



Research Article

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ARKA LAVANA AND ITS PHARMACEUTICAL PREPARATION

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ABSTRACT

Background: Lavana kalpana was described in many Ayurvedic texts such as Bhaishajya ratnavali, Rasatarangini, Vangasen, Gadanigraha etc. Arka lavana is a highly effective lavana kalpana which is mainly recommended for Yakrit-pleeha roga, Gulma, Ajirna, Agnimandya and Udara roga. Aim: Pharmaceutical study of Arka lavana. Materials and Methods: The raw material Arka patras were collected from the herbal garden of Rajasthan Ayurveda University, Jodhpur. The Arka patras were authenticated by Dravyaguna Department. Another raw material, Saindhava lavana, was procured from Rasashala of Rajasthan Ayurveda University, Jodhpur and was authenticated by Rasa shastra and Bhaishajya kalpana Department. Arka lavana was prepared by the traditional puta method as per the reference. Observation and Results: The Arka lavana was assessed for organoleptic parameters. Conclusion: The pharmaceutical study of Arka lavana provides the standard parameters.

Keywords: Lavana kalpana, Saindhava lavana, Arka patra, Putapaka, Arka lavana.

INTRODUCTION

Ayurveda, the traditional Indian medicine, is not only the oldest, but it is the most effective, safest and cost-effective treatment of all systems of medicine. Here, special emphasis is given to drug therapy. Ayurveda's pharmaceutical branch provides a wide variety of drug dosage forms. Lavana kalpana is among them, in which saindhava lavana and ash of other medications acquired after giving appropriate 'Putra' are the key ingredients.

Lavana kalpana is the pharmaceutical process of igniting the 'lavana' and the selected 'ausadha dravya' in a closed samputa to obtain the drug ash as a therapeutic product. Here the intrinsic properties of lavana are best utilized for medicinal purposes. As per Ayurvedic classics, lavana is defined as "Lunatiitilavanha", whereas 'lunati' means 'chedana', so it possesses chedana property. By virtue of its chedana property, it becomes 'sukmasrotogami' so that it can easily & quickly penetrate minute channels of srotas. The therapeutic benefits of lavana and the added medicinal drug are enhanced by the 'agnisamskarana' process used in lavana kalpana.

Arka lavana is an Ayurvedic herbo-mineral formulation that includes Arka patra (*Calotropis gigantea* leaves) and saindhava lavana (Rock salt) as main ingredients and is mainly indicated in yakrit pleeha rogas (liver & spleen disease). It is traditionally used for udararoga (ascites), atisara (diarrhoea) and other ailments. It has a variety of functions with many anupanas such as koshnajala (lukewarm water), dadhimastu (curd supernatant) and so on. *Calotropis gigantea*, also known as Arka, has therapeutic benefits

in Ayurveda and is used to cure various diseases. *C. gigantea* has been described as hepatoprotective, analgesic and anti-inflammatory. It possesses antibacterial properties also. Rock salt contains minerals like calcium and magnesium. It promotes a healthy metabolism, which leads to an improvement in the body's systemic processes. It works as a laxative and enhances appetite.

This paper aims to provide an overview of the ancient Ayurveda references and the pharmaceutical preparation of Arka lavana. Every procedure, along with its measurements, was recorded.

Classical References of Arka Lavana

Arka lavana and its therapeutical benefits have been explained in classical textbooks like Bhaishajya ratnavali, Rasatarangini, Vangasen, Gadanigraha etc.

MATERIALS AND METHODS

The required raw material, saindhava lavana, was procured from rasashala of Rajasthan Ayurveda University, Jodhpur. Fresh leaves of Arka (*Calotropis gigantea*) were collected from the herbal garden of Rajasthan Ayurveda University, Jodhpur. Arka lavana was prepared by the traditional puta method.

Arka lavana and its pharmaceutical study

1. Ingredients and quantity
2. Pharmaceutical preparation
3. Yield of the final product

Table 1: Arka Lavana formulation according to various texts

Classical Texts	Contents	Putra	Reference
Rasatarangini ¹	Arka patra – 1 part Saindhava lavana – 1 part	Gajaputa	R.T 14/131-136
Bhaishajya ratnavali ²	Arka patra Saindhava lavana	Gajaputa	B.R 41/31
Gadanigraha ³	Arka patra – 1 part Saindhava lavana – 1 part	Antardhoom method	GN 32/98
Chakradatta ⁴	Arka patra Saindhava lavana	Antardhoom method	CD 37/43
Ayurveda Sara Sangraha ⁵	Arka patra – 1 part Saindhava lavana – 1 part	Gajaputa	ASS P. 702
Bharat Bhaishajya Ratnakar ⁶	Arka patra Lavana	Antardhoom method	BBR Part 1/76

Table 2: Indications with Matra & Anupan of Arka Lavana according to various texts

