

## MANAGEMENT OF ERAIPPU NOI {BRONCHIAL ASTHMA} IN SIDDHA MEDICINE – A SYSTEMATIC REVIEW.

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### ABSTRACT:

Asthma is a chronic disease characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to person. Symptoms may occur several times in a day or week in affected individuals, and for some people become worse during physical activity or at night. During an asthma attack, the lining of the bronchial tubes swell, causing the airways to narrow and reducing the flow of air into and out of the lungs. Recurrent asthma symptoms frequently cause sleeplessness, daytime fatigue, reduced activity levels and school and work absenteeism. Asthma has a relatively low fatality rate compared to other chronic diseases. In Siddha system of medicine there are so many herbals and herbal formulations are indicated as a valuable drug for asthma. This present paper review and analyse the therapeutic value of some Siddha herbals such as *Andrographispanniculata* , *Curcuma longa* ,*Piper longum* ,*Justiciaadathoda*, *Glycyrrhizaglabra*, *Zingiberofficinale*etc, with their research findings for the management of asthma.

Key words: Asthma, Herbals, Siddha medicine, chronic bronchitis.

### INTRODUCTION

Asthma is common long term inflammatory disease of airways of the lungs . It is characterized by variable and recurring symptoms, reversible airflow obstruction ,and bronchospasm .symptoms include episodes of wheezing ,coughing,chest tightness and shortness of breath. These episodes may occur a few times a day or a few times per week. Depending on the person they may become worse at night or with exercise.

Asthma is thought to be caused by a combination of genetic and environmental factors. Environmental factors include exposure to air pollution and allergens. Other potential triggers include medications such as aspirin and beta blockers. Diagnosis is usually based on the patterns of symptoms, response to therapy over time, and spirometry.

Symptoms may occur several times in a day or week in affected individuals, and for some people become worse during physical activity or at night.

### **Asthma attack**

During an asthma attack, the lining of the bronchial tubes swell, causing the airways to narrow and reducing the flow of air into and out of the lungs. Recurrent asthma symptoms frequently cause sleeplessness, daytime fatigue, reduced activity levels and school and work absenteeism. Asthma has a relatively low fatality rate compared to other chronic diseases.

### **Key facts**

- Asthma is a chronic disease of the bronchial, the air passages leading to and from the lungs.
- Some 235 million people currently suffer from asthma. It is the most common chronic disease among children.
- Most asthma-related deaths occur in low- and lower-middle income countries.
- The strongest risk factors for developing asthma are inhaled substances and particles that may provoke allergic reactions or irritate the airways.
- Chronic inflammatory disease of the airways and most common childhood chronic disease 470,000 hospitalizations/yr
- Medication can control asthma. Avoiding asthma triggers can also reduce the severity of asthma.
- Appropriate management of asthma can enable people to enjoy a good quality of life.

### **The causes**

The fundamental causes of asthma are not completely understood. The strongest risk factors for developing asthma are a combination of genetic predisposition with environmental exposure to inhaled substances and particles that may provoke allergic reactions or irritate the airways, such as:

- indoor allergens (for example, house dust mites in bedding, carpets and stuffed furniture, pollution and pet dander)
- outdoor allergens (such as pollens and moulds)
- tobacco smoke

- chemical irritants in the workplace
- Air pollution.

Other triggers can include cold air, extreme emotional arousal such as anger or fear, and physical exercise. Even certain medications can trigger asthma: aspirin and other non-steroid anti-inflammatory drugs, and beta-blockers (which are used to treat high blood pressure, heart conditions and migraine). Urbanization has been associated with an increase in asthma. But the exact nature of this relationship is unclear.

### **Reducing the asthma burden**

Although asthma cannot be cured, appropriate management can control the disease and enable people to enjoy a good quality of life. Short-term medications are used to relieve symptoms. People with persistent symptoms must take long-term medication daily to control the underlying inflammation and prevent symptoms and exacerbations.

Medication is not the only way to control asthma. It is also important to avoid asthma triggers - stimuli that irritate and inflame the airways. With medical support, each asthma patient must learn what triggers he or she should avoid.

