EVALUATION OF ETIOLOGICAL FACTORS IN PATHOGENESIS OF TAMAKA SHWASA

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ABSTRACT
Tamaka Shwasa is the disease originating from Pittasthana and caused due to the vitiation of Kapha and Vata. Kapha accumulated in the Pranavaha Srotasa causes obstruction to the free movement of Vata. The clinical features of Tamaka Shwasa have close resemblance with Bronchial Asthma. It is estimated that 100 million people will be expected to develop Asthma by year 2025. Though the nidana of Tamaka Shwasa are well known, each nidana contributes the manifestation of disease may be specific and need to be understand. This may be helpful for the preservation of health status of patients of Tamaka Shwasa, as avoidance of nidana is the basis of treatment. By Nidan parivarjan we can minimize the episodes of Asthma. Being a vapya roga, avoidance of triggering factors can provide better quality of life. The main objective of the study is to evaluate and analyze the etiological factors of Tamaka Shwasa. An observational study was done on 37 patients of Tamaka Shwasa, based on demographic data, Aharaja, Viharaja, Mansika and Vyanyaka hetu. It was concluded that Tamaka Swasa is mainly caused by kaphavatamaka nidana.

Keywords: Nidan, Tamaka Shwasa, Bronchial asthma.

INTRODUCTION
Tamaka Shwasa is the disease of Pranavaha srotas caused due to vitiated kapha and vata leading to obstruction in Pranavaha srotasa. It is manifested by Pratilome vayu, Gharghurakam, Atitivra vega Shwasa and Pranaprapidaka Shwasa. The clinical feature of Tamaka Shwasa has close resemblance with Bronchial Asthma. Bronchial Asthma currently affects approximately 300 million people worldwide. It is estimated that 100 million people will be expected to develop Asthma by year 2025. The prevalence of Tamaka Shwasa (Bronchial asthma) is continuously increasing day by day due to environmental pollutants, stressful condition, modern lifestyle, green house effect. Most common etiological factors for Tamaka Shwasa are allergic factors Raja (Dust), Dhooma¹. Occupational exposures which encounter with above factor and history of smoking must be rule out. Nidana, dosha and dushya are the major factors in the manifestation of the disease. Interaction of these three factors decides the manifestation and non manifesta-
tion of the disease. Though the *nidana* of *Tamaka Shwasa* are well known, each *nidana* contributes the manifestation of disease may be specific and need to be understand. This will be helpful for the preservation of health status of patients of *Tamaka Shwasa* as *Ayurveda* basically being emphatic about “Swastha-syaswatthayarakshhanama” giving priority to prophylactic management; hence avoidance of *nidana* is the basis of the treatment. Being a *yapya and chronic* disease, there is phase of remission and exacerbation of disease leaving the patients in distressed condition, avoidance of triggering factors provide better quality of life. Hence a study was planned to evaluate the etiologic factors of *Tamaka Shwasa* and to understand the contribution of each causative factors in the manifestation of disease. An observational study was done on 37 patients of *Tamaka Shwasa*, based on demographic data, *Aharaja, Viharaja, Mansika* and *Vyanjaka hetu*. It was concluded that *Tamaka Swasa* is mainly caused by *kaphavatatmaka nidana*, which have its own role in the manifestation of disease.

**Material and Methods:**

**Aims and Objective-**

1. To evaluate the Etiopathogenesis of *Tamaka Shwasa*.
2. To evaluate the effect of *Upshayanupshya* in *Tamaka shwasa*.

**Selection of patients-**

To fulfill the criteria of the study total 37 Patients were selected randomly from the OPD/IPD of PG Deptt. of *Rog Nidana avam Vikriti Vigyan* UAU Rishikul campus Haridwar having classical symptoms of *Tamaka Shwasa* on the basis of exclusion and inclusion criteria depending on the detail clinical history, systemic examination and necessary pathological investigations irrespective of Sex, Socio-economic status and religion.

**Type of Study -** Randomized open trial

**Inclusion Criteria-**

1. Patients between the age group of 18-70 yrs.
2. Patients having the classical symptoms of *Tamaka shwasa*.

**Exclusion Criteria –**

- Patients of extreme age group i.e. below age 18 yrs and above 70 yrs.
- Patients of cardiac asthma, COPD (chronic bronchitis, Emphysema), Post tubercular lung fibrosis, CHF, LVF, Tropical Pulmonary Eosinophilia, Bronchopulmonary Aspergillosis etc.
- Patients having any other systemic disorders like Diabetes, HTN, and Tuberculosis etc.
- Patients of Status Asthmaticus
- Severely malnourished/debilitated patients
- Severe renal and hepatic diseases
- Pregnant and lactating women.

