

A Clinical Study on the Management of *Tamaka Shwasa* W.S.R. to Bronchial Asthma with *Shrungyadi Shaarkar*

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Abstract:

At present, many chronic recurrent airway disorders are increasingly seen all over the global population. Ayurveda has described one of such disorder as *Tamaka Shwasa*. The parallel in western medicine to this disorder i.e. Bronchial Asthma calls the attention of Medical world due to significant burden in terms of health care costs as well as lost productivity and reduced participation in family life. The disease, *Tamaka Shwasa* is characterized by paroxysmal attacks of breathlessness, cough, coryza, chest tightness, rapid respiration, distress due to inability to expectorate and prolonged expiration. In this clinical study 30 diagnosed patient of *Tamaka Shwasa* was registered and given *Shrungyadi Shaarkar*. The outcomes were assessed by WHO Ayurveda symptoms scoring. The outcome of the treatment after giving *Shrungyadi Shaarkar* for 8 weeks was observed to be significant in the parameters of *kasa*, *shwasa*, *shasabdashwasa*, *kaphanisthivanam*, PEF, Respiratory Rate, Breath sound, Heart Rate, Total count, ESR, and Absolute Eosinophil count. The effect of *Shrungyadi shaarkar* in *Tamaka Shwasa* given significant result due to *Ushna*, *Tikshana*, *Bhedana*, *lekhana* as well as anti-inflammatory, antioxidant, Bronchodilator property of all the ingredients which may help to prevent and reverse the pathogenesis. The study confirms that *Shrungyadi Shaarkar* which was selected for the study is effective in treating the Tamala Shwasa.

Key words: Bronchial Asthma, *Shrungyadi Shaarkar*, *Tamaka Shwasa*

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Introduction:

Tamaka Shwasa is one of the five types of disease *Shwasa*. It is mainly a disease of *Pranavahasrotas*.^[1] The signs, symptoms and etiopathogenesis of Bronchial Asthma explained in modern science have a lot of similarities with the disease entity *Tamaka Shwasa*. The main features of Bronchial Asthma are recurrent episodes of breathlessness, chest tightness, wheezing and cough. The prevalence of respiratory disorders like *Tamaka Shwasa* (Bronchial asthma) is now a day's increasing alarmingly due to excessive pollution, overcrowding, occupational conditions, stress and poor hygiene etc. Both Ayurveda and modern medical Science agree regarding the *Nidana* of the disease as host factors (*Nija Hetus-Doshadushti* and *Ama*) and Environmental factors (*Agantuj Hetus - Raja, Dhuma, Pragvat*, etc). It can be easily correlated with allergic condition. *Nidana Parivarjan* hence plays a key role in the management strategy in both sciences.^[2] Bronchial Asthma is a major global health problem, which can affect the population irrespective of age, sex, economic status, etc. It is very common at all ages but predominantly in early life. Current estimates suggest that 300 million people worldwide suffer from asthma and an additional 100 million may be diagnosed with asthma by 2025.^[3] Bronchial Asthma calls the attention of Medical world due to significant burden in terms of healthcare costs as well as lost productivity and reduced participation in family life. *Acharya Charaka* has mentioned that *Tamaka Shwasa* is *Kapha-vatajavikar* and site of its origin is *Pitta sthana*. "*Kaphavatamkavetopittasthanasamudbha*

va"^[4] *Tamaka Shwasa* in general is described as *Yapya* (palliable) disease. However in individual with recent origin of disease, person of *Pravara bala* or both said to be *Sadhya*.^[5] *Acharya Charaka* has clearly mentioned the importance of *Nidana parivarjana*, and also the following principles for the management of *Shwasa Roga*. 'The medicine and dietetic regimen which controls the *Kapha* and *Vata* due to their *Ushna guna* and are *Vatanulomaka* in action must be utilized in the treatment of *Shwasaroga*'.^[6] *Brimhana* is considered the best option compared to *Shamana* and *Karshana* when treating *Tamaka Shwasa* patient.^[7] Also, any remedy which aggravates *Vata* and pacifies *Kapha* or which pacifies *Vata* and aggravates *Kapha* or which pacifies either *Vata kapha* or which pacifies only *Vata* should be used for the management of *Tamaka Shwas*.^[8] The current management of *Tamaka Shwasa* (Bronchial Asthma) by modern medicine is only providing short term symptomatic relief but does not provide any long term relief to the patient. On the other hand prolonged use of these drugs are not safe, as it has many adverse effect with systemic manifestation and as the Chronicity increases drug dose dependency increases & dilates the lung tissue to such an extent that at last it leads to respiratory failure. In present scenario *Ayurveda* is the best way to effectively & safely manage the condition without any drug dependency where various *Shodhana* procedures and use of internal medication not only detoxifies the body but also provides nutrition & increases the elasticity of lung tissue & develops natural immunity of the body. So with this aim present study was

