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Pharmaceutical Evaluation of *Mrityunjaya Rasa* w.s.r. to preparatory method of *Rasendra Sara Sangraha*

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ABSTRACT

Mrityunjaya Rasa is a herbo-mineral formulation mentioned under *Jwarachikitsa* in *Rasendra Sara Sangraha* along with different *Anupana*. It is having ingredients like *Shuddha Hingula*, *Shuddha Gandhaka*, *Shuddha Vatsanabha*, *Shuddha Tankana*, *Pippali* and *Maricha* which show significant result on various types of fever. All drugs of *Mrityunjaya Rasa* are having properties like *Katu Rasa*, *Teekshna Guna* and *Jwaraghana* action. *Rasaushadhis* given in smaller dosage restore the individual's health immediately. In preparation of *Rasaushadhis*, precaution must be taken throughout the whole procedure. Now-a-days quality assured drugs are not formulated because Standard operative procedure (SOPs) is not followed properly so chances of adverse drug reaction also increase. By following SOP genuine medicines can be prepared. The purpose of standardizing traditional remedies is obviously to ensure therapeutic efficacy. To establish the efficacy along with safety of *Rasaushadhis*, precaution must be taken throughout the whole procedure to formulate the medicine. So here an effort is placed to validate the process of *Shodhana* of *Hingula*, *Gandhaka*, *Vatsanabha* and *Tankana* and to develop a Standard operative procedure for preparation of *Mrityunjaya Rasa*.

Key words: *Mrityunjaya Rasa*, *Rasa Aushadhi*, *Rasendra Sara Sangraha*, *SOP*.

INTRODUCTION

Standardization of Ayurvedic formulations is mandatory not only to maintain the basic acuities of the quality but also to meet the thrust of inquisitiveness of modern man. Apart from their therapeutic efficacy in minute doses, *Rasaushadhis*

are found very effective for the preservation and promotion of positive health and prevention of diseases which is the primary aim of Ayurveda, mentioned by Acarya Gopalkrishna Bhatta.^[1] *Mrityunjaya Rasa* is a herbo-mineral formulation mentioned under *Jwarachikitsa* in *Rasendra Sara Sangraha*^[2] along with different *Anupana*. Standard operating procedures (SOPs) can be defined as recognized methods to be followed routinely for the presentation of designated operations in designated situations. By following SOP genuine medicines can be prepared.

OBJECTIVES OF THE STUDY

In the current study it was aimed to develop a Standard operative procedure for preparation of *Mrityunjaya Rasa* and to validate the process of *Shodhana* of *Hingula*, *Gandhaka*, *Vatsanabha* and *Tankana*.

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MATERIALS

Raw drugs required for preparation were collected from SDM Ayurveda Pharmacy, Udupi. Preparation of *Mrityunjaya Rasa* was carried out in practical hall of Department of PG Studies in *Rasashastra* and *Bhaishajya Kalpana*, SDM College of Ayurveda, Udupi.

METHODS

The whole method of preparation includes;

1. Assessment of *Grahyalakshana* of ingredients
2. *Shodhana* of *Hingula*.
3. *Shodhana* of *Gandhaka*.
4. *Shodhana* of *Vatsanabha*.
5. *Shodhana* of *Tanakana*.
6. Preparation of *Pippalichoorna*.
7. Preparation of *Marichachoorna*.
8. Preparation of *Mrityunjaya Rasa*.

Standard Operative Procedure

1. Assessment of *Grahya Lakshana* of ingredients

Drugs were collected after assessing *Grahya - Agrahya Lakshana* as mentioned in classics.

2. *Shodhana* of *Hingula*^{[3],[4]}

Grahya Hingula^[5] was taken 65g. in quantity for *Shodhana* and powdered in *Khalvayantra*. A big size of *Nimbu* was taken and 20 ml of juice was obtained from it. Initially little amount of juice was added to just wet the mass then it was triturated. Then juice was added again and triturated well until *Subhavita Lakshanas*^[6] were observed, when mass was not sticking to the walls of the *Khalvayantra* and part of it when taken in between fingers it got flattened, edges of it were not cracked and fingerprints were appreciated on its surface. It was dried properly before going for next *Bhavana*. Similarly seven *Bhavanas* were given in same manner. After completion of last *Bhavana* it was taken in a vessel and kept for some time then it was decanted carefully this process was repeated until complete removal of *Amalatawa* as told by Acharya Sadananda Sharma.

