International Research Journal of Ayurveda & Yoga Vol. 7(7), pp. 9-13, July, 2024
Available online at http://irjay.com
ISSN: 2581-785X
DOI: 10.48165/IRJAY.2024.70702

ORIGINAL RESEARCH ARTICLE

Pharmaceutical Standardization of *Amritamanjari Rasa* Prepared with Two Different Purification Media of *Hingula*

Subrat Kumar Bhutia[1]*, Rakesh Bramhankar[2], Arun Kumar Das[3]

[1]Associate Professor, Department of Rasashastra and Bhaisajya Kalpana, Govt. Ayurved College and Hospital, Bolangir, Odisha, India.
[2]Associate Professor, Department of Rasashastra and Bhaisajya Kalpana, Rajiv Lochan Ayurved Medical College, Chandakhuri, Durg, Chhattisgarh, India.
[3]Professor & Principal, Department of Rasshastra and Bhaisajya Kalpana , Gopabandhu Ayurveda Mahavidyalaya and Hospital, Puri, Odisha, India

ARTICLE INFO

Article history:
Received on: 27-06-2024
Accepted on: 15-07-2024
Available on: 31-07-2024

Key words:
Amritamanjari,
Metalo-mineral,
Sheep milk,
Standardize,
Two purificatory media

ABSTRACT

Ayurveda is one of the traditional systems of medicine. A number of medicinal preparations are developed to maintain the health and curing ailments by maintaining the balance state of *Doshas* and *Dhatus*. It is possible by *Ousadhi Kalpana* having herbal, animal, and metalo-mineral origin. *Rasa Aushadhis* are unique formulations mainly from metals and minerals and having the qualities of small dose, quick action, palatability, and longer shelf life. *Amritamanjari Rasa* is mentioned in *Bhaishajya Ratnawali*, 5th chapter, *Jwara Chikitsa Prakaranam,* which is best indicated in *Jwara roga* (*Sadyojwara*). *Amritamanjari Rasa* contains *Suddha Hingula* (Cinnabar), *Suddha Vatsanabha* (*Aconitum ferox*), *Suddha Tankana* (Borax), *Pippali* (*Piper longum*), *Maricha* (*Piper nigrum*), and *Jatikosa* (*Jatiphala - Myirstica fragrans*). The pharmaceutical procedures adopted in this study are *Shodhana, Churna Nirmana,* and preparation of *Vati* of *Amritamanjari.* In this study, importance is given to standardize *hingula* with two purificatory media i.e *jambhira nimbu swarasa* having strong acidic in nature and *Meshi dugdha*(sheep milk) having alkaline in nature.

1. INTRODUCTION

Ayurveda provides quality life to the human beings by giving emphasis on the preventive aspect of the diseases. The individuals of the later part of the 21st century are not so sound in their physical or mental health due to different adversities of life. Naturally, this physical and mental imbalance reflects in the form of various anomalies pertaining to the human body. *Jwara* or Fever is one of them. Fever is described as a separate illness, a symptom, and a complication of many ailments in *Ayurveda* classics. Despite the advancement of contemporary science, fever remains the first and foremost symptom of almost all clinical consultations. In *Ayurvedic Shastras, Jwara* is considered as the "king of all the diseases." Here, living beings not only suffer physically but also mentally causing stress, worry, and anxiety.[1] It affects at any point of time throughout the life time, from birth to death.

Ayurveda practitioners developed a number of medicinal preparations for the treatment of various ailments by maintaining the balance state of *Doshas and Dhatus*. It is possible by *Ousadhi Kalpana* having herbal, animal and metalo-mineral origin. Among the different branches of *Ayurveda*, the branch that deals with the preparation of *Ayurveda* Medicines is known as *Rasashastra or Ayurveda* pharmaceutics. The *Rasousadhis* are effective due to their smaller doses, agreeable taste, and quick onset of action, better palatability, and effectiveness in lesser duration of treatment.[2] There are many antipyretic formulations having miraculous actions mentioned in *Ayurvedic* literatures. *Amritamanjari rasa* is one such formulation which is described in classical texts as a universal antipyretic formulation for relieving fever.[3]

In the present study, an effort has been made to highlight the significance of these pharmaceutical procedures and to standardize the method of preparation of *Amritamanjari* with two different purificatory media of *Hingula*.

