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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 Strotasa* 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 ***yapya*** *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 *Vyanjaka hetu.* It was concluded that *Tamaka Swasa* is mainly caused by *kaphavatatmaka 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, Ghurghurakam, 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), *Dhooma*[1], 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 "*Swasthasyaswathyarakhshanama*" 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 etiological 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 avum 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 nidan* wise distribution of 37 patients of *Tamaka shwasa*

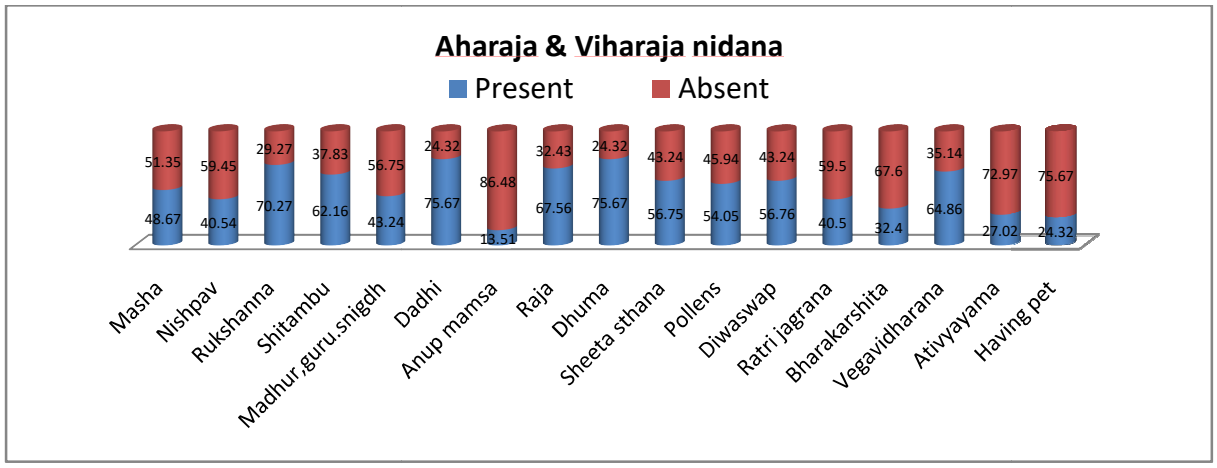


Chart 2: Showing Mansika nidana wise distribution of 37 patients of Tamaka shwasa

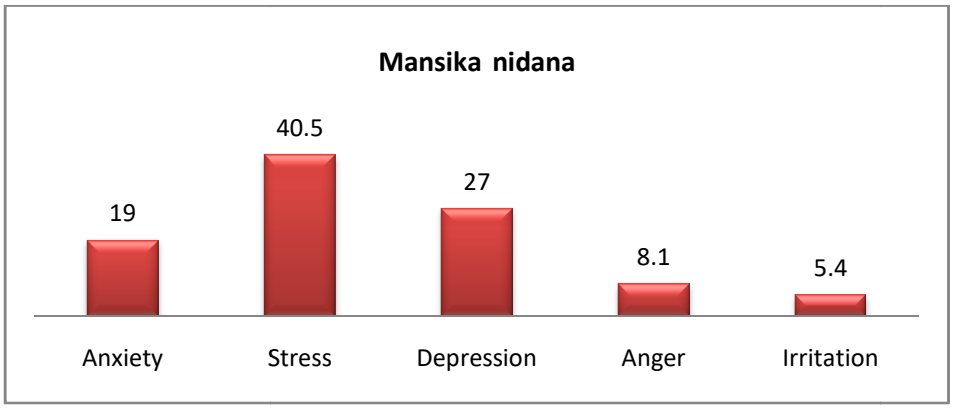


Chart 3: Showing Aggravating factors wise distribution of 37 patients of Tamaka Shwasa.

