ISSN 2456-3110
Vol 5 · Issue 4
July-Aug 2020

Journal of Ayurveda and Integrated Medical Sciences

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences

Charaka Publications

Indexed

Journal of
Ayurveda and Integrated Medical Sciences
ISSN 2456-3110
ORIGINAL ARTICLE July-Aug 2020

Kulathadi Kwatha and *Talisapatradi Churna* In *Tamaka Shwasa* (Bronchial Asthma) : An Open Label, Single Arm Clinical Study

Sreedevi KS[1], Lakshmiprasad L. Jadhav[2], Girish KJ[3], Vibhu Powar[4]

[1,4]Post Graduate Scholar, [2,3]Professor, Department of Kayachikitsa, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan, Karnataka, INDIA.

ABSTRACT

Background: *Tamaka Shwasa* is a *Pranavaha Sroto Vikara*, with predominant *Dosha, Kapha* and *Vata* and the site of origin is *Pittasthana*. The condition has similarity in clinical presentation with Bronchial Asthma. It leads to recurrent episodes of breathlessness, wheezing, cough and tightness of chest. *Shamshodhana* and *Shamshamana* are the two treatment modalities explained in *Tamaka Shwasa*. **Objectives:** To clinically assess the combined effectiveness of *Kulathadi Kwatha* and *Talisapatradi Churna* in *Tamaka Shwasa*. **Materials and methods:** This study was carried out by *Shamanaushadhis* viz; *Kulathadi Kwatha* and *Talisapatradi Churna* in 30 subjects of either sex in between the age 18-40 years, for 30 days, followed by follow up on 45th day. Collected data were tabulated and analysed using SPSS (Statistical package for social sciences) version 20 by using appropriate statistical test. **Results:** There was statistically significant improvement observed in the signs and symptoms of *Tamaka Shwasa* and Peakflow Meter with the P value <0.05. **Conclusion:** The trial drug *Kulathadi Kwatha* and *Talisapatradi Churna* was found beneficial in symptoms of *Tamaka Shwasa*.

Key words: *Tamaka Shwasa, Bronchial Asthma, Kulathadi Kwatha, Talisapatradi Churna, Shamana Aushadhis.*

INTRODUCTION

Tamaka Shwasa is *Kapha-Vataja Vikara* and the site of origin is *Pittasthana*. The causative factors responsible for *Tamaka Shwasa* are *Dhuma* (smoke), *Raja* (dust), *Ativyayama* (excessive work/exercise), *Sheetha Sthana Nivasa* (residing in cold areas), *Gurubhojana* (heavy diet), *Sheetha Bhojana* (cold food/drinks). These factors cause vitiation of *Vata* and *Kapha* leading to vitiation of *Rasa* and impeding the functions of *Pranavata*.[1]

Tamaka Shwasa has similarity in clinical presentation with Bronchial Asthma characterized by intermittent airflow obstruction, airway inflammation and bronchial hyper responsiveness. Bronchial Asthma manifests with difficulty in breathing, cough, wheezing, and tightness of chest.[2]

It is estimated that 300 million people worldwide suffer from asthma, among them a tenth of population is living in India. The burden of asthma is immense; the prevalence of asthma has been estimated to range of 2-12% in adults. The world health organization estimated that asthma contributes to the loss of 15 million disability adjusted life.[3]

Tamaka Shwasa is a *Yapya Vyadhi. Kulathadi Kwatha* and *Talisapatradi Churna* have been mentioned in

Address for correspondence:
Dr. Sreedevi KS
Post Graduate Scholar, Department of Kayachikitsa, Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan, Karnataka, INDIA.
E-mail: sreedeviks91@gmail.com
Submission Date: 11/07/2020 Accepted Date: 18/08/2020

Access this article online
Quick Response Code
Website: www.jaims.in
DOI: 10.21760/jaims.5.4.7

ISSN: 2456-3110 ORIGINAL ARTICLE July-Aug 2020

Shwasa Chikitsa. As per a clinical trial conducted, *Kulathadi Kwatha* is proven to be an effective *Yoga* which has *Kaphanishteevana Karma* and which significantly reduced the other symptoms of *Tamaka Shwasa* within a stipulated time.[4] An antioxidant study on *Talisapatradi Churna* has proven its antibacterial and antihistamic activity.[5] Hence, to evaluate the combined effectiveness of *Kulathadi Kwatha* and *Talisapatradi Churna* and also considering the prevalence recurrence and adverse effect of *Tamaka Shwasa* on the quality of life of the individual, the following study was conducted.

