



PHARMACEUTICAL ANALYSIS OF KSHARAGADA - A POLY HERBAL ANTI-TOXIC FORMULATION

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ABSTRACT

Ksharagada is a formulation mentioned by Acharya Charaka and Acharya Sushruta as part of Visha chikitsa. It is used to treat human poisoning from animals and vegetables, as well as poison-induced illnesses. Agadas (anti-toxic formulations) are Ayurvedic formulations that combat poisons or toxins and eradicate them from the body by their constitutional impact. These drugs are exceedingly potent and have been found to be antioxidant, anti-inflammatory, hepatoprotective, anti-mutagenic, antibacterial, and anthelmintic. Individually, some of these medications have diuretic and diaphoretic effects that aid in toxin elimination. The primary goal of this research paper is to examine the pharmaceutical investigation of *Ksharagada* (an anti-toxic composition) as mentioned in Charaka Samhita.

Keywords: *Ksharagada, Visha, Taruna Palasha, Agada Yoga*

INTRODUCTION

Ayurveda, an ancient medicinal system originating in India, encompasses a vast repository of knowledge dedicated to fostering overall health and well-being. Among its eight branches, Agada Tantra

holds a distinctive position, concentrating on toxicology, antidotes, and the management of various toxic conditions. The term "*Agada*" translates to "antidote" or "toxicology," making *Agada Tantra* the

branch that delves into comprehending, handling, and preventing poisoning and its related disorders. Agada Tantra extensively explores the realm of antidotes and detoxification methods. Utilising herbal formulations, therapeutic procedures, and lifestyle interventions, it aims to neutralise toxins and facilitate their elimination from the body.

Beyond mere treatment, the Agada Tantra places significant emphasis on preventive measures to avert poisoning incidents. This involves providing guidelines for making informed choices regarding food and lifestyle, engaging in purification processes, and considering environmental factors to minimise the potential risk of toxic exposure. The deleterious effects of poison on the senses and organs necessitate the use of potent formulations with rapid and specific actions in treating cases of poisoning. Agada yoga, incorporating drugs from the *Vishagna gana* category as its primary ingredients, fulfils these requirements effectively. *Ksharagada*, described by both Acharya Charaka and Acharya Sushruta, is a notable formulation specifically designed for the treatment of conditions resulting from poison exposure. These conditions encompass inflammation, bloating, skin ailments, haemorrhoids, fistula-in-ano, liver diseases, worm infestations, anaemia, digestive issues, respiratory ailments, and psychological

disturbances. Ayurveda literature is a vast treasure trove of various drug formulations. Agada yogas are those formulations that counteract the deleterious actions of Visha, or poison over the senses and organs. Treating poisonous cases requires formulations that are potent and have faster and more specific actions. *Agada yoga*, by having the *Vishagna gana* (antitoxic drugs) drugs as the major ingredients, meets these very requirements. *Ksharagada* is one of the formulations described by *Acharya Charaka* and *Acharya Sushruta*. It is indicated for the treatment of conditions manifested by poison, such as inflammation, bloating, skin ailments, haemorrhoids, fistula-in-ano, liver diseases, worm infestations, anaemia, digestive ailments, respiratory ailments, and psychological disturbances. *Ksharagada* is available in *gutika* (pills) and *chorona* (powder) forms. The dose to be used is one *kola pramana* (6 mg).

Aim

- To discuss the pharmaceutical study of *Ksharagada* mentioned in Charaka Samhita.

Objectives

- To prepare the *Ksharagada* as per the Charaka Samhita Gangadhara Tika and Ayurved Formulary of India
- To discuss the different steps involved in the preparation of *Ksharagada*

MATERIALS AND METHODS

Materials:

All the materials required for the preparation of *Ksharagada* were collected from the Parul Institute of Ayurved Pharmacy and nearby areas of Vadodara. Pharmaceutical study was conducted at Rasashastra and Bhaishajya Kalpana Practical Hall, Parul Institute of Ayurved Pharmacy, Vadodara.

