



Review article

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Conservative management of allergic respiratory illness in the light of Ayurveda & Plant Biotechnology: A literary review

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ABSTRACT

The term Allergy refers to expression of an 'altered state of reactivity' to common environmental antigens. Allergic diseases have a familial predisposition and common target organs are lungs, nose and skin. Common allergic respiratory illnesses are allergic rhinitis, allergic bronchitis and asthma etc. Allergic rhinitis is an inflammatory disorder of the nasal mucosa characterized by nasal congestion, rhinorrhea and itching and often accompanied by sneezing and conjunctival irritation, while Allergic bronchitis is triggered by an allergic reaction instead of by a cold or the flu. It is accompanied by a productive cough with slight fever, chills and a sore chest or throat. Asthma is a chronic inflammatory condition of the lung airways characterized by airways hyper-responsiveness resulting in episodic airflow obstruction. Remarkable increase in prevalence of allergic diseases in the past few decades has necessitated a holistic understanding of the condition and exploring its treatment through Ayurveda via the help of modern technologies including Plant biotechnology.

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1. INTRODUCTION

Description of allergic conditions in *Ayurvedic Samhitas* can be found as *Satmya-Asatmya*¹(Adaptable-non adaptable), *Viruddha Ahaar*²(Incompatible food), *Dushi Visha*³(Cumulative toxin) and *Ritu-Sandhi-Kal-Janya-Vyadhi*⁴(Seasonal disease). Common allergic respiratory diseases in *Ayurveda* includes *Vataj Pratishyaya* (Allergic Rhinitis), *Vataj Kasa* (Allergic Bronchitis) and *Tamak Swasa* (Bronchial Asthma). Genetic predisposition of such diseases is described as *Kulaj Roga* (Genetic disease)⁵, *Prakritibhav & Kulodbhav*⁶ (Familial disease), *Sanchari Vyadhi* (*Vagyavalka Samhita*) and *Jatiprasakta & Kulaprasakta*⁷ (*Inherited disease*).

Etiopathogenesis and clinical features: Following diseases can be correlated to allergic respiratory diseases:

Vataj Pratishyaya (Allergic rhinitis):

Prodromal symptoms⁸:

- *Shiro-Gurutvam* (Heaviness in head)
- *Kshavathoh Pravartanam* (Excessive sneezing)
- *Anga-Marda* (Malaise)
- *Jwara* (Fever)

Clinical features⁹:

- *Anadhha-Pihita-Nasa* (Nasal stuffiness)

- *Tanu-Srava-Pravartani* (Watery thin discharge from nose)
- *Gala-Talu-Oshtha-Shosha* (Dryness of mouth, throat and lips)
- *Nistoda-Shankha* (Pricking pain in temples)
- *Swaropghata* (Hoarseness of voice)
- *Murdha-Roga* (Headache)
- *Dhrana-Arti*¹⁰ (Nasal irritation)
- *Danta-Vyatha* (Tooth ache)
- *Kotika-Iva-Sarpanti-Manyate-Parito-Bhruvo*¹¹ (Frontal headache)

Vataj Kasa¹² (**Allergic bronchitis/Pulmonary eosinophilia**):

Etiology: Intake of ununctuous, cold and astringent food, under nutrition, suppression of natural urges and excessive physical strain.

Clinical features:

- Excruciating pain in the cardiac region, in the sides of chest and headache.
- Excessive hoarseness of voice
- Dryness in chest, throat and mouth
- Horripilation and fainting
- Resonant sound during coughing
- Weakness, irritability.
- Dry cough

- Phlegm comes out with difficulty and dry semisolid
- Coughing is relieved by food and drinks that are unctuous, sour, saline and warm.

