Study on the Effectiveness Of Abhaya Sunthi Churna and Snehana Swedana in Tamaka Shwasa

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Abstract

Background: In Ayurveda *Shwasa* is a disease of *Pranvha srotasa* which is explained by all the *Acharya* in detail. The disease, *Tamaka Shwasa* in the contemporary system of medicine resembles the clinical features of Bronchial Asthma such as dyspnea, cough and chest discomfort. The etiological factors like exposure to smoke, dust, seasonal variation and exposure to cold are also similar in both the condition. A rough estimation in India shows 10-15% of Bronchial Asthma in the age group of 5-11 year old children.

Aim: present study is entitled to study the effect of *Abhaya Sunthi Churna* and *Snehana, Swedana* in management of *Tamaka Shwasa*. **Material & Methods:** The present study was designed as the comparative parallel group, interventional study, in which minimum of 30 patients were enrolled. The selected participants were assigned to the two observational groups. Each interventional group participants were administered with *Abhaya sunthi churna* for 14 days in both the groups A and B. Also in Group A there were additional *Snehana* and *Swedana* procedures for 7 days and in Group B consist of *Churna* with Conventional therapy.

Results: In comparison significant results were seen only in *Kasa* in group A whereas other parameters showed insignificant difference between the groups. The parameters such as *Peenasa*, *Ghurghurkatwa*, *Kaphanishtivana*, *Asinolabhatesaukhyam* and *Shwasakrichrrata* showed reduction individually. The comparative result of both the groups on Adventitious Sound, Significant result was noted on the 14th day in group A who received Abhaya Shunthi Churna with Snehan Swedana after treatment in comparison with group B. **Conclusion**: we can conclude that the Symptoms of *Tamaka Shwasa* were reduced in both the groups (A and B) but the effect of the *Abhaya sunthi churna* with *Snehana, Swedana* i.e Group A was more significant than Group B.

Keywords- *Tamaka Shwasa, Bronchial Asthma, Abhaya Sunthi Churna, Shwasa roga*

Introduction

In Ayurveda *Shwasa* is a disease of *Pranvha srotasa* which is explained by all the *Acharya* in detail. As explained in Ayurveda with all the details of etio-pathology, this disease entity stands as a very grave one as neglecting it would even cause serious complications and even death. As vital in adults it has also been specified with the same importance in children too as evident from the details of *Shwasa roga* given in *Kashyapa Samhita*, the compendium of *Kaumarabhritya*. In this, *Shwasa* in children has been mentioned with the premonitory features in the view of early diagnosis in young children [1].

Tamaka Shwasa is one among the five types of *Shwasa roga* explained in all the classical textbooks of *Bruhatrayee* (Ayurveda)[2, 3]. It is a disease which is said to be *Yapya* (manageable) and if it is of recent onset then it is *Sadhya* (Curable) [4].

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The disease, *Tamaka Shwasa* in the contemporary system of medicine resembles the clinical features of Bronchial Asthma such as dyspnea, cough and chest discomfort. The etiological factors like exposure to smoke, dust, seasonal variation and exposure to cold are also similar in both the condition. Bronchial Asthma is defined as a chronic inflammatory disorder of airways which is associated with airway hyper-responsiveness. It leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night or early morning.[5].

It is said that this disease also causes burden on the number of lost school days and interferes with academic achievement and social interaction. A rough estimation in India shows 10-15% of Bronchial Asthma in the age group of 5-11 year old children. It also increases the number of preventable hospital emergency visits and admissions.[6] The chronic disease affects an estimated 4.8 million children[7]. According to WHO by the year 2020 Asthma along with chronic obstructive pulmonary disease will become the third leading cause of death [8]. According to Indian Survey, Prevalence regarding from heavy traffic region area in school going children showed prevalence 19.34% , but children of low socio-economic population is 31.14%,While the ratio of the children from low traffic area had 11.15% respectively and lastly in the rural area also showed 5.7% aged 6- 15 years.[9]

