Review Of *Tamaka Shwasa* and Its Ayurvedic Management

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***Abstract*—Urbanisation and modern way of living is creating an enormous amount of increase in air pollutants which results in causing a variety of respiratory disorders. Bronchial asthma is one among such disorders which is rising significantly and possessing a major threat in today's era. Asthma is a serious global health problem, affecting approximately 300 million people around the world, and causing around 1,000 deaths per day.[1] Thus need of cost-effective treatment is required to reduce the burden of disease globally. Five types of *Shwasa roga* are described in *Ayurveda* and *Tamaka shwasa* is one among them, which can be correlated with Bronchial asthma. The present study is aimed to study the etiopathogenesis and treatment of the disease from ayurvedic aspect and to reach a sustainable way of treating the disease in modern times.**

***Index Terms*—*Shwasa, Tamaka shwasa*, Bronchial asthma.**

I. INTRODUCTION

One of the fundamental physiological processes involved in the creation of energy in living things is respiration. The main function of respiration is to provide oxygen to the tissue and remove carbon dioxide from the body. Also explained in *Sharangdhara Samhita* the process of respiration gives a detail way of respiration as

नाभिस्थः प्राणपवनः स्पृष्ट्वा हृत् कमलान्तरम् ।
कण्ठाद् बहिर्विनिर्याति पातुं विष्णुपदामृतम् ।।
पीत्वा चाम्बरपीयूषं पुनरायाति वेगतः ।
प्रीणयन् देहमखिलं जीवयञ्जठरानलम् ।।
(शा.स.पू.ख.५/८९-९०) [2]

Continuity in this process is very much crucial as it maintains the continuous supply of oxygen for healthy way of living. In ayurveda, *Shwasa* term is used to denote the process of respiration, any variation which creates irregularity in the above process is denoted as *Shwasa roga*. It is of five types and *Tamaka shwasa* is one among them. Tamaka means darkness and it refers to the darkness the patient experiences in front of his eyes during the severe attack of the disease. *Tamaka shwasa* is a *Swantantra vyadhi* of *Pranavaha srotas* having its own pathophysiology explained in detail by all the acharyas. As per modern science it can be correlated with Bronchial asthma. It is defined as airway hyper-responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing particularly at night and in the early morning.[3] It is a chronic inflammatory disorder of the airways, in which many cells and cellular elements play a role.

II. OVERVIEW OF *PRANAVAHA SROTASA* AND IT'S MODERN CORRELATION

INTRODUCTION

The term *Srotas* means a channel. It is derived from the root *Su sravane* meaning to exude, to ooze, to filter, to permeate. *Charaka* has defined it as *sravata srotamsi* meaning the structure through which *Sravanam* takes place. *Srotamsi* of the body comprise of channels of different kinds. They may be *Sthula* or *Sukshma* or *Anu* or atomic in size or microscopic. In general usage, the term *Srotamsi* comprehends all channels big and small, perceptible and imperceptible that compose the internal transport system of the body.[4]

PRANVAHA SROTAS MULA

Mulam as *Mulamiti Prabhava Sthaanam* meaning that the *Mula* of *Srotas* is the anatomical and physiological seat of respective *Srotas* and also it is the main seat of pathology of that *Srotas* and the principal manifestation of the disease. According to *Acharya Charaka* the *Hriday*a and *Mahasrotas* are the *Mula* of *Pranavaha Srotas* and *Acharya Sushruta* has described *Hridaya* and *Rasavahini dhamani* as *mula* of *pranavaha srotas* respectively. *Hridaya* consists of heart and all the major vessels arising from heart and *Mahasrotas* can again be defined as *Mahasrote iti koshtham* where *Koshtha* includes *Amashya, Hridaya,Fuffusa* etc. and also the mediastinal cavity or space surrounding the heart and lungs. Thus, overall *pranavaha srotas* includes the major cardiac region along with major organs taking part in vital functions of the body.

CAUSATIVE FACTORS FOR VITIATION OF *PRANAVHA SROTAS*

The causative factors responsible for the vitiation of *Pranavaha srotasa* are described as

1) *KSHAYA (DHATU KSHAYA*)- It can be defined as all those factors which leads to debeliating condition of body such as any chronic illness, any malabsorption disease because of which the person undergoes in an undernourished state so that the basic immunity also gets affected and thus leads to all sorts of disease as the basic barrier of the body is hampered. Apart from this it can also be correlated with hypovolaemia arising from *Rasa, Raktaadi dhatu kshaya* etc. This can cause reduce cardiac output leading to conditions such as arrythmias, old myocardial infarction.**[5]**

2) *SANDHARANA (VEGA SANDHARANA* OF *MUTRA PUREESHA* ETC)- Ayurveda has given a detailed knowledge of *vega Dharana* and the disease arising by doing this at physical as well as mental level. There are 13 types of Adharenya *vega* explained and the disease arising from them. Suppression of urges again leads to *Vata prakopa* and *Vata* being the major *Dosha* affects the body system at all levels. As per modern view if the person suppresses the urge of defecation it will lead to increase absorption of water and salts along with toxins, which further leads to increase in volume of blood causing higher pulmonary pressure finally leading to pulmonary congestion.