Methods:

Pharmaceutical study

The pharmaceutical study of *Ksharagada* includes the following phases of processing:

1. Collection of drugs from *Ksharagada*
2. Preparation of *Taruna Palasha Kshara* (Ash of *Butea monosperma*)
3. Preparation of *Ksharagada*

1. Collection of *Taruna Palasha*:

Young plants of *Palasha* (*Butea Monosperma*) of maximum height 4 feet from different locations of Vadodara were collected.

Observations: Leaves of the plant: light green colour, most of the collected plants had lots of branches and short stems and roots.

- Collected *Taruna Palasha* Quantity (Wet Plant): 8 KG
- Weight of *Taruna Palasha* after dried in sunshade – 4 KG.
- Total loss of weight of *Taruna Palasha* after drying- 4 KG

2. Preparation *Taruna Palasha Kshara*:

Reference-Ayurveda Formulary of India and

Gangadhar Tika of Charaka Requirements: butane Gas, stainless steel vessel, ladle, pyrometer Procedure: Completely dried plant parts are kept in stainless steel and ignited with the help of butane gas. The burning of *Taruna Palasha* started in the morning at 10 a.m., and within 6 hours of duration, all the *Taruna Palasha* were turned into ash and left for self-cooling,

Observation and Results: Flames are seen in the middle of the burning process, and the colour of the flames is found to be normal. Ash was collected, and the quantity of the collected ash was 600 g and stored in an airtight container.

3. Preparation of *Ksharagada* [1, 2]

Reference: Ayurveda Formulary of India and Gangadhar Tika of Charaka

Materials Required: Vessel, Measuring Jar, pH Metre, Spoon.

Procedure: *Taruna Palasha Kshara* (Ash of *Butea monosperma*) was collected in the quantity of 600 gm, added six times to water in a 1:6 ratio, and stirred well. This mixture is kept for 2 hours and allowed to settle at the bottom of the glass jar. Filtration of the mixture is done with a double-folded cloth and transferred to a measuring jar. This filtering process was performed 21 times, and finally, *Ksharagada* (after the 21st filtration) was collected and measured. *Ksharagada* was boiled in a steel vessel. After boiling for 30 minutes, *Sookshma churna* (fine powder) of all drugs was added

to the quantity of 340 gm and stirred well. Stirring continued until the mixture reached a thick consistency. After self-cooling, the *Ksharagada* was collected and stored in an airtight container.

The final product weighed about 335 gm, as shown in **Figure 6**; it was thick, soft, and maroon in colour. *Ksharagada* has the smell of all ingredients and is salty in taste (**Table 2**).

OBSERVATIONS

Table 1: Ingredients of *Ksharagada* [3]

S. No.	Drug Name	Botanical Name	Family name	Part used
1	<i>Haridra</i>	<i>Curcuma Longa</i>	Rhizome	20 gm
2	<i>Surasamanjari</i>	<i>Ocimum sanctum</i>	Flower Seed	20 gm
3	<i>Daru haridra</i>	<i>Berberis aristate</i>	Rhizome	20 gm
4	<i>Jatamansi</i>	<i>Nardostachys jatamansi</i>	Rhizome	20 gm
5	<i>Hingu</i>	<i>Ferula foetida</i>	Oleo, gum, resin	20 gm
6	<i>Sariva</i>	<i>Hemidesmus indicus</i>	Root	20 gm
7	<i>Sweta sariva</i>	<i>Hemidesmus indicus</i>	Root	20 gm
8	<i>Maduka</i>	<i>Glycyrrhiza glabra</i>	Root	20 gm
9	<i>Kushta</i>	<i>Saussurea lappa</i>	Root	20 gm
10	<i>Shunti</i>	<i>Zingiber officinale</i>	Root	20 gm
11	<i>Pippali</i>	<i>Piper longum</i>	Fruit	20 gm
12	<i>Maricha</i>	<i>Piper nigrum</i>	Fruit	20 gm
13	<i>Bahlika</i>	<i>Ferula foetida</i>	Oleo, gum,	20 gm
14	<i>Palasha</i>	<i>Butea monosperma</i>	Whole plant	5 KG
15	<i>Lavana</i>	Rock salt		20 gm
16	<i>Laksha</i>	<i>Laccifer lacca</i>	Exudate	20 gm
17	<i>Gairika</i>	Red Ocre		20 gm

Table: 2 Observations of *Ksharagada*

S. No.	Observations	Results
1	Taste	<i>Lavana</i>
2	Colour	Maroon
3	Smell	Smell of all ingredients
4	Consistency	Thick and Soft
5	Results:	The weight of <i>Ksharagada</i> obtained at the end was 315 gm.

