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PHARMACEUTICAL STUDY OF SNUHI KSHEER PURIFICATION(EUPHORBIA NERIFOLIA LINN.)-A RESEARCH ARTICLE

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ABSTRACT

Snuhi is an *Upavisha* which is used in many diseases. The latex of the plant is poisonous, so it has to be purified before using in any formulation. As per the classics, *Shodhan* of *Snuhi Ksheer* is performed by *Chincha Patra Swaras* (*Tamarind* leaf juice). *Snuhi Ksheer* is used in making *Kshar Sutra,* as well as it is used in many systemic GIT disorders, skin diseases etc. Sap from the *Snuhi* plant contains polycyclic diterpene esters, which give it a highly caustic and irritating quality that burns the skin and eyes. *Snuhi Ksheer* (SK) is applied topically and topically to treat a variety of ailments. Despite *Snuhi's* potential for medicinal benefits, its toxic nature discourages use. In *Rasatarangini* chapter 24, the author mentioned that purification of *Snuhi Ksheer* is compulsory, when it is therapeutically used. So, the present study is done on the purification of *Snuhi Ksheer*. It was collected, taking precautions and then purified with *Chincha Patra Swaras* . Organoleptic and physicochemical analysis of both *Shodhit* and *Ashodhit Snuhi Ksheer* was performed. The result shows changes in various parameters after

purification, concluding that purification by *Chincha Patra Swaras* alters the poisonous nature of *Snuhi Ksheer* and makes it safe to use.

Keywords: *Upavisha,Chincha Patra, Swedan, Shodhan*.

INTRODUCTION

Ayurveda is classified into eight branches known as *Ashtang Ayurveda*. *Agadtantra* is one of the branches of it. It deals with the management of all sorts of *Visha* (poisons) being of either animal or plant origin. *Visha* is divided into *Sthavar* and *Jangama*[1]. *Sthavar Visha* is again subdivided into *Visha* and *Upvisha*[2]. 11 *Upavisha* are described in *Rasatarangini*[3]. *Snuhi* is one of the *Upavisha* described in it. *Upavisha* are fewer toxic drugs. The poisonous part of *Snuhi* is *Ksheer*, so it has to be used after purification. In *Ayurveda* the latex is used in two ways externally and internally. Fresh latex is used externally without purification in diseases like skin diseases, piles, fistula, cyst and tumors. Latex is used internally in ascites and *Krimi* diseases. Internal use needs purification. This study is based on the use of *Snuhi Ksheer* (SK) as internal medicine after purification.

The botanical name of *Snuhi* is *Euphorbia neriifolia*Linn belonging to the *Euphorbiaceae* family. It is a large shrub or small tree that can reach a height of 10 to 12 feet in arid areas of India. There are more than 2000 members in the genus. Spikes are added to the branches and trunk. 10.95% of fresh latex is solid, with 18.32% total resinous matter, 24.50% total diterpene, and 16.23% total triterpene, respectively. It is discovered that *Snuhi* latex is a strong contact poison but a weak stomach poison[4]. The antidote for it is ghee and milk.

MATERIAL AND METHOD

Present article based on pharmaceutical study of purification process of *Snuhi ksheer*. Literal reference for purification is mentioned in *Rasatarangini*[5] which is incorporated in *Ayurvedic pharmacopeia of India* part1 vol.1[6].

Process of *Snuhi Ksheer Shodhan*

1. Collection of *Snuhi ksheer*
2. Drying and powdering of collected *Snuhi ksheer*
3. Purification by *chincha patra swaras*
4. Analysis

REQUIRMENT

For collection- knife, wide mouth containers, gloves, eye protector goggles.

For drying and powdering- sunlight, airtight containers, grinder.

For purification- fresh leaves of *Chincha* (*imli),* (*Tamarindus indica*), water, steel top, spoons, plates, clean cloth, sunlight.

COLLECTION OF *SNUHI KSHEER*-

Sharad (Autumn) is the season in *Ayurveda* for collecting *Snuhi Ksheer*[7]. Since the *Bahukantak* kind of *Snuhi* is best for medicinal uses, a plant of the same variety that is unaffected by *Shastra, Krimi, Visha, Aatapa, Pavana*, etc., was chosen for collecting the *Snuhi Ksheer*. Four-to-five-inch cuts were made in the stem, and the *Ksheer* was collected in a wide mouth container by pressing it up against the stem since *Snuhi Ksheer* rushes out from even the smallest incision and congeals in a couple of minutes upon contact with air. Wearing gloves and protective goggles while collection is advised as a precaution.

