A critical study of Gandhaka Shodhana

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ABSTRACT

Gandhaka or Sulphur is a non-metallic solid element found in nature. Gandhaka or Sulphur is required in human body for proper functioning. It is the third most abundant mineral (after calcium and phosphorus) based on percentage of total body weight. It is the sixth most abundant macro mineral in breast milk. It is present in saliva, bile, protein, amino acids, and insulin. Sulphur is mainly present in sulphur containing amino acids like cystine. Gandhaka in the body purifies blood, aids healthy digestion, and prevents toxic build-up. In Ayurveda, Gandhaka is used in the treatment of variety of diseases since time immemorial. It as a free element cannot be utilized by the body, so in Ayurveda, first it is detoxified to get Shuddha Gandhak, and then given Bhavana of herbal ingredients that make it suitable for use. Shuddha Gandhak is combined with Shuddha Parad or purified mercury to form Kajjali which is further used to prepare Ras-Aushadhi. In combination with mercury, it is used in almost all diseases.

Key words: Gandhaka Shodhana, Sulphur Purification, Godughda

INTRODUCTION

Gandhaka is included under Uparas by all the Rasa Granthas. Gandhaka is the principal material used for making the most important preparations like Rasalinga, Rasabandhas. In modern science it similar to Sulphur. Sulphur is known since ages, in Brahattrayi, Sulphur is used in several diseases as a therapeutic agent. Later, after 7th century A.D. Sulphur was used extensively both in Dehavada (in maintaining the health and eradicating the diseases) and Loha Vada (converting lower metals into gold and silver).

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Syonym of Gandhaka is Shulbari i.e., Tamrashatru. It is an essential agent for the various processes of Parada Samskaras, Marana, Jarana and Bandhana etc. Mercurial preparations without Gandhaka are considered to be more toxic. The mythological origin is explained as, the product obtained while churning Ksheera Sagara / Samudra Manthana along with Amrita (nectar). Different synonyms like Gandhaposhana, Parnami, Kruragandha, Navanita Saugandhika, Gandhi, Bali, Gandhaka, Daityendra, Atigandha, Sugandhika, Balivasa, Ganda, Daityendra and Kushtari etc. In ancient texts mentioned Graha Lakshnas of Gandhaka as the colour of genuine Gandhaka should resembles that of the tail of parrot (greenish yellow). It should be smooth, hard and unctuous. It should be having the luster of Kapikacchubeja and Navanita (soft to touch). For Rasayanantha and Loha Vadartha, it should be translucent like the fruits of Amalaki (Amalasara Gandhaka).

The pharmacological and therapeutic properties explained in Ayurveda are;
Rasa: Madhura,[³] Katu, Tikta, Kashaya
Guna: Ushna, Sara, Snigdha
Virya: Ushna
Vipaka: Katu
Karma: Deepana, Pachana, Vishahara, Jantughna
Dosha Prabhava: Kapha Vatahara, Pittavardhaka.
Vyadhi Prabhava: Kandu, Visarpa, Krimi, Kustha, Kashaya, Pleeha, Rasayana.[6]

The modern view of Gandhaka (Sulphur)[7] Aryans, Greeks, Romans and Indians used it for fumigation and as medicine. It is estimated as the 9th most abundant element in the universe. The general properties of sulphur are:

Name - Sulphur
Symbol - S
Hardness - 1.5 to 2.5
Boiling point - 440.60°Celsius
Melting point - 112.80°Celsius
Atomic Number - 16
Atomic mass - 32.06
Specific gravity - 1.9 to 2.3

AIM AND OBJECTIVES
1. Review the classics for Gandhaka Shodhana
2. Analyze the Gandhaka Shodhana methods

MATERIALS AND METHODS

There are different methods of Gandhaka Shodhana available in classical of Rasagranthas. Among these some methods are described here-

1. Swedana: Swedana Kriya is done for one hour and powdered Ashuddha Gandhaka is taken in a cloth, Pottali is prepared and suspended in Dola Yantra containing milk and ghee. By this the impurities will get mixed up in milk and ghee, Shuddha Gandhaka gets collected in Pinda Roopa and ghee starts floating.[8,9]

2. Dalana and Vastragalana: A Mrut Patra filled half the level with milk is taken, its mouth is covered with a porous cloth smeared with ghee and tied with a thread. Powdered Ashuddha Gandhaka is taken in a spatula, melted and poured over the porous ghee smeared cloth into an earthen pot. Melted Shuddha Gandhaka gets solidified in milk, taken out and washed with warm water, and dried in shade. This has to be repeated for three to seven times.[10]