OBJECTIVES

To clinically assess the combined effectiveness of *Kulathadi Kwatha* and *Talisapatradi Churna* in *Tamaka Shwasa* (Bronchial asthma).

MATERIALS AND METHODS

Source of Data

Subjects who attended the Out - Patient Department of Kayachikitsa at Sri Dharmasthala Mnajunatheshwara College of Ayurveda and Hospital, Hassan.

Methods of collection of data

62 subjects were screened and selected based on the screening form prepared.

32 cases were registered and data was collected using specially prepared case report form.

Diagnostic Criteria

Diagnosis was made on basis of signs and symptoms of *Tamaka Shwasa* [Bronchial asthma] viz. Breathlessness (*Shwasakrichratha*), Wheeze (*Gurguratwam*), Cough (*Kasa*) and Expectoration (*Kaphanishteevana*).

Inclusion Criteria

Patients aged between 18-40 years with features of *Tamaka Shwasa* (bronchial asthma - mild to moderate grades as per GINA)[6] with chronicity < 10 years, either gender and Patient who are willing to sign in informed consent form.

Exclusion Criteria

Patients who are known cases of COPD, Pneumonia, Tuberculosis, Pleural Effusion, Cardiac Pathology, Uncontrolled Diabetes Mellitus, Hypertension, Uremia, Acidosis, Malignancy, Head injuries and pregnant women/lactating mother were excluded.

Laboratory Investigation

Radiological - Chest X- ray (PA view), Absolute Eosinophil Count and Peak Expiratory Flow Rate.[7]

Study Design

This study was an open label single arm, clinical study on 30 subjects of *Tamaka Shwasa* (Bronchial Asthma) selected using convenience sampling technique.

Intervention

1. *Kulathadi Kwatha*[8]
2. *Talisapatradi Churnam*[9]

Source and authentication of raw drug

Raw drugs were procured and authenticated from GMP certified CKKM Pharmacy Trippunithara, *Kochi*. *Kulathadi Kwatha* was prepared at Sri Dharmasthala Manjunatheshwara Teaching Pharmacy, Hassan. *Talisapatradi Churna* was purchased from GMP certified Sri Dharmasthala Manjunatheswara Ayurveda Pharmacy, Udupi.

Treatment Plan

Kulathadi Kwatha: 15 ml tid before food

Talisapatradi Churna: 4 grams in 3 divided doses after food with *Madhu* as *Anupana*.[10]

Duration: 30 days

Follow up during the treatment: follow up was done on 1st, 15th, 30th

Follow up after the treatment: on 45th day

Assessment Criteria

A. Subjective Parameter

The effect of the therapy was assessed on the basis of relief with following signs and symptoms of *Tamaka Shwasa* viz. *Shwasakrichrata, Gurguratwam, Kasa,*

ISSN: 2456-3110 ORIGINAL ARTICLE July-Aug 2020

Kaphanishteevanam, Parshwashoola, Aasinolabate Soukhyam.

B. Objective parameters

Assessment of lung volume was done using GINA Scale and Peak expiratory flow rate.

OBSERVATION

In the present clinical study 32 subjects were registered for observation. Out of 32 subjects 10 subjects were agriculturist, 17 were from rural area., 16 (49.9%) subjects had smoke/dust/perfume, cold drinks and frozen foods, cold climate, physical exertional activities as aggravating factors, 12 had rest, fomentation, change of climate, steam inhalation, expectoration as relieving factor, 18 (56.3%) had *Samagni*, 21 (65.6%) had *Madhyama Koshta*, 29 (90.6%) had disturbed sleep, 9 (28.1%) had a habit of smoking.

Table 1: Baseline distribution of 32 patients of *Tamaka Shwasa.*

Lakshana	Percent %
Shwasakruchrata	32 (100%)
Gurgurakata	32 (100%)
Kasa	32 (100%)
Kapha Nishteevana	27 (84.4%)
Asinolabhate Soukhyam	28 (87.5%)
Parshwashoola	23 (71.9%)

Results: A total of 32 subjects of *Tamaka Shwasa* were registered for the study; of which 2 dropped out and 30 completed the trial.

