



Research Article

A COMPARATIVE CLINICAL STUDY TO EVALUATE THE THERAPEUTIC EFFECT OF VASA ARKA AND TULASI ARKA NEBULIZATION IN IMMEDIATE MANAGEMENT OF TAMAKA SHWASA

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ABSTRACT

Tamaka Shwasa, comparable to bronchial asthma, is a chronic respiratory disorder of the *Pranavaha Srotas* marked by dyspnea, wheezing, cough, and chest tightness. Its prevalence is increasing globally due to environmental pollution, lifestyle changes, dietary factors, and psychological stress. Nebulization enables rapid drug delivery directly to the lungs with minimal systemic effects. Ayurvedic drugs possessing bronchodilator and anti-inflammatory properties may be beneficial in the immediate management of this condition. **Objectives:** To evaluate and compare the therapeutic efficacy of *Vasa Arka* and *Tulasi Arka* nebulization in the immediate management of *Tamaka Shwasa* (bronchial asthma). **Methods:** A randomized controlled clinical study was conducted on 60 clinically diagnosed patients of *Tamaka Shwasa*. Patients were randomly divided into two groups: Group A received nebulization with *Vasa Arka* and Group B received nebulization with *Tulasi Arka*. Assessment was done based on improvement in subjective symptoms and objective parameters before and after treatment. **Results:** Both *Vasa Arka* and *Tulasi Arka* nebulization showed significant improvement in the clinical features of *Tamaka Shwasa*. *Vasa Arka* demonstrated comparatively superior efficacy in reducing respiratory distress and associated symptoms. **Conclusion:** Nebulization with *Vasa Arka* and *Tulasi Arka* is effective in the immediate management of *Tamaka Shwasa*. *Vasa Arka* was found to be more potent, suggesting its potential role as an effective Ayurvedic nebulization therapy in bronchial asthma.

INTRODUCTION

Tamaka Shwasa is a *Pranavaha Srotoroga* described in Ayurveda, characterized by *Swasakruchrata, Ghurghuraka, Kasa*, and chest discomfort, with exacerbation during night, cloudy weather, cold exposure, and *Kapha*-provoking diet and lifestyle.^[1] The condition closely correlates with bronchial asthma in modern medicine, a chronic inflammatory airway disease marked by recurrent wheeze, breathlessness, cough, and variable airflow limitation.^[2]

The global prevalence of asthma has increased significantly, particularly in developing countries like India, due to environmental pollution, lifestyle changes, dietary habits, and psychological stress.^[3,4]

According to Ayurveda, *Tamaka Shwasa* occurs due to vitiation of *Vata* and *Kapha Doshas*, resulting in obstruction of *Pranavaha Srotas*.^[5] Management depends on *Dosha* predominance and patient strength, with *Shamana* therapy preferred in *Vatadhika, Durbala*, and elderly patients. *Vasa* and *Tulasi* possess *Kapha-Vata* alleviating, bronchodilatory, and anti-inflammatory properties, and are indicated in *Shwasa. Arka Kalpana* enhances the delivery of volatile active principles, while nebulization allows rapid pulmonary action.^[6,7] Hence, the present study was undertaken to evaluate and compare the efficacy of *Vasa Arka* and *Tulasi Arka* nebulization in the immediate management of *Tamaka Shwasa* (bronchial asthma).

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OBJECTIVES

1. To evaluate the effect of *Vasa Arka* in the treatment of *Tamaka Shwasa*.
2. To evaluate the effect of *Tulasi Arka* in the treatment of *Tamaka Shwasa*.
3. To compare the effect of *Vasa Arka* and *Tulasi Arka* in the treatment of *Tamaka Shwasa*.

MATERIAL AND METHODS

The necessary materials for the procedures include medications, instruments, and subjects diagnosed with *Tamaka Shwasa*.

Drugs: *Vasa Arka* and *Tulasi Arka*

Preparation of *Vasa Arka*: 216.6gm of fresh *Vasa Patra* was taken and washed with water followed by crushing it into small pieces. *Vasa Patra* was soaked with 5 parts of water (1.2 lit) for overnight. Soaked *Vasa Patra* was strained by using cloth and *Vasa Swarasa* was collected and subjected for distillation. With the help of distillation apparatus *Vasa Arka* was collected and stored in air tight container.