conducted to provide a unique, but accurate & effective method of dealing with the complexities of the disease. Thus decreasing episodic recurrence of the disease and providing long term relief to the patient. For the present study drug has been selected from *Chakradatta Hikkashwasa-chikitsaprakarana*.^[9]

Shrungyaadi Shaarkar drugs are selected as per the principles of *Ayurveda* and Research work conducted regarding these drugs in various research institutes. Drugs having *Vatakaphahara*, *Ushna* & *Vatanulomaka* property were selected & Compound preparation in the form of *Shaarkar* was prepared. Contents of *Shrungyaadi Shaarkar* is *Karkatshringi*, *Shati*, *Pushkarmula*, *Maricha*, *Shunthi*, *Pippali*, *Musta* and *Sharkara* in equal parts except *Sharkara* which is taken just double of all seven ingredients. After the evaluation of the trial, it has been proved that *Shrungyaadi Shaarkara* with luke warm water as *Anupana Dravya* shown

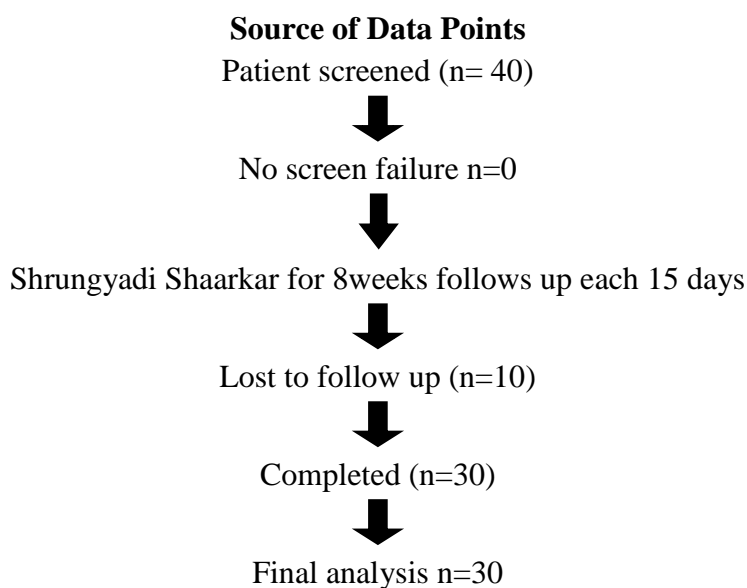
remarkably good results, in pacifying the symptoms and reducing the recurrence and frequency of episodes in the patients of *Tamaka Shwasa*. The study has been planned with aim to Evaluate the Therapeutic Effect of *Shrungyaadi Shaarkar* in management of *Tamaka Shwasa*.

Material & Methods:

Selection of Patients:

Total 30 Patients of *Tamaka Shwasa* were selected from the O.P.D. on the basis of inclusion and exclusion criteria, depending on the detailed clinical history, physical examination and other necessary / desired investigations and irrespective of their gender, caste or creed.

This work is approved by Institutional Ethics Committee (IEC No: PU/PIAIECHR/2017/40) and Registered in Clinical Trial Registry India (C.T.R.I. No. CTRI/2017/12/01099).



The study is open labelled single arm clinical study in which 30 patients of diagnosed cases of *Tamaka Shwasa* (Bronchial Asthma) were selected from Out-patient department of Kayachikitsa, Parul Ayurveda Hospital, Parul University and referred cases from other department's physicians. Patient's age group of above 16-30 years irrespective of sex, Religion, Socio-economic Status.

