WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 7, Issue 19, 903-914. Research Article ISSN 2277– 7105

PHARMACEUTICAL STANDARDIZATION OF TRIPHALADI TAILA

***[1]Dr. Ramkumar Pudi, [2]Dr. Sridurga Ch., M.D. (Ayu), Ph.d.**

*[1]PG Scholar Final Year, Department of Rasa Shastra and Bhaishajya Kalpana, S.V. Ayurvedic College, TTD, Tirupati, Andhra Pradesh, India.

[2]Professor and HOD, Department of Rasa Shastra and Bhaishajya Kalpana, S.V. Ayurvedic College, TTD, Tirupati, Andhra Pradesh, India.

Article Received on
28 Sept. 2018,

Revised on 18 October 2018,
Accepted on 08 Nov. 2018

DOI: 10.20959/wjpr201819-13722

***Corresponding Author**
Dr. Ramkumar Pudi
PG Scholar final year, Department of Rasa Shastra and Bhaishajya Kalpana, S.V. Ayurvedic College, TTD, Tirupati, Andhra Pradesh, India.

ABSTRACT

The Sneha kalpa are par excellent to other dosage forms due to their wider advantages like increased absorption and extraction of fat soluble active principles. Sneha kalpas are the only dosage from which can be administered conveniently both internally as well as externally. Triphaladi Taila is an important Herbo mineral formulation described in Rasa Ratnakara indicated for the management of the disease Palitya as Kesharanjaka. The ingredients present in the "Triphaladi Taila" are Shodhita Lauha churna, Triphala churna, Bhringaraja swarasa and Tila Taila. The main pharmaceutical procedures involved in the preparation of Triphaladi Taila are Shodhana, Kashaya nirmana, Churna nirmana, Kalka nirmana, Swarasa nirmana, Taila paka and Bhusthapana of Taila. The specific pharmaceutical blend of these contents can result in a more effective formulation. Till date, no research work has been carried out to standardize this formulation. Therefore the present study has been planned to standardize the method of preparation of Triphaladi Taila according to the method explained in the classical literature.

KEYWORDS: Triphaladi Taila, Palitya, Kesharanjaka, Bhusthapana, Lauha Shodhana, Pharmaceutical Standardization.

INTRODUCTION

Ayurveda is a highly evolved and codified system of health science based on its own unique and original concepts. Rasashastra and Bhaishaja Kalpana is the branch of Ayurvedic science that exclusively focuses on various aspects of preparation of medicines. It is known to

establish change in the qualities and properties of the drug either by inducing a new property or improving the existing one and finally making the drug safe and more effective.

Sneha kalpana means medicated fatty preparations.[1] These are prepared by using oil or ghee with some decoction or other liquids and paste of the drugs by heating method. It is one of the important and prime dosage forms in Ayurveda that has been emphasized in various conditions both for its internal and external application.[2]

MATERIALS AND METHODS

Collection of Raw material

Lauha was collected from Chennai Market and foreign matter adhering to raw drugs was removed and cleaned. Haritaki, Vibhitaki and Amalaki were collected from Sri Srinivasa Ayurveda Pharmacy, TTD, Tirupati Fresh Bhringaraja was collected from the herbal garden, S.V. Ayurveda College, TTD, Tirupati. It was then identified macroscopically and studied for important botanical characteristics. The base, which was used for the preparation of this taila i.e; Tila taila was also purchased from local market.

Methods

Entire preparation of Triphaladi Taila[3] was carried out in Department of Rasa Shastra and Bhaishajya Kalpana, TTD's S.V. Ayurvedic College, Tirupati.

Triphaladi taila was prepared strictly as per the guidelines of the classical literature. The changes occurring during the preparation were noted keenly.

