OBSERVATIONAL STUDY OF GANDHAK SHODHAN PROCESS OF
AYURVED PRAKASH AND RASAYANSAR METHOD

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INTRODUCTION

Rasashastra is most important and popular branch of Ayurveda related to Herbo-mineral
(Rasaushadhis) preparation techniques with their therapeutic uses. Rasashastra classical texts
have mentioned that every Rasavaidya should know parada (mercury) shodhan (therapeutic
purification), gandhak (sulphur) shodhan, parada murchana, gandhak jarana, snehapaaka etc.

This denotes the importance of gandhak shodhan process in Rasashastra. Kupipakwa, pottal-
li, parpati, khalwirasa containing gandhak are very popular and most demanding medicines
in India due to their advantage like instant action even in small dose, tasteless, long life and
fast relief. Hence requirement of shuddha gandhak for preparing different Rasaushadhis is of
large quantity. Dhalan process is widely accepted method using goghruta and godugdha and
by same dhalan process Ayurved Prakash and Rasayansar have described equal and one
fourth quantity of goghruta for gandhak shodhan. Change in materials quantity during sho-
dhan process may affect whole process and structural changes in drug. To know this, present
study was carried out on the observations found during dhalan on the basis of required time
for dhalan, melting point, structural changes in gandhak, and organoleptic properties of
shuddha gandhak after three dhalan for each method. Time required was 10-15 minutes,
melting point at 115°C, similar structural changes in gandhak at same temperature with same
organoleptic properties for both shuddha gandhak. Above results indicate that gandhak sho-
dhan process of Ayurved Prakash and Rasayansar methods were shown same observations
even though different quantity of goghruta used.

Keywords: Gandhak, shodhan, dhalan, Ayurved Prakash, Rasayansar

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INTRODUCTION

Rasashastra is most popular and
demanding branch of Ayurveda as it is re-
lated to complete knowledge of alchemy
(Lohavedha-conversion of mercury to no-
bile metals gold and silver) and preparation
techniques with therapeutic indications of
Rasaushadhis for Deha-vedha (internal use
of mercury for therapeutic uses). These
Rasaushadhis are prepared by using plant
and animal origin products to get in edible
form and absorbable form. Rasa-
ratnasammucchaya have mentioned that
every Rasavaidya should know parada
(mercury) shodhan, parada murchana, para-
da murchana, gandhak jarana, snehapaaka,
abhârâka marana, hirak maran, and upara-
sa shodhan1. As gandhak comes under
uparasa group2, every Rasa-vaidya should
know theoretical, practical and therapeutic knowledge of gandhak. Gandhak is most important drug in Rasashastra and used to prepare kajjali, different bhasma, and with the help of these used for preparation of Kupipakwa, pottalli, parpati, khalwirasa. These preparations are most demanding and used by large population in India, so requirement of gandhak is on large quantity. But gandhak should be used after shodhan i.e. shuddha form as impure or raw gandhak contains impurities like shila churna and vishatatva3, causes some disorders in body like giddiness, burning sensation4 etc. Many processes are mentioned in shodhan process as mardan (trituration), swedana, bhavana, dhavana (washing), avapa, nir-vapana, dhalan etc. Shodhan process has half weightage to whole process of medicine preparation. Dhalan process is widely used process for gandhak shodhan using goghruta and godugdha. Ayurved Prakash5 and Rasayansar6 have mentioned equal and one fourth quantity of goghruta for gandhak shodhan by using same dhalan method. Change in materials quantity during shodhan process may affect whole process and structural changes in drug. This is needed to know this present study was carried out for above mentioned shodhan method of gandhak having different quantity of goghruta on the basis of observations regarding time, melting point, structural changes and organoleptic properties of shuddha gandhak (purified sulphur).

MATERIALS AND METHODS

Materials

Raw gandhak, Goghruta (Cow Ghee), Godugdha (Cow Milk) were purchased from local market. Raw gandhak was taken 1000 gm. and divided into two batches each for Ayurved Prakash and Rasayansar method. Goghruta was used of Agmark standard of Gowardhan Company. Godugdha was taken of Mahananda Company having Agmark standard and specific gravity of 1.030. All materials were taken as shown in [Table 1].

Table 1: Materials Taken For Gandhak Shodhan

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Dravya Taken</th>
<th>1st Dhalan</th>
<th>2nd Dhalan</th>
<th>3rd Dhalan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ayurved Prakash</td>
<td>Rasayansar</td>
<td>Ayurved Prakash</td>
</tr>
<tr>
<td>1.</td>
<td>Raw Gandhak</td>
<td>500gm</td>
<td>500gm</td>
<td>470gm</td>
</tr>
<tr>
<td>2.</td>
<td>Goghruta</td>
<td>500gm</td>
<td>125gm</td>
<td>470gm</td>
</tr>
<tr>
<td>3.</td>
<td>Godugdha</td>
<td>1500ml</td>
<td>1000ml</td>
<td>1500ml</td>
</tr>
</tbody>
</table>

Method

Dhalan process was done for gandhak shodhan by using goghruta and godugdha. This was done three times for Ayurved Prakash as well as Rasayansar method. For each method, 500gm powdered gandhak was taken. Godugdha was taken in a cylindrical pot i.e. ketley covered with dry clean cotton cloth tied at neck. Required goghruta was taken in a steel pot, heated on slow fire and when goghruta completely melted then powdered gandhak was add-ed to it. Melted gandhak and goghruta were poured through cloth in ketley containing godugdha. Stones and clay like structure were remained on cloth and gandhak filtered in godugdha. Mixture was continuous stirred
to avoid blockage of cloth pores due to cooling of *gandhak*. Temperature was maintained between 1100°C-1200°C during each *dhalan* process. After 15 minutes *dhalit gandhak* was taken out from *godugdha* and appeared as fresh yellow *bundi* like structure. *Shuddha gandhak* was washed out with hot water of 80°C temperature till it gets free from *goghruta* and *godugdha*. This process was repeated for twice i.e. three *dhalan* was completed for each method. For one *dhalan* 15 minutes of time was required. For each *dhalan* new and fresh *goghruta* and *godugdha* were used. *Godugdha* was used each time for *Ayurved Prakash* and *Rasayansar* method was 1500ml and 1000ml respectively [Table 1].

