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Role of Krishnadi Churna in the Management of Tamak Shwasa With Reference To Bronchial Asthma

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Abstract

Tamak Shwasa is such type of disease in which recurrent attacks of Shwasa are hampering the life of patients and it is troublesome disease, because most of Acharyas have described it as Yapya to treat (C.C.17/9 and C.C. 17/62). Bronchial asthma mentioned in modern medicine closely resembles with Tamaka Shwasa. Work exposure to flour or cotton dust, animal fur, smoke and wide variety of chemicals has been linked to increased risk of asthma.

Aims and Objectives: To evaluate the efficacy of Krishnadi Churna in the patients of Tamak Shwasa and to compare effect of `Krishnadi Churna' with standard bronchodilator drug Deriphylline in Tamak Shwasa.

Materials and Methods: Patients suffering from Tamak Shwasa and attending the O.P.D. and I.P.D. department of Kayachikitsa, Government Ayurvedic Hospital, Nagpur were selected randomly. Patients were investigated as per proforma prepared for the study.

Discussion and Conclusion: In this study, none of the remaining 49 patients of Tamak Shwasa were 'cured'. However, 21 patients (70%) from trial group markedly improved and 4 patients (13.33%) were improved after completing the treatment. In case of control group 18 patients (60%) were markedly improved (symptoms relieved between 50-75%) and 6 patients (20%) were improved symptomr relieved more than 75%.

Keywords

Tamak Shwasa, yapya, Pranavaha strosa, ashthama

Greentree Group

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INTRODUCTION

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 term in western medicine to this disorder is Bronchial Asthma which 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.[1]

Development of large industrial complexes has increased the air pollution. Mass industrialization and urbanization has destroyed the ecological balance of environment. Work exposure to flour or cotton dust, animal fur, smoke and wide variety of chemicals has been linked to increased risk of asthma. This exposes the 'Pranavaha strosa'[3].

Modern medicine is much advanced in treating the infectious diseases, but limitation in treating disease like asthma provides only palliative treatment.[2] Most of the patients of asthma have to depend upon bronchodilators and in some severe cases have to be shifted on steroids for longer duration.

The desired mode of management should not evoke dependence or adverse drug effects, which are the major concern in the medical field. The purification therapy mentioned in the Ayurvedic classical books followed by drugs which have Kapha-Vatahara, Vatanulomana, Rasayan effects can improve the quality of life of patients by decreasing the recurrence of episodes and avoiding the drug dependence and adverse effects.[4]

TamakShwasa is troublesome disease, because most of Acharyas have described it as Yapya to treat (C.C.17/9 and C.C. 17/62). Bronchial asthma mentioned in modern medicine closely resembles with Tamaka Shwasa.

The holistic approach of Ayurveda is at the hand to the disease. The management of Shwasa in Ayurveda comprises Shodhan and Shaman Chikitsa, this concept depends on `Bala'. Shodhan indicated in `Balvan Rugna" of Shwasa and shaman chikitsa in `Durbala Rugna' (B. R.HikkaShwasa chi.16/1)

In Shaman Chikitsa 'Bhaishajya-Ratnavali' described two `Krishnadi Churna" (B.R.Chi.16/11 and 16/20) in Tamakshvas. There are many remedies described in Ayurvedic texts and `Krishnadi Churna" is one of them (B.R.Chi.16 /11).

AIMS AND OBJECTIVES

- To review ancients as well as modern literature available on Tamak Shwasa and its management.
- To evaluate the efficacy of Krishnadi Churna in the patients of Tamak Shwasa.
- To compare effect of `Krishnadi Churna' with standard bronchodilator drug Deriphylline in Tamak Shwasa.

MATERIALS AND METHODS

Patients suffering from Tamak Shwasa and attending the O.P.D. and I.P.D. department of Kayachikitsa, Government Ayurvedic Hospital, Nagpur were selected randomly, irrespective of their Age, Sex, Religion and Socio economical status etc.

