



UTILITY OF SUDHA CHURNA IN AYURVEDA: A CRITICAL REVIEW

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ABSTRACT

Rasashastra is a unique branch of Ayurveda. Rasadravyas gain importance as they produce great results with little dose. Sudha varga are the class of rasa dravya which are predominantly calcium compounds. Sudha varga includes Churna, varatika, shukti, shankha and so on. Sudha is employed therapeutically in the form of churna, churnodaka, lavana, navasada bhashpa drava. Sudha churna is basically calcium oxide. Sudhachurna is indicated in conditions of krimiroga, mukhapaka, amlapitta and vrushchika damsha. According to Rasatarangini, Churnodaka is used in dravana, swedana, bhavana, nimajjana, dhalana, pachana. The sudhalavana is useful in raktasrava and bhashpa drava in murcha.

Keywords: Sudha, Churnodaka, Rasatarangini, Calcium, Navasadar

INTRODUCTION

Rasashastra is a unique branch of Ayurveda, in which various groups of metals (rasa dravya) and minerals are mostly dealt in drug formulation (Rasayoga). Rasadravya are classified into maharasa, uparasa, loha, ratna so on. One among them is Sudha varga, comprising of churna, varatika, shukti, shankha etc. Among these, sudha in powder form (churna) is considered as latest in field of pharmaceuticals and is prime the focus of the review article.

In rasashastra before preparing any rasayoga, the drug should undergo purification process like swedana, mardana, bhavana etc., with any of the purifying agent drugs like churna, swarasa, udaka, kwatha etc. Sudha also known as churna is used as a shodhana media as well as independent drug having medicinal value.

Sudha which is calcium compound having chemical formula CaO has a very essential role in physiology related to bone structure, muscular movement, regulation of GI secretions and cardiac physiology¹.

Synonyms of Sudha

Churna, churnaka, sudha, soudhavilepana, shila - kshara, kata sharkara², sudha sharkara are popular synonyms.

Churna effectively mean powder and Sudha is usually available in powder form. Sudha refers to white colored appearance. By virtue of which in ancient time it was used to paint the houses and buildings hence it is known as soudhavilepana. It is basically alkaline in nature which supports its name as shila kshara. It is also available in crystalline form hence kata sharkara and Sudha sharkara name stands justified.

Different forms and utilities of Churna (sudha)

Churnodaka: The solution when obtained by dissolving churna in water is called churnodaka. It was first mentioned in Rasatarangini.

Churnodaka Preparation: Churna of about 2 ratti was taken in a clean stainless vessel and water of about 5 tola was added and stirred well. Later it was kept undisturbed for 9 hours. Then the supernatant liquid was collected and filtered with a clean cloth and kept preserved in green glass bottle³.

Observations During Preparation: While preparing churnodaka following observations are to be made. Churnodaka will attain milky white appearance in the beginning. After keeping it undisturbed for 9 hours, the Churna settled down and the supernatant fluid will be transparent light milky in color.

Precautions: Utensils, vessels and filtering cloth should be clean. Churnodaka has to be left undisturbed for 9 hours. Filtering should be done properly. It should be stored in green glass bottle only because if it is kept open and expose to sunrays means it will lose its potency.

Sudha Lavana: 13 parts of churnodaka and 2 parts of gandhaka is taken in a vessel and heated intensely till gandhaka melts in it. The solution then becomes kapila varna (Brown). Then the vessel be taken out from fire and solution be stored in glass bottle and allowed to cool. When the solution becomes cool then slowly add little quantity of lavana dravaka (HCL) to it until the gandhaka settles down. Later carefully take out the upper liquid proportion and allow it to dry and stored in glass bottle as sudha lavana which is used in the treatment of raktasrava⁴.

Prasangat Navasadar Bhashpa Drava: It is prepared by using distillation apparatus where 2 parts of churna and 1 part of sukshma navasadar churna (NH₄CL) is taken in one end of the beaker and drava is collected in the other end of the beaker by distillation process. The drava obtained is collected and stored as prasangat navasadar bhashpa drava which is used in treatment of moorcha by just taking the smell of drava⁵.

Dosage of Churnodaka: 1 year of age – 30 to 60 drops
Adult – 2 tola (24ml). The dosage must be carefully decided considering the withstanding capacity of the person and strength of the disease⁶.

Therapeutic Utility of Churna

Kshudra antra krimi: in conditions of helminth or worm infestations, churnodaka alone is used as basti dravya to give basti. Churnodaka acts as krimihara and destroys krimi as it does the prakruti vighata of krimi. Hence acts as krimihara.

Vruschika damsha visha: in scorpion sting attack, to bring down the toxic effect churnodaka is added with navasadar(NH₄Cl) and the solution is applied on the bitten part.

Amlapitta: In acid peptic diseases, churnodaka mixed with milk and is used for drinking which cures amlapitta because it's a naturally having kshara guna which nullifies the acid and milk is also reduces pitta.

Mukha paka: In stomatitis churnodaka used as a dravya for kavala because it cures mukha paka due to its kshariya guna⁷.

Pranacharya Sri Sadananda Sharma in rasatarangini have documented many uses of Sudha churna which are presented in table 1.

