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A Comparative Randomized Clinical Study to Evaluate the Effect of *Sadyo Vamana* and *Simhyadi Kwatha* in the Management of *Tamaka Shwasa*/ Bronchial Asthma

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ABSTRACT

A randomized clinical study planned to compare the therapeutic effect of sadyovamana and Simhyadi in the subjects who are diagnosed as Tamaka shwasa. **Objective:** to compare the therapeutic efficacy of Sadyovamana and Simhyadi Qwatha in patients suffering from Tamaka Shwasa. **Study design:** An open randomised clinical trial with pre-test and post-test design. Study selection: 30 patient suffering from Tamaka Shwasa/Bronchial Asthma were selected for the study from SDM Ayurveda hospital, Udupi. **Intervention:** Group A: Patients were subjected to Sadyo vamana following 15min of nadi sweda followed by 3/5 days of samsarjana karma. Group B: Simhyadi Qwatha 50ml bid was prescribed for 7 days. Patients from both the groups were assessed for 30 days with weekly interval. **Outcome measures:** The response of the intervention was assessed in both the groups before and after the treatment with a scoring pattern and the results were analysed bystatistical tests. **Results:** The observations noted after the treatment were statistically significant in subjective and objective parameters in both the groups. Sadyovamana showed better results on overall improvement with 73.33% of Good remission, 18.75% of moderate remission, and 6.66% of average remission. Whereas, Simhyadi Qwatha showed 33.33% of good remission, 40.00% of moderate remission, and 40.00% of average remission. **Conclusion:** Both the interventions were found to be efficacious in relieving the cardinal symptoms of Tamaka Shwasa, where Sadyovamana group showed comparatively better improvement.

KEYWORDS

Tamaka Shwasa, Bronchial Asthma, Simhyadi Qwatha, Sadyovamana

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INTRODUCTION

Breathing is the task of *Pranavaha Srotas* which is an important factor for the existence of life of human beings[1]. This sole sign of life is affected in the disease Tamaka Shvasa.Tamaka Shvasa is *Vatakaphaja* disease [2] originating from *Pittasthana* and manifested through *Pranavaha Srotas*[3]. *Vata* gets obstructed by *Kapha* and travels in opposite direction and in turn causes Tamaka Shwasa[4]. It is well known for its episodic and chronic course which comes under the life threatening disease which afflicts the human race.

Bronchial asthma is a syndrome of variable airflow obstruction. It is characterized pathologically by bronchial inflammation with prominent eosinophil infiltration, physiologically by bronchial hyperactivity, and clinically by variable cough, chest tightness and wheeze[5]

During 21st century, prevalence rate of respiratory disorders like Bronchial Asthma is increasing due to change in the life style in regards to the dietary habits and exercise[6]. On the other hand, at the same time due to steep advancement in the area of industrialization, overcrowding, poor hygiene and undue exposure to fumes, dust etc., has left the man being the victim of plethora of such diseases.

Asthma is one of the most common chronic diseases globally and currently affects approximately 300 million people worldwide. The presence of Asthma has risen in affluent countries over the last 30 years but now appears to have stabilized with approximately 10 – 12% of adults and 15% of children affected by the disease. Asthma affects 5 – 10% of population or an estimated 23.4 million persons; including 7 million children[7]

The main causative factors responsible for Tamaka shwasa are Dhooma (smoke), Raja (dust), Ativyayama (excessive exercise/work), Sheeta sthana nivasa (residing in cold areas), Guru bhojana (heavy diet) and Sheeta bhojana (cold food/drinks). These factors lead to the vitiation of Vata and Kapha impeding the function of Pranavaha srotas[8]. This leads to the symptoms like difficulty in breathing, hoarseness of the voice, cough with little sputum and pain in the flanks[9].