Patients were investigated as per proforma prepared for the study. This special proforma consisted of vital data, detailed present and past family history of patients, Samanya Parikshana, Asthtavidha Parikshana, Dashvidha Parikshana, Strotas Parikshana etc. Diagnosis was made after differential diagnosis along with clinical features described in modern textbooks.

- **CRITERIA OF SELECTION OF PATIENTS:**

The patients having signs and symptoms of Tamak Shwasa fulfilling the criteria of diagnosis were selected. Tamaka Shwasa as mentioned in classics is primarily selected in accordance with following inclusion and exclusion criteria. Concentration has been pinpointed on Ayurvedic clinical features like Shwasakashtata, Kasa, Kaphashteevan, Aruchi, Parshvashula, Asino Labhate Saukhyam, Ghurghuraka.

- **CRITERIA OF REJECTION OF PATIENTS**

Children below 16 years of age, pregnant woman, and patient having major disease like AIDS, renal and cardiac problems were rejected. Patients suffering from Tamak Shvas having respiration rate above 40/min- were rejected. Any complication arises during treatment or if any patient discontinuing the treatment was liable for rejection.

- **CRITERIA OF DIAGNOSIS**

Clinical features narrated in Ayurvedic texts like Shwasakashtata, Kasa, Kaphashteevan, Aruchi, Parshvashula, Asino Labhate Saukhyam, Ghurghuraka were considered.

At the same time signs and symptoms mentioned in modern texts was also considered like, respiration rate, ronchi, crepitations, reduced lung function test was done by carrying peak expiratory flow rate and sustained maximal inspiration and symptoms like dysponea, cough (dry/ with expectoration) etc. were also considered.

GROUPS OF MANAGEMENT

Table 1 Group Management

	Trial Group	**Control Group**
Drug	Krishnadi Churna (Pippali, Shunthi, Amalaki and Seeta)	Tab. Deriphylline retard
Dose	2 gm, QID.	150 mg, BD.
Duration	21 days	21 days
Anupan	Madhu	Water
No. of Patients	25	24
Follow – up study	0, 7, 14, 21 days.	0, 7, 14, 21 days.

- **Diet Regimen:**

Pathya-Apathya and Nidan parivarjanam is one of the main concepts of[2] - Chikitsa. Tamak Shwasa is the disease in which diet should have characteristics of alleviating Vayu and Kapha. With respect to this concept diet regimen and daily routine regimen was designed, for that Ushna, Vatanulomaka and Kaphahara diet was advised to patients (C.C. 17/147).

- **CRITERIA OF ASSESSMENT**

All the patients were selected for trial group and control group and assessed on clinical parameters, physical characters and Heamatological parameters. Sputum examination was also carried out in doubtful cases to rule out other pathology like tuberculosis.

Criteria of assessment was considered in three parts as following,

A) <u>Subjective – Assessment Criteria:</u>

General symptoms score systems were used by Kabra P.R. (1985), Mankar S.R. (2005-06). Kagde S.T. (1999-2000), Sangeeta G. (2002) IGPT and RA Jamnagar in their respective post graduate thesis, this method of scoring of symptoms was as follow.

1) Shwasakashtata

0 - Completely relieved Shwasa

1 - Slightly Shwasakashtata after heavy work -relieved by rest.

Shwasakashtata on slight exertion like walking.

3 - Shwasakashtata even at rest.

4 - Very severe required hospitalization.

2) Kasa

0 - No cough

1 - Dry cough without pain/wet cough with easy expectoration.

2 - Dry cough with pain/wet cough with slight difficulty in expectoration.

3 - Dry cough with severe pain/ feeling of restlessness because of difficulty in expectoration.

4 - Frequent coughing due to which patient becomes unconscious.

