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Simhnada Guggulu: A Unique Classical preparation of Vati Kalpana

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ABSTRACT

Introduction: *Simhnada Guggulu* is a herbo mineral formulation which is mentioned in an *Amavata Rogadhikara* in *Chakradatta* and *Bhaishajya Ratnavali*. It holds a unique method of preparation which creates difficulty in pharmaceutical outcome. Hence, this study is aimed in the pharmaceutical preparation of *Simhnada Guggulu* through different three methods.

Materials and Methods: This study was carried out in two phases: 1. Raw Drug Collection 2. Preparation of *Simhnada Guggulu*. *Simhanada Guggulu* was prepared with special reference to *Chakradatta* in three different approaches. 1. *Triphala Churna* was added as *Kalka* 2. *Gandhaka* was added as a *Prakshepa* 3. *Triphala* was included only in the form of *Kwatha* as per the original classical literature. **Result:** The *Paka* was continued till the entire *Kalka* achieved a pill rolling consistency. The final product resembles solid *Kalka* with free oil. The *Kalka* was rolled into *Gutika* after removing the excess oil. In the first method *Gandhaka* was not soluble in an *Eranda taila*. On increasing heat *Gandhaka* became solidified and was not evenly mixed with other ingredients. In the second method *Gandhaka*

was added as *Prakshepa Dravya* which favored its even distribution in the *Gutika*.

Discussion: *Simhanada Guggulu* is a unique preparation among *Gutika Kalpana*. The procedure is similar to *Sneha Paka* where the *Kalka* is constituted by *Triphala*, *Gandhaka* and *Guggulu* depending on altered approaches. *Sneha* is contributed by *Eranda Taila* and *Drava Dravya* by *Triphala Kwatha*. The quantity of *Taila* mentioned in the classical literature deters the preparation to develop as *Gutika*. As the optimum *Paka* for the preparation is not mentioned in the classics, the *Paka* opted must be ideal to prepare the *Kalka* into *Gutika*. The end product is assessed by firmness of *Gutika*, even distribution of *Gandhaka* in the *Gutika*. **Conclusion:** The evenly distributed *Gandhaka* method is expected to be safe and suitable for clinical utility. *Simhanada Guggulu* should be administered with extra *Eranda Taila* as an *Anupana* for a better result.

Keywords: *Simhnada Guggulu, Lehya, Vati, Gandhaka*

INTRODUCTION:

Ayurvedic formulations are the outcome of various trial and error experiments which favours its safety in clinical use if prepared accordingly. *Rasashastra*, which deals with Herbo –mineral pharmaceutical originated with the aim of attaining *Deha Siddhi* and *Loha Siddhi*. It is very much clear that theoretical and practical are two essential aspects of knowledge which only can make man a perfect physician who fights against the diseases with the weapon of drugs so; result of drugs always depends on its preparation [1]. It can be stated that pharmaceutical study especially in the field of *Ayurved* has supreme importance because it includes all herbo-mineral preparation which needs to be processed by *Shodhana* [2], *Jarana* [3], *Marana* [4] etc. [5]. Pharmaceutical study includes selection and process in of ingredients and

pharmaceutical process. In Standardization the ratio of ingredients, form of ingredients, intensity of fire, its duration etc are concerned. Pharmaceutical study aims not only drug manufacturing but also preparing the formulation into a suitable form for administration in patients. *Simhnada Guggulu* is a herbo mineral formulation included in *Sagni Guggulu Kalpana* (Where aid of heat is required for the preparation of formulation). *Simhnada Guggulu* was first mentioned by *Acharya Chakrapani* in *Chakradatta* [6] In AFI (Ayurvedic Formulary of India) the reference has been adopted from *Bhaishjya Ratnavali* [7] *Amavata Rogadhikara*. Another reference of *Simhanada Guggulu* is available in *Ayurveda Sara Sangraha* [8] where an addition of *Guduchi* [9] is observed. Previous research works have

proven that *Simhanada Guggulu* has given effective result in *Amavata* [10] compared to other *Guggulu* [11]. But in the midst of these benefits *Simhnada Guggulu* holds a unique method of preparation which creates difficulty in pharmaceutical outcome. Hence, this study is aimed to prepare *Simhnada Guggulu* in a suitable form for patient.

