



ORIGINAL RESEARCH ARTICLE

# A Randomized Comparative Clinical Study to Evaluate the Effect of *Abhra Garbha Pottali Rasayana* and *Shringyadi Churna* in *Tamaka Shwasa* w.s.r to Bronchial Asthma

Author: Soumya Kulkarni<sup>1</sup>

Co Authors: Shobha Itnal<sup>2</sup>, J K Sarma<sup>3</sup> and R V Gudi<sup>4</sup>

<sup>1-3</sup>Department of Kayachikitsa, Shri JGCHAMC, Ghataprabha, Karnataka, India

<sup>4</sup>Shree Dhootapapeshwar Limited, India

## ABSTRACT

*Tamaka shwasa* is one among five varieties of *shwasa* explained in classics of *Ayurveda* which is analogous with bronchial asthma mentioned in modern science. Since centuries *Tamaka shwasa* remained to be a challenging and persisting disease. *Acharyas* explained treatment modalities of *Tamaka shwasa* in terms of *vegakalina* and *avegakalina*. In *vegakalina* emergency management like *sadyovamana* and in *avegakalina rasayana*, *brimhana* and *shamana chikitsa* are explained. In *Ayurveda* *rasaushadhis* play an important role because of their quick action, small dose, palatable and long shelf life. In *Rasashastra* various *rasakalpas* are mentioned viz *khalveeya*, *parpati*, *kupipakwa* and *pottali*. Out of these four *kalpas*, *pottali* preparations are unique and compact in structure and quick in action. One of the *pottali kalpas* is *Abhra Garbha Pottali* which is indicated in *Shwasa roga*. **Aim & Objective:** To compare the treatment effect of *Abhra Garbha Pottali* and *Shringyadi churna* in the remission of the symptoms of *Tamaka shwasa*. **Methods:** Pre-test & post-test comparative clinical study. **Setting:** 60 patients suffering from *Tamaka shwasa* were randomly divided into two groups of 30 patients each. **Results:** when results were obtained it showed marked improvement in the signs and symptoms of *Tamaka shwasa* as per the statistical analysis. **Conclusion:** No difference is seen between the groups. Both the groups are equally effective. Although statistically not significant, comparatively *Abhra Garbha Pottali Rasayana* is better than *Shringyadi churna*

**Key Words** *Tamaka shwasa*, Bronchial asthma, *Abhra Garbha Pottali Rasayana* and *Shringyadi Churna*

Received 19<sup>th</sup> August 21 Accepted 04<sup>th</sup> September 21 Published 10<sup>th</sup> September 2021

## INTRODUCTION

*Tamaka shwasa* is one among five varieties of *Shwasa* explained in almost all the classics of *Ayurveda* which is analogous with Bronchial asthma mentioned in modern science. *Tamaka shwasa* is a *swatantra vyadhi* and having its own

aetiology, pathology and management. It is mentioned as *yapya vyadhi*<sup>1</sup> i.e. chronic in nature. *Tamaka shwasa* is one of the chronic disorders of the *pranavaha srotas* that disturbs the daily activities by producing *kasa* and *shwasa kruchrata*. The condition gets worsened in rainy



## ORIGINAL RESEARCH ARTICLE

season, windy and cloudy atmosphere. Bronchial asthma to which *Tamaka shwasa* is compared is a chronic inflammatory condition of the airways that causes breathlessness, wheeze and cough. It is considered as a chronic disease however there are periods of time during which disease can go into remission or resolve altogether.

Globally asthma is ranked 16th among the leading causes of years lived with disability and 28th among the leading causes of burden of disease. Asthma kills around 1000 people every day around world. Current estimate suggests that 339 million people worldwide suffer from asthma and 15 to 20 million people in India<sup>2</sup>. Hence it is considered as major chronic airway disorder; it is a serious public health problem in countries throughout the world. People with asthma report impact on the physical, psychological and social domains of quality of life.