In tamaka shwasa considering the pradhanata of dosha different treatment modalities are such as vamana[10], dhumapana[11], swedana[12], virechana[13], nasya and shamana[14], medications. Since vamana is the ideal treatment for kapha dosha which is intensified, so this study was carried out to evaluate the immediate effect of sadyo vamana which is having the properties like kaphahara and srotho

shodhana and Simhyadi Qwatha having properties like Kaphavilyana, Kapha nissarana and kasaghnta helps patients to overcome the symptoms

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MATERIALS AND METHODS

Objectives of the study

- To evaluate the effect of Sadyovamana in the management of Tamaka shwasa
- To evaluate the effect of Simhyadi Qwatha in the management of Tamaka shwasa
- Comparing the therapeutic effect of Sadyovamana and Simhyadi Qwatha in the management of Tamaka Shwasa

Design: Study type- A randomized comparative clinical study with pre-test and post-test design

Sample size: Thirty patients of Tamaka Shwasa/ Bronchial Asthma having symptoms of Tamaka Shwasa (Shwasa, Kasa, Gurguratha) and PEFR more than 50%, mild intermittent, mild persistent, moderate persistent asthma subjects fitting into GINA guidelines PEFR 50-80% (moderate exacerbation) aged between 16 - 70 were randomly categorized into two groups.

Setting: Shri Dharmasthala Manjunatheshwara Ayurveda Hospital, Kuthpady, Udupi;

Diagnostic criteria: Cardinal symptoms of Tamaka shwasa such as Shwasa krichratha, kasa, kaphashteevana

Inclusion criteria: mild intermittent, mild persistent, moderate persistent asthma subjects fitting into GINA guidelines**,** PEFR 50-80% (moderate exacerbation)**,** age 16-70 years**,** minimum duration of 6 months**,** oxygen saturation more than 90% in pulse oximeter**,** patients yogya for vamana therapy

Exclusion criteria: PEFR less than 50%(severe exacerbation)**,** severe variety of asthma according to Global initiative for Asthma (GINA) guidelines**,** The patient with the history of C.O.P.D, T.B, Emphysema, and Chronic airway limitation.**,** known Ischemic heart disease, renal failure, liver failure.**,** endocrine disorders like cushing syndrome, acromegaly, and diabetes mellitus, other complicated respiratory diseases having organic lesion such as tumour or any anatomical defect in airway, H/O Immunosuppressant disorders like AIDS, Asadhya lakshana of Tamaka shwasa.

Interventions: In (Group A) - Selected patients were orally treated with Simhyadi Qwatha in a dose of 50ml BD before food for 7 days and in (Group B) – Selected

patients were treated with Sadyovamana with the follow up for 28 days and after treatment with weekly interval.

Duration of the study: 33/35 days

Statistical study: Statistical analysis was done based on Sigma Stat Statistics software version 3.5. Wilcoxon signed rank test was used to analyze ordinal data. Paired 't' test is used when data is numerical. In between the group analysis, Mann Whitney 'Ú' test is used for ordinal data, when data is numerical unpaired t test is used. These tests are selected as this is a comparative randomized clinical study with pretest and posttest design.

Subjective parameters: Dyspnoea, Wheeze, Cough, Night wheeze, Severity, Running nose, Tightness of chest, Asthma control questionnaire (ACQ).

Objective parameters: Breath sounds, Laboured breathing, P.E.F.R, Chest expansion, Sputum, ESR, AEC, Respiratory rate.

Assessment criteria: Assessment will be done on 0^{th}, 7^{th}, 21^{st}, 35^{th} day on the basis of subjective and objective parameters.

Observation: On observation it was found that maximum no of patients were of 50 to 59 years of age, males and females were equally distributed, belonged to Hindu religion, most of them were married, who belongs to middle class, most of them were housewives and were residing at Anupa desha, almost all had Madhyama Sara, Samhanana, Satwa and Satmya. Maximum patients were having samagni and Madhyama Koshta. All the 30 patients presented with symptoms of Tamaka Shwasa (Shwasa, Kasa, Gurgurata, Kapha shteevana).