1. The drugs enumerated in the recipe.
2. Wide mouthed vessel – stainless steel vessel was taken.
3. Khalva yantra.
4. Grinder for preparing kalka
5. Iron pan for Lauha Sodhana
6. Strong spatula with long handle.
7. Measuring jar
8. A clean cloth for filtering.
9. A pyrometer for recording the temperature.
10. Heating aid - Gas stove.
11. Earthen pot with lid for Bhusthapana of taila
12. Cloth and multhanimitti for sandibandhana

The ingredients of the formulation are

Name of the content	Quantity
Sodhita Lauha	3 Parts
Triphala churna	3 Parts
Bhringaraja	6 Parts
Tila Taila	6 Parts

The entire pharmaceutical study was carried out in five stages

1. **Stage I**

- Preparation of Triphala kashaya
- Visesha shodhana of Lauha

2. **Stage II**

- Preparation of Triphala churna
- Preparation of kalka of Triphala and Lauhachurna

3. **Stage III**

- Preparation of Bhringaraja swarasa

4. **Stage IV**

- Tailapaka

5. **Stage V**

- Bhusthapana

1. Triphala Kwatha Nirmana[4]

Ingredients: Yavakuta Triphala churna – 3kg, Water –21 litres.

Procedure: Yavakutta Triphala churna was soaked in water for whole night. Next day the soaked drug was subjected to moderate heat and reduced to 1/4th. It was then filtered using a clean cloth and kashaya was collected.

Observations: Brown coloured Triphala Kashaya of characteristic odour was obtained.

2. Lauha Visesha Shodhana[5]

Ingredients: Lauha churna3 kg, Triphala Kashaya- 5.250 L.

Procedure: Lauha churna was taken in an iron pan and heated to red hot. It was quenched in Triphala Kashaya. This process was repeated for seven times. Each time the Kashaya was changed.

Observations

a) In Lauha

- In 1st Nirvapa it took 30 minutes to become red hot.
- From 2nd Nirvapa onwards the time taken to become red hot was gradually reduced.
- Hissing sound was heard during quenching of hot Lauha in Kashaya.
- After complete procedure, the colour of Lauha turned into deep black like collyrium.

b) In Triphala Kashaya

- After quenching the Lauha churna in Triphala Kashaya, it started boiling.
- On successive Nirvapa, black coloured powder deposited in the Kashaya.

3. Preparation of Triphala churna[6]

Ingredients: Triphala – 3 kg

Procedure: Haritaki,Vibhitaki, Amalaki were taken in equal quantity. Then these drugs were grinded in a Pulverizer and made into powder separately. Then these three powders were sieved through sifter sieve separately and mixed together.

Observations: Triphala churna was very fine.

4. Preparation of kalka of Triphala and Shodhita Lauha churna[7]

Ingredients: Triphala Churna – 3 kg, Shodhita Lauha churna – 3 kg

Procedure: Shodhita Lauha churna and Triphala were taken in equal quantity in a grinder. This mixture was made into paste by adding sufficient quantity of water through grinding.

Observations

- The kalka formed is fine and smooth.
- The colour of kalka is deep black like collyrium.

5. Preparation of Bhringaraja swarasa[8]

Ingredients: Bhringaraja panchangas – 6 kg

Procedure: Bhringaraja panchangas were taken, cleaned properly, pounded in a khalva yantra and made into paste.It was squeezed and filtered through a clean cloth and Bhringaraja Swarasa was collected.

Observations

- Greenish coloured juice was obtained.

6. Preparation of Triphaladi Taila[3]

Ingredients: Tila taila- 6 L, Kalka of Triphala and Sodhita Lauha churna - 6kg, Bhringaraja swarasa - 6 L.

Procedure: Tila taila was taken in wide mouthed vessel and placed over heating device on moderate fire. Kalka of Triphala and loha churna was added to the Tila taila. Bhringaraja swarasa was added to taila and the contents were stirred well. The heating was continued till the kharapaka lakshnas were obtained.Then the contents were filtered through a clean cloth to obtain Triphaladi taila.