Classical Texts	Indications	Matra	Anupan
Rasatarangini	Yakrit, Pleeha, Udara, Malbhedan, Shleshmak Yakrutroga	1/2 Masha	Koshnajal, Mastu
Bhaishajya ratnavali	Pleeha, Gulma, Udara roga	4 Ratti – 8 Ratti	Mastu
Gadanigraha	Pleeha, Udara	–	Mastu
Chakradatta	Gulma, Pleeha, Udara	1 Masha	Mastu
Ayurveda Sara Sangraha	KathinPleeha, Yakrit Vriddhi, Gulma, Udara, Ajirna, Mandagni, Panduroga, Baddhakoshata	1 Masha – 2 Masha	Koshnajal, Gomutra
Bharat Bhaishajya Ratnakar	Gulma, Pleeha, Udara	–	Mastu

Table 3: Ingredients and Quantity

Ingredients	Quantity
Arka patra (Yellow)	200 gm
Saindhava lavana	200 gm
Multani mitti	Quantity sufficient

Pharmaceutical preparation

Arka lavana was prepared in the departmental pharmacy of Dr Sarveppalli Radhakrishnan Rajasthan Ayurveda University, Jodhpur, as per the reference of Rasa Tarangini.

Method of preparation: Putra method

The method of preparing Arka lavana can be explained under three headings, Purva karma, Pradhan karma, and Paschat karma, as follows

Purva karma

- First, 200 gm of yellow-coloured Arka leaves and 200 gm of saindhava lavana were made into a coarse powder.
- These leaves are cleaned with water and kept under sunlight for proper drying.
- Then we have to take two sharava that should be cleaned and properly dried.

Pradhan karma

- The Arka leaves are then sandwiched between two layers of saindhava lavana.
- The pattern is kept so that the upper and lower layers are of Arka leaves. Another sharava is placed on top of it and sealed with a seven-layer mud (multanimitti) smeared cloth and kept in sunlight for drying, after which it is exposed to fire in gajaputa for a specific time and allowed to cool naturally.

Siddhi Lakshanas (Confirmatory Test)

- The red-hot colour of the earthen pot indicates that all the contents in the sharava became ash.
- Kajjalvarna of the prepared lavana kalpas is said to be the siddhi lakshana in the context of 'Narikel lavana' in Rasatarangini.

Paschat karma

- After cooling, the joining portion was scraped out with a knife, and the inner ingredients (the salt and leaves) were then removed from the pot and ground in khalva to a fine powder. After that, the final product was weighed and stored in an airtight container for further use.

RESULT

Table 4: Yield of the final product

Kalpna	Quantity of Raw drug	Materials used	Wt. of Final Product	Wt. Loss	% Loss
Arka Lavana	Arka patra – 200 gm Saindhava lavana – 200 gm	60 no. of cow dung cakes	225 gm	175 gm	43.75%

