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"PHYSICO-CHEMICAL AND PHARMACEUTICAL EVALUATION OF AJAMODADI VATI"

Dr.Shubhangi. S. N[1]

1. Associate Professor, Shalyatantra Department,

LRPAMCHPGI&RC, Islampur.

Corresponding Authors e mail Id.: shubhasn@gmail.com.

Abstract:

In Ayurvedic line of treatment, Ajamodadi churna is common indication for many diseases such as Amavata, sandhi vata, Gradrasi, Kati shula, Gudaroga, tuni-pratituni, viswachi and other kapha and vataj vyadhi [1,2], but churna may not be palatable for everyone. It can be made palatable through the most compact of all dosage forms that is in the form of Vati [3].

Preparation of vati holds its own importance in Ayurveda. Though it is very long process and consumes much time, it is widely accepted by all the population [4]. Method of preparation of vati explained in Ayurveda classics is of two types i.e., bhavana method and paak method [5,6]. Among these two types, paak method is preferred more as it is more palatable.

Along with preparation, physico-chemical and phyto-chemical analysis is very essential to access its qualities in order to standardize any Vati. Here an attempt is made in performing physico-chemical and phyto-chemical analysis to access the medicinal qualities inherited in Ajamodadi Vati.

Key words: Vati, tablet, Preparation of Ajamodadi vati, physico-chemical and phyto-chemical analysis.

INTRODUCTION:

Ajamodadi churna is commonly used drug in Ayurveda line of treatment for many diseases such as Amavata, sandhi vata, Gradrasi, Kati shula, Gudaroga, tuni-pratituni, viswachi and other kapha and vataj vyadhi [7,8]. Churna may not be palatable for everyone. Keeping this in view, Vati was prepared. They are the most compact of all dosage forms. Tablets are having more stability compared to liquid formulations and maintain accuracy of dosage. Katu and Tikta dravyas can be given easily in tablet form after giving suitable coating to the tablets [9].

MATERIALS AND METHODS:

I. Collection of Raw Drugs:

Raw drugs required for the preparation of Ajamodadi Vati were Procured from GMP certified KLE Ayurveda pharmacy, Khasbagh, Belagavi.

All the raw drugs were Authenticated from the Central Research Faculty of KLEU's shri. B.M.K Ayurveda mahavidhyalay, shahapur, Belagavi.

Table 1. Ingredients with proportion

Sl. No	**Ingredients**	**Latin Name**	**Part Used**	**Ratio in parts**
01	Ajamoda	*Apium graveolens* Linn	Beeja	**1**
02	Abhaya	*Terminalia chebula* Retz	Phala	**5**
03	Pippali mula	*Piper longum* Linn	Mula	**1**
04	Shunti	*Zingiber officinale* Roxb	Khanda	**10**
05	Maricha	*Piper nigrum* Linn	Beeja	**1**
06	Pippali	*Piper longum* Linn	Phala	**1**
07	Vidang	*Embelia ribes* Burm	Phala	**1**
08	Devadaru	*Cedrus deodara* Roxb	Khanda	**1**
09	Chitraka	*Plumbago zeylanica* Linn	Mulatwak	**1**
10	Shatapushpa	*Anethum sowa* Kurz	Phala	**1**
11	Saindha valavana	*Sodii chloride*		**1**
12	Vidhara	*Argyreia speciosa*	Mula	**10**
13	Guda	*Jaggery*		**34**

II. METHODOLOGY:

A. Process of preparation of Ajamodadi Vati [10, 11,12] :

Process of preparation is carried out in 4 stages:-

Stage 1:Lavigation Process:

a. Prescribed quantity of drugs were taken and pounded separately and made into sukshma churna. Then all the individual churna are mixed together thoroughly to make homogeneous mixture. (Figure 1)
b. Gooda Paak was prepared. (Figure 2)
c. Then the homogeneous mixture was added little by little to the Gooda paak and stirred well, until cluster of the mixture was formed. (Figure 3 & 4)
d. Vati having size 1.045-1.55grams were prepared. (Figure 5)

Stage 2: Drying of Vati:

Prepared Vati were taken in a tray and kept in dryer (hot air oven) at 40^0C temperature.