Observations

- Foam was observed when Taila paka completes. Kalka is hard, rough to touch and doesn't yield any Sneha on pressing.

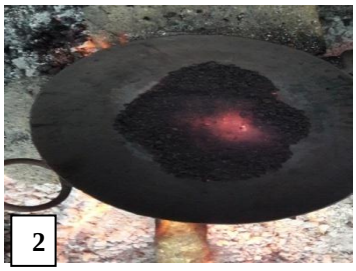
7. Bhusthapana of Triphaladi Taila[9]

Ingredients: Earthern Pot, lid,ghrita, cloth, multhanimitti.

Procedure: An earthen pot was taken, and innerside of the pot was smeared with ghrita. Prepared Triphaladi Taila was poured into this earthen pot. Then pot was covered with lid and the joints were sealed with cloth and multanimitti. It was then dried. The pot was placed in a pit. Later pit was covered completely with mud and kept undisturbed for 1 month. After one month earthen pot was taken out from the pit. Then Triphaladi Taila was transferred into bottles.

Observations

- Colour of taila turns more darker after bhusthapana.



Lauha Shodhana

Figure No :

1. Ashudda Lauha
2. Heating of Lauha to red hot
3. Nirvapa in Triphala kashaya
4. Shuddha Lauha

Triphala Churna Nirmana

Figure No:

5. Haritaki
6. *Vibhitaki*
7. *Amalaki*
8. *Triphala churna*

Triphala Kashaya Nirmana

Figure No:

9. Triphala
10. Boiling of Triphala in water
11. Triphala Kashaya

Bhringaraja Swarasa Nirmana

Figure No:

12. Bhringaraja panchanga

13. Bhringaraja Swarasa

Preparation of Taila

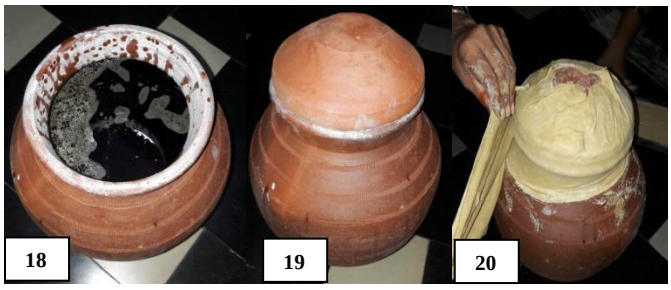
Figure No:

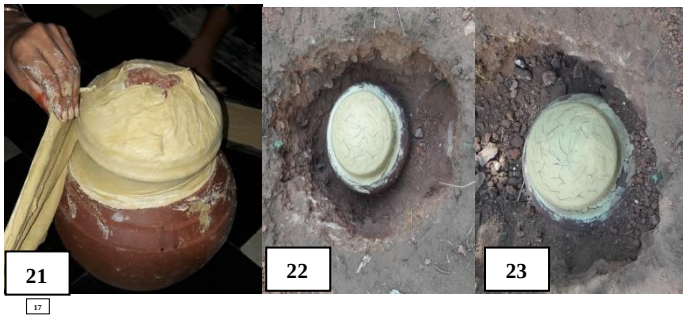
14. Kalka of Triphala and Shudda Lauha

15. Adding of Kalka to Tila Taila

16. Adding of Swarasa to Tila Taila

17. Boiling of oil during Taila paka





Bhusthapana of Taila

Figure No:

18. Taila poured into Pot

19. Pot closed with lid

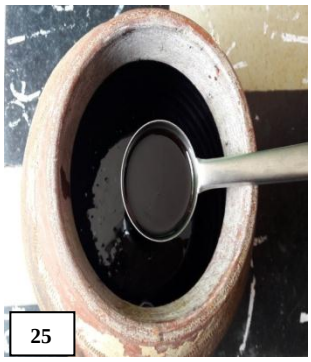
20. Pot sealed with cloth & Multanimitti

21. Sandhibandhana

22. Pot placed into a pit

23. Pit covered completely with mud

24. After a month pot was taken out from the pit



25. Triphaladi Taila

26. Taila poured into bottles

RESULT

Table No. 1: Showing the result of Triphala Kwatha Nirmana.

