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Preparation Of Apamarga Kshara and It's Analytical Study

Aruna V. Shelke, Sanjay S. Lokhande, Rajshri U Suryavanshi

1. Associate Professor, Agad Tantra. Dept.,
2. Associate Professor, Swasthvritta Dept., Email: sanjaylokhande13@gmail.com
3. Associate Professor, Shalyatantra Dept., Email: drrajshri123@gmail.com

S.R.C. Ayurved College, Chikhli, Dist Buldana, Maharashtra

*Corresponding author: dravshelke@gmail.com

ABSTRACT :-

Ayurveda depends mostly upon the medicinal plants for the remedy. Panchavidha Kashaya Kalpana is basic Preparation method in Bhaishjya Kalpana and Kshara Kalpana is one of them. Kshara is the herbal extracts of plants like Apamarga (Achyranthes Aspera linn) Snuhi (Euphorbia nerifolia linn) Aragwadha (Cassia Fistula Lin) Kutaja (Holarrhena antidysentrica linn) Kshar 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 Acharyas, This alkaline Preparation has many therapeutic usages and even has replaced many surgical procedures. It has the quality of excising

(chedhya) Cutting (bhedhya), Scraping (Lekhya) and tridoshaghna.

Keywords:- Kshara, Achyranthes aspera lin, Apamarga, Apamarga kshara, Shwet apamarga kshar, Rakta apamarga kshar

INTRODUCTION:-

Kshara is 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 seprate chapter which no other author has made. The prepared drug substance is called Kshara because it caues Ksharana (Destruction of tissue)

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 on long peduncle. Flowers are bisexual, tetracyclic, small, green and actinomorphic, Fruit is indehiscent achene. It is distributed throughout India. It is of two types 1) Shweta apmarga 2) Rakta apmarga.

Guna and karma of Apamarga:

- Guna: Laghu Ruksha Tikshna
- Rasa: Katu Tikta
- Virya: Ushna
- Vipaka: Katu
- Dosha Karma: Kapha Vata Shamaka, Kapha pitta samshodhana

Guna and karma of Kshara

- Rasa: Katu
- Virya: Ushna
- Guna: Saumaya. Tikshna, Agneya
- Doshaghata: Tridoshaghata
- Karma: Dahan, Pachana, Darana, Vilayan, Shodhana, Ropana, Shoshana, Stambhna, Lekhana

Alkali:

In Chemistry, an alkali is a basic, ionic salt of an alkali metal or alkaline earth metal. Alkalis are best known for being bases (compounds with pH greater than 7) that dissolve in water. The adjective alkaline is commonly used in English as synonyms for base, especially for soluble bases.

The word “alkali” is derived from Arabic al qili = “the calcined ashes” referring to the original sources of alkaline substances. Ashes were used in conjunction with animal fat to produce soap, a process known as saponification.

Common Properties of Alkali

- 1) Alkali have a pH greater than seven and hence can be detected with litmus paper (Moist red litmus will turn blue on contact with an alkali)
- 2) Moderately concentrated solutions have a pH of 10 or greater. This means that they will turn Phenolphthalein from colourless to pink.
- 3) Concentrated solutions are caustic (causing chemical burns)
- 4) Alkaline solutions are slippery or soapy to touch, due to the saponification of the fatty acids on the surface of the skin.
- 5) Alkalis are normally water soluble, although some like barium carbonate are only soluble when reacting with an acidic aqueous solution.

Alkali Salts

- Most basic salts are alkali salts, of which common examples are -
- Sodium hydroxide (Often called “Caustic Soda”)

- Potassium hydroxide (Commonly called “Potash”)
- Lye (Generic term, for either of the previous two , or even for a mixture)
- Calcium Carbonate (Sometimes called “Free Lime”)
- Magnesium hydroxide is an example of an atypical alkali. It is weak base and it has low solubility in water. among the different metals Na⁺, K⁺ Ca²⁺ are mainly involved in maintaining proper osmotic pressure and acid base balance of the body.

Apamarga Kshara

It is Kshara consisting of the water soluble ash of Apamarga.

Description -

- Fine powder , dull white in colour
- Odour - faint
- Taste - Saline

Identification -

An aqueous solution yields the reactions characteristic of sodium and potassium.

- pH - 9 to 11
- Assay for potassium - 24 to 27 percent w/w
- Sodium - 19 to 24 percent w/w

Therapeutic indication -

Swasa, Udarshula , gulma: Dose - 100 to 150 mg

Material Method:-

Initially, according the dravyagun Shastra, Plants are collected in October month (i.e Ashwin month). Then both the plants were dried up, in the shadow, so that it should not loses it's properties.

