



PHARMACEUTICAL AND ANALYTICAL ASPECT OF SINHNAD GUGGUL

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ABSTRACT **Background:** Guggula is a resin that exudes spontaneously as a result of injury from the bark of Commiphora mukul Hook. It is belonging to the family Burseraceae. Guggula is one of the ingredients of many therapeutic formulation used in the Ayurveda most of which are named with suffix 'guggulu'. Sinhnad Guggula is one of them and used widely in practice. It is need to revise the science using newer technologies. Here attempt has been made to carry out original research article on Sinhnad Guggula. As a PG scholar part of curriculum various medicine has been prepared, so in this article the pharmaceutical & analytical aspect of self-prepared Sinhnad Guggula has been put forth. **AIM:** To Study the Pharmaceutical and Analytical Aspect of Sinhnad Guggula. **Material & Methods:** The preparation of Sinhnad Guggula was done according to the reference of Chakradatta Samhita. All the procedure was done systematically and observations were noted. **Discussion:** the probable cause and effect changes in pharmaceutical and analytical aspect will be discussed in present paper. **Conclusion:** The Pharmaceutico-analytical study of Sinhnad Guggula a detailed stepwise description and documentation in scientific, logical, sequential manner helps in developing a standard manufacturing procedure for Sinhnad Guggula. Many studies present on Sinhnad Guggula but to get original research article and as a part of PG curriculum to study detailed procedure of Sinhnad Guggula attempt has been done.

KEYWORDS : Ayurved, Guggula, Commiphora mukul, Sinhnad Guggula.

INTRODUCTION

All herbal formulations are concluded under Bhaishjyakalpana. It includes different types of Kalpana like Panchvidhkashay Kalpana, Churn, Asav-Aristha, Malahara, Gutti, Vati etc. Guggulkalpana is mentioned under Vati Kalpana^[1]. Guggul is praised for its Balya, Rasayan, Vrushya, Strotogami and a good binding property^[2]. Guggulu is exudates obtained in the form of oleo gum resin from the stem of the plant Commiphora mukul^[3]. Different herbal drugs combine with guggula to enhance its original properties.

Sinhnad Guggul is one of the famous guggul kalpa which is commonly used in Rheumatoid arthritis, psoriasis, eczema etc. Sinhnad Guggul is explain in Bhaishajya Ratnavali, Chakra Datta, Bhel Samhita, AFI and API. I used chakradatta ref. for preparation. Its main ingredients are shu. Guggul, shu. Ghandhak, triphala kwath and castor oil^[4] and widely used in the treatment of Amavat. This formulation was prepared in March month, in department of Rasashastra and Bhaishjyakalpana, government Ayurved college, Nagpur.

As a part of our PG curriculum to study the in depth insist of pharmaceutical and analytical aspects of the classical medicine like Sinhnad Guggul, the present study has been undertaken. In this study all the steps followed during preparation and quality parameter analysis of Sinhnad Guggul has been detailed explained & documented.

No previous studies based on the quality standards of the formulation have been published. So, there is need for developing an analytical profile for the formulation in the form of tablets for assuring the quality, efficacy and safety of the formulation. Hence this article is an attempt to prepare best sample of Sinhnad Guggul.

AIM

To study the Pharmaceutical and Analytical aspect of Sinhnad Guggul.

Objectives

1. To study the preparatory aspect of Sinhnad Guggul.
2. To study the Analytical Parameters of Sinhnad Guggul.

Material and Methods

This study was carried out in two steps.

1. Pharmaceutical study.
2. Analytical study.

Pharmaceutical Study:

Pharmaceutical study carried out in three steps:

A. Raw material Identification: All the raw materials of Sinhnad Guggul were procured from authentic source and identify by the experts of Dravyagun and Rasashastra department to confirm the

quality, identity, purity and strength.

B. In Process Quality Control: The preparation of Sinhnad Guggul was done according to reference of Chakradatta.^[5]

च. द. (25-33/34)

Table no. 1: Ingredients of Sinhnad Guggula tablet:^[6]

Sr. No.	Ingredients	Latin Name	Quantity
1	Shu. Guggul (Triphala shodhit)	Commiphora mukul	110gm
2	Shu. Gandhak	Sulphur	110gm
6	Castor Oil	-	50ml

Procedure:**1. Shodhan procedure of Guggula:^[7]**

Authenticated crud drugs Haritaki, Bibhitaki and Amalaki taken in equal quantity, this mixture is called as Triphala. The mixture was heated using gas to make its decoction. Mandagni was given until it got reduced to one-fourth. After that mixture was cooled at room temperature and filtered through cotton cloth. Stone were removed from guggula. Guggula taken in the pottali and hang in Dolayantra. Triphala kashay heated at temperature 80^o -90^o until all the guggula passed into it. Removed all residue from cloth and mixture dried in sunlight. Total 210gm Asuddha guggula taken and 160gm shodhit guggul obtained.

2. Shodhan procedure of Gandhak:^[8]

Raw gandhak was taken and make powder in khalvayantra. Fresh godugdha was taken in cylindrical steel vessel then this vessel covered with cotton cloth and tied by thread. Goghrit taken in iron vessel and heated on mandagni then powdered form gandhak pour in it. After complete melting of gandhak, it is poured in milk dhalan procedure was done. The dhalit gandhak washed with hot water, same procedure repeated for three times. Shodhit gandhak dried and stored in container. Total 200gm gandhak taken for shodhan and 195gm shodhit gandhak obtained.

