A COMPARATIVE CLINICAL STUDY ON THE EFFECTIVENESS OF BHARANGYADI CHOORNA AND VYAGHRI CHOORNA IN TAMAKA SWASA (BRONCHIAL ASTHMA)

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ABSTRACT

Ayurveda classics mentioned various types of Swasa and Tamaka Swasa is one among them. Tamakaswasa is manifested by aggravated Pranavayu by the obstruction of Kapha. In this case treatment should be to clear out Pranavaha srotas, pacify Vata and remove the blockage due to Kapha. In modern science Tamaka Swasa is correlated with Bronchial Asthma. It’s a chronic inflammatory disorder of the airways in which the chronic inflammation causes an associated increase in airway hyper responsiveness that leads to recurrent episodes of asthmatic exacerbation. Modern science has no permanent cure of Tamaka Swasa, that’s why it is necessity to search herbal and herbo-mineral preparations for the treatment of disease. Present Study was conducted to reduce the symptoms of Tamakaswasa. Bharangyadi Choorna and Vyaghri Choorna have the properties of Kapha Vata hara, Agni Deepana, Pachana, Anulomana, Srotoshodhana, anti-asthamatic and anti-inflammatory property. Materials and Method: Patients who have symptoms of Tamakaswasa fulfill the inclusion criteria were given with Bharangyadi Choorna 4gm thrice a day along with Ardraka Swarasa as Anupana in the trail group i.e., group A and Vyaghri Choorna 4gm thrice a day along with honey as Anupana in the control group i.e. group B. It is a comparative clinical study with 30 patients in each group for 30 days. Analyzing the signs and symptoms, PEFR after each 10 days, Wilcoxon test was done for comparing the effectiveness of treatment between two groups. Comparative analysis of the overall effect of the treatments in both the groups was done by statistically done by Mann-Whitney test. Results: There was statistically significant change in all the signs and symptoms and PEFR after treatment and follow up. All the signs and symptoms have P≤0.05. Conclusion: Bharangyadi Choorna has shown highly significant reduction in the symptoms like Swasakrichratha, Peenasa, Kasa, Ghurghuraka, Krichrabhashana, Shushkasya and PEFR. On comparison between the two groups, Bharangyadi choorna showed a better result in improvement of symptoms- Swasakrichratha, Peenasa, Kasa, Ghurghuraka, Krichrabhashana, Shushkasya and objective parameter- PEFR. Hence H2 hold good.

KEYWORDS: Tamaka Swasa, Bronchial Asthma, Bharangyadi Choorna, PEFR, Vyaghri Choorna.

INTRODUCTION

Tamaka Swasa is mentioned as one of the variety among five types of Swasa. But out of these, Kshudra Swasa present as symptom in most of the diseases and both type of Swasa are manageable, whereas Maha Swasa, Urdhva Swasa and Chinna Swasa were present in the terminal stages of various diseases. Tamaka Swasa is a ‘Swantartra’ Vyadhi and having its own Nidana, Samprapthi and Chikista. Prana Vayu moves in the reverse order, pervades the Srotas, afflicts the Greeva and Shira, and stimulates Kapha to cause Pinasa resulting in Tamakaswasa. The main causative factors of Tamaka Swasa are Raja, Dhooma, Vata, Sheetha Sthana Nivasa, Sheethambu Sevana, Ativyayama and Rooakshanna Sevana. It is mentioned as Yaapya Vyadhi i.e., chronic in nature. Bronchial asthma mentioned in Modern Medicine closely resembles with Tamaka Swasa.

The process of breathing in and out is effortless, thus hardly noticeable, and therefore, often taken for granted for most of us. Through a life span, consider the newborn's first gasp for air outside mother's womb, signifying the wonderful act of entry into this world, the infant's first vocal sounds and lisp that express emotions enabling communication with the world, and finally, the inevitable act of dying, or expiration, marked by giving the spirit away with the last breath- all tied to the respiratory tract.

