



The Effect of Indigenous Classical Compound Preparation “*Shatyadichoorna*” in the Management of “*Shwasa*” with Special Reference to Bronchial Asthma in Children- A Clinical Study

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Abstract

Background: Childhood Asthma is a major global health concern and causes a great burden on the family and society and interferes with academic achievements and social interaction due to school absenteeism. Asthma is one among the leading cause of hospitalization among children under the age of 15 years. Though the mortality and hospitalization decreased and prevalence has stabilized due to better level of management, still there is need of safe and cost effective drug for the long term use as Tamaka Shwasa is considered as one among yasya disease as per Ayurveda. Shatyadi Choorna is one of the simple and safe herbal combinations advised by Yogaratnakara in the treatment of Shwasa Roga.

Objectives: To evaluate the efficacy of ShatyadiChoorna in Bronchial Asthma in children.

Methods: 30 children diagnosed as Bronchial Asthma were selected for the study. The trail drug ShatyadiChoorna was administered for 30 days with the assessment at the interval of every 7 days. Followed by the clinical assessment of Asthma, objective parameters such as Hb%, TLC, DLC, ESR, AEC and Peak Expiratory Flow Rate were assessed before and after the treatment. Assessment was also carried out in every 15 days during the follow up period of 60 days.

Results: In both subjective and objective evaluations, results were encouraging. Clinical assessment of level of Asthma control was found statistically highly significant (p-0.0001).Improvement in terms of Peak Respiratory Flow Rate was significant (p-0.0001).The Shatyadi Choorna was found effective in the improvement of clinical features of Bronchial Asthma in children.

Key words: *Bronchial Asthma, TamakaShwasa, ShatyadiChoorna, ShwasaRoga, Peak Expiratory Flow Rate.*

Introduction:

Asthma is a chronic inflammatory disease of airways characterized by the obstruction of airways. There will be bouts of expiratory dyspnea due to either Bronchospasm, mucosal oedema or thick secretion. The disease is caused by extrinsic factors which is allergic and common in children. The main diagnostic features of the disease are wheezing on exhaling, frequent intermittent cough, shortness of breath, chest tightness and chest pain. Childhood asthma is not a different disease from Asthma in adults. Asthma in

children is a leading cause of emergency visits, hospitalization and missed schools. Kashyapa in Vedanadhyaya mentioned that child exhaling warm air is said to be suffering from Shwasa Roga. It is a disorder of respiration where Prana Vayu gets vitiated and obstructed by Kapha, moves upwards and because of airway obstruction inspired air failed to reach the lungs causing difficulty in breathing. As Tamaka Shwasa is one among Shwasa Roga is relieved by the long term therapy, where safe and effective medicine without adverse effect is need of the hour.

Shatyadi Choorna is an herbal combination said to be advised along with honey as vehicle in the treatment of Shwasa Roga mentioned in the text Yogaratnakara is a mixture of following drugs in equal quantities-

1. Shati- *Hedychium spicatum*
2. Bharangi- *Clerodendrum serratum*
3. Vacha- *Acorus calamus*
4. Shunti- *Zingiber officinale*
5. Pippali- *Piper longum*
6. Maricha- *Piper nigrum*
7. Tejohwa- *Zanthoxylum alatum*
8. Pushkaramula- *Innula recemosa*
9. Hareetaki- *Terminalia chebula*
10. Karkatashringi- *Pistacia integerrima*
11. Katphala- *Myrica esculenta*
12. Ruchakalavana- Rock salt

The individual ingredients of the compound has been proven safe and effective in the treatment of various problems pertaining to the respiratory system including Bronchial Asthma and cough of varied etiology.

Objectives of the study:

To evaluate the efficacy of *Shatyadi Choorna* in Bronchil Asthma in children.

Materials and Methods:

Source and methods of collection of data:

30 children of either sex of the age group of 5-15 years were randomly selected in the Balaroga O P D of JSS Ayurveda Hospital, Mysuru and special camps conducted in the hospital, JSSschool, Suttur, Nanjangud Mysuru district in this regard.

Sampling:

Single group study of 30 children suffering from Bronchial Asthma to study the effect of Shatyadi Choorna clinically and on Peak Expiratory Flow Rate.

Inclusion criteria:

- Children in the age group of 5-15 years.
- Children irrespective of gender, religion and socioeconomic status.
- Children with symptoms described in the context of Bronchial Asthma.

Exclusion Criteria:

- Children with cardiovascular, renal and other systemic diseases.
- Children with chronic and infective disorders of respiratory system.
- Primary complex.
- Acute severe Asthma.
- Severe persistant Asthma.

Diagnostic criteria:

Recurrent episodes of wheezing with recurrent cough either dry or productive.
Breathlessness, chest pain, chest tightness, exhaustion, restlessness and sweating.