Preparation of *Tulasi Arka*: 216.6 gm of *Panchanga* of *Tulasi* was taken and soaked with 5 parts of water (1.2 lit) for overnight. Soaked *Tulasi* drug was strained by using cloth and *Tulasi Swarasa* was collected and

subjected for distillation. With the help of distillation apparatus *Tulasi Arka* was collected and stored in air tight container.

Clinical study

60 subjects were selected for the study from OPD and IPD of Department of Kaya Chikitsa, Karnataka Ayurveda Medical College, Mangalore, were selected for trial. They were divided into 2 groups by computer generated random number table method. The criteria for the selection of patient were as follows:

Inclusion Criteria

1. Age 16 – 70 years of either gender.
2. Patient having history more than 6 months of acute exacerbation bronchial asthma.

Exclusion Criteria

1. Severe exacerbation bronchial asthma.
2. *Asadhya lakshanas* of *Tamaka Shwasa*.
3. *Tamak shwasa* associated with emphysema, cor pulmonale.
4. Having peak flowmetry rate <50%.
5. Pregnant and lactating women.

Study design

Study Parameter	Description
Study type	Interventional
Estimated enrolment	60 participants
Allocation	Randomized
Endpoint classification	Comparative study
Intervention model	Double group assignment
Masking	Open-label study
Study duration	1 day

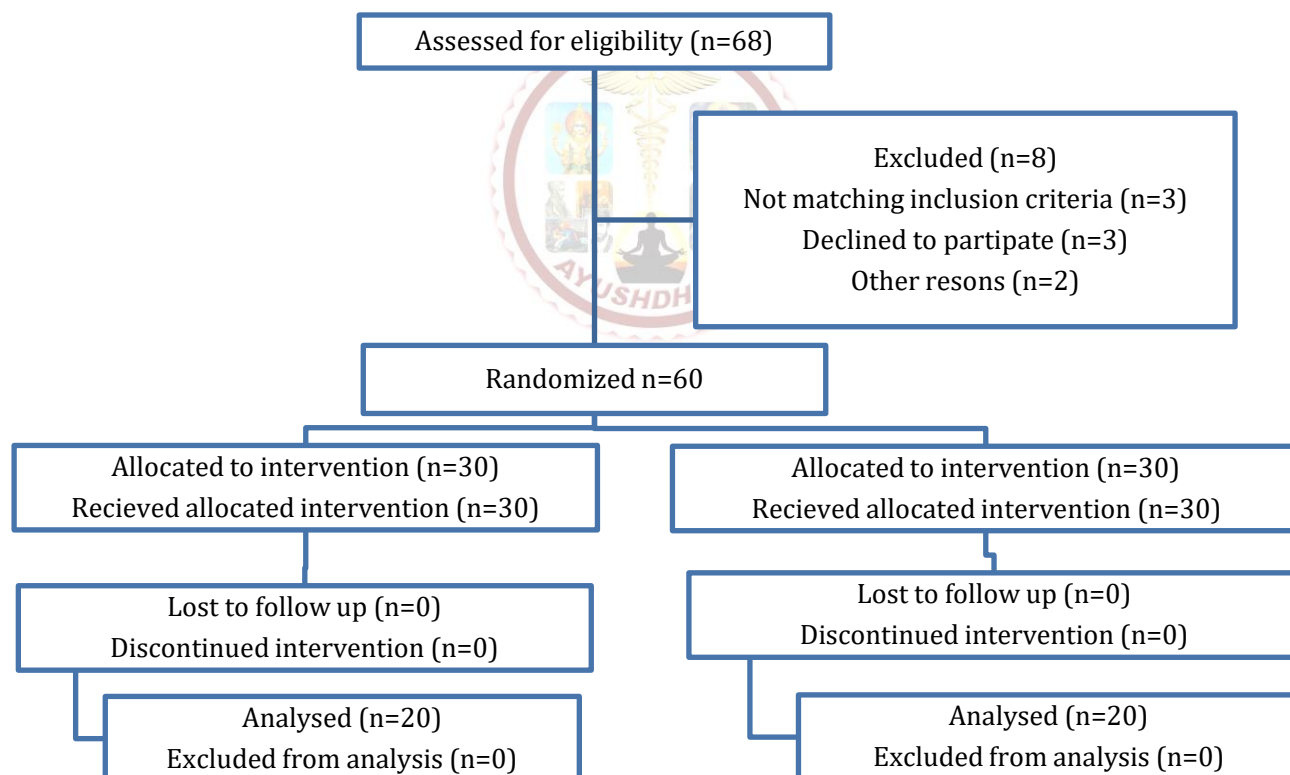
Assessment criteria

Assessment is based on the subjective and objective parameters, which are formulated for *Tamaka Shwasa* assessed before and after treatment.