3. Kurmaputa: A pot is filled with milk and its mouth is covered with a cloth and Ashuddha Gandhaka Choorna is spread over it and covered with an inverted Sarava. Upalas are spread over the Sarava and ignited. Gandhaka melts and penetrates through the cloth and Shuddha Gandhaka gets collected at the bottom of the pot. Repeating this for 100 times, Gandhaka becomes Nirgandha.[11-13]

4. Bhavana: One part of Ashuddha Gandhaka with one fourth part of Shuddha Tankana is given Bhavana with Matulunga Swaras and then with Eranda Taila, dried in shade to obtain Shuddha Gandhaka.[14]

5. Taila Pachana and Taila Nikshepa Vidhi: A pot filled with Tila Taila/ Kusumba Taila / Sarshapa Taila- subjected to heat by maintaining low flame and added with powdered Ashuddha Gandhaka. Heat is given until added Gandhaka melts and immediately poured into milk. Solidified Shuddha Gandhaka is removed from milk, washed with warm water and dried in shade.[15]

6. Damaru Yantra Vidhi / Urdhwapatana of Gandhaka: Four Pala of powdered Ashuddha Gandhaka has to be taken in Damaru Yantra and subjected to Urdhwapatana Kriya. Shuddha Gandhaka can be obtained from the inner side of the upper pot of Damaruyantra.[16,17]

DISCUSSION

The discussion section is one of the final parts of a research paper, in which an author describes, analyzes, and interprets their findings. In this article discussion based on methods used in Shodhana of Gandhaka.

The purpose of doing Swedana may be attributing the properties of Swedana Dravya to Sweady Dravya. The chemical reactions that take place during the Swedana...
process may be due to diffusion and Osmosis. Diffusion refers to the process by which molecules intermingle as a result of their kinetic energy of random motion. Osmosis may also be used to describe a physical process in which any solvent moves, without the input of energy, across a semipermeable membrane (permeable to the solvent, but not the solute) separating two solutions of different concentrations. Although osmosis does not require an input of energy, it does use kinetic energy and can be made to do. Osmosis is a selective diffusion process driven by the internal energy of the solvent molecules. Swedana is one such process that makes the drug biocompatible by converting it into an organometallic complex. During Swedan Karma following actions seen - Reduce hardness and biochemical changes favorable to body. In Dalana two methods described here Ghee absorbs toxic materials and helps in the removal of fat-soluble impurities. Water and colloidal soluble impurities will be removed by milk. By Vastragalana - filtering through a cloth, separation of stones and other physical impurities will be held up in the filtering cloth. Bhavana helps to extract special Gunas by doing Samskara. Mardana procedure employed in Bhavana is responsible for Gunavardhana and which inturn enhances the medicinal properties. Even if given in Alpamatra, Bala of drugs will be increased in the medicine. Alpamatra and Alpaveerya of the drug is changed to Mahakarma and Mahaveerya.

When powdered Gandhaka is melted in Taila containing pot, Taila absorbs toxic materials and helps in the removal of fat-soluble impurities. Later when melted Gandhaka is poured into milk, water, and colloidal soluble impurities will be removed by milk.

In Damaru Yantra Vidhi / Urdhwapatana of Gandhaka - The powdered form of Sulphur produced by sublimation; may contain up to 30% of the amorphous allotrope; used in rubber vulcanization, agricultural dust, pharmaceutical products, stock feeds. Sublimed Sulphur/“Flower of Sulphur” may help as a topical scabicide and antiparasitic agent. Also, it helps in quick skin healing, and people usually mix it with cold cream. It may be widely used to treat many skin problems like acne, sores, insect bites, rashes, bacterial infections, bedsores, dermatitis, eczema, fungus/yeast infections, psoriasis type problems, ringworm, wounds that won’t heal and more.

CONCLUSION

Sulphur is used widely in therapeutic hence it’s important to use it after purification. To get desired therapeutic effect and to lessen the untoward, toxic or harmful effect caused after its internal administration. The colour changes occurred can suggestive of removal of some of the physical and chemical impurities from Sulphur in the form of sand particles and loss during washing. It can be concluded that, Shodhana mentioned in Rasashastra texts is to make Gandhaka absolutely non-toxic by removing the impurities and to improve the quality of material, to enhance its therapeutic efficacy, to bring Laghutva, to make Gandhaka palatable, to make its therapeutic actions broad-based and these purification methods remove impurities not only physically and but also brings suitable chemical changes without producing any harmful effects on internal/external administration.

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