Table 2: Effect of therapy on *Shwasakruchrata.*

Shwasakruchrata	Mean rank	P value
1st day	3.85	< 0.005
15th day	2.90	
30th day	1.60	
45th day	1.65	
Test: Freidman's test		

Table 3: Effect of therapy on *Shwasakruchrata.*

Shwasa kruchrata	Ranks				Sum of ranks	Z	P	Remarks
	NR	PR	T	Total				
1-15th day	22	0	8	30	253.00	-4.35	>0.016	S
15th-30th day	26	0	0	30	351.00	-4.62	>0.016	S
30-45th day	8	7	15	30	60.00	.000	>0.016	NS
1st-45th day	29	0	1	30	435.00	-4.77	<0.016	S

Post hoc-Wilcoxon sign rank test with Bonferroni correction (S - Statistically Significant, NS - Not significant, NR - negative ranks, PR - positive ranks, T - ties)

Table 4: Effect of therapy on *Kasa.*

Kasa	Mean rank	P value
1st day	3.88	< 0.005
15th day	2.85	
30th day	1.75	
45th day	1.52	

Table 5: Effect of therapy on *Kasa.*

Kasa	Ranks				Sum of ranks	Z	P	Remarks
	NR	PR	T	Total				
1-15th day	23	0	7	30	276.00	-4.630	<.016	S
15th-30th day	21	0	9	30	351.00	-4.347	<0.016	S
30-45th day	7	1	22	30	60.00	-2.121	>0.016	NS
1st-45th day	30	0	0	30	435.00	-4.889	<0.016	S

Post hoc-Wilcoxon sign rank test with Bonferroni correction (S - Statistically Significant, NS - Not significant, NR - negative ranks, PR - positive ranks, T - ties)

ISSN: 2456-3110 **ORIGINAL ARTICLE** July-Aug 2020

Table 6: Effect of therapy on *Gurgurakata.*

Gurgurakata	Mean rank	P value
1st day	3.65	< 0.005
15th day	2.87	
30th day	1.65	
45th day	1.83	
Test: Freidman's test		

Table 7: Effect of therapy on *Gurgurakata.*

Gurgurakata	Ranks				Sum of ranks	Z	P	Remarks
	NR	PR	T	Total				
1-15th day	15	0	15	30	120.00	-3.69	<.016	S
15th-30th day	21	1	8	30	242.50	-4.14	<0.016	S
30-45th day	3	6	21	30	15.00	-1.00	>0.016	NS
1st-45th day	26	0	4	30	351.00	-4.61	<0.016	S
Post hoc-Wilcoxon sign rank test with Bonferroni correction (S - Statistically Significant, NS - Not significant, NR - negative ranks, PR - positive ranks, T - ties)								

Table 8: Effect of therapy on *Kapha Nishteevana*

Kapha Nishteevana	Mean rank	P value
1st day	3.37	< 0.005
15th day	2.85	
30th day	1.88	
45th day	1.90	
Test: Friedman's test		

Table 9: Effect of therapy on *Kaphanishteevana*

Kapha Nishteevana	Ranks				Sum of ranks	Z	P	Remarks
	NR	PR	T	Total				
1-15th day	17	6	7	30	197.00	-1.906	<.016	S
15th-30th day	17	0	13	30	153.00	-3.945	<0.016	S
30-45th day	4	4	22	30	18.00	-1.000	>0.016	S
1st-45th day	21	0	9	30	231.00	-4.123	<0.016	S
Post hoc-Wilcoxon sign rank test with Bonferroni correction (S - Statistically Significant, NS - Not significant, NR - negative ranks, PR - positive ranks, T - ties)								

Table 10: Effect of therapy on *Muhurmuhur Shwasa*

Muhurmuhur Shwasa	Mean rank	P value
1st day	3.50	< 0.005
15th day	2.67	
30th day	1.82	
45th day	2.02	
Test: Friedman's Test		

Table 11: Effect of therapy on *Muhurmuhur Shwasa*

Muhurmuhur Shwasa	Ranks				Sum of ranks	Z	P	Remarks
	NR	PR	T	Total				
1-15th day	13	0	17	30	91.00	-3.606	<0.016	S
15th-30th day	14	1	15	30	112.00	-3.357	<0.016	S
30-45th day	2	5	23	30	8.00	-1.134	>0.016	NS
1st-45th day	22	0	8	30	253.00	-4.600	<0.016	S
Post hoc-Wilcoxon sign rank test with Bonferroni correction (S - Statistically Significant, NS - Not significant, NR - negative ranks, PR - positive ranks, T - ties)								

ISSN: 2456-3110 ORIGINAL ARTICLE July-Aug 2020

Table 12: Effect of therapy on GINA assessment severity of Asthma

GINA severity assessment of Asthma	Mean rank	P value
1st day	3.58	< 0.005
15th day	3.05	
30th day	1.63	
45th day	1.73	
Test: Friedman's Test		

Table 13: Effect of therapy on GINA assessment severity of Asthma.