3) *RAUKSHYADA* (INCREASE OF *RUKSHA GUNA*)- *Rukshata* caused due to uptake of food which doesn't have *Snehana* properties and activities causing an increase in dryness of the body can again lead to *Vata prakopa* which disturbs the normalcy of *Doshas* in body and is a key factor in causing *Shwasa Vyadhi*.

4) *KSHUDITASYA VYAYAMA* (DOING EXERCISE BY SUPPRESSING HUNGER AND THIRST)- This means taking physical effort when body is completely exhausted or not in state of doing any physical exercise. Due to starvation, there will be shift in metabolism from carbohydrate to fat metabolism which leads to formation of ketone bodies which after a certain limit causes ketoacidosis which disturbs the breathing pattern.**[6]** Also Ayurveda has given detailed way of doing *Vyayama* in a proper way. If it is done untimely it puts a burden to the body tissues which causes problems like cardiac arrest any many such fatal disease suddenly.

5) *ANYA DARUNA KARMA*- Doing other stressful activity beyond one's capacity causes disturbance in cardiorespiratory system. As heart is the major driving force of the human body so any sort of exertion and irregularities occurring in other systems is also linked to occurrence of cardiorespiratory issues.

SROTODUSHTI LAKSHANA [7]

In *Pranavaha Srotas dushti*, greater importance is given to disturbances in the rate, rhythm, and pattern of respiration, along with associated functional complaints, rather than structural respiratory conditions such as *Hikka, Shwasa*, and *Pratishyaya.*

ATISRISHTA SHWASA is a *dushti lakshana* characterized by rapid and prolonged respiration with a respiratory rate exceeding 20 cycles per minute, leading to impaired oxygen–carbon dioxide balance at the cellular level. Classical descriptions relate this to *Urdhva Shwasa* (दीर्घं श्वसिति यस्तूर्ध्वं). Clinically, it correlates with tachypnoea and hyperpnoea, observed

in conditions with increased ventilatory demand such as exercise, fever, thyrotoxicosis, and ketoacidosis. A severe form of deep, laboured breathing is seen as Kussmaul's breathing, which occurs in metabolic acidosis. Reduced serum bicarbonate and pH stimulate hyperventilation, lowering carbon dioxide levels and partially compensating for acidosis.

ATIBADDHA SHWASA refers to reduced or arrested respiration, commonly due to upper airway obstruction involving the nasal cavity, oral cavity, pharynx, or larynx. It may also occur due to depression of the respiratory centre during sleep or cerebral disorders. Conditions such as epiglottitis and foreign body obstruction are common causes. Classical texts describe similar pathology in disorders like *Nasaarsha, Apachi*, and *Galashaluka*.

KUPITA SHWASA denotes breathlessness associated with *dosha* vitiation, marked by abnormalities in respiratory rate, rhythm, and force. This aggravated respiratory pattern is typically seen in *Tamaka Shwasa*.

ALPA-ALPA SHWASA is characterized by shallow, frequent breathing, commonly seen in pleural irritation were inspiratory pain limits chest expansion. This pattern resembles Cheyne–Stokes respiration, which presents as cyclical increases and decreases in breathing depth followed by apnea.

ABHIKSHINA SHWASA, or frequent respiration, is observed in *Kshataja Kasa*. Irregular changes in respiratory rhythm and depth resemble Biot's breathing, caused by damage to the medulla oblongata due to stroke, trauma, or raised intracranial pressure.

SASABDHA SHWASA refers to noisy respiration, audible with or without auscultation, described in *Kshayaja Kasa, Tamaka Shwasa, Kasa, Maha Shwasa, and Maha Hikka*. Corresponding modern findings include stridor, rhonchi, and crepitations. Rhonchi indicate bronchospasm, while crepitations suggest fluid in the alveoli.

SASHOOLA SHWASA denotes painful respiration, described in *Maha Shwasa, Vataja Kasa, and Gambhira Hikka*. In modern medicine, similar pain is seen in pleurisy and chest trauma, where pleural inflammation and nerve irritation cause chest pain during breathing.

