



Formulation and Evaluation of Adhulsa Lozenges for Asthma Patients

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ABSTRACT:

A chronic lung condition that affects people of all ages is asthma. Breathing becomes more difficult due to inflammation and tightness in the muscles surrounding the airways. Coughing, wheezing, shortness of breath, and tightness in the chest are some of the symptoms. Over time, these symptoms may become more or less severe. With the appropriate care, asthma can be controlled even though it can be a serious condition. For many years, justicia adhatoda has been used to treat allergies and other respiratory ailments. The primary active component of Justicia adhatoda is vasicine. It has been used to treat a variety of respiratory tract conditions in both adults and children in the Ayurvedic medical system. Adulsa juice is typically advised for use. There are liquid orals and syrups on the market that contain Justicia adhatoda. Lozenges are a tasty, solid unit dosage form that is taken orally.

INTRODUCTION:

A chronic lung condition that affects people of all ages is asthma. Breathing becomes more difficult due to inflammation and tightness in the muscles surrounding the airways. Coughing, wheezing, shortness of breath, and tightness in the chest are some of the symptoms. Over time, these symptoms may become more or less severe.

Ayurveda is a long standing tradition that provides a systematic approach to asthma management through proper medication and care. Ayurveda refers to bronchial asthma as *Tamaka Swasa* and contributes several modalities of treatment for the same. Polyherbal combinations are well-accepted, safe and effective in asthma. Ayurveda prescribes various herbs and minerals in the form of various formulations like asava arishta, churna, paka, arka, leha, avaleha, gutika, vati, taila, ghrita, bhasma, etc.

Many pediatric and geriatric patients are unwilling to take conventional solid preparations like tablets and capsules due to fear of choking because of its bigger size, swelling discomfort, in case of dyspepsia and because of the need of water for administration. In case of liquid oral preparations, there is high incidence of noncompliance and ineffective therapy in pediatric patients. Intravenous route is highly non acceptable to pediatric patients due to pain during administration. Pediatric and geriatric patients differ from adults in many aspects of pharmacotherapy, including capabilities for drug administration, medicine related toxicity, and taste preferences. Hence, pediatric and geriatric medicines are formulated to best suit the patients age, size, physiologic condition, and treatment requirements. The tiny, evergreen perennial shrub

Adhatoda vasica grows to an average height of three meters. Its branches are ascending and opposite. The broad, leathery leaves are about 4 centimeters wide and range in length from 10 to 15 centimeters. They are occasionally used as an insecticide. They have a lighter green top and a darker green underside; they are pubescent. The leaves have an opposite growth pattern, are fully lanceolate, petiolate for a short while, and taper at the base and apex. When the leaves dry, they take on a brownish-green color and develop a bitter flavor and strong tea-like aroma. Treatments for bronchitis, tuberculosis, and other lung and bronchiole conditions can be achieved with Adhatoda vasica. Cough and other cold symptoms can be alleviated with a decoction made from the leaves of the Vasaka plant. The expectorant will help release phlegm deposits in the airway, while the soothing action will lessen throat irritation. Because the leaves of Vasaka have antibacterial and anti-inflammatory qualities, they can be used as a poultice on wounds. It is disclosed and asserted that magnesium compounds of any acceptable pharmaceutical composition, as well as throat lozenges and orally retained liquids, are efficacious in treating and preventing asthma.

There are types of lozenges :

1. Medicated lozenges

Based on manufacturing

A) Hard candy lozenges

i) Center filled hard candy lozenges: Liquid filled/Fruit centers/Paste centers/Fat centers

ii) Chewy or caramel base medicated tablets: Caramels/Toffees

B) Compressed lozenges

i) Tablets compressed in weight range of 1.5- 4 g

Large in diameter and having desired area of activity on mucous membrane and mouth.

2. Non medicated lozenges

i) Sugar candies,

ii) Lollypops

Ingredients:

1. Adhatoda vasica (Adhulsa) extract

2. Honey or sugar

3. Menthol

4. Lemon juice (optional for flavor)

Serial no	Name of ingredients	Quantity taken (gm%)
1.	Sugar	40gm
2.	Corn Syrup	20gm
3.	Adhulsa aqueous extract	2gm
4.	Ginger juice	2%
5.	PEG	1gm

Formulation Table

Plant profile

Biological name: Justicia adhatoda

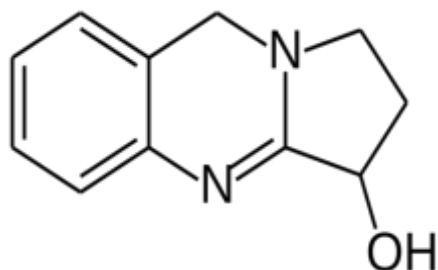
Synonym: Adhatoda vasica, Ecbolium adhatoda

Family: Acanthaceae

Adhatoda Vasica Could Be A Tiny, Evergreen, Perennial Ligneous Plant, That Reaches A

Median Height Of 3 Meters

Vasicine (peganine) is a quinazoline alkaloid. It is found in Justicia adhatoda, after which it is named.



IIUPAC name -1,2,3,9-Tetrahydropyrrolo[2,1-b]quinazolin-3-ol

Other name -Peganine

Chemical formula- $C_{11}H_{12}N_2O$

It has a characteristic odor and bitter taste.

Consuming Adhulsa powder along with honey is considered to be beneficial in cases of respiratory infections such as whooping cough, bronchitis, asthma as it helps promote the secretion of sputum from the air passages due to its expectorant property

Method

1. Prepare Adhulsa Extract

- Crush Adhulsa leaves to extract the juice or use a pre-made Adhulsa extract.
- Filter out any solid particles to obtain a clear liquid.

2. Mixing Ingredients

- Combine the Adhulsa extract with honey or sugar in a bowl. Adjust the quantity based on your taste preferences.

3. Optional Additions

- Add a small amount of menthol for a soothing effect.
- Consider adding a few drops of lemon juice for flavor.

4. Forming Lozenges

- Stir the mixture well until it forms a consistent blend.
- Use a dropper or a small spoon to drop small amounts onto a clean surface or a silicone mold.

5. Allow to Set

- Let the lozenges air-dry or place them in a dehydrator for quicker results.
- Once set, store the lozenges in a cool, dry place.



Prepared Lozenges

CONCLUSION

Vasaka has proven bronchodilator activity. In Ayurveda, the *swarasa* or juice of Vasaka leaves are administered for respiratory conditions. There are many liquid oral formulations available in market containing Vasaka and other related compounds. But, the solid oral formulations are still the most preferred formulation. Variation in dose is the major drawback of liquid oral syrups. Also, they are messy to administer and self administration is difficult. Thus, herbal lozenges are formulated from aqueous extract of Vasaka with bitter taste masked with sugar and flavoured with ginger extract, easy for paediatric patients to administer. It can also be an ideal choice for travelling patients as it eliminates the need of water for its administration. As Vasaka is a single component in the formulation, the standardization is easier. The cost of the formulation is reduced as it is easy to manufacture this formulation on a large scale.

Result :-

EVALUATION PARAMETERS :

Nature - Hard

Colour - Brown

Odor - Characteristics

Diameter- 2 cm

Friability- 6.8 %

Thickness- 0.8 cm

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