

CLINICAL EVALUATION OF HARITAKYADI YOGA IN THE MANAGEMENT OF TAMAK SHWASA (BRONCHIAL ASTHMA)

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ABSTRACT

Ayurveda is the most ancient of all medical sciences. It is the only medical science which has withstood the ravages of time and still thriving steadily and triumphantly even amidst the modern medical sciences of the west. It is a rich heritage handed down to us by the ancient *hindu* sages of divine insight and unlimited experience. As stated by *Acharya* we all know that the whole body consist of this basic components (*Dosha, Dhātu, Mala*). among this *Dosha* has their own significant role in the production of disease. Because their *Samata* is *Prakrati* and their *Vaishamya* is *Vikara*. *Caraka* says non equilibrium of *dhatu*s is nothing but the *Vikara*. It brings in pain and discomfort. The equilibrium of the *Dhatu*s, on the other hand, means health; it may also be called joy and comfort. *Sushruta* also says that

anything which produces pain discomfort in man may be called as *Vyadhi*. In *Ayurvedic* classics various diseases have been explained and each disease has subtypes mainly based on *Doshik* classification like *Vataja, Pittaja, Kaphaja* and *sannipataja* etc. But in *Shwasa Roga* normal procedure of classification of diseases is not followed. Here *Shwasa* is classified according to clinical manifestation. *Shvasa* or difficulty in breathing may appear as an individual disease is termed as *Swatantra Vyadhi* in *Ayurveda* sometimes it may appear as a symptom of other diseases and so long this exists secondary, it is termed as *Paratantra Vyadhi*. In the prognostic purview the *Shwasa* can be categorized as follows.

KEYWORDS: *Tamak Shwasa, Haritkyadi Yoga, Bronchial Asthma, Vikara.*

INTRODUCTION

In *Ayurvedic* classics various diseases has been explained and each disease have subtypes mainly based on *Doshik* classification like *Vataja*, *Pittaja*, *Kaphaja* & *Sannipataja* etc. but in *Shwasa Roga* normal procedure of classification of diseases is not maintained here *Shwasa* is classified according to clinical features. *Shwasa* or difficult breathing may appear as an individual disease termed as *Swatantra Vyadhi* in *Ayurveda* or sometimes it may appear as a symptom of other diseases and so long this exists secondary, it termed as *Paratantra Vyadhi*. So *Shwasa* can appear as an independent disease or it may appear as symptom of other diseases.

Asthma is a syndrome characterized by airflow obstruction that varies markedly, both spontaneously and with treatment. Asthmatics harbor a special type of inflammation in the airways that makes them more responsive than non Asthmatics to a wide range of triggers, leading to excessive narrowing with consequent reduced airflow and symptomatic wheezing and dyspnoea. Long term use of modern medicine produces the serious toxic effects such as Palpitation, Tremers, Nervousness, Bronchospasm, Throat irritation, Hoarseness of voice and Acidity etc.

On the basis of the clinical features Bronchial Asthma can be correlated with *Tamaka Shwasa*, a disease described under the heading of five types of *Shwasa roga* in *Ayurvedic* classics. According to *Ayurveda*, *Shwasa roga* is a *Kaphavataja* disease which is originated from *Pittasthana*.^[1] Whenever there is obstruction of *Pranavayu* by *Kapha Dosha*, the vitiated *Vayu* gets *Pratiloma* to produce *Shwasa Roga*.^[2]

The name of *Tamaka Shwasa* is due to the fact that, the symptoms or attack of this disease precipitates at night and also during the time of attack, the breathing difficulty is so severe that patient feels entering into the darkness (*Tama Pravesh*).^[3]

According to *Ayurveda Kha Vaigunya* in *Pranavaha Srotasa* (Mainly By the *Vata Dosha*) is the seed for the development of *Tamaka Shwasa*.^[4] The acute attack of disease appears whenever there is obstruction of normal passage of *Pranavayu*. Once the obstruction is removed and *Vayu* starts travelling in its normal path, most of the symptoms (Dyspnoea, Cough etc.) of *Tamaka Shwasa* are abolished.^[5]

Need and significance of Present Research work

According to the WHO by the year 2020 Asthma along with Chronic Obstructive Pulmonary Disease will become the third leading cause of death. As stated by WHO 100–150 million of global populations are suffering from Bronchial Asthma, out of which 1/10th are Indians and the prevalence of Asthma is increasing everywhere. Current estimates suggest that 300 million people worldwide suffer from Asthma and an additional 100 million may be diagnosed with Asthma by 2025.