Asthma may be as a chronic inflammatory disorder of the airways in which many cells plays a
role in particular mast cells, eosinophils and T lymphocytes. In susceptible individuals this inflammation causes recurrent episodes of wheezing, breathlessness, chest tightness and cough particularly at night or in the early morning. These symptoms are usually associated with wide spread but variable air flow limitation that is at least partly reversible either spontaneously or with treatment. The inflammation also causes associated increase airway responsiveness to a variety of stimuli.

Bronchial asthma is a respiratory disorder that has increased dramatically over the past two decades[1]. It is a frightening condition which can seriously impede one's breathing ability, and suddenly rob the individual of the most important nutrient of all- oxygen. People who are having an Asthma attack have real trouble taking a breath. Asthma affects peoples of all age and can be severe, sometimes fatal. Over 100 million people worldwide have suffering from Asthma, the prevalence is increasing among children. As with all chronic diseases rising prevalence is only part of the concern. Mortality due to asthma rose in last decade and has not changed in recent years. Morbidity due to exacerbations and persistent symptoms present as a huge burden to individuals and their community.

The prevalence of bronchial asthma is increasing alarmingly now a day due to increased air pollution, overcrowding, occupational conditions, stress and poor hygiene. As per WHO 2011 health reports, about 235 million people are suffering from bronchial asthma. The prevalence of asthma has risen in affluent countries over last 30 years but now appears stabilized with ~10-12% of adults and 15% of children affected by the disease[2]. It is estimated that there may be an additional 100 million people with asthma by 2025[3]. In India it is estimated around 15-20 million peoples are asthmatics and it was seen as one of the leading cause of morbidity and mortality in rural India.[4]

In 2005 GINA Workshop explained, "The rate of asthma increases as communities adopt western lifestyles and become urbanized. With the projected increase in the proportion of the world's population that is urban from 45% to 59% in 2025, there is likely to be a marked increase in the number of asthmatics worldwide over the next two decades. It is estimated that there may be an additional 100 million persons with asthma by 2025."

Bronchial Asthma can be related with Tamaka Swasa in Ayurveda which is mentioned as one of the variety among five types of Swasa. Acharya mentioned Shamana and Shodhana Chikitsa for Tamakaswasa in different contexts. Shodhana procedure has given a due importance in this disease by almost all Acharyas. Although Shodhana therapy shows better result than Shamana therapy and already many scholars have proved this but Shodhana therapy is not possible in all the conditions and in all the patients, all time and in the classics also, the Shamana therapy has been considered better than Shodhana and Bhramhana therapy (Ch.Chi 17/149). Comparing Shodhana and Shamana Chikitsa, Shodhana even if considered superior to Shamana can be done only Doshata vitiation is more, need hospitalization and can be done only in good body strength person.

The current management of Tamakaswasa (Bronchial asthma) by modern medicines provides only short term symptomatic relief but does not provide any long term relief to the patients. Shamana can be done in all age groups, even in patients of less body strength and can be done in O.P basis also. Here arises the need of an effective polyherbal combination which alleviate Kapha and Vata Dosha, having Agni Deepana, Anulomana, Srotosodhana and which can actively interfere in the disease pathology.

This study has been designed to assess the effectiveness of Bharangyadi Choorna and Vyaghri Choorna in Tamaka Swasa (bronchial asthma). Bharangyadi Choorna[5] and Vyaghri Choorna[6] have the properties of Kapha Vatahara, Agnideepana, Pachana, Anulomana, Srotosodhana, anti-asthmatic and anti-inflammatory property. The aim of the study is to assess clinically, the effectiveness of Bharangyadi Choorna and Vyaghri Choorna.

MATERIALS AND METHODS
Source of Data
Literary source
All the Ayurvedic classics, contemporary Ayurvedic literatures, modern texts and internet sources mentioning about the condition, medicine and administration were reviewed and documented for the intended study.

Sample source
Patients who fulfill the inclusion criteria will be randomly selected from OPD and IPD of Karnataka Ayurvedic Medical College Hospital, special camp conducted for the purpose and from referral sources.

Pharmaceutical source
Raw drugs will be procured from authentic sources in and around Mangalore and preparation of Choorna will be carried out at the teaching pharmacy attached to Karnataka Ayurveda medical college, Mangalore.
Method of Preparation of Drug

**Bharangyadi choorna**
- Bharangi
- Shunti

These two drugs are taken equal quantity should be powdered, sieved to form *Sookshma choorna* and it will be preserved in an air tight container.