**Observation & Results-**

**Epidemiological status of 37 patients of *Tamaka Shwasa*-**

Out of the 37 patients included in the study, Majority of patients belongs to age group 21-40 years (37.9%), Gender wise distribution showed that 59.5% were males and 40.5% were females. Occupation wise distribution revealed that maximum 30% patients were laborers, where as 20% patients were house wives. In the present study, majority of patients 73% were married, education wise distributions revealed that majority (32.4%) of the patients were in lower education, 24.4% were uneducated, Socio-economic status wise Maximum (40.5%) patients were of lower middle, 27% of the patient were middle class, Habitat wise distribution revealed that maximum 64.9% of patients were from urban area. The distributions based on age of onset (chronicity) showed that 59.5% of the patients had their onset of the disease more than 4 year back, 21.6% of the patients have the history of 3-4 year, Family history wise distribution shows that 48.6% of patients have no any family history of *Tamaka Shwasa*, 35.2% of the patient presented first degree and 16.2% of the patient presented 2nd degree of positive family history of *Tamaka shwasa*. Diet habit wise distribution shows that 64.9% of the patients were vegetarian and 35.1% patient have history of mixed diet. *Shad rasa ruchita* wise distributions shows that, maximum 54.1% patients had liking for *madhura rasa*, 18.9% of patients had liking the *Lava-*. 
na rasa, Aharavidhi wise distribution showed that 37.8% of the patients were indulged in Samasana, 24.4% in Vishamasana, 18.9% in Adhyasana, 10.8% of the patients taking Samyaka ahara while 8.1% of the patients were indulged in Virudhasana. Agni wise distribution showed that 59.5% of the patients had manda agni followed by Vishama agni (29.7%) and Tikshna agni and Samaagni (5.4%) each respectively. Kostha wise distribution of patients have shown that Krura kostha in 56.8%, followed by 35.1% madhyam kostha and 8.1% mridu kostha respectively. Bowel habit wise distribution showed that 35.2% of the patients had irregular bowel habit, 32.4% of the patients have regular bowel habit and 32.4% had history of constipation. Addiction wise distribution revealed that 54.1% of patients were addicted for tea or coffee, 27% for smoking, 10.8% for tobacco chewing and 8.1% for snuff. Sleep wise distribution showed that 51.4% of patients have disturbed sleep followed by irregular sleep (27%) pts and 21.6% were having sound sleep. Among 15 female patients Menstrual history wise distributions showed that maximum 73.3% of patients having menopause.

**Chart 1:** Showing Aharaja and Viharaja nidana wise distribution of 37 patients of Tamaka shwasa

**Chart 2:** Showing Mansika nidana wise distribution of 37 patients of Tamaka shwasa
**Chart 3:** Showing Aggravating factors wise distribution of 37 patients of Tamaka Shwasa.

<table>
<thead>
<tr>
<th>Aggravating Factors</th>
<th>Present</th>
<th>Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meghambu</td>
<td>72.97</td>
<td>27.03</td>
</tr>
<tr>
<td>Durdina</td>
<td>51.35</td>
<td>48.64</td>
</tr>
<tr>
<td>Sita vata</td>
<td>45.94</td>
<td>54.06</td>
</tr>
<tr>
<td>Shita padartha</td>
<td>51.35</td>
<td>48.64</td>
</tr>
</tbody>
</table>

**Chart 4:** Showing season wise variation of 37 patients of Tamaka Shwasa.

<table>
<thead>
<tr>
<th>Season</th>
<th>Ushnabhinandati</th>
<th>Hot drinks</th>
<th>Asino labhate saukhyam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter season</td>
<td>59.45</td>
<td>24.32</td>
<td>16.21</td>
</tr>
<tr>
<td>Rainy season</td>
<td>27.02</td>
<td>70.27</td>
<td>91.83</td>
</tr>
<tr>
<td>Summer season</td>
<td>45.94</td>
<td>70.27</td>
<td>86.48</td>
</tr>
<tr>
<td>Non specific</td>
<td>43.24</td>
<td>70.27</td>
<td>10.81</td>
</tr>
</tbody>
</table>