Along with this wide range of side effects, allopathic drugs do not cure the patients permanently. Whenever a patient comes in contact with a particular allergen he or she develops the disease again and an episode of acute attack of Bronchial Asthma is precipitated.

Since the management of Bronchial Asthma with allopathic medicine is purely temporary and at times associated with serious toxic effects therefore considering the demand of society and taking the responsibility it was decided, to evaluate certain *Ayurvedic* management for Bronchial Asthma.

Medicines are given in asthma person through systemic route (Oral) and these are effective but Bronchial asthma is a palliative disease so long spell and dose of treatment is required. Medicinal requirement is not fulfilled by systemic route so there is need to change the route to administer the drug at the site of pathology i.e. Lungs; this provides advantage like less dose needed; least systemic absorption and the highest surface area for absorption. This drug delivery method arrived under the name of inhalation therapy and its origin dates back to the name of *Dhumapana* in *Ayurveda* in which fumes of drugs are inhaled for required duration and with multiple frequency based on disease severity.^[6]

So *Ayurvedic* drugs having volatile oils and bronchodilator, anti-inflammatory effect are selected for the management of a series of patients of *Tamaka Shwasa* to evaluate their clinical efficacy as Herbal Nebulizer. It will be administered through nasal route in the form of aerosol with the help of Nebulizer machine.

Aims and Objectives of The Study

The current research project has been undertaken with the following main objectives

1. To assess the efficacy of '*Haritkyadi Yoga*' in the management of *Tamaka Shwasa*.

2. To compare the efficacy of modern control broncho-dilator drug with proposed herbal preparation in the management of *Tamaka Shwasa*.

MATERIALS AND METHODS

The current research project was a randomized, comparative, open ended, pre and post design, clinical trial.

The study was conducted on 40 Patients of *Tamak Shwasa* (Bronchial Asthma). The patients for this study were selected randomly from the O.P.D. and I.P.D. of the P.G. Deptt. of *Kayachikitsa*, NIA Hospital, Jaipur. A detailed evaluation and follow up studies were made on a Performa especially designed for the present study on the basis of Modern and *Ayurvedic* parameters.

Study type

Prospective, open, randomized control clinical study.

Consent

An informed written consent of patient included in the study was taken as the language best understood by them. Their disease and line of treatment was explained to them.

Selection of cases

The study was conducted on 40 clinically diagnosed patients of *Tamaka Shwasa*. The selection of patients will be done from O.P.D. / I.P.D. Wing of P.G. Deptt. Of *Kaya Chikitsa*, N.I.A., Jaipur.

Diet regimen

Kaphavataghna, *Ushna*, *Vatanulomana* concept of *Pathya* apathy with respect to *Tamak Shwasa* was considered, light diet was advised.

Regimen for personal Habits

The personal habits of smoking tobacco chewing *Ghutkha* chewing & excessive alcohol consumption were asked to avoid. Day time sleep was restricted.

Inclusion Criteria

- 1) Patient having sign and symptoms of *Tamak Shwasa* in *Vyakta awastha* (*Avegaawastha*)
- 2) Age 16 to 60 years

- 3) Sex – Both male & female

CRITERIA OF DIAGNOSIS

1. The main symptoms of *Tamak Shwasa* such as *Shwasaskrichhatha*, *Ghurghurakmshabda*, *Kasa*, *Kastenshlesmamoksha*, were kept in mind.^[7]
2. Physical examination of all *Srotas* was done.
3. Some modern method of diagnosis of bronchial asthma were adopted i.e. respiration rate, rhonchi, Breath holding time and Reduced lung function were tested with the help of Spirometry,
4. X-ray was done to rule out other lung pathology,
5. ECG reading was noted to exclude cardiac involvement,
6. Hematological investigation was done to rule out other pathology.
7. Sputum examination was done to exclude mycobacterium tuberculosis.

