Research Article

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A CLINICAL STUDY ON THE EFFICACY OF PARNAS PANCHAKAM YOG IN THE MANAGEMENT OF TAMAKA SHWASA WITH SPECIAL REFERENCE TO CHILDHOOD ASTHMA

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ABSTRACT

The present clinical trial was designed to go forward for an effective Ayurvedic regimen for treatment of Tamaka Shwasa by taking Samshaman chikitsa. Tamaka shwasa exacerbations are mostly occurs in winter, rainy and spring season due to increased humidity and allergens. Pranvaha, Annavaha, Rasavaha srotodushti was found chiefly and Kapha and Vata were main doshas, which vitiated dhatu and srotas. Ingredients of used Parnaspanchakamyog are Kaphavatashamak along with anti-allergic, anti-inflammatory, immunomodulatory action. In this single group study Total 36 patients were enrolled in which 32 patients continued the schedule. The prepared medicine has been administered in a single group of patients of age between 5-16 years for 3 months with follow up period of 3 months. Trial drug shows promising results may be due synergistic actions of all ingredients. Overall effect of therapy shows 4 (12.5%) patients were relieved 20 (62.5%) patients were moderately improved. 8 (25.0%) patients were mildly improved.

Keywords: Tamaka, Parnaspanchakam, Srotodushti

INTRODUCTION

Ayurveda is the science of health and medicines as well; to keep the health of the healthy and restore the health for the unhealthy. Unlike many diseases, which can be attributed to the lifestyle of modern man, Asthma is an ancient illness. Childhood Bronchial Asthma has multifactor causation like Geographical location, environmental, racial, as well as factors related to behaviors and lifestyles are associated with the disease. Tamaka Shwasa is a disease described in Ayurvedic texts that shows close resemblance with bronchial Asthma on the basis of clinical manifestations. Generally, there is no permanent cure for Asthma as per the Conventional Medical Science. Ayurvedic medicines can be a potential and effective for the treatment against the bronchial Asthma. Ayurvedic medicines are used for the treatment of diseases globally so that people all over the world can keep faith on it on the basis of scientific evidences.

The prevalence of Bronchial Asthma has increased over time and is increasing rapidly due to increasing environmental pollution produced by vehicles, industries etc. The Disease emerges from highly complex interaction between intrinsic factors of the patient and environment. Now a day's environment is so much polluted, which cannot be avoided.

"Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and in intensity, together with variable expiratory airflow limitation."[1]Asthma is an exaggerated immune response occurs as a most common chronic disorder due to amplified stress on the immune system by factors such as greater chemical contamination in the air, water and food. Its occurrence is rapidly increasing in terms of both severity and incidence particularly at childhood ages in developed countries. It is also considered as an adversary of modern treatment for various specific ailments that can alter immune balance. Approximately 50% of children, but a much smaller percentage of adults, have clearly defined allergen exposure that can be associated with their Asthma.[2]

According to Ayurveda vitiated Pranavayu combines with deranged Kapha dosha in Strotas causing obstruction. This result gasping, labored breathing and respiratory distress. This condition called as Shwasa roga.[3] Tamaka Shwasa is mentioned as one among five types of Shwasa roga. Acharyas stated that, Tamaka Shwasa is sadhya in the initial phase, and becomes yapya in chronic condition or if not treated in early condition.[4] Bronchial Asthma mentioned in modern medicine closely resembles with Tamaka Shwasa, is a major chronic airway disorder. It is characterized by inflammation of the airways, breathlessness, bronchoconstriction, wheezing, difficulty in expectoration and feeling little comfort in erect posture etc.

Once among the 8 branches of Ayurveda, Kaumarbhritya specially deals with the problems related with infants and children. It is a unique practice of Ayurveda that Ayurvedic pediatrics deals from conception to 16 years of age. It deals with antenatal perinatal and postnatal care along with the different aspect of child health and disease. In Kashyapa Samhita, Sutrasthana, chapter 25th "Vedana Adhyaya" it is mentioned that child suffering from Shwasa roga exhales warm air. The word Tamaka Shwasa is found in Khilsthana 10th chapter while mentioning its management. Shwasa is one of the most distressing diseases and is quite common in all the socioeconomic strata in all the age groups and almost all over the world. The entity of this disease was known to the ancient sages from the very beginning and that is why lot of description about the etio-

pathogenesis, prognosis, treatment do's and don'ts etc. about the shwasa are available in ayurvedic classics. There are lots of references described in Charaka Samhita and Sushruta Samhita about the treatment of Tamaka Shwasa.