**Anupana:** Ardraka swarasas

**Vyaghri choorna**
- Vyaghri
- Jeeraka
- Dhatri

All these drugs taken in equal parts should be powdered together and sieved to form *Sookshma Choorna* and it will be preserved in an air tight container.

**Anupana:** Madhu

Method of Collection of Data

**a. Sample size:** A minimum of 60 patients fulfilling the diagnostic and inclusion criteria of either gender were selected for the clinical study. They were randomly assigned into two groups A and B with 30 patients each.

**b. Diagnostic Criteria:** Diagnosis will be made on the basis of *Lakshanas* of *Tamaka Swasa* like
  - i. *Swasakrichrata* (difficulty in breathing)
  - ii. *Peenasa* (rhinitis)
  - iii. *Kasa* (cough)
  - iv. *Ghurghuraka* (wheezing)
  - v. *Shushkasya* (dryness in the mouth)
  - vi. *Krichrabhashana* (difficulty in speaking) and

  Symptoms of Bronchial asthma like wheezing, breathlessness, chest tightness and coughing will be included in this study.

**Intervention:**

| Table 1: Bharangyadichoorna Group A |
|------------------------------------|
| Sample size                        | 30                                 |
| Drug                               | Bharangyadichoorna                  |
| Dose                               | 4gm *Choorna* with *Ardraka Swarasa* thrice in a day after food. |

| Table 2: Vyaghri Choorna Group B |
|----------------------------------|
| Sample size                      | 30                                 |
| Drug                             | Vyaghri Choorna                    |
| Dose                             | 4gm *Choorna* with *Madhu* thrice in a day after food |

**Follow up period:** 10th day after stoppage of medications.

c. **Inclusion criteria**

  - i. Patients having classical signs and symptoms of *Tamaka Swasa* and Bronchial Asthma of mild to moderate nature.
  - ii. Age group between 16 to 60 years of either gender.
  - iii. Patient not taking any other medications for *Tamakaswasa*.
  - iv. PEFR 60% - 90%
  - v. Conscious and well oriented

d. **Exclusion criteria**

  - i. Asadhyaa Lakshanas of *Tamaka Swasa*
  - ii. The patient with history of Tuberculosis, Emphysema, Pulmonary effusion, COPD, Other complicated respiratory diseases having any organic lesion such as tumor or any anatomical defect in airway.
  - iii. Pregnant and lactating women.
  - iv. Uncontrolled Hypertension, Diabetes mellitus

e. **Investigations**

  Following lab investigations will be performed for the diagnosis and to rule out major pathological conditions:

  - Peak Flow Meter Reading
  - Spirometry (if needed)
  - Blood Routine: Hb gm%, TC, DC, ESR
  - Radiological - Chest X-ray P/A view (if necessary)
  - Absolute Eosinophil Count

**Procedure and design of the study**

A comparative clinical study with pre-test and post-test design will be conducted on 60 patients divided into two groups. i.e., Group A and Group B, each comprising 30 patients.
Devanand E, K Ravindra Bhat. Effectiveness Of Bharangyadi Choorna And Vyaghri Choorna In Tamaka Swasa

Table 3: Grading of Symptoms

| S. no | Assessment criteria | 0 (Normal) | 1 (mild) | 2 (moderate) | 3 (severe) |
|-------|---------------------|------------|----------|--------------|------------|
| 1     | Swasakrichratha     | No dyspnoea| Occasional or morning bouts-do not disturb work | Continuous during morning-disturbing work | Continuous during morning and night, disturbing activity |
| 2     | Ghurkuraka          | No wheeze  | Wheezing at end of respiration | Loud wheezing throughout expiration | Loud inspiration and expiration wheeze |
| 3     | Krichrabhashana     | Not at all | Hardly any of the time | Moderate amount of time | Most of the time |
| 4     | Kasa                | No cough   | Occasional or Morning bouts-do not disturb work | Continuous cough during morning-disturbing work | Continuous morning and night cough-disturbs activity |
| 5     | Shushkasya          | No dryness of mouth | Mild | moderate | Severe |
| 6     | Pinasa              | No symptom | Initially present or occasionally | Continuous in day with cough | Continuous in day and night with cough |
| 7     | PEFR                | >80% of the predicted value | 70-80% of the predicted value | 61-70% of the predicted value | ≤60% of the predicted value |