GINA severity assessment of Asthma	Ranks				Sum of ranks	Z	P	Remarks
	NR	PR	T	Total				
1-15th day	10	0	20	30	91.00	-3.051	<0.016	S
15th-30th day	24	0	6	30	112.00	-4.899	<0.016	S
30-45th day	10	9	11	30	8.00	-.229	>0.016	NS
1st-45th day	26	0	4	30	253.00	-4.617	<0.016	S
Post hoc-Wilcoxon sign rank test with Bonferroni correction (S - Statistically Significant, NS - Not significant, NR - negative ranks, PR - positive ranks, T - ties)								

Table 14: Effect of therapy on Assessment of level of asthma control

Assessment of level of asthma control	Mean rank	P value
1st day	3.57	< 0.005
15th day	2.98	
30th day	1.77	
45th day	1.68	
Test: Friedman's Test		

Table 15: Effect of therapy on Assessment of level of Asthma control

Assessment of level of asthma control	Ranks				Sum of ranks	Z	P	Remarks
	NR	PR	T	Total				
1-15th day	12	0	18	30	78.00	-3.464	<0.016	S
15th-30th day	21	1	8	30	241.50	-4.264	<0.016	S
30-45th day	7	5	18	30	45.50	-.577	>0.016	NS
1st-45th day	26	0	4	30	351.00	-4.660	<0.016	S
Post hoc-Wilcoxon sign rank test with Bonferroni correction (S - Statistically Significant, NS - Not significant, NR - negative ranks, PR - positive ranks, T - ties)								

Table 16: Effect of therapy on *Asinolabhate Soukhyam* and *Parshwashoola*

Lakshana	1st day		15th day		30th day		45th day		P value
	P	A	P	A	P	A	P	A	
Asinolabhate Soukhyam	26	4	12	18	1	29	1	29	<0.05
Parshwashoola	21	9	9	21	2	28	0	30	
P - Present, A - Absent									

There was statistically significant difference in *Lakshanas* like *Asinolabhate Soukhyam* & *Parshwashoola* with Cochran's Q test at p<0.05.

Table 17: Effect of therapy on *Asinolabhate Soukhyam*

Asinola-Bhate Soukhyam	1st day		15th day		30th day		45th day		N	Remarks
	P	A	P	A	P	A	P	A	30	S
	26	4	12	18	1	29	1	29		

ISSN: 2456-3110 ORIGINAL ARTICLE July-Aug 2020

P value	0.001	0.001	0.001	>.001		

P - Present, **A** - Absent, **Test:** Mc'nemar Test

Table 18: Effect of therapy on *Parshwashoola*

Parshwa Shoola	**1st day**		**15th day**		**30th day**		**45th day**		**N**	**Remarks**
	P	**A**	**P**	**A**	**P**	**A**	**P**	**A**	30	S
	21	9	9	21	2	28	0	30		
P value	0.008		0.001		0.001		0.001			

P - Present, **A** - Absent

Table 19: Effect of therapy on PEF

Parameter PEF	**N**	**Mean**	**Spericity assumed**			**Spericity assumed error df**	**Remarks**
			Df	**F value**	**P value**		
1st day	30	.3667	3	16.469	<0.05	27	S
15th day		.6667					
30th day		1.1667					
45th day		1.1667					

Test: Repeated measure ANOVA test

Table 20: Showing Pair wise comparison

Pairwise Comparisons							**Remark**
(I) Factor 1	**(J) Factor 1**	**Mean Difference (I-J)**	**Std. Error**	**Sig.[B]**	**95% Confidence Interval For Difference[b]**		**S**
					Lower Bound	**Upper Bound**	
1st Day	15th Day	-300	.098	<.016	-577	.548	
15th day	30th Day	-.500	125		-.853	-.147	
30th	45th	.000	136		-.384	.383	
day	Day						
45th Day	1st Day	.800	121		.457	1.143	
	15th Day	.500	125		.147	.853	
	30th Day	.000	136		-.384	.384	

Repeated measures Anova BT - before treatment, AT - after treatment, Df - degree of freedom

