

Review on Gandhak Druti in different Ayurvedic Classics.

Dr. Manasi Nandlal Maurya¹, Dr. Sheela Pargunde², Dr. Rahul Rampratap Basaiye³

¹Department of Rasashastra and Bhaishajya Kalpana, Dr. G. D. Pol foundation's Y.M.T. Ayurvedic Medical College,

²Department of Rasayanacharya, Sr. Scientist, Psychologist & Consultant, Ashtaang Ayurveda Multispeciality Hospital and Research Centre Chembur(E), Mumbai

³ Consultant at Ashtaang Ayurveda Multispeciality Hospital & Research Centre, Mumbai

Corresponding author-

Dr. Manasi Nandlal Maurya

Email- tinamaurya24th@gmail.com

Abstract

Background: Rasashastra is the branch of Ayurveda which works on the principle of dehawad and lohawada. For this Parad is used by doing sankars on it, which makes it capable to achieve both the wadas. With the use of different types of herbs, minerals, equipments and other things Parad is been processed. In therapeutics and for clinical use Druti Kalpana can be used easily, it is one of the process used to liquify a metal with the help of some herbal drugs or kshars, etc, in Rasashastra. The beauty of this Kalpana is that the liquified metal do not turn into its original state even after cooling it. Gandhak druti can be used in various disorder and it is even mentioned in different ayurvedic classics with different names and with different methods for its preparation.

Aim: This paper is aimed at discussing the concept of druti focusing mainly on gandhak druti.

Data source: Classical ayurvedic books, samhitas, granthas, research articles and papers were used for this review article.

Review method: For this review article advises was taken from the teaching department of Rasashastra and their correct understanding was given importance along with other documents and paper work done before.

Conclusion: It was found that, the concept of Druti Kalpana is unique and has not been limited only as a procedure for liquefying a metal/ mineral, but has other implications too such as its use in clinical practice. Different methods of preparation have been mentioned in the texts of Rasasashtra depending upon the use of Gandhak Druti.

Keywords: Druti, Gandhak druti, Rasasashtra, Sanskar.

Introduction

Rasashastra is the branch of Ayurveda that deals with the pharmaceutical study related to any metal, mineral, plant origin or poisonous drugs. In Rasasashtra Parad (Mercury) is given due importance and considered as a prime drug were different types of sanskars (processing) is done to obtain the required consistency which can be used further for a new formulation (dosage form) and for the growth of longevity. Various formulation such as Dravak, Pottali, Parpati, Druti, etc. are done in order to achieve a medicinal form that is capable to treat, cure disease and for the growth of longevity.

Druti Kalpana is one such dosage form which has been used to achieve both lohawad and dehawad. Because of the lustrous, brittle and hard property of a metal and mineral it is difficult to keep it in a liquid state. The metal/mineral is applied heat to an optimum temperature till it melts and gets liquified but however on cooling it again gains its original form of solid mass. Druti is considered as a liquified condition of a mineral or metal even after cooling.

Gandhak (sulphur) is another important mineral that stands next to parad (mercury). Which is used for various

processing (sanskars) and therapeutic uses. However, for various mercurial formulations the use of gandhak druti can be observed.

Gandhak druti is an important druti kalpana were gandhak (sulphur) with the use of specific herbs, minerals and kshars is converted into a permanent liquid state by applying a certain amount of heat for a certain period of time. It is indicated in various diseases internally and externally like kasa, pandu, kshudra, etc. There are number of methods for the preparation of gandhak druti which needs to be addressed.

Materials And Methods

A detailed search was carried out in available literatures of Rasasashtra along with some old ayurvedic classical texts available. Various research articles, Papers and Electronic media was used. Proper guidance was taken from the professor of rasashastra department of the institute where the review was done.

Observations And Results

It was observed that Druti does not mean melting, but maintaining the molten state permanently, with the desired characteristic features. Details of the process and other things have been mentioned in Rasaratna Samucchaya (R.R.S.),

Rasendra Chudamani (Ra.Chu.), Rasa Prakash Sudhakara (Ra.Pr.Su.), Ayurveda Prakash (Ayu.Pr.), Rasa Hridaya Tantra (Ra.Hr.T.), Rasarnava and other classical texts of Rasashastra.⁽¹⁾

For the medicinal use and other purpose loha adi dhatu are melted at a specific temperature and then the hard metals stay in a liquid solution which does not turn into its original form is called as Dhruvi. RRS 8-77⁽²⁾

The process through which hard and brittle Draya's turn into liquid state and do not return to its original form is called as Druti. Gandhak druti can be prepared with many methods as there are different ways of preparation for this single drug.