Item	Assessment
Frequency of <i>Shwasa Vega</i>	0) No attack 1) 2-3 times in 3 weeks 2) 2-3 times in 2 weeks 3) 2-3 times in 1 week
Breathlessness	0) No breathlessness. 1) Mild – While walking, can lie down 2) Moderate – While at rest, prefers sitting 3) Severe – While at rest, sits upright
Presence of <i>Pranavaha Srotodusti Lakshana</i> (dyspnoea / freq./exp./prolonged exp./ with loud sound painful/difficulty in speaking/ sweating)	0) Absent 1) Any 1 2) Any 2 or 3 3) More than 4

<i>Asino Labhate Saukhyam</i> (relieved with sitting position)	0) No effect 1) Temporarily feels better 2) Sitting posture gives relief, patient can sleep 3) Spontaneous sitting posture/can't sleep
<i>Kasa</i> (coughing)	0) Absent 1) Cough with expectoration with slight difficulty 2) Cough with pain difficulty in expectoration, patient can tolerable 3) Freq. coughing with more difficulty in expectoration, patient can't tolerate
<i>Kapha Nisthwana</i> (Sputum)	0) Absent 1) Only in morning 2) 4-5 times / day 3) Continuously
Wheeze	0) No wheezing 1) Few wheezing 2) Few scattered unilateral 3) Few scattered bilateral

CONSORT flow diagram for the study



Observations

Clinically diagnosed 60 patients of *Tamaka Shwasa* were randomly selected and assigned in two groups of 20 patients each for study. First Group-A as study group was treated by *Vasa Arka* nebulization and second group-B as control group was treated with *Tulasi Arka* nebulization. The age, sex, socio-economic status, symptoms etc. were observed in the patients of this study and noted.

Table 1: Frequency of severity of *Shwasakruchrata* before treatment

<i>Shwasakruchrata</i>	Frequency	Percent
Present	60	100
Absent	00	00
Total	60	100

All the subjects were having dyspnoea before treatment.

Table 2: Frequency of presence of *Gurghuraka* before treatment

<i>Gurghuraka</i>	Frequency	Percent
Present	57	95.0
Absent	03	5.0
Total	60	100

Among 60 subjects, 57 of them were having *Gurghuraka* before treatment.

Table 3: Frequency of presence of *Kasa* before treatment

<i>Kasa</i>	Frequency	Percent
Present	02	96.7
Absent	58	3.3
Total	60	100

Among 60 subjects, 58 of them were having *Kasa* before treatment.

Table 4: Frequency of presence of *Urah Parshwa Peeda* before treatment

<i>Urah Parshwa Peeda</i>	Frequency	Percent
Present	49	81.7
Absent	11	18.3
Total	60	100

Among 60 subjects, 49 of them were having *Urah Parshwa Peeda* before treatment.

Table 5: Frequency of presence of *Na Chapi Nidram Labhate* before treatment

<i>Na Chapi Nidram Labhate</i>	Frequency	Percent
Present	44	73.3
Absent	16	26.7
Total	60	100

Among 60 subjects, 44 of them were having *Na Chapi Nidram Labhate* before treatment.

Table 6: Frequency of presence of *Peenasa* before treatment

<i>Peenasa</i>	Frequency	Percent
Present	32	53.3
Absent	28	46.7
Total	60	100

Among 60 subjects, 32 of them were having *Peenasa* before treatment.

Table 7: Frequency of presence of *Ativa Tivra Vega Shwasa* before treatment

<i>Ativa Tivra Vega Shwasa</i>	Frequency	Percent
Present	24	40.0
Absent	36	60.0
Total	60	100

Among 60 subjects, 24 of them were having *Ativa Tivra Vega Shwasa* before treatment.

RESULTS

A total of 60 clinically diagnosed patients of *Tamaka Shwasa* were randomly allocated into two groups of 30 each. Group A received *Vasa Arka* nebulization and Group B received *Tulasi Arka* nebulization. Both groups were comparable at baseline.

Both groups showed statistically significant improvement in major symptoms after treatment. The study group demonstrated a greater and faster reduction in the frequency of *Shwasa Vega* and *Kasa* when compared to the control group.

