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Clinical evaluation of efficacy of Shatyadi churna in the management of Tamak shwasa

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Abstract
In global scenario the cases of bronchial asthma were increasing tremendously and were estimated to be approximately 4.5 percent. There are about 334 million patients suffering with bronchial asthma that is affecting almost all age groups of patients across the world. In India around 15-20 million people were affected with bronchial asthma. The prevalence of asthma is increasing with time and additional 100 million people will be expected to develop asthma by the year 2025. The alarming rise in the prevalence of *Tamaka Shwasa* can be accounted to factors such as Atmospheric pollution, rapid environmental changes, adaptation of newer dietetic preparations and tremendous psychological stress. The proposed study was undertaken to access the efficacy of *Shatyadi Churna* and *aktam lavan tail snehana* and *swedan karma* in the management of *Tamaka shwasa.* The clinical trial was carried out from OPD and IPD of N.I.A Hospital and Bombaywala hospital in Jaipur (Rajasthan) on total of 30 patients and randomly divided into three groups with 10 patients in each group. In 1st group patients were subjected to *snehana* and *swedan karma* on *Uraha Pradesh* for 30 days. In 2nd group patients were treated with *Shatyadi Churna* with dose of 5 grams with honey B.D for 30 days whereas in 3rd group the patients were treated with *snehana* and *swedan* and *Shatyadi Churna* both. The data collected was then statistically analyzed. It was observed that in Group I, 31.50% symptomatic relief was noticed, in Group II 58.22% symptomatic relief was noticed whereas in Group III 72.22% symptomatic relief was noticed. Hence fastest and maximum improvement was found in Group III.

Keywords: bronchial asthma, *Tamaka shwasa*, *Shatyadi churna*

Introduction
Ayurveda is the traditional system of Medicine, its antiquity going back to the *Vedas*. It adapts a unique holistic approach to the entire science of life, health and cure. Ayurveda serves the living-beings in two ways- one by curing the disease and second by maintaining the health of healthy individual. *Tamaka Shwasa Vyadhi* is related with the derangement of the *Pranavaha Srotas.* On the basis of the clinical features Bronchial Asthma can be clinically correlated with *Tamaka Tamaka Shwasa* is *Pittasthana Samudhabhava* and *Kapha vataja dosha Vyadhi* [1]. Whenever there is obstruction of *pranavayu* by *kapha dosha*, the vitiated *vayu* gets *pratiloma* to produce *Shwasa roga*.
In global scenario the cases of bronchial asthma were increasing tremendously and were estimated to be approximately 4.5 percent [2]. There are about 334 million patients suffering with bronchial asthma that is affecting almost all age groups of patients across the world. In India around 15-20 million people were affected with bronchial asthma [3]. The prevalence of asthma is increasing with time and additional 100 million people will be expected to develop asthma by the year 2025 [4]. This alarming raise in the prevalence of *Tamaka Shwasa* can be accounted to factors such as Atmospheric pollution, rapid environmental changes, adaptation of newer dietetic preparations and tremendous psychological stress.
The clinical manifestations show high recurrence pattern. Therefore the management criteria should be addressed to quality improvement in the life of patients. The desired mode of management should not evoke dependence or adverse drug effects, which are the major concern in the medical field. According to modern science there are four basic steps for the management of Bronchial Asthma is avoidance of allergen, treatment of infection, Pharmacological therapy, and Hypo sensitization. According to ayurveda the drugs which were having *kapha vataghna guna, ushna* and *vatanulomana* properties can effectively treat the *Tamaka Shwasa*. Hence the proposed *Shatyadi Churna* along with *snehana and swedana* on *uraha pradesh* was selected for clinical study.

Material and Methods
Selection of Patients
The study involved a total of 30 patients of either sex of bronchial asthma aged between

16-70 years were registered during the trial. The patients were randomly selected from the OPD/IPD of *Arogyashala* and S. S. B. Hospital, National Institute of *Ayurveda*, Jaipur, Rajasthan.

Inclusion criteria
The patients above the age of 16 years and below 70 years of either sex were included on the basis of clinical sign and symptoms. The subjects with a history for at least one year, non smokers and absence of long term remission of asthma were included in the study.

Exclusion criteria
Patients with the history of pulmonary tuberculosis, pleural effusion, cardiac asthma, emphysema, bronchial carcinoma, status asthmatics were excluded from the trial. Written informed consent was obtained from each patient before starting the clinic study.