3) Parshvashula/Urahshula

0 - No Parshvashula

1 - Parshvashula along with attack

2 - Parshvashula without attack

3 - Always Parshvashula

4) Kaphashteevan

0 - No Kaphashteevan

1 - Only in mornings

2 - 2-3 times / day

3 - Always Kaphashteevan

5) Ghurghurkam (Wheezing)

0 - No ghurghurkam

1 - Only at night

2 - At night occasionally during day

3 - Throughout day

6) Aruchi

0 - Normal desire for food

1 - Eating timely without much desire

2 - Desire for food, little late than normal

3 - Desire for food – only after long intervals

4 - No desire at all.

7) Assino labhate Saukhyam

0 - Relief on lying down position

1 - Temporarely felts better in sitting posture

2 - Sitting posture gives relief

3 - Spontaneous sitting posture, can't sleep

8) Rhonchi / Crepitation Score

0 - Absence of ronchi/ crepts

1 - Absent on normal breathing but few ronchi/ crepts seen on forced breathing.

2 - A few scattered bilateral rhonchi/ crepts on normal deep breathing.

3 - In-numerable high pitched bilateral rhonchi/ crepts on normal deep breathing.

These symptoms score was assessed weekly for 21 days (0, 7, 14, 21 days).

A) Objective Assessment Criteria: (Table-No.8)

1) Lung Function Tests/ Pulmonary Functions:

These were carried out at every follow up visit.

i. **Respiration Rate (RR)**

It was noted in the morning during 9 to 11 o' clock.

ii. Expansion of Chest (EOC)

a. EOC was measured with the help of tailor's measuring tape, at the level of nipples, in centimeters. The diameter of fully expanded chest was taken three times. The mean EOC was recorded before and after the treatment.

iii. Breath Holding Time (BHT)

a. BHT was counted with the help of stop watch. Patients were asked to take maximum possible inspiration. At the same time, stop watch was started. Patients were asked to hold the breath for maximum possible time. Breath Holding Time was recorded in seconds. The same process was repeated thrice. The mean BHT was noted before and after the treatment.

iv. Sustained Maximal Inspiration (SMI)

a. For this, Sustained Maximal Inspiration apparatus was used. Its pointer was fixed on the reading of 200 cc/sec. Patients were instructed to take maximum possible inspiration through the mouthpiece of the apparatus. At the same time, stop watch was started and the time taken to hold the red ball of the apparatus, in the upper side of chamber was noted. Time in seconds was recorded. The same process was repeated thrice. The mean SMI in seconds was noted before and after the treatment.

v. Peak Expiratory Flow Rate (PEFR)

PEFR was measured with the help of Peak Flow Meter. Patients were asked to exhale air with maximum possible force in the mouthpiece of Peak Flow Mater. Reading on the scale of apparatus was noted as the PEFR in liter/min. The process was repeated thrice to calculate mean PEFR before and after the treatment.

OBSERVATION AND RESULTS

Out of 60 patients registered for the study, 11 patients left against medical advice (LAMA). Hence data of only 49 patients is presented as given in **Table 2.**

It was observed that (23) 46.94% patients having vata-pittaj Deha prakruti,(16) 32.66% having vata-kaphaj prakruti and very few of pitta-vatta,kapha-vataj & kapha-pittaj prakruti.

In this study it was found that most of the patients were having Vata dominance 85.71% followed by Kapha dominance 14.29% **Table 3.**

Table 2 Deha Prakriti Wise Distribution of 49 Patients of Tamak Shwasa

Sr. No.	Deha prakriti	Trial group		Control group		Total no. of pts.	%
		No. of pts.	%	No. of pts.	%		

1	Vata-pittaj	10	40%	13	54.17%	23	46.94%
2	Vata-kaphaj	10	40%	06	25%	16	32.66%
3	Pitta-vata	00	00%	01	4.17%	01	2.04%
4	Kapha-vataj	03	12%	02	8.33%	05	10.20%
5	Kapha-pittaj	02	8%	02	8.33%	04	8.16%

