscent achene enclosed within persistent perianth and bracteole. It is distributed throughout India, up to an altitude of 2100 feet and in the south Andaman Island, commonly found as a weed on waysides and barren land [9]. Guna and Karma of Apamarga [9]. And Kshara [10] are mentioned in Table 1 and Table 2

Table 1: Guna of Apamarga

Guna	Laghu Ruksha Tikshna
Rasa	Katu Tikta
Virya	Ushna
Vipaka	Katu
Dosha Karma	Kapha Vata Shamaka Kapha Pitta Samshodhana

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Table 2: Guna of Kshara

Rasa	Katu
Virya	Ushna
Varna	Shukla
Guna	Saumaya Tikshna Agneya
Doshaghanata	Tridoshaghata
Karma	Dahan, Pachana, Darana, Vilayan, Shodhana, Ropana, Shoshana, Stambha, Lekhana

2. Materials and Methods

2.1 Preparation of Apamarga Kshara

Apamarga raw drug was procured from SDM Ayurveda Pharmacy, Udupi, Karnataka, India and were dried and burnt to ash in a large iron pan. The grey coloured ash was collected, which is devoid of mud, stones and charcoal. The total volume of this ash was mixed with 6 times of water and the mixture was left overnight. The next morning, only the supernatant fluid was collected, discarding the dark coloured sediment in the bucket. The supernatant fluid thus obtained was filtered 21 times using a cotton cloth to obtain Gaumutra Varna Ksharajala. This Ksharajala was heated over an iron pan in mild- moderate flame with intermittent stirring for about 3 hours till it turned to reddish–yellow (Ishat Raktavarna). When the Ishat Raktavarna is attained then it is called as Mrudu Kshara.

Sankhanaabhi (Shukti) weighing about 1/10th part of Apamarga ash was obtained and was heated red hot in an iron pan. Once it was red hot, Pottali of it was prepared. Pottali of Shukti was dipped in Mrudu Kshara. Then Mrudu Kshara turned into white colour and heated on the moderate flame and stirred continuously till it became thick in consistency. This is called as Madhyama Kshara.

Chitrakamula weighing about 1/10th part of Shukti was collected. The chitrakamula was finely pasted and kept ready. The Madhyama Kshara was put off from the flame, allowed to cool for 5-10 minutes and then finely pasted Chitrakamula Kalka was added and stirred for its uniform distribution. The Kshara thus obtained is Tikshana Apamarga Kshara (Fig. 1)

**Fig. 1:** Apamarga Kshara

2.2 Use of Apamarga Kshara in Dushta Vrana

This Apamarga Kshara was used in a patient with Dushta Vrana having Utsanna Mamsa (Raised granulation tissue), Kathina (Hard), Kanduyukta (Itching), Chirothana (Chronic) and kept over the wound for 100 Matra Kala or till Samyak Dagdha Lakshana (black colour) are seen followed by washing of wound with Nimbu Swarasa. The procedure was done in SDM College of Ayurveda and Hospital, Udupi – Karnataka, India

2.3 Use of published articles

Various published articles on Apamarga Kshara were studied, analysed and used as material to highlight the facts according to aim of the study.

3. Result and Discussion

Kshara is more effective in Kapha Dosha and Kapha is responsible for Utsanna Mamsa (Raised or hypergranulation tissue), Kathinata (Hard) and Kandu (Itching) in Vrana. Acharya Sushruta has clearly mentioned the indication of application of Kshara in such condition of Vrana^[11]. So on the basis of this reference Apamarga Kshara was applied to a male patient age about 55 years in SDM Ayurveda Hospital, Udupi – Karnataka, India, who was presented with ulcer in dorso – lateral aspect of left foot since 7 month associated with itching. On examination, hypergranulation was present in the floor of ulcer and was having punched out edge. Apamarga Kshara was applied over the wound for 100 Matra Kala or till Samyaka Dagdha Lakshana (black colour) are seen followed by washing of wound with Nimbu Swarasa. After 21 days of treatment there was significant healing response and patient was having no complain of itching (Fig. 2 and 3).

**Fig 2:** Before Application**Fig 3:** 21 days after Treatment

A Clinical study was done for comparison of tympanic membrane perforation closure with trichloroacetic acid and Apamarga Kshara (*Achyranthes aspera* linn. alkaline extract) and it was concluded that *Achyranthes aspera* alkaline extract breaks the submucosal fibrosis, excessive necrosed tissue and augments the neovascularization in order to restore the integrity of a perforated tympanic membrane. *Achyranthes aspera* alkaline extract can safely advocated as an Ayurvedic cauterization substitute for the resurfacing of the ruptured tympanic membrane with a successful closure rate of 83.3% in comparison to 87.5%, which is observed in trichloroacetic acid, traditionally used as a chemical myringoplasty agent.^[12] Acharya Sushruta has mentioned the indication of Pratisaraniya Kshara in Charmakeela^[13] so a prospective study of Pratisaraneeya Apamarga Kshara in comparison with Pratisaraneeya Palasha Kshara in patients with Charmakeela (warts) and Kadara (corns) was done and found that Pratisaraneeya Apamarga Kshara showed greater improvement

in corns and warts when compared to Pratisaraneeya Palasha Kshara^[14].

Acharya Sushruta has also mentioned the indication of Kshara in Bhagandara^[13] so a clinical comparative study was done on efficacy of Apamarga Ksharasootra and Seton therapy in management of Bhagandara w.s.r. to Fistula – In – Ano and it was concluded that median healing time was 7 weeks for Ksharasootra and 11 weeks with Seton therapy. Recurrence rate was only 0.0 percent with the Ksharasootra and 13.33 percent with Seton therapy. The technique of Apamarg Ksharasootra therapy is appropriate for healing of the fistulous tract with minimal complications. Apamarga Ksharasootra is more competent and effective than Seton therapy in the management of Bhagandara. In Ksharasootra therapy the cutting and healing of fistulous track takes simultaneously^[15].

A study was done to know the Effect of Apamarga Kshara Taila Uttarbasti in the Management of Infertility w.s.r. Tubal-blockage and it was concluded that the trial drug Apamargakshara Taila gave highly significant results. In this study, patency achieved in fimbrial block was 83.33%. In case of cornual block the result also found highly effective i.e. 76.92%^[16].

Acharya Sushruta has mentioned that when Kshara is administered by an ignorant physician, it can harm the body like Agni, Shastra and Vajra and may cause death of the patient. While the same Kshara, when administered by an intelligent and skilled physician can prove potent enough to subside most troublesome and all serious diseases rapidly in which Kshara is indicated^[17]. So decision making ability is very important in field of surgery and one should make decision before treating the patient with Kshara to avoid complications.

4. Conclusion

Acharya Sushruta has mentioned the indication of Kshara to treat many diseases like Vrana, Bhagandara, Arsha, Charmakeela etc. which shows its importance in Shalya Tantra. Case study on Dushta Vrana treated with application of Kshara and by the review of research articles where Kshara was used in different surgical diseases and found effective. This shows that Kshara has important role in surgical practice.

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