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Indian traditional herbs *Adhatoda vasica* and its Medicinal application

**K. P. Sampath Kumar^{*1}, Debjit Bhowmik², Chiranjib², Pankaj Tiwari²,
Rakesh Kharel²**

¹*Dept. of Pharmaceutical Sciences, Coimbatore Medical College, Coimbatore*

²*Rajeev Gandhi College of Pharmacy, Maharajganj, Uttar Pradesh*

Abstract

Vasaka is a well-known herb in indigenous systems of medicine for its beneficial effects, particularly in bronchitis. Vasaka leaves, bark, the root bark, the fruit and flowers are useful in the removal of intestinal parasites. Vasaka herb is used for treating cold, cough, chronic bronchitis and asthma. The decoction of its root and bark in doses of 30 grams twice or thrice a day for 3 days can be given for this purpose. The juice of its fresh leaves can also be used in doses of a teaspoon thrice a day for days. In acute stages of bronchitis, vasaka gives unfailing relief, especially where the sputum is thick and sticky. It liquefies the sputum so that it is brought up more easily. For relief in asthma, the dried leaves should be smoked. In Ayurveda, a preparation made from vasaka flowers, known as gulkand is used to treat tuberculosis. The juice from its leaves should be given in doses of 2 to 4 grams in treating diarrhea and dysentery. A few fresh petals of vasaka flowers should be bruised and put in a pot of china clay. Some sugar crystals are added and the jar kept in the sun. It should be stirred every morning and evening. The preserve is ready for use in about a month. A poultice of its leaves can be applied with beneficial results over fresh wounds, rheumatic joints and inflammatory swellings. A warm decoction of its leaves is useful in treating scabies and other skin diseases. In olden times its leaves were made into a decoction with pepper and dried ginger. But the modern medicine searched its active ingredients and found out that vasicine, oxyvasicine and vasicinone are the alkaloids present in vasaka and in which vasicine is the active ingredient for expelling sputum from the body.

Key Words: *Adhatoda vasica*, Herbal medicines, Traditional uses, Cough, Decoction.

Introduction

Vasaka, also called Malabar nut tree, is well known throughout India. It is tall, with several branches, dense, and an evergreen shrub. Leaves are large and lance-shaped. It has capsular four-seeded fruits. The flowers are either white or purple in colour. Its trade name vasaka is based on Sanskrit name. Vasaka is indigenous to India. It grows all over the India and in the lower Himalayan ranges. The leaves contain an alkaloid vasicine besides an essential. In Ayurvedic medicine, malabar nut (*Adhatoda vasica*) has been used for a multitude of disorders including; bronchitis, leprosy, blood disorders, heart troubles, thirst, asthma, fever, vomiting, loss of memory, leucoderma, jaundice, tumors, mouth troubles, sore-eye, fever, and gonorrhoea. *Adhatoda vasica* is useful in treating bronchitis, tuberculosis and other lung and bronchiole disorders. A decoction of the leaves of *Vasaka* may be used to help with cough and other symptoms of colds. The soothing action helps irritation in the throat and the expectorant will help loosen phlegm deposits in the airway. A poultice of the leaves of *Vasaka* may be applied to wounds for their antibacterial and anti-inflammatory properties. The poultice is also helpful in relieving rheumatic symptoms when applied to joints. *Vasaka* has been used to control both internal and external bleeding such as peptic ulcers, piles and bleeding gums. *Vasaka* exhibits antispasmodic, expectorant and blood purifying qualities. *Adhatoda* *Vasaka* is a very well known remedy available everywhere and it is especially popular in rural areas. Acknowledging its medicinal properties, it has been adopted by modern medical practitioners also. This bush grows in all parts of the world and the bark, flowers, roots and leaves are used in medicine. The leaves enjoy a reputation as a useful remedy in the cure of coughs and bronchitis. The plant has pungent and astringent taste. It is cold in action. It normalizes kapha and pitta and improves the voice. It is useful in ridding the patient of coughing and asthma and can be given as a cure in any disease with which these symptoms are associated. It is beneficial to the tuberculosis patient. *Vasaka*'s special virtue is stopping bleeding due to the aggravation of pitta, through the mouth, nose, genitals, or the urinary systems. The leaves are dampened and then pounded, and one teaspoon of the resultant juice is useful in cases of chronic bronchitis, asthma and tuberculosis. This is not to say that it always cures all these diseases but it does give immediate relief. Being a very good expectorant, it draws out all kapha (phlegm) accumulated in the lungs. In many cases where bronchitis is due to lack of appetite and poor digestion, the juice of *Vasaka* is mixed with the juice of ginger and honey and given in the early morning on an empty stomach. Given in the early stages of tuberculosis, the juice of *Vasaka*, thrice a day, helps a patient who is prone to incessant coughing. In many of the cough syrups that are available, *Vasaka* has been used either as a base or as an ingredient. Boiled and put on the bladder region, the leaves produce a diuretic action, reduce the swelling of the kidney and lead to clear urination. Persons suffering from bleeding piles or diarrhoea, accompanied by bleeding, or women suffering from menorrhagia can take the juice of *Vasaka* 2 to 3 times a day to great advantage. Dried and powdered leaves also form a remedy for bronchitis in the dose of 40 grains twice a day. In liquid form the dose is about half to one teaspoon. In excessive doses of 1 to 2 ozs, an emetic action results inducing vomiting in which all the kapha is removed. In ancient times the root of the *Vasaka* was tied on the back below the navel region and it is said that it produced safe, painless delivery. *Vasa avaleha*, useful in easing all sorts of coughs, especially in the case of asthma, and bronchial congestion, is made in the following manner: the juice of 1 seer of *Vasaka* leaves is boiled with $\frac{1}{4}$ seer of white sugar, 4 tolas long peppers and 4 tolas pure ghee, until the mixture is reduced to a jelly form. After cooling, $\frac{1}{4}$ seer of honey is added and the preparation is mixed thoroughly.

