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A CONCEPTUAL STUDY TO EVALUATE THE EFFECT OF POUSHKARADI KASHAYA IN TAMAKA SWASA - BRONCHIAL ASTHMA

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ABSTRACT

TamakaSwasa(Bronchial asthma) is a chronic disorder of *Pranavaha Srotas* that disturbs daily activities. It is caused by *Pratiloma Gati* of *Vayu* supported by *Srothorodha* produced by *Kapha*. It is well explained in all the classical texts of *Ayurveda*. The *Udbhavasthana* of *Swasaroga* is said as *Amashaya* in the classics.

Bronchial Asthma, which can be compared with *TamakaSwasa* is a chronic inflammatory disease of the respiratory tract causing airway obstruction and variable airflow limitation. The prevalance of Asthma has increased over the past 30 years. Asthma is also a complex disease determined by the interaction between genetic and environmental factors. Modern synthetic drugs provide instant relief in these cases but tend to develop a number of adverse drug reactions.

As this is a *srotorodhavyadhi* produced by *Vata* and *Kapha*, Drugs which *are VataKapha Hara, UsnaVeerya*, and *VataAnulomana* are prescribed in this condition. The polyherbal formulation *Poushkaradi Kashaya* mentioned in *Sahasrayogam, Kashaya Prakarana* in *SwasakasaAdhikara* is *UshnaVeerya* with *KaphaVatha Hara* and *Swasa-Kasa Hara* properties. Hence it will be effective in removing *Kapharodha* and causing *Vatha Anulomana*. Individual drugs in combination like*Pushkaramoola* are antispasmodic, antiinflammatory, and antihistaminic.

Keywords: *TamakaSwasa, Poushkaradi Kashaya,* Bronchial Asthma.

INTRODUCTION

Background

In Ayurveda *TamakaSwasa(Bronchial asthma)* is one among the five varieties of*Swasa*explained in all the classics. In *TamakaSwasa Vayu* gets obstructed by *Kapha* and moves in *PrathilomaGathi*. According to *Astangahridaya* the *Srotas* vitiated are *Prana, Udaka, and Anna. TamakaSwasa* is a *Vatakaphaja Vikara* with a symptom like *Kasa*(cough), *Ghurghurakam*(wheezing), *Peenasa*(rhinitis), *Nishtyuthanthe KshanamSugham* (comfort after expectoration*), Parshwashoola* (pain in intercostal spaces), *PratamyatiVegataha* (tachypnea)[1], *Kanthodhwansa* (hoarseness of voice)[2]etc. It is generally described as*YapyaRoga* means it can be just controlled. Medicines and treatments that pacify *Vata and Kapha*, and also which are *Ushna* in *Guna* producing *VataAnulomana* should be adopted. So,the treatment modality for the management of *TamakaSwasa* is *Virechana* (purgation therapy)[3]. Bronchial Asthma is a chronic disease affecting the population worldwide. The survey finding shows an estimate 300 million people worldwide are suffering from asthma, with an annual death rate of 250,000. This increased rate of prevalence is because of the change in lifestyle, rapid industrialization, increase in air pollution, etc[4].

According to the Global Initiative of Asthma(GINA) Guidelines, Bronchial Asthma is defined asa chronic inflammatory disorder of the airways in which many cells and cellular elements play a role. chronic inflammation is associated with airway hyper responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness, and coughing, particularly at night or in the early morning[5]. Chronic airway inflammation causes airway hyper responsiveness to a variety of triggers like inhaled allergens, air pollution, cold air, occupational exposures, dietary habits, lifestyle, smoking, anxiety, and stress[6].Bronchial Asthma is commonly diagnosed in early childhood and Chronic Obstructive Pulmonary Disease(COPD) is commonly diagnosed after the age of 60. Cases of adult-onset of Asthmapredominate in women. Global burden of disease estimates suggests that atleast 300 million people worldwide have Asthma. Data from the National Health Interview Survey (NHIS) reveals a 75% increase in self-reported Asthma rates from 1980 to 1994[7]. In India, the estimated prevalance is 10-15% and in Kerala, it is about 9.9%Bronchial asthma attack is an inappropriate immune response where the triggering factors induce bronchial hyperreactivity leading to the constriction of smooth muscles, and the inflammatory changes cause the increased mucous secretion into the airways. The modern system of medicine uses a number of drugs to counter this condition[8].