Tamak Swasa¹³ (Bronchial Asthma):

Etiology:

- *Rajasa-Dhoom-Vatabhyaam* (Exposure to dust, smoke and wind)
- *Sheet-Sthana-Ambu-Sevanata* (Residing in cold place, use of cold water)
- *Vyayam* (Exercise)
- *Jalaj-Anup-Sevnata* (Intake of meat of aquatic and marshy animals and birds)
- *Dadhi-Ksheer-Sevanata* (Intake of curd and unboiled milk)

Pathogenesis and clinical features¹⁴: *Vayu* moving in reverse order pervades the channels (*Pranavah Srotas*), afflicts the neck and head, and stimulates the phlegm to cause rhinitis. This *Vayu* thus obstructed, produces following signs and symptoms:

- *Ghurghurak* (Wheezing)
- *Ativa-Teevra-Vegam-Cha-Swasam-Prana-Prapedkam* (Severe dyspnoea)
- *Ativegat-Kasate* (Severe coughing)
- *Pramoha* (Fainting)
- *Sleshmanam-Vimokshante-Muhurtam-Labhte-Sukham* (Patient is relieved of restlessness for sometime soon after the phlegm is expectorated)
- *Udhvanste-Kanthah* (Choking sensation)
- *Krichrat-Shaknoti-Bhashutam* (Unable to speak freely)
- *Na-Chapi-Nidram-Labhte-Shayanah-Swasa-Piditam* (Sleep disturbance due to dyspnoea while lying down)
- *Aaseeno-Labhte-Saukhyam* (Relieved in sitting posture)
- *Uchshrita-Aksho* (Eyeballs become prominent, project outside)
- *Lalaten Swidyata* (Excessive sweating)
- *Bhrisha Artiman* (Restlessness)
- *Vishushka Aasyo* (Dry mouth)
- *Muhuh-Swaso-Muhuch-Avadhmyate* (Frequent paroxysms of dyspnoea)

Infuriating factors¹⁵: *Megh-Ambu-Shee-Pragvate-Shleshmaleshachapi-Abhivardhate* (Attacks get aggravated when clouds appear in the sky, when he is exposed to humidity and cold, when easterly wind blows, and when he resorts to *Kapha* aggravating food and regimens). *Udavarta-Rajo-Ajeerna-Klinna-Kaya-Nirodhjah, Tamasa Vardhte Atyartham* (*Pratamak Swasa*, a type of *Tamak Swasa* is caused by upward movement of air in abdomen, dust, indigestion and humidity. It is aggravated at night).

Prognosis¹⁶: This disease is *Yapya* (very difficult to treat) but curable in early stage.

Treatment principles & drugs¹⁷:

Nidan Parivarjanam: Avoidance of allergens.

Mucolytics: *Vasa* (*Adhatoda vasica*), *Pippali* (*Piper longum*), *Banafsa* (*Viola odorata*).

Mast cell stabilizers: *Bharngi* (*Clerodendrum serratum*), *Amrita* (*Tinospora cordifolia*), *Tulsi* (*Ocimum sanctum*)

Anti allergy: Turmeric (*Curcuma longa*), *Kutaki* (*Picrorhiza kurroa*), *Triphala*.

Medicinal properties of Ayurvedic drugs:

***Haridra*¹⁸ (*Curcuma longa*):** Taken internally or used externally, turmeric is anti-viral, anti-bacterial, anti-fungal, anti-parasitic, and anti-helminthes. Turmeric is a powerful anti-inflammatory and antiseptic, useful for bronchial asthma, chronic cough.

***Tulsi*¹⁹ (*Ocimum sanctum*):** Essential oil of *Tulsi* (*Ocimum sanctum*) found to have anti-allergic properties. When administered to laboratory animals, the compound was found to inhibit mast cell degranulation and histamine release in the presence of allergen. These studies reveal the potential role of *Ocimum sanctum* extracts in the management of immunological disorders including allergies and asthma. Essential oil of *Tulsi* (*Ocimum sanctum*) has antibacterial, antifungal and antiviral properties. It inhibits the growth of *E.coli*, *B.anthraxis*, and *M.tuberculosis* etc. Its anti-tubercular activity is one-tenth the potency of streptomycin and one-fourth that of isoniazid. The drinking of *Tulsi*-leaf tea keeps one free from cough and colds and other ailments associated with '*Kapha*' *Dosha* in the body. The juice of the leaves is given in catarrh and bronchitis in children.

***Madhuyasti*²⁰ (*Glycyrrhiza glabra*):** Licorice root in powdered form has been used since ancient times as a cough remedy. It is anti-inflammatory and anti-allergy and has actions that are similar to cortisone drugs.