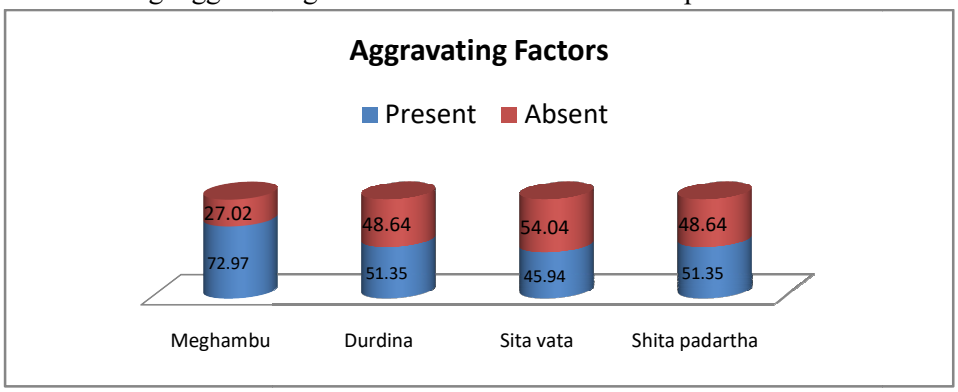


Chart 4: Showing season wise variation of 37 patients of Tamaka shwasa

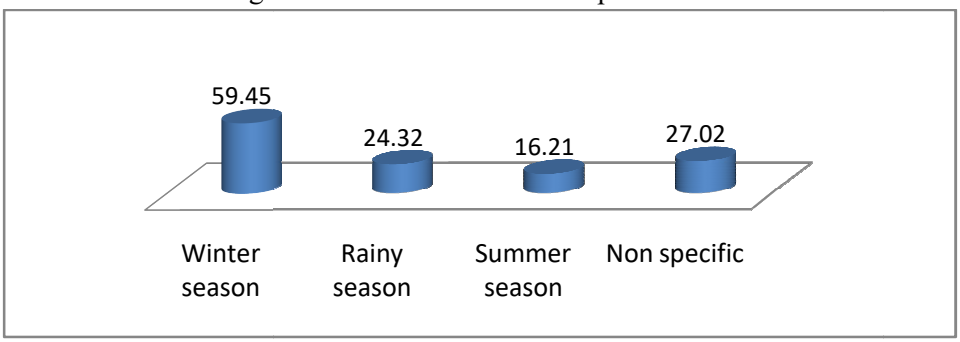


Chart 5: Showing *Upshaya* wise distribution of 37 patients of *Tamaka Shwasa*.

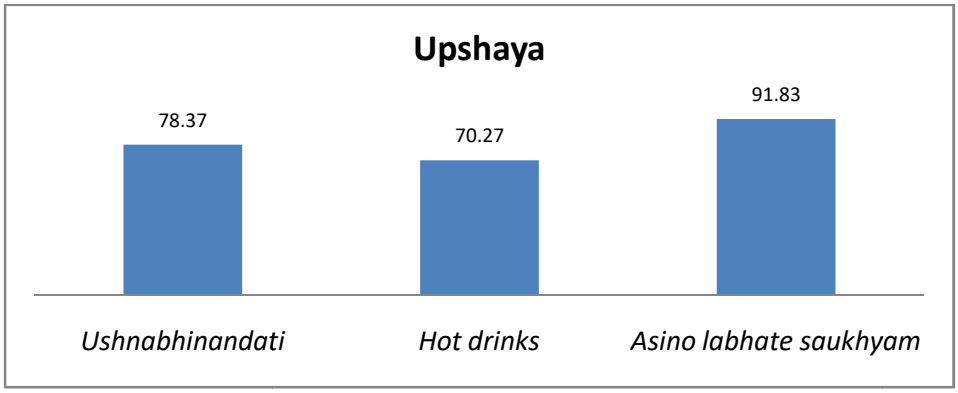
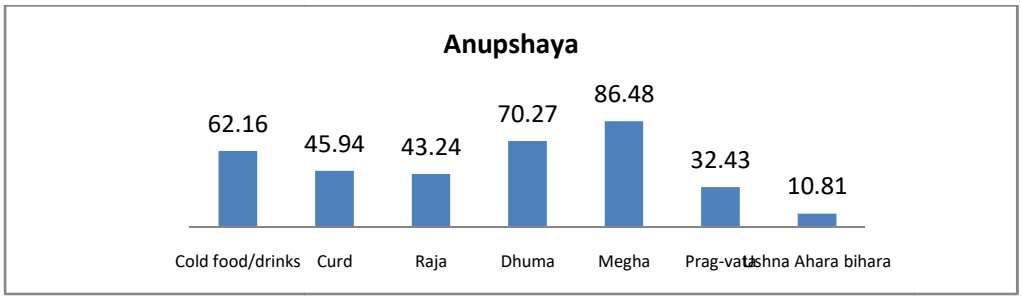


Chart 6: Showing *Anupshaya* wise distribution of 37 patients of *Tamaka Shwasa*.



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*[2]. 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*[3], 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 hypoventilation, 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*[4]. *Dadhi sevana* causes *kapha prakopa*, results in *sroto-avarodha*, due to *abhishyandi guna*, thus causes *avarodha* in *pranavaha srotasa*. 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 *vibandhakara* as stated in *Dhanyavarga* of *Bhava Prakasha*[5]. Its excessive *sevana* results in *vata prakopa, vibandha, pratilomagati* of *vata* and *dusti* of *Pranavaha srotasa*. Matsya is *abhishyandi* (produces excess secretion in the tissue pores causing their blockage), *guru, snigdha, ushna*[6] and thus causes *sroto-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 *ushna veerya*, causes *pitta prakopa*, *vidahi* and *guru*. Thus due to *ushna* 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%, *Sitasthana* in 56.75%, *Diwaswapa* in 56.76% and exposure of pollens in 54.05%, *Pragavata* in 45.94%, *Ratrijagrana* 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 sroto dusti* 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, *Diwasvapa* and *Ratrijagarana* 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 sroto dusti*. *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 Shoshananam*[7]. (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 *Manda*. Both the seasons are not favorable for *Asthmatic* person but their prevalence differs person to person according to *Rogi bala* and intensity of *Prakupita Dosha Anshansh*. 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%[8] 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*[9] (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.

RELIEVING 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 vatgnam 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 tridosha 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 *Apathya varjana* have major role in prevention and management of *Tamaka shwasa*.

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