**Chart 5:** Showing Upshaya wise distribution of 37 patients of Tamaka Shwasa.

<table>
<thead>
<tr>
<th>Upshaya</th>
<th>Present</th>
<th>Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ushnabhinandati</td>
<td>78.37</td>
<td>21.63</td>
</tr>
<tr>
<td>Hot drinks</td>
<td>70.27</td>
<td>29.73</td>
</tr>
<tr>
<td>Asino labhate saukhyam</td>
<td>91.83</td>
<td>8.17</td>
</tr>
</tbody>
</table>

**Chart 6:** Showing Anupshaya wise distribution of 37 patients of Tamaka Shwasa.

<table>
<thead>
<tr>
<th>Anupshaya</th>
<th>Present</th>
<th>Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold food/drinks</td>
<td>62.16</td>
<td>37.84</td>
</tr>
<tr>
<td>Curd</td>
<td>45.94</td>
<td>54.06</td>
</tr>
<tr>
<td>Raja</td>
<td>43.24</td>
<td>56.76</td>
</tr>
<tr>
<td>Dhuma</td>
<td>70.27</td>
<td>29.73</td>
</tr>
<tr>
<td>Megha</td>
<td>86.48</td>
<td>13.52</td>
</tr>
<tr>
<td>Prag-vaishna Ahara bihara</td>
<td>32.43</td>
<td>67.57</td>
</tr>
<tr>
<td>Meghambu</td>
<td>72.97</td>
<td>27.03</td>
</tr>
</tbody>
</table>
DISCUSSION
In the present study, demographically it was observed that maximum number of patients i.e. 37.9% were in the age group of 21-40 years followed by 27% each in 41-60 years. This type of trend may be due to working age group giving chances of exposure to environmental pollutants, occupational pollutants, indoor allergens, faulty dietary habits and high stress and strain. Maximum numbers of patients i.e. 59.5% were males, though there is no relation of sex with Asthma but in present study majority of male patients were associated with faulty dietary habits and lifestyle, exposed to pollutants and addicted to smoking and alcohol. Majority of the patients were labors (30%) and house wives (20%). Labors are related to do a wide category of occupation facing many type of allergens for example roadside dust, automobile exhaust, passive smoking, Flour, dyes and certain chemicals due to their occupation are commonly associated with work related Asthma. The increased no of patients, who were doing house hold activity is due to their life style and dust allergy. Patients having more than 4 years chronicity were reported in maximum (59.5%) may be due to the nature of the disease i.e. Yapya, recurrence by the triggering factors like seasonal variations, dust etc., Socioeconomic status wise distribution showed that lower middle class people were more (40.5%) affected This might be due to improper hygiene, exposure to different allergens, dust, and smoking & lack of health awareness. Maximum (51.4%) patients had family history of Asthma which may be due to Bijadosha which was not withdrawn from their respective families. Atopy is demonstrated by increased total /specific serum IgE. It may be considered as Khavigunya in Pranavahasrotas since birth. Majority (51.4%) of patients had disturbed sleep, this is due to Allergens present in bedding, decreased mucociliary clearance, nocturnal hyperventilation, and gastro esophageal reflex may contribute to the development of nocturnal asthma. Majority of patients were having Shamashana (37.8%) and Vishamashana (24.4%) type of dietetic pattern that cause vitiation of Agni and formation of Ama which starts the pathogenesis. Majority (59.5%) of the patients were having Mandagni, which leads to the formation of Ama; causative factor for the initiation of pathogenesis of Tamaka Shwasa. Majority of patients (54.1%) were addicted towards tea/coffee (54.1%), it is Ruksha and cause Vata Prakopa along with vitiation of Agni. The modern research shows that it cause bad effect on gastric secretion and precipitate Asthma. Majority of the patients (64.9%) were from urban areas. Urban peoples are more indulged in fast and hectic lifestyle, polluted environment, irregular dietary pattern; which may triggers the disease.

AHARAJA NIDAN –
Now a days excessive use of canned food, bakery and flour products, beans, black- gram, fish and curd are more in practice which may be the etiological factors of Tamaka Shwasa.

In the present study majority of patients (75.67%) were consuming the Dadhi, followed by Rukshanna (70.27%), Shitambu (62.16%), madhura rasa (54.1%), 48.64% of the patients had taken Masha, 43.24% Madhur, guru, snigdha Ahara, (40.54%) Nishpav and 13.51% patients were taking Anup mamsa.