Although asthma does not kill on the scale of chronic obstructive pulmonary disease (COPD) or other chronic diseases, failure to use appropriate medications or to adhere to treatment can lead to death.

## PHARMACOLOGICAL INTERVENTION OF HERBS AND ITS USE FOR ASTHMA

### MANAGEMENT

In Siddha literatures, there are so many herbals are indicated as a valuable drug against the symptoms of asthma. Here some herbals for managing asthma are going to discuss with their research findings.

#### 1) 1.*Justicia adathoda*

- i) Vasicinone is an active principle has been isolated from adathodavasica possess

#### **bronchodilator activity.**

- ii) Some mucolytics such as benzylamines, bromhexine and ambroxol have been isolated from this plant are very effective in the management of asthma. This plant shows anti inflammatory, antispasmodic activity and it has some active principles such as phenols, tannins, alkaloids, anthraquinones, saponins, flavonoids, amino acids and reducing sugar.

Use: The dried leaves are used in smoking in the treatment of bronchial asthma.

## 2. *Glycyrrhiza glabra*:

This plant contains active principles such as a saponin named Glycyrrhizin is a mixture of potassium and calcium salts of 18 beta glycyrrhizic acid also known as glycyrrhizic or glycyrrhizinic acid and a glycoside of glycyrrhetinic acid. This plant has some triterpenes called liquiritic acid, glycyrrhetol, glabrolide, isoglabrolide and liquorice acid. It also has some flavonoids and coumarins, phenols and sterols. *Glycyrrhiza* produce demulcent and expectorant effects by stimulating tracheal mucus secretions. Glycyrrhizic compounds are very effective in reducing chemokine production. It also acts as a bronchodilator and plays an effective role in the management of asthma.

## 3. *Zingiber officinale*:

Research studies found that through blockade of plasma membrane channels, ginger inhibits airway obstruction and associated Ca<sup>2+</sup> signalling in murine airway smooth muscle cells. Research evidence shows that rhizomes of *Zingiber officinale* act as a bronchodilator.

Use: Fresh ginger juice with a cup of fenugreek and honey act as an expectorant in relieving asthma.

## 4. *Taxus baccata*:

Research evidence shows that the alcoholic extract of *Taxus baccata* not only has bronchodilating activity, by decreasing the infiltration of inflammatory cells in the airway and inhibiting the result of histamine it decreases bronchial hyperactivity. In Siddha literatures, this plant and the formulation of this plant acts as an expectorant and plays a significant role in the management of chronic obstructive pulmonary disease.

Use: The leaf powder of *Taxus baccata* mixed with adathoda leaf extract and small quantity of honey helps in curing asthma.

## 5. *Andrographis paniculata*:

Andrographolide is an active principle has been isolated from this plant has been shown to activate the nuclear factor erythroid 2 related factors and promoted inductions of glutathione peroxidase (GPx) and glutathione reductase activities in lungs from cigarette smoke exposed mice. Research evidence shows that via augmentation of Nrf 2 activity it possesses antioxidative properties against cigarette smoke induced lung injury. It shows some beneficial effects in treating the symptoms of asthma.

## 6. *Curcuma longa*:

Based on research findings curcuma longa and its constituents possess bronchodilator activity. It is found that in NTHi (non-typeable hemophilus influenzae) induced mice curcumin effectively suppresses asthma like airway inflammation through dietary administration.

Use: The combination of turmeric powder and honey is an effective method for the treatment of asthma.

### 7. *Piperlongum*:

In Siddha literatures, this plant is indicated as an expectorant. And also research findings show that piperine is an active constituent from piper longum which possesses anti-tussive and bronchodilator activity. On endothelial cells, piper longum and its analogues inhibit TNF- $\alpha$  induced expression of ICAM-1. So, it shows anti-inflammatory activity. This herb is showing progress in the management of asthma exacerbations.

Use: The dried part of the plant is used for the treatment of asthma.

### 8. *Pipernigrum*:

On rat models, the milk extract of *Piper nigrum* was found effective in passive cutaneous anaphylaxis. Methanolic extract of this plant shows an in vitro inhibitory effect on compound 48/80-induced histamine release from rat peritoneal mast cells. In Siddha texts, this herb is indicated as a best remedy for asthma. It possesses bronchodilator activity.

