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### CRITICAL REVIEW ON SPECIFIC SYMPTOMS OF TAMAKSHWASA (ASTHMA) AND ITS PATHOGENESIS

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#### Abstract

This environmental interaction is leading to many respiratory disorders among which one of the major distressing diseases is Asthma which has been described in Ayurveda as *Shwasa*. Ayurveda texts *Shwasa* has been described more deeply involving *Pranavaha*, *Udakavaha* and *Annavaha Strotas* with its *Udbhava* from *Pittasthana* i.e. *Amashaya*. Further *Shwasa* is divided into five types. Among five types of *shwasa*, *Tamaka Shvasa* is an episodic disease. The main pathology of *tamaka Shwasa* involves vitiation of *kapha* followed by *vata* which obstruct the *pranavahasrotas*. By getting obstruction, *vata* is aggravated more and both *kapha* and *vata* together produce the disease. All the symptoms of *Tamaka Shwasa* described in Ayurvedic texts. Some of important symptoms in pathogenesis are *Ativativravega Shwasa*, *Ghurghurakam*, *Kasa*, *Asinolabhaie Soukyam*, *Muhur Muhur Shwasa*, *Lalate Sweda*, *Meghambuna Pragvate Vridhi*, *Mahata Ghousha Shwasa* etc.

**Keywords:** *TamakaShwasa*, *Pranavaha*, *Udakavaha*, *Amashaya*.

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## INTRODUCTION

The word “*Tamaka*” is derived from the root word “*Tama*” which means oppression of chest [1]. One of the meanings of *Tam* mentioned in Sanskrit *Shabdārtha Kostubha* is choking of neck [2]. In Sanskrit dictionary *Shabdastoma Mahanidhi*: ‘*Tamyati Tama*’ which means darkness [3]. According to *Vachaspathyam* the word *Shvasa* is derived from the root ‘*Shvas*’ *Dhatu* + *GhanjPratyaya* and it implies for both *Vayu Vyapara* and *RogaBheda* [4]. It represents both physiological as well as pathological respiration. In *Madhukosha* commentary, the features of *ShvasaRoga* described in detail, It is the prolonged expiration which is similar to the blowing of air from the *Bhastrika* (Blower) [5]. *Shvasa* word is used to denote respiration (both phases) and exchange of air in the body. So the *ShvasaRoga* may be defined simply as a disease in which the respiration and exchange of air is disturbed. Sushruta has mentioned the detailed definition of *Shvasaroga* in *UttaraTantra* [6]. While commenting on this *Dalhana* says - *Prakriti Vihaya* means *Viguno Bhavati*. On the basis of above description it is clear that when the *Prana Vayu* is not performing its normal physiological functions and become vitiated (*Viguna*); obstructed by *Kapha* and moves upwards then it results into a disease known as *Shvasa Roga*. This definition seems to be very scientific and describes all the aspects of dyspnoea. *Charaka* says, “A single etiological factor may produce a single disease or many factors together may produce single disease and “vice versa” [7]. As *Tamaka Shvasa* is one of the five types of *Shvasa*, so the etiology of *Shvasa* may also be considered as the etiology of *TamakaShvasa*. Most of *Vataprakopaka Nidana* (*Rukshanna*, *Shitapana*, *AtiVyayama* etc.) vitiates *Vata* by its *Ruksha* and *ShitaGuna*, producing *Sankocha* [8] in the affected *Srotasa* which is similar to bronchospasm. *Kaphaprakopaka Nidana* like *Dadhi*, *Amakshira*, *Jalaja Anup Mamsa* when potentiated with *Agnivaishmyakara Nidana* like *Vishamashana*, *Amapradosha*, *VishtambhiAharaleads* to *Srotorodhajanya Samprapti* causing obstruction in the path of *Vata* thus leading to its aggravation and in turn resulting into *ShvasaKashtata*, the characteristic feature of disease *Tamaka Shvasa*. This can be co related to endobronchial obstruction in asthma. In *Tamak Shawasa Vata* becoming reversed in its course reaches the respiratory tract lays hold of the neck and the head and rouses up the *Kapha* then it causes coryza. Obstructed by this coryza variety of dyspnoea is produced associated with a wheezing sound and characterized by acute condition and causing great affection to the vital breath. On account of the forces of the paroxysm the patient faints, coughs and becomes motionless. While thus constantly coughing he feels faint frequently. Owing to

