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A Literature review of *Gandhagam* (Sulphur)

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Abstract

The Siddha system is the traditional oldest system practiced in the southern part of India. Medicinal preparations in this system are prepared from herbals, minerals, metals, raw materials, and animal products. In Siddha literature, Sulphur is commonly called *Gandhagam*. It is a non-metal compound used to cure a wide range of diseases. This review aimed to bring the literature review of *Gandhagam* and focused on purification, types, toxic effects, and traditional uses and pharmacological activity of the drug and justify its usage.

Keywords: *Siddha*, *Gandhagam*, Sulphur, pharmacological activity

Introduction

Siddha is the most common oldest system practiced in South India, particularly in Tamilnadu. It is also called a Dravidian system of medicine. The founder of this system was *Siddhars*. In Siddha literature, Sulphur is

traditionally referred to by the Tamil name *Gandhagam*. *Gandhagam* is used for a variety of skin diseases. It has anti-inflammatory and antimicrobial activity. This review gives knowledge about *Gandhagam* and its

pharmacological activity, types and traditional uses, and purification process. The research was made from the textbooks, Journals, internet databases, etc.

Gandhagam:

Gandhagam is a multivalent, non-metal, crystalline mineral. The other names of *Gandhagam* are *Kaarizhai Natham*, *Parai natham*, *Parai Veerayam*, *Beejam*, *Selvi vindhu*, *Sakthi*, *Sakthi peesam*, *Chendurathaathi*, *Theviuram*, *Natham*, *Naatram*, *Parai natham*, *Ponnvarni*, and *Rasa suronitham*. It comes under the type of *Padanam*⁽¹⁾. Mostly available in Nepal, Kashmir, Afghanistan, and Barma. It has a bitter taste. Astringent and laxative, tonic and antiseptic in nature. It helps in increasing the secretion of bile fluids. It can be used to treat many types of skin diseases, venereal disease, unknown poisonous bite, dysentery, gastric ulcer, liver disease, and eye diseases.

Types of Gandhagam:

-) *Pirappugandagam*
-) *Kozhithalaigandagam*
-) *Vana Kendhivaipu*
-) *Vaipugandagam*

Its Gunam (character) was *Nellikai Gandhagam* which was used for medicinal preparation another one was *Vaana Gandhagam*. Depending upon the color they are classified into White, Red, gold, and black.

- *Natpusarakku-Rasam* (Mercury),
- *Pagaisarakku-Sembu* (copper)

In India, it is found in combination with other metals, minerals, herbal and animal products

Purification:

Method 1:

Gandhagam was melted with cow's butter and added to banana rhizome juice, where it was then allowed to cool and sulphur was recovered.

Ten repetitions were completed in this manner, using new juice each time.

Method 2:

The *Lawsonia inermis* (Maruthani) leaves were pounded in a stone mortar and combined with cow's curd in this technique. Sulphur was placed on top of the cotton cloth that covered the mixture, which was maintained in a mud pot. A towel that had been dipped in mud paste was placed over the pot's lid to complete the sealing process. Cow dung cakes were piled over the pot's mouth and the pot was covered with dirt up to the mouth level. As soon as the cow dung cakes were placed on the fire, the sulphur that had been placed atop the cloth started to melt from the heat and fell to the bottom of the pot. The processed sulfur was removed, and the procedure was then carried out seven more times.

Medicine named drug:

- ❖ *Sarvavidathodarikuligai*
- ❖ *Ganghagaparpam*
- ❖ *Ganghagachendurum*
- ❖ *Gandhagamezhugu*
- ❖ *Gandhagamathirai*
- ❖ *Gandhagathylam*
- ❖ *Ganghagavadagam*
- ❖ *Gandhagarasayanam*
- ❖ *Gandhagakattu*

Traditional uses:

-) Mercury and sulphur are used together to treat practically all disorders.
-) Sulphur is administered in combination with jaggery or milk cream to treat chronic skin conditions as well as hemorrhoids, prolapse, and strictures;
-) Sulphur is applied both inside and externally to treat skin conditions.
-) Mustard combined with *Yavakshara* (*Hordeum vulgare*- barley) and sulphur
-) In cases of ptyriasis, psoriasis, etc., oil is administered.

-) *Gandhagarasayanam* is used to treat chronic skin conditions.
-) Having acute leprosy in leprosy

Toxic effect⁽²⁾:

Due to high doses, improper purification or without purification, or taking Gandhagam related formulations for a long period causes toxicity it produces skin diseases, general weakness, and hypospermia. Yellowish discoloration of eyes, paleness of face, excessive sweating, odor smell of the mouth,

Antidote:

- ✓ *Nelumbo nucifera* seed crushed with coconut water mix well and filter it
- ✓ Cow milk: cow milk mixed with cow ghee. This preparation was administered for seven days with quantity. This reduces sulphur poisoning.
- ✓ Roots of *Cassia auriculata*, *Zingiber officinale*, *Gynandropsis gynandra*, *Gossypium herbaceum*, *Mesunaneccarium*, and *Indigofra tinctoria* were taken in equal quantities and made decoction
- ✓ *Piper nigrum*, mixed with an equal quantity of *Cuminum cyminum* and *Indigofera tinctoria*, and made into a decoction.

Table1: Pharmacological activities and indications of Gandhagam related formulations

Medicines	Activity	Indications
<i>Gandhaga parpam</i>	anti-cancerous ⁽³⁾ , antioxidant, and anti-inflammatory activities	Skin diseases, venereal diseases
<i>Gandhaga Mezhugu</i>	Antimicrobial activity ⁽⁴⁾	Urinary disorders, piles, leprosy
<i>Gandhagarasayanam</i>	Anti-microbial ⁽⁵⁾ , anti-inflammatory	Skin disease, gastric ulcer, piles, venereal diseases, leprosy, dysentery, urinary tract infections
<i>Gandhagamathirai</i>	Antifungal ⁽⁶⁾	Fever
<i>Gandhagathailam</i>	Anti-microbial ⁽⁷⁾ , anti-arthritis ⁽⁸⁾	Psoriasis, leprosy, leukorrhea, gastric Ulcers, skin diseases,

Discussion and conclusion:

This literature review reveals the various formulations of *Gandhagam* mentioned in Siddha's classic text. It is evident that the *Gandhagam* has pharmacological activities of anti-microbial, anti-fungal, anti-arthritis, anti-inflammatory, anti-cancerous, and anti-oxidant. Based on the literature references, explain the purification methods, types, actions, uses, toxic effects, and antidote of *Gandhagam* which is mentioned in the Traditional Siddha book of *Gunapadam Thathu Seeva Vagupu*.

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