Materials and Methods: This study was carried out in two phases: 1) Raw drug Collection and authentication 2) Preparation of *Simhnada Guggulu*

Collection and authentication of raw materials:

It was carried as per reference of *Chakradatta Amavata Rogadhikara* [12], *Haritaki* [13], *Bibhitaki* [14], *Amalaki* [15], *Guggulu* [16], *Gandhaka* [17], *Eranda taila* [18] were used in a preparation which were procured from the P.G. department of *Rasashastra evum Bhaishajya kalpana*, Parul Institute of Ayurved, Parul University, Vadodara, Gujarat. All the herbal drugs were authenticated from the department of *Dravyaguna vigyana* Parul Institute of Ayurved. The pharmaceutical study was conducted in laboratory of Department of *Rasashastra evum Bhaishajya kalpana*, Parul Institute of Ayurved, Vadodara, Gujarat.

Purification of Raw Materials:

Shodhana of *Guggulu* was done in a *Dolayantra* using *Triphala kwatha* as the liquid media. The process was continued maximum possible quantity of *Guggulu* was drained into the liquid media. This was estimated by the thinning of *Pottali* when *Guggulu* melted in a *Triphala kwatha*, *Pottali* was removed from *Dolayantra*. The physical impurities were seen rendered inside the *Pottali*. The filtered mixture of *Triphala Kwatha* and Dissolved *Guggulu* was again heated till the liquid portion was evaporated till the condensed *Suddha Guggulu* was obtained in the bottom of the vessel. Then *Guggulu* was powdered and stored in an airtight glass container [19]. *Shodhana* of *Gandhaka* was carried out as per reference of *Rasa tarangini*. *Go dugdha* (Cow's Milk) was taken in an earthen vessel in half its volume. Then mouth of the vessel was covered with a cotton cloth. Above a cloth *Gandhaka* fine powder was spread evenly and covered with a *Sharava* (Earthen Plate). Wrapping was carried out with the help of *Multani mitti* smeared cloth. This was subjected to *Laghu puta* was given. *Gandhaka* in the form of small yellowish opaque balls was obtained in a milk pot. It was washed with warm water and stored it [20].

Preparation of *Simhnada Guggulu*:

Simhnada Guggulu was prepared in different approaches.

- SG₁: In the first method (SG₁) *Triphala churna* was included as an ingredient along with *Triphala Kashaya* with a substantiation that the term ‘*Kashayasya*’ refers to *Kashaya* as a Drug.
- SG₂: *Gandhaka Churna* was added as a ‘*Prakshepa*’ [21] to avoid crystallization of *gandhaka*.
- SG₃: Literal textual method was followed where *Triphala* was included in the form of *Kwatha* along with *Guggulu* and *Gandhaka* as a *Kalka dravya* [22].

Method no. 1 (SG₁):

Table 1: List of Ingredients

Sr. No.	Ingredients	Quantity	Kalpna
1	<i>Triphala churna</i>	75 gm	<i>Kalka</i> [23]
2	<i>Su. Gandhaka churna</i>	25gm	<i>Kalka</i>
3	<i>Su. Guggulu churna</i>	25gm	<i>Kalka</i>
4	<i>Triphala yavakuta churna</i>	19 gm	<i>Kashaya</i> [24]
5	<i>Chitra taila(eranda taila)</i>	100 ml	<i>Sneha</i> [25]

Method of Preparation:

- In a steel vessel *Triphala yavakuta churna* was taken and 8 times more water added into it and reduced up to half quantity. 75 ml *kwath* was obtained. In a porcelain mortar fine powder of *Triphala*, *Gandhaka*, and *Guggulu* was taken. It was triturated with water and made into *kalka* (bolus) form. In a steel vessel *Eranda taila* and *Triphala kwath* was heated which was then added

with *Kalka*. The process of boiling was continued till the *Kwatha* was evaporated and the *Kalka* attained *Madhyama Paka Lakshana* of *Sneha Kalpana*. (Like *Varti*/wick form of *Kalka dravya*). The excess oil from the *Kalka* was separated and collected in a glass container. The *Kalka* was then rolled into pills [26].