Exclusion Criteria

Patients suffering from -

1. Tuberculosis (Pulmonary).
2. Chronic obstructive pulmonary disease. (COPD)
3. Pleural effusion.
4. Cardiac asthma.
5. Emphysema.
6. Status Asthmaticus.
7. Patients suffering from systemic disorders like renal failure, hypertension, Diabetes etc.
8. Pregnancy and lactating mother.

Discontinuation Criteria

1. Patient who discontinued the treatment themselves due to any reason.
2. Patient who developed hypersensitivity for any constituent of selected formulation.

CRITERIA OF ASSESSMENT

Clinical Parameter

- A) Physical parameter
- B) Investigational Parameter.

A) Clinical Parameter (as per Ayurvedic Texts)

- 1) *Shwasa – Krichhata*
- 2) *Ghur – Ghurak Shabda* (Rhonchi score)
- 3) *Kasa* (cough)
- 4) *Kastenashlesma Moksha* :- (Difficult expectoration)
- 5) *Andira* (Insomnia)
- 6) *Urashool* (Chest pain)
- 7) *Pinas* (Rhinorrhoea)

The improvement in the Severity of disease was assessed by the Assesemennt Rating Scale, as mentioned below-

- 0 - for absence of symptoms
- 1 - for mildly present symptoms
- 2 - for moderately present symptoms
- 3 - for severely (excessively) present symptoms

B) Physical Parameter

- A. Detailed history of the patients -
- B) General examination- Systemic examination.
- C) Determination of *Sharirika Prakriti*
- D) Breath holding time (BHT)
- E) Spirometry

C) Investigational Parameter

- 1) Complete blood count & ESR at start & end of the study
- 2) Sputum for AFB
- 3) Chest X-ray, P.A. view in full inspiration
- 4) ECG

Above 1 to 3 No. test was done in starting to exclude other pathology.

Management including drugs, dosage and duration

40 patients of *Tamaka Shwasa* (Bronchial Asthma) were registered and divided randomly into following 2 groups.

Group I

20 registered patients of *Tamaka Shwasa* were advised to take *Haritkyadi Yoga* orally, 3-5 gm twice a day *Prag-Bhukt* with *Anupana* of 5 ml *Madhu* for 15 days.

Table No. 1: Contents of ‘*Haritkyadi Yoga*’ (*Bhavaprakasha Madhyamkhanda -14/36*)^[8]

| S.No. | Drug Name | Botanical Name | Part used |
|-------|-----------------|---------------------------|----------------|
| 1. | <i>Haritaki</i> | <i>Terminalia chebula</i> | Fruit |
| 2. | <i>Vidanga</i> | <i>Embelia ribes</i> | <i>Fruit</i> |
| 3. | <i>Maricha</i> | <i>Piper nigrum</i> | <i>Fruit</i> |
| 4. | <i>Pippali</i> | <i>Piper longum</i> | <i>Fruit</i> |
| 5. | <i>Madhu</i> | Honey | Flower extract |

Group II (Control Group)

20 registered patients of *Tamaka Shwasa* were advised to take Tab ‘Deriphyllin-R, 150 mg twice a day with lukewarm water for 15 days.

Derphylline

Derphylline was selected in the Standard Group for the comparative analysis of modern management & *Ayurvedic* Management for the *Tamak Shwasa*, considering its efficacy and reduced adverse effects.