Table 1: Utility of Sudha as Churna and Churnodaka by Rasatarangini Along with Reference

Drug	Shodhana Media	Process	Time	Reference
Parada	Churna	Mardana	3 days	RT 5/27
Parada	Churna	Mardana	7 days	RT 5/36
Gandhaka	Churnodaka	Dravana	Till Gandhaka melts	RT 8/26
Haratala	Churnodaka	Swedana	6 hours	RT 11/20
Haratala	Churnodaka	Bhavana	7 times	RT 11/25
Manashila	Churnodaka	Nimajjana	2 days	RT 11/109
Vanga	Churnodaka	Dhalana	7 times	RT 18/8
Naga	Churnodaka	Dhalana	7 times	RT 19/10
Yahada	Churnodaka	Dhalana	7 times	RT 19/98
Mukta	Churnodaka	Pachana	3 hours	RT 23/69
Rakta Chitaka	Churnodaka	Bhavana	3 times	RT 24/575

RT refers to Rasatarangini

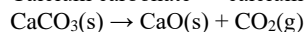
Both Rasaratnakar⁸ and Rasarnava⁹ include it in Shukla Varga (calcium compounds). Rasamritam¹¹ has included these drugs under Sudha Vijnaneyama based on their chemical composition. In Anand Kanda¹⁰, Rasamritam¹¹, and Ayurvediya Rasashatra¹² churna is included in sudha varga dravya.

Properties Of Churnodaka: Churnodaka used for internal as well as external purpose will be krimi nashaka in properties. It is beneficial to cure atisara and amlapitta roga. In children it helps in digestion of ingested milk. It cures udara sula and grahani roga. Its judicious use brings down the toxic effects of gandhakamla (sulphuric acid)¹³.

Modern Perspective

According to modern chemistry Calcium carbonate, calcium oxide and calcium hydroxide are all made from limestone and have important applications, so it is important to know how they are made. Calcium carbonate is found naturally in limestone. When limestone is heated strongly, the calcium carbonate it contains absorbs heat (endothermic) and decomposes to form calcium oxide. This is indicated by an orange glow as the limestone is heated¹⁴.

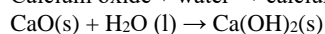
Calcium carbonate → calcium oxide + carbon dioxide



Calcium oxide (also known as quicklime) is a key ingredient in the making of cement and is also used to make certain types of plaster.

Calcium Oxide: Calcium oxide reacts with a few drops of water to form calcium hydroxide, which is an alkali. This is an exothermic reaction, indicated by the water turning to steam. The solid remains white but crumbles into a powder as the water is added.

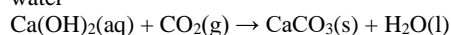
Calcium oxide + water → calcium hydroxide



Calcium Hydroxide: Calcium hydroxide (also known as slaked lime) is used to neutralize excess acidity, for example, in lakes and soils affected by acid rain.

Calcium hydroxide dissolves in excess water to produce calcium hydroxide solution (limewater), which is used to test for carbon dioxide. The carbon dioxide reacts with the calcium hydroxide to form white calcium carbonate, which is insoluble and so turns the limewater 'milky'.

Calcium hydroxide + carbon dioxide → calcium carbonate + water



DISCUSSION

The pharmaceutical procedure applied in the shodhana of the various drugs by various methods with help of churna because as it is having tikta rasa and kshara guna helps to remove the visible and invisible impurities, to reduce the toxicity of the drug and helps to reduce the drug in to fine particle¹⁵.

Sudha Dravya mainly contains calcium compounds chiefly calcium oxide (CaO), calcium carbonate (CaCO₃) and some amount of calcium silicates. Calcium carbonate is widely used in the treatment of peptic ulcer. It is a fast-acting antacid and reduces gastric acidity resulting in an increase in the pH of stomach. Calcium being the main ingredient plays an important role in many physiological activities not only related to bones but also includes blood clotting, nerve conduction, muscle contraction, regulation of enzyme activity and cell membrane function. It takes part in production of many enzymes and hormones which regulate digestion process and metabolism. Calcium is essential for the normal transport of nutrients through membranes, blood coagulation and muscle functioning. Calcium also helps in regulating potassium and magnesium balance in the body. It prevents blood loss if ulcers are bleeding, heal the ulcers by muscle contraction and hardening and also reduces the pain by regulating nerve function and perhaps most importantly, Calcium is the main buffer used in the body to neutralize acids and maintains the proper pH. Even it is evident that excess intake of calcium leads to production of peptic ulcers instead of healing. The administration of calcium both orally or intravenously, stimulates acid secretion and increases circulating concentration

of gastrin. Stimulation of acid secretion by the parietal cells occurs by at least three major pathways: the cholinergic transmitter such as acetyl-choline, histamine, which is locally released in the gastric epithelium and the hormone gastrin. The effect of histamine is mediated by increasing adenylate cyclase activity, whereas the effects of the acetylcholine and gastrin seem to involve an increase in cytosolic free calcium¹⁶.

CONCLUSION

Rasashastra is the branch of Ayurveda has been designated following the use of metals/ minerals. It is quite evident from available literature that Sudha is directly co-related to calcium containing mineral. All the available materials are used for pharmaceutical and therapeutic purposes as per their availability and chemical composition. However, these metals and minerals have to undergo various types of pretreatments to remove their toxicity and increase their potency. In order to get rid of the Dosha (impurities) present in the mercury and other minerals, various Shodhana procedures with sudha churna have been explained in the classics.

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