3. Procedure of preparation of Sinhnad Guggula:^[9]

Different types of methods for preparation were mentioned in textbook like kuttan, sompak, analpak etc. We used kuttan method for preparation of sinhnad guggul. 110gm triphala shodhit guggul and 110 gm shudha gandhak taken in iron khalvayantra. Then castor oil was added drop by drop in it as per requirement, then kuttan was done and total 50ml castor oil was used. Total 10hr kuttan done until it forms vati like consistency. Net weight of sinhnad guggula mixture obtained was 260gm. After that vati was prepared by manually which is weighted upto 225-250 mg.

C. Finished Drug:

After complete preparation finished drug was stored in air tight

container. Around 500-600 vati was prepared.

Observations:

Table no. 2: Showing kuttan time duration and Observations:

Day	Time	Observations
1st day	2hr	Consistency of mixture was rough.
2nd day	3hr	Mixture was slightly soft in Consistency.
3rd day	3hr	Mixture was slightly soft in Consistency.
4th day	2hr	Vati like Consistency formed. Then vati was prepared.

Organoleptic characteristics of Sinhnad Guggula:

Shabda – No
Sparsha – Mrudu
Roop – Yellowish Green
Rasa – Tikta, Katu
Gandha – Erandtailgandhi

Analytical Study:

Analysis of Sinhnad Guggula-

Table no.3: Showing the analytical parameters of Sinhnad Guggula:

Parameters	Sinhnad Guggula	API values [9]
Total Ash	5.42	NMT 7%
PH	5.00	4.87 to 5.33
Acid Insoluble Ash	0.36	NMT 3.55
Water Soluble Extractive	21.41	NLT 23%
Alcohol Soluble Extractive	24.84	NLT 31%
Loss On Drying	3.81	NMT 12%

RESULTS AND DISCUSSION:

As a part of PG curriculum this study was carried out in stepwise manner. To get original research article this study was done in department and all analytical parameters were tested in authorized lab. The above stepwise description and documentation in scientific, logical, and sequential manner helps in developing standard manufacturing procedure^[10].

The preparation of Sinhnad Guggula was strictly carried out from the reference Chakradatta Samhita, Aamvat Adhyay. As mentioned in reference Triphala kwath prepared by using 4times of water on mandagni. Maintained mandagni (i.e., 80^o to 90^o) throughout the procedure, so that all active constituents should not be burned out. Then filtration of kwath was done. Then Guggula shodhana was carried out in Triphala Kwath. Also, Gandhak shodhan was done according to textual reference. Then Shudha Guggula and Shudha Gandhak was taken in Lohkhalvayantra and castor oil was added drop by drop and Kuttan was started till its consistency changes into soft thick mixture. After that vati was prepared manually. From total 260gm mixture 500 to 600 vati was formed.

Analytical parameters assessment of prepared formulation was done in terms of colour, odor, taste and to authenticate the identity, purity of raw drugs & quality of sample. They help in determining the identity, authenticity, strength and purity of the substance and their qualitative standards. All inspection revealed similar observations in prepared drug as reported in the Ayurved Pharmacopeia of India (table no 4).

Total ash-

Total ash value indicates the quantity of inorganic substances present in the prepared sample and lesser the value more is its purity. The ash values of the prepared sample were within limits as mentioned in API (NMT 7%).

PH-

Ph of prepared sample was found to be acidic in nature may be due to equal quantity of Gandhak in Sinhnad Guggula. Ph of Sinhnad Guggula were within limits as mentioned in API.

Acid Insoluble Ash-

Low acid insoluble ash indicates low inorganic matter or less adulterant which proves drugs purity. This obtained value may be due to Sulphur. But this value was within limits as mentioned in API.

Water Soluble Extractive-

The extractive values determine the quantity of active constituents extracted with different solvents and more the extractive values, more is the purity. WSE of Sinhnad Guggula were within limits it shows the purity of formulation.

Alcohol Soluble Extractive-

ASE of Sinhnad Guggula was found to be 24.81 which is within limits as mentioned in API. Extractive values determine the genuinity of the formulation. The change in the alcohol soluble extractive value might have occurred due to the difference in the preparatory procedure of Sinhnad Guggula from classical reference.

Loss On Drying-

loss on drying indicates the moisture content of a formulation. More the moisture content more the chance of spoilage and early microbial attack. LOD of Sinhnad Guggula was found to be 3.81% it indicates the less moisture content in it. Obtained value were within limits as mentioned in API.

Conclusion:

Sinhnad Guggula is one of the most commonly used formulation in clinical practice. Sinhnad Guggula useful in rheumatoid arthritis, skin disorders, gout etc. The detailed pharmaceutical and analytical study of the formulation has not done till date. There is minute scientific study about the pharmacological activities of Sinhnad Guggula. The above stepwise description and documentation in scientific, logical, and sequential manner helps in developing standard manufacturing procedure^[10]. This standard procedure helps in producing the formulation by following the guidelines given in the above SOP. So, the results of the study can be used as a valuable tool for the quality assurance of this formulation for future references.

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