When we look to the ayurvedic literature, there are large numbers of drugs which are used for the treatment of various aspects of shwasa. Though this disease has been described as Kasthsadhya i.e. difficult to treat so there are hundreds of ayurvedic formulations are described in the Ayurvedic literature, which have been shown as effective for its treatment. There are many drugs which have been clinically proved to be useful. The greatest advantages with most of the Ayurvedic drugs are that these do not have any side or aftereffects like modern drugs.

The allopathic systems of medicine started classifying this disease only in the middle of 19th century. "In contemporary medical science, management of Bronchial Asthma is carried out with usage of bronchodilator, leukotriene antagonist, mast cell stabilizers, and corticosteroids. Long lasting usage produces adverse effects also reduces the effectiveness of therapy. Avoidance of triggers is a key component of improving control and preventing attacks. The most common triggers include allergens, smoke, air pollution, non-selective beta blockers, and sulphite containing foods. Similarly, our Ayurveda has state that all these nidana are found in ancient ayurvedic text. There are so many claims have been made by the different researchers in modern medical science, but no complete cure have been authentically brought out by any of them. Thereby possible palliative treatment is only with Ayurveda, which is much better and very effective without any side effects. Because of the faulty methods of living, scarcity of balanced diet and various other reasons the incidence of this disease is increasing day by day. There is no satisfactory treatment available, so that decision was taken to take up this problem for intensive study.

This work has been done for enhancing the use natural medicines should justify for accomplishment as anintact therapy, or in sequence to set a complete integrated approach Which can supportive to patients troubled by drug induce toxic side effect.

Aims and objectives

- To study the concept of Tamaka shwasa along with Childhood Asthma through Ayurvedic and modern text.
- To evaluate and observe the effect of Parnaspanchakam yog in the management of shwasa roga.

MATERIAL AND METHODS

For purpose of this clinical trial, patients of Tamaka shwasa were selected regardless of sex, religion and socio-economic conditions, with the age group of 5-16 year from O.P.D. and I.P.D. of State Ayurvedic College and Hospital, Lucknow. After careful clinical history, examination and lab investigations as per proforma, patients were selected and screened for their suitability of getting enrolled in this clinical trial as per specific inclusion and exclusion criteria.

Method of research

Group

Total 36 patients were enrolled in a single group which 32 patients continued the schedule and 4 patients left the treatment before the completion of the therapy.

Plan of study

The study was cleared by the institutional ethics committee. Informed Consent was taken from all the patients before including them in the trial.

Drug: Parnaspanchakam yog

Preparation method of trial drug

The compound has been prepared in the form of syrup on the basis of classical sharkarakalpana preparation in order to enhance its palability for easy administration in children. All the ingredients were taken in equal amount and suspended in sixteen times water at room temperature and then mildly heated to reduce it up to 1/8 part. Sugar has been added as per classics to previously prepared kwatha by mild heat, filtered and stored at room temperature.

Form: syrup formulation
Dose: 1 ml / kg in 2 divided dosage
Mode of administration – oral
Duration – 3 months with 3 months of follow up period

Table 1: Ingredient of Parnaspanchakam yog (P.V. Sharma)

Name	Rasa	Guna	Veerya	Vipaka	Part used	Ratio in Drug	Family
Guduchi	Katu, Tikta	Laghu, Ruksha	Ushna	Katu	Stem	1	Menisper-maceae
Shunthi	Katu	Laghu, Snigha	Ushna	Katu	Rhizome	1	Zinziberaceae
Bharangi	Tikta, Katu	Laghu, Ruksha	Ushna	Katu	Root	1	Verbanaceae
Nidigdhika	Katu, Tikta	Laghu, Ruksha	Ushna	Katu	Panchang	1	Solanaceae
Tulsi	Katu, Tikta	Laghu, Ruksha	Ushna	Katu	Panchang	1	Labiatae
Pippali	Katu,	Laghu, Snigdha, Tikshna	Anushnashita	Madhur	Fruit	Used as Prakshep Dravya	Piperaceae

Criteria for Diagnosis

Patients will be diagnosed and assessed thoroughly on the basis of Ayurvedic classical signs and symptoms of Tamakashwasa and will be examined on the basis of specially prepared proforma. Detailed history has been taken.