Corresponding Author:
Subrat Kumar Bhutia,
Associate Professor, Department of Rasashastra and Bhaisajya Kalpana,
Govt. Ayurved College and Hospital, Bolangir, Odisha, India.
Email: subratbhutia@gmail.com

1.1. Aims and Objectives

1. Preparation of *Amritamanjari Rasa*
2. Physicochemical analysis of *Amritamanjari Rasa* with two different purificatory media of *Hingula* (Cinnabar).

2. MATERIALS AND METHODS

Amritamanjari Rasa with two different purificatory media is prepared in the Pharmacy of PG Dept *Gopabandhu Ayurveda Mohavidyalaya, Puri,* and *Odisha*. The compositions are given in below Table 1.

3. PHARMACEUTICAL STUDY DESIGN

This section includes major steps:
1. Identification and collection of raw drugs.
2. Purification and processing of raw drugs.
3. Preparation of *Amritamanjari Rasa.*

3.1. Identification and Collection of Raw Drugs

Identification, selection, and collection of raw drugs play active role for preparing an *Ayurvedic* formulation. These things help to maintain the quality of the formulation. Hence, this part of this study deals with the same.

3.2. Purification and Processing of Raw Drugs

The entire part was carried out in three stages

3.2.1. Stage-I
- *Hingula* (Cinnabar) *Shodhana*
- *Vatsanabha* (*Aconitum ferox*) *Shodhana*
- *Tankana* (Borax) *Shodhana*

3.2.2. Stage-II
- Preparation of *Pippali* (*Piper longum*) *Churna*
- Preparation of *Maricha* (*Piper nigrum*) *Churna*
- Preparation of Jatikosa (*Myristica fragrans*) *Churna*

3.2.3. Stage-III
- Preparation of Homogenous mixture

3.3. Preparation of *Amritamanjari Rasa*

Here, *Amritamanjari rasa* is prepared with two different purificatory media, that is, *jambhira nimbu swaras* and *Meshi Dugdha*
- Trial compound - 1 was prepared by *Sodhita hingula* with *Jambhira Nimbu Swarasa*
- Trial compound - 2 was prepared by *Sodhita Hingula* with with *Meshi Dugdha*
- Preparation *Vati* of *Amritamanjari Rasa* with trituration of homogenous mixture by *Jambhira Swarasa*.

3.3.1. Amritamanjari Rasa preparation

3.3.1.1. Materials: Trial compound-1
- *Shuddha Hingula* – 50g (*By Jambhira Nimbu Swarasa*)
- *Shuddha Vatsanbha* – 50g
- *Shuddha Tankana* – 50g
- *Pippali Churna* – 50g
- *Maricha Churna* – 50g
- *Jatiphala Churna* – 50g
- *Jambhira Swarasa* – Q.S shown in table 2

3.3.1.2. Materials: Trial compound-2
- *Shuddha Hingula* – 50g (*By Meshi Dugdha*)
- *Shuddha Vatsanbha* – 50g
- *Shuddha Tankana* – 50g
- *Pippali Churna* – 50g
- *Maricha Churna* – 50g
- *Jatiphala Churna* – 50g
- *Jambhira Swarasa* – Q.S shown in table 3

3.3.2. Apparatus

Khalwayantra, steel vessel, cloth, wt machine, spoon, trey, and glass jar.

3.3.3. Method/principle

Shodhana, Udukhalwa Yantra, Churna Nirmana, Bhavana, Vati Nirmana.

3.3.4. Procedure

For preparing, *Amritamanjari rasa shodhana* was done so as to remove toxic effects of that drug.

Hingula Shodhana was done according to the method that was mentioned in *Rasa Ratna Samuchaya*.[4] First, *Asuddha Hingula* was taken in *Khalwayantra* and pounded to make fine powder. Sufficient quantity of *Jambhir Nimbu Swaras* was added in *Hingula* of Trial compound-1and *Meshi Dugdha* was added to *Hingul* of trial compound-2 for *Bhavana*. Trituration was carried out up to it dried completely. Same procedure was continued for 7 times.

Shodhana of Vatsanabha was carried out by deeping it into *Gomutra* for 3 days.[5] *Vatsanabha* treated by cow's urine on TLC studies have shown that pseudoaconitine and aconitine were converted into far less toxic substances veratroyl pseudaconitine and benzoylaconine, respectively, only in traditional *Ayurvedic Shodhana*.[6] Every morning fresh *gomutra* was added and kept in sunlight. The *Vatsanabha* pieces were taken out and washed properly with hot water and dried. Dried *Vatsanabha* pieces were taken in a *udukhalwa yantra* and pounded to make it powder form.

