

PHARMACEUTICAL STUDY ON PIPPALI MODAKA

Dr. Gayatri Khillar¹

Prof. (Dr.) Rajib Kishore Jena²

Dr. Jitendra Kumar Chhatra³

Dr. Chandan Kumar Sahoo⁴

1. P.G. Scholar, PG Dept. of Rasashastra & B.K, Gopabandhu Ayurveda Mahavidyalaya, Puri, Odisha
2. Professor & HOD, PG Dept. of Rasashastra & B.K, Gopabandhu Ayurveda Mahavidyalaya, Puri.
3. Lecturer, PG Dept. of Rasashastra & B.K, Gopabandhu Ayurveda Mahavidyalaya, Puri, Odisha
4. Lecturer, PG Dept. of Rasashastra & B.K, Gopabandhu Ayurveda Mahavidyalaya, Puri, Odisha

Abstract:-

Ayurveda considered as the ancient science of life. The ultimate aim of Ayurveda is *svasthyorjaskaram* (natural immunity with strength promoter) and *roganut* (disorder alleviating). To cure diseases *vaidya* takes different measures. These measures include different *Panchakarma* procedures & medicines. The medicines in Ayurveda are presented in wide range of dosage forms and **Vati** is one of the stable and potent of these. The *Vati* formulation is also largely preferred and prescribed dosage form. The pioneer in the *bheshaja nirmana* is *Acharya Sharangdhara*. There are different *vati* mentioned in *Sharangdhar Samhita Madhya Khand-Vati Prakarana*. *Vataka*, *Gutika*, *Vati*, *Modaka*, *Vatika*, *Pindi*, *Guda* and *Varti* are the synonyms of *vati*. Differences may prevail in the shape or size of the above synonyms, but the pharmaceutical procedure remains same. “*Pippali Modaka*” is the classical Ayurvedic herbal formulation which is mentioned by *Sharangadhar* in the above chapter in 37-39 verse. *Pippali Modaka* is prepared according to the classical text. The present study is made to evaluate the pharmaceutical study.

KEYWORDS: Modaka, Pippali Modaka, Pharmaceutical study.

INTRODUCTION:

Ayurveda is very much rich in its pharmaceutical aspects since the *Samhita* period. The *Panchavidha Kashaya Kalpana* i.e. *Swarasa*, *Kalka*, *Srita*, *Sita* and *Phanta* was described by legend scholar *Acharya Charaka* for the first time in a scientific manner. These *Panchavidha Kashaya Kalpana* are the basic formulations of all Ayurvedic formulations. The *Vati Kalpana* is the solid medicament in the form of rolled preparation is undoubtedly centuries old. Medicines prepared in the form of pills are known as *vati* or *gutika*. These are made up of one or more drugs of plants, animal and mineral origin. Fine powder of medicinal drugs when mixed with water, *swarasa*, *gomutra*, *godugdha* or *madhu*, etc. is prepared in various sizes, is called as *Vati*, *Vatak Modaka* or *Gutika*. A lot of formulations of *Vati Kalpana* are mentioned in the classics. According to *Acharya Sharangadhara*, *Modaka* is considered as a synonym of *Vati Kalpana* itself. It can be prepared with *Agni Samyoga* in *Gudapaka* method and without *Agni Samyoga* by doing *Mardana* in *Khalwa Yantra*. The formulations prepared with *Agni Samskara* will be having comparatively more shelf life than the one without *Agni Samskara*. Also, formulations prepared with *Agni Samskara* will be comparatively lighter for digestion & *Pippali Modaka* is also prepared with *agni samskara*. Easy administration of the drugs, better palatability as well as the better accuracy of dosages forms make it unique formulation.

Sharangadhara in Sharangadhara Samhita has mentioned "Gutika Kalpana" as an individual entity in the 7th chapter of Madhyama Khanda.

“क्षौद्राद्द्विगुणितं सर्पिर्घृताद्द्विगुणं पिप्पली ॥३७॥
सिता द्विगुणिता तस्याः क्षीरं देयं चतुर्गुणम्।
चातुर्जातं क्षौद्रतुल्यं पक्त्वा कुर्याच्चमोदकान् ॥३८॥
धातुस्थांश्च ज्वरान्सर्वांश्चासंकासं च पाण्डुताम्।
धातुक्षयं वह्निमान्द्यं पिप्पलीमोदकोजयेत् ॥३९॥ “(Sa.Ma.7/37-39).

As per Sharangadhar, Pippali Modaka is used in the treatment of Dhatukshyaya, Jwara, Swasa, Kasa, Pandu etc. and by analyzing the properties of its ingredients it seems that its use may be justified in these clinical conditions.

MATERIALS AND METHODS:-

- ❖ Before the raw materials used for the preparation of the finished product, proper identification of all plant materials is extremely necessary for its genuineness. This is done by evaluating their quality by various parameters. All ingredients were collected from Local market of Puri, Odisha.
- ❖ Identification of raw drugs was done in Pharmacognosy Laboratory by the experts from Dravyaguna department and Rasa Shastra & Bhaishajya Kalpana Department of Gopabandhu Ayurveda Mahavidyalaya, Puri where they were proven authenticated as per the standards of Ayurvedic Pharmacopia of India.
- ❖ Pharmaceutical study was done in the laboratory of Rasa Shastra and Bhaishajya Kalpana, Gopabandhu Ayurveda Mahavidyalaya, Puri.
- ❖ Equipments needed for the study are Udukhalwa Yantra, mixer grinder, sieves, clothes, weighing machine, stainless steel vessels, spoons, gas stove as fire source and wide mouthed vessel were used for this practical.