Statistical Analysis
- Statistical analysis will be done using SPSS package, version 22.
- All the qualitative variables are summarized using frequency and percentage.
- The quantitative variables are summarized using mean and standard deviation, median and interquartile range (Q3, Q1).
- Data needs to be analyzed using normal distribution then performing parametric and non-parametric tests.
- Since all subjective variables are qualitative data, assessment will be done by Wilcoxon sign test and Mann-Whitney test.

OBSERVATIONS AND RESULTS
Higher incidence of Tamakashwasa was reported in age Group 38-47 years. They were 30% and 26.7% respectively in A and B Group. Out of 60 patients in group A and Group B, 27 patients were female and 33 patients were male. Out of total 60 patients in Group A and Group B, maximum patients were found moderate Nature of Work. They were 31 (51.7%). Out of total 60 patients in group A and Group B, maximum patients were of Hindu religion (55%). Out of total 60 patients in group A and Group B, maximum patients occupation are Housewife (16.67%). Out of total 60 patients in Group A and Group B, maximum patients’ Socio Economic Status were middle i.e, 32 (53.3%). Marital status: Out of 60 patients 76.7% were married. That could be because of the inclusion of patients between age 16-60 years includes the maximum of marital age. In this study out of 60 patients, majority of patients had disturbed sleep 50%. Whereas 28.8% patients had irregular sleep, 13.3% patients had delayed sleep and 6.7% had sounded sleep. Out of total 60 patients in Group A and Group B, maximum patients pet keeping were no (81.7%). In Group A, they were 80% and in Group B they were 83.3%. Out of total 60 patients in Group A and Group B, maximum patients Habit were Nil (33.33%). Some patients had the habit of smoking beedi, cigarette and some are addicted to tea/coffee and 5% are using snuff. Out of total 60 patients in Group A and Group B, maximum patients Diet were mixed (75%).Out of total 60 patients in Group A and Group B, maximum patients Chronicity were upto 1 year (75%). Out of total 60 patients in Group A and Group B, maximum patients Education were High School (50%).

RESULTS
In this work of 30 patients studied in Tamaka swasa with Group-A 53.70% and 38.64% improvement seen in Swasakrichratha. An assessment of Peenasa in patients of Tamaka swasa before and after the treatment with Group-A showed 84.21% and Group-B showed 58.82% improvement.
Magnitude of Kasa in patients of Tamakaswasa before and after the treatment in Group-A showed 69.70% improvement whereas in Group-B 47.52% improvement. Magnitude of Ghurghuraka in patients of Tamakaswasa in Group-A is 62.50 and in Group-B 45.10% improvement. Magnitude of Krichra Bhashana in patients of Tamaka swasa in Group-A 70.59% improvement and in Group-B 60% improvement. Magnitude of Shushkasya in patients of Tamakaswasa in Group-A 76% improvement. Further in Group-B 38.89% improvement. Magnitude of PEFR in patients of Tamakaswasa in Group-A had 92.41% improvement. Further in Group-B 27.08% improvement.