Shweta and Rakta apamarga plants are measured before and after it's being dried up. After it's being dried, it loses it's weight.

* Moist white Aparmarg = 10 kg
Pachang weight

* Dry White Aparmarg Pachang weight = 5.5 kg.

* Moist Rakta Aparmarg weight = 10 kg

* Dry Rakta Aparmarg weight = 6 kg

After being dried up all plants were spilted up into small pieces. Then burned on the iron sheet. All the plants burned in the open air, according to Bahirdhum method so that it get's converted into a Ash. i.e. Bhasma. Then the Bhasma is measured when it becomes Shwangashit.

White Apamarg Panchang Bhasma - 450 g

Rakta Apamarg Panchang Bhasma - 650 g

According to shastra, 1:4 ratio of Bhasma and water is taken, then this mixture is left for settle down, three hours.

This mixture is being filtered by triple Layered piece of cloth. During each and every time of filtration the cloth as well as the instruments are washed. Due to this procedure, the impurities are removed. According to *Ayurveda, Bhayamal Nashnarth Dhaavan* is done.

The Mixture now is kept on the gas burner, so when the mixture becomes thick the burner is kept slow. In the last stage of procedure, when mixture Dried completely a white colored powder is obtained called as, "Kshar" now is measured electronically and kept safely in glass container.

Observations:-

- Shweta Aapamarg Kshar = 55 g
- Rakta Aapamarg Kshar = 70 g

Moist plant, Dry plant, Bhashma as well as Kshar, these all are being measured. From this we can estimate how much quantity of Kshar can be obtained then Physical and Chemical study of Kshar is done. Rakta Aapamarg Kshar is more in quantity than Shweta apmarga Kshar and it is more bitter in taste than Shweta apmarga Kshar.

ANALYTICAL STUDY

1. Apamarg is most-obsorbant. Rakt Aapamarg Kshar obsorbd the moisture more than that of Shwet Aapamarg

Kshar. Rakta Aaparmag Kshar contains LOD 8.8909 %. The difference of LOD between this two is of 0.6272.

2. Total ash value of Rakt Aapamargh Kshar is 87.0987 % & that of shwet is 80.8876 %. The difference between the ash Value of two is of 6.2161.
3. Water soluble ash in Rakta Aapamarg Kshar is 83.9898% & in Shwet Aapamarg Kshar is 62.288% the difference between this two is of 21.7013%
4. Quantity of Acid insoluble ash in shwet Aapamarg Kshar & in Rakt Aaparmag Kshar are 10.4162 % & nil respectively, so that we can say Rakt Aapamarga Kshar absorbs gastric Juice more than of Shwet Aapamarg Kshar.

5. Water Solubility -

- a. Rakt Aapamarg Kshar = 98.0131 %
- b. Shwet Aapamarg Kshar = 72.471%

Difference between this two is 25.542 % on the basis of water solubility, one can estimate that *Rakt Aapamarg kshar* is easily observed than that of *shwet Aapamarg Kshar*.

6. Acid in soluble Solubility -

- Rakt Aapamarg Kshar = 0.2720 %
- Shwet Aapamarg Kshar = 0.2545 %

7. PH -

- Rakt Aapamarg Kshar = 11.2
- Shwet Aapamarg Kshar = 11.5

8. Shwet Apamarg Kshar gives aluminium detection positive, Hence aluminum assay is being alone in Shwet Aparmag Kshar, contains 10.07 % Aluminum on the other hand, Rakt apamarga Kshar does not contain aluminum at all.

CONCLUSION :-

From the above paper and analytical study of *Apmarga Kshar* it shows that - In the preparation of Kshar Rakta Apamarga Kshar is obtained in more quantity than Shwet aparmaga Kshar.

- Shwet Apamarga Pahchang 10 kg. Kshar 55 Gm
 - Rakta Apamarga Pahchang 10 kg. Kshar 70 Gm
- a. Rakta Apamarga Kshar is more Katu And Tikshna than Shwet. Apmarga Kshar
 - b. Analytical Study shows that LOD Total Ash, Water soluble ash, Acid Insoluble Ash, Acid insouble solubility these values are more in Rakta Apmarga Kshar than Shwet Apamarga Kshar.
 - c. Rakta Apmarga Kshar is more soluble in water than Shwet Apmarga Kshar.
 - d. Rakta Apmarga Kshar is more humid than Shwet Apmarga Kshar.
 - e. In Shwet Apamarga Kshar Aluminium is detected in 10.7 % there is no aluminum in Rakta Apmarga Kshar, though both plants are from same soil.

To know the cause of differences in both Kshar's we have further Research in Preparation and Analytical Study of *Shwet and Rakta Apamarga Kshar*.

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