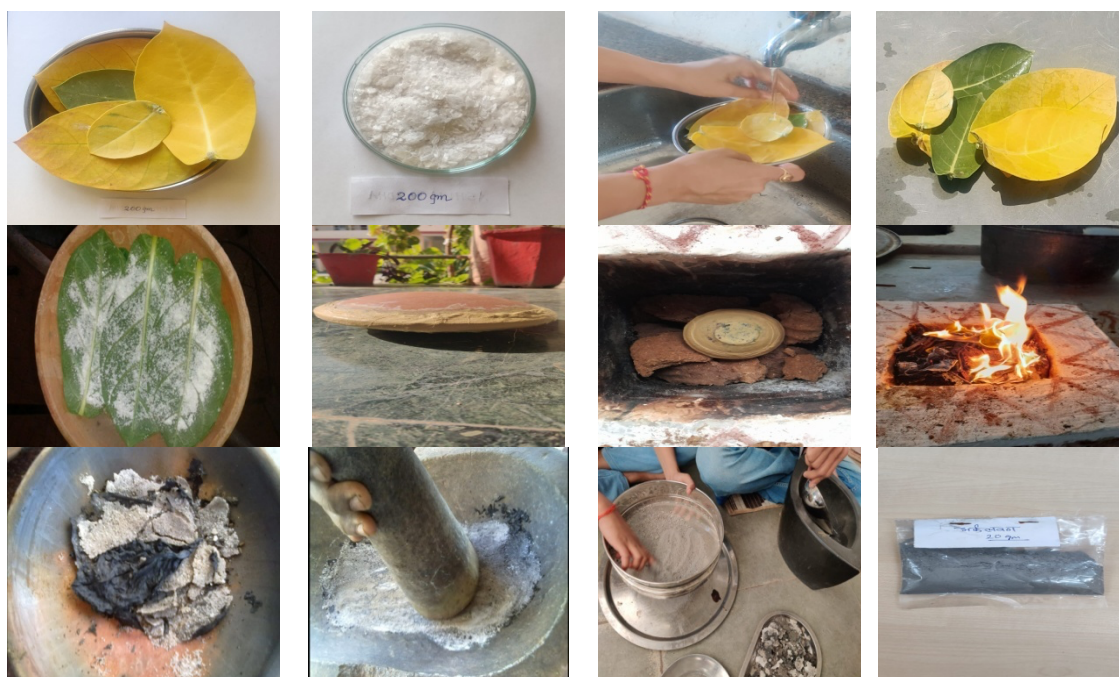


Figure 1: Steps in making Arka lavana

DISCUSSION

Arka lavana is a unique compound formulation of Arka patra and Saindhava lavana that is safe and effective. It is mainly used in Yakrit-pleeharoga but can also be used for other digestive issues. Therefore, it can play an essential role in today's period. In classics such as Rasatarangini, Bhaishajya ratnavali, Ayurveda sara sangraha, Bharat Bhaishajya Ratnakar, Chakradatta, Gadanighra etc., several references for internal management of Arka lavana are also found. The formulation's components, i.e., Arka patra and Saindhava lavana, are readily available and inexpensive. This mixture is effortless to prepare and administer.

The mode of action of Arka lavana is not addressed in the literature review. As a result, the mode of action is derived from the activities of its constituents. According to the literature, Arka lavana is primarily prescribed in the Gulma, Udara and Yakrit-pleeharoga. Further, the evaluation of organoleptic characteristics of the final product is done by using sensory organs as follows:

Table 5: Organoleptic characters of Arka lavana

Characters	Properties of Arka lavana
Taste	Salty
Texture	Fine powder
Sound	No specific sound
Colour	Dark greyish black
Odour	Pungent alkaline odour

Agnimandya is the primary aetiology of Gulma, Udara and Yakrit-pleeharoga. Its leading management consists of deepana and pachana dravya administration. Arka patra has katu rasa and katu vipaka, which operate as agnivaradhaka. Saindhava lavana has a lavana rasa that demonstrates both deepana and pachana karma. Deepana karma aggravates Agni, whereas pachana karma increases jatharagni so that it can do amapachana. As a result of these features, the chemical formulation aids in stimulating jatharagni and dhatwagni, as well as eliminating vitiated dosha. Arka patra also depicts sara, bhedhana, tikshnaguna, shophahar, vranahara, vishaghna and kaphavatashamak karma, all of which aid in the treatment of Gulma, Yakrit, Pleeha and Udara roga.

Because of its sukshma quality, saindhava lavana helps this formulation easily access the minute channels of Srotas and increase absorption.

Thus, the mode of action of Arka lavana is derived from its ingredients, i.e., Arka patra and saindhava lavana. The phytochemical constituents of *Calotropis procera* leaf, such as α amyrin, β amyrin, β sitosterol, Stigmasterol, etc., most commonly show antioxidant, cytotoxic, anti-inflammatory, and analgesic antitumor and hepatoprotective activities⁷. The leaves also contain proteolytic enzymes and a thiol-activated proteinase. An ethanolic extract of the leaves exhibited high mortality against the nematode, cephalobuslitoralis. Methanolic extract of the leaf also showed antibacterial and antifungal activities⁸. Arka lavana becomes more absorbable, colloidal and easy to digest due to agnisamskara, and it has a higher potency at low doses. It also has properties such as doshahara, gunaprakarsha, dipana, laghutva, shighravaypti and others in addition to the original properties of the ingredients. According to API, the dose of Arka lavana for internal administration is given as 1 g⁹. Arka lavana aids in the management of disease problems by using various doses of anupana. Anupana as per the disease are –

Pleeha-with Kumari rasa (*Aloe barbadensis*)

Gulma-with Eranda Taila (oil of *Ricinus communis*) and lukewarm milk

Udararoga- with Gomutra (Urine of Cow) and Eranda Taila
Also, as per the experimental study held at Banaras Hindu University, Varanasi, gross pathology and histopathology of liver tissue were observed to confirm the effectiveness of Arka lavana. Arka lavana produces a dose-dependent effect and reduces the anomalies induced by dexamethasone and ethanol, similar to silymarin¹⁰.

CONCLUSION

This article concisely explained the classical references of Arka lavana as per different acharyas and its pharmaceutical preparation. Arka lavana was prepared in our departmental pharmacy using Arka patra and saindhava lavana filled with 400 gm. After giving puta, the yield gained was 225 gm. This loss

may be due to the evaporation of moisture content in Arka patra and saindhava lavana.

Arka lavana is an effective medicine that is used to treat a variety of diseases. Agnisamskara boosts the gunas of Arka patra and saindhava lavana by exposing them to putapaka, making Arka lavana a strong medication effective at low doses. The pharmacological activities of Arka patra and saindhava lavana have been described, contributing to substantiating Arka lavana's medicinal claims. As a result, it's concluded that Arka lavana's method of action is comparable to that of Arka patra (*Calotropis procera*) and saindhava lavana's combined efforts.

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