



ANALYTICAL STUDY OF EFFECT OF BHAVANA PROCEDURE ON KAJJALI.

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ABSTRACT:

Ayurvedic Pharmacology having Herbomineral preparations using *Parad* as base. *Parad* is implied usually with *Gandhak* for preparing different formulations. Many formulations contains *Kajjali* which is bond of Mercury and sulfur. *Bhavana* of various herbal juices are said to be given to the *kajjali* in several formulations like *Rasasindoor*, *Shrikamdevras*, The *Bhavana* procedures advocated by *Rasagrantha's* are of specific importance like it increases the *Guna's* of the product. All this study focuses following important findings. The wt. of *Raktakarpaspushpa bhavit Kajjali* is found increased because of *Bhavana*. The analysis showed percentage of Mercury and Sulphur nearly became equal. It means by mixing of *Bhavana* Dravya in *Kajjali* the bond between mercury and sulphur may get broken and properties of *Bhavanadravya* were added to each and every atom of the 'Hg' & 'S', Hence it will be of help in increasing potency of *Kajjali*. As compared to plain *Kajjali* in which ash content was zero, it was found present in *Raktakarpaspushpa Bhavit Kajjali*. It may be because of presence of organic matter of *bhavana dravya* used for *bhavana Sanskara*. TLC Analysis of *raktakarpaspushpa svaras Bhavit kajjali* & *Raktakarpaspushpa svaras* (plain) shows many spots of common Rf values in both. Percentage of 'Sulfur' in Plain *Kajjali* with respect to that in *bhavitkajjali* is found to be decreased. This shows that *raktakarpaspushpa svaras* probably alters the Hg & S bonding, as there was probably no other source of Sulphur loss. This might be used as a future reference to analyze whether *raktakarpaspushpa svaras bhavana* has been given or not.

KEYWORDS: *Kajjali*, *Raktakarpaspushp svaras*, *Bhavana*, Analysis.

INTRODUCTION:

Ayurvedic Pharmacology having Herbomineral preparations using *Parad* as base. *Parad* is implied usually with *Gandhak* for preparing different formulations. Many formulations contains *Kajjali* which is bond of Mercury and sulfur. *Bhavana* of various herbal juices are said to be given to the *kajjali* in several formulations like *Rasasindoor*, *Shrikamdevras*, The *Bhavana* procedures advocated by *Rasagrantha's* are of specific importance that they increases the *Guna's* of the product. The effort was made to analyze the *kajjali* before and after *Bhavana* procedure to elaborate *Bhavana* analytically.

Aim:

To find out effect of *Bhavana* procedure on *Kajjali*.

Objectives:

1. Preparation of *Kajjali*
2. *Bhavana* of *Raktakarpaspushpa* (Red flowers of cotton plant) to *Kajjali*
3. Analysis of *Kajjali*.

MATERIALS AND METHODS:

A) Preparation of *Kajjali*:

धातुभिर्गन्धकादैश्चनिर्द्रवैर्मदितोरसः ।

सुरक्ष्णः कज्जलाभोऽसौकज्जलीत्याभिधीयते ॥५॥

(रसरत्नसमुच्चय अ.८)

1. 1kg pure Sulphur powder was taken and mixed it with 500 gm pure mercury in mortar
2. This mixture was grinded well without adding liquid.

3. After 14 hours it turned in to smooth and black powder.
4. It was luster-free.
5. Total 1470 gm *Kajjali* was obtained.

Properties of kajjali:

“सहपानानुपानानां वैशिष्ट्यादिह कज्जलि ।

सर्वामयहरावृष्यामतादोषत्रयापहा ॥” (र. त. ६/११२)

- 1) *Sarvarogohar* - The *Kajjali* when used properly along with other metals or herbs can cure all the diseases
- 2) *Tridosahar* - It can pacify all the three *doshas*.
- 3) *Vrishya*- It has a property of *Vrishyatwa* i.e. it increases *shukradhatu*.
- 4) *Vyavayi* - It immediately spreads in the body when consumed.
- 5) *Vikasi* - While it spreads in the body it clears the obstructed channels at the diseased organ.
- 6) Easy to prepare.
- 7) *Yogwahi*- It enhances the properties of other metallic or herbal medication when taken along with proper *anupana*.

Siddhi pariksha of kajjali:

- 1) *Nischandra*
- 2) *Rekhapurn*
- 3) *Varitar*
- 4) *Unnamanatva*

Bhavana:

द्रवेणयावताद्रव्यमेकीभूयाद्रतां ब्रजेत् ।

तावत्प्रमाणं कर्तव्यं भिषग्भिर्भावनाविधौ ॥५१॥

(भैषज्यरत्नावली)

औषधीनां द्रवैर्यावत्कर्दमाभो भवेद्द्रसः ।

संप्लावितः परमानं भावनायाः प्रकीर्तितम् ॥ - र.चि.

Trituration of metals, minerals or other substances by the use of liquid substances is known as *Bhavana*. The quantity of liquid should be such that the powdered drug becomes wet. Stickiness and softness are the two qualities of *Subhavita* drug.

Importance of Bhavana:

1. Raw material became more fragile and fine for further procedure.
2. Potency of the raw material will increase.
3. Heat generated due to rubbing and pasting converts the raw material from hard to soft.
4. Drug may get purified

Bhavana Procedure:

- a) 1400 gm *Kajjali* was grounded well again with the 450 ml juice of *Raktakarpas flowers*.
- b) This treated *Kajjali* was kept in sun light to become dry.

