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Critical Analysis of Charakokta Mahakashaya in the Management of Respiratory Allergic Disorders (RAD)

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Abstract

Respiratory allergic disorders are the most common allergic manifestation that is encountered in paediatric age group. Grievance of this problem is stated by statistical view which shows 5-20% of the paediatric population are sufferers of Respiratory Allergic Disorders (RAD).

Acharya charak mentions a variety of *hetus* for this type of disease that incorporates *Rajasa* (from dust), *Dhooma* (smoke), *Rukshaanna* (dry food), and *Vishamashan* (irregular diet). These are important causative factors that can be attributed to environment and diet. Because respiratory allergies occur mostly due to hyper responsiveness to these factors in the form of histamine release and activation of mast cells, treatment is aimed towards anti-histaminic and mast cell stabilising agent.

Ayurveda has a large number of drugs that can act as anti-histaminic or mast cell stabilising agents. The present paper is focused on *Charakokta mahakashaya* to determine the role of *Shwashar Mahakashaya*, *Kasahar mahakashaya*, and *Vishaghna mahakashaya* and their *dravyas* for management of RAD.

The paper attributes to the critical analysis of *Shwashhar*, *Kasahar*, and *Vishaghna mahakashaya* to elicit their pharmacological actions based on various experimental and clinical studies.

Keywords: Shwashar; Kasahar; Vishaghna mahakashaya; Respiratory allergic disorder

Introduction

Respiratory allergies are a cause of concern particularly in children, and prevalence is increasing worldwide. Approximately 40% of children are affected by some form of allergy and respiratory allergies are the most common allergies worldwide [1]. WHO identified acute respiratory infections as the leading cause of death in children less than 5 years of age. Acute respiratory infections account for 2 million deaths per year in children below 5 years [2].

Respiratory allergies commonly includeallergic rhinitis and allergic asthma, causing wheezing, coughing, shortness of breath, sneezing, runny nose and sinus problems, and also red, watery and itching eyes [3]. The prevalence of these disorders in the developing as well as developed countries is increasing over recent decades. The increase in prevalence may be attributed to environmental factors-(*Rajasa, Dhooma),* dietic incompatibilities-(*Rukshanna, Vishamashan)* and faulty lifestyle- (Ati-v*yayama, Gramyadharma)*[4].

Modern science counteracts RAD with the help of anti-allergic drugs like Chlorephenaramine Maleate (CPM), Cetrizine, Levocetrizine, Loratidine, Disodium chromoglycate etc. Although the drugs suppress the symptoms, they do not potentiate respiratory system nor root out the cause. Rather these drugs leaves the patient with one or other adverse effects such as sedation, drowsiness, ataxia, lack of concentration, headache, dry mouth, constipation etc [5]. Despite the severe impact of disease on patients and on society as a whole, respiratory allergic disorders (RAD) are neglected and under recognized by healthcare professionals thereby hampering the quality of life and rendering socio-economic burden on parents or society.

Ayurveda has a rich treasure of medicinal plants which are very effective in prevention and management of Respiratory Allergic Disorders (RAD). Herbal drugs that hold anti-histaminic, anti-toxic, mast cell stabiliser and immune-modulatory properties should be utilised to manage RAD. Ayurveda has a large number of herbal drugs that possess these properties and can serve as a mainstay of treatment for respiratory allergies. Treatment with herbal drugs not only control symptoms but improve the quality of life. Hence there is utmost need to utilize these herbs with evidence based practice guidelines to yield better results.