Total Effect of Therapy**1. Cured**

Total relief in cardinal symptoms such as *Shwasakrichhata* and disappearance of Rhonchi from all over the lung field was considered in this category. Along with these facts, no recurrence of episode of *Shwasakrichhata* for about 15 day’s duration was considered as “Cured”.

2. Markedly Improved

50% or more average improvement in signs and symptoms was termed as “Markedly Improved”.

3. Improved

Improvement ranging in between 25 to 50% responded by the patients in signs and symptoms was taken for “Improved”.

4. Unchanged

Those patients presenting less than 25% improvement in their sign & symptoms were categorized as “Unchanged”.

5. Lama

Those patients who left the treatment before advised duration or who did not followed the instruction about *Ahara-Vihara* were considered as left against medical advice (LAMA).

OBSERVATION DURING THE COURSE OF THE STUDY

Visit – 1 (Initial)

On day of the study the patient having sign & symptoms of *Tamak Shwasa* were included in the study the routine investigation CBC, ESR mentioned in investigation parameter were conducted. Medicine was given to the patient & the patient was instructed to give follow up after 7 days.

Visit – 2 (Day 7th)

During this visit the patient was assessed for the drug tolerability clinical assessment & physical assessment was done.

Visit 3 (Day 14th)

During this visit the patient were assessed for any adverse effect, clinical assessment, physical assessment was done was done.

OBSERVATIONS AND RESULTS

- 1) All the results calculated by using software: In Stat Graphad 3.
- 2) For non-parametric data- Wilcoxon – matched pairs signed ranks test is used while for parametric data- paired ‘t’ test is used and result calculated in each group.

The incidence of *Tamak Shwasa* (Bronchial Asthma) in 40 Patients, was found in age group ranging from 51-60 years who were married, occupation related with Desk Work. The incidence was found maximum amongst the urban area, irregular bowel habits, Patients of *Vata-Pittaja Prakruti*, *Madhyama Satva*, *Madhyama Vyayama Shakti*, middle socioeconomic status, *Vishamagni* were found Maximum sufferers of *Tamak Shwasa* (Bronchial Asthma).

Table No. 2 Effect of Therapy on Objective Parameters (Paired 't' Test)

| HB | Group | Mean score | | | % Change | SD ± | SE ± | t | P | Result |
|------------|-------|------------|-------|-------|----------|---------|--------|------|-------|--------|
| | | BT | AT | Diff. | | | | | | |
| HB | A | 13.12 | 13.3 | 0.21 | 1.60 | 1.96 | 0.26 | 0.80 | >0.05 | NS |
| | B | 13.02 | 13.3 | 0.31 | 2.38 | 1.27 | 0.28 | 1.08 | >0.05 | NS |
| TLC | A | 8165 | 7480 | 335 | 4.70 | 785.65 | 215.78 | 178 | >0.05 | NS |
| | B | 7140 | 6730 | 410 | 5.74 | 1040.70 | 232.70 | 1.76 | >0.05 | NS |
| Neutrophil | A | 55.35 | 55.45 | 1.1 | 2.02 | 8.46 | 1.89 | 0.58 | >0.05 | NS |
| | B | 55.30 | 55.46 | 0.15 | 0.27 | 8.52 | 1.90 | 0.08 | >0.05 | NS |
| Eosinophil | A | 4.0 | 2.35 | 1.65 | 41.25 | 2.43 | 0.54 | 3.03 | <0.05 | S |
| | B | 3.7 | 2.95 | 0.75 | 20.27 | 1.86 | 0.41 | 1.80 | <0.05 | S |
| Lymphocyte | A | 38.10 | 37.35 | 0.75 | 1.96 | 2.19 | 0.49 | 1.52 | >0.05 | NS |
| | B | 38.40 | 37.05 | 1.35 | 3.06 | 3.55 | 0.80 | 1.57 | >0.05 | NS |
| ESR | A | 30.55 | 23.95 | 6.6 | 21.60 | 8.19 | 1.83 | 3.60 | <0.05 | S |
| | B | 27.22 | 26.85 | 0.35 | 1.28 | 0.87 | 0.19 | 1.78 | >0.05 | NS |