Inclusion Criteria:

Patient of Age Group 16 to 60 years of age irrespective of caste, religion, gender, habitat, occupation and socio – economy status, Patient manifesting the symptoms of *Tamaka Shwasa* with symptoms *Shwasa vega*, *Kasavega*, *Sashabda shwasa*, *Kaphanisthivina*, Decreased PEF, Decreases breath holding time, Increase respiratory rate.

Exclusion Criteria:

Severe cases of Asthma with complication like suspected infection larger airway lesion, heart disease etc. Chronicity more than 10 years, Cardiac complaints other chronic debilitating disease like HTN, T.B. AIDs, DM Allergic Bronchitis, COPD etc or other systemic and endocrine

Criteria for Assessment:

The assessment of the trial was done on the basis of following parameters

Subjective: The subjective assessment was done on the basis of improvement in signs and symptoms of *Tamaka Shwasa* described in classics, before during and at the end of the trial.

Objective: The objective assessment was done on the basis of changes in clinical findings, relevant laboratory parameters and Pulmonary Function Test before during and at the end of the trial.

complaints associated with any degree of Asthma.

Criteria for withdrawal:

Some of patients withdraw the treatment of *Shrungyaadi Shaarkar* due to some Personal matters some due to intercurrent illness some due to Aggravation of complaints and some other difficulties.

Diagnostic Criteria:

An extensive proforma was compiled on the basis of classical signs and symptoms of the *Tamaka Shwasa* as per the Ayurveda. A detailed clinical history and respiratory examination was done and the data was collected of each patient compiled and filled in proforma. All vital signs like B.P, Pulse Rate, and Respiratory rate were noted and Peak Flow Meter reading. Breath holding time was taken before and during treatment for assessment.

Interventions:

The trial drug chosen for the present study- an herbal preparation- *ShrungyaadiShaarkar* which containing- *Karkatshrungi*, *Sunthi*, *Pippali*, *Musta*, *Pushkaramoola*, *Shaarkar* all churna in equal quantity and Shaarkar is in 4 times more.

Laboratory Investigations:

Complete blood count, Erythrocyte Sedimentation Rate, Absolute Eosinophile Count, X-Ray chest PA view.

For the sign and symptoms of the disease *Tamaka Shwasa*, grading was done depending upon the severity and assessment was done on the following *Lakshanas* graded. All the signs & symptoms were given scores depending upon their severity before, during and at the end study.

Preparation of the Drug:

All the seven ingredients are taken in equal quantity and made into coarse powder; the quantity was 14 kg of weight of all drugs before making coarse powder and mixed well in 50 litres of water to prepare the decoction. The mixture is converted into *Kashaya* and later mixed 40 kg of

Sharkara was added. Then it converted in to *Shaarkar Kalpana* as per *Sharangadhara Samhita*.^[10] *Shaarkar* was kept in under observation for 7 days. If there will be fungus formation or not after that confirmation *Shaarkar* packed in 100 ml bottle.

Table-1: Interventions:

| Drug | Dose | Time | Anupana | Duration | Follow Up |
|---------------------------|--------------------------|------------|------------|----------|-----------|
| <i>Shrugyadi shaarkar</i> | 10 ml thrice in a day | After food | Warm water | 8 weeks | 2 weeks |