Dadhi possess qualities snigdha, amlapaka, guru, ushna, sleshmakrita and abhishyandi. Dadhi sevana causes kapha prakopa, results in srot-o-avarodha, due to abhishyandi guna, thus causes avarodha in pranavaha srotas. In present era common aharaja nidana of Tamaka Shwasa may be cornflakes, oats, bread, frozen pea, re-cooking of food, Barley (yava) and black gram flour (Rukshanna) have dominancy of vata and cause shoshana, it also diminishes the oja. Rukshata causes dusti of prana and udakavaha srotas. Shitambu (like cold water, cold drinks, ice creams) are sheeta and ruksha that leads to vata and kapha prakopa, madhura rasa like sweets, chocolate, bakery food can lead to Chaya Purvaka Prakopa of Kapha Dosha. Vitiated Kapha obstructs the path of Vata. Masha is guru, snigdha, ushna and has madhura rasa. This cause prakopa of kapha and pitta, thus its excessive intake contributes towards disease process. Madhura, guru and snigdha ahara (like sweet dish, fast food, Fatty and oil foods, stale (perushita) rice, Poha, dry fruits, ripened Mango), can creates the srotorodha and vitiates the normal path of vata. Nishpav (Flat-beans)
are ruksha, amla vipaka, guru, vidahi and vibandha-kara as stated in Dhanyavarga of Bhava Prakashā. Its excessive sevana results in vata prakopa, vibandha, pratilomagati of vata and dusti of Pranavaha srotasa. Matsya is abhisshyandi (produces excess secretion in the tissue pores causing their blockage), guru, snigdha, ushaṇā and thus causes srotō-avarodha. In a research it had been found that eating burgers and fries can increase risk of Asthma because it weakens the immune system. Pishita ahara (suji maida, ata, basan) has ushaṇa veerya, causes pitta prakopa, vidahi and guru. Thus due to ushaṇa and vidahi guna, it vitiates udakavaha srotasa, which in turns involved in the pathogenesis of Tamaka Shwasa.

Viharaja Nidana-
Among most common viharaja nidana exposure of dhooma was seen in majority (75.67%), exposure to raja in 67.56% patients, vegavidharan in 64.86%, Si-tasthana in 56.75%, Diwaspapa in 56.76% and exposure of pollens in 54.05%, Pragavata in 45.94%, Ratrijagran in 40.5%, Bharadwarkarshita in 32.4%, Ativyayama in 27.02%, and exposure to pet animals in 24.32%.

Majority of the patients were exposed to raja, dhooma etc. Environmental pollutants like smoke, dust, pollens, chemicals etc causes pranavaha srotodusti and kaphavata prakopa leading to pathogenesis of Tamaka Shwasa. Vegavidharana causes reversible flow of vata (Pratilome vayu) and proceeds the samprapti, shita sthana acts as the aggravating factors for the disease, Divaspapa and Ratrijagran also causes kapha and vata prakopa respectively affecting the process of digestion leading to formation of ama and initiate the disease process., pollen grains acts as allergens which initiate the disease, Bharavahana and ati adhwa causes dhatu kshya and thereby vata prakopa, leading to pranavaha srotodusti. Ativyayama is triggering factor of Asthma i.e. exercise which acts by mechanism of hyperventilation. In Atopic Asthma, symptoms are aggravated in contact of various triggering factors including animal dander. It was found that a very less percentage of patients having pet and it is not necessary that all of them had atopic type of Asthma.

Mansika Nidana-
Chinta (stress) and shoka (grief in any form) was seen in 90% patients while Bhaya was seen in 10%. Atichintana, Bhaya, Shoka and Krodha were found to be the mansika nidana of Tamaka Shwasa because it can cause vata prakopa, thus leading to rasa dhatu shoshana in hrudaya and hence resulting in the dusti of pranavaha srotasa. Krodha causes pitta prakopa, thus contributes in disease process. These are also described in Charaka nidana in detail as “Vishado Roga Vardhananam, Shoko Shoshana-nam”. (ch.shutra.25). “Chintyanama ati Chintanam (ch.vi.5) is considered as Rashvaha srotodusti nidana in which rasa is dushya that is also responsible for pranavaha srotodusti and manifested as Tamaka shwasa.