inability to expectorate him feels greatly distressed and on the sputum being expectorated, he feels comfort for a while. His throat is affected and he can hardly speak; and embarrassed by dyspnoea. He is not able to get sleep while lying flat in his bed, because the *Vata* process upon both his sides while he is in bed. He finds comfort in a sitting posture (orthopnoea) and he likes only hot food and drinks. His eyes are wide open, his forehead is covered with sweat he is in great distress all the time; his mouth is dry he breathes easily once and again his respiration becomes violent. These paroxysms are intensified by cloudy, humid and cold weather and an easterly wind, as well as by *Kapha*-increasing things. This bronchial asthma is partial. It is curable if it is of recent origin [9].

### **Purvarupa of Tamak shwasa [10,11]**

*Purvarupa*, the Premonitory symptoms are those that precede the actual manifestation of disease. The vitiated *Doshas* getting *Sthana Samshraya* in their respective *Dhatu*s presents some of the symptoms which are known as *Purvarupa*.

| <b>Purvarupa ( Prodromal symptoms)</b> | <b>C.S.</b> | <b>S.S.</b> | <b>A.H.</b> | <b>M.N.</b> |
|--|-------------|-------------|-------------|-------------|
| <i>Anaha</i>                           | +           | +           | +           | +           |
| <i>Parshvashula</i>                    | +           | +           | +           | +           |
| <i>PidanamHridayasya</i>               | +           | +           | +           | +           |
| <i>PranasyaVilomata</i>                | +           | -           | +           | +           |
| <i>Bhakta dvesha</i>                   | -           | +           | -           | -           |
| <i>VadanasyaVairasyata</i>             | -           | +           | -           | -           |
| <i>Arati</i>                           | -           | +           | -           | -           |
| <i>Adhmana</i>                         | -           | -           | -           | +           |
| <i>ShankhaNistoda</i>                  | -           | -           | -           | +           |
| <i>Shula</i>                           | -           | -           | -           | +           |

The above table indicates that *Anaha*, *Parshvashula* and *PidanamHridayasya* are the common prodromal symptoms according to all authors.

**Rupa:** Rupa appears in the 5<sup>th</sup> *Kriyakala* i.e. *Vyaktavastha* of the disease. At that time the sign and symptoms of the disease are completely manifested [12-14].

All the symptoms of *TamakaShvasa* described in Ayurvedic texts are shown as per below:

| <b>Sign/Symptom</b>             | <b>C.S.</b> | <b>S.S.</b> | <b>A.H.</b> | <b>A.S.</b> | <b>M.N.</b> |
|---------------------------------|-------------|-------------|-------------|-------------|-------------|
| <i>Tivra Vega Shvasa</i>        | +           | -           | +           | +           | +           |
| <i>Prana PrapidakaShvasa</i>    | +           | -           | +           | +           | +           |
| <i>RuddhaShvasa</i>             | +           | -           | -           | -           | +           |
| <i>MuhuMuhuShvasa</i>           | +           | -           | +           | +           | +           |
| <i>Ghurghurukam</i>             | +           | +           | +           | +           | +           |
| <i>KasatiVegatahPratamyati</i>  | +           | -           | -           | -           | +           |
| <i>KasateSannirudhyate</i>      | +           | -           | -           | -           | +           |
| <i>KasateMuhuMuhupramohanam</i> | +           | -           | +           | +           | +           |

