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A Clinical Study on the Use of Drakshadi Syrup for the Management of *Tamak Swash* (Bronchial Asthma) in Children

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Abstract

Background: Bronchial asthma in children is a prevalent illness globally. There is strong evidence indicating a global rise in asthma cases, impacting numerous families, education, growth and development of children and also healthcare systems. Chronic asthma results in a significant financial load on the society.

Aim: the present study is undertaken to assess the efficacy of the polyherbal compound 'Drakshadi Syrup' in the management of childhood bronchial asthma.

Material & Methods: after taking clinical history of bronchial asthma (Tamak Swash) 106 nos. of patient were registered irrespective of sex between the age group 3-16 years out of which 100 nos. of patient completed the trial. Blood samples were collected before and after 90 days for TC, DLC, ESR, Hb%, AEC, IgE along with spirometry (PEFR). Drakshadi syrup was given for 90 days in a dose of 1ml/kg/day in two divided doses.

Statistical analysis used: paired-t test in GraphPad prism-10 software

Results and conclusion: both the subjective and objective parameters have shown highly significant improvement with p<.0001. so, it can be concluded that the Drakshadi syrup is very effective in the management of childhood asthma

Keywords: Drakshadi syrup, *Tamak Swash*, bronchial asthma

INTRODUCTION

Bronchial asthma is a chronic lung disease with airway obstruction, airway inflammation, and hyper-reactivity to various stimuli, often reversible with bronchodilators and anti-inflammatory drugs[1].

Bronchial asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms, such as wheezing, shortness of breath, chest tightness, and cough, that vary over time and in intensity, together with variable expiratory airflow limitation.[2]

Bronchial asthma is one of the most prevalent chronic conditions worldwide causing a extensive social burden on both children and adults.

The overall prevalence of current asthma symptoms in Global Asthma Network Phase I was 9.1% for children, 11.0% for adolescents, and 6.6% for adults. This differed by country income level with lower prevalences across all three age groups in low- to lower-middle-income countries and highest prevalences in high-income countries[4]. Global Burdan of Diseases Study estimated that in 2019, there were 21.6

million DALYs (Disability-adjusted life years) attributed to asthma across all ages globally and asthma was ranked 34th among the leading causes of burden of disease, responsible for a fifth of total DALYs from chronic respiratory diseases. Chronic asthma causes a great financial load on society as well as the individual family.

74% of asthma episodes experienced in children less than 5 years of age and 26% in less than one year of age[5]

Asthma is a global health problem, affecting approximately 300 million people worldwide and 1000 deaths per day[2]

In Ayurvedic texts laboured, loud, and fast breathing due to blockage in the flow of *Vayu* is regarded as *Swash roga*.

There are five types of *Swash rogas* mentioned in our classics. They are *Maha Swash, Urdha Swash, Chhinna Swash, Tamak Swash* and *Kshudra Swash*. As per the descriptions available in various Ayurvedic texts, *Tamak swash* is closely similar to bronchial asthma in modern medicine.

MATERIALS AND METHOD

Aims and objectives:

- Study the role of Drakshadi syrup in the management of *Tamak Swash* (bronchial asthma) in children."
- To provide relief from the symptoms through a holistic approach

Selection of patients:

106 nos. of patients between 3 to 16 years of age of either sex were enrolled for the present study after getting written consent from the guardian or caretaker with signs and symptoms of *Tamak Swash* (Bronchial Asthma) like dyspnea, cough, wheezing, prolonged expiration, fever, chest tightness, rhinitis, crepitation, sleep disturbance and headache from O.P.D. & I.P.D. of Government Ayurvedic College & Hospital, Jalukbari, Ghy-14 Assam and kept in one single group. Out of 106 patients, 6 nos. of patients were discontinued from the study.

Inclusion criteria:

- Patients present with cardinal signs and symptoms of bronchial asthma
- Patients between the age group of 3-16 years of either sex.
- Uncomplicated case of Bronchial asthma

Exclusion criteria:

Patients less than 3 years of age or above 16 years, suffering from cardiac asthma, pulmonary tuberculosis, massive pulmonary embolism, COPD, psychogenic dyspnoea, metabolic acidosis, renal pathology, acute severe asthma, pneumonia, left ventricular failure, malignancy, and surgical intervention are excluded from the study.