With this view in mind herbal drugs are screened for their potential against respiratory allergies. These herbal agents not only serves as an alternative for modern anti-allergic treatment but also can safely be prescribed for the paediatric population. *Acharya charaka* in the fourth chapter of *Sutrasthana* specifies and describes fifty *Mahakashaya* with ten herbal drugs in each group. Each group of herbal drugs has specific pharmacological actions, with the same pharmacotherapeutic actions, to fight against a particular disease or disorder. The utility of *Charakokta mahakashaya* is disease specific and has been prescribed in such a way that the combination provides effective guidelines for the *Chikitsak*. Out of the fifty *Mahakashaya, Shwashar*, *Kasahar* and *Vishaghna mahakashaya* can be screened for anti-allergic properties against respiratory disorders [3]. Out of these three *mahakashayas*, *Shwashar* and *Kasahar mahakashaya* can be considered directly for the respiratory disorders whereas *Vishaghna mahakashaya* plays its role as an anti-allergic agent against respiratory system in an indirect manner. The present paper is focused towards critical analysis of herbal agents

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of the above *mahakashayas* to justify their efficacy and safety in the management of respiratory allergic disorders on the basis of clinical and experimental evidence (Table 1).

The above table depicts the pharmacological actions of herbal drugs that make up *ShwasharMahakashaya*. All the *mahakashaya* herbs show evidence based action on respiratory allergies. Herbs like *Inula racemosa, Garcinia pedunculata, Ellataria cardamom, Ferula foetida, Phyllanthus niruri* can be safely and effectively used in the treatment for cough, bronchitis and asthma [6]. Gargling with *Balasmodendron myrrha* prove beneficial in tonsillitis, common cold, gingivitis etc [6]. All *Shwashar mahakashaya* show anti-histaminic, anti-asthmatic, bronchodilator, expectorant, and mast cell stabiliser properties that is essential for the management of respiratory allergies. As an adjuvant, herbs such as *Inula racemosa* are efficacious as an equipotent in the respiratory system (Table 2 and 3).

Out of ten herbs in *Kasahar mahakashaya* mentioned above, eight herbs have action on the respiratory system that is evident from clinical and experimental studies. Although *Acharya charak* has indicated this group of herbs in *Kasa* disorders, evidence from studies has suggested their multi-dimensional use in respiratory allergies. *Terminalia chebula, Piper longum, Pistacia integerrima, Solanum xanthocarpum* are few herbs that are beneficial for cough, bronchitis, dyspnoea and asthma.

S.N.	Drug	Action on Respiratory System	Other Properties
1	*Hedychium spicatum* Common name: Shati	Expectorant [6], Anti-asthmatic [6], Anti-histaminic, Mast cell stabilizer [10]	Anti-inflammatory [6], Anti-microbial [6], Anti-helmenthic [6], Spasmolytic [6,7]
2	*Inula racemosa* Common Name: Pushkaramula	Anti-histaminic [8], Expectorant [6], Anti-catarrhal [6], Anti-asthmatic [9], Mast cell Stabilizer [10]	Anti-spasmodic [6], Stomachic [6] Immunostimulant [6]
3	*Garcinia pedunculata* Common name: Amlavetasa	Cough & other respiratory disorders [6]	Astringent [6], Cooling [6], Cardiotonic [6]
4	*Elletaria cardamomum* Common name: Elaichi	Anti-asthmatic [6],	Anti-microbial [6], Anti-septic [6], Anti-spasmodic [6], Carminative [6]
5	*Asafoetida* Common name: Hing	Expectorant [11], Anti-asthmatic [6]	Anti-spasmodic [11], Laxative [11] Carminative [11], Sedative [11], Anti-oxidant [11]
6	*Aquilaria agallocha* Common name: Aguru	Anti-asthmatic [6]	Astringent [6], Carminative [6], Anti-diarrhoeal [6]
7	*Balasmodendron myrrha* Common name: Myrrh	Expectorant [6],	Anti-inflammatory [6], Anti-viral [6], Antiseptic [6], Bacteriostatic [6], Carminative [6], Stomachic [6]
8	*Phyllanthus niruri* Common name: Bhumiamalaki	Anti-asthmatic [12]	Anti-pyretic [6], Anti-spasmodic [6], Anti-viral [6], Diuretic [6], Bactericidal [6]
9	*Leptadenia reticulata* Common name: Jivanti	Anti-histaminic [13], Mast cell stabilizer [13], Expectorant [13]	Anti-inflammatory, Anti-spasmodic, Anti-diuretic, Anti-bacterial
10	*Angelica archangelica* Common name: Choraka	Expectorant [6], Anti-histaminic [6]	Anti-inflammatory [6], Anti-spasmodic [6], Anti-bacterial [6], Anti-fungal [6]