HS: Highly Significant, S: Significant, JS: Just Significant, NS: Not Significant

Table No: 3 Effect of Therapy on Objective Parameters (Paired 't' Test)

| | Group | Mean score | | | Mean% | SD ± | SE ± | t | P | Result |
|------|-------|------------|-------|-------|-------|-------|------|------|---------|--------|
| | | BT | AT | Diff. | | | | | | |
| PEFR | A | 56.45 | 71.25 | 14.80 | 26.21 | 9.97 | 2.23 | 6.63 | < 0.001 | HS |
| | B | 56.45 | 65.05 | 8.60 | 15.23 | 13.28 | 2.97 | 2.89 | <0.05 | S |
| FEV1 | A | 77.40 | 99.50 | 27.10 | 25.05 | 16.12 | 3.60 | 7.51 | < 0.001 | HS |
| | B | 79.95 | 90.00 | 10.05 | 12.57 | 21.34 | 4.77 | 2.10 | <0.05 | S |
| BHT | A | 9.25 | 10.20 | 0.95 | 10.27 | 1.14 | 0.25 | 3.70 | <0.05 | S |
| | B | 8.45 | 9.20 | 0.75 | 8.87 | 0.91 | 0.20 | 3.68 | <0.05 | S |
| RR | A | 21.90 | 20.00 | 1.90 | 8.67 | 2.19 | 0.49 | 3.86 | <0.05 | S |
| | B | 21.80 | 20.85 | 0.95 | 4.35 | 1.19 | 0.26 | 3.56 | <0.05 | S |

For parametric data- Repeated Measures Analysis of Variance (ANOVA) is used

Table No: 4 The Effect of Therapy in Subjective Parameters (Wilcoxon Matched Paired Single ranked test)

| | Group | Mean score | | | % Change | SD ± | SE ± | t | P | Result |
|--------------------------|-------|------------|------|-------|----------|------|------|------|---------|--------|
| | | BT | AT | Diff. | | | | | | |
| Shwaskrichrata | A | 2.35 | 1.80 | 0.55 | 23.40 | 0.60 | 0.13 | 4.06 | < 0.001 | HS |
| | B | 2.35 | 1.80 | 0.50 | 21.27 | 0.51 | 0.11 | 4.35 | < 0.001 | HS |
| Kasa | A | 2.30 | 1.80 | 0.50 | 21.73 | 0.51 | 0.11 | 4.35 | < 0.001 | HS |
| | B | 2.35 | 1.95 | 0.40 | 17.02 | 0.50 | 0.11 | 3.55 | <0.05 | S |
| Ghur-Ghurak shabdata | A | 2.40 | 1.90 | 0.50 | 20.83 | 0.51 | 0.11 | 4.35 | < 0.001 | HS |
| | B | 2.45 | 1.90 | 0.55 | 22.44 | 0.60 | 0.13 | 4.06 | < 0.001 | HS |
| Pinas | A | 2.35 | 1.70 | 0.75 | 31.91 | 0.85 | 0.19 | 3.64 | < 0.05 | S |
| | B | 2.50 | 2.10 | 0.40 | 16.00 | 0.50 | 0.11 | 3.55 | <0.05 | S |
| Kashtenshle shmamokshata | A | 2.45 | 1.90 | 0.55 | 22.44 | 0.60 | 0.13 | 4.06 | < 0.001 | HS |
| | B | 2.46 | 1.95 | 0.50 | 20.40 | 0.60 | 0.13 | 3.68 | <0.05 | S |
| Urashoola | A | 2.10 | 1.70 | 0.40 | 19.04 | 0.50 | 0.11 | 3.55 | <0.05 | S |

| | | | | | | | | | | |
|---------------|---|------|------|------|-------|------|------|------|---------|-----------|
| | B | 2.10 | 1.70 | 0.40 | 19.40 | 0.50 | 0.11 | 3.55 | <0.05 | S |
| <i>Anidra</i> | A | 2.50 | 2.10 | 0.40 | 16.00 | 0.50 | 0.11 | 3.55 | <0.05 | S |
| | B | 2.45 | 1.90 | 0.55 | 22.44 | 0.60 | 0.13 | 4.06 | < 0.001 | HS |

