

A Review on the Ayurvedic Management of Causes and Symptoms of Bronchial Asthma

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Abstract

Ayurvedic medicine is an ancient Indian form of healing. It is gaining popularity as part of the growing interest in New Age spirituality and in complementary and alternative medicine (CAM). There is no cure for Asthma as per the Conventional Medical Science. Ayurvedic medicines can be a potential and effective alternative for the treatment against the bronchial asthma. Ayurvedic medicines are used for the treatment of diseases globally. The present study was a review on the management of Tamaka-Shwasa based on Ayurvedic drugs including the respiratory tonics and naturally occurring bronchodilator and immune-modulators. This study result concluded that a systematic combination of herbal and allopathic medicines is required for management of asthma.

Keywords: Tamaka-Shwasa, Causes, Symptoms, Ayurvedic Management, Herbal drugs, Allopathic medicine, Bangladesh perspective

Introduction

Natural products, including plants, animals and minerals have been the basis of treatment of human diseases. History of medicine dates back practically to the existence of human civilization. The current accepted modern medicine or allopathy has gradually developed over the years by scientific and observational efforts of scientists (Patwardhan, 2004).

But Ayurveda represents one of the most ancient and still living traditions practised widely in India, Sri Lanka and other countries and has a sound philosophical and experimental basis (Dahanukar, 2000). Atharvaveda (around 1200 BC), Charak Samhita and Sushrut Samhita (1000–500 BC) are the main classics that give detailed descriptions of over 700 herbs (Dash, 2001). Ayurveda still remains dominant compared to modern medicine, particularly for treatment of a variety of chronic disease conditions (Waxler-Morrison, 1988).

Asthma is the most common chronic lower respiratory disease in childhood throughout the world and Ayurveda address it as “*Tamaka-Shwasa*.” *Tamaka Shwasa* is characterized by prolonged expiration, wheeze, dyspnoea of exceedingly deep velocity, which is immensely injurious to life. *Tamaka-Shwasa* is classified as *Vata Pradhana* and *Kapha Pradhana*. Signs and symptoms of *Tamaka-Shwasa* are very much similar to that of bronchial asthma. The word 'asthma' is derived from the Greek meaning 'panting' or 'labored breathing'. Asthma is a condition characterized by a paroxysmal wheezing dyspnea, mainly expiratory. Asthma is the disease of the respiratory system in which the airways constrict, become inflamed, and are lined with excessive amounts of mucus, often in response to one or more “triggers, ” such as exposure to an environmental stimuli (or allergen), cold air, exercise, or emotional stress.

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Asthma is a manageable disease but incurable. The ‘WHO’ and ‘International Asthma Council’(IAC) consultation report published in 1998 on implementation of asthma guidelines, highlights that wherever there is use of traditional medicines in asthma care, the conventional therapy should not be stopped because lack of evidence of safety and efficacy of these therapies. (Tavhare, 2014) This highlights the need for clinical researches in suitable designs to evaluate the safety and efficacy of ayurvedic therapies and drugs in the treatment of asthma.

Causes of Asthma

Genetic factors: Asthma is caused by a combination of complex and incompletely understood environmental and genetic interactions. These factors influence both its severity and its responsiveness to treatment. It is believed that the recent increased rates of asthma are due to changing epigenetics (heritable factors other than those related to the DNA sequence) and a changing living environment (Vemula, 2011).

Environmental: Many environmental factors have been associated with asthma's development and exacerbation. The most common things in the environment that trigger asthma are exercise, allergens, irritants, and viral infections and other environmental chemicals. Allergens include animal dander (from the skin, hair, or feathers of animals), dust mites (contained in house dust), cockroaches, pollen from trees and grass and mold (indoor and outdoor). Irritants like cigarette smoke, air pollution, cold air or changes in weather, strong odors from painting or cooking, scented products can cause asthma. Smoking during pregnancy and after delivery is associated with a greater risk of asthma-like symptoms. Low air quality from factors such as traffic pollution has been associated with both asthma development and increased asthma severity (Wim M. Van Aalderen , 2012).

Exercise-induced: Exercise can trigger bronchoconstriction in both people with and without asthma. It occurs in most people with asthma and up to 20% of people without asthma. While it may occur with any weather condition it is more common when it is dry and cold.