The mixture is given in ½ ounce doses. A liquid preparation of Vasaka known as Vasasav given in half ounce measures after the principal meals, reduces production of kapha (phlegm) and relieves excessive coughing. The juice of Vasaka leaves softens the bronchial tube. It is also useful in reducing aggravation of pitta and discomfort due to jaundice. The roots and bark possess a virtue well-known for their expectorant properties. If well-known patented expectorant remedies have failed to give you relief, by all means try this home remedy. *vasica* has also been used to speed delivery during childbirth.

Classification of *adhatoda vasica*

Kingdom: Plantae
Order: Lamiales
Family: Acanthaceae
Genus: Justicia
Species: *J. adhatoda*
Common name: Adulsa (Vasaka)

Habit

It is a evergreen shrub about 2.2-3.5 meters high, which have long leaves and white flowers in axillary spike.

Distribution

This plant occurs throughout india except mountain regions. characteristics of *Adhatoda Vasica* : Leaves are long and dark green in colour. cattle do not eat this plant as the leaves emit an unpleassant smell.

Therapeutic uses

Cough and bleeding-	Take 1 table spoon juice of leaves with honey internally.
Excessive menstruation-	Juice of leaves 15ml with 15 gm jaggery twice daily internally
Bleeding piles-	Decoction of whole plant with sugar internally

Chemical composition

The principle constituents of Vasaka are its several alkaloids, the chief one being vasicine. The leaves contain two major alkaloids called vasicine and vasicinone^{2, 3}. The pharmacological activities of vasicine and vasicinone are well known. Recent investigations on vasicine showed bronchodilatory activity comparable to theophylline, both in vitro and in vivo. Both the alkaloids in combination showed pronounced bronchodilatory activity. Vasicine also exhibits strong respiratory stimulant activity. There has also been a report of thrombopoetic⁴ (platelet-increasing) activity with vasicine. Uterine stimulant activity and moderate hypotensive activity of the alkaloids have been observed. The leaves of Vasaka are rich in vitamin C, carotene and an essential oil. A study showed that *Mycobacterium tuberculosis* was inhibited by the essential oil (at a specific concentration).

Health Benefits of *Adhatoda vasica*

The health benefits of *Adhatoda Vasica* are:

- ❖ *Adhatoda Vasica* has been used in traditional Indian medicine for thousands of years to treat respiratory disorders.
- ❖ *Adhatoda Vasica* is useful in treating bronchitis, tuberculosis and other lung and bronchiole disorders.
- ❖ A decoction of the leaves can be used as an herbal treatment for cough and other symptoms of colds. The soothing action helps irritation in the throat and the expectorant will help loosen phlegm deposits in the airway which makes adhatoda a good remedy for sore throat.
- ❖ *Adhatoda Vasica* has been used to control both internal and external bleeding such as peptic ulcers, piles and bleeding gums.
- ❖ A poultice of the leaves may be applied to wounds for their antibacterial and anti-inflammatory properties. The poultice is also helpful in relieving rheumatic symptoms when applied to joints.
- ❖ This herb exhibits antispasmodic, expectorant and blood purifying qualities.
- ❖ *Adhatoda Vasica* has also been used to speed delivery during childbirth.

Plant Parts Used of *Adhatoda Vasica*:

The leaves, roots, flowers and stem bark of this plant are used in medicinal applications.

Side Effects and Possible Interactions:

Adhatoda is considered safe in recommended usage and dosing. The safety of this herb has not been tested in children and should be avoided, unless directed by a medical professional. Use of this supplement is not recommended during pregnancy (except at birth, and then only under the direction of a medical practitioner.) Care should be exercised when taking this herb with other drugs or supplements that exhibit expectorant or antispasmodic effects.

Medicinal Applications of *Adhatoda vasica***❖ *Healing Power and Curative Properties***

The leaves, roots and the flowers are extensively used in indigenous medicine as a remedy for cold, cough, bronchitis and asthma.

❖ *Bronchitis and Asthma*

In acute stages of bronchitis it gives unfailing relief. especially where the sputum is thick and sticky. It liquifies tilt sputum so that it is brought up more easily. For relief in asthma, the dried leaves should be smoked.