III. AYURVEDIC REVIEW OF *TAMAKA SHWASA*

NIDANA- The causative factors of *Shwasa roga* in general are also etiological factors of *Tamaka shwasa.* It occurs as a result of Vata and *Kapha prakopaka nidana.*

AAHARAJA NIDANA:[8]

- *Ruksha Anna*
- *Guru bhojana*
- *Nishpava*
- *Masha,Pinyaka,Tilataila sevana*
- *Vishamasana*
- *Pishta*
- *Shaluka*
- *Vidahi vishtambhhi bhojana*

VIHARAJA NIDANA:

- *Raja dhuma vata*
- *Sheeta sthanaambu sevana*
- *Vyayama*
- *Adhwa gamana*

PURVARUPA- [9][10]

- *Anaha* (Distension of the abdomen)
- *Adhmana* (Fullness of the abdomen)
- *Arati* (Restlessness)
- *Bhaktadwesha* (Aversion to take food)
- *Vadanasya Vairasya* (Abnormal taste in mouth)
- *Parshwa Shoola* (Pain in the sides of the chest)
- *Peedanam Hridaayasya* (Tightness of the chest)
- *Pranasya Vilomata* (Sinusitis or Rhinitis)
- *Shankha Nistoda* (Temporal headache)

RUPA-

- *Peenas* (Running nose, sneezing, stuffiness of the nose)
- *Shwasa* (Dyspnoea)
- *Tivravega Shwas* (Rapid breathing)
- *Amuchyamane Tu Bhrisham* (Severe breathlessness if sputum is not expectorated out)
- *Vimokshante Sukham* (Slight relief in breathlessness on spitting out the sputum)
- *Anidra* (Breathlessness disturbs sleep)

- *Sayanah Shwas Peeditaha* (discomfort worsens on lying)
- *Aseeno Labhate Soukhyam* (Feels easy to breath in sitting position)
- *Pratamyati Ati Vega* (Deterioration of consciousness)
- *Kasa* (Cough)
- *Pramoham Kasamanashcha* (Frequent deterioration of consciousness during paroxysm of cough)
- *Kanth Gurghurak* (rattling)
- *Kanthodhwamsa* (Soreness of the throat)
- *Utshoonaksa* (Oedema around the eyes)
- *Vishushkasya* (Dryness of mouth)
- *Lalat Sweda* (Sweating on the forehead)
- *Meghaihi Abhivardhate* (Cloudy weather worsens the attack)
- *Sheeta Ambu* (Cold water)
- *Pragvata* (breeze)
- *Shleshmala* (*Kaphakara*)
- *Ushnabhinandate* (Likes hot things)
- *Aruchi* (Anorexia)
- *Trishna* (Excessive thirst)
- *Vepathu* (Tremors)
- *Vamathu* (Expectoration)

IV. MODERN REVIEW OF *TAMAKA SHWASA* [11]

DEFINITION

Bronchial asthma, now regarded as a chronic inflammatory disorder of the lower airway is characterized by bouts of dyspnea (predominantly "expiratory"), as a result of temporary narrowing of the bronchi by bronchospasm, mucosal oedema and thick secretions.

ETIOPATHOGENESIS

Triggers/Excitatory Factors

- Allergy to certain foreign substances:(a) inhalants like pollen, smoke, dust and powder, (b) foods like egg, meat, wheat and chocolate, (c) food additives and (d) drugs like aspirin and morphine.
- Respiratory infection: Usually a viral infection causes mucosal oedema and mucus secretion that result in narrowing of the airway.
- Exercise: Role of exercise/exhaustion is well-known in the so-called "exercise-induced asthma". Loss of heat and water from the lower airways leads to a state of mucosal hyperosmolarity. The latter causes release of mediator from the mast cells which result in bronchospasm.
- Change of climate/weather: This act though two mechanisms, namely sudden release of airborne allergens in the environment and loss of heat and water from the lower airways.

PREDISPOSING FACTORS

- Heredity: A family history of asthma or some other allergic disorder is often forthcoming.
- Childhood infections like measles and pertussis.

PATHOPHYSIOLOGY

Factors ending up with lower airway obstruction in asthma include:

- Mucosal inflammation (especially oedema)
- Excessive mucosal secretions (mucus, inflammatory cells, cellular debris)
- Bronchial hyperresponsiveness with broncho-spasm

TYPES OF ASTHMA

- Extrinsic: This is IgE-mediated and precipitated by an allergen.
- Intrinsic: This is non-IgE-mediated and precipitated by a respiratory infection (usually, viral)
- Mixed: This is usually exercise-induced or aspirin-induced.