*Shwasa* is considered as *yapya vyadhi*. In this condition *kapha*, the predominant *dosha* causes obstruction in the *pranavaha srotas*, there by disturbing the movement of *vata*. Consequently, aggravated *vata* takes *pratiloma gati* which results in *shwasa kruchrata*. *Acharyas* explained treatment modalities of *Tamaka shwasa* in terms of *vegakalina* and *avegakalina*. In *vegakalina* emergency management like *sadyovamana* and in *avegakalina rasayana*, *brimhana* and *shamana chikitsa* are explained. In modern science the treatment modalities for asthma are bronchodilator inhalers, corticosteroids with long acting beta adreno receptors. Long term use of these drugs results into skin rashes, throat

irritation, tremors, irregular heartbeat, insomnia<sup>3</sup> etc. hence there is need to find out an effective management of *Tamaka shwasa* with *Ayurvedic* formulations that covers preventive and therapeutic effects.

In *Ayurveda Rasaushadhis* play an important role because of their quick action, small dose, palatable and long shelf life. In *Rasashastra* various *rasakalpas* are mentioned viz *khalveeya*, *parpati*, *kupipakwa* and *pottali*. Out of these four *kalpas*, *Pottali* preparations are unique and compact in structure and quick in action but these are rarely practiced. *Pottali kalpas* are having high efficacy and it can be used in an emergency condition also. One of the *pottali kalpas* is *Abhra Garbha Pottali*<sup>4</sup> which is indicated in *Shwasa roga*. In the present clinical study patients were assigned into two groups each consisting of 30 patients. Group A patients were administered by *Abhra Garbha Pottali* and in Group B *Shringyadi churna*<sup>5</sup> was administered.

## AIMS AND OBJECTIVES

- To study *Tamaka shwasa* and Bronchial asthma in detail
- To evaluate the therapeutic effect of *Abhra Garbha Pottali* in the remission of the symptoms of *Tamaka Shwasa/Bronchial asthma*
- To assess the effect of *Shringyadi churna* in *Tamaka Shwasa*
- To compare the treatment effect of *Abhra Garbha Pottali* and *Shringyadi churna* in the remission of the symptoms of *Tamaka shwasa*.



## ORIGINAL RESEARCH ARTICLE

### MATERIALS AND METHODS

**Ethical Committee Approval No.**  
AMC/989/2018-19

#### Source of Data:

#### Literary source of Data:

Reference of Tamaka Shwasa from Ayurvedic classical text books, journals, research articles and references of Bronchial asthma from contemporary text including website.

#### Clinical source of Data:

Patients suffering from Tamaka Shwasa were selected from OPD/IPD of Shri JGCH'S Ayurvedic medical hospital Ghataprabha, from medical camps and other sources.

#### Drug source:

Abhra Garbha Pottali was collected from GMP Certified pharmacy. The drugs for the preparation of Shringyadi churna was purchased from an ayurvedic dealer duly identified by the botanist. Shringyadi churna was prepared in the department of Rasashastra and Bhaishajya Kalpana of Shri.J.G.C.H. Ayurvedic medical college and hospital, Ghataprabha according to classical references.

#### Method of collection of Data:

#### Study Design:

Randomized comparative clinical study with 60 patients fulfilling the inclusion criteria was selected and assigned into two groups of 30 patients in each, irrespective of their economic status, education status and caste.

**Study type** - Interventional

**Allocation** - Randomization

**End point classification** - Efficacy study

**Interventional model** - Parallel assignments

**Masking** - Open label

**Primary purpose** - for the purpose of treatment effect

#### Diagnostic criteria:

Diagnosis was established on the basis of history and clinical presentations of Tamaka Shwasa i.e. Shwasa, kasa, Shtheevana, Ghurghurak fitting into the diagnostic criteria of GINA (Global initiative for Asthma) guidelines.