Ayurveda has various treatment modalities for *Tamaka Shwasa* which includes both internal and external therapies. Two types of therapies are advised which are *Shamana* (Pacification) and *Shodhana* (Purification). The *churna* of *Abhaya* (*Terminalia Chebula*) and *Sunthi* (*Zingiber officinalis*) is explained in treatment of *Shwasa roga* as a *Shamana* (Pacification) therapy.[10] *Abhaya* or *Haritaki* acts as *anulomana* (facilitating downward movement of *Vata*) and *Sunthi* acts as *Pachana* (Digestive), *Kapha-Vatahara*[11]. Other therapy is *Shodhana* (Purification) which have *Snehana* (Oilation) and *Swedana* (Sudation) over chest region have been explained for *Tamaka Shwasa* by Acharya Charaka [12] and Swedana has also been explained as one of the beneficiary procedure in *Tamaka Shwasa*[13].

Only a few research studies have been carried out on *Tamaka Shwasa* in children. Thus the present study is entitled to study the effect of *Abhaya Sunthi Churna* and *Snehana, Swedana* in management of *Tamaka Shwasa*.

Objectives of the Study

To study the effect of Abhaya Sunthi Churna on the clinical features of Tamaka Shwasa

To study the effect of Abhaya Sunthi Churna along with local Snehana Swedana on the clinical features of Tamaka Shwasa

Material and methods

Selection of material: The Raw drugs i.e Haritaki and Sunthi were procured from a local shop and authenticated by the Department of *Dravyaguna,* M.G.A.C.H. and R.C. Salod (H) Wardha.

Source the drug: The trial drug *Abhaya sunthi churrna* was prepared at *Rasashastra* Department in the college as per the classical method of *Churna* preparation.

Preparation of material: Ingredients were cleaned properly and taken in equal quantity and dried under sunlight. Each ingredient was pounded to fine powder by Pulverizer (Mesh no.80) & sieved, Each ingredient was weighed separately, Mixed together and finally the drug was prepared and made ready by packing in the air tight container in which for age criteria 3-9 years 100 grams of *Churna* was packed and for 10- 15 years 200 grams of *Churna* was packed in the air tight container.

Methods

After receiving approval for research from Institutional Ethical Committee Ref no DMIMS(DU)/ IEC/2017-18/7247 the comparative parallel group, interventional study was conducted. Total 30 Children aged 3 – 15 years with clinical symptoms and auscultations of Tamaka Shwasa were enrolled from OPD & IPD, Department of *Kaumarbhritya* of M.G.A.C.H. and R.C. Wardha

The selected participants were assigned to the two observational groups. Each interventional group participants were administered with *Abhaya sunthi churna* for 14 days in both the groups A and B which was decided following textual reference. Also in Group A there were additional *Snehana* and *Swedana* procedures

for 7 days and in Group B consist of *Churna* with Conventional therapy if the participant is on any kind of conventional therapy. Detailed history of the participant was taken from the informant and the participant too with thorough general and systemic examination as per the parameters mentioned in the case Proforma which was prepared for the clinical trial of the study. From the 1st day itself the observations and laboratory sampling were recorded before and after the treatment. Hence the observational results were analyzed by statistical tests and post treatment follow up was done on 28th day.

Administration of the trial drug: The trial drug, *Abhaya sunthi churna* was administered in the following dosage for a period of 14 days.

Table no.-1: Dosage of drug as per age

Age group	Drug doses	Aushadha Kala
3 – 9 years	06 grams/day	4 times a day
10 – 15 years	12 grams/day	4 times a day

Inclusion Criteria:

· Diagnosed participants of TamakaShwasa between theage group from 3 to 15 years of age irrespective of caste, religion, sex, habits, occupation and socio - economic status

Exclusion Criteria:

· Severe persistent Asthma which needs usage of nebulization and inhalation of nasal spray (puffs).

· Diagnosed cases of Severe COPD, Respiratory Distress Syndrome (RDS), Pneumonia, Pulmonary Kochs and AIDS, Status Asthmaticus

· Any other systemic disorders which may interfere with the trial.