Assessment criteria: Effect of the treatment was assessed on the basis of gradation of subjective parameters (G0-G5) and objective parameters (Hb%, TLC, DLC, ESR, AEC) and PEFR before, during and after the treatment.

Study design: Children fulfilling the diagnostic criteria were selected for the study under single group. Blood samples were drawn and PEFR values checked. Intervention started with Shatyadi Choorna in the dosage of 8gms/day for the age group of 5-9yrs and 10 gms/day for the age group of 10-15yrs in 4 divided doses along with honey as vehicle irrespective of food for 4 weeks. Every 7 days children were assessed with respect to the symptoms and PEFR values noted. After the duration 30 days, blood samples were drawn and analyzed statistically.

Study Period: One month with assessment in every 7 days.60days follow up period with assessment in every 15 days.

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Results:

Table 1(a). Effect of Shatyadi Choorna on wheeze

Grades	BT	D.T 7 th day	D.T 14 th day	D.T 21 st day	AT
3	15	8	4	0	0
2	15	13	13	8	0
1	0	8	11	17	13
0	0	1	2	5	17

Table 1(b). Comparison between before treatment and after treatment

	Mean	S.D	t-value	p-value
BT	2.50	0.5085	25.167	0.0001
AT	0.433	0.5040		

Table 2(a). Effect of Shatyadi Choorna on cough

Grades	BT	D.T 7 th day	D.T 14 th day	D.T 21 st day	AT
3	7	3	1	0	0
2	22	14	6	3	0
1	1	12	18	15	16
0	0	1	5	12	14

Table 2(b). Comparison between before treatment and after treatment

	Mean	S.D	t-value	p-value
BT	2.20	0.4842	16.699	0.0001
AT	0.533	0.5074		

Table 3(a). Effect of Shatyadi Choorna on breathlessness

Grades	BT	D.T 7 th day	D.T 14 th day	D.T 21 st day	AT
3	6	4	1	0	0
2	20	14	9	1	0
1	4	11	17	20	8
0	0	1	3	9	22

Table 3(b). Comparison between before treatment and after treatment

	Mean	S.D	t-value	p-value
BT	2.067	0.5833	17.897	0.0001
AT	0.267	0.4498		

Table 4(a). Effect of Shatyadi Choorna on chest pain

Grades	BT	D.T 7 th day	D.T 14 th day	D.T 21 st day	AT
3	0	0	0	0	0
2	5	3	2	0	0
1	15	14	10	6	4
0	10	13	18	24	26

Table 4(b). Comparison between before treatment and after treatment

	Mean	S.D	t-value	p-value
BT	.833	0.6989	6.433	0.0001
AT	0.133	0.3457		

Table 5(a). Effect of Shatyadi Choorna on chest tightness

Grades	BT	D.T 7 th day	D.T 14 th day	D.T 21 st day	AT
3	0	0	0	0	0
2	14	10	5	0	0
1	11	13	14	8	6
0	5	7	11	22	24

Table 5(b). Comparison between before treatment and after treatment

	Mean	S.D	t-value	p-value
BT	1.300	0.7497	9.104	0.0001
AT	0.200	0.4068		

Table 6(a). Effect of Shatyadi Choorna on chest exhaustion

Grades	BT	D.T 7 th day	D.T 14 th day	D.T 21 st day	AT
3	2	0	0	0	0
2	5	5	4	0	0
1	13	15	10	9	3
0	10	10	16	21	27

Table 6(b). Comparison between before treatment and after treatment

	Mean	S.D	t-value	p-value
BT	0.967	0.8899	6.117	0.0001
AT	0.100	0.3051		

Table 7(a). Effect of Shatyadi Choorna on chest sweating

Grades	BT	D.T 7 th day	D.T 14 th day	D.T 21 st day	AT
3	0	0	0	0	0
2	3	0	0	0	0
1	10	12	7	2	2

0	17	18	23	28	28
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Table 7(b). Comparison between before treatment and after treatment

	Mean	S.D	t-value	p-value
BT	0.533	0.8614	4.474	0.0001
AT	0.067	0.2537		

Table 8(a). Effect of Shatyadi Choorna on restlessness

Grades	BT	D.T 7 th day	D.T 14 th day	D.T 21 st day	AT
3	0	0	0	0	0
2	6	3	2	0	0
1	13	15	11	8	4
0	11	12	17	22	26

Table 8(b). Comparison between before treatment and after treatment

	Mean	S.D	t-value	p-value
BT	0.833	0.7466	5.887	0.0001
AT	0.133	0.3457		

Table 9(a). Effect of Shatyadi Choorna on PEFr

Scores	B.T	D.T 7 th day	D.T 14 th day	D.T 21 st day	A.T
<150	9	8	7	6	4
150-200	5	3	2	3	4
200-250	8	10	9	6	6
250-300	7	8	11	13	10
>300	1	1	1	2	6