The overall maximum effect of the Trial drugs, *Haritkyadi Yoga* was evaluated by applying Wilcoxon Matched Paired Single ranked test. The test clearly indicates that the improvement was observed best in the 'Group A' after completion of the trial and on follow up. This proves that the "*Haritkyadi Yoga*" in 'Group-A' shows maximum effect.

DISCUSSION ON EFFECT OF THERAPY

Effect of therapy in Group A

Patients were treated with *Haritkyadi Yoga*, showed statistically highly significant results (p value <0.001), regarding subjective parameters- *Kasa* (75%), *Ghurghurakam shabda* (65%), *Shwaskrichhata* (70%), *Kashtenshle shmamokshata*(75%), whereas in case of other subjective parameters i.e. *Peenasa* (55%), *Urahshoola* (60%), *Anidra* (60%), results were significant (P<0.05).

In case of objective parameters, improvement in RR -4.35%, BHT-8.87%, FEV₁ -12.57%, PEFR-8.6%.

Effect of therapy in Group B

Patients treated with Tab. Deryphylline showed statistically highly significant results (p<0.001), regarding subjective parameters- *Shvaskrichhata*, (75%), *Ghurghurakam shabda* (75%), *Anidra* (80%), whereas in case of other subjective parameters i.e. *Kasa* (65%), *Peenasa* (55%), *Kashten shleshma moksha* (55%), *Urashoola* (50%), results were significant (P<0.05).

In case of objective parameters, improvement in RR -4.67%, BHT-20.75%, FEV₁ -13.51%, PEFR-26.21%.

Probable Mode of Action of *Haritkyadi Yoga*

Haritkaki

- It is a rejuvenative, laxative (unripe), astringent (ripe), anthelmintic, expectorant, tonic, carminative, and appetite stimulant's used in cough and excessive secretion of mucus.^[9,10]

Vidanga

- It is acrid, astringent anthelmintic, antifertility, anthioestrogenic carminative, digestive laxative, soothing, stimulant, stomachic, and thermogenic, indigestion, lung diseases, pneumonia, and sore throat, asthma.^[11,12]

Maricha

- It contains essential oils like myrcene, piperonal. Alkaloids like piperidine and piperidine. Also has fixed oil. *Kapha* type asthma and sinusitis, because it has dry and hot qualities.^[13]
- Actions – *Deepana, Pachana, Shirovirechana, Krimaghana, Shulaghna and Swasahara*. *Bhavaprakasha* has mentioned that it should also be used in chronic bronchitis.^[14]

Pippali

- It is *Katu- Kaphashamak, Snigdha – Vatashamak*. When fresh it is sweet and *Sheeta* and thus is *Vata-Kapha Vardhak* and *Pittashamaka*.^[15]
- It encourages broncho-dilation and improves blood circulation in lungs.^[16]
- It is an excellent medicine for cough, asthma and hiccoughs and acts as expectorant and prevents the production of mala *Kapha*.^[17]
- The *Rasayana* action of *Pippali* on *Pranavaha* is very unique.
- It gives strength to all the alveoli and the *Mamsa Dhatu* of *Pranavaha*, thereby avoiding the recurrence of diseases like asthma, cough and *Rajayakshma*.^[18]

Madhu (Honey)

- There was a significant increase of SPO₂ and decrease of Respiratory Rate and Heart Rate 60 minutes after Bee Honey Nebulization. The dyspnoea improved in 94% of patients. The chest wheezes disappeared in 35% and decreased significantly in 31% of patients.^[19] (Friday, October 12, 2007).
- Bee Honey Nebulization as a Non Traditional Treatment of Acute Bronchial Asthma in Infants and Children, (Apitherapy news).
- *Madhu* has been act as kaphaghna property due to its *Laghu Guna* and *Pitta-Vataghna* due to *Madhura, Kashaya Rasa*.^[20]