Table 3 Dominant Dosha of 49 Patient of Tamak Shwasa

Sr. No.	Dominant Dosha	Trial Group		Control Group		Total No. of Pts	%
		No. of Pts	%	No. of Pts	%		
A	**DOSHA**						
1	Vata Dominance	20	80%	22	91.67%	42	85.71%
2	Pitta Dominance	00	00%	00	00%	00	00%
3	Kapha Dominance	05	20%	02	8.33%	07	14.29%

Table-.4 Showing Effect of Therapy on General Symptoms Score of 49 Patients of Tamak Shwasa

Sr. No.	Symptoms	Group	Symptoms Score			% of Relief (Diff/BT)
			BT	AT	Diff	
1	Shwasakashtata	Trial Group	55	12	43	78.18%
		Control Group	54	13	41	75.92%
2	Parshvashula	Trial Group	18	04	14	77.78%
		Control Group	24	07	17	70.83%
3	Kapha-shteevan	Trial Group	49	08	41	83.67%
		Control Group	44	12	32	72.72%
4	Ghurghurak	Trial Group	56	09	47	83.93%
		Control Group	48	09	39	81.25%
5	Aruchi	Trial Group	37	07	30	81.08%
		Control Group	33	12	21	63.64%
6	Kasa	Trial Group	55	11	44	80.00%
		Control Group	45	16	29	64.44%
7	Asino Labhate Saukhyam	Trial Group	48	09	39	81.25%
		Control Group	45	08	37	82.22%
8	Rhonchi/Cripitation	Trial Group	47	09	38	80.85%
		Control Group	46	07	39	84.78%

It was observed on above observations that in all symptoms viz. Shwasakashtata, Parshvashula, Kapha-shteevan, Ghurghurak, Aruchi, Kasa, % is better as compaired to control group,while in symtoms like Asino Labhate Saukhyam, Rhonchi/Cripitation the total % relief is more thatn trial group. **Table 4**.

In **Table 5** it was observed in trial group that p value is significant only in Shawsakashtata

symptoms while in other symptoms it was not significant in trial group. **Table 5**

Table 5 Effect of Therapy on Symptoms of 25 Patients of Tamak Shwasa of trial Group by Wilcoxon-Matched-Pairs-Singed-Ranks Test

No.	Symptom	Mean of Diff.	SD	SEd	Sum of All Singed Ranks	Z	P
1	Shwasakashtata	1.72	0.4583	0.0916	325	4.3718	<0.05
2	Parshvashula	0.6	0.5774	0.1155	105	1.412	>0.05
3	Kapha-shteevan	1.64	0.5686	0.1137	325	4.3718	<0.05
4	Ghurghurak	1.88	0.5260	0.1052	325	4.3718	<0.05
5	Aruchi	1.24	0.7234	0.1447	253	3.4032	<0.05
6	Kasa	1.76	0.4359	0.0871	325	4.3718	<0.05
7	Asino Labhate Saukhyam	1.56	0.5831	0.1166	300	4.0355	<0.05
8	Rhonchi/Crepitation	1.52	0.5099	0.1020	325	4.3718	<0.05

Table-No.6 Showing Effect of Therapy on Symptoms of 24 Patients of Tamak Shwasa of Control Group By Wilcoxon-Matched-Pairs-Singed-Ranks Test

No.	Symptom	Mean of Diff.	SD	SEd	Sum of All Singed Ranks	Z	P
1	Shwasakashtata	1.708	0.55	0.1123	300	4.2857	<0.05
2	Parshvashula	0.67	0.5647	0.1153	120	1.7142	<0.05
3	Kapha-shteevan	1.33	0.4851	0.09829	300	4.2857	<0.05
4	Ghurghurak	1.625	0.4925	0.1009	300	4.2857	<0.05
5	Aruchi	0.875	0.5367	0.1096	190	2.7142	<0.05
6	Kasa	1.2083	0.5090	0.1039	276	3.9428	<0.05
7	Asino Labhate Saukhyam	1.5416	0.5090	0.1039	300	4.2857	<0.05
8	Rhonchi/Crepitation	1.625	0.4945	0.1009	300	4.2857	<0.05