Investigations:

- Blood : TLC, DLC, Hb%, ESR, AEC
- Stool : Routine& microscopic examination
- Urine : Routine & microscopic examination
- Sputum : For AFB to exclude tubercular pathology
- X-ray chest P.A. view (to exclude structural or other radiological abnormality)
- ECG: To exclude patients with cardiac diseases.
- Serum IgE Level

- Spirometry-peak expiratory flow rate (PEFR)

TLC, DLC, Hb%, AEC, and IgE levels are done routinely in all cases before treatment and after completion of the treatment i.e. after 90 days

Selection of Drug:

A polyherbal compound '*Drakshadi Churna'* mentioned in Yogaratnakar Uttarardha[6] for the treatment of *Tamaka Swash* in children is selected for the study. The polyherbal compound includes **Draksha** (*Vitis vinifera* Linn.), **Vasaka** ((*Adhatoda vasica* Ness.) **Haritaki** (*Terminalia chebula* Retz.), and **Pippali** (*Piper longum*Linn.). For palatability and easy administration, the drug was transformed into syrup and named as Drakshadi Syrup.

Dose and duration:

All the drugs were taken in equal ratios and made into honey-based syrup. Though the drug was mentioned as a powder, to make it more palatable in children it was transformed into honey-based syrup. All the patients enrolled in the study were given the syrup in a dose of 1ml/kg/day in two divided doses for 90 days and advised to do follow-up every 15-day interval.

Assessment criteria:

For assessment of the efficacy of the trial drug from both modern and Ayurvedic points of view, the following two parameters were adopted-

1. Subjective parameters (improvement in clinical features)
2. Objective parameters (improvement in laboratory and other investigations)

Subjective parameters-

Assessment of clinical features (Dyspnoea, Cough, Prolonged expiration, Rhonchi/Wheezing, Tightness of the chest, Rhinitis, Crepitation, Headache, Sleep Disturbance, and Fever) depending on the severity was done on a four-point scale like nil, mild, moderate with grade points 0 to 3 respectively. Severity scores of all clinical features were recorded before and during every visit for analysis but for analysis before and after follow-up score points were used.

Objective parameters-

- **Blood** -TLC, DLC, ESR, Hb%, AEC & IgE
- **Spirometry**-Peak Expiratory Flow Rate (PEFR) in Litre/Second

All the values of laboratory investigation and PEFR were recorded before and after 90 days (completion of trial) of treatment.

Statistical analysis:

In the present study, GraphPad Prism-10 was used to get the mean($\bar{x}$), Standard deviation (SD), Standard Error (SE), standard error of mean difference (SED), p-value, and t-value.

OBSERVATION AND RESULTS:

The highest number of patients i.e. 60% belong to the age group 3-6 years followed by 23% in 7-10 years and 17% were 11 to 16 years of age. The maximum number of patients was female i.e. 52.00%. whereas male patients were 48.00%.

The majority of patients i.e. 73.00% belonged to urban habitats and 27.00% from rural areas.

The present study also shows that maximum number of patients i.e. 54.00% were belonging to lower class followed by 36% from middle class and 10% from upper class respectively.

Religion-wise distribution showed 72% Hindu, 26% Muslim, and 2% Sikh.

In the present study, there were 86% of non-veg patients whereas only 14% were vegetarian.

In the present study, the maximum nos. of cases (15%) had a history of pneumonia followed by 12% of measles,6% of typhoid,2% of jaundice, and 1% of whooping cough but there was no history of meningitis and tuberculosis in past.

53% of patients showed positive hereditary influence whereas 47% had no positive family history.

Risk factors screening of the study showed that the highest numbers of the patient had genetic susceptibility i.e. 38% followed by 15% early weaning, 12% use of antibiotics in early infancy, 10% passive smoking, 8% soft toys and carpets, 6% pets and bottle feeding and poor ventilation at home are responsible for 5% cases.

Provocation factors/triggering factors in the present study showed that the highest nos. of the patients had provoked by Cold air/ cold season/Season Change i.e. 57%, followed by dust allergy in 53%, by Cold water/Cold drinks &ice creams in 41%, passive smoking in 24%, cloudy weather in 23%, curd or *Vyayam* (exercise) /loud laughing/loud crying in 6%, strong odour or citrous fruit/banana/apple in 2% and mental stress in only 1% cases.

In the present study, the duration of illness was found to be 38% in less than 1 year age, 30% in1-2 years,20% in 2-3 years, and 12% were in above 3 years.