The rationale of the study:

According to the Global Initiative on Asthma (GINA), it is stated that despite the advancements in the understanding of Asthma and the development of new therapeutic strategies, the morbidity and mortality rates due to Asthma have increased. Current management in modern medicine provides a short-term symptomatic effect but also has many adverse effects on its continuous usage[5]. In the present scenario, *Ayurvedic* formulations can be a better way for managing the condition safely and effectively providing long-term relief to the patient. In *TamakaSwasa,Vata*and *Kapha Doshas* are involved primarily so the drug of choice should be *UshnaVeerya*. *Ayurveda* classics also explain the usage of various oral medications and shodhana therapies like *Virechana, Mriduvamana* after *Snehana, and Swedana*[3]. The formulation *Poushkaradi Kashaya* mentioned in *Sahasrayogam, Kashaya Prakarana* in *Swasakasa Adhikara* is *UshnaVeerya* with *KaphaVatha Hara* and *SwasaKasa Hara* properties[9]. Hence it will be effective in removing *Kapharodha* andcausing *Vatha Anulomana*.Individual drugs in the polyherbal combination are readily available and safe to use also.[10]

AIM: To study the effect of *Poushkaradi Kashaya* in the management of *TamakaSwasa.*

MATERIALS AND METHODS

Classic *Ayurvedic* textbooks like *Charaka Samhita, Sushruta Samhita, AstangaHridaya, Sarangadhara Samhita, Madhavanidana,* etc, and all relevant databases are critically analysed for a better understanding of etiology, pathogenesis, clinical features and treatment of the disease.

REVIEW OF LITERATURE

NIDANAS OF *TAMAKA SWASA* WITH SPECIAL REFERRANCE TO BRONCHIAL ASTHMA

Āharajanidana

Rukṣhnna, ***Viṣamaśana,*** *Adhyśana,* ***Anśana,*** *Sītaaśana,* ***Sītapana***[11]***, Viṣṭambhiahara,*** *TilatailaVidahi,* ***Niṣpava,*** *Maṁsa,* ***Piṣṭanna,*** *Guru dravya,* ***Sleṣmaladravya,*** *Abhiṣyandidravya,* ***Dadhi,*** *Amakṣira etc*[2].

Viharajanidana

Vyayama, Raja, Dhuma, Sitastana[1]*, Adhwagamana, Kanthapratighata, Urapratighata*[2]*, Bharadhwa, Vegaghata, Upavasa, Strisevana*[11]*, Marmaghata, seethambuetc.*

Nidanarthakararoga*: Jwara, anaha, pandu, pratishyaya, Atisara, Kshaya, Amdosha, Kshata, Alasaka, Visuchika, chardi*[2]*,kasa* [1]*etc.*

BRONCHIAL ASTHMA CAUSES[12]

- Respiratory tract infections (bacterial infections like Chlamydia).
- Inhaled allergens (House dust, mites, grass pollens).
- Environmental pollution (sulphur dioxide, ozone or nitrogen dioxide, Carbon monoxide)
- Exercise
- Drugs (beta-blockers and non-steroidal anti-inflammatory drugs (NSAIDS).
- Foods (milk, eggs, nuts, alcoholic drinks, etc)
- Occupation (wood and vegetable dusts, spinning of cotton, plastics, chemicals such as isocyanates, and animal proteins from birds, fishes, and insects sensitize the workers).
- Psychological factors.