Study design and duration
The study design was open clinical trial that was conducted in 34 patients of bronchial asthma out of which 4 patients left the clinical trial in between. The study was intended as a preliminary attempt to visualise the efficacy of *Shatyadi Churna* on bronchial asthma. The trial was performed in recognized Ayurvedic hospital hence administration of modern control was an ethical problem. The 30 clinically diagnosed and registered patients of Bronchial Asthma were randomly divided into three groups with 10 patients in each group. The patients in group I were subjected to *snehana* and *swedan* karma, in group II 10 registered patients of *Tamaka Shwasa* were treated with *Shatyadi churna* whereas in group III 10 registered patients of *Tamaka Shwasa* were treated with both i.e. *snehana* and *swedana* karma along with *Shatyadi Churna.* The duration of treatment was one month with two regular follow on 15 days each.

Trial drug
In *ayurveda* the drug is considered as second most important factor for treatment of disease. The drug having bronchodilator, antihistaminic, mast cell stabilizer, immune modulator, expectorant, anti-tussive, mucolytic properties were selected. Hence *Shatyadi Churna* mention in *Charak Samhita* in *hikkashwasa adhyaya* was selected. The drug was administered with a dose of 5 gm BD per day with *anupana* of *madhu* (honey). The drug was administered *prabhat pragbhakta* (early morning) and *sandhya pragbhakta* (evening) before having meals. The dose were giving by considering the *rogabala* (stamina of patient), *rogabala* (severity of disease) and *vaya* (age) of patients [5].

Diet and restrictions
Patients were advised to avoid cause and aggravating factors such as curd, cold drinks, fish and meat, tobacco chewing and smoking, alcohol, excessive physical work, day sleep, and exposure to dust, smoke, pets, and pollens. Patients were advised to use lukewarm water after meal and at bed time. They were also advised for light diet, breathing exercises such as *Pranayama*, use of mask while working, to avoid exposure to dust and smoke, etc.

Criteria for diagnosis
The study was carried out after taking detail history and physical examination on the basic of specifically designed research pro-forma. The selection of the patients was done by subjective and objective criteria of the study which were as follows:-

Subjective Criteria
The symptoms which were based on textual references of *Tamaka Shwasa* were considered as subjective criteria for the assessment of disease. *Pratiloma Vayu* (prolonged expiration), *Ghurghuraka* (wheeze), *Ativa Tivra Vega*, *Shwasam Pranaprapidakam* (dyspnea of exceedingly deep velocity, which was immensely injurious to life), *Shlesmanyamucyamane Tu Bhrsam Bhavati Duhkhita* (as the phlegm does not come out, the patient became more restless), *Uddhvamsate Kantha* (choked throat), *Asino Labhate Saukhyam* (comfortable in orthopnea position), *Tasyaiva Ca Vimoksante Muhurtam Labhata Sukham* (patient found momentary relief after the expulsion of phlegm), *Shayanah Shwasapiditah* (patient had more dyspnea when lying down), *Ruksa Bhasana* (hoarseness of voice) [6, 7].

Objective Parameters
The objective parameters were based on following laboratory investigations which were done before and after the clinical trial such as FEV (Forced expiratory volume), FVC (Forced vital capacity), (Peak expiratory flow rate) Hb% (Hemoglobin), TLC(Total leucocytes count)
DLC (Differential leucocytes count), ESR (Erythrocyte Sedimentation Rate), TEC (Total Eosinophil Count).Some investigations were done to exclude cardiac and pulmonary disorders such as Sputum for AFB, Chest X-ray PA view and Monteux test.

Criteria for assessment
The sign and symptoms of *Tamak Shwasa* (Bronchial Asthma) as mentioned in *ayurvedic* classical literature were subjective in nature. The clinical trial was conducted by making a special Research Pro-forma. A multidimensional scoring system has been adopted. The scores obtained before and after the treatment were then statistically analyzed and percentage relief was then taken to know the efficacy of the treatment. (Table 1).

Symptom rating scale
The assessment of the symptoms like *Shawasakrichata*, *Kasa*, *Ghurghuraka Dhwani* etc grading were done and were assessed as follows:- (Table 2).