In the present study, before treatment dyspnoea, cough, prolonged expiration, and wheezing/rhonchi were present in 100% of patients, tightness of chest in 69%, rhinitis in 50%, crepitation in 24%, headache in 27%, sleep disturbance in 34% and fever only in 9% cases. The response of the trial drug on the clinical features is shown in Table 2.

Table 1: Chief Complaint and Associated Symptoms observed in 100 Patients of bronchial asthma

Sl. No	Sign & Symptoms	No. of Patients	Percentage
1	Dyspnoea	100	100.00%
2	Cough	100	100.00%
3	Prolonged Expiration	100	100.00%
4	Rhonchi / Wheezing	100	100.00%
5	Tightness of Chest	69	69.00%
6	Rhinitis	50	50.00%
7	Crepitations	24	24.00%
8	Headache	27	27.00%
9	Sleep disturbances	34	34.00%
10	Fever	09	09.00%

Table 2: Response of the treatment on signs and symptoms after 90 days in bronchial asthma(N=100)

Sl. No	Sign & Symptoms	Nos. of Patients		Percentage of relief
		Before treatment (BT)	After treatment (AT)	
1	Dyspnea	100	18	82.00%
2	Cough	100	12	88.00%

3	Prolonged Expiration	100	13	83.00%
4	Rhonchi / Wheezing	100	24	76.00%
5	Tightness of Chest	69	16	76.81%
6	Rhinitis	50	16	68.00%
7	Crepitations	24	3	87.50%
8	Headache	27	4	85.18%
9	Sleep disturbances	34	6	82.35%
10	Fever	09	1	88.89%

In the present study, the severity scores of cough, dyspnoea, prolonged expiration, wheezing, tightness of the chest, rhinitis, crepitation, headache, sleep disturbances, and fever are recorded before and after 90 days of treatment. Paired-t test showed a highly significant result in the reduction of all the clinical features with p<.0001 (Table-3).

Laboratory investigations (ESR, AEC, IgE) and spirometry (PEFR) were done before and after 90 days of treatment. All the values are analyzed by paired-t-test and found highly significant improvement with P<.0001(Table-4)

After 90 days of treatment with the trial drug, 10% of the patients showed complete remission of symptoms (Cured), 41% of patients markedly improvement, 30% moderately improvement,10% mild improvement, and 9% poor response to the treatment. (Table-5)

Figure No.01 shows response of treatment after 90 days

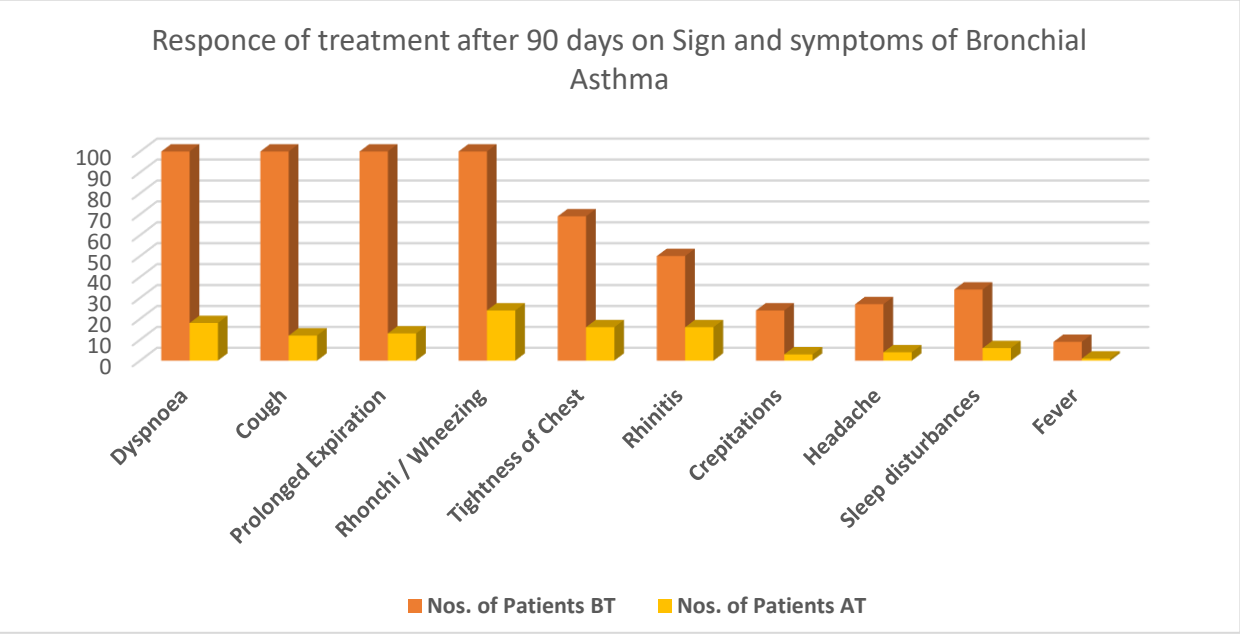


Table-3. Showing improvement in clinical features before and after 90 days of treatment