Table 1: Pharmacological Properties of *Shwashar Mahakashaya.*

Property	Drugs
Anti-histaminic	*Hedychium spicatum, Inula racemosa, Leptadenia reticulata, Angelica archangelica*
Anti-asthmatic	*Hedychium spicatum, Inular acemosa, Elletaria cardamomum, Asafoetida, Aquilaria agallocha, Phylllanthus niruri*
Expectorant	*Hedychium spicatum, Inularacemosa, Asafoetida, Balasmodendron myrrha, Leptadenia reticulata, Angelica archangelica*
Anti-catarrhal	*Inula racemosa*
Mast cell stabilizer	*Hedychium spicatum, Inula racemosa, Leptidenia reticulata*

Table 2: Analysis of *Shwashar Mahakashaya.*

S.N.	Drug	Action on Respiratory System	Other Properties
1	*Vitis vinifera* Common name: Draksha	Anti-histaminic, Use in cough & respiratory tract catarrh [6]	Anti-microbial [14], Anti-malignant [9], Laxative [6], Anti-oxidant [15]
2	*Terminalia chebula* Common name: Haritaki	Anti-asthmatic [16], Mast cell stabiliser [16]	Gentle purgative [6], Astringent [6], Stomachic [6], Anti-bilious [6]
3	*Emblica officinalis* Common name: Amalaki	Anti-asthmatic [6], Anti-tussive [17]	Anti-oxidant [9], Anti-microbial [9], Anti-ulcerogenic [9], Immunomodulatory
4	*Piper longum* Common name: Pippali	Anti-Asthmatic [6], Mast cell stabiliser property [18], Bronchodilator [18], Anti-histaminic [19], Bio availability enhancer [9]	Anti-bacterial [9], Anti-tubercular [9], Appetiser [6], Anti-inflammatory [9]
5	*Fagonia cretica* Common name: Dhanvyaas	-	Anti-septic [6], Anti-microbial [6], Anit-viral [6], Blood purifier [6]
6	*Pistacia integerrima* Common name: Karkatshringi	Anti-histaminic [6], Expectorant [6],	Astringent [6], Anti-dysentric [6]
7	*Solanum xanthocarpum* Common name: Kantakari	Anti-histaminic [8], Expectorant [6], Mast cell stabilizer [8]	Diuretic [6], Laxative [6], Febrifuge [6]
8	*Boerhavia diffusa* Common name: Punarnava	Expectorant [6],	Diuretic [6], Laxative [6], Anti-inflammatory [6], Spasmolytic [6],
9	*Phyllanthus niruri* Common name: Bhumiamalaki	Anti-asthmatic [12]	Anti-pyretic [6], Anti-spasmodic [6], Anti-viral [6], Diuretic [6], Bactericidal [6]

Table 3: Pharmacological Properties of *KasaharMahakashaya.*

Property	Drugs
Anti-histaminic	*Vitis vinifera, Pistacia integerrima, Solanum xanthocarpum*
Anti-asthmatic	*Termania chebula, Emblica officinalis, Piper longum, Phyllanthus niruri*
Expectorant	*Pistacia integerrima, Solanum xanthocarpum, Boerhavia diffusa*
Mast cell stabilizer	*Terminalia chebula, Piper longum, Solanum xanthocarpum*