Table-2: Observations on Demographic Data

| Observation | No of patients | Total |
|---|-----------------|-------|
| Age | 40.303 ± 12.665 | 30 |
| Gender Female/Male | 8/22 | 30 |
| Religion Hindu/Muslim | 29/1 | 30 |
| Marital Status/ Married/ Unmarried/ Widow | 25/4/1 | 30 |
| Aggravating Factor/ Cold climate/Rainy Climate | 30/17/30 | 30 |
| Reliving Factor/ Hot treatment/ Expectoration/ Sitting | 30/30/30 | 30 |
| Postural Aggravation/ Sleeping/ Walking/ Exercise | 12/8/30 | 30 |
| Allergic factor/Dust/Fumes/Pollen | 30/15/8 | 30 |
| Onset/gradual/Acute/Insidious | 29/1/0 | 30 |
| Chronicity/<1/3-5/5-7/7-10 | 12/6/8/4 | 30 |
| Severity/mild/moderate/sever | 6/25/0 | 30 |
| PEFR Value/<100/100-200/200-300/>300 | 0/12/16/2 | 30 |
| Family History/ Present/ Absent | 5/25 | 30 |
| Bowel habit Regular/irregular/ Not At All | 1/2/27 | 30 |
| Diet/Veg/mixed | 18/12 | 30 |
| <i>KosthaMrudu/madhyam/krura</i> | 13/9/8 | 30 |
| <i>Dietary habits Samashana/vishmashana/adhyashana</i> | 12/17/11 | 30 |
| <i>Prakruti Vata-Pitta/Kapha-Vata/Kapha-Pitta</i> | 6/8/16 | 30 |
| <i>Menstrual history</i> Regular/irregular/menopause | 6/1/1 | 30 |
| <i>Vyayama</i> Regular/irregular/Not at all | 1/2/27 | 30 |
| <i>Nidra/Sound/Disturbed/RatriJagaran</i> | 16/12/3 | 30 |
| Occupation House-wife/ Labourer/ Service class/ Business/ Student | 6/13/3/5/3 | 30 |
| <i>Vyasana/Tobacco/ Smoking/ Alcohol</i> | 12/17/1 | 30 |

Table-3: Effect of therapy on physical parameter:

| Physical parameter | Mean BT | Mean AT | % of changes | SD | SE | T Value | P Value |
|----------------------|---------|---------|--------------|--------|--------|---------|---------|
| BHT | 1.333 | 2.333 | 42% | 0.263 | 0.0479 | 20.857 | <0.001 |
| Respiratory rate | 22.567 | 20.667 | 8.41 | 3.033 | 0.554 | 3.432 | 0.002 |
| Peak Expiratory Rate | 236.333 | 349.900 | 48% | 64.398 | 11.757 | -9.659 | <0.001 |

Table-4: Effect the Haematocrit values:

| Investigation | Mean BT | Mean AT | % of changes | SD | SE | T Value | P Value |
|---------------|----------|----------|--------------|----------|---------|---------|---------|
| Hob% | 12.537 | 13.387 | -6.80% | 0.842 | 0.154 | -5.527 | <0.001 |
| ESR | 25.067 | 21.133 | 15.69 % | 4.941 | 0.902 | 4.361 | <0.001 |
| Europhiles | 63.500 | 54.033 | 14.90% | 7.642 | 1.395 | 6.785 | <0.001 |
| Eosinophil | 3.533 | 1.433 | 62.35% | 1.094 | 0.200 | 10.515 | <0.001 |
| T.L.C | 8550.833 | 8647.556 | 0.29% | 1178.348 | 226.773 | 0.162 | 0.873 |

Table-5: Statistical analysis: (Wilcoxon- signed Rank test):

| Parameter | Sum of rank BT | Sum of rank AT | No of Patients | Z Value | P value | Remarks |
|------------------------|----------------|----------------|----------------|---------|---------|---------|
| Kasa intensity | 1.00 | 15.50 | 30 | 4.965 | .000 | HS |
| Kasa frequency | 3.00 | 15.50 | 30 | 5.025 | .000 | HS |
| Kasa life quality | 6.00 | 15.50 | 30 | 4.893 | .000 | HS |
| Shwasa intensity | 1.50 | 11.00 | 30 | 4.118 | .000 | HS |
| Shwasa frequency | .00 | 14.50 | 30 | 4.714 | .000 | HS |
| Shwasa life quality | 4.00 | 15.00 | 30 | 4.870 | .000 | HS |
| Shwasa reliving factor | 3.00 | 15.00 | 30 | 4.585 | .000 | HS |
| <i>Kaphanisthinam</i> | .00 | 15.00 | 30 | 4.231 | .000 | HS |
| Sashabdashwasa | 3.00 | 13.00 | 30 | 4.457 | .000 | HS |
| Ronchi | 4.5 | 4.00 | 30 | 2.121 | 0.030 | NS |
| Crepitation | 5.50 | 15.50 | 30 | 4.932 | 0.22 | NS |

