



PHARMACEUTICAL-ANALYTICAL STUDY OF PRATISARANEeya TILANALA KSHARA

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ABSTRACT

Introduction: Kshara is the alkali obtained from the processing and filtration of herbal drug ashes. Kshara karma is considered an anushastra in Ayurveda and is used in many Parasurgical procedures where shastras are difficult to perform. Kshara is mainly divided into paaneeya kshara and pratisaraneeya kshara based on the mode of administration and based on potency kshara is made to be mrudu, madyama and teekshna. The method of preparation is mentioned in the Sushruta Samhita, asthanga hrudaya, sarangadhara Samhita, rasatarangini etc. Hence the present work pharmaceutico-analytical study on pratisaraneeya Tilanala kshara is undertaken. **Aim and Objective:** The main aim of the study is to prepare pratisaraneeya tilanala kshara as per the classical reference and Physico-chemical analysis of the same. **Materials and methods:** collection of Tila, preparation of ksharajala and obtaining the pratisaraneeya kshara. A comprehensive physico-chemical analysis of Tilanala kshara was done. **Results:** loss on drying, total ash value, acid insoluble, water-soluble, refractive index, and pH were found to be well within the normal range. **Discussion and Conclusion:** Adverse events and drug interactions can result in serious harm to patients and can also lead to increased healthcare costs. The present study asserts that Tilanala kshara is safe for therapeutic use which is substantial in the treatment of kshara Pratisarana.

KEYWORDS: pratisarana, tilanala kshara, Physico-chemical analysis.

INTRODUCTION

Kshara is the alkali obtained from the processing and filtration of herbal drug ashes in the form of solution, powder or crystals¹. In ayurveda, many types of kshara preparation have been explained likely According to Acharya - *Mushka*, yava, palasha, svarjika and **TILA** are mentioned under kshara panchaka and Sudha (snuhi), palasha, shikhara, chinchha, arka, **TILANALA**, svarjika, yava are mentioned under *kshara ashtaka*². Here as mentioned in samhita the use of vessels, mode of preparation, time for settling, preparation of alkali water and addition of other drugs are taken depending on the required potency and type of *kshara karma*³. According to *acharya susruta* the kshara has the qualities of *dahana, sodhana, lekhana, roopana, stambana and vilayana*⁴ due to its corrosive nature it is widely used in various disorders. '*kshara arbuda adhimamseshu kriya*⁵' According to *acharya charaka* the action of kshara is explained in all types of hypertrophied mass. This substance possesses the characteristics of *Sukshma, vyavayi guna katu, tikta rasa, and usna veerya*⁶. It is mentioned as *pratisaraneeya* and *paaniya* form of administration and it is widely quoted in *arsa* and *asmari chikitsa* respectively. Here *pratisaraneeya Tilnala kshara* is prepared using all parts except *beeja*. The analytical study discloses the chemical composition of the formulation as well as its concentration, which aids in ensuring the drug's safety and accuracy. It is performed utilizing contemporary analytical approaches to investigate and interpret physicochemical changes that occur during and after pharmaceutical production. *The tilanala kshara* was physico-chemically analysed in the present study.

MATERIALS AND METHODS

Source of Data: Fresh *tila* with *panchaga* is collected in June – July 2022 and get authenticated by the department of Dravyaguna, SJGAMC Koppal. All raw drugs were washed and dried to remove the dust and dirt. as per classical reference and the sample was subjected to analytical study.

Preparation of *Tilanala kshara*:

The preparation of *Tilanala kshara* has processed as follows

- Preparation and collection of ash
- Preparation and filtration of *ksharajala*
- Preparation of *kshara*

Preparation and Collection of Ash

The fresh *Tila panchaga* was collected and kept to dry in the sunlight for 7 days, The *beeja* and physical impurities were removed manually. Dried *Tilanala* is weighed cut into pieces and subjected to burn using an iron pan. the completely burnt ash is allowed to cool by itself then collected in a vessel and measured.

Table 1: Table Showing list of Drugs and Quantity

| SI No | Drug Name | Quantity |
|-------|--------------------------|----------|
| 1. | Dried <i>Tilanala</i> | 19.2 kg |
| 2. | Burnt <i>Tilanla</i> ash | 861 gm |

Fig.1



(b) Preparation and Filtration of ksharajala

The collected ash is measured in a steel jar and transferred to the steel container. 6 parts of water measured with the same steel jar are added, and contents are stored well and left undisturbed through the night. The next day the supernatant water is filtered to another container using a four-layered Cora cloth, and the same procedure is repeated another 20 times to attain *gomutra varna* of the filtrate. This filtrate is shifted to an iron pan for heating.

Fig.2



(c) Preparation of kshara

The filtrate is subjected to heating in a mild flame using an iron pan. Continuous stirring is allowed so the contents do not stick to the vessel. 1/10th part of *Sudha* and *sankha* is measured and triturated in a *kalwayantra* to obtain fine powder consistency and added. It enhanced the potency as well as helped to attain the qualities of *Madhyama kshara*. when it is observed the filtrate is attaining a semisolid consistency and stirring is done, it is collected and measured and kept in an air-tight container. The obtained *tilanala kshara* is ivory white and for *Pratisaraneeya kshara* the semisolid consistency is helpful other than powdered form.

