



ISSN (E): 2277- 7695

ISSN (P): 2349-8242

NAAS Rating: 5.03

TPI 2018; 7(6): 516-518

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www.thepharmajournal.com

Received: 13-04-2018

Accepted: 17-05-2018

Dr. Aparna Singh

Assistant Professor, Department of Kriya Sharir, RLAMC, Bhilai, Chhattisgarh, India

Dr. Kanhaiya Agrawal

Assistant Professor, Department of Dravyaguna, SKAMCH, Varanasi, Uttar Pradesh, India

OP Dadhich

Prof, Dean, National Institute of Ayurveda, Jaipur, Rajasthan, India

Pharmacodynamics of Shatyadi churna in the management of Tamaka Shwasa

Dr. Aparna Singh, Dr. Kanhaiya Agrawal and OP Dadhich

Abstract

The alarming rise in the prevalence of bronchial asthma can be accounted to factors such as atmospheric pollution, rapid environmental changes, adaptation of newer dietetic preparations and tremendous psychological stress. There are about 334 million patients suffering with bronchial asthma that is affecting almost all age groups of patients across the world. In India around 15-20 million people were affected with bronchial asthma. In *Ayurveda*, the success of treatment completely depends upon four factors, termed as *Chikitsa Chatushpada* among which drug is second important factor after physician. The revalidation of ancient *Ayurvedic* or traditional compound preparations which can optimize the functions of respiratory tract by reversing the inflammatory responses and provide strength to the system is important. Hence pharmacodynamic of *Shatyadi Churna* in the management of *Shatyadi Churna* was studied. *Shatyadi Churna* indicate the dominance of *Katu*, *Tikta Rasa*, *Laghu*, *Tikshna Guna*, *Ushna Virya*, *Katu* and *Madhur Vipaka* and *Kapha Vatashamaka Karma* these drugs act on *Pranavaha Srotas* thereby pacifying the *doshas* and hence pacify the symptoms in *Tamaka Shwasa*.

Keywords: bronchial asthma, tamaka shwasa, shatyadi churna

Introduction

Science is exploring ways to control and cure the diseases with the help of advancements in technology but the challenge is still persisting because of springing up of newer diseases, and also the relapse of old ones in a modified and worsened form. From the foregoing, it is clear that human race gets inevitably exposed to atmospheric pollution and thus with the passing of decade and increasing of urbanization and industrialization the incidence of *Tamaka Shwasa* will keep on increasing. Modern medicine were believed to give immediate relief to the patient of *Tamaka Shwasa* but this relief is transient and symptomatic and patient continues to get the recurrent attacks of disease with further complications.

In global scenario there are about 334 million patients suffering with bronchial asthma that is affecting almost all age groups of patients across the world [1]. In India it is to be estimated around 15-20 million people were affected with bronchial asthma. Hence the prevalence of asthma is believed to be increasing with time and additional 100 million people would be expected to develop asthma by the year 2025 [2, 3].

Tamaka Shwasa Vyadhi is related with the derangement of the *Pranavaha Srotas*. On the basis of the clinical features Bronchial Asthma can be correlated with *Tamaka Shwasa in Ayurveda*. There are striking similarities in the description of mechanism of Asthma and its pathogenesis between modern and *Ayurveda* concepts. Asthma is described as a disorder of airways characterized by airway inflammation due to hyper responsiveness of airway. There is constriction of bronchial muscles causing broncho-constriction and mucous plug formation causing airway obstruction leading to airflow limitation & presentation of Asthma occurs. *Ayurveda* explains this as *pratiloma gati* [4] of *Vayu in Vata Pradhana Samprapti* mainly due to *Sankochana Karma* (bronchoconstriction) of vitiated *Vata* and subsequently obstruction of *Pranavaha Srotas* by *Udirita Kapha* which loses its natural attributes and becomes condensed in the *Srotas* in *Kapha Pradhana Samprapti* mainly due to *Srotorodha Karma* (obstruction) of vitiated *Kapha Tamaka Shwasa* is *Pittasthana Samudhabhava* and *Kaphavataja dosha Vyadhi* [5].

The fundamental treatment method of *samsodhana*, *samsamana* and *nidana parivarjana* mentioned in *Ayurvedic* classics, if administered judiciously, the desired results can be achieved. The revalidation of ancient *Ayurvedic* or traditional compound preparations which can optimize the functions of respiratory tract by reversing the inflammatory responses and provide strength to the system is important.

Correspondence

Dr. Aparna Singh

Assistant Professor, Department of Kriya Sharir, RLAMC, Bhilai, Chhattisgarh, India

In *Ayurveda*, the success of treatment completely depends upon four factors, termed as *Chikitsa Chatushpada* among which drug is second important factor after physician [6]. Thus selection of a proper drug in the management of disease is very important. In the modern ages WHO also stresses importance of drug and defines it as a substance or product that is used or intended to be used, to modify or explore physiological system or pathological status for the benefit of the recipient.