Method no. 2 (SG₂):

Table 2: List of Ingredients

Sr no.	Ingredients	Quantity	Kalpna
1	<i>Triphala churna</i>	75 gm	<i>Kalka</i>
2	<i>Su. Gandhaka churna</i>	25gm	<i>Prakshepa</i>
3	<i>Su. Guggulu churna</i>	25gm	<i>Kalka</i>
4	<i>Triphala yavakuta churna</i>	19 gm	<i>Kashaya</i>
5	<i>Chitra taila(eranda taila)</i>	100 ml	<i>Sneha</i>

Method of preparation:

- The process was same as above. The ingredients include *Triphala kashaya* as *Drava Dravya triphala churna* and *guggulu churna* as *Kalka Dravya*. Process was continued till *Madhyama paka* was attained. After obtaining a *Madhyama paka*, *Gandhaka* was

added as *Prakshepa* to the mixture of *Kalka* and *Taila*. After filtering oil from *Kalka*, it was taken in a mortar pounded well for even distribution of *Gandhaka*. On attaining suitable consistency, the *kalka* was rolled into pill and dried in a room temperature.

Method no. 3 (SG3):

Table 3: List of Ingredients

Sr no.	Ingredients	Quantity	Kalpna
1	<i>Su. Gandhaka churna</i>	25gm	<i>Kalka</i>
2	<i>Su. Guggulu churna</i>	25gm	<i>Kalka</i>
3	<i>Triphala yavakuta churna</i>	19 gm	<i>Kashaya</i>
4	<i>Chitra taila(eranda taila)</i>	100 ml	<i>Sneha</i>

Method of preparation:

- In the third method *Triphala Kashaya* was used as *Drava Dravya*. *Kalka* part was occupied by *Gandhaka* and *Guggulu*. The procedure was similar as previous two preparations. After removing excess oil, the *kalka* was pounded well in *Khalwa yantra* and on suitable consistency it was a rolled into pills. The pills were then dried in room temperature and stored in an air tight container.

Taila. The *kalka* was rolled into *Gutika* [28] after removing the excess oil. In SG₁, *Gandhaka* was observed insoluble in *Eranda Taila*. On increasing heat, the powdered *Gandhaka* was unified and solidified. This led to its non-uniform mixing with other ingredients. In SG₂ *Gandhaka* was added as *Prakshepa Dravya* which was followed by trituration. This favored even distribution of *Gandhaka* in the *Gutika*. In a third method, *Gandhaka* was floated on a *taila* during procedure and become solidified till achieving *Madhyama Paka Lakshana*. In this method too the *Kalka* was triturated to avail uniform distribution of *Gandhaka*. In the third method quantity of *Kalka* was less which laid difficulty access a *Varti Lakshana*.

RESULTS:

The entire procedure followed same principles of *Sneha kalpana*. The *Paka* was continued till the entire *Kalka* achieved *Madhyama paka* [27]. The final product resembles solid *Kalka* with free *Eranda*

Table 4: Weight of Final Product

Batch	Initial weight (powder)	Final product weight	Loss
SG ₁	125 gm	101.8 gm	23.2 gm
SG ₂	125 gm	110.8 gm	14.2 gm
SG ₃	50 gm	34.8 gm	15.2 gm

Table 5: Analytical Study of *Simhanada Guggulu*

Parameters	SG ₁	SG ₂	SG ₃	Sample 1	Sample 2
Tablet weight variation	765.5 mg	800.6 mg	748.8 mg	500 mg	500 mg
Hardness of tablet	1.5 kg/cm ²	1.0 kg/cm ²	2.0 kg/cm ²	1.0 kg/cm ²	1.0 kg/cm ²
Disintegration time of pill	1.30 Hours	1.15 Hours	2 Hours	1 Hours	1 Hours
Loss on drying at 105 ⁰ c	2.80% w/w	2.50 %w/w	2.20%w/w	1.80%w/w	2.10%w/w
Total Ash value	10.00%w/w	10.00% w/w	9.00% w/w	8.00%w/w	8.20%w/w
Acid insoluble ash	2.60% w/w	2.40% w/w	2.30%w/w	1.80%w/w	2.10%w/w
Water soluble extractive value	29.10% w/w	28.60% w/w	29.30%w/w	14.4%w/w	25.9%w/w
Alcohol soluble extractive value	23.40% w/w	22.90%w/w	23.20%w/w	12.3%w/w	21.7%w/w