Occupational: Asthma as a result of (or worsened by) workplace exposures, is a commonly reported occupational disease. Many cases however are not reported or recognized as such. It is estimated that 5–25% of asthma cases in adults are work-related. A few hundred different agents have been implicated with the most common being: Drugs, grain and wood dust, paint, animals, bakers, food processing, chemical, hospitals, hairdressers, dairy, etc. Others like Aspirin and other nonsteroidal anti-inflammatory drugs (NSAIDS), beta-blockers, sulfites in food (dried fruit) or beverages (wine) provoke asthma in some patients A condition called gastroesophageal reflux disease that causes heartburn worsening asthma symptoms, especially at night. Strong emotional expression (including crying or laughing hard) and stress. may also aggravate condition in many people with asthma having a personal or family history of allergies, such as hay fever (allergic rhinitis) or eczema.

Symptoms of Asthma

- Wheezing: When breathing out is nearly always present during an attack. Usually the attack begins with wheezing and rapid breathing, and as it becomes more severe, all breathing muscles become visibly active.
- Shortness of breath (dyspnea): Shortness of breath is a major source of distress in asthma patients, although severe dyspnea does not always reflect a serious attack or reduced lung function.
- Coughing: In some people the first symptom of asthma is a nonproductive cough.
- Chest tightness (pain): Initial chest tightness without any other symptoms may be an early indicator of a serious attack. The neck muscles may tighten, and talking may become difficult or impossible. Chest pain occurs in about three quarters of patients; it can be very severe, although its intensity is not necessarily related to the severity of the asthma attack itself.
- Rapid heart rate and sweating.
- The end of an attack is often marked by a cough that produces thick, stringy mucus. After an initial acute attack, inflammation persists for days to weeks, often without symptoms.

Herbal drugs used in asthma

Natural treatment for asthma incorporates vitamins, minerals and herbs to relieve symptoms and prevent further attacks.

Asthma is a respiratory disease that affects both adults and children and asthma is today one of the most common chronic childhood ailments. There is no scientifically proven cure for asthma but it can be controlled and regulated (Vemula, 2011).

Natural treatments for asthma are meant to complement, or as an addition, to your existing medication but never as a replacement. Before using an herbal asthma remedy keep in mind that medicinal herbs can be as powerful as pharmaceutical drugs and should be treated as such so it is important to seek the support of health care provider as some natural herbs for asthma treatment may conflict with pharmaceuticals commonly prescribed for asthma.

Adhatoda (ADHATODA VASICA)

This is a small evergreen shrub that is found at lower altitudes in India and South East Asia. The leaf has been used for centuries to treat asthma where it works as a bronchodilator and mild expectorant. Adhatoda also works by decreasing the viscosity of mucous to assist with expectoration. Key constituents of adhatoda leaf are the quinazoline alkaloids (0.5–2%). The major alkaloid is vasicine present at the level of 45–95% and is the original source of the drug bromhexine, which is often still used to assist expectoration.

Coltsfoot (*Tussilago farfara*)

It has been used medicinally as a cough suppressant. The plant has been used in historical times to treat lung ailments such as asthma as well as various coughs by way of smoking (Vemula, 2011).

Bitter Gourd Root (*Momordica charantia*)

The roots of bitter gourd plant have been used in folk medicine since ancient times. A teaspoon of the root paste, mixed with an equal amount of honey or juice of the holy basil, is an excellent expectorant, and is a remedy for asthma. It should be taken once every night for month.

Chinese Skullcap (SCUTELLARIA BAICALENSIS)

The root of this plant has been used in traditional Chinese medicine (TCM) for a variety of conditions including asthma. Chinese skullcap contains flavone derivatives including baicalin, wogonin and baicalein which inhibit histamine release from mast cells *in vitro*. Baicalin showed antiasthmatic activity (antihistaminic and anticholinergic activity) in isolated tracheal muscle from asthmatic guinea pigs. Reducing hypesensitivity and inflammation in airways is vital formanaging asthma.

Indian Gooseberry (*Emblica officinalis*)

This fruit has proved valuable in asthma. Five grams of gooseberry mixed with one tablespoon of honey, forms an effective medicinal expectorant and tonic for the treatment of this disease. It should be taken every morning. When fresh fruit is not available, dry gooseberry powder can be used, mixed with honey.

Ginkgo Biloba (*Ginkgo biloba*)

One of the oldest herbs in use today, ginkgo has a broad range of indications. For asthma sufferers, ginkgo works to inhibit PAF (platelet activating factor), a powerful inducer of platelet aggregator and anaphylactic reactions. Natural herbs that stimulate anti-PAF activity are known to assist in the treatment of asthma, allergic reactions, thrombosis and shock. One study showed that a 600mg standardized dose of ginkgo reduced airway hypersensitivity in patients with asthma.

Grindelia(GRINDELIA SPP.)