DISCUSSION

Effect on *Shwasakruchrata:* Statistically significant improvement was noticed in *Shwasakruchrata* after the treatment. *Shwasakruchrata* is result of *Pranavaha Sroto Sankocha* and *Avarodha*, due to *Vata Prakopa* in *Pranavaha Srotas* & *Vata* being obstructed by *Kapha*. *Kulatha*, *Nagara, Vasa, Vyaghri* & *Pushkaramula* having *Laghu Ruksha Guna, Ushna Veerya* helps in liquefying the *Kapha*, relieves *Srotorodha* and improves breathing. *Talisapatradi Churna* has *Kapha Lekhana* & *Kapha Vatahara* properties. It acts as an expectorant, which helped in reduction of *Shwasakruchrata*.[18]

Effect on *Gurghurukata*: *Gurghurukata* was reduced by its mean rank statistically significant improvement was noticed after treatment.

Gurghurukata is due to *Pranavaha Sroto Avarodha* by *Kapha*. It is generated by vibration in the wall of an airway on the point of closure due to smooth muscle contraction.

Talisapatradi Churna possess anti-inflammatory, has bronchodilator and expectorant actions. It can effectively drain out the mucus and reduce airway resistance.[19]

Effect on *Kasa* and *Kapha Nishteevana:* Statistically significant improvement was noticed in *Kasa* and *Kapha Nishteevana* after treatment. *Kasa* is an effort to expel the *Malaroopi Kapha* secreted in the *Pranavaha Srotas*. *Talisapatradi Churna* having *Katu Rasa, Laghu Ruksha Guna, Ushna Veerya* & *Kapha Vatahara* properties facilitates liquefaction of the mucus and thus helped in reduction of *Kasa* & *Kapha Nishteevana*.[20]

ISSN: 2456-3110 ORIGINAL ARTICLE July-Aug 2020

Effect on *Muhurmuhur Shwasa*: The symptom was reduced in its mean rank & statistically significant improvement was noticed. Due to *Ruksha Guna, Ushna Veerya* of *Talisapatradi Churna* and *Kulathadi Kwatha*, there was reduction in *Kapha* causing relief in symptom of *Muhurmuhur Shwasa*.[21]

Effect on *Asinolabhate Soukhyam*: Statistically significant improvement was noticed in *Asinolabhate Soukhyam* after treatment. An individual suffering with *Tamaka Shwasa* experiences difficulty in breathing in supine position and relief while sitting. This can be explained as the increased broncho constriction due *Kapha Avarodha* causing *Pratilomagati* of *Pranavayu* additional to physiological diaphragmatic pressure on lungs in supine position.

Ushna Teekshna Katu properties of drugs in *Talisapatradi Churna* helps in reduction in production of *Kapha* and increases elimination of *Kapha*. Thus clearing the airway obstruction and *Vata Anulomana* which inturn reduces the broncho constriction and dyspnea.[22]

Effect on *Parshwashoola:* Statistically significant improvement was noticed in *Parshwashoola* by its mean after treatment. Due to aggravation in *Vata* and *Kapha*, patient experiences repeated cough and breathing difficulty, in turn causes pain in *Parshwa Bhaga.*

The *Teeksha Guna, Ushna Veerya* & *Kapha Vata Shamaka* properties of *Talisadpatradi Churna* and *Kulathadi Kwatha* helped in reduction of cough, thereby relieved *Parshwashoola*.[23]

Effect on Gina Assessment Scale: Significant improvement in assessment of level of asthma control and in severity of asthma control was noticed after treatment. *Laghu Ruksha, Teekshna Guna, Ushna Veerya* & *Kapha Vatahara* properties of *Kulathadi Kwatha* and *Talisapatradi Churna* helped in relieving symptoms of *Tamaka Shwasa.*

Effect on Peak Expiratory Flow Rate: Statistically significant reduction in Peak Expiratory Flow was observed before and after the treatment. *Kapha Vilayana* property of the *Kulathadi Kwatha* and *Talisapatradi Churna* enhanced the normal *Gati* of *Vata*. It showed significant reduction in the airway obstruction and relief from symptoms of *Shwasa Kruchrata*, *Gurghurukata* & *Kasa*. Thus, there was improvement in the values of peak expiratory flow rate.