Sl no	Clinical features	x̄BT±SD	x̄AT±SD	BT-AT	N	t-value	p-value	Remarks
1	Cough	2.26±0.63	0.22±0.60	2.04	100	30.66	<.0001	H.significant
2	Dyspnea	1.79±0.61	0.19±0.42	1.6	100	28.14	<.0001	H.significant
3	Wheezing	1.97±0.59	0.27±0.51	1.7	100	32.55	<.0001	H.significant

4	Prolonged expiration	1.82±0.54	0.14±0.38	1.68	100	32.93	<.0001	H.significant
5	Chest tightness	1.88±0.56	0.28±0.51	1.60	69	25.66	<.0001	H.significant
6	Rhinitis	1.90±0.58	0.38±0.60	1.52	50	19.77	<.0001	H.significant
7	Crepitation	1.46±0.51	0.13±0.34	1.33	24	13.56	<.0001	H.significant
8	Sleep disturbances	1.32±0.47	0.18±0.39	1.14	34	18.61	<.0001	H.significant
9	Headache	1.26±0.53	0.19±0.48	1.07	27	20.91	<.0001	H.significant
10	Fever	1.33±0.71	0.22±0.67	1.11	9	10.00	<.0001	H.significant

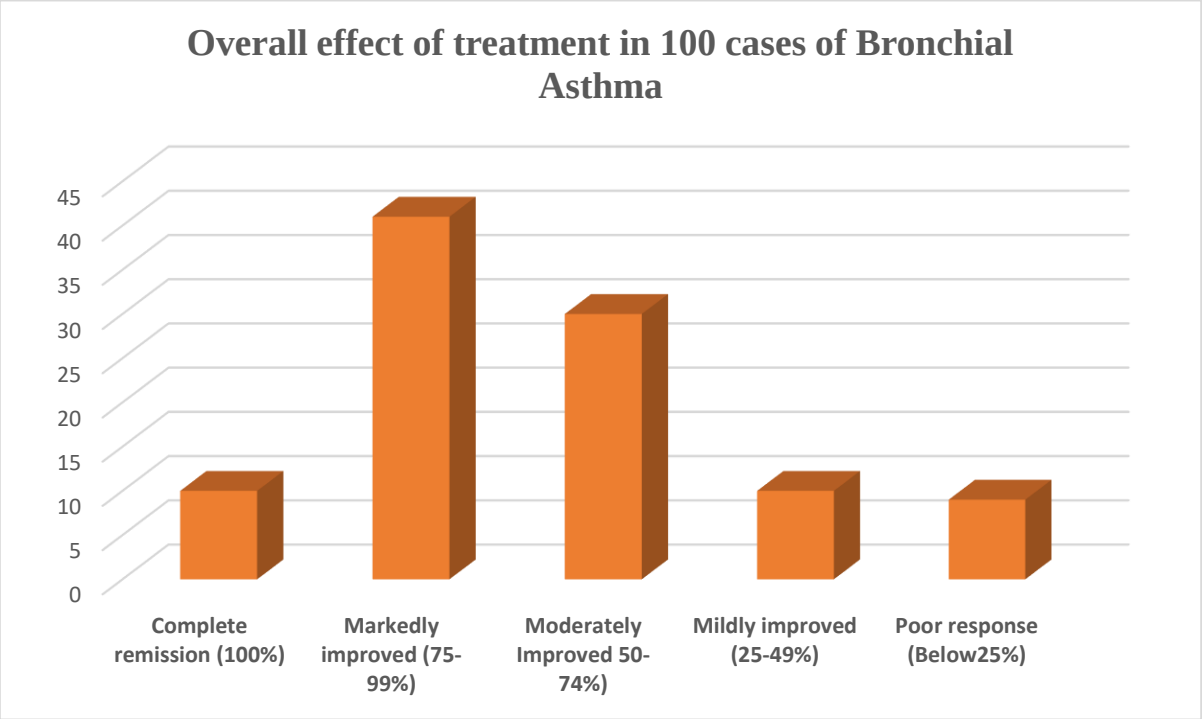
Table-4. Showing effect of treatment in laboratory parameters & spirometry before and after 90 days of treatment