1.	Nil	00%	0	-
2.	Mild	25%	1	+
3.	Moderate	50%	2	++
4.	Severe	75%	3	+++
5.	Agonizing	100%	4	++++

Criteria for total effect of therapy
Each patient was assessed on the basis of clinical signs and symptoms of the disease on the basis of specific grading pattern and percentage relief and then patients were categorized as follows:- (Table 3)

Complete improvement	100% relief
Marked improvement	More than 70% relief
Moderate improvement	50 to 70 % relief
Mild Improvement	20 to 50 % relief
No Improvement	Below 20 % or no relief

Pre treatment observations

All the patients were studied along with the registration by noting down their demographic profile including their age, sex, address, occupation, socio-economic status, marital status, dietary habits etc. After preliminary registration, patients were subjected to detailed case history taking, physical, general and systemic examinations. In history and physical examination importance was given to Respiratory system. During this all other relevant information like *Ashtavidha Pariksha* and assessment of *Sharirika-Prakriti* (based on the features described in classical texts) etc. were noted

Observations and Results

It was observed that majority of patients i.e. 44.11% belong to age group 16-30 years and 58.82% were male dominant in the study. The majority of patients i.e. 91.17% were found to be Hindu and maximum patients were married i.e. 70.5%. The trial indicates maximum incidence of bronchial asthma was reported in housewife i.e. 26.47%. The study also revealed positive family history with maximum 19 patients i.e. 55.88% and history of addiction was also found in 64.7%. The maximum patients were having *Vata Kaphaj Prakriti* i.e 55.88%.

In the present study 24 patients (66.66%) were found to take *garishta ahara*. The excessive use of *Abhishyandi Aahara was* found to be an etiological factor in 79.41 % of patients, *Dadhisevan* was found in 67.64% patients, 73.53 % of patients were having history of consuming *vishtambhi Aahara - Sheetaambu &* food and *Ruksha anna*, 50 % patients gave history of *gurubhojana*, 55.85% patients were taking *Jalaj,Aanup mansa*, 41.17 % of patients were consuming *Vidhahi Aahara*. 26.47% patients were found to take different food articles prepared from *pishtha*. 52.94 % patients were consuming *Aama kshira*, 35.29% were consuming *masha. Abhishayandi Aahara* can create the *Srotorodha* and vitiate the normal path of *Vata*. It is having *Guru* (heavy*)* Property which is heavy for digestion and hampers the function of *Agni*.

As per the *Viharaja Nidana*, 67.64% patients were reported with excessive exposure to *Dhuma* and 61.76% of *vata*; 32.35 % had *diwaswapa* regularly. 44.11 % patients were regular in contact with *Raja*, 32.35 % patients had *apatarpana* history; 23.52 % from *Vyayama*, 35.29 % stay near *Sheetasthana*, 17.64 % showed *Gramyadharm.* These factors act as predisposing factors. *Raja* and *Dhuma* contain number of allergens which adds to chronic airway inflammation in airways. 29.41 % patients have given history of some kind of tension which acts as a *Vataprakopaka* and *Agnidustikara Nidana*.

In current series of patients of Allergic Bronchial Asthma registered for the study, following clinical manifestations were observed with high incidence. *Shwasakrichata* (Dyspnoea) was observed in all registered patients(100%) as well as Frequency and duration of attack was also noticed in all patients(100%), *Parshve avaghruhyate* (chest tightness) and Paroxysm of dyspnoea due to *megha, ambu* cold weather were noticed in 94.11% patients respectively, *Pranapidaka tivra shwasa* (severe breathlessness) in 91.17% patients, Restlessness in 85.29% patients respectively, Expectoration in 76.47%, *Anidra* (Insomnia) 73.52%, *Aasinolabhate Saukhyam* (comfort in sitting posture) and *Shleshman aamuchyamane bhrusham dhukhitam* (difficult to expectorate) were present in 64.70%, *Ghurgurak dhwani* (wheezing) in 67.64%, *Vishushkasya* (Dryness in mouth) in 61.74%, *Pinasa* (coryza) in 58.82% and *Shayanah shwasa peeditah* (orthopnoea) in 55.88%.