**Effects on Bharangyadi Choorna (Group A)**

| Symptoms         | Mean score | % | S.D (±) | S.E (±) | Wilxocon Z Value | p value |
|------------------|------------|---|---------|---------|-----------------|---------|
| Swasakrichratha  | 1.80       | AT 1.10 | 0.70    | 38.89   | 0.651           | 3.72    | <0.05  |
|                  |            | AF 0.83 | 0.97    | 53.70   | 0.556           | 4.37    | <0.05  |
| Peenasa          | 0.63       | AT 0.33 | 0.30    | 47.37   | 0.535           | 2.00    | >0.05  |
|                  |            | AF 0.10 | 0.53    | 84.21   | 0.629           | 2.20    | <0.05  |
| Kasa             | 1.10       | AT 0.63 | 0.47    | 42.42   | 0.571           | 3.83    | <0.05  |
|                  |            | AF 0.33 | 0.77    | 69.70   | 0.728           | 4.70    | <0.05  |
| Ghurghuraka      | 1.87       | AT 1.17 | 0.70    | 37.50   | 0.596           | 2.00    | <0.05  |
|                  |            | AF 0.70 | 1.17    | 62.50   | 0.461           | 3.05    | <0.05  |
| Krichra Bhashana | 0.57       | AT 0.44 | 0.13    | 23.53   | 0.346           | 3.05    | <0.05  |
|                  |            | AF 0.17 | 0.40    | 70.59   | 0.498           | 3.62    | <0.05  |
| Shushkasya       | 0.83       | AT 0.36 | 0.47    | 56.00   | 0.629           | 4.70    | <0.05  |
|                  |            | AF 0.20 | 0.63    | 76.00   | 0.615           | 4.78    | <0.05  |
| PEFR             | 1.60       | AT 1.40 | 0.20    | 12.50   | 0.407           | 2.20    | <0.05  |
|                  |            | AF 1.17 | 0.43    | 27.08   | 0.504           | 3.18    | <0.05  |

**Effect on Vyaghri Choorna (Group B)**

| Symptoms         | Mean score | % | S.D (±) | S.E (±) | Wilxocon Z Value | p value |
|------------------|------------|---|---------|---------|-----------------|---------|
| Swasakrichratha  | 1.47       | AT 1.17 | 0.30    | 20.45   | 0.466           | 2.66    | <0.05  |
|                  |            | AF 0.90 | 0.57    | 38.64   | 0.679           | 3.24    | <0.05  |
| Peenasa          | 0.57       | AT 0.44 | 0.13    | 23.53   | 0.434           | 1.47    | <0.05  |
|                  |            | AF 0.24 | 0.33    | 58.82   | 0.479           | 2.80    | <0.05  |
| Kasa             | 1.20       | AT 1.00 | 0.20    | 16.67   | 0.407           | 2.20    | <0.05  |
|                  |            | AF 0.63 | 0.57    | 47.22   | 0.626           | 3.40    | <0.05  |
| Ghurghuraka      | 1.70       | AT 1.53 | 0.17    | 9.80    | 0.379           | 2.02    | <0.05  |
|                  |            | AF 0.93 | 0.77    | 45.10   | 0.430           | 4.19    | <0.05  |
| Krichra Bhashana | 0.83       | AT 0.63 | 0.20    | 24.00   | 0.407           | 2.20    | <0.05  |
|                  |            | AF 0.33 | 0.50    | 60.00   | 0.509           | 3.40    | <0.05  |
| Shushkasya       | 0.60       | AT 0.33 | 0.27    | 44.44   | 0.521           | 2.36    | <0.05  |
|                  |            | AF 0.37 | 0.23    | 38.89   | 0.430           | 2.36    | <0.05  |
| PEFR             | 1.60       | AT 1.40 | 0.20    | 12.50   | 0.407           | 2.20    | <0.05  |
|                  |            | AF 1.17 | 0.43    | 27.08   | 0.504           | 3.18    | <0.05  |
DISCUSSION

Tamakaswasa is manifested by the aggravated Pranavayu by the obstruction of Kapha. The symptoms of Tamakaswasa are Swasakrichratha, Muhurmuhur Swasa, Ghurghuraka, Kasa, Peenasa, Shayanasya, Swasapeditha, Kapahanshtivam, Urahapeeda, Peenasa, Parshwashoola, Shushkasuya etc. Attack of the disease cause entering of darkness due to vitiation of Vata which in turns vitiates Kapha and it obstructs the passage of Pranavata this produce the upward movement of Vata or abnormal dyspnoea.