Stage 3: Tablet Polishing: (Figure 6)

Dried vatis were subjected to polishing in a machine, until the surface of vati became smooth and change in colour was observed. (Figure 7)

Stage 4: Storage and Packaging: (Figure 8)

After polishing, the vatis were stored in air tight containers, each having 48 vatis and mouth of container was sealed.

Figure.1

Figure.2

Figure.3

Figure. 4

Figure. 5

Figure. 6

Figure. 7

Figure. 8

B. Analysis of Ajamodadi Vati:

Tests performed are as follows

i. **Organo-leptic test** viz., sparsha, rupa, rasa, Gandha were performed.
ii. **Physico-chemical test** viz., Total Ash value, Loss on drying, Alcohol

soluble extract, Water soluble extract, Tablet disintegration time, Tablet hardness Test, Acid insoluble Ash.

iii. **Phyto-chemical test** viz., organic and Inorganic.

iv. **Thin Layer Chromatography** for long and short waves were done with solvent

TOULENE: ETHYL ACETATE (9:1)

Results:

Table 2. Organo-leptic Tests:

Sr. No	TESTS	RESULTS
01	Form	Vati
02	Colour	Black
03	Taste	Sweet and Astringent
04	Odour	Characteristic

Table 3. Physico-chemical Tests

Sr. No	TESTS	VALUE
01	Total Ash Value	5.30%
02	Loss on Drying	5.34%
03	Alcohol Soluble Extract	18.40%
04	Water Soluble Extract	35.12%
05	Acid Insoluble Ash	0.204%
06	Tablet Hardness Test	3.66kg/cm
07	Tablet Disintegration Time	50min.

Table 4. Phyto-chemical Tests: Organic

Sr. No.	TESTS	Water soluble extract	Alcohol soluble extract
01	Reducing Sugar	+	+
02	Monosaccharides	--	--
03	Pentose sugar	--	--
04	Hexose sugar	--	--
05	Proteins	--	--
06	Amino acids	--	--
07	Fats and Olis	--	--
08	Steroids	--	--
09	Cardiac glycosides	+	+
10	Anthroquinone glycosides	--	--
11	Saponin glycosides	+	+
12	Cynogenetic glycosides	--	--
13	Coumarin glycosides	--	--
14	Flavonoids glycosides	+	+
15	Alkaloid glycosides	+	+
16	Tannins and Methanol	--	--

Positive = + Negative= --

Table 5.Phyto-chemical Tests: Inorganic

Sr. No.	TESTS	VALUE
01	Test for Calcium	--
02	Test for Magnesium	--

03	Test for Sodium	+
04	Test for Potassium	--
05	Test for Iron	--
06	Test for Sulphate	--
07	Test for Phosphate	--
08	Test for Chloride	--
09	Test for Carbonate	--
10	Test for Nitrates	--

Positive = + Negative = --

Table 6. Thin Layer Chromatography:

(Solvent:- Toulene : Ethyl acetate (9:1) ; Total Length: 7.7cms.)

Sr. No.	Short Waves	Long Waves
01	0.19cm	0.19cm
02	0.27cm	0.36cm
03	0.40cm	0.72cm
04	0.44cm	0.79cm
05	0.51cm	-----
06	0.70cm	-----

DISCUSSION:

Wastage was seen more while preparing churna of Maricha, pippali, pippali mula and chitraka.

For the preparation of vati, binding agent is necessary. In all the classical texts, two methods for preparation of vati are mentioned viz., Bhavana method and Paak method.

To make more palatable for all individual patients, Paak method was preferred.

Jaggery contains plenty of nutrients as it is not completely refined like sugar [13].

In this way, Ajamodadi vati was prepared and different Analytical investigations were performed.

CONCLUSION:

All the findings of physico-chemical tests were within the normal limits (As per standard range mentioned in Ayurvedic Pharmacopeia of India.

As it contains, Saponin Glycosides and Flavonoids, it acts as *Anti-inflammatory*.

Due to presence of Alkaloids, it acts as *Analgesic*; *Muscle Relaxants* and *Anti-Bacterial*.

Sodium present in it stimulates *Neuron function*.

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