DISCUSSION:

Simhanada Guggulu is a unique preparation among *Guggulu Kalpana*. In classical text various reference available for *Simhanad Guggulu*. In *Yogatarangini*, *Simhnada Guggulu* is described in which *Sneha Dravya* is not mentioned but in a *Chakradatta and Bhaishjya ratnavali* [27] mentioned *Eranda taila* as a *sneha dravya*. In *Ayurveda sara sangraha* additionally *Amruta* is mentioned. According to reference of *Chakradatta*, procedure is similar to *Sneha paka* where the *kalka* is constituted by *Triphala* (Optional), *Gandhaka* and *Guggulu* depending on altered approaches. *Sneha* is contributed by *Eranda taila* and *Drava dravya* by *Triphala Kwatha*. In a market *Simhnada Guggulu* available in a *Lehya* and *Gutika* form both. The quantity of *Taila* mentioned in the classical literature deters the preparation to form as *Gutika*. As the optimum *Paka* for the preparation is not mentioned in the

classics, the *Paka* opted must be ideal to prepare the *Kalka* into *Gutika*. In the preparation of *Simhanada Guggulu* mainly hurdle encountered was by *Gandhaka* because the melting point of Sulphur (*Gandhaka*) is between 114⁰ to 119⁰C and it solidifies at above 230⁰C. *Kalka*, while attaining *Madhyama Paka Lakshana Gandhaka* became solidified and found difficulty to get mixed evenly in the *Gutika*. Sulphur is not soluble in oil, so it remained as solid particles. As a solution, continuous grinding was adopted in SG₂ and SG₃ method for particle size reduction of solidified *Gandhaka* and even distribution of *Gandhaka* and other herbal drugs. The end product was assessed by the parameters of tablet testing firmness of *Gutika*. Considerable weight variation of SG₂ was due to the manual tablet rolling. Increased disintegration of SG₃ was assumed by its hardness. Excess oil was removed from *Kalka* to ensure its pill rolling consistency.

Simhanada guggulu in the consistency of *Avaleha* may affect its palatability. In SG₂ batch *Gandhaka* was evenly distributed in each tablet which suggests that addition of *Triphala Churna* as an ingredient accompanied by continuous grinding is essential optimum pharmaceutical preparation of *Simhanada Guggulu*. This may also point out to its clinical suitability which can be confirmed only by phytochemical study and Clinical trials. Hardness of tablet is more observed in a SG₃ compared to other 2 batches (SG₃>SG₁>SG₂). A possible explanation may be the effect of solidified *Gandhaka* and binding outcome of *Guggulu*. SG₂ showed least hardness which may be due to the presence of excess *Triphala Churna* in the sample, limiting the *Paka* upto initial stage of *madhyama paka* and addition of powdered *Gandhaka* as *Prakshepa* without the aid of heat. All these may lead to a comparative loose binding of *Gutika*. The disintegration time of SG₂ was less (75 min) compared to SG₁ and SG₃, which is close to the accepted disintegration time of *Guggulu Kalpana* mentioned in standard references (60 min). In all three batches least time for preparation was required for SG₃ compared to other 2 batches due to comparatively less quantity of ingredients. Total Ash (TA) value represents the total percentage of inorganic constituents in the

sample. TA was less for SG₂ resulted from less powder contents in the sample. Therapeutically, *Simhnada Guggulu* mainly used in a *Amavata*, *Deepana*, *Ama Pachana*, *Kasaghna*, *Sothghna*, *Soolaghna*, *Vatarakta*, *Gulma*, *Udara Shoola*, etc. The ingredients of the *Simhanad Guggulu* are containing mainly *Katu-Tikta Rasa*, *Ushna-Laghu-Ruksha-Tikshna Guna*, *Ushna Virya*, *Katu or Madhur Vipaka* and so it has *Tridosha Samaka* property. Because of *Ushna Tikshana Guna* of drugs increases *Jathragni*, this digests *Amarasa* and reduces excessive production of *Kapha*. It also removes obstruction of the *Srotas*. So, it is helpful to treat *Amavata* and digestive system related disorders. *Eranda taila* having *Vatasamak*, *Shoola Hara*, *Rechana* property which is beneficial in a *Vataj Vyadhi*. *Simhnada Guggulu* given with different *Anupana* like *Taila*, *Ghrita*, *Vasa*, *Sali- Shastika* for a better result. *Triphala churna* having various alkaloids like tannins, flavonoids, etc which is having anti inflammatory, anti oxidant property. *Guggulu* having a steroid, diterpenoids, inorganic ions, etc which inhibits inflammatory mediators like COX-2 and reduce inflammatory pain. *Gandhaka* is essential for body and it is 7th or 8th most abundant element in human body by weight. Sulphur is helpful to build and fix DNA and protect cells from damage that