This is an expectorant herb with bronchospasmodic activity. It is traditionally recommended for the treatment of spasmodic respiratory conditions such as asthma and bronchitis. The British Herbal Pharmacopoeia 1983 lists the specific indication suchas bronchial asthma with tachycardia. Californian Native Americans used grindelia not only for skin infections but also for bronchial conditions where grindelia eventually gained the attention of the Catholic missionaries. The dried leaf and flowering tops of grindelia were official in the United States Pharmacopoeia 1882– 1926, and have been in the National Formulary, 1926–1960.

Honey (*shahad*)

Honey is one of the most effective home remedies for asthma. It is said that if a jug of honey is held under the nose of the asthmatic patient and he inhales the air that comes in contact with honey, he starts breathing easier and deeper. The effect lasts for about an hour or so. Honey usually brings relief, whether the air flowing over it is inhaled or whether it is eaten or taken either in milk or water. It thins out accumulated mucus and helps its elimination from the respiratory passage.

Garlic (*Allium cepa*)

Garlic is another effective home remedy for asthma. Ten cloves of garlic should be boiled in 30 ml of milk. This makes an excellent medicine for the early stages of asthma. The patient should take this mixture once daily. Steaming ginger tea with minced garlic pods in it can also help to keep the problem under control and should be taken both, in the morning and evening.

Linseed (*Linum usitatissimum*)

A decoction made from linseed is considered useful in curing congestion in asthma and to prevent recurrence of attacks. Simultaneously; linseed poultice should be applied externally at the lung bases for reducing internal congestion.

Licqorice (*Glycyrrhiza glabra*)

The Licqorice root has been used traditionally to restore breathing and calm the breathing passageways.

Mustard Oil (*Brassica spp*)

During the attack, mustard oil mixed with little camphor should be massaged over the chest. This will loosen up phlegm and ease breathing. The patient should also inhale steam from boiling water mixed with caraway seeds (siya jeera). It will dilate the bronchial passage.

Figs (Anjeer) (*Ficus carica*)

Dry figs help to clear mucus from bronchial tubes and are therefore a valuable food remedy for asthma. Phlegmatic cases of cough can be treated with success. It gives comfort to patient by draining off the phlegm. Three or four dry figs should be cleaned thoroughly with warm water and soaked overnight. They should be taken during morning time in an empty stomach, along with the water in which they are soaked. This treatment may be continued for about two months.

Elecampane (*Inula helenium*)

It helps in toning lungs. Used in bronchitis, asthma treatment and emphysema. A stimulating and anti-inflammatory expectorant which helps dry up mucus secretions.

Skullcap (*Scutellaria lateriflora*) & **Valerian** (*Valeriana officinalis*)

These are nervine herbs that are useful for asthmatics. Calming herbs may help in stressful situations when the asthmatic may be more vulnerable to an attack.

Turmeric (CURCUMA LONGA)

Turmeric is a member of the ginger family and has been used as a colouring agent, spice and medicine for thousands of years. The active constituents are the diarylhepanoids, including curcumin, which are found in the vividly yellow rhizome. In an uncontrolled trial in India, 60% of asthma patients given 6-12grams of turmeric powder that had been fried in ghee showed a relief in their symptoms. Curcumin is a powerful anti-inflammatory in both acute and chronic conditions, and it is believed to work in a variety of biological pathways to reduce inflammation. In some models studied, curcumin showed a similar efficacy to cortisone and phenylbutazone.

Table 1 : Herbal drugs with its properties.

Drugs	Latin Name	Properties
1. Kantakari	<i>Solanum surattense</i> Burm. F	Antihistaminic activity, anti-inflammatory activity
2. Vasa	<i>Adhatoda vassica</i> Nees	Antispasmodic, Expectorant, anti-tussive , bronchodilator
3. Yastimadhu	<i>Glycyrrhiza glabra</i> Linn	Anti-asthmatic, anti-inflammatory, antimicrobial, expectorant
4. Shirisha	<i>Albizia lebbek</i> Benth	Anti-inflammatory
5. Haridra	<i>Circuma longa</i> Linn	Anti-inflammatory, analgesic , antibacterial
6. Amalaki	<i>Emblica officinalis</i> Gaertn	Immunostimulatory
7. Shunthi	<i>Zinziber officinale</i> Roxb	Anti-inflammatory
8. Shati	<i>Hedychium spicatum</i> Buch-Ham	Used in breathlessness, cough, chest heaviness, loss of appetite, dyspnea
9.Puskarmool	<i>Inula racemosa</i> Hook	Mast cell stabilization property in the animal allergic models. Antihistaminic activity, anti eosinophilic
10. Tulasi	<i>Ocimum Sanctum</i> Linn	Anti-inflammatory , anti-asthmatic, immunomodulatory
11. Pipalli	<i>Piper longum</i> Linn	Mast cell stabilization property, immunomodulatory, antiasthmatic
12. Kutaki	<i>Picrorrhiza kurroa</i> Royle ex Benth	In animal studies, anti-inflammatory and immunomodulatory activities have been demonstrated.