**OBSERVATIONS**

For each *dhalan* process of both methods following observations were found [as shown in figures 1 and 2].
- 900°C to 950°C - hardening of *gandhak* started and small yellowish stony structures were found.
- 1000°C to 1050°C - yellowish big sized stone like structures were found with some reddish tint.
- 1050°C to 1100°C - melting of *gandhak* were initiated.
- 1150°C to 1200°C - *gandhak* was melted completely.

**PRECAUTIONS**

1) Raw *gandhak* and *dhalit gandhak* was used in powder form
2) Cotton cloth was clean dry and not having any layer of soap on it. As cloth remains wet *gandhak* is accumulated on that wet portion and causes blockage of cloth pores results in difficulty in filtering *gandhak* through cloth. Hence *shodhan* is not carried properly as *gandhak* does not get poured in *godugdha*.
3) *Gandhak* should be melted in *goghruta* properly.
4) Temperature was noted during each *dhalan* process for both methods.
5) During *dhalan* process, pouring of melted *gandhak* was done quickly with continuous stirrer till *gandhak* was get poured through cloth.
6) *Shuddha gandhak* was washed carefully to remove *goghruta* and *godugdha* completely.

**RESULTS**

Table 2 - Organoleptic Properties of *Gandhak*

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Parameters</th>
<th>Ashodhit Gandhak</th>
<th>Shuddha Gandhak of Ayurved Prakash</th>
<th>Shuddha Gandhak of Rasayansar</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Colour</td>
<td>Yellow</td>
<td>Yellowish red</td>
<td>Yellowish red</td>
</tr>
<tr>
<td>02</td>
<td>Odour</td>
<td>Original</td>
<td><em>Goghruta</em></td>
<td><em>Goghruta</em></td>
</tr>
<tr>
<td>03</td>
<td>Taste</td>
<td>Bitter</td>
<td>Tasteless</td>
<td>Tasteless</td>
</tr>
<tr>
<td>04</td>
<td>Touch</td>
<td><em>Khar</em></td>
<td><em>Snigdha</em></td>
<td><em>Snigdha</em></td>
</tr>
</tbody>
</table>

**DISCUSSION**

This study was carried out to know whether lesser quantity of *goghruta* is beneficial for *gandhak shodhan* as mentioned by *Rasayansar* or equal quantity of *goghruta* should be used.
as described by Ayurved Prakash. But as material quantity changes may cause procedural observations changes regarding time, structural form of drug as well as therapeutic indications of drug. Hence this present study was taken on the basis of observational study during shodhan process for above two methods having different quantity of goghruta. Gandhak has many therapeutic indications mostly for skin disorders as it has best antimicrobial action especially against fungal infections. It is largely used drug for preparation of many formulations in Rasashastra. Many methods and materials are mentioned in classical texts of Rasashastra in which widely accepted method is dhalan using goghruta and godugdha. Tila taila, Errand taila Sarshap taila, Karanj taila, Bhallatak taila etc are mentioned substitutes for goghruta and Aja dugdha, Takra, Bhrungraj swarasa, Adraka swarasa, Triphala kwath are mentioned as a substitute for godugdha. Preferably goghruta and godugdha are used due to their pit-tashamak, oaksatmya, vishaghna, shita-virya, laghu guna. Gandhak is having impurities shila churna and vishatatva, so godugdha and goghruta are commonly used to do shodhan of gandhak. As per modern aspects gandhak is soluble in fat and very essential for metabolism in hu-
man physiology and it may contain arsenic as a toxic substance which detoxify with hydrocarbons of goghruta and godugdha. The same explanation has been given by classical texts of Rasashastra that by dhalan process shila churna remains filtered on cloth and detoxification of visha occurs in goghruta and godugdha.

During this study powdered gandhak was added to melted goghruta then melted firstly and showed hard stone like structures and then melts completely after some time. This was seen in every dhalan of each method. Required complete time for dhalan was 15 minutes with similar structural changes for gandhak. Gandhak was melted at 1150C-1200C temperature for each dhalan of each method. Organoleptic properties of shuddha gandhak of above methods were yellowish red coloured, tasteless, goghruta odour and snigdha touch as shown in [Table 2].

**CONCLUSION**

Gandhak has most important role for preparing Rasaushad is in Rasashastra. Shuddha gandhak should be used to prepare medicines and for that dhalan process is widely accepted method with goghruta and godugdha. Ayurved Prakash and Rasayansar have mentioned equal and one fourth quantity of goghruta. Shodhan process is main process in preparing medicines and has half weightage to whole procedure of medicine preparation. Change in materials quantity during shodhan process may affect whole process and structural changes in drug. So to know the observations during process in gandhak by using above two methods differ in goghruta quantity and goghruta can be used in lesser quantity as mentioned by Rasayansar. Hence results were indicating that both methods were shown similar observations for shuddha gandhak of Ayurved Prakash and Rasayansar method with equal time requirement and same organoleptic properties.

**REFERENCES**

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3. Ibidiem1 Adhaya 02/25, pg. 262
5. Ibidiem1, Adhaya 02/24, pg.261

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