Effect of therapy on clinical features

1. **Group I:** The patients of Gp I who were treated with *Snehana & Swedana karma* (*Tila tail* & *saindhav lavana*) on *Uraha Pradesh* showed maximum percentage of improvement in symptoms of *Vishushkasya* (60%), *Prana pidaka tivra Shwasa* (46.66%), Duration of attack (46.17%), *Pinasa* (42.85%), *Aasinolabhate saukhyam* (41.66%), *Ghurghuraka dhwani* (40%), *Shyanah Shwasa peeditah* (33.33%), Restlessness (33.33%), *Anidra* (33.33%), *Parsve avagruhyate* (31.57%), Expectoration(30.76%), Paraoxym of dyspnoea due to *megha, ambu* & cold weather (27.27%), Frequency of attack (23.07%), *Sleshman aamuchyamane bhrusham dukhitam* (23.04%), *Kasa* (21.05), *Shwasakrichata* (20%). (Table 4)
   The overall improvement in the patient of group I was found to be 31.50% which was mild improvement symptomatically but statistically it was highly significant. ($t=8.52$, $p<0.001$) (Table 5)
2. **Group II:** The patients of Gp II treated with *Shatyadi Churna* the maximum percentage of improvement was recorded in the symptoms like *Parsve avagruhyate* (81.89%), Paraoxym of dyspnoea due to *megha, ambu* etc (76.92%), Expectoration(75%), *Pranapidaka tivra shwasa* (75%), Duration of attack(73.33%), *Shayanah Shwasa peeditah* (70%), *Ghurghurk dhwani* (68.75%), *Pinasa* (66.66%), *Anidra*(61.33%), *Aasinolabhate Saukhyam* (50%), *Kasa* (47.05%), *Sleshman aamuchyamane bhrusham dukhitam* (44.44%), Restlessness (43.75%), Frequency of attack (43.75%), *Vishushkasya* (40%), *Shwasakrichata* (34.34%). (Table 4)
   The overall improvement in the patient of Group II was found to be 58.22% which was moderate improvement symptomatically but statistically it was highly significant ($t=10.39$, $p<0.001$) (Table 5)
3. **Group III:** In the patient of group III treated with both *Shatyadi Churna+ Snehana & Swedana Karma* maximum improvement was recorded in the symptoms like *Vishuskasya* (93.33%), Expectoration (90%), *Shyanah shwasa peeditah* (88.88%), *Parsve avagruhyate* (88.88%), *Pinasa* (82.35%), Paraoxym of dyspnoea due to *megha, ambu*, cold weather (78.26%), Duration (76.42%), *Ghurghura dhwani* (75%), *Aasinolabhte Saukhyam* (73.33%), *Sleshman aamuchyamane bhrusham dhukhitam* (66.66%), Frequency (66.66%), *Pranapidaka tivra Shwasa* (64.28%), *Anidra* (64.28%), *Kasa* (61.9%), Restlessness (59.09%), *Shwasakrichata* (54.54%) (Table 4)
   The overall improvement in the patient of group III was found to be 72.24% which was marked improvement symptomatically & statististically it was highly signignificant. ($t=13.21$ & $p= <0.001$) (Table 5)

Effect of therapy on laboratory parameters

Group I: In Group I there was 5.46% relief was noticed in Hb%, reduction of TLC was noticed with 7.46% relief whereas in ESR there was 6.75% relief and it was statistically highly significant (<0.001). In TEC 4.85% relief was noticed and it was statistically highly significant (<0.001), there was 2.35% relief was noticed on Respiratory Rate. On Pulmonary function test, there was 10.18% relief on FVC which was

statistically significant (<0.01), In FEV, there was 34.56% relief & it was statistically significant (<0.01), PEFR 25.79% relief was noticed. (Table 6)

Group II: It was observed that there was 8.6% increase in Hb% and the result was statistically significant (<0.01) whereas in TLC there was 10.14% relief it was statistically higly significant (<0.001). In ESR 35.69% relief and it was statistically significant(<0.01) and in TEC there was 43.22% relief and it was statistically highly significant (<0.001), On Respiratory Rate there was 16.22% relief and was statistically highly significant(<0.001).On Pulmonary Function Test there was 16.75% relief on FVC and was statistically significant(<0.01), However in FEV there was 38.87% relief and was statistically significant (<0.01) whereas in PEFR 14.33% relief was noticed and it was statistically highly significant (<0.001). (Table 6)

Group III: By combined use there was 6.88% increase of Hb% was noticed and the result was statistically highly significant(<0.001) whereas in TLC 19.98% relief was observed and the result was statistically significant(<0.01) however in ESR 56.12% relief was statistically highly significant (<0.001) whereas in R.R 23.5% relief was noticed and was highly significant(<0.001).On Pulmonary Function Test, there was 28.09% relief on FVC and was statistically significant (<0.01),On FEV there was 55.40% relief and was statistically highly significant(<0.001), on PEFR 45.34% relief and was statistically significant(<0.01). (Table 6)

Probable mode of action of the drug

It was observed that in *Shatyadi Churna* there is dominance of *katu, tikta rasa, laghu, tikshna guna, ushna virya, katu* and *madhur vipaka* and *kapha vatashamaka karma* are present in maximum dravyas.These drugs act on *Pranavaha Srotas* thereby pacifying the *doshas* and thereby relieves the symptoms in *Tamaka Shwasa*.