Table 4: Analysis of *KasaharMahakashaya.*

S.N.	Drug	Action on Respiratory System	Other Properties
1	*Curcuma longa* Common name: Haridra	Expectorant, Anti-histaminic [8], Anti-Asthmatic [6]Mast cell stabiliser [16]	Anti-inflammatory [6], Stomachic [6]Anti-oxidant [6], Hepatoprotective [9],
2	*Rubia cordifolia* Common name: Manjishta	Expectorant [21], Use in cough, cold [21]	Anti-microbial [9], Astringent [6], Anti-inflammatory [9], Blood Purifier [6], Anti-oxidant [6]
3	*Operculina turpethum* Common name: Trivrit	Expectorant [22]	Purgative [22],Carminative [22], Anti-inflammatory [6], Anti-helmenthic [22], Anti-arthritic [22]
4	*Elletaria cardamomum* Common name: Elaichi	Anti-asthmatic [6],	Anti-microbial [6], Anti-septic [6], Anti-spasmodic [6], Carminative [6]
5	*Santalum album* Common name: Chandan	Expectorant [6]	Cooling [6], Diuretic [6], Anti-septic [6], Bacteriostatic [6]
6	*Strychnous potatorum* Common name: Kataka	Expectorant [6]	Anti-diabetic [6], Anti-microbial [6], Anti-inflammatory [6], Anti-oxidant [6], Anti-arthritic [6]
7	*Albizia lebbeck* Common name: Shirisha	Bronchodilator [10], Anti-histaminic [9], Mast cell stabilizer [10],	Anti-septic [6], Anti-bacterial [6], Anti-allergic [9], Anti-ulcerogenic [9]
8	*Vitex negundo* Common name: Nirgundi	Mast cell stabilizer [9]	Anti-inflammatory [9], Astringent [6], Febrifuge [6], Anti-diarrhoeal [6]
9	*Cordia dichotoma* Common name: Shleshmataka	Demulscent [6], Expectorant [6], Use in cough and cold [6]	Diuretic, Anti-helmenthic, Anti-inflammatory, Anti-microbial

Table 5: Pharmacological Properties of *Vishaghna Mahakashaya.*

Property	Drugs
Anti-histaminic	*Curcuma longa, Albizia lebbeck*
Anti-asthmatic	*Curcuma longa, Elletaria cardamomum*
Expectorant	*Curcuma longa, Rubia cordifolia, Operculina turpethum, Santalum album, Strychnous potatorum, Cordia dichotoma*
Mast cell stabilizer	*Curcuma longa, Albizia lebbeck, Vitex nigundo*

Table 6: Analysis of *Vishaghna Mahakashaya.*

Apart from this, *Terminalia chebula, Emblica officinalis, Piper longum, Boerhavia diffusa* are reported to have immunomodulatory property [20] that is helpful in managing RAD, especially in the paediatric age group. Most of the herbs including *Vitis vinifera, Terminalia chebula, Embelica officinalis, Piper longum and Phyllanthus niruri* have shown anti-microbial or anti-bacterial property, hence can be used for infectious disorders of the respiratory system (Table 4 and 5).

The herbs in *Vishghna mahakashaya* have been analysed to identify their pharmacological action on symptoms of the respiratory system. It is evident from the above table that herbs within *Vishghna mahakashaya* have a potent role in the management of respiratory allergic disorders. These herbs can especially act as anti-allergic agents to counteract the allergens produced in respiratory infections. Among them *Curcuma longa, Rubia cordifolia, Albizia lebbeck, and Vitex negundo* can be used as effective anti-histaminics, anti-asthmatics and mast cell stabiliser agents. As these herbs are included in *vishghna mahakashaya,* (Table 6) it can be utilized an anti-toxic, anti-septic, anti-bacterial as well as an anti-inflammatory agent. The herbs have an influential role as immunomodulatory and anti-oxidant herbal drugs.

Conclusions

From the above analysis, it is evident that *Acharya charak* has correctly described the herbal drugs in a qualitative manner to combat the particular disorder. The herbal agents of *Shwashar*, *Kasahar* and *Vishghna mahakashaya* has shown anti-histaminic, anti-asthmatic, expectorant, and mast cell stabilising properties. These herbal drugs can be used as effective anti-allergic agents against the respiratory allergic disorders. Moreover these herbal drugs provide better options to prepare formulations on the basis of their pharmacological actions. Their role as immunomodulator agents is equally important in limiting repeated respiratory allergies and potentiating the respiratory system.

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