can lead to serious metabolic disorders. *Eranda taila* having a ricinine, ricin, gallic acid, ricinoleic acid, palmitic, etc. ricinoleic acid acts as an anionic surfactant that

reduces net absorption of fluid and electrolytes and stimulates intestinal peristalsis.

Table 6: *Rasapanchaka* of Ingredients [28]

Sr. No.	Ingredients	Rasa	Guna	Vīrya	Vipaka	Doshaghnta
1	<i>Haritaki</i>	M, A, K, T, Ks	L, Ru	<i>Ushna</i>	<i>Madhura</i>	<i>Tridoshghna</i>
2	<i>Amalaki</i>	M, A, K, T, Ks	G,Ru,Sh	<i>Sheeta</i>	<i>Madhura</i>	<i>Tridoshghna</i>
3	<i>Bibhitaki</i>	Ks	L, Ru	<i>Ushna</i>	<i>Madhura</i>	<i>Tridoshghna</i>
4	<i>Guggulu</i>	K, T	L,Ru, Tik,V, Sa,Su	<i>Ushna</i>	<i>Katu</i>	<i>Vata kaphaghna</i>
5	<i>Gandhaka</i>	M	Sn,Sa	<i>Ushna</i>	<i>Katu</i>	<i>Vata kaphaghna</i>
6	<i>Eranda taila</i>	M, K, Ks	G, Sn, Tik, Su	<i>Ushna</i>	<i>Madhura</i>	<i>Vata kaphaghna</i>

CONCLUSION:

Simhnada guggulu which is an effective formulation for diseases like *Amavata*, *Vata roga* is prepared in three different methods designated as SG₁, SG₂, and SG₃. Among the three methods, SG₂, where *Gandhaka* was added as *Prakshepa* to the mixture of *Eranda Taila* and *Kalka*, on attaining *Madhyama paka*, followed by grinding favored uniform distribution of *Gandaka* in the *vati* compared to SG₁ and SG₂. This method also gave good yield of *Gutika* compared to SG₃ which is prepared following the literal meaning of classical

literature. The present study is an attempt to solve the pharmaceutical difficulty of preparing *Simhanada Guggulu*. In all the methods the *kalka* was filtered from the *Taila*. This lays a question of relevance of *Eranda tila* in the prescribed quantity. Further analysis of all the three samples of *Gutika* and filtered *Taila* is essential to understand phytochemical concentration. The three samples should also be subjected to clinical efficacy studies to identify the therapeutic dominancy.