Selection of Patients

For purpose of this clinical trial, patients of Tamaka shwasa were selected regardless of sex, religion and socio-economic conditions, with the age group of 5-16 year from O.P.D. and I.P.D. of State Ayurvedic College and Hospital, Lucknow. After

careful clinical history, examination and lab investigations as per proforma, patients were selected and screened for their suitability of getting enrolled in this clinical trial as per specific inclusion and exclusion criteria.

Inclusion Criteria

- Age 5- 16 years
- Either sex Religion, S.E.S., Education.
- History of episodes of previous attacks
- Patients presenting with primary symptoms of Tamaka Shwasa.
- Patients with increased Absolute eosinophilic count associated with other symptoms of Bronchial Asthma.
- Mild to moderate type of patients of shwasa roga with signs and symptoms like[5]

Shwasa krucchrata	Breathlessness
Ghurghuraka	Wheezing
Kasa	Cough
Peenasa	Rhinitis
Kanthodhvamsa	Hoarseness of voice
Lalata Sweda	Perspiration
Asino Labhate Saukhyam	Relief in sitting position

Exclusion Criteria

- Age < 5 and > 16 years.
- Shwasa roga associated with complications.
- Secondary infections of Respiratory system.
- Children with status asthmaticus.
- Children with cardiac disease.
- Children with any systemic disorder which interfere with the present treatment.
- Children with any congenital anomalies and genetic disorders.

Criteria for assessment of therapy

Assessment was done by considering change in the subjective as well as the objective parameters before the treatment and after the treatment. Patients were assessed clinically every 15 days for evaluation of improvement for a period of 90 days. The changes observed in the signs and symptoms were assessed by adopting suitable scoring method and the objective signs by using appropriate clinical tools.

a) Subjective Criteria

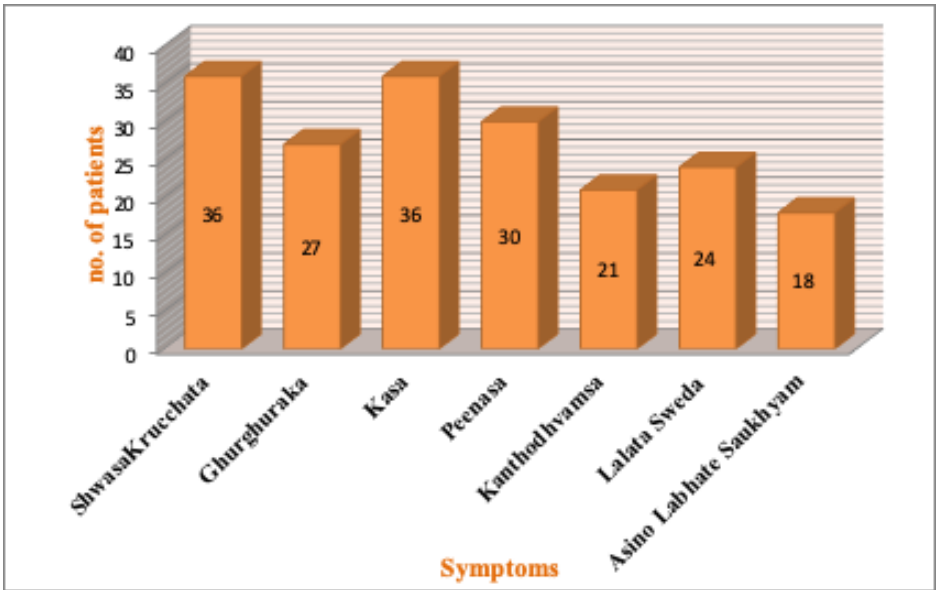
The efficacy of the Parnaspanchakam Yog has been analyzed in terms of the relief produced in the signs and symptoms before and after treatment on the basis of grading scale framed for the disease.

b) Objective Criteria

Effect of treatment has been assessed on the basis-

- Improvement in Peak expiratory flow rate.
- Absolute Eosinophilic count.

Data has been collected before, during and after treatment.