The whole Charaka Chikitsa Adhyaya 17 is dedicated to differentiate the Sadhya and Asadhya Swasa based on the symptomatology and then the treatment of Sadhya or Yapya variety of Swasa (Tamaka Swasa). From the treatment point of view, Tamaka Swasa has got a great importance due to its Sadhya (including Kriccha and Yapya) nature and being manageable. Swasa is being existed from the very primitive age as evident in Vedic literatures. References regarding Swasa in both physiological and pathological senses can be obtained from Vedic literature onwards. The importance of respiration in life sustenance has been ascertained by the usage of the word Prana Vayu for inhaled air. Puranas, Upanishads and Brahmanas also have given many references about Swasa Kriya and many a times about Swasa Roga as well. Description of Swasa Roga is available in Brihattrayee as well as Laghuttrayee.

In the Tamakaswasa it is clearly explained about the types Swasa Roga and it is classified into five on the basis of severity. Kshudra Swasa can be seen as a symptom in many diseases and is self limiting. Chhinna, Urdhwa and Maha Swasa are the terminal stages and have extremely bad prognosis. Then explained about Nirukthi, Nidana, Puravarupa, Rupa, Samprapthi, Samprapthighataka, Upashyananupashaya, Vyadhivyavechedaka, Chikitsa and Pathyapathy. In modern view it is explained about Asthma which is a chronic inflammatory disorder of the respiratory airways, asthma is characterized by bronchial airway inflammation resulting in increased mucus production and airway hyper-responsiveness. The resultant symptomatology includes episodes of wheezing, coughing, and shortness of breath. Asthma is a multifactorial disease process with genetic, allergic, environmental, infectious, emotional, and nutritional components. The underlying pathophysiology of asthma is airway inflammation. In this section it was explained about types, etiological factors, signs and symptoms, differential diagnosis, treatments and lab investigations.

About the drugs used for treatment of Tamaka Swasa. Bharangyadi Choorna and Vyaghri Choorna contains of two drugs Bharangi and Shunti, Vyaghri Choorna contains of three drugs Kantakari, Dhatri and Jeeraka. All the drugs are having Kapha Vatashamaka properties because of its Rasa, Guna, Veerya and Vipaka. Only Amalaki have Tridosahara property. Anti-inflammatory and anti-asthmatic properties are the other benefits of these drugs.

DISCUSSION ON OBSERVATION

Age: Out of 60 patients of Tamakaswasa maximum number of patients around 30% were between 38-47 years of age group. Group wise division 30% in group A and 26.7% in group B. This shows that Tamakaswasa is more prevalent in younger adults around age 35.

Gender: However, the link between gender and incidence of Asthma has not been established. In the

| Signs Symptoms | Group A Mean Score | Group B Mean Score | Z-Value of Mann Whitney | U Value | P Value |
|----------------|-------------------|-------------------|------------------------|--------|--------|
| Swasakrichratha | 1.24              | 1.18              | 0.47                   | 417.50 | >0.05  |
| Peenasa         | 0.36              | 0.41              | 0.05                   | 445.50 | >0.05  |
| Kasa            | 0.69              | 0.94              | 1.47                   | 349.50 | >0.05  |
| Ghurghuraka     | 1.24              | 1.39              | 0.98                   | 383.00 | >0.05  |
| KricchaBhashana | 0.39              | 0.60              | 1.75                   | 330.50 | >0.05  |
| Shushkasuya     | 0.47              | 0.43              | 0.63                   | 406.50 | >0.05  |
| PEFR            | 1.28              | 1.39              | 0.03                   | 447.00 | >0.05  |

Comparative analysis of the overall effect of the treatments in both the groups was done by statistically with Mann Whitney test. The test shows that the treatment is significant in Group A when compared to Group B. Group A overall result is 75.64% and Group B overall result is 46.23%.

Table 6: Comparative results of Group-A and Group-B

| Group A | Group B | Mean Difference | SE (±) | Z-Value of Mann Whitney | U Value | P Value |
|---------|---------|-----------------|-------|------------------------|--------|--------|
| 75.64   | 46.23   | 29.41           | 5.99  | 4.63                   | 136    | <0.05  |

Table 7: Overall Comparative Results of Group A and Group B
present study out of 60 patients 55% were males. It may be high level of exposure to etiological factors like dust, smoke and habits like smoking etc.

Religion: Out of 60 patients taken for study 55% of patients are Hindus, 35% were Muslims and 10% were Christians. The high incidence of illness in Hindus in this study cannot predict because it may be due to the small sample size and availability of patients in this particular area.