According to *Rasa Tarangini*, the author mentioned that *Nirjalikarana* is to be done to purify *Tankana. Ashuddha Tankana* was taken in a clean and dry *Khalwa yantra* and pounded to make powder. Powder *Tankana* was taken in an earthen plate and heated on mild fire up to the water content in the *Tankana* was completely evaporated.[7]

Pippali, Maricha, and Jatiphala churna were carried out by pounding in *Udukhalwa* according to the reference mentioned in *Sharangadhara Samhita Madhyama Khanda*[8] and the homogenous mixture of *Shodhita Hingula, Shodhita Tankana Churna, Pipali churna, Marichaa Churna, and Shodhita Vatsnabha Churna* was taken and mixed in the ratio according to the reference *Sloka* to obtain the homogenous mixture of *Amritamanjari*.[9] *Jambhira Swarasa* was added and trituration was done until it attains *Vati Lakshana.* 125 mg size of *Vati* were prepared by rolling the mixture between thumb and index finger.[10] After drying, *Vati* were stored in glass jar.

4. RESULTS

280 g of *Amritamanjari rasa* was obtained by preparing with *Jambhira Nimbu Swarasa* and 270 g of *Amritamanjari rasa* was obtained by preparing with *Meshi Dugdha.*

4.1. Organoleptic Parameters

The ancient parameters such as *Varna, Sparsha, and Gandha* were studied at postgraduate department of *Rasashastra, Gopabandhu Ayurveda Mahavidyalaya, Puri, Odisha.*

4.2. Physical Tests

The analytical parameters were studied at *QUALITY CONTROL LABORATORIES*

ALN RAO MEMORIAL AYURVEDIC MEDICAL COLLEGE

AND PG CENTRE, KOPPA, DISTRICT: CHIKMAGALUR, KARNATAKA, 577126

Reference Number: *QC/ST/27/2022 Date:6th July 2022*

Analysis for Trial Compound-1 (*Amrita Manjari Rasa*) and Trial Compound-2 (*Amrita Manjari Rasa*)

Result:
The organoleptic test results are shown in Table 4
Physicochemical parameters are shown in Table 5
Preliminary phytochemical tests (Qualitative Tests) are shown in Table 6
Fluorescent tests are shown in Table 7
Quantitative tests are shown in Table 8
Thin layer chromatography are shown in Table 9
Microbial contamination is shown in Table 10.

5. DISCUSSION

This work incorporates comparative study on standardization of *Amritamanjari Rasa* prepared with two different purificatory media of *Hingula*. The selected drugs for the trial compound are herbomineral in nature and prepared in *Vati* form for internal administration. In this study, more focus was given on the preparations with two different ways using the different *Sodhan* process and to utilize it in the treatment of *Jwara*. This formulation was prepared according to the reference book *Bhaisajya Ratnavali*. Ingredients of *Amritmanjari Rasa* are *Hingula, Tankana, Vatsanabha, Pippali, Maricha, and Javitri.* In this study, *Amritmanjari Rasa* was prepared in two method, that is, Trial compound-1 and Trial compound-2 on the basis of *Hingula Sodhan*. In Trial compound-1, *Hingula Sodhan* was done with *Jambeera Swarasa,* and in Trial compound-2, *Hingula Sodhan* was done with *Meshi Dugdha*. The main aim of preparing drug by two different ways was for standardization of both the compound pharmaceutically, analytically to compare the effect that which one was more suitable in relieving the disease *Jwara*.

Shodhita Hingula - *Yogavahi, Sarvamayahara, Rasayana*
Shodhita Tankana - *Kaphavatahara, Katu, Ushna, Rasayana*
Shodhita Vatsanabha - *Yogavahi,Pranadayi,Jwaraghna,Tridoshaghna*
Pippili - *Deepana,Rasayana,Vatasleshmahara,Jwaraghna*
Maricha - *Kapha Vatahara, Deepana*
Jatikosh - *Laghu, Agni Deepaka and Grahi*
Jambhira swarasa - *Ruchikra, Agnidepaka and Hridya*

The main causative factor for *Jwara is Ama. Hingula, Marich, Vatsanabha, Pippali* having the *Deepana,* and *pachana* property which causes *Amapachana. Marich, Pippali, and Vatsanabha* have *Ushana Theekshana Gunas* and *Tankana* which have *Lekhana* action, this reduces the *Swedaavarodha. Vatsnabha* have the *Sweda Pravartaka* action, which helps to create the sweating which decreases the *pitta* and reduces *Santapa in Jwara*. Some ingredients are having *Yogavahi Guna* such as *Hingula and Vatsanabha* which enhance activities of other ingredients *Trikatu, Tankana, Jaipala,* and *Haritaki* that are combined with it, without losing their own properties.[1]

