

Standardization Of Vidanga Arka Nasal Drops for Chronic Sinusitis

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Abstract

Standardization herbal formulations is essential to ensure their safety, efficacy, and reproducibility. This study focuses on the development and standardization of Vidanga Arka Nasal Drops, formulated using Vidanga (*Emblies Ribes*), for the treatment of Chronic sinusitis. Vidanga is known for the Anti Bacterial, Anti Parasitic, Anti Microbial, Anti Inflammatory, Neuro protective and Analgesic properties in traditional Ayurveda Medicine. The formulation process involved the preparation Aqueous Extract of Vidanga. The standardization protocol included phytochemical analysis through qualitative and quantitative technique such as high- performance liquid chromatography (HPLC) to ensure consistency in Active phyto constituents. Physiochemical parameters such as pH, specific gravity etc, were evaluated. The sterility and microbial limit test confirmed the absence of harmful pathogens. The result highlights the standardized Vidanga Arka Nasal Drops are safe and effective medicine for treating chronic sinusitis.

Key Words : Vidanga, *Emblies Ribes*, Standardization, Vidanga Arka Nasal Drops, Anti Bacterial, Anti Parasitic, Anti Microbial, Anti Inflammatory, Neuro protective, Analgesic properties

INTRODUCTION

Sinusitis is an inflammation of the nose and paranasal air sinuses ⁽¹⁾. Sinus infection that persists for months or even years are referred to as Chronic Sinusitis ⁽²⁾. The clinical symptoms of Chronic sinusitis characterized by Purulent nasal discharge, facial/dental pain, nasal obstruction, post nasal drip, nasal stiffness, anosmia, headache, ear pain, foul smell discharge, cough, fatigue and fever ⁽³⁾. The symptoms of chronic sinusitis are similar to head conditions described in Ayurveda such as Kaphaja Shirashoola. In Contemporary medicine the treatment of sinusitis includes antibiotics, decongestants, anti-histamines, analgesics and surgical procedures. Sinusitis is not successfully combated due to its recurrence and well known side effects of the medicines and fear of surgery. Its expense and complication have restricted patients from opting surgery in view of the magnitude of the problem there is a need to find a therapy which is economically effective, within the reach of the patient and having the potential to drain the sinuses by removing the pathology with sustained effect and reduced recurrence.

Arka is a liquid preparation gained by distillation of drug soaked in water using arka yantra or any other convenient modern distillation apparatus ⁽⁴⁾.

MATERIALS AND METHOD

Ingredient of formulation: Vidanga fruit (*Emblies Ribes*)

Vidanga (*Emblies Ribes*)

It is commonly known as false black pepper, white flowered emblica. Vidanga is one of Ayurveda's most potent anti-parasitic medicine (*Krimighna*) ⁽⁵⁾, which belongs to the myrsinaceae family. Vidanga is used for broad spectrum therapeutic properties, including Anti Bacterial, Anti Microbial, Anti Inflammatory, Neuro protective and Analgesic properties ⁽⁶⁾. Making it a valuable resource for managing a wide array of infection and inflammatory conditions. Among its diverse applications vidanga has gained attention for its potential to treat chronic sinusitis.



Figure 1: Vidanga Fruit

Ayurvedic Properties

Rasa (Taste) : Katu, Kashaya

Guna (Property) : Laghu, Ruksha, Tikshna

Veerya (Potency) :Ushna

Vipaka (Metabolism):Katu

Karma (Action) : krimighna, shiropogahara, shoolahna, shirovirechana⁽⁷⁾,

The phyto constituents present in Vidanga Fruit are Embelin, christembine, quinine, quercitol, tannin, embolic acid,volatile oil⁽⁸⁾.

Apparatus required for distillation

Distillation is the process by which liquid is vaporized and recollect by cooling and condensing the vapour

The apparatus required for distillation as follows:

- Boiler (Heating Mantle) – which provides heat and maintains the heat.
- Vessel - in which vapours are produced by heating the liquid to its boiling point.
- Condenser – cooling device for vapours either by circulation of water or air atmospheric temperature.
- Receiver – it is used for collection of condensed liquid.

Method of preparation

Vidanga fruits are cleaned and coarsely powdered of vidanga fruit were prepared, weighed and soaked in sufficient quantity of water and kept overnight. The well soaked drug was transferred to the distillation apparatus (Arka yantra) with the water (1:10). The mixture was continuously heated (80⁰ C) till 1 liter of liquid is collected. After cooling , the collected arka was filtered and preserved in sterile air tight container⁽⁹⁾.