Table No: 5 Showing the basic *Ayurvedic* properties of the contents of the *Haritkyadi Yoga*

| S. N. | Drug | Rasa | Guna | Veerya | Vipaka | Dosha karma |
|-------|---------------------------|-------------------------------------|-------------------------|---------------|---------|---|
| 1. | Haritaki ^[21] | Kashaya, Katu, Madhura, Amla, Tikta | Laghu, Ruksha | Ushna | Madhura | Tridosha Shamaka, especially Vata shamaka |
| 2. | Vidanga ^[22] | Katu, Tikta | Laghu, Ruksha, | Ushna | Katu | Vata kapha shamaka |
| 3. | Marichaxx ^[23] | Katu | Laghu, Tikshna Ruksha | Ushna | Katu | Kapha-Vata Shamaka |
| 4. | Pippali ^[24] | Katu | Laghu, Snigdha, Tikshna | Anusna sheeta | Madhura | Vata-Kapha shamaka |
| 5. | Madhu ^[25,26] | Madhura, Kashaya | Guru, Ruksha | Sheeta | Madhura | Kapha-Pitta Shamaka |

DISCUSSION

Tamaka Shwasa is a very broad term which includes many more diseases where dyspnoea is predominant symptom. But still we can correlate Bronchial Asthma to *Tamaka Shwasa*, because out of the remaining four, three are incurable and the fourth one is *Kshudra Shwasa* developed due excessive labor or taking excessive *Ruksh Ahara* and which is easily curable.

The etiological factors of *Tamaka Shwasa* are mentioned with variable multiplicity of diet (*Ahara*), lifestyle (*Vihara*) and consequences of diseases (*Nidanarthakara Roga*). The dietetic causes (ingestion of toxins, unboiled milk, cold water and mutually contradictory food) vitiate the *Vata Dosha*, which may be similar to allergens working as triggering factors for asthma.

In *Tamaka Shwasa* there is difficulty in breathing due to obstruction of the channels by accumulated *Kapha*, narrowing of bronchi, inflammation and over secretion of mucous.

The *Pranvaha Srotas* has been taken as the main site of disease pathology, but it has origin from *Pittasthana*. In *Cakrapani*, it has been mentioned that *Amashaya* being the seat of *Pitta*, should be considered as the origin of this pathogenesis. *Vagbhata* has also mentioned that it is *Amashaya Samudbhava* disease.

The involvement of three *Srotas* in pathogenesis of *Tamaka Shvasa* is the established fact. *Anaha* (tympanitis), *Bhaktadvesha* (aversion to food), *Adhmana* (flatulence) are the *Purvarupa* involving the *Annavaha Srotas*. *Pratiloma Vayu* (dyspnoea) and *Ghurghuraka* (wheezing) are related to *Pranvaha Srotas*. Excessive sweating, excessive thirst and dryness of mouth are related to *Udakavaha Srotas*. From this discussion we can conclude that there is

involvement of three *Srotasas* with predominance of *Pranvaha Srotas* and *Pitta Sthana* is the origin of disease.

The oral trial drug *Haritkyadi Yoga* have the above mentioned therapeutic benefits (based on textual references) hence the hypothesized results were obtained after completion of the research trial.

The prepared composition provided excellent symptomatic relief in *Tamak Shwasa* (Bronchial Asthma) because most of the drugs of research project were *Katu, Tikta Rasaj, Ushna Virya, Laghu-Tikshna-Ruksha Guna, Katu-madhur vipaka Kapha-Vata Shamaka. Ushna Virya* increases the basal metabolic rate, oxygen consumption and accelerates the breakdown of fat at mitochondrial level.^[27] According to *Ayurveda*, *Ushna Virya* helps in pacifying *Kapha* and *Vata*. Raised metabolic rate helps in fast destruction of cell debris and clearing the micro channels. As the micro channels are cleared the *Vata* become *Anuloma* that is the *Samprapti Vighatana* occurs.