Use: The powder of black pepper mixed with turmeric powder and small quantity of ghee helps for the removal of asthma.

### 9. *Boerhaevia diffusa*:

The flavonoids isolated from *Boerhaevia diffusa* have immune suppressive properties which are associated with asthma. In Siddha texts, this plant is indicated as an effective drug for kapha-related diseases.

Use: The aqueous extract of the root is used for the treatment of asthma.

### 10. *Ocimum gratissimum*:

In airway epithelial cell BEAS-2B, the aqueous extract of *Ocimum gratissimum* inhibits lipopolysaccharide-induced interleukin-6 and interleukin-8 expression. This plant shows an effect in asthma management. And also some herbals such as *Albizia odoratissima*, *Elaeocarpus sphaericus*, *Terminalia bellerica*, *Anisochilus carnosus*, *Leucas aspera*, *Allium cepa*, *Tylophora indica*, *Nyctanthes arbour tristis*, *Solanum trilobatum*, *Solanum xanthocarpum*, *Mukiamaderaspatana*, *Borassus flabellifer*, *Calotropis gigantea*, *Crocus sativus* are indicated as effective in the management of kapha diseases. These plants and their active constituents show effectiveness in the management of asthma.

Use: The aqueous extract of the leaf has an anti-asthmatic effect.

### TREATMENT:

In the Siddha system, purgatives should be given before starting the treatment. [Sanjeevi tablet (1 or 2) is also given with the *Daemia extensa* juice (4 or 5) drops for purgation.].

SIDDHA HERBO- MINERAL FORMULATIONS TO MANAGE ASTHMA:

SL.NO	FORMULATION	MAJOR INGREDIENTS	INDICATIONS
1.	<i>Thalisathichooranam</i>	Thalisam,thirikadugu,thiripala, Saathipathiri,lavangapathiri,elam Athimadhuram,perungayam,sirunagapu Vaivilangam,kottam	Hoarseness of voice, coryza
2.	<i>Thirikadugu</i>	Sukku,milagu,thippili	Cold, cough,dyspnea
3.	<i>Korosanaimathirai</i>	<i>Korosanam,kungumapu,pachaikarpuram, Sathikkai,elam,koshtam,akkiragaram, Karpooram,rasachendooram,appiraga Parpam.</i>	Breathlessness,
4.	<i>Suwasakudorimathirai</i>	Vellerukkampoo,milagu.	Dyspnea, cold
5.	<i>Aadathodaimanappagu</i>	<i>Aadathodaiilai.</i>	Reduces phlegm
6.	<i>Thudhuveelainei</i>	<i>Thudhuvalai,mulli,kandangathiri, Kanchori,adathodai,thirikadugu, Thirpala,kirambu,seeragam,thalisam.</i>	Chronic Cough,
7.	<i>Pavalaparpam Thipillirasayanam</i>	<i>Pavalam,karumburasam.</i>	Wheezing,reduce excessive sputum production
8.	<i>Gowrichindhamani</i>	<i>Rasam,kanthagam,porigaram, Thirikadugu.</i>	Wheezing,dyspnea
9.	<i>Kasthurikaruppu</i>	<i>Kasthuri,Pachaikarpooram,kungumapu, Korosanam,lingam,pooram,kandhagam, Thalagam,manoseelai,rasam,thippili</i>	Cold, cough, wheezing
10.	<i>Purnachanthrodhayam</i>	<i>Rasam,kanthagam,thangarekku.</i>	Chronic cough, Wheeze

CONCLUSION:

The present scenario of the world in which many non communicable diseases play a threatful role in affecting the quality of life.Though many currently available drugs for the management of asthma, there is a need of drug for asthma with lesser adverse effects. This research results in the discovery of many medicines which were used traditionally. Among the above listed Siddha herbals and Siddha herbo mineral formulations provide the right path for the management of the disease. Many scientific researches and pharmacological studies related with the above preparations support in the treatment of asthma. This article might be helpful in evaluating the mode of herbals and herbo-mineral formulations indicated in Siddha system of medicine for the management of asthma.

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