Distribution of Sign and Symptoms in cases of Tamaka Shwasa (n = 36)

RESULTS

Table 2: Assessment of Subjective Parameters

Clinical features	Before treatment	After treatment	Mean Change	Z-value	p-value[1]
Shwasakrucchata	2.06 ± 0.25	1.00 ± 0.36	1.06 ± 0.31	5.507	< 0.001
Ghurghuraka	1.38 ± 0.98	0.59 ± 0.50	0.78 ± 0.77	4.327	< 0.001
Kasa	2.78 ± 0.42	0.94 ± 0.25	1.84 ± 0.34	5.336	< 0.001
Peenasa	1.50 ± 0.80	0.63 ± 0.49	0.88 ± 0.67	4.613	< 0.001
Kanthodhwansha	0.94 ± 0.95	0.25 ± 0.44	0.69 ± 0.74	3.508	< 0.001
Lalata Sweda	0.75 ± 0.67	0.44 ± 0.50	0.31 ± 0.59	2.887	0.004
Asino Labhate Saukhyam	0.78 ± 0.98	0.44 ± 0.50	0.34 ± 0.78	2.517	0.012

Assessment of Objective Parameters

Table 3: PEFR (Peak Expiratory flow rate)

Parameter	Time	Mean	SD	t-value	p-value
PEFR (L/min)	BT	129.22	33.46	5.381	< 0.001
	AT	147.84	43.06		

Table 4: AEC (Absolute eosinophilic count)

Parameter	Time	Mean	SD	t-value	p-value
AEC/ ccm blood	BT	660.22	467.87	4.057	< 0.001
	AT	503.03	286.28		

Table 5: Conclusive result (n = 32)

Relieved		Improved				Unchanged	
≥75%		Moderate Improved 50-74%		Mild Improved 49-25%		<25%	
No. of Patients	%	No. of Patients	%	No. of Patients	%	No. of Patients	%
4	12.5	20	62.5	8	25	0	0

Table shows among over all patients in the group 4 (12.5%) patients were relieved, 20 (62.5%) patients were moderately improved and 8 (25.0%) patients were mildly improved. None of the patients got worsened by the treatment.

DISCUSSION

Ayurveda is science of life which described favorable and unfavorable things and aspects of life. If people don't follow the rules described in Ayurveda it leads to several pathogenesis which ultimately produces different disorders which caused by asatmya sevan. Asthma is one of the most common chronic diseases globally. This disease can occur at any stage of life right from pediatric group to geriatric group. The fundamental constituents that constitute living body and its total physiological aspects are considered as vata, pitta and kapha dosha and imbalance to their existing proportion is responsible for provoking any disease, so in Ayurveda disease is considered as a state of dosha imbalance. In Ayurveda two major factors of illness origin are the dosha imbalance and specific pathogenesis they follow which results into definite symptom manifestation. In influence of causative factors vata present in respiratory region get exaggerate due to aggravation of kapha and vata in upper G.I.T. region. In keeping with classical terms, vata is a set of all accountable for catabolism. It may beneficial or harmful depend upon condition either normal (physiological) or disturbed (pathological) respectively. Here aggravated vata may create over catabolic state in respiratory region, mostly to bronchus parts. At the same time blockage of different channel of respiratory system which cause hindrance in proper breathing.

Probable Mode of Action of Drug

In Ayurveda, the action of drugs is determined on Pharmacodynamic factors as Rasa, Guna, Veerya and Vipaka along with certain specific properties called Prabhava. These drugs in combination act as antagonist to the main morbid factors i.e. Dosha and Dushya to cause Samprapti Vighatana to all of the symptoms of the disease. Tamaka shwasa or Asthma is a result of disturbance in the equilibrium of Vata and Kapha, which cause obstruction in the of Pranvaha srotas, so a drug which can remove the blockage, is essential in this disorder. The trial medicine has pharmacokinetic properties as Katu Tikta Rasa, Laghu Ruksha Guna, Ushna Veerya and Katu Vipaka which help to clear the blockage. Katu Vipaka property of the drug helps to cure Ama i.e. the inflammatory condition of the bronchial tree. Laghu, Ruksha Guna helps to control Kapha responsible for the mucogenic secretion in the respiratory tract.