Features of Druti: Rasaratna Samucchaya, states that a properly prepared Druti should consist of following characteristics: RRS 8-78⁽²⁾

1. Nirlepatvam: (Nonstickiness)
2. Drutatvam: (Liquified state)
3. Tejastvam: (Lustrous)
4. Laghuta: (Lightness)
5. Drutam Asanyogasca sutena: (Does not mix with mercury)

A} According to Varga, Types of Druti⁽³⁾:

1. Maharasa Varga: Abhraaka Druti (Mica), Vaikraanta Druti (Tourmaline), Swarna makshika Druti (Chalcopyrite), Swarnamakshika Satwa Druti (Extract of Chalcopyrite) Dhanya abhraka Druti
2. Uparasa Varga: Gandhaka Druti (Druti of Sulphur), Talaka Druti (Druti of Orpiment)
3. Dhaatu Varga: Svarna Druti (Druti of Gold), Rajata Druti (Druti of Silver), Loha dravana (Druti of Iron)
4. Dhatu Bhasmas: Bhasmas of Metals can also be made into Druti
5. Ratna Varga: Ratna Druti (Druti of various gemstones)

B} According to the method of preparation:

1. Garbha Druti (Internal Liquification): In this method the material given as Grasa is liquified with mercury and this is a mercurial process usually used for the processing (sanskars) on Parad (Mercury). (RRS.8/81)⁽⁴⁾
2. Bahya Druti (External Liquification): This method is usually used for the processing of Parad (Mercury) and specifically used in Jarana in which Abhrakadi satva are melted at a specific temperature outside and then added to the Parad (Mercury) for the Jarana purpose. (RRS.8/82).⁽⁴⁾

C} Method according its use:

1. Uses in mercurial process, for example, Abhraka Druti, Swarna Druti, Ratna Druti, etc.,
2. Uses for the treatment of diseases, for example, Tamra Druti, Druti Sara Rasa etc
3. Uses for both Purpose, for example, Gandhaka Druti.

History of Gandhaka Druti⁽⁵⁾

1. It was 1st mentioned in Rudraamala Tantra for Parad sankars (Mercurial process).⁽⁶⁾
2. Later was mentioned by Vangasena for its therapeutic purposes.⁽⁷⁾
3. The same formula was noted and modified by later texts of Rasashastra like R.K.D, R.R.S, etc.
4. Formulation of Gandhaka Druti was renamed by R.T and R.K.D. as Gandhaka Tailam.

*R.K.D = Rasa Kama Dhenu, R.R.S = Rasa Ratna Samuccaya, R.T. = Rasatarangini

Gandhak Druti Preparation

1. By varti method:

In this, pure Gandhaka (sulphur) & Trikatu powder are mixed and triturated then sprinkled all over a plain cotton cloth with a specific measurement and rolled from one side to another to form a Varti (candle).

This Varti is then tied with the help of a thread and then immersed in a beaker filled with Tila taila for 3 hours. After this time period Varti is removed out of the beaker, and hanged with the help of a stand or a holder so that it can hold at the middle and then ignited from both the sides. The oil dropping is collected from the Varti that is ignited and this is called as Gandhaka Druti.

The similar formulation is mentioned in other texts like R. P. S, R. R. S., R. K. D., Ay. Pra., R. T., R. J. N., B. B. R, R.C [Table 1]. Gandhaka Druti preparation by Varti method consist of different ingredients according to Vangasena [Table 2].

2. Without Varti method:

1. Bhavana Method (R. K. D.): This method, consist of Pure Gandhak and given Bhavana of the specified Drugs as mentioned in the text. [Table 3].
2. Puta paaka method (R. R. S.): In this method, Pure Gandhaka is taken and given Bhavana of specific drugs mentioned and then subjected to Puta Paaka. [Table 4]
3. Kruthrimavari method (Ru. Ya. Ta.): In this method, Kshara is used and added in Pure Gandhaka which is then kept for Sandhana (Fermentation) for 21 days. [Table 5]
4. Soxhlet extraction method (Ay. Kha. Vi.): In this method, specific drugs are subjected for extraction purpose separately and then mixed together in given ratio [Table 6].

R.S also mentioned 2 other methods for Gandhak Druti [Table 7] in this method Cow Milk is boiled and then Pure Gandhak [Sulphur] powder is mixed in it, once the milk cools down it is processed and makkhan [Butter/Ghee] is collected. This Makkhan is heated at high temperature till all the Gandhak appears on the upper layer and it is collected this is called as Gandhak Tail.

Another method is in which a clean Cotton Cloth is dipped 7 times in Ark Dudh [Calotropis Procera milk] and dried

completely. Now the makhan [Butter/ghee] mixed with Pure Gandhak[Sulphur] is spread evenly all over the cloth then Varti is made. This Varti is made to hold at the middle and ignited from both the ends. The dropping oil is collected from the burning varti and called as Gandhak Druti or Gandhak Tail [Table8]

Table 1: Plain cotton cloth Varti method⁽⁸⁾

Ingredients	Quantity
Pure Gandhak powder	1 part
Trikatu powder	1/16 part
Tila Taila	Q.S

Q.S - Quantity sufficient

Table 2: Plain cotton cloth Varti Method⁽⁹⁾

Ingredients	Quantity
Gandhaka Powder	1 Pala (48 g) Rajika 1 Karsha (12 g)
Trikatu	1 Karsha
Rajika	1 Karsha(12g)
Ghee	Q.S

Q.S-Quantity sufficient

Table 3: Bhavana method⁽¹⁰⁾

Ingredients	Quantity
Pure Gandhak Powder	1 part
Devdali juice	Q.S
Kakmachi juice	Q.S