|  |   |   |   |   |   |
|--|---|---|---|---|---|
| ShleshmaVimokshanteMuhurtamLabhateSukham   | + | - | + | + | + |
| MahatGhoshavanaShvasa                      | - | + | - | - | + |
| ShleshmaAmuchyamaneBhrishamBhavatiDukhitam | + | - | - | - | + |
| GrivaShirasoSamgrahanam                    | + | - | + | - | + |
| Krichchhernabhasitum                       | + | - | - | - | + |
| ShyaneShvasaPiditam                        | + | + | + | + | + |
| ShyaneParshvaGraha                         | + | - | - | - | + |
| SakaphaShvasa                              | - | + | - | - | - |
| Kaphe Hine Shamayati                       | - | + | - | - | - |
| UrahaPida                                  | - | - | + | + | + |
| ParshvaPida                                | - | - | + | + | - |
| Trisha                                     | - | + | + | + | - |
| Sveda                                      | - | + | + | + | - |
| Vamathu                                    | - | + | - | - | - |
| Moha                                       | - | - | + | + | - |
| LalateSveda                                | + | - | + | + | + |
| Vishushkasyata                             | + | - | + | + | + |
| Uchchhritaksha                             | + | - | + | + | + |
| AsinoLabhateSaukhyam                       | + | - | + | + | + |
| Annadvesha                                 | - | + | - | - | - |
| Abala                                      | - | + | - | - | - |
| Pinasa                                     | + | - | + | + | + |
| Kasa                                       | + | + | + | + | + |
| Kanthodhvanasa                             | + | - | - | - | + |
| Aruchi                                     | - | - | + | + | + |
| Ushnabhinandati                            | + | - | + | + | + |
| MeghambuVardhte                            | + | - | + | + | + |
| ShitenaVardhte                             | + | - | + | + | + |
| PragVatenaVardhte                          | + | - | + | + | + |
| DurdineShvasa                              | - | + | - | - | - |
| ShleshmalaiVardhte                         | + | - | + | + | + |

### Samprapti

*Samprapti* deals with the whole pathological process, which is responsible for clinical signs and symptoms of the disease. It is stated that *Vata* located in the *Urah* after afflicting the *PranavahaSrotasa* (channels carrying the vital breath), gets aggravated and stimulates *Kapha* which leads to the causation of *Shvasa* [15]. Further it is said that if *Vata*, predominantly associated with *Kapha*, obstructs the *Pranavaha* and *UdakavahaSrotasa* (channels carrying *Prana*) and circulates all over the body then this obstruction aggravates *Vata* further causing *Shvasa*. Regarding the *Samprapti* of *TamakaShvasa*, *AcharyaCharaka* narrates that the vitiated *Vata* after causing the obstruction in *PranavahaSrotasa* spreads with in *PratilomaGati* and involving the neck and head region, which produces *Pratishyaya* by excitation of *KaphaDosha*. This *Kapha* causes obstruction at the site of the throat region and produces *GhurghurukamShabda* when *Vata* passes through the same region. This results into an increase in the respiration rate

resulting in disease of *Shvasa*, which includes pain in the chest. According to Vagbhata [16] the vitiated *Vata* travels abnormally in the *Pranavaha*, *Udakavaha* and *AnnavahaSrotasa*. This *Vata* associated with *Kapha* reaches upwards in the chest and throat, at that time the normal flow of air is affected which leads to production of *ShvasaRoga*. According to him this disease originates from the *Amashaya*.(Adhoamashaya) Acharya *Sushruta* explains that vitiated *Prana Vata* combines with *Kapha* gets *Urdhva Gati* and produces *Shvasa* [17].

## DISCUSSION

During the evaluation of disease process, clear manifestation of subjective symptoms and physical signs are termed as Rupa of that particular disease.