#### Inclusion criteria:

- Patients of either sex
- Age group from 16 to 60 years
- Patients with peenasa or without peenasa
- Patients with Classical symptoms of Tamaka Shwasa
- Patients having history of more than 6 months
- Mild persistent cases of Asthma (as per WHO and GINA guidelines)
- Patients of Tamaka Shwasa with special reference to Bronchial asthma with signs and symptoms like Shwasa kruchrata - Breathlessness, Ghurghurak - wheezing, Kasa - Cough

#### Exclusion criteria:

- Severe life-threatening type of Tamaka Shwasa associated with complications.
- Secondary infections of respiratory system
- Patient with Status asthmaticus, COPD, Bronchitis, Tuberculosis.
- Asthma patients who are on Salbutamol inhaler and other treatment.



## ORIGINAL RESEARCH ARTICLE

- Asthma in pregnancy and lactating women
- Occupational Asthma
- Patient with systemic disorder which interfere with the present treatment like Hypertension, Uncontrolled DM, HIV.

### Duration of the study

- Treatment duration: 48 days
- Follow up: 30 days

Patients were assessed before treatment, after completion of treatment and once in every 15 days for a month during follow up.

### Intervention:

#### Method of administration:

A randomized comparative clinical study with 60 patients. Patients were selected on the basis of classical signs and symptoms of Tamaka Shwasa with detail history taking and physical examination as per case proforma. These patients were assigned in two groups each consisting of 30 patients. One group was given Abhra Garbha Pottali while the patients of second group was given Shringyadi churna. In both the groups sadyovirechana was given.

### Treatment plan -

#### Method of administration in Group A (Trail Group)

Deepana-Pachana: Gudashunthi<sup>6</sup>, 2gms BD, before food with Sukhoshna Jala

Sadyovirechana: Eranda Taila, depending upon Koshta with Sukhoshna Jala

Abhra Garbha Pottali: 125mg, OD, after food with Anupana-Madhu

#### Method of administration in Group B (Control Group)

Deepana-Pachana: Gudashunthi, 2gms BD, before food with Sukhoshna Jala

Sadyovirechana: Eranda Taila, depending upon Koshta with Sukhoshna Jala

Shringyadi Churna: 4gms BD, after food with Guduchyadi Kwatha Anupana

#### Assessment Criteria:

**Subjective Parameters:** Symptoms were graded by adopting standard scoring pattern and symptoms were assessed before, during and after treatment.

- Shwasa kruchrata /Breathlessness
- Kasa / Cough
- Stheevana / Expectoration
- Speech
- Laboured breathing
- Aggravating factors
- \* Sheetambu pana
- \* Sheeta sthana nivasa
- \* Exposure to Raja, Dhooma and Vata
- Relieving factors
- \* Ushna Jala Pana and Ushna Ahara
- \* Sitting posture

#### Objective Parameters:

- Lung function test by Peak expiratory flow rate (PEFR)
- Quantity of Sputum
- Respiration rate
- Chest expansion
- Breath sounds
- Asthma control test



## ORIGINAL RESEARCH ARTICLE

### Investigations:

- Blood- TC, DC, ESR, Hb%, AEC
- Serum creatinine
- LFT
- Chest X-ray PA view (if necessary)

### RESULTS

Out of 60 patients 30 each were allotted into two groups. Group A (Trial) was administered with Abhra Garbha Pottali and Group B (Control) was administered with Shringyadi Churna. Chi-Square test was used for the statistical analysis of the ordinal data. For the numerical data, paired 't' test was used compare the BT & AT results of the individual group and unpaired 't' test was used to compare the results in between the different treatment groups. The parameters of assessment shwasa krichrata, kasa, kapha stheevana, speech, laboured breathing, sheetambu pana, sheeta sthana nivasa, exposure to raja, dhooma, vata, ushna jala pana & ahara, sitting posture, PEFR, quantity of sputum, respiration rate, chest expansion, breath sounds, asthma control test, AEC, ESR & Hb% were taken for the statistical analysis. The changes are detailed in the tables. The subjective & objective criteria's of the disease Tamaka shwasa were recorded before the treatment and after the completion of the treatment and follow up was done once in a every 15 days for a month during follow up.