Source : Pravin, M. (2015)

Allopathic Medicine

First-line therapy involves the use of inhaled corticosteroids as anti-inflammatory agents to control the underlying process. Bronchodilators are used for symptom relief. Short-acting β -agonists provide rapid relief of bronchoconstriction, whereas long-acting β -agonists control the symptoms and reduce the frequency of exacerbations when combined with inhaled corticosteroids. Anticholinergic bronchodilators have a minor role in acute exacerbations and in patients troubled by adverse effects from β -agonists. Theophylline has a bronchodilator action in asthma, but its role as an anti-inflammatory agent needs to be examined further. Because of their toxicity, corticosteroid-sparing agents have a limited role, being restricted to patients with severe uncontrolled asthma.

A number of individual medications exist for asthma, and many are used in combination with others. In general, the three types of treatments are:

- Immunotherapy or allergy desensitization shots. These decrease your body's sensitivity to a particular allergen.
- Anti-IgE monoclonal antibodies. These are designed to prevent your immune system from reacting to allergens.
- Long-term-control medications. These are used on a regular basis to control chronic symptoms and prevent attacks.

Bangladesh perspective

Ayurvedic medicine is widely practised in Bangladesh. When Bangladesh constituted the eastern part of Pakistan, the Pakistani Board of Unani and Ayurvedic Systems of Medicine was operative in the country. Following independence, the Bangladesh Unani and Ayurvedic Practitioners Ordinance of 1972 restructured this body as the Board of Unani and Ayurvedic Systems of Medicine, Bangladesh. The Board is responsible for maintaining educational standards at teaching institutions, arranging for the registration of duly qualified persons (including appointing a registrar, and arranging for the standardization of unani and ayurvedic systems of medicine. A research institute has been functioning under the Board since 1976.

The Bangladesh Unani and Ayurvedic Practitioners Ordinance of 1983 prohibits the practice of unani and ayurvedic systems of medicine by unregistered persons. A significant feature of the ordinance is the deliberate omission of a provision contained in preceding legislation that made it an offence for an ayurvedic or unani practitioner to sign birth, medical, and physical-fitness certificates.

The large number of industries (traditional and herbal factories) have been established in this country for producing Ayurvedic, Unani, Homeopaths and Herbal medicines. It has been estimated that Bangladesh has a market of about 330-crore taka worth traditional and herbal products annually. Bangladesh has near about 550 medicinal plants. More than 300 of such medicinal plants are now in common use in the preparation of traditional medicines in Bangladesh. WHO has forecasted in 2020 this market will be of \$ 3 trillion and in 2050 it will be \$ 5 trillion. By cultivating medicinal plants we can avail this opportunity. Moreover as dependence on ayurvedic drug for the treatment of chronic diseases is appreciable, medicinal drugs should be more cultivated in Bangladesh.

Discussion

Asthma is a well-documented disease in Ayurveda which is comparable with modern disease bronchial asthma on the parameters of risk factors, etio-pathology, clinical manifestations and treatment principles. Ayurveda strives for boosting host defense mechanism by employing life style modifications. The sum total properties of herbal drugs shown in Table1 are considerable ways to reduce the sufferings of asthma . All the drugs have the quality to normalize or suppress the symptoms of the disease. They help in reducing inflammation of the bronchioles and are also useful in recurrent rhinitis, chronic cough and reducing the cough and relieving chest pain. The benefits of these herbs and Herbo-minerals drugs are highly praised in Ayurvedic classical literature and Rasashatra books for conditions like breathlessness, chest congestion, cough and cold, which act by making the secretion thin and helps in expectoration, reduce the inflammation of the respiratory system, signs and symptoms of *Tamaka-Swasa*. All herbal drugs compound have anti allergic, bronchodilator effect, and anti-inflammatory and immune-modulator properties. These properties of drugs help in inflammation in bronchial lumen, increase strength of respiratory system. Herb and Herbo-minerals compound control asthmatic problems and

improves immunity. Healthy lifestyle, breathing exercise like *Yoga* and meditation play important role to reduce symptoms and improve the lung function.

Conclusion

Asthma is a chronic lung disease which has no permanent cure. Alternative medicines are the preventive therapy which has minimal side effects, used in long term therapy. But emergency treatment needs allopathic medicine, which gives quick relief. So survival of asthmatic patients can be managed using the combination of herbal and allopathic medicine. The need of the hour is to develop an allopathic system using the principles of alternative approaches to diminish the side effects for treating asthma.

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