PURVA RUPA

Anaha, Parśvaśūla, Hṛdpiḍa, Praṇasyavilomatva[2]*,Bhaktadveṣa, Asyavairasya,Arati, Adhmana,Saṅkhanistoda*[11]

RUPAS OF TAMAKA SWASA[1,2,11] WITH RESPECT TO SYMPTOMS OF BRONCHIAL ASTHMA

TamakaSwasa	**BrinchialAstma**
Kasa	Cough
Ghurghurakam	Wheezing
Peenasa	Rhinitis
ParshwaShoola	Intercoastal Myalgia
Swasa	Dyspnoea
AsinoLabhateSugham	Comfort In Sitting Position
KrichraBhashitam	Unable To Speak
NistyuthantheSughamLabha	Comfort, After Expectoration
GreevaSiraschaSangruhya	Contraction Of Muscles of Head and Neck
LaladenaSvidyata	Exertion Due to Rapid Respiration
UsnaKamkshi	Desire For Hot Comforts
Prana Prapidakam	Tachycardia
Pramoha	Fainting
Vishushkasya	Dryness Of Mouth
Uchritakshata	Upward Gazing
Annadwesha	Indigestion

SAMPRAPTHI

Acharya Charaka described *Samanya Samprapti* of *Shwasa* in *Chikitsa Sthana.* According to him due to *Nidanasevana,* the vitiated *Vata* enters the *pranavahasrotas* and provokes the *Urastha Kapha (Kapha* residing in the chest). This provoked *Kapha* to obstruct the *Pranavahasrotas* and gives rise to *Swasa*. Vagbhata says that Due to the *nidanas*, the flow of *praṇavata* is obstructed by *kapha*, so *vatadosha* gets

vitiated, surrounds *Shiras* and *Greeva* which leads to excess secretion of *Duşta Kapha* and spreads to all directions. Vitiated *Vata dosha* produces *Rukstha, Kathinnyata, and Sankocha* in *Pranvaha, Udakavaha& Annavahasrotas* located in the chest and produces *Swasaroga* arising from *Amashaya*.[14]

***SAMPRAPTHI GHATAKA*[15]**

- *Dosha – Vatha, Kapha*
- *Dushya – Rasa Dhathu*
- *Agni – Jataragni, Dhatwagni.*
- *Srotas – Prana, Udaka, Anna, Rasavaha.*
- *Srotodushti – Sanga,Vvimargamana, Atipravriti*
- *Udbhavasthana- Amashayodha.*
- *Vyakthasthana – Uras, Hridaya, Parshwa, Urdhwajatru*
- *Rogamarga – Abhyanthara.*
- *Prabhava – Tamakaswasa- Yapyaroga*.

PATHOGENISIS OF BRONCHIAL ASTHMA [13]

Cells	Mediators	Effect
Mast Cells	Histamines	Broncho Constriction
Macrophages	Cytokines, Leukotrienes	Mucus Hypersecretion
Eosinophils	Thromboxane	Plasma Exudation
T Lymphocytes	Cytokines	Airway Hyper Responsiveness

INFLAMMATION

Inflammation occurs in the respiratory mucosa from the trachea to terminal bronchioles, especially in the bronchi which is associated with airway hyperresponsiveness (AHR).

MAST CELLS

These cells initiate acute broncho constriction responses to allergens and several other stimuli, such as exercise.

an IgE-dependent mechanism, and binding of specific IgE to mast cells.

MACROPHAGES

Macrophages are influxes into the airways and may be activated by allergens through IgE receptors. Macrophage releases certain cytokines, which contribute to chronic airway inflammation and secretion.

EOSINOPHILS

Allergen inhalation results in increased activation of eosinophils in the airways at the time of the late reaction resulting in plasma exudation.

T LYMPHOCYTES

These coordinate the inflammatory response in asthma. through the release of specific cytokines, resulting in the maintenance of the mast cell population in the airways.

AIRWAY REMODELING

Changes in the structure of the airway are found in asthma, which may lead to irreversible narrowing of the airways. The structural changes include fibrosis, mucus hyperplasia, etc.