Weight of *Raktakarpasapushpa Bhavit Kajjali*: 1410gm.

METHODS:

Analysis of Kajjali by following Modern parameters:

- a. X-ray fluorescence
- b. Total ash
- c. Acid insoluble ash
- d. Water soluble extractive value
- e. Alcohol soluble extractive value
- f. Thin layer chromatography

OBSERVATIONS AND RESULTS:

Table no.1. Analysis of kajjali:

Sample	Mercury (%)	Sulphur (%)	Total Ash (%)	Acid insoluble Ash (%)	Water Soluble Extractive Value (%)	Alcohol Soluble Extractive Value (%)
<i>Kajjali</i>	26.9 580	74.2 4	0.00	0.00	0.32	3.35
<i>Raktakarpas Pushpa svaras Bhavit Kajjali.</i>	35.4 737	39.6 939	0.19	0.19	1.49	2.78

Table no.2. TLC of Kajjali and BhavitKajjali:

Solvent of extraction: Chloroform Solvent System -- Chloroform: Hexane =6:4
 Detection: After spraying anisaldehyde H2SO4:Major Spots :

<i>Raktakarpaspushpa Swaras</i>		<i>Raktakarpaspushpa Swaras Bhavit Kajjali</i>	
Approx. RF value	Color	Approx. RF value	Colour
0.11	Light Green	0.11	Light Green
0.16	Red	0.16	Light Green
0.21	Purple	0.21	Light Green
0.29	Purple	—	—
0.33	Light Purple	—	—
—	—	0.66	Green
0.74	Light Pink	0.71	Light Green
0.79	Green	0.79	Green
0.91	Purple	0.91	Light Purple

DISCUSSION:

Herbo-mineral compounds have an intangible importance in *Ayurvedic* medications, of which mercury can be considered the single most important element which not only enhances the mode of action, but also improves efficacy along with the binding agent, consequently decreasing the amount of doses consumed.

As direct consumption of *Parada*(Hg) is not advisable, it is usually bonded with other elements through *murchana Sanskar*. Though *Parad* and *Gandhak*(S) form the most important component in all these formulations (*Kajjali*, *Parpati*, *Pottali*) they cannot be used in their raw format and needs to be treated for proper amalgamation.

Kupipakwa rasayan are formed as a consequence of continuous, ascending extreme heating procedure resulting in strong interchemical bonding, *Sukshamatva*, *Yogvahitva* in between these elements.

- For *Kajjali* preparation *ShuddhaParad* 500gm and *Shuddha Gandhak* 1kg was mixed together and rubbed together in a *khalwayantra* for 7 days.
- 1470 gm *Kajjali* was obtained.
- Total loss of *Kajjali* was 30gm

Table no. 1. Analysis of *kajjali*:

a)The Ratio of Mercury and sulphur in which *Kajjali* was found to be approximately 1:3 with absence of total ash and Acid insoluble ash. Similarly water Soluble extractive of *kajjali* was found less than alcohol soluble extractive.

b) Analysis of *raktakarpaspushpa svaras bhavit kajjali*: ratio of mercury and sulfur in *raktakarpaspushpa bhavit kajjali* was found to be approximately 1:1. This shows that *raktakarpaspushpa svaras* probably has a role on decreasing the sulfur part of *kajjali*. Analysis showed water soluble extractive to be less than alcohol soluble extractive.

Table no.2:

a)TLC Analysis of *raktakarpaspushpa svaras Bhavit kajjali* & *Raktakarpaspushpa svaras* (plain) shows many spots of common Rf values in both. This might be used as a future reference to analyse whether *raktakarpaspushpa svaras bhavana* has been given or not.

b)The weight of *kajjali* was found to be increased by 10 gm after it was processed with *raktakarpaspushpa svaras*. This shows that probably some part of *bhavana dravya* remains in *kajjali* after *bhavana*. (Needs further research).

CONCLUSION:

1) The wt. Of *raktakarpaspushpa bhavit kajjali* is found increased because of *bhavana*. The analysis showed percentage of mercury and sulfur nearly became equal. It means by mixing of *bhavanadravya* in *kajjali* the bond between mercury and sulphur may get broken and properties of *bhavanadravya* were added to each and every atom of the hg & s, hence it will be helpful in increasing potency of *kajjali* (needs further research).

2) As compared to plain *kajjali* in which ash content was zero, it was found present in *raktakarpaspushpa bhavit kajjali*. It may be because of presence of organic matter of *bhavana dravya* used for *bhavana sanskara*.

3) TLC Analysis of *raktakarpaspushpa svaras Bhavit kajjali* & *Raktakarpaspushpa svaras* (plain) shows many spots of common Rf values in both as per Table 2. This might be used as a future reference to analyze whether *raktakarpaspushpa svaras bhavana* has been given or not.

4) As per Table 1, percentage of 'S' in Plain *Kajjali* with respect to that in *bhavit kajjali* is found to be decreased. This shows that *raktakarpaspushpa svaras* probably alters the Hg & S bonding, as there was probably no other source of Sulphur loss.

REFERENCES :

1. *Rasatarangini* (Eleventh edition 1979) Edited by Pandita Kashinath shastri Published by Motilal Banarasidas) Adhyay 6 shloka no. 112
2. *Bhaishajya Ratnavali* Edited by Jaidev shloka no. 51.
3. *Rasaratnasamucchaya* Edited by Dr. A. D. Satapute (1st edition 2003)Adhyay no.8, shloka no.5

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