Considering all the above mentioned factors it can be presumed that the '*Haritkyadi Yoga*' could be a drug of choice for *Tamak Shwasa* (Bronchial Asthma).

CONCLUSION

1. The vitiation of *vata& Kapha dosha* is predominantly responsible for pathogenesis of *Shwasa Roga*.
2. A good result was found by the use of Tab. Deriphyllin in the management of *Tamak Shvasa*. (Group B).
3. Comparatively better results were found in the patients treated by *Haritkyadi yoga* (group A).
4. The patients of *Tamaka Shwasa* need continuous treatment. As the treatment is withdrawn the symptoms may show recurrence.
5. This Clinical study proves that most of the *Ayurvedic* drugs used in this research project possess bronchodilator, anti-inflammatory, antihistaminic and mucolytic properties.
6. The drugs given in the said research work were well tolerated by all the patients and no side effects were noted in any patient.
7. It can be concluded that *Haritkyadi yoga* can be used as safe and effective remedy for the management of *Tamak Shwasa* (Bronchial Asthma) and can be considered as first line therapy in the management of *Tamaka Shwasa* (Bronchial Asthma).

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6. CHARAKA SAMHITA Part-I with "Ayurvedeepika" commentary by Chakrapanidutta, Acharya harichandra singh kushvaha, Chaukhambha oriyantaliya, Varanasi, 2009; 78.
7. Sushrut Samhita, by Acharya Atridev, Motilal Banarasidas, Delhi, 2002; 359
8. Bhavaprakasha Madhyamkhanda -14/36
9. Aqueous extract of *Terminalia chebula* was tested for potential anti-oxidant activity by examining its ability to inhibit gamma radiation induced lipid peroxidation in rat. (Naik GH. et al, 2004).
10. The fruit is having laxative property due to a glycoside, which may be similar to sennoside A. (Patel et al, 1956).
11. In view of the therapeutic use of *Embelia ribes* in Bronchial Asthma by Ayurvedic physicians, studies have been carried out on the mechanism of its anti allergic effects, as milk extract effectively reduced passive cutaneous anaphylaxis in rats and protected guinea pigs against antigen induced bronchospasm. (Dahanukar, S. A., 1984; 377-383).
12. The fruits of *Vidanga* are attributed with numerous medicinal uses, and may be used for diseases of respiratory tract viz., bronchitis, asthma (The Wealth of Asia, C.S.I.R., New Delhi, 1996).
13. *Maricha* (*Piper nigrum*) Acts as a powerful anti convulsant and natural anti inflammation agent. Taken over a period of time it builds strong immunity against allergy. (International org for standardization (ISO) 9002).
14. Bhavaprakash Nighantu, By Ganga Sahay Pande, Krishnachand Chuneekar, chaukhamba bharati, 2006; 17

15. Bhavaprakash Nighantu, By Ganga Sahay Pande, Krishnachand Chuneekar, choukhamba bharati, 2006; 15.
16. Long pepper was found to significantly decrease the frequency and severity of asthma attacks in a group of 20 asthmatic children, (Rege NN, et al. 1999).
17. The fruits are attributed with numerous medicinal uses, and may be used for diseases of respiratory tract viz., bronchitis, asthma (The Wealth of Asia, C.S.I.R., New Delhi 1996).Milk extract has been found effective against antigen induced bronchospasm (Ram. P. Rastogi et.al, 1995).
18. Piper longum used in traditional practice to promote respiratory health. It significantly benefits respiratory function and builds up resistance against respiratory tract constriction and inflammation. (International org for standardization (ISO) 9002).
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27. The substance having *Ushna Virya* are accountable for increasing the basal metabolic rate, oxygen consumption and accelerate the breakdown of fat at mitochondrial level (*Upadhyaya et.al* in 1979 at BHU, Varanasi).