Weight of Triphala	Quantity of Water	*Kashaya* prepared
3000 g	21 L	5.25 L

Table No. 2: Showing the result of Lauha visesha Shodhana.

Weight	Final Weight	Loss in Weight	% Loss in Weight
3000g	2940g	60g	2%

Table No. 3: Showing the Results of preparation of Triphala Churna.

Initial weight	Final weight	Loss in weight	Loss in %
Triphala – 3000 g	Triphala churna-2940 g	60g	2%

Table no. 4: Showing preparation of Triphaladi Taila.

Initial quantity of Taila	6000 ml
Final quantity of Taila	5800 ml
Loss of Taila	200 ml

DISCUSSION

Lauha Visesha Shodhana

- There are various methods mentioned for Shodhana of Lauha in Rasa Shastra texts. These procedures can be categorized as Nirvapa, Pachana, Abhiseka, etc.

- But in this study, Nirvapa with Triphala Kashaya has been selected for Shodhana procedure according to Rasa Ratna Samucchaya.
- Nirvapa is the process of heating the material to red hot and quenching it into a liquid substance.
- 16 Pala of Triphala is boiled in 128 Palas of water. When it reduced to 32 Pala, the mixture was strained through cloth to obtain decotion of Triphala.[10]
- In this decotion, Five Palas of small Iron pieces were quenched after strong heating.
- The procedure of Nirvapa (heating and quenching) was done in Triphala Kashaya for 7 times.
- This procedure of Nirvapa was selected for Lauha shodhana, because Nirvapa in liquid media makes the material more brittle by increasing the grain size.
- Due to hardness of Lauha, repeated heating and quenching (Nirvapa) in specific media disrupts the compression-tension equilibrium in the internal structure of Lauha.
- In this Nirvapa method, during the process of heating weakening of electrostatic forces and crystal lattice of Lauha takes place.
- Because of the high temperature, more collision between the particles occurs. (Collision theory).
- Due to this weakening of bonds occurs which causes structural weakness that may develop into crack. (Griffith theory).
- Immediate quenching in liquid media after heating causes disruption in compression tension equilibrium.
- This leads to increased brittleness and reduction in hardness of the material.
- As a result of this, some part is converted to coarse powder and some into fine powder. After each quenching, powder was found as sediment in media.

Role of Media

In Visesha Shodhana of Lauha, Triphala Kwatha is used. This media may have particular functions in purification and detoxification of Lauha.

This liquid media act as cooling media during process of Nirvapa, these may serve a favourable atmosphere to the material for occurrence of particular chemical reaction and compound formation. These may enter through the cracked surface of the material and cause film coating and further heating leads to breaking of the material.

Some important considerations during Nirvapa process of Shodhana

- Heating should be done to complete red hot state of Lauha.
- The ladle should be inert, it must not react with the material during heating.
- Red hot material should be quenched immediately.
- After quenching materials should be allowed to complete coolness in liquid media.
- Specified times of heating and quenching should be followed as per the Rasa texts.
- The amount of liquid media should be as much that the material should be dipped in completely.
- The size and shape of the equipments of heating and cooling are important, Ladle used for heating must be flat, round and wide and vessel used for cooling must be of wide mouth and deep enough.

Churna Nirmana

- Haritaki, Vibhitaki and Amalaki were made into fine powder according to the reference mentioned in Sarangadhara Samhitha.

Swarasa Nirmana

- Bhringaraja panchangas were taken and made into swarasa according to the reference mentioned in Sarangadhara Samhitha.