6. CONCLUSION

Pharmaceutical standardization of *Rasa Oushadis* is an important requisite for the establishment of their efficacy and consistent biological activity.[11] Regarding better efficacy on the symptoms of *Jwara* among the both formulations still to be proved. Hence, more research is needed on *Amritamanjari Rasa* to make it a novel medicine. However, by inference from all the observation of laboratory data, we may conclude that Trial Compound 1-*Amritamanjari Rasa* (*Nimbu Swarasa Sodhan*) shows good activity than Trial compound 2-*Amritamanjari Rasa* (*Meshi Dugdha Sodhan*).

7. ACKNOWLDGMENTS

Nil.

8. AUTHORS' CONTRIBUTIONS

All the authors contributed equally in design and execution of the article.

9. FUNDING

Nil.

10. ETHICAL APPROVALS

This manuscript not required ethical approval as it is an analytical study.

11. CONFLICTS OF INTEREST

Nil.

12. DATA AVAILABILITY

This is an original manuscript and all data are available for only review purposes from principal investigators.

13. PUBLISHERS NOTE

This journal remains neutral with regard to jurisdictional claims in published institutional affiliation.

REFERENCES

1. Sharma M. Pharmaceutico analytical and experimental study of Amritamanjari Rasa W.S.R. to its anti-pyretic activity on albino rats. World J Pharm Pharm Sci 2017;6. doi: 10.20959/wjpps20179-10158
2. Dole VA. Rasa ratna samuchaya (1/4). Varanasi: Choukambha; 2022.
3. Shastri AD, Das G. Bhaishajya Ratnavali (B.R.5/550-551). Vol. 2. Varanasi: Choukambha Publication; 2017.
4. Dole VA. Rasa Ratna Samuchaya (3/142-143). Varanasi: Choukambha.
5. Kashinathshastri P. Rasa Taranginiby Pranacharya Sri Sadananda Sharma. Ch. 24/19-22. Delhi, Sloka: Mothilal Banarasi Das. p. 651; 2014.
6. Deore SL, Moon KV, Khadabadi SS, Deokate UA, Baviskar BA. Evaluation of toxicity of 'Vatsanabha' (Aconitum ferox, ranunculaceae) before and after shodhana. J Young Pharm 2013:5:3-6.
7. Kashinathshastri P. Rasa Tarangini. In: Kasaratrika-Vijnaniya Taranga. 2014th ed., Ch. 13. Delhi: Mothilal Banarasi Das; 2022. p. 318.
8. Tripathi B. Sharngadhara, Sarangadhara Samhita of with the Hindi Commentary. Madhymakhanda. Ch. 6/1. Varanasi: Chaukhambha Subharati Prakshan; 2011. p. 172.
9. Shastri AD, Das G. Bhaishajya Ratnavali. Vol. 2. Ch. 29/95-98. Varanasi: Choukambha Publication; 2017. p. 303.
10. Shastri AD, Das G. Bhaishajya Ratnavali. Vol. 2. Ch. 29/93-95. Varanasi: Choukambha Publication; 2017. p. 302.
11. Ashok M, Sridurga C. Pharmaceutical standardization of amritamanjari. Int J Ayurveda Pharma Res 2019;7.

How to cite this article:
Bhutia SK, Bramhankar R, Das AK. Pharmaceutical Standardization of *Amritamanjari Rasa* Prepared with Two Different Purification Media of *Hingula*. IRJAY. [online] 2024;7(7);9-13.
Available from: https://irjay.com
DOI link- https://doi.org/10.48165/IRJAY.2024.70702

Table 1: Compostition of Amritamanjari ras

Lakshanas	*AmritariRasa*
Varna	Brick red
Sparsha	Smooth
Gandha	*Tikshna*
Rasa	*Katu, Tikta*

Table 2: Ingredients of trial compound-1 (*Amrita Manjari Rasa*) (b.r. 5/550-551)

S. No.	Drug Name	Quantity
1.	*Shodhita Hingula* (Cinnabar) (*By Jambhira Nimbu Swarasa*)	1 part
2.	*Pippali* (*Piper longum*)	1 part
3.	*Maricha* (*Piper nigrum*)	1 part
4.	*Shodhita Vatsanabha* (*Aconitum ferox*)	1 part
5.	*Shodhita Tankana* (Borax)	1 part
6.	*Jatikosh* (*Myristica fragrans*)	1 part
7.	*Jambhira Swarasa* (Citrus lemon)	Q.S.