Table-6: Overall effect of therapy:

| Symptoms | N | % Relief | P value | Statistically |
|----------------------------------|----|----------|---------|--------------------|
| Roga Bala | | | | |
| Kasa (Intensity) | 30 | 88.70% | <0.001 | Highly Significant |
| Kasa (Frequency) | 30 | 90.58% | <0.001 | Highly Significant |
| Kasa (Life Quality) | 30 | 92.25% | <0.001 | Highly Significant |
| Shwasa (Intensity) | 30 | 61.75% | <0.001 | Highly Significant |
| Shwasa (Frequency) | 30 | 81.01% | <0.001 | Highly Significant |
| Shwasa (Life Quality) | 30 | 65.94% | <0.001) | Highly Significant |
| Shwasa (Relieving Factor) | 30 | 58.76% | <0.001 | Significant |
| <i>SashabdaShwasa</i> | 30 | 56.63% | <0.001 | Significant |
| <i>KaphaNisthivana</i> (Sputam) | 30 | 96.87% | <0.001 | Highly Significant |
| Ronchi | 30 | 53% | <0.001) | Significant |
| Crepitations | 30 | 52% | <0.001) | Significant |
| Peak Expiratory Flow Rate (PEFR) | 30 | 48% | <0.001) | Not Significant |
| Breath Holding Time (BHT) | 30 | 42% | <0.001) | Not Significant |
| Respiratory rate | 30 | 6.80% | <0.002 | Not significant |
| Agnibala | | | | |
| <i>Abhyavaharanashakti</i> | | 62% | <0.001 | Highly Significant |
| <i>Jaranashakti</i> | | 58% | <0.001 | Significant |
| <i>Ruchi hi Aharakala</i> | | 71% | <0.001 | Highly Significant |
| <i>Vatamutra Purish Rate</i> | | 50% | <0.001 | Significant |
| Dehabala | | | | |
| <i>Balavridddhi</i> | | 60% | <0.001 | Highly Significant |
| <i>Shwara Varna Yoga</i> | | 41.38% | <0.001 | Not Significant |
| <i>ShariraUpachaya</i> | | 4.51% | 0.103 | Not Significant |
| Chetasabala | | | | |
| Status of sleep | | 62.23% | <0.001 | Highly Significant |
| Feeling of well being | | 56.67% | <0.001 | Significant |
| Dreams | | 11.58% | 0.134 | Not Significant |
| MBI avyaptti | | 42.85% | <0.001 | Significant |

RESULT:**Effect of Therapy on Emergency Medicines**

The mean score of emergency medicines in prior to the treatment was 3.400 After the treatment the same reduced to 2.167 with mean difference of 1.233 The change that occurred with the treatment is greater than would be expected by chance; this improvement when analysed by the paired 't' test found significant ($P = <0.001$).

As *Tamaka Shwasa* is an episodic disease and acute dyspnoea attack may disturbs the patient at any time duration and interval. We found that all patients under this trial have remarkable improvement and also observed that, severity of symptoms and time period between two successive dyspnoea attacks increased. During the study also observed that relief in severity and increased in duration between two episodes is related to the Chronicity of the disease means lesser the Chronicity greater the relief and in more chronic patient we observed less significant improvement. We found this medicine gives significant improvement in the patients who have Chronicity less than 1 year.

Discussion:

The formulation which was used in trial have many drugs i.e. *Karkatshrungi, Shati, Taritatu, Pushkarmoola, Musta, Sharkara. The all drugs are having Katu, Tikta, rasa, Usnavirya, Lekhana, Bhedan, chhedana, vatanulomaka* property so it is very useful help to clear the blockage and normalizing the vitiated Doshas. These properties specifically katu Rasa and UshnaVeerya may act as Vata Hara i.e. the reaction of an organ towards any stimulus KatuVipakaproperty of the drug helps to

cure Ama the inflammatory condition of the bronchial tree. *Laghu, Ruksha* and *Tikshana* property helps to control *Kapha* responsible for the mucogenic secretion in the respiratory track. ^[12]

The classical formulation of the *Shrungyadi Shaarkar* is mentioned in classical text of *Bhaisajya Ratnavali* in the form of *churna Kalpana* (powder form). But here the formulation is changed and is considered in the form of *Shaarkar Kalpana* (syrup form. In present study the formulation made in the syrup form for easy palatability of patient. In the research study, it is very necessary to fix the accurate dose of the drug. The fixation of the drug dose is very easy & accurate in the case of *Shaarkar (Syrup) Kalpana* than *churna Kalpana*.