Following exposure to an allergen which interacts with specific mast cell bound IgE, reaction occur in two phases:

1) Early Phase/Reaction: Within minutes, mast cell release histamine, leukotriens C, D and E, prostaglandins, platelet activating facor and bradykinin, causing mucosal edema, secretion and bronchospasm. The net result is lower airway obstruction. Premedication with beta-agonists can inhibit this phase.
2) Late Phase/Reaction: This is characterized by clinical manifestations of asthma. It follows 3-4 hours later with release of mast cell mediators. Unlike the early phase, beta-agonists cannot

inhibit it. However, steroids ae capable of inhibiting it.

Over and above "inflammation", two additional factors may contribute to development of hyper-reactivity of the lower airway, namely:

- Intrinsic defect in the airway, and
- Abnormal neural control of the airway.

PATHOLOGY

Inflammation of the lower airway is considered to be the “cornerstone” of the basic pathology of asthma. The inflammatory changes are characterized by infiltration of the mucosa and epithelium with activated mast cells, T cells and eosinophilia. The mediators of inflammation (leukotrienes) released by the mast cells damage the wall of the airway, causing epithelial shedding and mucus secretion.

The so-called “bronchial hyperreactivity” accompanied by bronchospasm involving smooth muscles is now regarded as secondary to inflammation.

Defect in the airway and abnormal neural control of the airway may also contribute to its development. A platelet activating factor (PAF), supposed to be formed by the inflammatory cells, causes bronchial hyper-reactivity.

The net result of inflammation and bronchospasm is characteristic wheeze and respiratory distress. Poorly controlled disease results in collapse and emphysema. Rarely, bronchiectasis may occur.

CLINICAL FEATURES

1) The onset of an asthmatic paroxysm is usually sudden and often occurs at night. Occasionally, it is preceded by the so-called asthmatic aura in the form of tightness in the chest, restlessness, polyuria or itching.
2) A typical attack consists of marked dyspnea, bouts of cough and chiefly "expiratory wheezing". Cyanosis, pallor, sweating, exhaustion and restlessness are often. present. Pulse is invariably rapid.
3) The fulminant attack may subside in an hour or two, sometimes with vomiting or "coughing up" of viscid secretions. Some expiratory wheezing may however be present.

COMPLICATIONS

- Emphysema (Commonest)
- Collapse (middle lobe on right side)
- Cor Pulmonale
- Pneumothorax
- Bronchiectasis
- Tuberculosis in patients on prolonged steroid therapy

CHIKITSA SIDDHANTA

1) Nidana parivarjan- as allergen is the main factor in triggering the disease, it is important to stay away from the factor causing the disease.

2) “तमकेतुविरेचनं’ (च.चि १७/१२१) [12]

As discussed above *Tamaka shwasa* is caused by vitiated *Vata* and *Kapha dosha* and originates from *Pitta Sthana* which according to chakrapani is explained as *Amashaya*, the space between *Hridaya* and *Nabhi*. *Virechana* is best for *Sroto shodhan* and *Pitta shaman chikitsa* and the *Pittasthana samudbhava* of *Shwasa Roga* can be explained in terms of the importance of *Ama* in the *Samprapti*. Hence, the specific management of *Tamaka shwasa* according to *Charaka is Virechana*.

यत्किञ्चित् कफ़वातघ्नंमुष्णं वातानुलोमनम् I
भेषजं पानमन्नं वा तदहितं श्वासहिक्किने I
(च.चि.१७/१४७)

Also, any remedy which pacifies *Vata* and *Kapha dosha* and does *Anulomana* of *Vata dosha* should be used in the management of *Tamaka shwasa*.

As per modern science the mucosal secretions and inflammation causes the obstruction thus *virechana* helps in clearing this obstruction and providing relief in the condition.

Some important formulations used in treatment of *Tamaka shwasa* are-

1. *Pushkarmula-shwasakasaparshwashula haranama*[13]
2. *Shawasahara mahakashya* which includes dravyas like shati, amlavetasa etc
3. *Sitopladi churna*
4. *Shirishadi kwatha*
5. *Dashmula kwatha*

V. CONCLUSION:

Similar types of symptoms associated with asthma are usually associated with widespread but variable airflow obstruction within the lung that is often reversible, either spontaneously or with treatment. Patients suffering from bronchial asthma are taking lifelong treatment of the beta agonists and corticosteroids which have several side effects like oropharyngeal candidiasis, hoarseness of voice and pneumonia. Thus, a sustainable way of treatment is required which can eradicate the root cause of the disease, which is available in ayurveda. The aim of study is to study the disease from ayurvedic view and throw some light on managing the disease in a sustainable way.

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