Ingredients & Compositions of Pippali Modaka:-

Ingredients	Scientific/English Name	Ratio
Madhu	<i>Apis mellifera</i>	1 part
Ghrita	<i>Clarified Butter</i>	2 part
Pippali	<i>Pipper longum</i>	4 part
Sarkara	<i>Saccharum officinarum</i>	8 part
Go-Dugdha	<i>Cow's Milk</i>	16 part
Twak	<i>Cinnamomum zeylanicum</i>	1/4 th part
Ela	<i>Elettaria cardamomum</i>	1/4 th part
Patra	<i>Cinnamomum tamala</i>	1/4 th part
Nagakeshara	<i>Mesua ferrea</i>	1/4 th part

All the raw drugs were removed of impurities, weighed, and then separately powdered in the Udukhalwa Yantra to make coarse powder. This was again separately powdered in mixer grinder and sieved to obtain the fine powder which was then separately weighed, labelled, and stored in air-tight containers for further use.

- For the preparation of *Pippali Modaka*, all the powders of the ingredients were measured separately as per requirement and then mixed homogenously.
- Then milk was taken in a big stainless steel vessel & heated over mild fire.
- Stirring and heating was continued till the milk turned thicker and then ghee & sugar were added to it.
- After the mixture attaining a thicker consistency of 2-3 thread, heat was stopped and other ingredients were added to it with continuous mixing till a homogenous mixture was formed.
- After complete cooling, honey was added to it. Then with hands smeared with *ghee*, it was rolled into *Modakas* of approximately 6 g size, dried in shade and stored in air-tight containers.

Figures for the Preparation of Pippali Modaka:-



Fig1: Raw Drugs

Fig2 : Milk

Fig3:Adding Ghee to Milk



Fig4: adding raw drugs

Fig5: making homogenous mixture

Fig6: Packaging

Precautions :

- One should be keen in observing for the consistency and immediately the flame should be switched off.
- The powders should be mixed little by little with continuous stirring.
- Proper drying should be done to avoid fungal attack
- Honey should be added after complete cooling .

RESULT:**Observation in preparing Pippali Modaka**

Total quantity taken	14 kg
Total quantity obtained	9.5kg
Loss	4.5 kg
Total time duration	2 hours and 35 minutes

Organoleptic Characteristics of Pippali Modaka

Colour	Greyish
Smell	Smell of Ghee was prominent
Taste	Katu & Madhura
Consistency	Solid with Smooth texture

DISCUSSION:

While powdering the raw drugs, wastage was seen more in *Pippali* , *Ela* & *Patra* . When powdering was done, the loss was seen as dusting of the powder in the mixer grinder and while sieving, some parts remained in the form of rough particles due to the presence of fibre content in it. The consistency observed while preparing *Pippali Modaka* was important. One should be alert during this stage as, if the *Paka* is prolonged, it can affect the final consistency of the product. Also, if the flame is switched off before proper consistency, the final product will be softer, and the firmness won't be there. During drying the *Modakas*, sufficient space should be there between each other to avoid sticking between each other. This plate also should be smeared with ghee to prevent the sticking of *Modakas* to the plate. The final product was brownish in colour. The product had *Katu Pradhana Rasa*. The *Katu Rasa* might be contributed by *pippali* which is the major constituent of the formulation. *Tikta Rasa* might be due to the presence of *Twak* and *Patra*. *Madhura Rasa* was noticeable due to the presence of sugar. The formulation *Pippali Modaka* had characteristic smell of the ingredients and the smell of ghee, and was easily identifiable. The consistency of the formulation *Pippali Modaka* was solid and had smooth texture which shows the proper binding of the ingredients in the formulation.

CONCLUSION:

The formulation *Pippali Modaka* is mentioned in the text *Sharangadhar madhyam khanda*. The present study shows that the proper consistency of *Pippali Modaka* can be obtained by doing the milk into thicker consistency and then homogenously mixing the fine powders and rolling into *Modakas*. The practical difficulty while preparing *Modaka* is assessment of *Paka Lakshana* and the rolling of crackless modaka carefully.

REFERENCES:

1. Acharya Sharangadhara, Sharangadhara Samhitha, with English translation by Dr. P. Himasagara Chandra Murthy, Chaukhambha Krishnadas Academy, Varanasi, edition 2nd, Madhyama khanda, chapter 7, shloka no: 37; 2007. p. 208.
2. The Ayurvedic Pharmacopoeia of India, First edition, New Delhi; Govt. of India, 'Ministry of Health and Family welfare' Department of Indian Systems of Medicine and Homeopathy, 1999, 133-134.
3. Dravya Guna Vigyana by P.V. Sharma Chaukhambha Bharati Academy, Varanasi, Reprint 2003; II:278.