Table 9(b). Comparison between before treatment and after treatment

	Mean	S.D	t-value	p-value
BT	203.333	73.124	-6.640	0.0001
AT	243.667	69.703		

Table 10. Effect of Shatyadi Choorna on Hematological value

Criteria	BT Mean(SD)	AT Mean(SD)	t-value	p-value
Hb%	13.133(1.214)	13.003(1.1376)	1.157	0.257
TC	9363.333(2529.206)	8021.333(2562.159)	3.051	0.005
Neutrophils	55.000(9.432)	53.967(9.510)	0.581	0.566
Lymphocytes	39.900(8.806)	41.6(9.474)	-1.030	0.312
Eosinophil	2.200(2.1238)	2.333(1.398)	-0.430	0.670
Monocytes	2.733(1.172)	2.467(1.332)	1.137	0.265
ESR	21.567(16.397)	14.667(7.208)	2.320	0.028
AEC	389.333(402.532)	209.900(111.543)	3.036	0.005

There was a reduction of 82.68% of wheeze in 30 children after the completion of the treatment and paired t test showed $P < 0.0001$ which is highly significant (Table 1b). There was reduction of 75.77% of cough in 30 children after the completion of the treatment and paired t test showed $P < 0.0001$ which is highly significant (Table 2b). In the study breathlessness was also reduced by 87.08% in 30 children after the

completion of the treatment and the paired t test showed $P < 0.0001$ which is statistically highly significant (Table 3b). The chest pain was reduced to 84.03% in 20 children after the completion of the treatment and the paired t test showed $P < 0.0001$ which is again statistically highly significant (Table 4b). The study showed the reduction of chest tightness about 84.61% in 25 children after the completion of the treatment and the paired t test showed $P < 0.0001$ which is highly significant (Table 5b). There was reduction of 89.65% of exhaustion in 20 children after completion of the treatment and paired t test showed $P < 0.0001$ which is highly significant (Table 6b). In the study sweating was reduced by 87.42% in 13 children after the completion of the treatment showing the paired t test $P < 0.0001$ which is highly significant (Table 7b). Restlessness was reduced by 84.03% in 19 children after the treatment and paired t test showed $P < 0.0001$ which is highly significant statistically (Table 8b).

83.49% of improvement was observed in PEFr value in 30 children of the study with the mean difference of 40.33 and the paired t test showed $P < 0.0001$ with statistically highly significant result (Table 9b). There was also good improvement in ESR and AEC values with the mean difference of 6.9 and 179.433 respectively and the t test showed statistically significant result (Table 10).

Discussion:

Bronchial Asthma is the most common chronic disorder in children characterized by recurrent attacks of breathlessness and wheezing associated with cough. There will be airway obstruction either due to inflammation of mucus membrane, excessive secretion of mucus or spasm of smooth muscles. The incidence of Asthma is on increase and affected children forms high proportion of those attending outpatient clinics. Child exhaling warm air is said to be suffering from Shwasa Roga and Tamaka Shwasa was mentioned by Kashyapa in Khilasthana is one of Yajnya Vyadhi. The concept of Ama, Mithya Ahara Vihara, Prjnaparadha and Apathya Ahara Sevana etc have been clearly explained as Nidana for Tamaka Shwasa. An effective management with good prognosis have been explained centuries ago with the tested documentary manuscripts. Shatyadi Choorna is a polyherbal formulation with the indication in respiratory disorders may be a perfect suitable combination to treat bronchial Asthma in children. The study with 30 children suffering from Bronchial Asthma showed encouraging result in reducing the symptoms such as wheezing, cough, breathlessness, chest pain, chest tightness, exhaustion, sweating and restlessness in the stipulated period of a month with no recurrences during the follow up period of 60 days. There was also marked improvement in the objective parameters such as PEFr, ESR and AEC values. The study showed the classical compound preparation Shatyadi Choorna was proved to be effective statistically with $P < 0.0001$ which is highly significant.

Conclusion:

Shatyadi Choorna explained in Yogaratanakara is the simple cost effective and safe drug compound in the treatment of Bronchial Asthma in children. The contents of the drug combination having Katu Tikta in Rasa, Ruksha Ushna Teekshna in Guna, Madhura in Vipaka and Ushna in Veerya in tern balances Vata and Kapha as Vata Kapha aggravation is responsible in the manifestation of Shwasa Roga. The combination is highly useful in bringing Samprapti Vighatana of Shwasa Roga. The ingredients possess antitussive, bronchodilator, smooth muscle relaxant, antihistaminic and antibacterial effects thereby helps to relieve the symptoms of Bronchial Asthma.

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