Ingredients are Kaphavatashamak and have different therapeutic actions like Anti-allergic[6], and immunomodulatory[7,8] anti-histaminic[8] anti-tussive[9,10], mast cell stabilizing activity[9], anti-inflammatory[10] action etc. Trial drug showed promising results may be due to synergistic actions of all ingredients.

Immunomodulatory activity of Guduchi Ghanis well stablished.[11] Guduchi has Antibacterial activity.[12] Shunthi is anti-inflammatory, antioxidant, antimicrobial, expectorant, so useful in shwasa rog and other bronchial disease.[13] Bharangi acts as mucolytic, breaks down the mucus so useful in asthma because of its immense benefit in respiratory tract disorders, it is used in many anti asthmatic drug.[14] It has hepato protective activity.[15] It has antioxidant activity.[16] Kantakarit has anti allergic activity and anti-inflammatory affect. It also helps in inhibition of fungal growth.[17] It also has anti-oxidant activity.[18] Tulsi has antibiotic property.[19] Tulsi also has anti-oxidant activity, anti-microbial, and immunomodulatory activity.[20] Pippali has anti-oxidant and antibacterial activity.[21] Pippali works as a good expectorant so useful in asthma and other respiratory diseases.[22] A bundle of research work has been done on management of Tamaka Shwasa and Asthma in both modern and Ayurveda sciences and lot of work is still going on. But still an expectant cure is not found. According to fundamentals of ayurveda, for cure of any disease samprapti vighatan is the basic line of treatment. As Tamaka shwasa have Vata Kaphaja predominance with srotodushti sang (Srotovarodha) and vimarggaman, we have selected a regimen with Vatakaphashamaka properties.

CONCLUSION

The present clinical trial "A Clinical Study on the Efficacy of Parnaspanchakam Yog in the Management of Tamaka Shwasa with special reference to Childhood Asthma" was designed to go forward for an effective Ayurvedic regimen for treatment of Tamaka Shwasa by taking Samshaman chikitsa. Charaka Chikitsa Chapter 17 deals with the differentiation of Sadhya and Asadhya types of Shwasa Roga and then the treatment of sadhya and yapya type of shwasa i.e. all types of dyspnoea of respiratory origin. Mandagni caused by a range of viprakrista nidana sevana, is the prime cause of disease and it may be either sudden or chronic in nature, causes dosha prakopa and whenever exposure of sannikrista nidana sevana occurs, disease takes place. Paroxysmal nature of disease is not described in the classics, but it can be

understood with the Nidana- Dosha -Dushya Theory. In Samprapti of Tamaka Shwasa mainly two processes are involved, prakupita Vata reaching to Pranavaha Srotas and get obstructed by sama kapha leading to vata pradhana Tamaka Shwasa. Prakupita Kapha causes obstruction to sthanika Kapha leading to vata kapha pradhana Samprapti. Tamaka shwasa is more common in early childhood period because of kapha dominant body in childhood. Tamaka shwasa exacerbations are mostly occurs in winter, rainy and spring season due to increased humidity and allergens. Pranvaha, Annavaha, Rasavaha srotodushti was found chiefly and Kapha and Vata were main doshas, which vitiated dhatu and srotas. Overall effect of therapy shows, 4 (12.5%) patients were relieved, 20 (62.5%) patients were moderately improved. 8 (25.0%) patients were mildly improved. In all treated patients none of the case worsens during the trail regime. After treatment the mean PEFR value was significantly increased. The mean AEC value was significantly decreased. Mean PEFR value significantly increased and mean AEC value significantly decreased in objective parameters. Drug shows highly significant results on Shwasakrucchata, Ghurghuraka, Kasa, Peenasa and Kanthodhwansha and significant results on Lalata Sweda and Asino Labhate Saukhyam (Breathlessness during sitting position) in subjective parameters. Hb% significantly increased, Raised ESR and Eosinophils are significantly decreased. The drug formed shows favorable as well as promising results in response of signs and symptoms of disease. The trial drug schedule was well tolerated and did not show any side effects. Ingredients of Parnaspanchakam yog are Kaphavatashamak and have different therapeutic actions like Anti-allergic, anti-tussive, anti-histaminic, mast cell stabilizing activity, anti-inflammatory and immunomodulatory action etc. Trial drug shows promising results may be due synergistic actions of all ingredients.

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