Ayurveda, believes that the drug or diet articles that reverses or break the *Samprapti* is ideal for the particular disease. The drug can be used singly or in combination to achieve the prescribed objective. It is often the total effect of all the ingredients in case of a formulation rather than the action of individual drugs that plays a vital role in therapeutics. Drug combinations are envisaged to serve synergistic action, combined action, toxicity, neutralizing action and specific action.

Aims and objective

1. To study the pharmacodynamic properties of *Shatyadi Churna*.
2. To analyze the role of *Shatyadi Churna* in the management of *Tamaka Shwasa*

Discussion

Selection of drug

In order to achieve maximum effect, a drug is expected to have a good symptomatic relief action, an antagonistic approach towards aetiopathogenesis, minimum side effects

and good compliance [7]. According to modern system those drugs which are commonly used in Bronchial Asthma includes, bronchodilator, anti-histaminic, anti-allergic, mast cell stabilizers, immune-modulator, antioxidant, anti-inflammatory, expectorant, anti-tussive, mucolytic, adaptogenic properties. While studying the aetiopathogenesis of *Tamak Shwasa* the drugs which were having *Kaphavataghna*, *Ushna* and *Vatanulomana* properties are very beneficial to treat this disease. Hence *Shatyadi Churna* [8] mentioned in *Charak Chikitsa* in context of *Hikka – Shwasa* was selected for the analytical studies.

The drugs administered with *anupana* of honey/*ushnodaka* to enhance its pharmacological activity. Each contents of *Shatyadi Churna* were taken in equal part and fine powder was made. It was then mixed with 8 parts of sugar. All the ingredients of the drugs are easily available, easy to administer and have no side effects.

Probable mode of action of the drugs

As per the description available in *Ayurvedic* texts, therapeutic effect of a drug depends on certain pharmacodynamic properties of its particular content. These pharmacodynamic properties are- *Rasa*, *Guna*, *Virya*, *Vipaka* and *Prabhava*. According to *Ayurvedic* Pharmacodynamic, drug do some part of work through *Rasa*, some part through *Virya*, some through *Vipaka* and remaining some part through *Prabhava*.

Pharmacodynamics of Shatyadi churna

S.No	Drug	B.N	Rasa	Guna	Virya	Vipaka	Doshagnata
1.	<i>Shati</i>	<i>Hedychium spicatum</i>	Katu, Tikta, Kashaya	Laghu, Tikshna	Ushna	Katu	Kapha vatashamaka
2.	<i>Choraka</i>	<i>Angelica glauca</i>	Katu, Tikta	Laghu, Tikshna	Ushna	Katu	Kapha vatashamaka
3.	<i>Jivanti</i>	<i>Leptadenia reticulata</i>	Madhur	Laghu, Snigdha	Sheeta	Madhur	Vata pittashamaka
4.	<i>Twak</i>	<i>Cinnamomum zeylanicum</i>	Katu, Madhur	Laghu, Ruksha, Tikshna	Ushna	Madhur	Kapha vatashamaka
5.	<i>Mustak</i>	<i>Cyperus rotundus</i>	Tikta, Katu, Kashaya	Laghu, Ruksha,	Sheeta	Katu	Kapha vatashamaka
6.	<i>Pushkarmoola</i>	<i>Inula racemosa</i>	Tikta, Katu	Laghu, Tikshna	Ushna	Katu	Kapha vatashamaka
7.	<i>Tulsi</i>	<i>Ocimum sanctum</i>	Katu, Tikta	Laghu, Ruksha	Ushna	Katu	Kapha vatashamaka
8.	<i>Bhumyamalaki</i>	<i>Phyllanthus urinari</i>	Tikta, Kashaya Madhur	Laghu, Ruksha	Sheeta	Madhur	Kapha pittashamaka
9.	<i>Ela</i>	<i>Elettaria cardamomum</i>	Katu, Madhur	Laghu, Ruksha	Sheeta	Madhur	Kapha vataghna
10.	<i>Pippali</i>	<i>Piper longum</i>	Katu	Laghu, Tikshna, Snigdha	Anushnasheeta	Madhur	Kapha vataghna
11.	<i>Agaru</i>	<i>Aqualaria agallocha</i>	Katu, Tikta	Laghu, Tikshna	Ushna	Katu	Vata kaphahara
12.	<i>Shunthi</i>	<i>Zingiber officinale</i>	Katu	Laghu, Snigdha	Ushna	Madhur	Vata kaphahara

From the above table it is clear that:-

Rasa

1. Katu Rasa is present in 8 dravya (i.e 36.36%)
2. Tikta Rasa is present in 7 dravya (i.e 31.81%)
3. Madhura is present in 4 dravya (i.e 18.18%)
4. Kashaya is present in 3 dravya (i.e 13.63%)