DRUG REVIEW[16]

The formulation *Poushkaradi Kashaya* mentioned in *Sahasrayogam, Kashaya Prakarana*in*SwasaKasaAdhikara* is *UshnaVeerya*with*KaphaVatha Hara* and *SwasaKasa Hara* properties. Hence it will be effective in removing*Kapharodha* andcausing*VathaAnulomana.*

S No	***Drugs***	***Rasa***	***Guna***	***Veerya***	***Vipaka***
1	*Pushkaramoola*	*Katu, Tiktha*	*Tikshna, Laghu*	*Usna*	*Katu*
2	*Gambhari*	*Tikta, Kashaya Madhura*	*Rooksha, Laghu*	*Usna*	*Katu*
3	*Bharangi*	*Katu, Tikta, Kashaya*	*Laghu, Ruksha*	*Usna*	*Katu*
4	*Pippali*	*Katu*	*Tikshna, Laghu, Snigdha*	*Anusna*	*Madura*
5	*Shundi*	*Katu*	*Laghu, Snigdha*	*Usna*	*Madura*

PHARMACOLOGICAL PROPERTIES[16]

DRUGS	PROPERTIES
PUSHKARAMOOLA	*Vatakaphahara ,Shwasahara, Parshwashoolahara, Hikkanigrahana Kasahara , Shodhahara, Jwaraghna*
BHARANGI	*vatakaphahara ,Diipana, pachana ,swasahara*
GAMBHARI	*Tridoshahara ,Shodhahara, Diipana ,Pachana ,Bhedana, Soshahara ,Shoolahara ,Jwarahara*
PIPPALI	*Kaphavathahara ,Dipana, Rasayana ,Swasahara ,Vrishya.*
SHUNDI	*Vathakaphahara ,Dipana ,Pachanakasaswasahara ,Shoolahara, Hridya ,Vibandhahara*

DISCUSSION

Tamakaswasa as a disease entity was known to the ancient ages from the very beginning. The description of *Tamakaswasa* in *Ayurveda* is found in various classics. *Lakshanas*of *Tamakaswasa* can be equated to the clinical features of Bronchial asthma as far as explained. Even though this disease is a combination of genetic and environmental factors. Changes in lifestyle, demographic factors, and industrialization, act as triggering factors. Modern treatment protocol aims at decreasing airway inflammation, airway hyper responsiveness, and increasing immunity. According to the *Ayurveda Chikitsa Sidhanta, Virechana or purgation, Kapha-Vatahara* drugs, and *Vatanulomana* are considered the prime line of treatment of *Tamakaswasa*.

PROBABLE MODE OF ACTION OF DRUGS:

Poushkaradi Kashayam, mentioned in *Sahasrayoga* includes ingredients like *Pushkaramoola, Katphala, Bharangi, Vishwa, and Pippali*. Most of them have*KaphaVata hara* properties, *TikthaKatu rasa, Katuvipaka, and Ushnaveerya* properties. *Poushkaramoola, Vishwa, and Pippali* are *Deepana* in nature. *Pippali* has *Rasayana* properties. *Pushkaramoola* is a potent Bronchodialator and has Antiallergic activity, Anti-inflammatory, Analgesic activity, and Mast cell stabilization activity. *Katphala* is Anti-inflammatory, Anti-allergic, and is effective in chronic cough and asthma. *Bharangi* is Anti-bacterial and Anti-inflammatory. *Pippali* is Anti-allergic, Anti-bacterial and is useful in respiratory disorders. *Shunti* also has an effect on respiratory illness[17].

CONCLUSION

T*amakaswasa*is *a vatakapha*dominant disorder that mostly aggravates during the cold season. *Tamakaswasa* in its *Nidana, Samprapti*, and *lakshanas* are found to be similar with respect to the causative factors, clinical features, etc of Bronchial asthma. Various literatures were thoroughly reviewed including *Ayurvedic* and modern textbooks for relevant information. All of them emphasize that *Tamakaswasa* is curable if it is treated in an early stage otherwise it becomes *Yapya*. Bronchial asthma also if not treated at early stages can lead to irreversible conditions like COPD (chronic obstructive pulmonary disease). The interventional drug *Poushkaradikashaya* mentioned in *Sahasrayogam* shows significant results in the reduction of symptoms of *Tamakaswasa* like *Kasa*(cough), *Swasa* (dyspnoea), *Parshwashoola* (inter coastal myalgia*), Ghurghurakam* (wheezing), etc. This result shows that the drug *Poushkaradikashaya* helps in the *Samprapthi Vighatana* of *Tamakaswasa* resulting in a marked reduction of signs and symptoms of *Tamakaswasa*.

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