In control group there was no significant p value(<0.005) in any of symptoms of Tamak shwasa. **Table 6**

Table 7 Comparison between Two Groups with respect to Symptoms Score by Mann-Whitney Test

SR No.	Symptoms	Mean ± SD of trial Group	Mean ± SD of Control Group	'U'	Ustatistic	P	Result
	Shwasakashtata	1.72± 0.458	1.708± 0.55	307	293	0.8942	Not significant
2	Parshvashula	0.6 ± 0.577	0.66±0.564	319	281	0.7066	Not significant
3	Kapha-shteevan	1.64± 0.568	1.33± 0.481	384	216	0..894	Not significant
4	Ghurghurak	1.88± 0.526	1.625± 0.49	367.50	232.50	0.1708	Not significant
5	Aruchi	1.24± 0.723	0.875± 0.53	381.50	218.50	0.0983	Not significant

6	Kasa	1.76± 0.435	1.208± 0.50	456	144	0.0017	Very significant
7	Asino Labhate Saukhyam	1.56± 0.58	1.54± 0.509	312	288	0.8148	Not significant
8	Rhonchi/ Crepitation	1.52± 0.50	1.625± 0.49	331.50	268.50	0.5273	Not significant

Table 8 Effect of Therapy on Physical Parameters of 49 Patients of Tamak Shwasa

Sr No.	Physical Parameter	Gr	Mean ± SD		Mean of diff. ± SD	SEd	't'	P
			BT	AT				
1	Respiratory Rate(RR)	TG	24.12 ± 2.088	19.60± 1.708	4.52 ± 1.636	0.3272	13.814	<0.0001
		CG	25.042±1.628	19.583± 1.53	5.458± 1.285	0.2622	20.815	<0.0001
2	Expansion of Chest (EOC)	TG	79.28±6.045	80.24 ± 5.79	-0.96 ± 1.06	0.2120	4.529	<0.0001
		CG	82.417±7.312	83.792±7.16	1.375±0.87	0.1787	7.695	<0.0001
3	Breath Holding Time(BHT)	TG	6.24±1.94	11.08± 3.353	-4.84 ±2.17	0.4347	11.135	<0.0001
		CG	6.458±2.0	14.375 ±2.65	-7.917± 2.06	0.4210	18.805	<0.0001
4	Sustained Maximal Inspiration(SMI)	TG	3.24±0.778	6.08± 1.187	-2.84 ± 1.028	0.2056	13.814	<0.0001
		CG	3.375±0.710	5.958±0.954	2.583±0.77	0.1583	16.319	<0.0001
5	Peak Expiratory Flow Rate(PEFR)	TG	162.80±27.91	234± 35.59	-71.20± 27.1	5.426	13.122	<0.0001
		CG	149.17± 39.1	240.83±52.3	-91.667±27.6	5.636	16.265	<0.0001

Table 9 Comparison between Two Groups By Unpaired 't' Test with respect to Hematological Parameters

Sr No.	Hematological Parameter	Mean of diff. ± SD		Diff. between two means	SEd	T	P
		trial Group	Control Group				
1	ESR	7.6 ± 6.88	3.25 ± 5.53	4.35	1.779	3.693	P<0.001
2	E+M	3.04 ± 2.11	2.42 ± 1.44	0.62	0.5141	1.2060	p>0.1

Table 10 Comparison between Two Groups by Chi-Square Test

Sr. No.	Group	Markedly Improved	Improved	Total	Chi-square value
1	trial Group	(O)=21 (E)=19.89	(O)=4 (E)=5.11	25	0.61 >0.05
2	Control Group	(O)=18 (E)=19.11	(O)=6 (E)=4.89	24	