1. *Greeva Sira Parigraha* (stiffness around the neck): Provoked *Vata* contracts the muscles of head and neck during the attacks of *Shvasa*. Due to which patients feels some pain and stiffness of the head and neck muscles like as someone tightly holding the head and neck.
2. *Ghurghurakam*(Wheezing): When increased *Kapha* situated in *Srotas (Kanta)* obstructs the airway then this sound is produced. During attack, this type of sound is produced as the patient's breaths. This is equivalent to the wheezing sound described in modern science.
3. *Lalatasveda* (Forehead Sweating): This clinical feature of asthmatic attack indicates exertion due to rapid respiration. Sweating is also an indication of tachycardia. *Sushruta* did not specify *Lalatasveda* but mentioned the word *Sveda*, which generally indicates perspiration of whole body.
4. *Asino Labhate Saukhyam*(Comfort in sitting posture)): During attack, in sitting position patient feel better than in any other position. During lying posture about 500 ml extra fluid will be accumulated in pulmonary tissue and by sitting posture this extra fluid will come back to the circulation hence the congestion in the lung tissue will be reduced in sitting posture and patient gets relief from breathlessness. In sitting position diaphragm is lowered and secretion of airways will not obstruct the airways completely. There will be more space for gases exchange. Hence the patient gets relief while sitting. This is equivalent to orthopnoea described in Status asthmaticus.
5. *Usnabhinandati* (Feeling good by hot drinks and food)): In *TamakaShvasa* ,*Vata* and *Kapha* are the main *Doshas*. Both are having *Shita* property and *Ushna* is antagonist of

*Shita*, which suppress *Vata* and *Kapha Dosha* both. So, the patients of *Tamaka Shvasa* likes warm articles like tea, coffee, hot water etc.

6. *Kantodhvamsa* (Pain in the throat) : When increased *Kapha* is situated in *Kanta* and obstruct it, the patient cannot speak properly and feels difficulty.
7. *AtiTivra Vega Shvasa* (Having life threatening sever bouts of dyspnoea ): *TamakaShvasa* has been described as the disease coming in *Vega* (paroxysmal attacks). During *Vega*, patient gets the difficulty in breathing. This is the '*PratyatmaLaksana*' of *ShvasaRoga* . The word *Vega* has been mentioned in *Charaka* and *Vagbhatta* by adding adjectives like *Tivra* and *Ati*. This means that during the attack, patients feel much difficulty. Due to obstruction of *ShvasaMarga*, less amount of *Prana* can enter the body. To compensate the required amount of *Prana*, the rate of respiration is markedly increased. In *TamakaShvasa* expiration is prolonged, but inspiration is shortened.
8. *Muhurmuhu Shvasa*(Gasping): To fulfil the demand of oxygen the rate of respiration is increased; as the cough becomes extremely detersive, the patient may have gasping type of respiration.
9. *Pratamyati Ativegat* (Blackouts due to frequent bouts of coughing and breathlessness): During severe and prolonged attacks of *Shvasa* the mucus plugging obstructs the airways and there is poor air entry and thus poor supply to live parts of the body. Due to this situation, patients feel that he is covered by darkness and worried.
10. *Prana Prapidakam* (Having life threatening sever bouts of dyspnoea): The heart rate is also increasing due to increase in respiratory rate. Heart may exhaust as it has to work more. Hence there will be feeling of pain in chest.
11. *Nachapi Nidra Labhate Shayane Shvasa Piditam* (Aggravated in lying posture): The patient may not get sleep in the lying position because the secretions obstructs the airways, leading to dyspnea and cough.
12. *Shayanate Parshva Grahana* : When patient takes recumbent position there may be sudden pressure on the lungs due to raised diaphragm and air present in lungs can not pass out easily through the airways because of obstruction in bronchioles by secretion. These trapped airs inside the lungs exert pressure on the pleura and chest wall thus resulting in mild, moderate or severe pain.

