Efficacy of Common Herbal Medicines in Tamak Shwasa: A Review

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ABSTRACT

Ayurveda is the major systems of indigenous medicines and as all of us know it is a science of life. It deals with preventive, promotive as well as curative aspects. The signs and symptoms of Tamak Shwasa are closely related to Bronchial Asthma. It has the predominance of vata and kapha. Asthma is a disease of respiratory airways in which the patient complaining of recurrent attacks of breathlessness and wheezing due to the narrowing of the airways. The cause of asthma may be genetic, but the disease develops and persists as a result of changes in the environment, food and life style. There are about 334 million patients with Asthma affecting all age groups, across the world. India has an estimated 15-20 million asthmatics. The prevalence of Asthma has increased over time and an additional 100 million people worldwide will be expected to develop Asthma by the year 2025. The prevalence of bronchial asthma amplified with time & growing hastily due to increasing environmental pollution. There are numbers of drugs in modern medicine to control the attack of episodes of asthma but still are unable to cure the disease completely and besides this have many adverse effects. Ayurveda has described many herbal drugs Vasa, Kantakari, Shirish, Bharangi, Shati, Pushakarmool, etc. which are described and experimentally proved to treat Tamak shwasa without any adverse effect.

Keywords: Indigenous medicine, Tamak shwasa, Shirish.

INTRODUCTION

Ayurveda is the major systems of indigenous medicines and as all of us know it is a science of life. Ayurveda deals with preventive, promotive as well as curative aspects. The human seeks for health and long life covered the way for the birth of Science of life, which is the science of medicines as well, to keep the health of the healthy and restore the health for the unhealthy. Unlike many diseases, which can be attributed to the life style of modern man, asthma is an ancient illness. Bronchial Asthma has multifactor causation like geographical location, environmental, racial, as well as factors related to behaviors and life-styles are associated with the disease. Tamak Shwasa is a disease described in Ayurvedic texts that shows close resemblance with bronchial asthma on the basis of clinical manifestations. 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 so that people all over the world can keep faith on it on the basis of scientific evidences. The prevalence of Bronchial Asthma has amplified over time and is growing hastily due to increasing environmental pollution produced by vehicles and industries. The disease emerges from highly complex interaction between factors intrinsic to the patient and environment. In today’s environment there is so much pollution, which cannot be avoided because it is mostly produced by vehicles and industries. According to Ayurveda vitiated Pranavayu combines with deranged Kapha dosha in Srotas causing obstruction. This result gasping, labored breathing and respiratory distress. These conditions called as Shwasroga. Tamak Shwasa is sadya in the initial phase, and becomes Yapya in chronic condition or if not treated in early condition. Bronchial Asthma mentioned in modern medicine closely resembles with Tamak Shwasa, is a major chronic airway disorder. It is characterized by inflammation of the airways, bronchoconstriction breathlessness, wheezing.

EPIDEMIOLOGY

The global prevalence of Asthma is anticipated to be approximately 45 percent 1-4. There are about 334 million patients with Asthma affecting all age groups, across the world. India has an estimated 15-20 million asthmatics. The prevalence of Asthma has increased over time and an additional 100 million people worldwide will be expected to develop Asthma by the year 2025. In the United States, about 20 million people have asthma. Nearly 9 million of them are children. Among children and adolescents aged 5-17 years, asthma accounts for a loss of 10 million school days annually (National Health Interview Survey, National Center for Health Statistics). A hospital based study in Bengaluru showed that the prevalence of asthma steadily increased from 9% in 1979 to 29.5% in 1999. Persistent asthma increased by 20-72% and persistent severe asthma by 4-11% from 1999 to 2009 5. In 2006, approximately 14% of the world’s children experienced asthma symptoms. In African countries, the prevalence of asthma ranges from approximately 10% to more than 20%. Poorly treated asthma can lead to school absence, hospitalization and death 6. In contemporary medical science, management of Bronchial Asthma is carried out with usage of bronchodilator leukotriene antagonist, mast cell stabilizers and corticosteroids. Long lasting usage produces adverse effects and also reduces the effectiveness of therapy 7-10. So by this, modern medical science can only control the episode of attack.

HERBAL MEDICINES

Vasa

In a study comparative efficacy of Vasarishta and Vasakaasava were assessed on 24 patients of Shwasa. Effect of therapy showed

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that marked improvement was found more in Vasarilasha group while the improved patients were in Vasakaasava treated group. In another study 32 patients were taken in a study and randomly divided into 3 groups consisting of Vasavleha, Vasarilasha and Vasa ghrita. Overall effectiveness of test samples on shwasa was observed more in Vasa avleha than Vasarilasha and Vasa ghrita. In a comparative study of Vasavleha prepared from swarasas and kwathkalpana in the management of shwasa, 35 patients were taken and randomly divided in two groups. Both the preparation of Vasa avleha showed statistically highly significant results on shwasa. From both preparations, Vasa avleha (prepared from swarasa) was better clinically effective in comparison to Vasa avleha (prepared from kwath). In respiratory disorders Vasa (Adhatoda) has been used for so long as traditional medicine. The primary alkaloid constituents of Adhatoda are vasicine and vasicine none.