UPASHAYA AND ANUPASHAY-
Envirnomental factors – Among all registered patients 59.45%, showed an increased frequency and intensity of attacks in hemanta ritu, 24.32% in Varsha Ritu, 16.21% in Greeshma Ritu and 27.02% throughout the year. In winter season the pollution level is high, because of the cold dry air stagnated in the ground level creating the inversion effect. These suspended pollutants in the air acts as trigger response in Asthmatics. According to Ayurvedic point of view, in winter season Shaitya and Raukshyta of the atmosphere leads to the increase of already vitiated Vata and Kapha in Asthmatics worsening the attacks. In Varsha Ritu there was Vata prakopa, and Agni becomes Mana. Both the seasons are not favorable for Asthmatic person but their prevalence differs person to person according to Rogi bala and intensity of Prakupita Doshā Anshash. Autumn season tended to be associated with high total spore and pollen counts. In some patients symptoms aggravated in summer, may be due to involvement of Pitta. In some cases patients having the problem throughout the year may be due to continuous Nidana Sevana, Alpa Rogi Bala or due to chronicity of Vyadhi.

In this study 54.05% of the patients were found that when they were exposed to pollen, the symptoms of Asthma aggravated. Paramesh H observed in his study
that Asthma attacks precipitate during winter season i.e. 82.3% during change of season, e.g. Sept./Oct., and Feb./March the amount of pollens in the environment is maximum in these seasons. Therefore the patient allergic to pollens gets the attack during the change of season. In 32.43% of the patients Pragavata acts as aggravating factors. Pragavat is dusta vayu, it has abhisyandi guna. It can cause kasa, pratishyaya, shiroruja. This showed that Tamaka shwasa patients are susceptible to cold environment, cold airwaves and cloudy season aggravates symptoms of Tamaka shwasa. Cooling of the airways may induce vasoconstriction in bronchial mucosa, followed by reactive hyperemia and edema, which would narrow the airways after hyperpnoea. By virtue of kapha prakopa in vasant Ritu episodes of Tamaka shwasa are more prevalent, simultaneously loads of pollen grains are also maximum in environment which is also triggering factors for pathogenesis of Tamaka Shwasa (Ch.Su.6). Whenever there is changing in quality of air in different seasons by change in temperature or humidity or by dust precipitates asthmatic attack.

**AGGRAVATING FOOD**-
Shlesmala Aahara, milk, dadhi (45.94%), sweets, rice, cold water (62.16%) etc which causes kapha prakopa, results sroto-avrodha in pranavaha srotas leads the disease. Some of the food chemicals like sodium metabisulphite are used in processed food as preservatives. e.g. in wine, fruit juice, canned fish and dried fruit, Food coloring agents such as yellow food tartrazine, monosodium glutamate which are used to enhance flavor in snack, soya sauce, packet soups, salicylates present in many foods like coffee, soya sauce, tomato paste and sauce, beer and honey, drugs like Aspirin, Carbide and ethylene used for fruits ripening also triggers the disease. These substances may disturb the immunity of the individuals and cause atopy of Asthma in later life.

**RELEIVING FOOD**-
Usnaabhinandati (78.37% of patients) were feeling comfort by getting hot food and drinks. Heat is vasodilator and opposite of cold, it liquefies condensed sticky mucous (kapha) impacted in respiratory channel and make it easier to expel out. General principle of treatment of shwasa roga as-“Yat Kinchita Kapha vaignam usnam...Bhesajama Annam Panani” as supports relieving effect of heat.

**AGGRAVATING AND RELIEVING POSTURE** – Sleeping and exercise factor created spasm of Asthma in majority of patients. Long term walking was also reported as one of aggravating factor in most of the patients. In majority (91.83%) of the patients were get relief in sitting posture.

“Aashino Labhate Saukhyam Shayane Shwashsa Piditum” (ch.chi. 17) Perhaps due to clearing of airways in sitting posture as Kapha gets accumulated at the base of alveoli & increased space available for oxygenation simultaneously accessory muscles of respiration. (Sternocleidomastoid & Abdominal muscles) provide better support in breathing in Asthmatic patients in sitting posture.

**CONCLUSION**
Tamaka Shwasa is kaphavatatmaka and pitta sthana samudbhava vyadhi of pranavaha srotas. Though tri-dosha are involved in this disease but mainly vata and kapha are involved. Vyanjaka hetu play a major role in stimulation of hidden dosha of the body. The present study stated that nidana mentioned in Ayurveda for Tamaka Shwasa are relevant to present era in the pathogenesis of disease. Hence nidana parivarjana helps in preservation of health status of patients of Tamaka Shwasa. The patients were strictly advised to follow the restrictions regarding food, food habits, and life style. To the extent possible, they were instructed to avoid the probable causative factors of the disease and causes of Agnimandya. Pathyasevana and Apathy varjana have major role in prevention and management of Tamaka shwasa.

**REFERENCES**

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