Without washing with water if it is used as it is not purified properly it will not be as beneficial as expected and may produce complications. Then it was dried properly under sunlight and stored for further use.

OBSERVATION

After each *Bhavana* lusture of *Hingula* was diminished and colour was changed.

RESULT

- *Ashuddha Hingula* taken: 65g.
- Time taken: 8 days
- *Shuddha Hingula* obtained: 63g.
- Weight loss: 2g.

3. *Shodhana* of *Gandhaka*^[7]

The *Grahya Gandhaka*^[8] 50g. in amount was powdered in *Khalvayantra*. *Godugdha* was taken in a steel vessel. It was tied with a cloth smeared with *Goghrita*. In an iron pan the *Goghrita* was added and heated on *Mandagni*. Then *Gandhaka* was added to this pan and heated on *Mandagni* till melted and changed into orange colour. Then this melted *Gandhaka* was poured immediately into the vessel containing *Godugdha* through the cloth. Solid mass of *Gandhaka* was collected from the *Godugdha* and washed with hot water and dried by rubbing with cloth and powdered. The procedure was repeated for two more times. In Every time milk and *Ghritha* were taken fresh. *Ghritha* was taken in equal quantity to *Gandhaka*. *Gandhaka* finally obtained was powdered, washed with hot water until *Snigdhatata* of *Ghritha* was removed and dried properly, weighed and stored.

Observations

The physical impurities such as sand, thread etc. got collected on the cloth in black colour.

Result

- *Ashudda Gandhaka* taken - 50g
- No. of days taken - 1 day
- *Shuddha Gandhaka* obtained - 44g

- Weight loss - 6g

4. Shodhana of Vatsanabha^[9]

Grahya Vatsanabha^[10] in 70g amount was cut in to *Chanaka* size. It was kept in *Mrutapatra* and filled with fresh *Gomutra*. It was kept under bright sunlight for three days, daily fresh *Gomutra* was taken. *Gomutra* was discarded daily in the evening and the pieces of *Vatsanabha* were spread over a plastic sheet. After 3rd day this outer covering was peeled off with knife and then it was washed with hot water and dried under sunlight and stored for further use.

Observations

Consistency of *Vatsanabha* became soft after one day.

Result

- *Ashuddha Vatsanabha* taken - 70g
- No. of days taken - 5 days
- *Shuddha Vatsanabha* obtained - 50g
- Weight loss - 20g

5. Shodhana of Tankana^[11]

Tankana was taken in 100 gm quantity. First of all *Tankana* was powdered. Then a broad mouth *Mrutapatra* was heated. In this vessel powder of *Tankana* was spread and heated. After some time hissing sound was started and liquid portion started to evaporate. After this it changed in to white coloured light weight substance like *fullika* and it resembled like flower. Complete removal of hissing sound and fumes indicated complete evaporation of water content then heating source was turned off and *Shodhita Tankana* was obtained. *Utfulitha Tankana* was made into fine powder in *Khalvayantra*.

Observations

After heating for a while hissing sound was observed.

Result

- *Ashudda Tankana* taken - 100g
- No. of days taken - 1 day
- *Shuddha Tankana* obtained - 40g
- Weight loss - 60g

6. Preparation of Pippali Choorna

First of all 50g *Pippali* was dried under sunlight properly. Then it was subjected for powdering. *Stoola Choorna* was filtered through cloth. Fine powder was obtained.

Observation

Colour was changed after powdering.

Result

- *Pippali* taken - 50g
- *Pippali Choorna* obtained - 30g
- Weight loss - 20g

7. Preparation of Maricha Choorna

First of all 50g *Maricha* was dried under sunlight properly. Then it was subjected for powdering.

Stoola Choorna was filtered through cloth. Fine powder was obtained.

Observation

Colour was changed after powdering.