The probable mode of action of all drugs in *Shatyadi Churna* can be divided into following groups such as:-

1. **Deepan-pachana drugs:** Choraka, *Bhumiamalaki, Tulsi, Pippali, Musta, Ela, Twak.* (These drugs help at the level of Agni in *Samprapti Vighatana*.)
2. ***Srotoshodhaka Drugs*****:** *Shunthi, Jivanti, Tulsi, Ela, Twak.* (These drugs cleans the various channels of *Pranavaha Srotas* which leads to *Anuloma Gati of Vata* in this manner these *Srotoshodhaka drugs* help in *Samprapti Vighatana*)
3. ***Aamanashaka Drugs (Rasagata Kaphanashaka)*****:** *Shunthi, Pippali, Tvak.* (*Ama* is the one of the important milestone in the *Samprapti* of *Tamaka Shwasa* hence these drugs help in *Samprapti Vighatana*
4. ***Vata kapha Nashaka Drugs*****:** *Shati, Choraka, Twak, Mustak, Pushkarmula, Tulsi, Ela, Pippali, Agaru, Shunti.*
5. ***Dhatu rupi Kapha shamaka*****:** *Madhu*
6. ***Shwasahara action*****:** All most all the drugs of *Shatyadi Churna* are having *Shwasahara* action.[5]

Discussion

From the foregoing, it is clear that human race gets inevitably exposed to atmospheric pollution and thus with the passing of decade and increasing of urbanization and industrialization the incidence of *Tamaka Shwasa* will keep on increasing. The fundamental treatment method of *Samsodhana*, *Samsamana* and *Nidana Parivarjana* mentioned in *Ayurvedic* classics, if administered judiciously, the desired results can be achieved. Some previous studies also support the effect of herbal compound along with sodhana and shaman therapy in the management of Tamak Shwasa [8, 9, 10]. In present context, the revalidation of ancient *Ayurvedic* or tradional compound preparations which can optimize the functions of respiratory tract by reversing the inflammatory responses and provide strength to the

According to modern medical science Bronchial Asthma is more prevalent in the younger age groups. W.H.O. states that prevalence of Asthma has increased in the past two or three decades in young adults which may be the cause why 44.11% patients were registered from 16-30 years age group that support the above data.

Higher percentage of patients from the married group might be due to the anxiety, panic, anger, sexual excitement in the married person. Reckmann F.M. (1958) has reported that anxiety panic, anger, jealousy, sexual excitement may trigger Bronchial Asthma.

The present study indicates that positive family history of *Tamaka Shwasa* was present in maximum 55.88% of patients. This is parallel with the view that Asthma occurs in families due to atopic nature. (Burrows B, *et al* N Engl J Med 1989; 320:271-277) i.e. the positive family history suggests the *Bija Dosha* present in the parents which is responsible for producing abnormal amounts of lgE in response to exposure to environ allergens

The *Chikitsa Siddhanta* of *Shwasa* with *Shatyadi Churna* proved to be effective in the management of *Tamaka Shwasa*. (Bronchial Asthma). It was observed that the majority of drug ingredients have *Laghu, Ruksha, Tikshna Guna, Tikta, Katu Rasa, Katu & Madhura Vipaka and Kapha Vatashamaka Prabhava*. It shows signs of *Srotoshodhaka* properties which may possibly assist to eliminate sluggish *Dosha* in the *Srotas.*

By combined effect of *snehana-swedana karma* leads to excessive increase of *doshas*, liquification of *doshas*, digestion of *doshas*, opening of *srotomukha* and control of *vata* occurs so that, the *dosha* come to the *kostha* and then they are expelled out through nearest route.

On Statistical basis it is clear that there were highly significant improvement in patients of all the three groups (p<0.001) but on the basis of mean percentage, maximum symptomatic improvement was observed in patients of Group III (7 2.74%) followed by Group II (58.22%) where as less symptomatic relief was observed in Group I (31.50%). Thus maximum improvement was found with the combined effect of *Shatyadi Churna* along with *snehana and swedana karma* in the management of *Tamaka Shwasa*.