It was seen that by comparison of two groups there is equal effect of both group as p value is not significant in any of symptoms of tamak shawsa. **Table 7.**

In both group there was significant effect found by therapy of trail group as well as control group.In table no. 8 it was observed that p value is <0.0001 in all physical parameters. **Table 8.**

In this study it was observed that p value is significant (p<0.001) for ESR in trial group (**Table 9).**

In case of trial group 21 patients were markedly improved and 4 patients were improved, while 18 patients were markedly improved and 6 patients were improved in Control group. Comparison between (**Table 10**) two groups with respect to total effect of therapy was done by Chi-square test. There was no significant difference between two groups.

Mode of action of Krishandi Churna: Tamaka Shwasa is having Kapha, Vata predominance. While mentioning management of this disease Acharyas explained that, those diets' and drugs that have Kaphavataghna, Ushna and Vatanulomana properties are useful in Tamaka Shwasa (C.C.17/147).

All these drugs are mostly having Vatakaphahara and Vatanulomana property. Pippali is already proved to be act on Prana vaha srotas, Amalaki is itself Rasayan which increase the strength of patients. The other three ingredients Shunthi, Amalaki and Seeta is supposed to alleviate the Vata and Kapha and also increase the strength of patients.

Table 11 Total Effect of Therapy on Total 60 Patients of Tamak Shwasa

Sr. No	Criteria For Total Effect of Therapy	Groups	Total No. of Patients	%
1	Cured	TG	00	00
		CG	00	00
2	Markedly Improved	TG	21	70%
		CG	18	60%
3	Improved	TG	04	13.33%
		CG	06	20%
4	Unchanged	TG	00	00
		CG	00	00
5	LAMA	TG	05	16.67%
		CG	06	20%

It was observed in this study (21)70% patient were markedly improved (relief is > 75%) while (18) 60% in control group. Those patients who got relief in 50-75% were (4) 13.33% in trail group while (06) 20% in control group. Left against medical advice in trial group were 16.67% and 20% in control group, respectively. **Table 11**

DISCUSSION

Totally 49 patients of Tamak Shwasa were categorized into two groups i.e. trial Group (25) and Control Group (24).Table No.2 Most of the patients were having Vata dominance 85.71% followed by Kapha dominance 14.29% **Table 3**

Effect of therapy was mainly assessed on total symptoms score of clinical parameters in before and after treatments. Percentage of relief was more in trial Group than that in Control Group, in terms of symptoms like Kasa, Kaphashteevan, Aruchi and Shwasakashthata. **Table 4** In trial group, all the symptoms relieved significantly at 5% level of significance, as P value was < 0.05 except for parshvashula, while in Control group it was found that all symptoms relieved significantly at 5% level of significance. **Table No.5 &** 6 Comparison between two groups with respect to symptoms score was statistically evaluated by Mann-Whiteny test. There was no significant difference found in two groups as P value was not significant **Table 7**. As per the criteria of assessment of this study, total effect of therapy was highlighted in terms of cured, markedly Improved, Improved, unchanged and LAMA. It is to be noted here that 5 and 6 patients, respectively from trial and Control Groups discontinued the treatment in the halfway without any prior intimation, hence were termed as LAMA (Left against Medical Advice) in Table–11.

In this study, none of the remaining 49 patients of Tamak Shwasa were 'cured'. However, 21 patients (70%) from trial Group were markedly improved and 4 patients (13.33%) were improved after completing the treatment. In case of Control group 18 patients (60%) were markedly improved and 6 patients (20%) were improved. **Table 11.**

CONCLUSION

It was observed the significant improvement in symptoms of both groups while no significant difference was found between two groups except in Kasa lakshan, as results are more significant for Kasa in trial group. In terms of physical

parameters like RR, EOC, BHT, SMI and PEFR, these were found to be significantly increased in both the groups. Hematological parameters did not show any significant change in trial Group except for ESR which was significantly reduced.

Conflict of Interest: Nil

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