


Research Article
PREPARATION AND EVALUATION OF HERBO-MINERAL DRUG: AROGYAVARDHINI VATI (TABLET)
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ABSTRACT

As per ancient *Ayurveda* scholars for getting desirable outcome of any medication, it should be precisely analyzed before prescribing to the patient. In maximum cases there is lack of data regarding their detailed standardized pharmaceutical procedures. *Arogyavardhini vati* is one of the herbo-mineral drugs which are widely used by *Ayurveda* physicians for the treatment of skin disorders and hepatic diseases. Medicines prepared using traditional method may not have the desired quality and batch to batch consistency. Hence, there is a need of Pharmaceutical and analytical validation of the formulations on Ayurvedic as well as modern parameters. *Arogyavardhini vati* is traditionally used in *Vati* form in this study efforts were made to transform it into tablet dosage form. The present work deals with the preparation of *Arogyavardhini vati* in tablet form using modern equipments and techniques. Pharmacopeial standards are set for the Ayurvedic formulations in tablet form. Three batches of the sample were prepared and their analytical validation was set. All the three batches are identical and do not show any significant difference in their analytical parameters. HPTLC fingerprinting also shows similar Rf values which confirms the product prepared by this method is authentic. The set parameters may be used as reference parameters for further pharmaceutical processes.

KEYWORDS: *Arogyavardhini Vati* (Tablet), *Ayurved Saar Sangraha*, Skin and hepatic disorders, HPTLC.

INTRODUCTION

Ayurved Medical research emphasizes upon the basic drug research because the success of treatment depends mostly upon the quality of drug. Ayurvedic pharmaceuticals also deals with such research where basic formulations are modified without violating the basic principles. This is done to find out the most potent drug; to have a permutation of herbal and herbo-mineral compounds; to enhance the shelf life of a formulation or to offer a formulation having easy administration.²

In the *Ayurvedic* field of practice, though several types of *Kalpas* are being used presently, a tablet plays an important role in *Ayurveda* pharmaceuticals owing to many advantages like easy administration, palatability, convenient form for dispensing and transportation.

The word '*Arogya*' means good health and '*Vardhini*' means improver. It means a formulation, which improves good health is known *Arogyavardhini*. The drug has been mentioned in various Ayurvedic texts, such as *Rasaratna samucchaya*, *Bhaisajyaratnavali* etc. on various disorders like leprosy, jaundice, fever, oedema, obesity and

other hepatic disorder³etc. *Rasaratnasamucchaya* mentioned that *Arogyavardhini Vati* is "*Sarvaroga-prashamani*"⁴.

The present study aims at preparation of this herbomineral formulation in tablet form and its pharmaceutico-analytical study.

Material and Methods
Collection and authentication of raw material

Herbal ingredients were collected from the authentic source at Nagpur. All herbal raw drugs were authenticated by pharmacognosy lab at Unijules Life sciences Limited Nagpur. Mineral ingredients are collected from authentic sources from Nagpur. Analysis was carried out by employing different physico-chemical parameters for raw materials. Three batches of this formulation were prepared for its authentication purpose viz. Batch A, Batch B and Batch C.

Ingredients⁵

Each batch of 2kg was prepared which contains.

Contents	Latin name	Quantity (gm)
<i>Shuddha Parad</i>	Mercury	45.6
<i>Shuddha Gandhak</i>	Sulphur	45.6
<i>Louha bhasma</i>	Iron	45.6
<i>Abrak bhasma</i>	Mica	45.6
<i>Tamra bhasma</i>	Copper	45.6
<i>Triphala Churna</i>	<i>Terminalia chebula</i>	91
	<i>Terminalia belirica</i>	91

	<i>Embilika officinalis</i>	91
<i>Shuddha Shilajit</i>	Asphaltum	137
<i>Shuddha Guggul</i>	<i>Commiphora mukul</i>	182.5
<i>Chitrak mool Churna</i>	<i>Plumbago zeylanica</i>	182.5
<i>Kutaki</i>	<i>Picrorhiza kurroa</i>	1000
<i>Neem patra</i>	<i>Azardirachta indica</i>	500
Excipients: Starch		160
MCC		240

Preparation of Arogyavardhini vati⁶

- *Shodhana* of *Shilajit* was carried out by using *Triphala Quatha*.
- *Shodhana* of *Guggul* was carried out by *swedana* method using *Triphala Quatha*.
- Herbal ingredients were powdered by pulverizer and sifted from sieve no. 80.
- Fresh *Nimb patra swaras* was prepared by grinding and squeezing.
- Then herbal powder and *Nimbpatra swaras* was passed through edge runner and given *Bhavana* for 3 *Prahara* (9 hours).
- Obtained material was dried in electric air drier for temperature not more than 60°C.
- Purified *Shilajit* and *Guggula* were added to the herbal ingredients which were mixed in a mass mixer.
- *Dhatukajjali* (*Kajjali*, *Louha bhasma*, *Abhrak bhasma* and *Tamra bhasma*) was prepared by sequential *Mardana*.

- All the above ingredients were mixed homogenously in mass mixer.
- Excipients were added to the mixture for proper binding of the tablets.
- Spherical tablets of *Arogyavardhini vati* were prepared in automatic tablet making machine.

Weight after each pharmaceutical process was noted to observe the processing loss.

Observations and results:

All the analytical processes which have been done during this study are explained here along with the observations and results.

Physicochemical analysis of Arogyavardhini Vati**Classical parameters**

Three samples of *Arogyavardhini Vati* were tested using classical analytical properties like *Shabda*, *Sparsha*, *Rupa*, *Rasa*, *Gandha*. All the samples have attained the specific classical parameters mentioned in Ayurvedic texts about *Arogyavardhini vati*.