Result

- *Maricha* taken - 50g
- *Maricha Choorna* obtained - 30g
- Weight loss - 20g

8. Preparation of Mrityunjaya Rasa^[12]

Reference: *Rasendra Sara Sangraha Jwara Chikitsa* (4/15)

Date of commencement: 29/03/2016

Date of completion: 05/04/2016

Ingredients required with quantity

1. *Shuddha Hingula* : 60 g
2. *Shuddha Gandhaka* : 30 g
3. *Shuddha Vatsanabha* : 30 g
4. *Shuddha Tankana* : 30 g
5. *Pippali Choorna* : 30 g
6. *Maricha Choorna* : 30 g

Figure 1: Pictures depicting ingredients of Mrityunjaya Rasa.



Bhavana Dravya

In case of Anukata of Bhavana Dravya, Jala is taken as Bhavana Dravya and in case of Anuktata of no. of Bhavana in reference seven times Bhavana should be given according to Bhaishajya Ratnavali. So here 130 ml of filtered water was taken as Bhavana Dravya for each Bhavana.

Apparatus required

Tula Yantra, Khalva Yantra, spoon, measuring jar

Principle

Mardana, Bhavana

Procedure

Shuddha Hingula was taken in a Khalvayantra and made into powder. Shuddha Gandhaka was added in it and triturated well. Shuddha Vatsanabha Choorna was added in it. Shuddha Tankana was added into it and homogenous mixture was prepared. Pippali and Maricha were added and triturated well. Then Jala was added little by little by triturating well until Subhavita Lakshana. When mass was stopped to sticking the walls of Khalvayantra and part of it taken in between fingers it got flattened, edges of it were not cracking and fingerprints were appreciating on its surface, then it was allowed to drying.

Similarly six Bhavanas were completed. Before each Bhavana it was dried properly. Vati size of 62.5mg (Mudga Pramana) were rolled, dried under shade and stored in air tight glass container.

Observations

- Colour was changed during the process.
- Time taken for each Bhavana - 2.30 hours

Characters

- Colour - Brownish red
- Smell - Specific
- Touch - Hard

Result

- Quantity of ingredients taken - 210 g
- Quantity of final product obtained - 225 g
- Weight gain - 15 g
- Weight gain in percentage – 6.7 %

Precautions

- Bhavana Dravya was added little by little to avoid spillage.
- Filtered water was taken as Bhavana Dravya.

Table 1: Observation of preparation of Mrityunjaya Rasa.

Parameters	Before Bhavana	After Bhavana
Colour	Bright red	Brownish red
Touch	Rough	Hard
Smell	Teekshna	Teekshna
Weight variations	210 gm	225 gm

Figure 2: Pictures depicting preparation of Mrityunjaya Rasa.

DISCUSSION

After developing SOPs and maintaining the hygiene during the process, finished products can be appreciated as therapeutically fit to serve the patients. The idea regarding SOP and quality control was well known to *Acharyas* that's why they have mentioned *Grahya - Agrahya Swarooma of Dravyas* and different steps of processing of drugs like *Shodhana, Marana* etc. To prepare *Mrityunjaya Rasa* according to *Rasendra Sara Sangraha* was taken as study because of its detailed explanation regarding *Shodhana* of *Rasa Dravyas* mentioned in reference itself and mode of administration along with different

Anupana also gives a clear cut idea to physician to administer the drug in different types of *Jwara*. Ingredients are having properties of *Katu, Teekshna Guna* and *Jwaraghana* action. By following SOP one can achieve the goal of fulfilling the expectations of society to get genuine medicines.

CONCLUSION

For compound formulation, the term standardization implies, to ascertain the parameters established for an ethically and classically prepared formulation from authenticated standardized raw drugs. The purpose of standardizing traditional remedies is to ensure therapeutic efficacy. To establish the efficacy along with safety of *Rasaushadhis*, precaution must be taken throughout the whole procedure to formulate the medicine. Most of *Jwarahara Yogas* are containing *Hingula* and *Vatsanabha* as main drugs, so proper *Shodhana* procedures are required to nullify the impurities of these *Rasaushadhis*. So here an effort is placed to validate the process of *Shodhana* of *Hingula, Gandhaka, Vatsanabha* and *Tankana* and to develop a Standard Operative Procedure for preparation of *Mrityunjaya Rasa*.

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