CONCLUSION

The trial drug *Kulathadi Kwatha* and *Talisapatradi Churna* was found beneficial in symptoms of *Tamaka Shwasa*. Statistically significant improvement was observed in primary outcome measures like, *Shwasakruchrata, Gurgurata, Kasa, Kaphashteevana, Asinolabhate Soukhyam* & *Parshwashoola*. The assessment of severity of asthma and level of asthma control as per GINA scale showed marked improvement in all parameters like day time symptoms, exacerbations, nocturnal symptoms and limitations of activities after treatment. Statistically significant improvement was noticed in secondary outcome measures Peak expiratory flow rate.

REFERENCES

1. Acharya JT. Charaka Samhitha with Ayurveda Dipika commentary of Chakrapani Datta. Reprint ed. Varanasi: Chaukamba Orientalia; 2009.p. 533
2. K.V.Krishnadas. Text book of medicine. ed 6th, chapter 143, Delhi: Jaypee: The health science 2017:Pg no;1054
3. K.V.Krishnadas.Text book of medicine. ed 6th, chapter 14, Delhi: Jaypee: The health science 2017:Pg no;984
4. Ratheesh. P, A clinical evaluation in the management of Tamaka Shwasa with Kulathadi kashaya. 2006, Koppa.
5. International journal of pharmaceutical and sciences review and research, antioxidant study and GCMC analysis of an Ayurvedic medicine;Talisapatradi churnam.
6. Pocket Guide for Asthma Management and Prevention. http://www.ginasthma.org/ (accessed 2012)
7. Robbins and Cotran.pathologic basis of disease.ed 8th chapter of obstructive pulmonary diseases.pg:512
8. Srivastava.S, Editor, edition-3rd. Sharangadhara Samhitha of Sharangadhara. Madhyama khanda; Churna kalpana: Chapter-3,verse no.130-4. Varanasi: Chaukhambha Orientalia,2003
9. Srivastava.S, Editor, edition-3rd.Sharangadhara Samhitha of Sharangadhara. Madhyama khanda;Churna kalpana:Chapter-3,verse no.130-4. Varanasi: Chaukhambha Orientalia,2003

ISSN: 2456-3110 **ORIGINAL ARTICLE** July-Aug 2020

10. Murthy KRS, English translation on sarangadhara samhita of sarangadhara.2nd ed.Madhyamakhanda; Kashaya prakarana adhyaya: ch01, verse4. Varanasi: Choukamba Orientalia,1995.
11. An epidemiological study of tamaka Shwasa w.s.r to bronchial asthma (research article) www.ayurpharm.com
12. Ramdas J, Jella V. prevalence and risk factors of bronchial asthma. Int J Adv Med 2018;5:1120-3
13. Acharya YT. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Chikitsa Sthana 17/90. Reprint ed. Varanasi (India): Chaukambha Orientalia; 2011.p.533.
14. 14) http://errersjournal.com control of asthma european respiratory society. Ashtanga Hrudaya, Nidana Sthana .4th Chapter.Sloka No.8
15. Asthma & cigarette smoking.european respiratory journal.erj.ersjournals.com.
16. Acharya YT. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Chikitsa Sthana 17/90. Reprint ed. Varanasi (India):Chaukambha Orientalia; 2011.p.533.
17. Acharya YT. Charaka Samhita with Ayurveda Dipika commentary of Chakrapani Datta. Chikitsa Sthana 17/90. Reprint ed. Varanasi (India):Chaukambha Orientalia; 2011.p.537.
18. Dr. Archana Nivrutti Bhangare, A critical review study on Tamaka Shwasa (bronchial asthma) an ayurvedic prospective.wjpmr.2017.3(6).88-94
19. Pharmachological potential of polyherbal formulationtalisadi Churna. http://ijam.co.in
20. Pharmachological potential of polyherbal formulationtalisadi Churna. http://ijam.co.in
21. Pharmachological potential of polyherbal formulationtalisadi Churna. http://ijam.co.in
22. Sharma PV. Dravyaguna Vijnana. 14th ed. vol2. Varanasi: Chaukhambha Bharati Academy;1993
23. International ayurvedic medical journal, critical review; Tamaka Shwasa. Kaushik raman. University of Delhi. New delhi.India.p 307.

How to cite this article: Sreedevi KS, Lakshmiprasad L. Jadhav, Girish KJ, Vibhu Powar. Kulathadi Kwatha and Talisapatradi Churna In Tamaka Shwasa (Bronchial Asthma) : An Open Label, Single Arm Clinical Study. J Ayurveda Integr Med Sci 2020;4:37-44. http://dx.doi.org/10.21760/jaims.5.4.7

Source of Support: Nil, **Conflict of Interest:** None declared.

****