DRYING AND POWDERING

The best method of drying *Snuhi Ksheer* (SK) is by keeping it in the direct sunlight. The Congealed and liquid both *Snuhi Ksheer* was dried separately in sunlight for 4-5 days. After drying, dark yellow/ blackish hard resinous SK was procured, which was trichurated to form a fine powder. This fine yellowish white powder was obtained and kept in an airtight jar. Weather plays a crucial role in the process of drying therefore precautions should be taken. Cloudy and rainy weather can spoil the *Snuhi Ksheer.*

PURIFICATION BY *CHINCHA PATRA SWARAS*

*Rasatarangini*chapter 24 and *Ayurvedic Pharmacopeia of India* part1 vol.1 mentions the purification of *Snuhi Ksheer.* As *Snuhi* is poisonous in nature, it has

to be always purified before using in preparation of any internally taking formulation.

Collection of *Chincha Patra*- Fresh leaves of *Chincha* were collected from field and washed properly.

***Swedan* of *Chincha Patra*-** As *Rasatarangini* has not mentioned the method of *Swaras* extraction from *Chincha Patra*, therefore it was procured by *Swedan Vidhi*[4,5]. *Chincha Patra* were washed and dried, their weight was measured. These leaves were steamed for half an hour to soften them. Then the leaves were crushed and *Swaras* were squeezed out with the help of a cloth.

Table1: Data of quantity obtained from extraction of *Chincha Patra Swaras*

Swedan Dravya	Quantity of *Dravya*	Quantity obtained (*Swaras*)
Chincha patra	500 gm	150 ml

Mixing of powder of *Snuhi Ksheer* with *Chincha Patra Swaras*- After obtaining *Chincha Patra Swaras* it was mixed with *Sunhi Ksheer* powder on a steel plate. Then it was kept in sunlight for drying until it became hard, and the water evaporated. After proper drying it was grinded into a fine powder and stored in an airtight jar.

Table2: Data of shodhan of *Ashodhit Snuhi Ksheer Churna*

Shodhan Dravya	Quantity of *Chincha Patra Swaras* for mixing	Quantity of *Ashodhit Snuhi Ksheer Churna*	Obtained quantity of *Shodhit Snuhi Churna*
Ashodhit Snuhi ksheer	65 ml	116 gm	122 gm

ANALYSIS- Oeganoleptic and physicochemical analysis were conducted Govt. Drugs Testing Laboratory, Govt. Ayurved College premises, Raipur, Chhattisgarh. References for analytical testing parameters carried out were taken from *Ayurvedic Pharmacopoeia of India* Part 1 vol.1. Parameters for assessment in *Ashodhit* and *Shodhit Snuhi Ksheer* are as follows:

1. Organoleptic parameters: Colour, Odour, Taste

2. Physicochemical parameters: Loss on drying, Total ash, Acid insoluble ash, Water-soluble extractive, Alcohol-soluble extractive.

Table 3 : Data of organoleptic parameters of dried *Ashodhit* and *Shodhit Snuhi Ksheer Churna*

Organoleptic parameters	Dried *Ashodhit Snuhi Ksheer*	Dried *Ashodhit Snuhi Ksheer*
Colour	Yellowish white	Brown-cream colour
Odour	Strong pungent	Pungent
Taste	Bitter	Bitter

Table4: Data of Physicochemical parameters of dried *Ashodhit* and *Shodhit Snuhi Ksheer Churna*

Physicochemical parameters	Dried *Ashodhit Snuhi Ksheer*	Dried *Shodhit Snuhi Ksheer*
Loss on drying (%)	9	11.5
Total ash (%)	5.3	6.66
Acid insoluble ash (%)	0.6	1.6
Water-soluble extractive (%)	19.6	16.2
Alcohol-soluble extractive (%)	19.6	20.6

Note: Testing values of Shodhit and Ashodhit SK for above phesycochemical parameters are available in *Ayurvedic Pharmacopeia of India.*


Snuhi Ksheer collection from field


Ashodhit Snuhi


Chincha Patra


steaming of *Chincha leaves*


Chincha Patra pounded in *kharal*


Chincha Patra squeezed to obtain S*waras*


Chincha Swaras and *Ashodhit Snuhi*


mixing S*waras* in S*nuhi*


Protruded S*hodhit Snuhi*


Shodhit Snuhi after drying in sun


pounded in K*haral*


Shodhit Snuhi

DISCUSSION

Snuhi is a poisonous plant that is used in *Ayurvedic* treatment for many years. It is found that most of the internally taking *Snuhi Ksheer* formulations are prepared without purification, which is an alarming situation. As per WHO guidelines, there is emphasis on good, safe and efficacious medicine as a prime necessity of treatment for human beings. Therefore, it is very important to use poisonous drugs like *Snuhi* very carefully. These poisonous drugs should always be purified as per the standard operating methods mentioned in the classics before therapeutically used. Present article is based on pharmaceutical analysis of *Snuhi Ksheer* purification.