Table 1: The details of the assessment of the symptoms rating is given below: Grading of (Breathlessness) / *Shwasakrichhrata*

1	Not troubled by shortness of breath on level or uphill	None	0
2	Troubled by shortness of breath on level or uphill	Mild	1
3	Walk slower than person of same age (breathlessness at the simple walking)	Moderate	2
4	Stops after walking 100 yards	Severe	3
5	Breathlessness at rest	Agonizing	4

Based on American thoracic society (AIS) scale

Grading of *Kasa* (Cough)

1	**No Cough**	**None**	**0**
2	Coughing for 2-5 min, Freq. 1-2 time/day without pain	Mild	1
3	Coughing for >10 min, Freq. > 5-10 times/day with pain	Moderate	2
4	Coughing for >15 min, Freq. >5-10 times/day without pain	Severe	3
5	Frequent coughing due to which patient becomes unconscious	Agonizing	4

Grading of *Ghurghurakam Dhwani* (Wheezing)

1	**No wheezing**	**None**	**0**
2	Wheezing only at early morning or during physical exertion	Mild	1
3	Intermittent wheezing present only during attack	Moderate	2
4	Constant wheezing throughout day	Severe	3
5	Constant wheezing along with other added respiratory sound	Agonizing	4

Grading of *Peenasa* (Coryza)

1	**No *Peenasa***	**None**	**0**
2	*Peenasa* Present before attack and subsides 1-2 days after the attack	Mild	1
3	*Peenasa* before attack and persist for than a week after the attack	Moderate	2
4	*Peenasa* present often even without attack	Severe	3
5	*Peenasa* always persisting	Agonizing	4

Grading of *Shayanah Shwasa Piditah* (Orthopnea)

1	**No Orthopnea**	**None**	**0**
2	Mild difficulty in breathing on lying down position	Mild	1
3	There is increase dyspnea on lying down position and patient prefers to take sleep in prone or lateral position	Moderate	2
4	Patient is able to take sleep only after taking support of 2-3 pillows (fowler's position)	Severe	3
5	Patient is continuously in sitting posture	Agonizing	4

Grading of Aasino Labhate Saukhyam (Comfort in sitting posture)

1	**Dyspnoea on recumbent position**	**None**	**0**
2	Can continue recumbent position but feels better on sitting	Mild	1
3	Not able to continue recumbence for long time	Moderate	2
4	Cannot assume recumbence / can't sleep	Severe	3
5	Dyspnoea in recumbent position / relief on sitting	Agonizing	4

Grading of Sleshma aamuchyamane bhrusham dhukhitam (Difficult to expectorate)

1	**No such difficult to expectorate**	**None**	**0**
2	Less often to expectorate during attack	Mild	1
3	Difficult to expectorate during attack	Moderate	2
4	Very often difficult to expectorate during attack	Severe	3
5	Severe difficulty to expectorate during attack	Agonizing	4

Grading of Pranapidaka tivra shwasa (Life threatening severe breathing)

1	**No Shwasa vega**	**None**	**0**
2	Shwasa After heavy work and relieved by rest	Mild	1
3	Shwasa on walking little distance	Moderate	2
4	Shwasa on slight exertions	Severe	3
5	Shwasa even at rest	Agonizing	4

Grading of Restlessness

1	**No Restlessness**	**None**	**0**
2	Feeling of suffocation sometimes	Mild	1
3	Frequent feeling of suffocation (1-2 time/day)	Moderate	2
4	Patient feel helpless and unable to carry out his work	Severe	3
5	Feeling drowning in dark and unconscious during attack	Agonizing	4

Grading of *Vishushkasyata* (Dryness of Mouth)

1	**No Dryness of Mouth**	**None**	**0**
2	Mild Dryness of Mouth which subsides by taking water	Mild	1
3	Cracks on lips and patient drink more water to moisten the mouth	Moderate	2
4	Dryness of mouth not subside by drinking water	Severe	3
5	Patient takes excessive water and always feel thirsty	Agonizing	4

Grading of Parsve avagruhyate (Chest Tightness)

1	**No chest Tightness**	**None**	**0**
2	Chest Tightness during attack	Mild	1
3	Chest Tightness very often without attack but relieved by local *snehan* and *swedana*	Moderate	2
4	Chest Tightness very often without attack and not relieved by local *snehan* and *swedana*	Severe	3
5	Persistent chest pain	Agonizing	4