Table 1: table showing list of drugs and quantity

| SI no | Drug name | Quantity |
|-------|------------------------|----------|
| 1. | <i>Tilanala</i> ash | 861 gm |
| 2. | Powdered <i>sudha</i> | 43 gm |
| 3. | Powdered <i>sankha</i> | 43 gm |



Fig.3



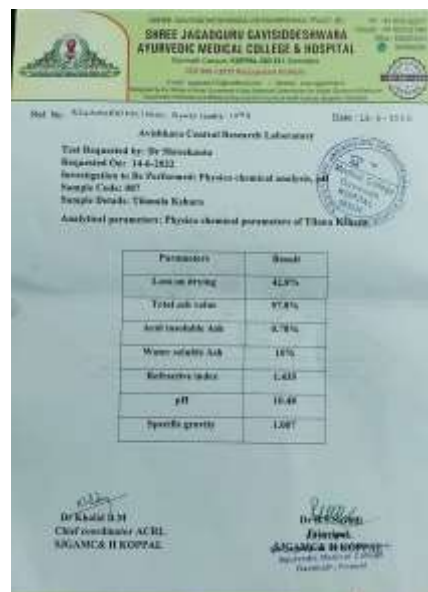
OBSERVATIONS

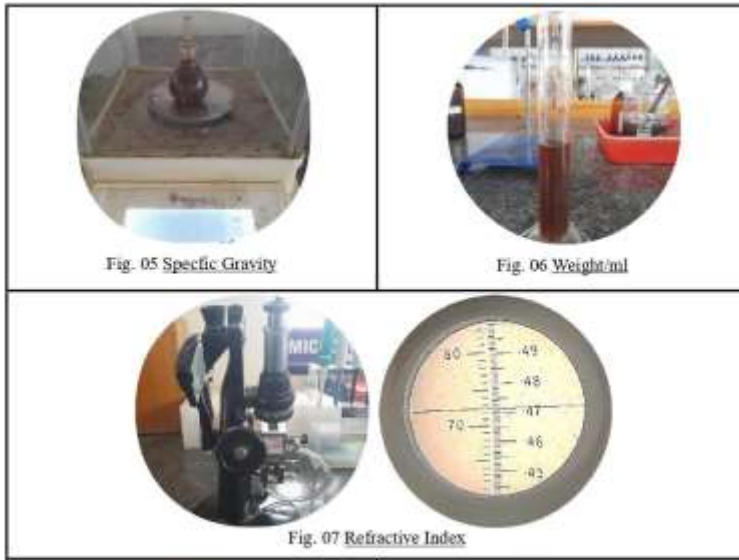
Table – 3 Organoleptic characteristics of Tilanala kshara

| Parameter | Observation |
|------------|--------------|
| Appearance | Oily viscous |
| Colour | Silver white |
| Odour | Pungent |
| Touch | Slimy |
| Clarity | Clear |
| Taste | Bitter |

Fig.4

| Parameters | Results |
|--------------------|---------|
| Loss on drying | 42.8% |
| Total ash value | 57.8% |
| Acid insoluble ash | 0.78% |
| Water soluble ash | 10% |
| Refractive index | 1.435 |
| pH | 10.48 |
| Specific gravity | 1.007 |





Physico-Chemical Parameters of Tilanala kshara

DISCUSSION: 861 gm *Tilanala* ash was subjected to the preparation of *kshara* and the end product obtained was 189 gm. The mode of usage of *Tilanala kshara* is *pratisarana* (local application).

Interpretation of values of Physico-chemical parameters (Table-4) are as follows,

Specific gravity – It is the ratio of the density of the substance to the density of water.

Significance: It signifies the heaviness of *kshara* more compared to that of water. *Tilanala kshara* with 1.007 gm/cm³ specific gravity imparts the presence of more saturated compounds and less aromatic compounds. (Fig. 05)

Density – It is the mass of the solute divided by the volume of the solution.

Significance: Density helps in knowing the lubrication activity of the substance. *Tilanala kshara* with 0.877gm/ml density suggests low density when compared to water, which indicates a better absorption rate. (Fig. 06)

Refractive Index – The ratio of the speed of light in a medium relative to its speed in a vacuum. Significance: A higher the refractive index implies the molecular compactness of the substance. *Tilanala kshara* has a refractive index of 1.435 suggesting the high molecular absorption through osmosis. (Fig. 07)

Acid Value – The acid value is the number of milligrams of potassium hydroxide required to neutralize the free acids in 1 gm of the substance.

Significance: The higher the acid value higher the deterioration rate. *Tilanala kshara* has an acid value of 1.11mg, indicating its low deterioration. (Fig. 09)

pH – The pH of the *tilanala kshara* is 10.48 which suggests strongly alkaline and required potency for *Pratisarana*.

CONCLUSION

ksharakarma is considered a minimally invasive parasurgical procedure in Ayurveda. The *pratisaraneeya tilanala kshara* is prepared according to the standard operative procedure and standard analytical parameters were followed. *Kshara pratisarana* is one of many such potential formulations in *Ayurveda* which can be a boon for mankind if utilised properly after an authentic physico-chemical validation. It is quoted mainly in *arsa*, *asmari* and hypertrophied masses. Before this, the qualitative assessment is essential to rule out any possible chemical adverse reactions. The present study showed that the *Tilanala kshara* is highly safe for *Pratisarana* and detailed physico-chemical analysis.

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