Pharmaceutical study of *Snuhi Ksheer*

Collection and drying of *Snuhi Ksheer* is a very laborious work which needs time and favorable weather, if weather changes suddenly then the *Ksheer* may get spoiled. In the process of collection and purification, contact with *Snuhi Ksheer* may cause dangerous pathological conditions. Skin irritation, burning, vision problems, diarrhea etc. can be possible harmful effects due to *Ksheer*. Therefore, the handling should be done with great precautions.

The method of purification of *Snuhi Ksheer* has been mentioned in *Rasatarangini* and *Ayurvedic Pharmacopoeia of India part1 vol.1*. Before the purification process *Snuhi Ksheer* was collected by standard procedure and dried properly to prevent it from bacteria, yeast or fungi. *Chincha Patra* were freshly picked, washed and dried. After weighing its *Swaras* were obtained by traditional extraction methods. Then the procured *Swaras* were measured. After adding *Chincha Patra Swaras* to the 116 gm of *Ashodhit* (SK), 122 gm of *Shodhit* (SK) is obtained.

Organoleptic and physicochemical parameters of *Shodhit* and *Ashodhit* SK show qualitative and quantitative changes. This might make SK safe and efficacious. Organoleptic parameters like colour, odour and taste changed after *Shodhan*. Physicochemical parameters like loss on drying in *Ashodhit* SK was 9% and 11.5 % in *Shodhit* SK, here increase in percentage is because of reduction of moisture content as moistures in the drugs are prone for fungal or bacterial infection. Total ash in *Ashodhit* SK was 5.3% and in *Shodhit* SK 6.66%. Total cash value represents inorganic salt present in the drug, in the process of *Shodhan* of SK, adding *Chincha Patra Swaras* into it may increase % of the inorganic salt, so the value of total ash is increased. Acid-insoluble ash in *Ashodhit* SK was 0.6 % and in *Shodhit* SK 1.6 %. High percentage of acid insoluble substances indicates that its content has excess amount of acid insoluble impurities in the ash and that means the *Shodhan* process has removed the impurities that are insoluble in acid. The water-soluble extractive value in *Ashodhit* SK was 19.6% and in *Shodhit* SK 16.2%, whereas alcohol-soluble extractive value in Ashodhit SK was 19.6% and in *Shodhit* SK 20.6%. Different compo-

nents dissolve in different types of media. Water solubility in the *Shodhit* SK decreased whereas alcohol solubility increased in percentage after *Shodhan.*Thus, after purification prcess, properties of *Snuhi Ksheer* has changed. So, it can be presumed, as the irritability of *Ashodhit* SK is becoming less therefore the *Shodhit* SK becomes acceptable and safe for therapeutic purpose.

Once any poison is purified and converted into an effective drug, it becomes safer for medical use. Such poisonous plants are widely used in *Ayurvedic* medicine after purification. Unfortunately, they can cause devastating effects up to death, if not processed properly or if they are taken in a large dose.

CONCLUSION

Agad Tantra deals with poisonous drugs which are used in *Ayurvedic* medicine therefore human use should be safe. *Snuhi* is listed in schedule E1 of the Drugs and Cosmetics act, in which poisonous plants are mentioned. *Shodhan* of poisonous drugs are the main aim of *Agadtantra*. *Snuhi Ksheer* is alkaline in nature and used in *Kshar Chikitsa*. *Kshar Chikitsa* is considered as *Apunarbhav Chikitsa* i.e., it not only cures the disease but also limits its regeneration. As *Ayurveda* mentiones that all types of formulation containing *Snuhi Ksheer* needs purification, so it is very important to do the *Shodhan* of *Snuhi Ksheer* before using it in any formulation. External use of *Snuhi Ksheer* without purification is another question of debate but purification of *Snuhi Ksheer* prior to internal use is must.

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