Grading of Paroxysms of dyspnoea due to *mega, ambu,* cold weather

1	**No paroxysm of attack**	**None**	**0**
2	Mild attack occasionally but subsides itself by removing the cause	Mild	1
3	Mild attack often but subsides only after take hot measures	Moderate	2
4	Moderate attack even after taking hot measures & requires medication	Severe	3
5	Severe continuous attack requiring hospitalization	Agonizing	4

Grading of Expectoration

1	**No Expectoration**	**None**	**0**
2	White in color, not more than 2-5ml/day	Mild	1
3	Yellowish White in color, more than 20ml/day	Moderate	2
4	Deep yellow in color, more than 50ml/day	Severe	3
5	Blood stained sputum	Agonizing	4

Grading of Disturbance of sleep

1	**Sleeping pattern normal**	**None**	**0**
2	Sleep disturbed 1-2 time in night due to Dyspnoea	Mild	1
3	Sleep disturbed 3-4 time in night due to Dyspnoea	Moderate	2
4	Sleep disturbed throughout the night due to Dyspnoea	Severe	3
5	Patient fear to sleep	Agonizing	4

Duration of Vega/attack

1	**No episodes of attack**	**None**	**0**
2	Attack lasting for duration of 15 min-30 min	Mild	1
3	Attack lasting for duration of 30 min-1 hour	Moderate	2
4	Attack lasting for duration of ≥ 1hour	Severe	3
5	Continuous attack	Agonizing	4

Frequency of attack

1	**No paroxysm of attack**	**None**	**0**
2	Mild intermittent-1-2 attacks/week and 1-2 attack in night/month, No symptom between attack	Mild	1
3	Mild persistent: One attack/day, 1-2 attack in night/week, attack affects the activity.	Moderate	2
4	Moderate persistent: 1-2 attack/ day, 1-2 attack in night/week, attack affects the activity.	Severe	3
5	Severe persistent: Symptom present throughout day night attack/day, attack affects the activity.	Agonizing	4

Table 4: Showing the symptomatic improvement in 30 registered patients in all three groups.

Symptom	**Group**	**Mean Score**		**%Relief**	**P**	**S**
		B.T.	**A.T.**			
Shwasakrichhta (Dyspnoea)	I	2.5	2	20	0.0625	NS
	II	2.9	1.9	34.48	<0.001	HS
	III	3.3	1.5	54.54	<0.001	HS
Kasa (cough)	I	1.9	1.5	21.05	0.1250	NS
	II	1.7	0.9	47.05	<0.001	HS
	III	2.1	0.8	61.9	<0.001	HS
Ghurgurak dhwani (wheezing)	I	1	0.6	40	0.1250	NS
	II	1.6	0.5	68.75	<0.01	S
	III	2.4	0.6	75	<0.001	HS
Pinasa (coryza)	I	0.7	0.4	42.85	0.2500	NS
	II	0.9	0.3	66.66	<0.01	S
	III	1.7	0.3	82.35	<0.001	HS
Shayanah shwasa peeditah (orthopnoea)	I	0.9	0.6	33.33	0.2500	NS
	II	1	0.3	70	0.0625	NS
	III	1.8	0.2	88.88	<0.001	HS
Aasinolabhate Saukhyam (comfort in sitting posture)	I	1.2	0.7	40	0.0625	NS
	II	1.4	0.7	68.75	<0.01	S
	III	1.5	0.4	75	<0.001	HS
Shleshman aamuchyamane bhrusham dhukhitam(difficult to expectorate)	I	1.3	1	23.07	0.2500	NS