These are well established therapeutic respiratory agents. Adhatoda’s leaves and root Extracts are useful in treating different respiratory conditions like bronchitis, bronchial asthma and other lung and bronchiol disorders, as well as common coughs and colds. Leaves decoction of has a soothing effect on irritation in the throat and helps to expel out the phlegm in the respiratory passages. In a sequence of evaluating the more therapeutic properties of vasa, good antitussive activity of Adhatoda extract in anesthetized guinea pigs and rabbits and in unanesthetized guinea pigs have been evaluated. Vasicine showed broncho-dilatory activity both in vitro and in vivo during recent investigations.

Kantakari
Kantakari was mentioned under hikka nigrana and kasahara mahakashayas by Acharya Charaka. Literature available on kantakari supports use of whole plants. The therapeutic effect of Ethanolic extract of Solanum xanthocarpum i.e. asthma relieving or antiasthmatic, antiallergic property have been evaluated. Effects of Solanum xanthocarpum extract on some of the parameters like smooth muscle relaxation, and antagonism of asthma mediators such as histamine, eosinophills and protection against mast cell degranulation which seemed to be prominent in pathophysiology of asthma. The ethanolic extract of Solanum xanthocarpum showed a significant antihistaminic activity of in histamine induced contraction in goat tracheal chain preparation. It shows Ethanolic extract of Solanum xanthocarpum has a significant inhibition of histamine induced contractions on isolated goat tracheal chain preparation. Besides this, all three extracts of flowers of Solanum xanthocarpum results were screened and showed that only Ethanolic extract of Solanum xanthocarpum at a dose of 50 and 100 mg/kg reduced milk induced eosinophilia to a great extent. Mast cell stabilization activity of Solanum xanthocarpum at a dose of (50-100 mg/kg, i.p) showed significant as compared to standard drug Disodium chromoglycate (DSCG).

Shirish
A single blind study had been conducted on Albizia lebbeck stem bark decoction (Shirish Twak Kwatha). In this study, patients with good, fair, poor are 56 %, 38 %, 6 % respectively. The results reveal that the drug significantly acts upon the parameters that were assessed during the study. It could suppress total leukocyte count, eosinophil count and ESR and improve the PEF ratio with symptomatic relief. So, the drug can be recommended for its use in the Bronchial Asthma patients. Antihistaminic activity of Albizia lebbeck has been proved in various trials. An experiment on guinea pig against 1% Histamine induced bronchospasm showed that the bark decoction in dose of 0.25g to 1.0 g/kg considerably affective. The flower decoction in dose of 50mg/kg appreciably protected the guinea pig against Histamine induced bronchospasm. Due to smooth muscle relaxation activity both the bark and flower decoction of the plant protect the guinea pig against Histamine induced bronchospasm.

Bharangi
On the isolated guinea pig ileum and tracheal chain showed a graded inhibition of histamine responses with the aqueous extract of the root bark (10 to 500 μg/ml) of bharangi. The aqueous extract’s ethyl acetate fraction (0.1 to 1 μg/ml) showed inhibition of histamine responses on the guinea pig ileum. After saponin treatment for three weeks the in vitro sensitivity of the rat lung tissue to histamine was diminished but the sensitivity to acetylcholine was not remarkable. After continuous perfusion of the alcoholic fraction of aqueous extract of the root of Clerodendrum serratum suggesting anti-asthmatic potential on anaphylactic bronchoconstriction response in sensitized isolated guinea pig lung. The saponin derived from the plant caused disruption of mast cells of the rat mesentry and the maximum effect was produced in thirty minutes after which they were was no further increase. The effect was dose dependent.

Yashimadhu
Purified saponin fraction of the extract of Glycyrrhiza glabra was injected to the swiss variety of albino rats were induced asthma by triple antigen. The outcome obtained shows that the saponin fraction acts as anti-asthmatic agent is in triple antigen sensitized albino rats. The mast cell degranulation inhibition took place up to 62% at 25 mg/Kg body weight.