Guna

1. Laghu guna is present in 12 dravya. (i.e. 46.15%)
2. Tikshna guna is present in 6 dravya. (i.e 23.07%)
3. Ruksha guna is present in 5 dravya. (i.e 19.23%)
4. Snigdha guna is present in 3 dravya (i.e 11.53)

Virya

1. Ushna Virya is present in 7 dravya.(58.33%)
2. Sheeta Virya is present in 4 dravya.(33.33%)
3. Anushnasheeta is present in 1 dravya.(8.33%)

Doshashamaka

1. Kaphavatashamaka Karma is present in 10

dravya.(83.33%)

2. Kaphapittashamaka Karma is present in 2 dravya.(16.66%)

In *Shatyadi Churna* most of the *Dravya* are having predominance of *Laghu*, *Ruksha* and *Tikshna Guna*. All these *Guna* helps in increasing *Dhatwagni*, by enhancing the basal metabolic rate. These also help in digestion of undigested matter and their removal. *Tikshna Guna* due to predominance of *Agni Mahabhuta* acts on the channels immediately and remove the obstruction by pacifying the *Kapha*. *Ruksha Guna* helps in absorption of excessive secretion and thereby helps in removing obstruction caused by thick mucus plug. *Laghu* and *Ruksha Guna* are mainly *Kaphahara*.

The mode of Action of all drugs in *Shatyadi Churna* can be divided into following groups such as

1. **Deepan-Pachana Drugs:** *Choraka*, *Bhumiamalaki*, *Tulsi*, *Pippali*, *Musta*, *Ela*, *Twak*. (These drugs help at the level of *Agni* in *Samprapti Vighatana*.)
2. **Srotoshodhaka Drugs:** *Shunthi*, *Jivanti*, *Tulsi*, *Ela*, *Twak*.

(These drugs cleans the various channels of *Pranavaha Srotas* which leads to *Anuloma Gati of Vata* in this manner these *Srotoshodhaka drugs* help in *Samprapti Vighatana*)

3. **Aamanashaka Drugs:** (*Rasagata Kaphanashaka*):- *Shunthi, Pippali, Tvak*. (*Ama* is the one of the important milestone in the *Samprapti* of *Tamaka Shwasa* hence these drugs help in *Samprapti Vighatana*)
4. **Vata Kapha Naashak Drugs:** *Shati, Choraka, Twak, Mustak, Pushkarmula, Tulsi, Ela, Pippali, Agarar, Shunti*.
5. **Dhatu Rupi Kapha Shamak:** *Madhu*
6. **Shwasahara action:** All most all the drugs of *Shatyadi Churna* are having *Shwasahara* action.

A study done by Behera B. showed the relevance of *Shvāsakuthāra rasa* in the management of *Tamak Shwasa*. This study was carried out on the 44 patients of bronchial asthma. *Shvāsakuthāra* was administered in the dose of 1.5 gm per day in six divided doses with honey for a period of 45 days. The results of this study showed that *Shvāsakuthāra* rasa significantly reduces the frequency, duration and intensity of the attack. It also provided significant relief in signs and symptoms and increased the PEF. No adverse effect of the drug was noticed during the study^[10].

Another study done by Prajapati P.K *et al.* showed the relevance of different forms of *Vasa (Adhatoda vasica)* in different dosage forms of *Vasa* like *kwatha, avaleha, sneha* and *sandhana* have been used for the treatment of *Shwasa roga*^[11].

Panda A.K *et al.* studied the efficacy of *Padmapatradi yoga* in the management of bronchial asthma. A study was carried out in 40 patients of either sex in between the age of 15-65 years to assure the clinical response of *Padmapatradi yoga* in bronchial asthma (*Tamaka Shwasa*) at P.G. department of Kayachikitsa, D.G.M. Ayurvedic Medical College, Gadag, Karnataka. The sum total properties of *Padmapatradi yoga* is *tikta katu rasa, laghu and tikna guna* (light and penetrating properties), *ushna virya* (hot potency) and *vatakaphagna* (decrease *vata* and *kapha dosa*). *Padmapatradi yoga* is effective in increased peak expiratory flow rate, breath holding time, and reduces the absolute eosinophil count of studied cases and also found statistically highly significant at $p < 0.001$ level. The drug is quite safe and acts as a bronchodilator, antihistaminic and anti-inflammatory^[12].

Conclusion

Hence *Shatyadi Churna* indicate the dominance of *Katu, Tikta Rasa, Laghu, Tikshna Guna, Ushna Virya, Katu* and *Madhur Vipaka* and *Kapha Vatashamaka Karma* are present in maximum dravyas. These drugs act on *Pranavaha Srotas* thereby pacifying the *doshas* and thereby pacify the symptoms in *Tamaka Shwasa*. The contents of the drug are easily available and adverse effect of the drugs were also not reported.

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