Sl No.	**Parameters**	**x̄BT±SD**	**x̄AT±SD**	**BT-AT**	**N**	**t-value**	**p-value**	**Remarks**
1	ESR (mm/hr)	13.46 ±2.96	9.46 ±1.47	4.0	100	17.16	<.0001	H.S.
2	IgE (IU/ml)	223.71 ±115.51	198.56 ±102.12	25.15	100	9.73	<.0001	H.S.
3	AEC (cell/mm^3)	289.68 ±117.96	185.34 ±91.98	104.43	100	13.31	<.0001	H.S.
4	PEFR (L/sec)	90.00 ±21.46	155.8 ±45.62	65.80	100	22.56	<.0001	H.S

Table-5: Overall Effect of Treatment after 90 days in 100 patients of Bronchial Asthma

Results	No. of Patients	% of patients
Complete remission (100%)	10	10.00 %
Markedly improved (75-99%)	41	41.00 %
Moderately Improved 50-74%)	30	30.00 %
Mildly improved (25-49%)	10	10.00 %
Poor response (Below25%)	09	9.00 %
Total	100	100%

Figure-2: overall effect of trial drug in 100 cases of bronchial asthma



CONCLUSION

The present research work wants to conclude that Drakshadi syrup is found to be very effective in childhood bronchial asthma with significant improvement in both subjective and objective parameters. The effect may be due to the immunomodulatory (Dean P, et al 2007), anti-histaminic (Pathak D, et al 1991), antiallergic[7,8] & mast cell degranulation properties (Pathak D, et al 1991) activity, bronchodilator activity (Mohammad Kazem et al 2005), anti-tussive[9], Antiviral activity[10] Expectorant activity (Inamdar at el 1960), anti-inflammatory activity (Chakraborty A & Brantner AH, 2001), mucolytic activity[11] of the drug component. Excellent result of the trial drug may also be achieved due to *Jwarahara*[12], *Swashahara*[13], *Kasahara*[14] *Tridoshasamak*[15] properties of the drug components.

No specific side effects of the Drakshadi syrup were observed during the trial period of 3 months. The Drakshadi syrup can be regarded as a non-steroidal, cost-effective, and safe drug that can be prescribed for childhood bronchial asthma.

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References:

1. IAP textbook of pediatrics,4th edition,2010
2. Global initiative in asthma, 2024 report
3. Global initiative for asthma, global strategy for asthma management and prevention, National Institute of Health updated 2012
4. The Global Asthma Report, 2022
5. IAP textbook of pediatrics, 3rd edition

6. Yogaratnakar /uttardha /Balrogachikitsa adhyay
7. Aher VD. Immunomodulatory effect of alcoholic extract of Terminalia chebula ripe fruits. J Pharm Sci Res. 2010; 2 (9):539– 544.
8. Pratibha N, Saxena VS, Amit A, D'Souza P, Bagchi M, Bagchi D. Anti-inflammatory activities of Aller-7, a novel polyherbal formulation for allergic rhinitis. Int J Tissue React. 2004; 26 (1– 2):43–51. [PubMed]
9. Gabriela Nosalova et.al. hasevaluated the anti-tussive activity of water-extracted carbohydrate polymer from the fruits of Terminalia chebula retz.inguinea pigs.Hindawi Publishing corporation, Evidence based complementary and alternative medicine.Volume- 3.2013
10. Yukawa TA, Kurokawa M, Sato S, Yoshida Y, Kageyamer S, Hasegawa T, et al. et al. Prophylactic treatment of cytomagalovirus infection with traditional herbs. Antiviral Res. (1996; 32 (2):63–70. [PubMed]
11. Ind. Journal of Pharm. Sci. 1979,41 (6) 277
12. Charak samhita/Sutrasthan/4/39, Susruta Samhita/ Uttartantra /39/171, Bhavaprakash Nigantu/ Amaradivarga/111)
13. Bhavaprakash Nigantu/ Amaradivarga/111
14. Charak samhita/Sutrasthan/4/36, Susruta Samhita/Uttartantra52/15, Astanga sangrah /sutrasthan/ 15/36)
15. Kaiyadev Nigantu/Aushadi varga, P.184