***Shirish*²¹ (*Albezia lebeck*):** *Shirish* is described in *Ayurveda* as –“*Vish-ghan*” i.e. removes poison. It is very useful herb to remove accumulated poisons i.e. accumulated metabolites from produced within the body. According to *Ayurveda*, the poisonous substances interfere with our immune system and hamper its functions.

Application of Plant biotechnology & Ayurveda:

***Nettle*²²(*Urtica dioica*):** It is a good anti- allergy herb and having natural anti-histamine. It reduces the ability of the body to produce histamine. Histamine is a chemical produced by the antibodies in the body to fight against the allergens. Stinging nettle fights against allergy symptoms like cough, watery eyes, sneezing and runny nose.

***Quercetin*²³(A flavonoid derived from *Quercus*):** *Quercetin* is a natural anti-oxidant and anti-histamine. It helps in relieving typical allergic symptoms and even asthma. Its anti-inflammatory properties help reducing itchiness and rash.

Butterbur²⁴(*Petasites*, a genus of Asteraceae family): Butterbur (*Petasites hybridus*) is an anti-inflammatory herb. It also decreases histamines and leukotrienes. It blocks the action of histamine released by the body during the allergic reaction. It treats fever symptoms effectively.

Astragalus²⁵(*Astragalus membranaceus*)

Astragalus membranaceus is used to strengthen the body's immune system. It is rich in anti-oxidants and protects cells against damage caused in allergies. It protects and supports the immune system in preventing colds and upper respiratory infections. It is also an anti-bacterial, anti-viral and anti-inflammatory herb.

Ephedra²⁶(*Coccoloba uvifera*): Ephedra is an active ingredient in many traditional Chinese medicines used in the treatment of asthma, hay fever and common cold. It is a thermogenic and a stimulant. It expands the bronchial tubes making breathing easier. Its diaphoretic properties help to expel exterior pathogens and regulate the functioning of lungs.

Chamomile²⁷(*Matricaria chamomilla*): Chamomile has antihistamine, antispasmodic and anti-inflammatory properties. This is an excellent remedy for allergies, particularly for hay fever. As it is an antihistamine, it counteracts histamine effects and hence reduces hypersensitivity.

Eucalyptus²⁸(*Eucalyptus globules*): It has expectorant properties. Eucalyptus oil can be applied topically for clearing chest congestion. Also, it helps in clearing nasal congestion. Additionally, it loosens phlegm and also protects from insect bites.

Angelica²⁹(*Angelica archangelica*): This is an effective medicine for hay fever. The active components present in this herb block antibodies formation which are produced due to allergic reactions.

Licorice root³⁰(*Glycyrrhiza glabra*): This is a wonderful herb for treating asthma and allergies. Licorice root has glycyrrhizic acid. It has anti-inflammatory and anti-allergic properties as well. Hence, it is very effective in the treatment of conjunctivitis, bronchial asthma, allergic rhinitis and hay fever. As it is a strong expectorant, it can also be used for treating chest infections and cough.

Garlic & Ginger³¹(*Allium sativum* & *Zingiber officinale*): It is known for its anti-microbial properties. It inhibits the activities of clotting agent and platelet-activating factors. These produce inflammatory reactions. Also, it prevents excessive secretion of histamine, thus reduces the symptoms of allergies and garlic is a decongestant and thereby, gives relief from congestion problems caused by allergies.

Rooibos³²(*Aspalathus linearis*): Rooibos has antihistamine properties. In some situations, rooibos tea can help in treating hay fever symptoms.

St. John's wort³³(*Hypericum perforatum*): St. John's wort capsules give relief from sinus headaches.

2. CONCLUSION

Now days, Allergic respiratory complaints in every age group practice are very widespread and equally challenging to physician. So thorough clinical assessment and perfect analysis of development of this disease in the given patient is necessary to reach the sure shot of confirm diagnosis. Thus it provide a protected, cost effective, natural and permanent cure to patient and provide an alternative way of treatment for this most common burning problem which is recognized as contribution of Ayurveda to this world

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