❖ *Tuberculosis*

In Ayurveda, a preparation made from vasaka flowers, known as gulkand is used to treat tuberculosis. A few fresh petals of vasaka flowers should be bruised and put in a pot of chill3 clay. Some sugar crystals are added and the jar kept in the sun. It should be stirred every morning and evening. The preserve is ready for use in about a month. Even the juice from its leaves is useful in treating tuberculosis. About 30 ml of the juice is taken thrice a day with honey. It relieves the irritable cough by its soothing action on the nerve and by liquefying the sputum, which makes expectoration easier.

❖ Coughs

For coughs, 7 leaves of the plant are boiled in water, strained and mixed with 24 grams of honey. This decoction provides relief. Similarly a confection of vasaka flowers eaten in doses of 12 grams twice daily relieves cough. About 60 grams of flowers and 180 grams of jaggery should be mixed for preparing this confection.

❖ Intestinal Worms

Its leaves, bark, the root-bark, the fruit and flowers are useful in the removal of intestinal parasites. The decoction of its root and bark in doses of 30 grams twice or thrice a day for 3 days can be given for this purpose. The juice of its fresh leaves can also be used in doses of a teaspoon thrice a day for 3 days.

❖ Diarrhoea and Dysentery

The juice from its leaves should be given in doses of 2 to 4 grams in treating diarrhoea and dysentery.

❖ Skin Diseases

A poultice of its leaves can be applied with beneficial results over fresh wounds, rheumatic joints and inflammatory swellings. A warm decoction of its leaves is useful in treating scabies and other skin diseases.

Methods for Uses and Dosages

The drug vasaka is often taken in the form of juice extracted from its leaves, mixed with ginger or honey, in doses of 15 to 30. The leaves can be made into a decoction or the dried leaves can be given in powder form in doses of 2 grams. Both the decoction and powder are constituents of many preparations used in the Ayurvedic medicine for various affections of the respiratory tract. The root and the bark have the same medicinal uses as the leaves. A decoction of the bark is given in 30 to 60 ml doses and the powdered root-bark in 0.75 to 2 grams doses.

Siddha Home Remedies of *Adhatoda vasica*

- ❖ Cough, cold and asthma contain preparations made using adathoda. Along with thippili (piper longum), chukka (dry ginger), pepper, adathoda, thoothuvalai (tri lobatum) are the common herbs used in treating all conditions related to lungs, airway passage, throat etc. Of this, adathoda holds a vital position in treating asthmatic conditions.
- ❖ Adathodai kudineer and manappagu are the two time tested Siddha remedies used in treating asthma. Kudineer is Tamil word for decoction. Adhatoda kudineer is prepared by boiling adathoda leaves in water and then cooling down the water for consumption.
- ❖ Now for the ingredients needed to prepare the kudineer or decoction. Adathodai leaves, chukku or dry ginger, and pepper are taken. They are crushed and put in 1 litre of water and allowed to boil. Once it boils for 3-5 minutes, remove from the stove and allow it to cool. When it reaches a lukewarm state, drink this. This is done three times a day for 3-4 days. This is found to be helpful in clearing cough, cold and phlegm in chest.
- ❖ One other preparation for treating cough is to follow the above-mentioned process using adathoda root and kandankathiri root. Piper longum powder is added to this decoction. This is taken three times a day after food.
- ❖ In case of chronic wheeze, the following time-tested preparation can be used. Prepare a decoction using adathoda leaves, terminalia chebula (kadukkai), and grapes. Add honey and

palm candy to this decoction and take it three times a day after food. Continue this till there is no wheezing.

- ❖ Another combination is to prepare a decoction of adathoda root, kandankathiri root, dry ginger, horsegram and adding powder of alli kizhangu (*Nymphaea rubra*) tuber. This is also effective in curing wheezing.
- ❖ The juice obtained from the leaves can be used to treat bloody stool and mucus in stool.
- ❖ The dry leaves can be rolled and smoked as a cigar to treat wheezing. The flower of adathoda can be used to treat ailments of eye. For this, the flowers are slightly shown on fire and then placed on the eyelids. Regular application is said to cure eye irritation and other minor ailments.

Conclusion

Vasaka is a well-known herb in indigenous systems of medicine for its beneficial effects, particularly in bronchitis. A unique herb that helps support the bronchial function with bronchodilatory, expectorant and mucolytic properties. The leaves, bark, root-bark, fruit, and the flowers of vasaka tree also help in removing intestinal parasites. The leaves of the plant contain the alkaloid vasicine, which is responsible for the small but persistent bronchodilatation, and an essential oil which is chiefly responsible for the expectorant action. The leaves and roots contain other alkaloids, vasicinone, vasicinolone and vasicol, which may contribute to the bronchodilatory effect through anticholinergic action on the vagal innervation of the bronchii. The bronchodilation effect is considerably increased after atropine administration. Studies have also shown vasa to be effective in the treatment of amlapitta (dyspepsia) and pyorrhea. The in vitro growth of several strains of *Mycoplasma tuberculosis* was inhibited by the essential oil at concentrations in the range of 2-20 µg/ml. There has also been a report of thrombopoietic (platelet-increasing) activity with vasicine. The drug vasaka comprises the fresh or dried leaves of the plant. It is used as an expectorant and brings quick relief in bronchitis.

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