Effect of treatment on shwasa krichrata, kasa, kapha stheevana, sheetambu pana, sheeta sthana nivasa, exposure to raja, dhooma, vata and sitting

posture for the patients of both the groups has shown highly significant results with the p value of 0.00001 ( $< 0.05$ ). In both the groups patients were not having laboured breathing before and after the treatment. Effect of treatment on speech, ushna jala pana & ahara has shown insignificant results as the 'p' value was  $> 0.05$  in both the groups. Effect of treatment on PEFR has shown highly significant results with the p value of 0.007 ( $< 0.05$ ) in Group A and Group B has shown insignificant results on PEFR. Treatment has shown highly significant results in quantity of sputum for both the groups. Effect of treatment on respiration rate in Group A has shown highly significant results with the p value of 0.003 & in Group B the p value shows 0.354 which is not significant. For the criteria like chest expansion and breath sounds the treatment has shown insignificant results in both the groups with the p value  $> 0.05$ . for the criteria asthma control test in both the groups the treatment has shown highly significant results.

Within the group comparison: there was highly significant reduction in AEC in both the groups after the treatment with the p value of 0.0001. The effect of treatment on ESR has shown insignificant results in Group A and highly significant results in Group B. The effect of therapy on Hb% for both the groups has shown significant results. Between the group analysis of AEC, ESR and Hb% has shown statistically insignificant results.

### Outcome assessment (Table No 6):

- In Group A, 43.3% of the patients achieved good improvement, 50% of the patients achieved



### ORIGINAL RESEARCH ARTICLE

moderate improvement, 3.3% of the patients achieved mild improvement and 3.3% of the patients achieved no improvement.

- In Group B, 16.7% of the patients achieved good improvement, 76.7% of the patients achieved moderate improvement, 6.7% of the patients achieved mild improvement and 1.7% of the patients achieved no improvement.

- After analysing by Pearson Chi-Square test, p value shows 0.087 which is not significant. No difference is seen between the groups. Both the groups are equally effective. Although statistically not significant, comparatively trial group is better than control group.

**Table 1** Statistical analysis of the subjective criteria by Chi-Square test for Group A & Group B

Parameters	Group	Pearson Chi-square value	df	Significance
Shwasa krichrata	Group A	30.679	4	0.00001
	Group B	39.636	3	0.00001
Kasa	Group A	26.648	3	0.00001
	Group B	27.284	3	0.00001
Kapha Stheevana	Group A	17.810	2	0.00001
	Group B	20.156	2	0.00001
Speech	Group A	2.164	2	0.339
	Group B	2.069	1	0.246
Laboured breathing	Group A	-	-	-
	Group B	-	-	-
Sheetambu pana	Group A	39.733	3	0.00001
	Group B	52.640	3	0.00001
Sheetasthana nivasa	Group A	41.057	3	0.00001
	Group B	52.640	3	0.00001
Exposure to raja.dhooma,vata	Group A	47.259	3	0.00001
	Group B	52.667	3	0.00001
Ushna jala pana & ahara	Group A	4.974	3	0.174
	Group B	1.029	3	0.794
Sitting posture	Group A	26.800	2	0.00001
	Group B	25.714	2	0.00001

**Table 2** Statistical analysis of the objective criteria by Chi-Square test for Group A & Group B

Parameters	Group	Pearson Chi-square value	df	Significance
PEFR	Group A	9.821	2	0.007
	Group B	1.109	2	0.574
Quantity of sputum	Group A	17.554	2	0.0001
	Group B	15.133	2	0.001
Respiration rate	Group A	13.771	3	0.003
	Group B	2.076	2	0.354
Chest expansion	Group A	3.186	2	0.203
	Group B	0.111	1	1.000
Breath sounds	Group A	5.315	3	0.150
	Group B	0.351	1	1.000
Asthma control test	Group A	49.091	1	0.0001
	Group B	26.786	1	0.0001