13. *Shleshma Vimokshante Muhurtam Sukham* (After expectoration gets temporary relief) : If the sticky sputum is expectorated the frequency of cough is reduced and easy ventilation is facilitated for a short time. So after expectoration patient feels better.
14. *Shleshma Amuchyamane Bhrisham Bhavati Dukham* (greatly distressed during expectorate): The mucus secreted in the respiratory tract is tenacious and sticky; so if expectoration could not clear the airways and secretion obstructs the air passage. To expel this viscid secretion constant coughing will be there and the patient gets exhausted due to cough.
15. *Krichrat Bhashitam* (Slurred speech): An intense coughing and breathlessness result to hoarseness of voice and patient feels difficulty in talking. The tenacious mucus coated in the throat including vocal cords lead to difficulty in speaking.
16. *Kasat Sannirudhyate* (Inactive due to coughing): During episodes of cough patients breath ceases for few second and patient becomes motion less.
17. *Kasat Muhurmuhu Pramohanam* (Mental confusion due to coughing): Patient gets repeated attacks of fainting during continuous coughing, which if continues for long time leads the patient to distress and fear.
18. *Ucchritaksha* (Eyes are elevated widely opened): When proper oxygenation is hampered due to obstruction in the air ways, to meet the oxygen demand there may be gasping for air, patient puts the face upward to facilitate straight airways. Hence he keeps his eyes open as he is in apprehension.
19. *Muhu Chaiva Avadhamyate*: The body moves along with respiration during attack. While during inspiration the trunk is raised and during expiration lowered. Bhavamishra has compared this movement with the movement of a person's body travelling on an elephant.
20. *Annadvesha* (Anorexia): *Acharyas* have stated that *Shvasa* originates from *Pitta Sthana*; hence there is always a possibility of *Agni Dushti* and disturbed digestion process leading to *Annadvesha*.
21. *Vishushkasyata* (Dryness of mouth) : Due to rapid breathing during attack, dryness of mouth is an effect of water loss from the body. Here *Sushruta* has mentioned 'Trut' as *Lakshana of Tamaka Shvasa*
22. *Pinasa* (Rhinitis): Due to vitiated *Vata*, excessive secretion of *Shleshma* in *Pranavaha Srotas* occurs. *Pinasa* is a result of the hyper secretion in nasal mucosa.

23. *Urahpada* (chest pain): When vitiated *Vata* enters in *UrahPradesa*, there will be some painful condition. Out of these *Rupas*, some appear in the *Vegavastha* of *TamakaShvasa* and some remain present in between the two attacks. In *Tamaka Shvasa Vata is Kapha-Sanyukta*, may be through two different processes which ultimately convert in each other.

- *Vata* is in normal state and 1) *Kapha* is either vitiated with its own etiological factors like *Shita*, *Guru*, *Dadhi*, *Amakshira* etc. or 2) *Vishamashana*, *Vishtambhi Bhojana* etc. can produce *Mandagniit* further produces *Ama* and this *Ama* produces *MalarupaKapha*. This vitiated *Kapha* in the *UrahaPradesha* causes the obstruction in the normal path of *Vata* it further leads to *Avaranajanya Vata Prakopa and Pratiloma Gati of Vata (Kaphapradhana Samprapti)*.
- *Vata* is vitiated through its own etiological factors like *Apatarpana*, *Raja*, *Dhuma*, *Vegavarodha* etc. and by *Dhatukshaya* may be due to chronic disease, vitiated *Vata* causes contraction of *Pranavaha Srotasa*, which further produces *Pratishyaya* by excitation of *Kapha Dosha*. Thus, leading to the presentation of *Shvasa (VatapradhanaSamprapti)*.

## CONCLUSION

*Tamaka Shwasa* is not so serious as *Maha*, *Urdhva* and *Chhinna* but it is a very troublesome disease and long lasting with frequent episodes (attacks) difficult to bring under control unless quick and prompt treatment is not provided. Ayurveda considers *Tamaka Shwasa* is a *Yapya* disease (after one year). Both *Vata* and *Kapha* have been considered to be the chief *Doshas* involved in the pathogenesis of *Tamak Shwasa*. Among the five types of *Sareera-Vayu*, *Prana Vayu* is deranging this disease. Diagnosis of *Lakshanas* are important because Acute episodes of bronchial asthma are one of the most common respiratory emergencies, and it is essential that the physician recognize which episodes of airway obstruction are life-threatening and which patients demand what level of care.

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