Q.S-Quantity sufficient

Table 4: Putapaka method⁽¹¹⁾

Ingredients	Quantity
Pure Gandhak Powder	10 Nishka(30g)
Tuttha	10 Nshka(30g)
Abrak Bhasma	10 Nishka(30g)
Tamra Bhasma	10 Nishka(30g)
Shilajeet	1 Karsha(12g)
Nilanjana	1 Karsha(12g)
Adaraka Juice	Q.S

QS - Quantity sufficient

Table 5: By Kritrima Vartinirmana method⁽¹²⁾

Ingredients	Quantity
Sarjakshara	6 Mann (2.304 g)
Water	1 Kumbh (12.288 l)
Gandhaka	QS
Abraka	QS

QS - Quantity sufficient

Table 6: Soxhlet extraction method⁽¹³⁾

Ingredients	Quantity
Gandhakamla (H ₂ SO ₄)	3 ounce
Alcohol 90%	29½ ounce
Tincture Ginger (Zingiber officinale)	10 ounce
Tincture Dalchini (Cinnamomum zeylanica)	½ ounce*

*1 Ounce (troy)=31.103 g

Table 7: Gandhak Taila method by Rasa Trangini⁽¹⁴⁾

Ingredients	Quantity
Cow milk	Q.S
Pure Gandhak powder	Q.S

Table 8: Gandhak Taila method by Rasa Trangini⁽¹⁵⁾

Ingredients	Quantity
Cotton Cloth	Q.S
Ark milk	Q.S
Pure Gandhak Powder	Q.S
White butter (Navneet)	Q.S

Discussion:

The review of literature mainly shows that the preparation of drutis was mostly done for parad sanskars. Rasaratna Samuchchaya has mentioned specific point saying that Drutis cannot be prepared easily and even without the grace of Lord Shiva. There are also some variations in preparation method of the same Druti in different texts in classical texts of Rasashastra. In Druti Kalpana heat and the herbs used while converting a solid metal into liquid plays an important role.

In Ayurveda, Prakruti, Dosha, Bala &Kala are given importance, therefore the formulations are made according to the need of one's body. As described above Gandhak druti can be prepared by various methods in the Rasashastra Texts.

As the year passed by the Ayurvedic researchers found that the need for various human body is different so it was prepared by variety of methods which changes the constituent single drug in it. And with the change in the drug constituent of a specific formulation there is a change in the mode of action of a drug.

Like the formulation of Gandhak druti by plain cloth varti method consist of Trikatu in it. Trikatu when mixed with Gandhak it increases its bioavailability making the formulation easily absorbable. Which makes it useful to treat various skin orders, this same formulation is used in eye disorders with different dosage and need.

Each and every preparation mentioned has its own mode of action depending upon the herbs and minerals used in the formulation and can be used with the proper amount of dose to be used respective of the disease mentioned in it.

Rasaratna Samuchchaya has mentioned about increasing the shelf life of Drutis by storing it in Kusumbha Taila (Safflower oil) [R. R. S. 4/79]⁽¹⁶⁾. Unlike, Rasaratna samuchchya Asamyogasca Sutena is mentioned in Rasendra Chudamani as a fifth characteristic of Druti which indicates exactly opposite property i.e., mixing with mercury easily.

Purified Gandhaka[Sulphur] is only used for the preparation of Gandhaka Druti. There are overall six methods mentioned in the texts of Rasashastra for the preparation of Gandhaka Druti, consisting of different ingredients and indications according to its uses. Most of them are indicated in Parad Sanskar[Mercurial processing]. However, it also has clinical use and so indicated for diseases such as Pandu, Shwasa, Shula, Kasa, Aamvaat, eye disease, gilayu, Grahani and Kustha.

Gandhaka Taila has been mentioned along with Gandhaka Druti in texts such as Rasakamdhenu, Rasa Tarangini[Table 7&8] and Rasaratna Samuchchaya has used the same ingredients and method of preparation as mentioned by Rasatarangini.⁽¹⁷⁾ It can also be prepared by Varti as well as without Varti method. In Varti method, the measurement of plain cloth is usually 1 Aratni (Approx. 16.5" × 16.5")⁽¹⁸⁾.

Fire is ignited from both the sides of Varti but in Rasendra Chudamani it is said to ignite it all over that is "Sarvatra Prajwalayet". Plain cotton cloth Varti method mentioned in Rasendra Chudamani, Rasaratna Samuchchaya, Rasatarangini mentioned in Table 1 is said to be best method among all. Because this gives a good yield and ingredients mentioned are easily available.

Conclusion:

It was found that Gandhak Druti was mainly evolved for the Parad[mercury] bandh and sankars process in order to achieve lohawad, later on developed for clinical use to treat and cure many diseases. Different methods of preparation have been mentioned in the texts of Rasasashtra depending upon the use of Gandhak Druti. It was found that, the concept of Druti Kalpana is unique and has not been limited only as a procedure for liquefying a metal/ mineral, but has other implications too such as its use in clinical practice.

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