Table 3: Ingredients of trial compound-2

S. No.	Drug Name	Quantity
1.	*Shodhita Hingula* (Cinnabar) (*By Meshi Dugdha*)	1 part
2.	*Pippali* (*Piper longum*)	1 part
3.	*Maricha* (*Piper nigrum*)	1 part
4.	*Shodhita Vatsanabha* (*Aconitum ferox*)	1 part
5.	*Shodhita Tankana* (Borax)	1 part
6.	*Jatikosh* (*Myristica fragrans*)	1 part
7.	*Jambira swarasa* (Citrus lemon)	Q.S.

Table 4: Organoleptic characters

	Trial compound-1	Trial compound-2
Color	Mud-green	Mud-green
Odor	Characteristic (plesant)	Characteristic (pleasant)
Taste	Slightly sour, pungent	Slightly sour, pungent
Texture	*Vati* (pills)	*Vati* (pills)

Table 5: Physicochemical parameters

	Trial compound-1 (%)	Trial compound-2 (%)
Loss on drying at 105°C	2.44	1.67
Total ash	36.30	35.70
Acid-insoluble ash	10.56	9.76
Water-insoluble ash	15.24	14.15
Water-soluble ash	84.76	85.85
Alcohol-soluble extractives	15.23	14.34
Water-soluble extractives	18.43	20.89
pH (10% aqueous solution)	7.20+0.10	7.63+0.10

Table 6: Preliminary phytochemical tests (qualitative tests)

Hydro-alcoholic extracts were used		
	Trial compound-1	Trial compound-2
Carbohydrate	Present	Present
Protein	Present	Present
Alkaloid	Present	Present
Cardiac glycoside	Present	Present
Flavonoids	Present	Present
Tannins	Present	Present
Anthraquinone glycoside	Present	Present
Triterpenoides	Present	Present

Table 7: Fluorescent tests

Trial Compound-1		
	Under Visible Light	Under Long UV
Sample+Water	Reddish-cream	Fluorescent yellow
Sample+MeOH	Yellowish-cream	Fluorescent yellow
Sample+10% NaOH	Orange-yellow	Fluorescent green
Sample+10% HCl	Light crick-red	Fluorescent yellow
Sample+10% HNO_3	Light orange	Fluorescent green
Sample+10% H_2SO_4	Light brick-red	Fluorescent yellow
Sample+10% NH_3	Reddish-brown	Brown
Trial Compund-2		
	Under Visible Light	Under Long UV
Sample+Water	Reddish-cream	Fluorescent yellow
Sample+MeOH	Yellowish-cream	Fluorescent yellow
Sample+10% NaOH	Orange-yellow	Fluorescent green
Sample+10% HCl	Light crick-red	Fluorescent yellow
Sample+10% HNO_3	Light orange	Fluorescent green
Sample+10% H_2SO_4	Light brick-red	Fluorescent yellow
Sample+10% NH_3	Reddish-brown	Brown
Tablet tests for Vati		
	Trial compound-1	Trial compound-2
Diameter (Mean+St. Dev.)	0.5+0.02 mm	0.6+0.04 mm
Weight (Mean+St. Dev.)	0.18+0.02 g	0.18+0.03 g
Friability (Loss percentage)	0.45%	0.50%
Hardness (kg/cm^2)	5.11+0.09	5.85+0.11
Disintegration time	6.15 min	8.00 min

Table 7: Quantitative tests

	Trial compound-1 (%)	Trial compound-2 (%)
Total mercury	18.65	17.70
Total Sulfur	11.25	10.12
Boron	1.78	1.69
Sodium	0.25	0.27
Potassium	0.31	0.39
Calcium	0.42	0.46
Magnesium	0.22	0.24

Table 9: Thin layer chromatography

Solvent System: Toluene: Ethyl acetate: 40: 10
Methanol extracts were used for spotting.
No spots were observed under visible light

Under Long UV		
Rf Values	**Trial compound-1**	**Trial compound-2**
0.04	Bright fluorescent green	Bright fluorescent green
0.10	Fluorescent green	Fluorescent green
0.28	Fluorescent green	---
0.34	Bright fluorescent green	Bright fluorescent green
0.52	Bright fluorescent green	Bright fluorescent green
0.67	Bright fluorescent green	---
0.82	Bright fluorescent green	Bright fluorescent green

Table 10: Microbial contamination

	Trial compound-1	**Trial compound-2**
Total aerobic count	Nil	Nil
Total fungal count	Nil	Nil