RESULTS

Vamana group showed improvement of dyspnea by 84.20%, wheeze by 82.03%, cough by 78.04%, night wheeze by 87.03%, severity by 40.53%, running nose by 90%, chest tightness by 95.99%, ACQ by 83.54%, breath sounds by 63.87%, Labored breathing by 78.92%, PEFR by 18.08%, chest expansion by 13.18%, quantity of sputum by 14.28%, respiratory rate by 18.83%, Hemoglobin by 1.26%, Total WBC count by 25.11%, ESR by 30.89%, AEC by 12.67%. Qwatha group shown improvement in dyspnea by 54.44%, wheeze by 65.77%, cough by 47.50%, night wheeze by 83.89%, severity by 23.07%, running nose by 92.02%, chest tightness by 85.71%, ACQ by 39.27%, breath sounds by 64.71%, labored breathing by 74.96%, PEFR by 10.09%, chest expansion by 21.09%, quantity of sputum by 13.21%, respiratory rate by 16.95%, hemoglobin by 1.57%, Total

WBC count by 13.62%, ESR by 30.89%, AEC by 9.18%.

DISCUSSION

In the present study, a total of 30 patients suffering from Tamaka Shwasa/Bronchial Asthma were registered for the study from OPD & IPD of S.D.M Ayurveda hospital after taking signed consent. Patients were randomly divided into 2 groups of 15 each. Diagnosed case of Bronchial asthma/ Tamaka Shwasa consisting of intermittent episodes with a minimum duration of 6 months were included. Patients with mild intermittent, mild persistent, moderate persistent asthma, subjects fitting into GINA guidelines or freshly diagnosed cases or who were on medications were registered for the study. The patients who were on medications for bronchial asthma, were subjected to a window period of 7 days before starting the study. Pre and posttest design was planned and the patients were subjected to sadyovamana on the next day of admission and were discharged after day 1 assessment and 3/5 days of samsarjana karma was advised. In Qwatha group 50ml of Simhyadi Qwatha was given before food twice daily for 7 days. Follow up of each patient was done for 30 days with weekly intervals. Subjects with complications acute or chronic were excluded since they may interfere with the treatment effect.

Mode of Action: *Vamana karma* is administered in vitiated *Kapha dosha* alone or with association or combination of other *dosha* where *Kapha* is predominant. *Tamaka shwasa* is *Vata-Kaphaja* disorder caused due to *pratilomagati* of *vayu* by the obstructed *kapha* in *pranavaha* srothas. *Sadyovamana* is administered during *Vega kala* and *utklishta doshavastha* of *Tamaka Shwasa. Madana phala* which is the best Vamaka dravya with minimal complications is used as vamaka dravya. For avara shodhana Madana phala pippali churna is taken 4gm, Yastimadhu and Vacha 2gm each which acts as Vamanopaga dravya, saindhava 2gm and 30gm of Honey.

Vamaka and Vamanopaga dravya possess properties like of ushna, teekshna, sukshma, vyavayi, and vikasi with their swaveerya, moves to hridaya, through various dhamani (micro and macro channels) acts over the vitiated complexes in the body. Agneya property of the drugs liquefies the dosha while tikshna property breaks down the dosha. Liquefied dosha glides through various snigdha or sookshma srotas towards the koshta (Amashaya), which are then stimulated by udana vayu. Due to the prabhava of the drug with agni and vayu moves upward

direction towards oral cavity there by expelling out the vitiated dosha. When dravya reaches the gastrium, it causes inflammation of the gastric mucosa, vagal and sympathetic nerve that carries signals to the vomiting center and induces vomiting. When vamanopaga drugs like yastimadhu phanata and Lavana jala are administered, as it reaches pyloric end they induces emesis by reflex stimulation of the vomiting center of brain. Vomiting may be initiated by stimuli acting on a variety of anatomical structures within the central nervous system and peripheral nervous system. The area postrema on the dorsal surface of the medulla at the caudal aspect of the fourth ventricle is believed to represent the chemoreceptor trigger zone (CRTZ) that is responsible to a broad range of neuro-chemical activators, other central nervous system sites mediate initiation of emetic response to selected stimuli. Finally, emesis results from activation of the central nervous system. Various activities were carried out to evaluate the effect of vamana in shwasa, viz., the result of a study regarding the vamana karma suggest that vamana reduces the hypersensitivity, which reflect restoration of the airway responsiveness.