Modern parameters:

Test	Sample A	Sample B	Sample C
Description	Blackish brown coloured circular, compressed, flat, uncoated tablets	Blackish brown coloured circular, compressed, flat, uncoated tablets	Blackish brown coloured circular, compressed, flat, uncoated tablets
Average wt.	0.2530 gm	0.2590 gm	0.2590 gm
Uniformity of wt. of tablet ¹	Complies (Range:0.242-0.262g. none>5%)	Complies (Range:0.2508-0.2591g. none>5%)	Complies (Range:0.2508-0.2591g. none>5%)
Diameter	8.19 mm	8.26 mm	8.26 mm
Thickness	3.61 mm	3.51 mm	3.51 mm
Hardness ¹	2.00Kg/sq.cm	2.37Kg/sq.cm	2.37Kg/sq.cm
Friability ¹	0.02%w/w	0.53%w/w	0.53%w/w
HPTLC	Complies	Complies	Complies
Disintegration ¹	14 min to 15 min	13 min to 14 min	13 min to 14 min

HPTLC of Arogyavardhini Vati

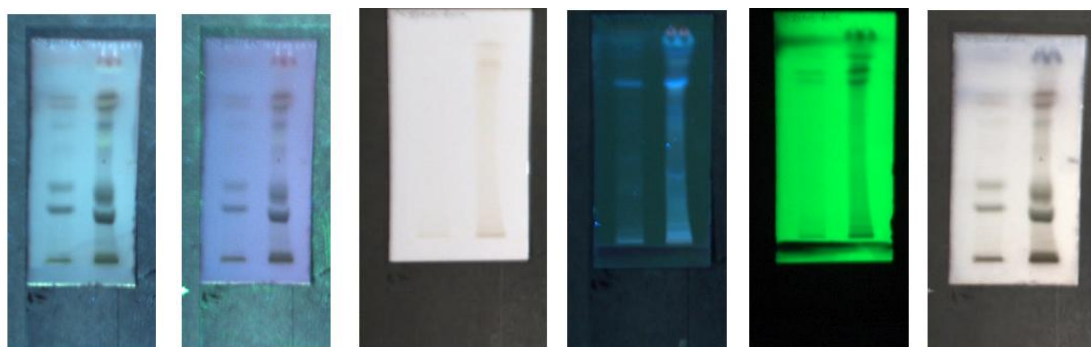
All three samples batches of this formulation were studied for HPTLC study and spots were observed. Extract 5g of formulation powder by using Ethyl Acetate: Methanol: Water in 6:1.4:1 ratio was used to carry out the thin-layer chromatography. 10µl layer was applied on HPTLC plate and the plate was developed to a distance of 8cm using Ethyl Acetate: Methanol: Water in 6:1.4:1 ratio as mobile phase. After development the plate allowed to

dry air and examine under UV light. It shows following results.

Sample A shows peaks at Rf -0.06, 0.01, 0.03, 0.08, 0.09, 0.16, 0.19, 0.42, 0.44, 0.51, 0.72, 0.79.

Sample B shows peaks at Rf -0.06, 0.00, 0.05, 0.11, 0.18, 0.27, 0.33, 0.46, 0.50, 0.57, 0.80.

Sample C shows peaks at Rf -0.06, 0.00, 0.05, 0.11, 0.18, 0.28, 0.33, 0.46, 0.50, 0.57, 0.80, 0.84



HPTLC images of *Arogyavardhini* Tablets at wavelengths 254nm, 366nm and White R

DISCUSSION

Arogyavardhini vati was prepared by method mentioned in *Ayurved Saar Sangraha*. An appropriate processing sequence was strictly followed and changes observed during each pharmaceutical step were noted. There was no significant processing loss. Approx. 7800 to 8000 tablets were obtained after complete process. Physico-chemical analysis is essential to check quality of the product and its biological activity. In this study we have analyzed the *Arogyavardhini Vati* as per Ayurvedic as well as modern parameters which are mentioned in Drug and Cosmetic act 1940 and Rules 1945.

Colour of all three sample batches is nearly same as blackish brown. Average wt of sample A, B, C are 0.2530, 0.2590, 0.2590 respectively. Uniformity in wt. of tablets of sample A,B,C are 0.242 -0.262g, 0.2508-0.2591g, 0.2508-0.2591 respectively. Diameter of sample A, B, C are 8.19mm, 8.26mm, 8.26mm respectively. Thickness of sample A, B, C are 3.61mm, 3.51mm, 3.51mm respectively. Hardness of sample A, B, C 2.00kg/sq.cm, 2.37Kg/sq.cm, 2.37Kg/sq.cm respectively. Friability of sample A, B, C are 0.02%w/w, 0.53%w/w, 0.53%w/w, respectively. T.L.C. of all the samples get complies. Disintegration time of sample A,B,C are within 15 min. HPTLC includes number of spots and its relative Rf values also shows images under visible and ultraviolet light. All the three samples have shown nearly similar spots and Rf values. Hence it can be concluded that the three batches prepared are nearly similar to each other which means the operating manufacturing process is similar and that can applied for manufacturing.

CONCLUSION

From above study we can conclude that the *Arogyavardhini vati* (Tablet) prepared by the method mentioned in *Ayurved Saar Sangraha* in three batches do not show any significant difference in physico-chemical analysis. Hence we can say that. *Arogyavardhini Vati*

(Tablet) prepared by this method complies the standard parameters mentioned in API. Hence we can say that pharmaceutical and analytical parameters for *Arogyavardhini Vati* Tablet are validated by above said method is standard one.

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