Pushkarmool
Pushkarmool has antihistaminic and a bronchodilator action that make it work in shwasa roga. The root of pushkarmool is useful in all edematous condition and helpful in curing swelling and pain. The root of this drug is bitter, acid, thermogenic, aromatic, stimulant, expectorant, and bronchodilator. The chemical constituents of root are inulin (10%), aromatic oil (1.3 %). Main alkaloid in oil is Alantolactone. Roots of Inula racemosa gave β-sitosterol, dancosterol, and isoolantolactone. Pushkarmool is a respiratory support that smoothens the irritated bronchial tree. It is rejuvenative for lungs. It is useful in many conditions including inflammation, anorexia, cough, hiccough, cardiac and bronchial asthma, bronchitis, anemia and general debility. According to Charaka it is the drug of choice in Hikka, Shwasa and Parshwashool. Pushkarmool has anti- histaminic and a bronchodilator action that make it work in Shwasa roga. Alantolactone and inulin extracted from root of Inula racemosa showed maximum antibacterial and anti-inflammatory activities.

Shati
In a study of 25 patients with recurrent paroxysmal attacks of dyspnea (bronchial asthma) the powdered rhizome of, given 10 g in divided doses to for 4 weeks. All patients’ relieved dyspnea, cough and restlessness in various degrees. The ronchi completely disappeared in 36 % of the patients. 25 % reduction in mean respiration rate and 20 % increase the vital capacity with 55.6 % decline in mean absolute eosinophil count also. In another study of H.spicatum 16 patients of bronchial asthma. Patients were given 1 g of powder thrice daily for 21 days, with plain water. The chief complaints like breathlessness, cough, chest heaviness, loss of appetite, uneasiness during exercise and sleeplessness etc were relieved with varying extent of relief.
Table 1: Some Herbal Drugs with its Properties

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Drugs</th>
<th>Latin Name</th>
<th>Prospective (effects)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kantakari</td>
<td>Solanum surattense Burm. f</td>
<td>Antihistaminic activity, Anti-inflammation activity, Bronchodilation, Diaphoretic</td>
</tr>
<tr>
<td>2</td>
<td>Vasa</td>
<td>Adhatoda vassica Nees</td>
<td>Antispasmodic, Expectorant, anti-tissue, bronchodilator</td>
</tr>
<tr>
<td>3</td>
<td>Yastimadhuv</td>
<td>Glycyrrhiza glabra Linn</td>
<td>Anti-asthmatic, anti-inflammatory, anti-microbial, expectorant</td>
</tr>
<tr>
<td>4</td>
<td>Shirisha</td>
<td>Alizia lebebeck Benth</td>
<td>Anti-inflammatory, analgesic, anti-inflammatory, Analgesic, Antispasmodic</td>
</tr>
<tr>
<td>5</td>
<td>Haridra</td>
<td>Curcuma longa Linn</td>
<td>Anti-inflammatory, analgesic, antibacterial, Immunostimulatory</td>
</tr>
<tr>
<td>6</td>
<td>Almalki</td>
<td>Emblica officinalis Gaertn</td>
<td>Mast cell stabilization property in the animal allergic models</td>
</tr>
<tr>
<td>7</td>
<td>Shunshi</td>
<td>Zinziber officinalis Roxb</td>
<td>Mast cell stabilization property in the animal allergic models</td>
</tr>
<tr>
<td>8</td>
<td>Shati</td>
<td>Hedychium spicatum Buch-Ham</td>
<td>Use in breathlessness, cough, chest heaviness, loss of appetite, dyspnea</td>
</tr>
<tr>
<td>9</td>
<td>Puskarmool</td>
<td>Inula racemosa Hook</td>
<td>Mast cell Stabilization property in the animal allergic models</td>
</tr>
<tr>
<td>10</td>
<td>Tulasi</td>
<td>Ocimum sanctum Linn</td>
<td>Mast cell Stabilization property in the animal allergic models</td>
</tr>
<tr>
<td>11</td>
<td>Pipali</td>
<td>Piper longum Linn</td>
<td>Mast cell Stabilization property in the animal allergic models</td>
</tr>
<tr>
<td>12</td>
<td>Kutaki</td>
<td>Picrorrhiza kurroa Royle ex Benth</td>
<td>In animal studies, anti-inflammatory, and immunomodulatory activities have been demonstrated</td>
</tr>
</tbody>
</table>

CONCLUSION

Ayurveda is the systems of native medicines and as all of us know it is a science of life. Ayurveda deals with a healthy life style. Contrasting many diseases, which can be attributed to the life style of modern era, asthma is an ancient illness. Bronchial Asthma has multifactor causation like ecological location, environmental, racial, as well as life style. India has an estimated 15-20 million asthmatic. The prevalence of Asthma has increased over time and an additional 100 million people worldwide will be expected to develop Asthma by the year 2025. In this review article, an effort is made to collect the single herbs which are effective in Tamak shwasa (asthma), helpful in management of distressing condition of tamak shwasa. Anti-asthmatic, antihistaminic, mast cell stabilizing, bronchodilatation etc. activities of above described drugs prove good efficacy of herbal drugs for management of Tamak shwasa. The article may be helpful to enhancing the use of herbal drugs in general practice.

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