Table: 3 showing pH of *Ksharagada* in different stages of preparation

S. No.	Stages of Preparation of <i>Ksharagada</i>	pH
1	Taruna Paasha kshara	10
2	<i>Ksharagada</i> after 1 st filtration	9.7
3	<i>Ksharagada</i> after 7 th Filtration	9
4	<i>Ksharagada</i> after 15 th filtration	8.7
5	<i>Ksharagada</i> after 21 st filtration	8.6
6	Before adding sookshma Churna	8.5
7	<i>Ksharagada</i>	7.8

Figure 1: *Taruna Palasha*Figure 2 :Dried *Taruna Palasha*Figure 3: *Taruna Palsha Kshara* PreparationFigure 4 :Filtration of *Kshara Jala*Figure 5: Preparation of *Ksharagada*Figure 6 : *Ksharagada*

DISCUSSION

Ksharagada is made up of 17 drugs. Most of these drugs have *Katu* (pungent taste), *Tikta rasa* (bitter taste), *Usna Veerya* (hot in potency); *Katu vipaka* (pungent taste in the end of digestion); *Kusthaghna* (anti-eczema), *Visaghna* (anti-toxins), *Deepaniya* (enlighten the digestive fire), and *Krimihara*

karmas (anti-helminthic). These drugs are very potent and reported to have actions such as antitoxic [4-14] antioxidant, anti-inflammatory, hepato-protective, anti-mutagenic, anti-bacterial, and anti-helminthic [15-22]. Individually, some of these drugs have diuretic, diaphoretic

actions that are useful in the elimination of poison.

The preparation is prepared in *Kshara* (Ash) with mild *Tikshna* (sharp) *guna*, which makes it suitable for use in the treatment of poison where fast action is required. In the shloka of *Ksharagada*, the word "*Taruna Palasha*" as per the reference to the *Gangadhara Tika* of *Charaka Samhita*; clarifies that young plants from their habitat are to be collected for the preparation of *Ksharagada*. While gathering *Taruna Palasha* (**Figure 1**), each plant was guaranteed to be about four feet tall. Following the collection, every component of the *Taruna Palasha* plants was inspected and chosen for further processing. *Taruna Palasha* was dried in a shaded area (**Figure 2**) and burned to ashes using conventional techniques (**Figure 3**), keeping an eye on the fire's temperature at each stage. The entire ash was transformed into ashes, which were then collected and mixed with water six times. After an adequate amount of time for this to settle, the supernatant is gathered and filtered. After up to 21 repetitions of this process (**Figure 4**), *Ksharaodaka* was finally made. After adding the additional ingredients (**Table 1**), *Ksharagada* is cooked until it thickens (**Figure 5**). To guarantee the precision and calibre of the final product, PH was recorded at various points during the *Ksharagada* preparation process (**Table 3**). soft, maroon colour

Ksharagada has the smell of all ingredients and is salty in taste (**Table 2**). The maximum pH of *Taruna Palasha Kshara* is 10, while *Ksharagada* shows a pH of 7.8, indicating a decrease in alkalinity that might be brought on by the inclusion of other ingredients. *Taruna Palasha Kshara* was prepared using references to the *Gangadhara Tika* of *Charaka Samhita*. The final product shown in (**Figure 6**); was thick.

CONCLUSION

In conclusion, *Ksharagada* is a type of yoga in which young *Palasha* plants, or *Taruna Palasha*, are burned into ash. *Ksharagada* is then formed by filtering the ash 21 times after adding water six times. After adding additional ingredients, the *Ksharagada* was reduced to the consistency of a thick paste. When *Kleda*, *Chedana*, and *Bhedana* need to be removed, *Ksharagada* can be employed for *Visha* and other conditions produced by them. For generations, many traditional healers have used it as their preferred medication for neoplastic illnesses. Additionally, pre-clinical and clinical research on this formulation is required to determine its pharmacological activity in various illness situations.

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