ORIGINAL RESEARCH ARTICLE

**Table 3** Statistical analysis of AEC, ESR & Hb% within the Group A, before and after treatment by paired 't' test

Parameter	Mean score			SD		SE		t value	df	p value
	BT	AT	BT-AT	BT	AT	BT	AT			
Group A										
AEC	386.56	331.16	55.40	119.27	116.18	21.7	21.2	5.422	29	0.0001
ESR	29.73	24.46	5.2	20.04	18.92	3.65	3.45	1.902	29	0.067
Hb%	12.32	12.56	-0.24	1.55	1.53	0.28	0.27	-2.977	29	0.005

**Table 4** Statistical analysis of AEC, ESR & Hb% within the Group B, before and after treatment by paired 't' test

Parameter	Mean score			SD		SE		t value	df	p value
	BT	AT	BT-AT	BT	AT	BT	AT			
Group B										
AEC	346.56	317.60	28.96	83.9	65.5	15.32	11.96	4.386	29	0.0001
ESR	22.3	19.13	3.16	5.86	7.48	1.070	1.36	3.571	29	0.001
Hb%	12.42	12.56	-0.133	1.43	1.33	0.26	0.24	-2.672	29	0.012

**Table 5** Between the Group A and Group B effect of therapy on AEC, ESR & Hb% by unpaired 't' test

Parameter	Group	N	Mean	SD	SE	df	t value	P value
AEC	Group A	30	331.16	116.18	21.21	58	0.557	0.580
	Group B	30	317.6	65.54	11.96			
ESR	Group A	30	24.46	18.92	3.45	58	1.135	0.157
	Group B	30	19.13	7.482	1.36			
Hb%	Group A	30	12.563	1.53	0.279	58	0.009	0.993
	Group B	30	12.56	1.33	0.244			

**Outcome assessment**

**Table 6** The outcome assessment of treatment for Group A and Group B

Groups	Good improvement	Moderate improvement	Mild improvement	No improvement
	(>75 to <100%)	(>50 to 75%)	(>25% to 50%)	(0 to 25%)
Group A	13	15	1	1
(In %)	43.3%	50%	3.3%	3.3%
Group B	5	23	2	0
(In %)	16.7%	76.7%	6.7%	0.0%
Total	18	38	3	1
(In %)	30%	63.3%	5%	1.7%

**Table 7** Chi-Square test analysis for Group A & Group B for outcome assessment

Outcome assessment	Value	df	Significance (2 sided)
<b>Pearson Chi-Square</b>	6.573	3	0.087

**DISCUSSION**

Tamaka shwasa, a pranavaha srotogata vyadhi effecting the movement of pranavata, is produced due to the involvement of pitta sthana. The disease has an episodic nature which aggravates by the specific nidana in each individual. The

pathogenesis of Shwasa is explained to occur due to the obstruction of the srotas by kapha leading to the vata vimarga gamana. Shwasa, ghurghuraka, kasa and peenasa are taken as the cardinal features as observed in the study. Tamaka shwasa is considered to be yapya in general and based upon the condition sadhya or anupakrama. Treatment is planned based on the stage of vega or avega of the disease. As the disease is considered to be ashu, atyayika chikitsa during vega was necessary.

Observations of the patients in this study showed September 10<sup>th</sup> 2021 Volume 15, Issue 2 **Page 191**



## ORIGINAL RESEARCH ARTICLE

the predominance of females with age groups between 41-50 years, Hindu religion, married, housewives, middle class, graduates, residing in sadharana desha.