Occupation: In this study of 60 patients most of them are house wives and workers. This may be due to exposure to dust, irregular dietary habits which may cause respiratory disorders.

Socio-economic status: Out of 60 patients 53.3%of patients belong to middle class. This might be due to higher level of the exposure to different kinds of allergens in the middle class due to their competitive environment and low health care maintenance in middle class people.

Marital status: Out of 60 patients 76.7% were married. That could be because of the inclusion of patients between age 16-60 years includes the maximum of marital age.

Sleep: In this study out of 60 patients, majority of patients had disturbed sleep 50%. Whereas 28.8% patients had irregular sleep, 13.3% patients had delayed sleep and 6.7% had sounded sleep. Day sleep is the main reason that aggravates Swasa.

Pet keeping: Out of 60 patients, maximum patients (81.7%) are not keeping pets. But 18.3% patient were keeping pets at home, pet dander may be one of the cause for Asthma.

Habit: Out of 60 patients majority of the patients don't have any type of addiction or habit. But some patients had the habit of smoking beedi, cigarette and some are addicted to tea/ coffee and 5% are using snuff. These habit may be one of the cause for Asthma.

Diet: Among 60 patients, maximum numbers of patients i.e. 75% were used to take mixed diet. Non vegetarian foods mixed with Vyanjakas and its Gurutva in getting digested, lead to the formation of Ama and Srotho-Abhishyanda which in turn causes vitiation of Tridosha in Amashaya.

DISCUSSION ON RESULT
Effect of treatment on Swasakrichratha
The symptoms Swasakrichratha was reduced and showed highly significant result at P<0.01 before treatment. It shows symptom reduced to 38.89% after treatment and after follow up it became 53.70% improvement in Group A. In Group B after treatment symptom reduced to 20.45% and after follow up with 38.64% improvement. While comparing both the groups there is Statistically Significant result at P<0.05 was found.

Breathlessness (Swasakrichratha) is due to broncho-constriction (Srotosanga) of the airway due to inflammatory causes like increased secretion of bronchial mucous gland and epithelial secretions etc. So this study shows reduction and clearance in the obstruction to the passage of Pranavayu by clearing the morbid Kapha which results in reduction in Pranavilomata by the treatment.

Effect of Treatment on Peenasa
The symptoms Peenasa was reduced and showed highly significant result at P<0.01 before treatment. It showed reduction of 47.37% relief of symptom after treatment and after follow up it symptom reduced 84.21% in group A. in group B it showed reduction of 23.53% relief of symptom after treatment and 58.82% improvement after follow up. While comparing both the groups there is Statistically Significant result at P<0.05 was found.

Effect of treatment on Kasa
The symptom Kasa was reduced and shoes highly significant result at P<0.01 in the period of after treatment 42.42% improvement and after follow up 69.70% improvement was found in group A. In group B after treatment symptom reduced to 16.67% and after follow up it showed an improvement of 47.22%. While comparing both the groups there is Statistically Significant result at P<0.05 was found.

Kasa is an effort to expel the Kapha. (Malaroopa) secreted in the Pranavaha Srotas. So on administration of medicine, there would have been in acting in liquefaction of the sputum, and then only the diminishing of the cough is possible.

Effect of treatment on Ghurghuraka
The symptom Ghurghuraka was reduced and showed highly significant result at P<0.01 in the period of after treatment it showed 37.50% and after follow up it showed 62.50% improvement in group A. In group B it showed that after treatment symptom reduced 9.80% and after follow up symptom Ghurghuraka reduced to 45.10%. While comparing both the groups there is Statistically Significant result at P<0.05 was found.

Wheeze (Ghurghuraka) is generated by vibration in the wall of an airway on the point of closer due to smooth muscle contraction. Drugs helps for the Kapha Vilayana and thus it helps for the reduction in the Sroto Sanga.

Effect of treatment on Krichrabhashana
The symptom Krichrabhashana was reduced and showed highly significant result at P<0.01 in the period of after treatment it showed 23.53% and after
follow up it showed 70.59% improvement in group A. In group B it showed that after treatment symptom reduced 24% and after follow up symptom reduced to 60%. While comparing both the groups there is Statistically Significant result at P<0.05 was found.