Simhyadi Qwatha is mentioned in the context of *Shwasa* which has nine drugs, amongst which eight forms the *kashaya*, and two are *prakshepaka dravya* (*Pippali* in *qwatha churna* and also as *prakshepaka dravya*). Individual drugs are effective in the disorders of respiratory system. Kantakari, Guduchi and Bringaraja and pippali (Anushna sheeta veerya) possess teekshna guna and ushna veerya whereas Amalaki, Vasa, Amalaki and musta with its ruksha and laghu guna helps in liquifying the kapha dosha which is obstructing the srotas, there by doing pranavilomata and clearing the airways. Pippali, Shunti, Vasa, Kantakari drugs possess kashaya, katu and tikta rasa, and laghu, ruksha helps in the disease by Kapha harana, Chedana, Shwasa and Kasahara effect. Musta and Guduchi drugs have tikta katu kashaya rasa and guru snigdha guna acts as balya, rasayana. Thus provoiding the brimhana effect. Kantakari, Vasa, Pippali, Bringaraja, Maricha, Amalaki have Kapha-Vata shamaka property which have major role in samprapthi there by helping in samprapthi vighatana chikitsa. Kantakari Shunti, Pippali has Shwasahara, Kasahara, Peenasa hara, kantya. Amalaki, Bringaraja acts as Rasayana, Balya and Kasa-Shwasahara. Vasa has swarya, Shwasa-Kasahara properties. Guduchi acts as Jwaraghna. Overall all the nine drugs together possess kaphavilayana, kapha nissarana, kasaghnata, shwasahara, Swarya

and shoolahara propeties. Kantakari (Stigmasterol, Carpesterol and diosgenin) has Anti-inflammatory, Antibacterial, Expectorant, Anti histamine and Anti allergic property, Amalaki (Emblicanin A & B, Chebulinic acid and Ascorbic acid) has Immunomodulatory, Antioxident, Anti-inflammatory property, Vasa(Vascine, Vasicine) has Bronchodialatory activity and Antitussive property, Guduchi (Tinpsporide, cordifolide) has Antipyretic activity, Shunti (Gingirol, Gingiberol) has Anti-inflammatory, Antioxident. Pippali (Piperin, Pipernonaline) acts as Appetizer, Antitussive property. Bringaraja (Ecliptal, Stimasterol) have shown Anti-inflammatory activity. All the drugs by their chemical constituents and pharmacological activities relieves inflammation, releases bronchospasm and bronchoconstriction there by reducing the symptoms

Conclusion: Sadyo Vamana and Simhyadi Qwatha, both have shown improvement in almost all the parameters, but comparatively Sadyovamana have shown better results. A maximum 73.33% and minimum 6.66% of patients have shown good and average remission in vamana group respectively. Whereas in Qwatha group moderate and average remission has been seen in equal no of patients i.e 40% each, and 33.33% have shown good improvement.

Table 1 Showing the Statistical Results

Parameters	Group	Data	Within the group					Between the group		
			Mean	±SD	±SE	% relief	P value	mean	t value	P value
Dyspnoea	SV	BT	2.533	0.64	0.165	84.2	<0.001	2.133	324	<0.001
		AT	0.400	0.63	0.163					
	SQ	BT	2.200	0.67	0.17	54.44	<0.001	1.2		
		AT	1	0.75	0.19					
Wheeze	SV	BT	2.6	0.50	0.13	82.03	<0.001	2.133	272	=0.087
		AT	0.46	0.64	0.165					
	SQ	BT	2.533	0.52	0.133	65.77	<0.001	1.533		
		AT	0.867	0.64	0.165					
Cough	SV	BT	2.73	0.45	0.118	78.04	<0.001	2.133	299	=0.003
		AT	0.60	0.50	0.131					
	SQ	BT	2.66	0.49	0.126	47.5	<0.001	**1.267**		
		AT	1.40	0.63	0.163					
Night wheeze	SV	BT	2.133	0.64	0.165	87.5	<0.001	1.867	242	=0.663
		AT	0.267	0.59	0.153					
	SQ	BT	2.067	0.70	0.182	**83.89**	<0.001	**1.733**		
		AT	0.333	0.49	0.13					
Severity	SV	BT	2.467	0.64	0.165	40.53	<0.003	1	265.5	=0.134
		AT	1.467	0.83	0.215					
	SQ	BT	2.6	0.63	0.163	**23.07**	<0.004	**0.6**		
		AT	2	0.85	0.218					
		BT	1.33	0.92	0.236	90	<0.00	1		