Mode of action of formulations: In the management of Tamaka shwasa acharyas say the main aim is to remove the obstruction made by kapha and normalized the function of vayu. The formulation Abhra Garbha Pottali mainly acts as rasayana. Most of the drugs used in combination of this formulation have the madhura, tikta, kashaya rasa, ushna veerya and katu vipaka. Abhraka is having the properties of balya and rasayana. Parada is tridoshaghna, balya and rasayana. Gandhaka is kaphavata shamaka and rasayana. Swarna is tridoshahara and rasayani. All the drugs used were having mainly kaphavata shamaka, deepana, pachana, srotoshuddhikara and rasayana properties which helped in samprapti vighatana of the disease by increasing the agni and removing the ama which helped to open srotas mainly pranavaha, annavaha and udakavaha. Rasayana property of the drug helped to increase vyadhi kshamatva and provide bala to the srotas hence helped in uttarottara dhatu vriddhi leads to ojevridhi. Invitro evaluation of Abhraka bhasma has shown immunomodulatory actions. Thus, it helps in improving the quality of life of the patient.

### **Anupana dravya - Madhu**

Madhu is tridoshahara in nature. Honey is known as yogavahi since it has a quality of penetrating the deepest tissue. When honey is used with other preparations it enhances the medicinal qualities of those preparations and helps them to reach the

deeper tissues. Experiments and studies on honey have shown that honey is having antiseptic, antimicrobial, antipyretic, anti-inflammatory, antiallergic, antitoxic, antioxidant properties.

### **Shringyadi churna**

Most of the drugs used in this formulation having the properties of kapha-vata shamaka, ushna veerya, vata anulomana and deepana and pachana in nature. These characteristics made these drugs to act on prana, udaka and annavaha srotas so that the samprapti vighatana occurs in a systemic manner starting from the amashaya where the deepana, pachana and agni guna of these drugs help in the pachana of ama in the body. Also, kaphaghna guna will helps in removing blocked channels of the body i.e. srotorodha will be cured and vata anulomana will be achieved so that the kupitavata will attain its samyak state and there will be relief in the symptoms of Tamaka shwasa.

### **Anupana dravya - Guduchyadi kwatha**

Most of the contents of guduchyadi kwatha are having katu, tikta rasa, ushna veerya, katu vipaka and kapha vataghna property which seems to be quite effective in antagonizing the shwasa roga, which is kapha vata pradhana disease. Quick absorption of the kwatha from amashaya due to its vikasi and vyavaya guna also contribute to the quick implementation of its action. The elimination of kapha will release the obstruction and free flow of pranavayu will be relieved in the form of improvement, ultimately bronchodilatation will bring free flow of pranavayu.





**ORIGINAL RESEARCH ARTICLE**

**CONCLUSION**

The formulations Abhra Garbha Pottali and Shringyadi churna, both have shown improvement in almost all the parameters. No difference is seen between the groups. Both the groups are equally effective. Although statistically not significant, comparatively trial group (Group A) is better than control group (Group B). No severe complications were observed during the study.



ORIGINAL RESEARCH ARTICLE

REFERENCES

1. Agnivesha, Charaka Samhita Revised by Charaka and Dridhabala with Ayurveda Deepika Commentary by Chakrapanidatta, edited by Vaidya Yadavaji Trikamaji Acharya, Published by Chaukambha Orientalia, Varanasi. Reprint edition: 2015 Chikitsasthana 17th Chapter, pg.no. 535
2. [www.globalasthmareport.org/](http://www.globalasthmareport.org/) Global% 20 accessed date 7/3/2019, 9:42 pm
3. Harrison's principles of internal medicine, disorders of the respiratory system, minion pro by cenveo publisher services, 18<sup>th</sup> edition, editor: James F.shanahan & Kim.J.davis, Volume II, pg.no.
4. Vaidya Pandit Hari Prapanna Sharma Rasayoga sagara, Vol II Pottali Rahasya, Chaukambha Krishnadas academy, edition: 2010, pg.no 582
5. Kaviraj Govinda Das Sen Bhaishajya Ratnavali edited by Prof.Siddinadan Mishra, Published by Chaukambha Surabharati Prakashana, Varanasi, Reprint edition:2007, Chapter 16, pg.no 459
6. Chakrapani, Chakradatta, commentary by Dr. Indradev Tripathi, edited by Prof. Ramanath Dwivedy, Chaukambha Sanskrit Samsthan, Varanasi, edition 3, reprint:1997, pg.no 70