**Effect of treatment on Shushkasya**

The symptom Shushkasya was reduced and showed highly significant result at P<0.01 in the period of after treatment it showed 56% and after follow up it showed 76% improvement in group A. In group B it showed that after treatment symptom reduced 44.44% and after follow up symptom reduced to 38.89%. While comparing both the groups there is Statistically Significant result at P<0.05 was found.

**Effect of treatment in PEFR**

The objective criteria PEFR was reduced and shows highly significant result at P<0.01 in the period of after treatment it showed 62.03% and after follow up it showed 92.41% improvement in group A. In group B it showed that after treatment 12.50% improvement and after follow up it showed improvement of 27.08%. While comparing both the groups there is Statistically Significant result at P<0.05 was found.

This may be due to the *Kapha Vilayana* property of the drug and enhances the normal Gati of Vata. It shows significant reduction in the airway obstruction.

**Discussion on Mode of Action of Drug**

**Probable Mode of Action of Bharangyadi Choorna**

The mode of action of drugs in Bharangyadi Choorna i.e., Bharangi and Shunti is due to its Vata Kapha Shamaka property. Especially Bharangi has Kaphaghna property which directly acts on the causative Dosha. It pacifies the vitiated Kapha Dosha which is dominant in the pathogenesis of Tamakaswasa as well as depletes the excessively produced Rasa Mala Kapha. Thus it is known to act against the Kaphapradhana pathogenesis of Tamaka Swasa but because of Guru, Snigdha Guna and Madhura Vipaka Shunti is also effective on Vatapradhana pathogenesis. Both drugs are Deepana, Pachana and Shunti is Amnashaka (Rasagata Kaphanashaka) so act on Agni and alleviate the Ama. This would also clear up the Rasa Dhatu Dushti, and excessive production of Mala Kapha. These drugs help at the level of Agni in Samprapti Vighatana.

*Shunti* has Sroto shodhana property it cleans the various channels of Pranavaha Srotas which leads to Anuloma Gati of Vata. In this manner these Srotoshodhaka drugs help in Samprapti Vighatana.

*Shunti* has Vatakapha Shamaka property and Bharangi has Kaphaghna property in this way it helps in the Samprapti Vighatana at the level of Pratiloma Vata Dosha and removes obstruction. Both drugs also have Shwasahara, Kasahara action mentioned in various Ayurveda texts.

**CONCLUSION**

After the study regarding Tamakaswasa and its treatment, the following conclusions are explained below.

It is observed that diet pattern, increasing stress and pollution are the main causative factors for Tamaka Swasa. The present study shows the incidence of the disease Tamakaswasa is found more in males than females. Majority of the patients had complaints viz., Ghurghuraka, Swasakrichratha, Peenasa, Kasa, Shushkasya and Krichrabhasana. The disease Tamakaswasa can be equated with Bronchial Asthma in modern parlance due to its similarity in presentation.

Two Choorna Yogas– Bharangyadi Choorna and Vyghri Choorna were taken as the trial drug and control drug respectively. Effect of therapy on each and every sign and symptom were considered and critically analyzed. The results thus obtained were subjected to analytical statistical techniques to compare both types of treatments.

In this study Bharangi and Shunti are having all the properties required to break down the Samprapthi of Tamaka Swasa. Both Bharangiyadi Choorna and Vyaghri Choorna have the properties of kaphavata hara, Agni Deepana Pachana, Anulomana, Srotoshodhana, anti-asthamatic and anti-inflammatory property. But Bharangyadi Choorna had got better improvement (75.64%) than Vyaghri Choorna (46.23%).

When comparing both groups Bharangyadi Choorna and Vyghri Choorna both have significant effects on symptoms of Tamaka Swasa. Bharangyadi Choorna shows better improvement of the symptoms– Swasakrichratha, Peenasa, Kasa, Ghurghuraka, Krichrabhasana, Shushkasya and in the objective parameter– PEFR than Vyaghri Choorna. Hence H₂ holds good and proved.

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