Figure 1

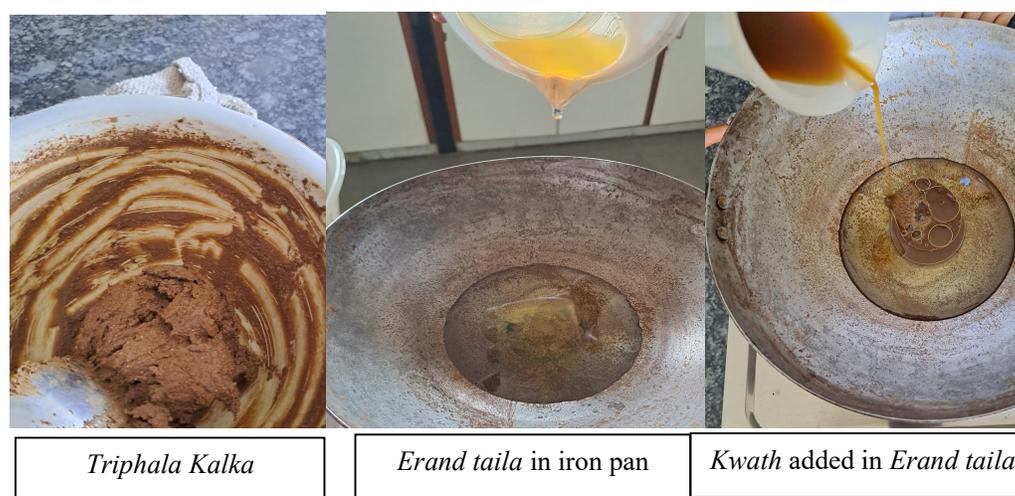


Figure 2

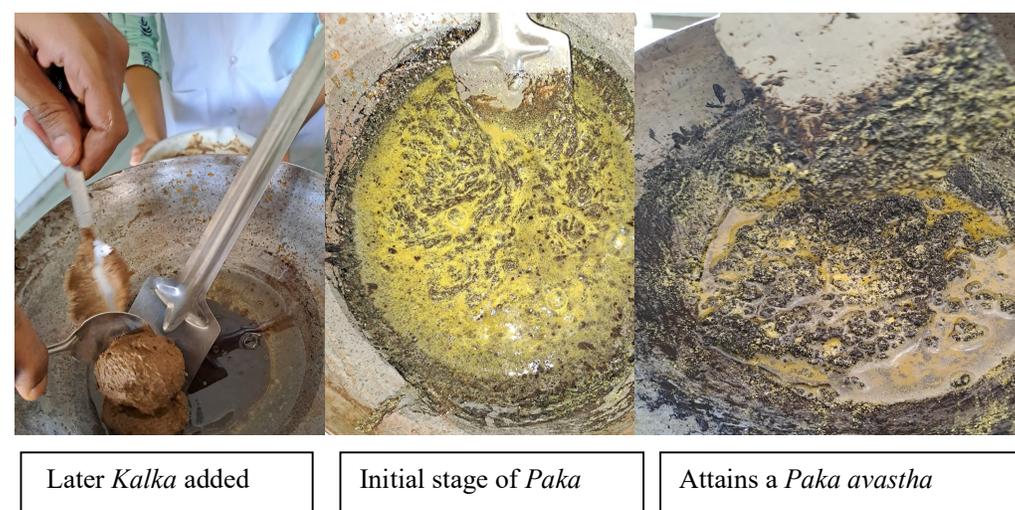


Figure 3



Figure 4

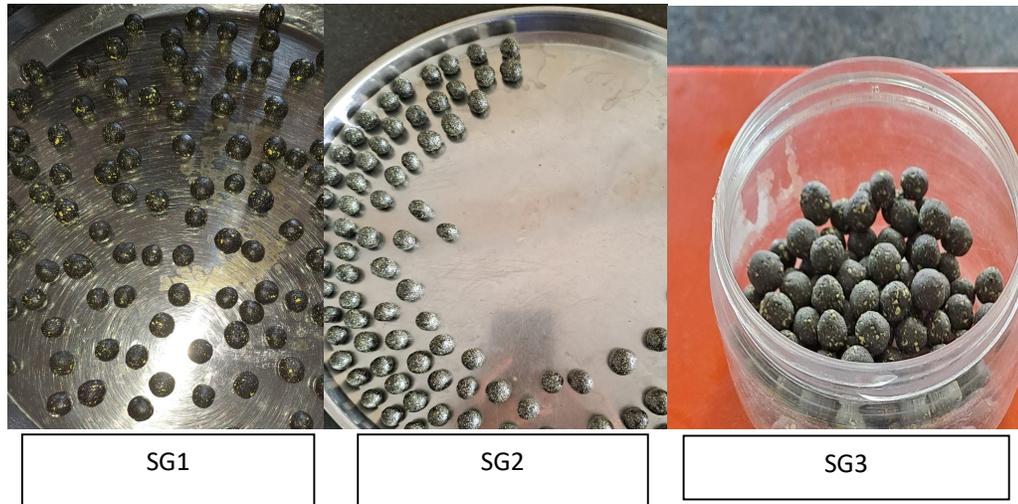


Figure 5

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