So after the complete study results is statistically significant in all subjective or objective parameter some of them got significant result in subjective parameter but not in objective parameter i.e. Crepitation, Ronchi some of them got result in such as increases respiratory rate, and breath holding time. There is also result found Haematocrit value such as increased Hb%, reduction in ESR, AEC value.

On the basis of Statistical test, it can be concluded that *Shrungyaadi shaarkar* has shown excellent improvement in PEFR, BHT, Respiratory rate of the patient of *Tamaka Shwasa* with maximum no. of patients achieving a PEFR value between 90–100% of their normal predicted value according to height and age. The drug has shown effectiveness in lowering the raised eosinophils and ESR in the patients of *Tamaka Shwasa*.

Mode of action of drug:

Shrungyadi shaarkar is the Shaman yoga in Shwasa is expected to work on Prana-udaka and Annavaahasrotasa and should provide Dipana- Pachana, Vatanulomana, Vatakaphahara property. All these Characteristics made these drugs to act on *Prana - Udaka* and *Annavaahasrotasa* so that the *Samprativighatana* occurs in a systemic manner starting from the *Aamashaya* where the *Dipana-pachana* and *Agniguna* of these drugs helps in the *Pachana* of *Ama* in the body. Also *Kaphaghna* and *Kaphanissaraakaguna* will helps in the removing of blocked channels of the body i.e. *Srotorodha* will be cured and *Vatanulomana* will be achieved so that the *Kupitavata* will attain its *Samyaka* state and there will be relief in the symptoms of *Tamaka Shwasa*. *Balya guna* of these medicines on the other hand will prevent the *Prakopa* of *Vayu* which may occur due to continuous use of *Kapahnashak & Kaphanissaraka aushadh*.

Pharmacological activities of trial drugs:

Pharmacological Action of all the drugs of *Shrungyaadi Shaarkar* are explained here like Anti-inflammatory action mentioned for *Sunthi*, *Karkatshrungi*, *Kocher*, *Musta*, *Pippali*, Anti-allergic action of *Karkatshrungi*. *Pushkaramoola* is Mast cell stabilization in action. *Kocher* is Anti-oxidant, Bronchodilator and Anti-histaminic. *Karkatshrungi*, *Musta* is Anti-jussive in action. *Pushkaramoola*, *Sunthi*, *Pippali* are Immunomodulatory. Features like appetite, digestion, weight gain, improved due to improved nutrition at the cellular level by *Deepan-Pachan* (carminative and digestive) and

Agnivardhan (increase digestive power of individual) properties of *Pippali* improved nutrition to each and every body tissue results in improvement in features like general and mental feeling of well-being, ability to work and fatigue *Shrungyaadi Shaarkar* through *Vata-Kapha* pacifying, *Srotorodha* and *Kaphanissaran* properties makes the pathway clear for proper circulation of *Vata* thus relieving various respiratory signs and symptoms. It was observed that Respiratory Rate reduces significantly. Breath Holding Time & Sustained Maximum Inspiration Increases significantly. Haemtocrit value of Hb% increases significantly. Neutrophils & ESR reduces significantly. Mild changes were shown in WBC & Eosinophil count. No side effects were observed from the drug were noted during the trial and follow-up period.

Conclusion:

It can be used for long term management just because of it is an herbal formulation so that no side effect was found in all 30 patients. It may hinder the complication of *Tamaka Shwasa*. It may Enhances the life span of patient with good quality of life. It is very easy to take the medicines, good in taste, no offense smell, eco-friendly therapy, herbal drugs are containing of the drug. So, that by concluding this study the alternative hypothesis has been stabilized i.e. *Shrungyaadi Shaarkar* is effective the management of *Tamaka Shwasa*.

Limitation of the study:

Small sample size i.e. study was carried out only in 30 patients. Future scope of this study may suggest Study should be carried out in larger samples Study should

be carried out by adding another drug. Study should be carried out by changing form of preparation with different Anupana, Other *Sodhana*, with *Sthanik Abhyanga Swedana*, as an adjuvant in acute cases.

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