Figure 2: Arka Yantra

Standardization of Vidanga Arka

Table No.1 : showing organoleptic study of Vidanga Arka

SL. No.	Parameters Tested	Result
01	Colour	colourless
02	Odour	Sweet Odour
03	Taste	Astringent Taste
04	Ph	6.38
04	Volatile Matter	Not found
05	Specific Gravity	0.966 at room temperature
06	Clarity Test	Clear solution without any particles

HPLC ANALYSIS REPORT

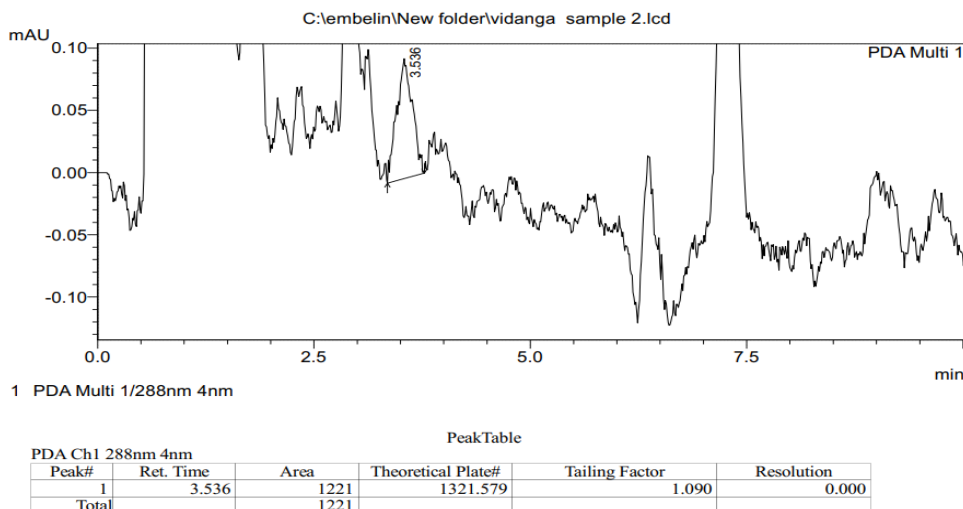


Figure 3: Chromatogram of Vidanga Arka Nasal Drop

Report:

The concentration of Embelin present in 1ml of vidanga Arka Nasal Drop is 0.211µg/ml.



Figure 4: Vidanga Arka Nasal Drop

DISCUSSION

The Vidanga Arka Nasal Drops consists primarily of Vidanga (Emblies Ribes) and used in management of Kaphaja shirashoola. Vidanga posses several important properties or “Gunas” according to Ayurveda , Including Laghu, Ruksha and Tikshna Guna. It has Katu,Kashaya Rasa,Ushna Veerya and Katu vipaka, krimighna,Medohara and Shothahara Properties ⁽¹⁰⁾.these properties helps in enhance Vidanga therapeutic efficacy in kaphaja shirashoola, due its properties which helps in allevates symptoms by reducing nasal mucosa swelling, stagnation, mobilize the retained fluids by doing kapha vilayana, preventing further fluid accumulation and allowing the normal flow of prana vata in the shira.The sukshma quality of vidanga Arka penetrates effectively into the nasal passages, reaching deeper tissues and clearing blockages.

The Phtyo chemical from Vidanga (Embelin) Exhibits Anti Bacterial properties⁽¹¹⁾ attributed to bioactive compounds like Embelin, which inhibit microbial growth and contribute to minimizing infections. By its Anti Inflammatory effects ⁽¹¹⁾ helps in modulation of pro- inflammatory cytokines by diminishing the local inflammation, pain and there by maintains healthier condition of sinus mucosa.

CONCLUSION

The preparation of Vidanga arka Nasal drops involves a standardized method to ensure safety and efficacy, including the extraction of active compound from Emblies Ribes under controlled condition. The formulation is prepared in a sterile environment, with adjustment to pH (6.38). Testing includes physicochemical evaluations (pH, Viscosity, Specific Gravity) and Phyto chemical analysis to quantify active ingredients.

Vidanga Arka Nasal Drops offers natural and effective approach to managing Chronic sinusitis.

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