Table 8: Results on parameters within the group and between the group

Parameter	Group	Baseline (Mean ± SD)	Final Follow-up (Mean ± SD)	Within-group p-value	Inter-group p-value
Wheeze	Group A (<i>Vasa Arka</i>)	0.96 ± 0.71	2.36 ± 0.49	<0.001	0.792
	Group B (<i>Tulasi Arka</i>)	1.40 ± 0.81	2.40 ± 0.49	<0.001	
<i>Shwasa Vega</i>	Group A (<i>Vasa Arka</i>)	2.70 ± 0.46	1.40 ± 0.67	<0.001	<0.001
	Group B (<i>Tulasi Arka</i>)	2.87 ± 0.35	2.07 ± 0.45	<0.001	
<i>Kasa</i>	Group A (<i>Vasa Arka</i>)	2.36 ± 0.80	1.13 ± 0.77	<0.001	0.001
	Group B (<i>Tulasi Arka</i>)	2.40 ± 0.78	1.42 ± 0.72	<0.001	
<i>Asino Labhate Soukhyam</i>	Group A (<i>Vasa Arka</i>)	1.70 ± 0.91	0.36 ± 0.55	<0.001	0.010
	Group B (<i>Tulasi Arka</i>)	2.07 ± 0.69	0.93 ± 0.94	<0.001	

Between-group analysis revealed that *Vasa Arka* nebulization was statistically superior to *Tulasi Arka* in reducing the frequency of *Shwasa Vega*, *Kasa*, and improving comfort while sitting. No statistically significant difference was observed between the groups in wheeze and *Kapha Nishtiwana* at final follow-up.

Table 9: Results on PEFR Assessment

PEFR (L/min)	Before treatment		After treatment	
	Frequency	Percentage	Frequency	Percentage
310–350	40	66.7	21	35.0
360–390	20	33.3	39	65.0
Total	60	100	60	100

The results of the present study show a clear improvement in peak expiratory flow rate (PEFR) following treatment. Prior to treatment, the majority of participants (66.7%) exhibited PEFR values in the lower range of 310–350 L/min, while only 33.3% were in the higher range of 360–390 L/min. After treatment, this pattern reversed, with 65.0% of participants achieving higher PEFR values and only 35.0% remaining in the lower range. This shift toward higher PEFR values indicates improved airway function following the intervention. PEFR is an important indicator of expiratory airflow and airway patency, and improvements in this measure suggest a reduction in airflow limitation.

DISCUSSION

Tamaka Shwasa is a chronic disorder of the *Pranavaha Srotas* caused by *Avarana* of *Prana Vayu* by vitiated *Kapha*, resulting in dyspnoea, wheeze, cough, and discomfort in supine posture. Clinically, it closely resembles bronchial asthma, where airway inflammation, bronchoconstriction, and mucus hypersecretion lead to recurrent respiratory distress.

In the present study, nebulization with *Vasa Arka* and *Tulasi Arka* produced significant improvement in major clinical features such as *Shwasa Vega*, *Kasa*, *Gurghuraka*, and *Asino Labhate Soukhyam*. The early increase in *Kapha Nishtiwana* observed in both groups suggests effective mobilization and expulsion of accumulated *Kapha* from the *Pranavaha Srotas*, which is therapeutically desirable in *Tamaka Shwasa*.

Vasa Arka demonstrated comparatively faster and sustained relief in *Shwasa Vega* and *Kasa*, which may be attributed to the broncho-dilatory and expectorant actions of alkaloids like vasicine and vasicinone.^[8,9] *Tulasi Arka* showed beneficial effects through its anti-inflammatory, antioxidant, and immunomodulatory properties, helping to reduce airway inflammation and hypersensitivity.^[10] Improvement in PEFR values in both groups further supports the bronchodilator effect of nebulized *Arka* preparations.

CONCLUSION

Nebulization with *Vasa Arka* and *Tulasi Arka* proved effective in the immediate management of *Tamaka Shwasa*, producing significant relief in *Shwasa Vega*, *Kasa*, *Gurghuraka*, and improvement in PEFR. *Vasa Arka* showed comparatively faster and sustained symptomatic relief, while *Tulasi Arka* demonstrated beneficial anti-inflammatory and supportive effects. The initial increase in *Kapha Nishtiwana* indicates effective expulsion of obstructing *Kapha* from the *Pranavaha Srotas*. Recurrence of symptoms during follow-up reflects the *Yapya* nature of *Tamaka Shwasa*. Overall, Arka nebulization is a safe, non-invasive, and useful modality for acute symptom control.

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