Kalka Nirmana

- Triphala and Shodhita Lauha churna were made into fine paste according to the reference mentioned in Rasa Ratnakara Rasayanakanda.

Taila paka

As per the reference, Triphaladi taila[3] was prepared with 3 parts of shudda Lauha, 3 parts of Triphala churna, 6 parts of Bhrigaraja swarasa and 6 parts of Tila taila. Tila taila was taken in wide mouthed vessel and placed over heating device on moderate fire. Kalka of Triphala and loha churna was added to the Tila taila. Bhringaraja swarasa was added to taila and the contents were stirred well. In order to prevent the spillage of taila due to overflowing, a wide mouthed large vessel was taken for the preparation. The colour of the taila changed from light brown to black after paka. The colour change probably is an indication of solubility of active principles more into taila with the increased contact time. The heating was continued till the kharapaka lakshnas were obtained. Foam was observed when Taila paka completes. Kalka is hard, rough to touch and doesn't yield any Sneha on pressing. Khara paka is good for external

application because it is totally devoid of moisture content. Hence it is easily absorbed through the epidermal cells. Then the contents were filtered through a clean cloth to obtain Triphaladi taila. Final quantity of taila obtained was 5800 ml and the percentage of loss was 20%.

Triphaladi Taila was poured into the earthen pot and was placed into a pit. After one month earthen pot was taken out from the pit. Triphaladi Taila was transferred into bottles.

CONCLUSION

Taila kalpana, comes under sneha kalpana, which is mentioned in the classical text books. Triphaladi taila is a herbo mineral medicine meant for external application, mentioned in Rasa Ratnakara Rasayanakanda indicated in Palitya as Kesharanjaka. The chief ingredients of Triphaladi Taila are Lauha churna, Triphala churna, Bhringaraja swarasa and Tila taila. Principle procedures involved in the preparation of Triphaladi Taila are Kashaya nirmana, Shodhana, Swarasa nirmana, Kalka nirmana, Churna nirmana, and Snehapaka. Nirvapa with Triphala Kashaya can be considered as best method for Lauha shodhana**.**

Pharmaceutical standardization is the first step towards standardization of any drug. So it should be done with utmost accuracy. This leads to reproducibility of drug and production of safe and efficacious drug.

REFERENCES

1. Dr. Rama Chandra Reddy, Bhaisajya Kalpana Vijnanam, 2nd edition Chaukhambha Sanskrit Bhawan, Varanasi, 2001, Chapter 5, pg-362.
2. Das Govinda, Bhaishajya Ratnavali, Edited and enlarged by Mishra Brahma Shankar, Commented by Shastry Ambikadatta, English translation by Lochan Kanjiv, 1st edition, Chaukambha Sanskrit Bhavan, Varanasi, 2006, pg366-377.
3. Rasa Ratnakara Rasayanakanda, Ramji Technologies publications Telugu version by Dr Ramakrishana acharyulu, 2011, 5th chapter sloka no 39-41.
4. Sharangdhara Samhita Madhyama Khanda 2nd chapter.
5. Rasa. Ratna. Samuccaya. 5th chapter sloka no 102-103.
6. Sarngadhara Samhita Madyma khanda 6th chapter sloka no 2 Chaukhambha Sanskrit series, Varanasi, translated by Dr P. H. C. Murthy.
7. Sarngadhara Samhita Madyma khanda 5th chapter, Chaukhambha Sanskrit series, Varanasi, translated by Dr P. H. C. Murthy.

8. Sarngadhara Samhita Madyma khanda 1st chapter sloka no 2 Chaukhambha Sanskrit series, Varanasi, translated by Dr P. H. C. Murthy.
9. Rasa Ratnakara Rasayanakanda, Ramji Technologies publications Telugu version by Dr Ramakrishana acharyulu, 2011, 5th chapter sloka no 39-41.
10. Rasaratnasamucchaya by Dr. V. A. Dole, 5th chapter pg no 197.