Running nose	**SV**	**AT**	0.133	0.35	0.090		4			
		BT	1.66	0.72	0.187	**92**	<0.001	**1.533**	198	=0.13
	SQ	**AT**	0.133	0.35	0.9					
Chest tightness		**BT**	1.667	0.62	0.16	96	<0.001	1.6		
	SV	**AT**	0.066	0.26	0.06					
		BT	1.4	0.51	0.131	**85.71**	<0.001	**1.2**	264.5	=0.147
	SQ	**AT**	0.2	0.41	0.017					
ACQ		**BT**	21.1	3.83	0.98	83.54	<0.001	7.6		
	SV	**AT**	13.47	5.54	1.431					
		BT	25.80	6.25	1.613	**39.27**	<0.001	**10.1**	195.5	=0.128
	SQ	**AT**	15.67	5.34	1.38					
Breath sounds		**BT**	2.4	0.83	0.214	63.87	<0.001	1.6		
	SV	**AT**	0.867	0.83	0.215					
		BT	2.267	0.59	0.153	**64.71**	<0.001	**1.467**	238.5	=0.811
	SQ	**AT**	0.8	0.52	0.145					
Laboured breathing		**BT**	1.267	0.59	0.153	78.92	<0.001	1		
	SV	**AT**	0.267	0.46	0.118					
		BT	1.067	0.46	0.118	**74.97**	<0.001	**0.8**	253.5	=0.189
	SQ	**AT**	0.267	0.46	0.118					
PEFR		**BT**	58.27	7.56	1.593	18.08	<0.001	13	-2.823	=0.009
	SV	**AT**	71.133	0.11	2.701					
		BT	58.2	8.74	2.258	**10.09**	<0.001	**6.53**		
	SQ	**AT**	64.73	8.92	2.302					
Chest expansion		**BT**	2.654	0.40	0.122	13.18	<0.001	0.42	1.401	=0.172
	SV	**AT**	3.057	0.31	0.083					
		BT	2.17	0.40	0.127	**21.09**	<0.001	**0.55**		
	SQ	**AT**	2.75	0.28	0.087					
Sputum		**BT**	9.33	4.17	1.076	14.28	<0.001	8.533	0.080	=0.419
	SV	**AT**	0.8	1.78	0.46					
		BT	13.21	4.64	1.24	**77.29**	<0.001	**10**		
	SQ	**AT**	3.0	4.14	1.07					
Respiratory rate		**BT**	19.47	2.2	0.568	18.83	<0.001	3.667	0.512	=0.613
	SV	**AT**	15.8	1.08	0.279					
		BT	19.267	1.35	0.345	**16.95**	<0.001	**3.267**		
	SQ	**AT**	16	1.31	0.338					
Haemoglobin		**BT**	13.79	1.87	0.485	1.26	=0.132	0.193	0.022	=0.982
	SV	**AT**	13.967	1.77	0.459					
		BT	12.247	1.75	0.451	**1.57**	=0.069	**0.197**		
	SQ	**AT**	12.443	1.67	0.431					
Total count		**BT**	8360	1204	31.08	25.11	<0.001	2200	2.533	=0.017
	SV	**AT**	6260	5407	21.143					
		BT	7733	1058	273.1	**13.62**	<0.001	**1053**		
	SQ	**AT**	6680	489	126.19					
ESR		**BT**	23.73	6.63	1.711	30.89	<0.001	7.33		
	SV	**AT**	16.40	2.03	0.524					
		BT	26	10.9	2.828	**26.15**	=0.009	**6.933**	0.146	=0.885
	SQ	**AT**	19.2	4.77	1.231					
AEC		**BT**	458.7	94.5	24.37	12.67	=0.040	52.533		
	SV	**AT**	400.6	70.5	18.208					
		BT	440.5	78.3	20.219	**9.18**	=0.040	**38.867**	0.429	=0.671
	SQ	**AT**	400.6	63.3	16.356					
SPO_2		**BT**	95.8	0.56	0.145	0.012	<0.001	-1.20		
	SV	**AT**	97	0	0					
		BT	96	0.65	0.169	**0.005**	=0.020	**0.533**	3.388	=0.002
	SQ	**AT**	96.5	0.52	0.133					

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