	II	0.9	0.5	44.44	0.1250	NS
	III	1.2	0.4	66.66	<0.01	S
Pranapidaka tivra shwasa (life threatning severe breathing)	I	1.5	0.8	46.66	<0.01	S
	II	2	0.5	75	<0.001	HS
	III	2.8	1	64.28	<0.001	HS
Restlessness	I	1.2	0.8	33.33	0.1250	NS
	II	1.6	0.9	43.75	<0.01	S
	III	2.2	0.9	59.09	<0.001	HS
Vishushkasya (Dryness in mouth)	I	0.5	0.2	60	0.2500	NS
	II	0.5	0.3	40	0.5000	NS
	III	1.5	0.1	93.33	<0.001	HS
Parsve avagruhyate (chest tightness)	I	1.9	1.3	31.57	0.0625	NS
	II	1.1	0.2	81.81	<0.001	HS
	III	1.8	0.2	88.88	<0.001	HS
Paroxysm of dyspnoea due to megha, ambu cold weather	I	2.2	1.6	27.27	<0.01	S
	II	1.3	0.3	76.92	< 0.01	S
	III	2.3	0.5	78.26	<0.001	HS
Expectoration	I	1.3	0.9	30.76	0.3125	NS
	II	1.2	0.3	75	<0.01	S
	III	1	0.1	90	<0.01	S
Anidra (Insomnia)	I	1.2	0.8	33.33	0.1250	NS
	II	1.3	0.5	61.53	<0.01	S
	III	1.4	0.5	64.28	<0.01	S
Frequency of attack	I	1.3	1	23.07	0.2500	NS
	II	1.6	0.9	43.75	<0.01	S
	III	1.8	0.6	66.66	<0.001	HS
Duration of attack	I	1.3	0.7	46.15	<0.01	S
	II	1.5	0.4	73.33	<0.001	HS
	III	1.7	0.4	76.47	<0.001	HS

Table 5: Showing comparative symptomatic improvement in patients of all the three different groups after treatment

Group	%Relief	Improvement	't'	'p'	Result
I	31.50	mild	8.52	<0.001	H.S
II	58.22	moderate	10.39	<0.001	H.S
III	72.24	marked	13.21	<0.001	H.S

Table 6: Showing the improvement in laboratory parameters in 30 registered patients in all three groups.

Laboratory Parameter	Group	Mean Score		%Relief	t	P	S
		B.T.	A.T.				
Respiratory Rate	I	22.3	20	10	2.35	<0.05	S
	II	22.8	19.1	16.22	6.01	<0.001	HS
	III	23.4	17.9	23.50	6.49	<0.001	HS
FVC	I	1.41	1.58	10.18	3.58	<0.01	S
	II	1.65	1.98	16.75	3.89	<0.01	S
	III	1.45	2.01	28.09	3.83	<0.01	S
FEV	I	0.33	0.51	34.56	4.34	<0.01	S
	II	0.42	0.69	38.87	3.34	<0.01	S
	III	0.88	1.96	55.10	5.96	<0.001	HS
PEFR	I	1.46	1.96	25.79	2.35	<0.05	S
	II	1.87	2.18	14.33	7.42	<0.001	HS
	III	1.64	3.01	45.34	9.67	<0.001	HS
Haemoglobin	I	11.4	12.05	5.46	2.53	<0.05	S
	II	11.37	12.44	8.60	3.43	<0.01	S
	III	11.77	12.64	6.88	5.56	<0.001	HS
TLC	I	9110	8430	7.46	3.14	<0.05	S
	II	9270	8340	10.14	6.26	<0.001	HS
	III	10910	8730	19.98	4.36	<0.01	S
ESR	I	40	30.5	23.75	6.75	<0.001	HS
	II	29.7	19.1	35.69	4.53	<0.01	S
	III	46.5	20.4	56.12	6.57	<0.001	HS
TEC	I	344.2	295.5	14.14	4.85	<0.001	HS
	II	323.2	183.5	43.22	5.16	<0.001	HS
	III	320.3	158.5	50.51	7.28	<0.001	HS

Conclusion

Tamaka Shwasa (Bronchial Asthma) is a very troublesome disease affecting the *Pranavaha Srotas* and producing respiratory dyspnea and discomfort. It was observed that the symptoms relapse when treatment is withdrawn in patients of bronchial asthma. *Shamana Chikitsa* in the form of *Shatyadi*

Churna along with *purva karma* as *snehana* and *swedana* played an important role in the management of *Tamaka Shwasa*. The combined effect of *snehana-swedana karma* leads to excessive increase of *Doshas*, liquification of *Doshas*, digestion of *Doshas*, opening of *Srotomukha* and control of *Vata* occurs so that, the *doshas* come to the *Kostha* and then they are expelled out through nearest route. An appropriate *Anupana* also enhances the property of drug. Hence honey was used to enhance the action of the drug. Thus it can be concluded that *Shatyadi churna* along with *snehana* and *swedana karma* can be used as safe and effective 'Therapeutic Agent' in the management of *Tamaka Shwasa* (Bronchial Asthma). Therapy was well tolerated by all the patients and no adverse effects were seen in any patient.

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