Diagnostic criteria-

A). Subjective criteria:

· The assessment was done on the basis of Classical signs and symptoms of *tamaka shwasa*

· *Peenasa* (Coryza)

· *Ghurghurakatwa* (Wheezing)

· *Kasa* (Cough)

· *Kapha Nisthivana* (Expectoration)

· *Asino Labhate Saukhyam* (Relieving while sitting position)

· *Shwaskrichhrata* (Difficulty in Breathing) related to climate

· *Nidra* (Sleep)

B) Objective criteria:

· Adventitious Sound

· CBC (Complete blood count)

· A.E.C (Absolute Eosinophil Count)

Result and Observations

As per the demographic data maximum numbers of participants were from age group 8-13 years. Age is often considered as a risk factor for Bronchial Asthma because it is unclear if malnutrition status leads to Bronchial Asthma or if the age reflects the sum of cumulative response throughout the life. Ageing of the airway and parenchyma may lead to structural changes associated with Childhood Asthma. Out of 30 participants, males were 12 in Group A and 7 in Group B whereas females were 3 in Group A and 8 in Group B. The ratio of males is seen more which was just serendipity (coincidence) rather than any logic behind this observation.

Distribution according to area of residence revealed 53.3% of participants were from rural area in both the Group A and group B, followed by 46.7% from urban in both the Group A and B. In the past most studies have reported that prevalence and mortality rate Bronchial Asthma are greater in urban area rather than rural area because of the reflecting change and patterns of the environment and climate in developing and developed countries. All this is worsening due to one major causes i.e. pollution in urban areas which is affecting a big threat of global warming. In the present study, the site was a rural area and the population was also from the same area. The prevalence of Bronchial Asthma even in rural areas suggests that environmental pollution might have started influencing even the rural areas. Even the nearby industries might be contributing to the disease in children. Burning wood, cow dung, crop residues and coal in open fire is typically found in the location of the study which might have also contributed to this observation.

On the basis of religion, nothing specific can be predicted from the observation in the present study, as the demographic area might have played the major role in it. With respect to the status of education, all the participants were school going children and there is no such fact which relates prevalence of Bronchial Asthma in school going children.

Disturbances in sleep are an essential feature quoted in the *lakshana* of *Shwasa* in *Charaka Samhita*. In the present study, sound sleep was found in 53.3% of participants in Group A and 73.3% of participants in Group B which is suggestive that the sleep disturbances may not be an essential feature of *Tamaka Shwasa* in children as in adults. Disturbed pattern of sleep in Group A was 7 (46.7%) participants and only 4 participants in Group B. This might be because in children, sleep pattern is not considered as the major problem.

Around 10 (33.33%) participants were found to be having a familial history of similar condition and hence this observation also did not show any obvious relation. Noticeably *Nidana* explained for *Tamaka Shwasa* in Ayurveda do not include hereditary factors involved in the pathology. But as per modern medicine, significant risk has been observed in participants who frequently suffer from uncontrolled asthma symptoms, Severe Exacerbations in previous year, Exposure to potential allergens/triggering agents and Poor adherence to past treatment.

15 participants in each group were having a vegetarian and mixed diet. Majority of the participants were having the habit of consuming *Ruksha Aahara* like chips, packet food and fried items. As these food items are meant to cause *Vata prakopa* and are among the causative factors of *Shwasa roga*, it can be said that there is a direct relation between the type of food consumed and the disease manifestation.

Subjective Parameters

In comparison significant results were seen only in *Kasa* in group A whereas other parameters showed insignificant difference between the groups. The parameters such as *Peenasa*, *Ghurghurkatwa*, *Kaphanishtivana*, *Asinolabhatesaukhyam* and *Shwasakrichrrata* showed reduction individually.

Objective Parameters:

In the comparative result of both the groups on Adventitious Sound Significant result was noted on the 14th day in group A, who received *Abhaya Shunthi Churna* with *Snehan Swedana* after treatment in comparison with group B.

Result on Hematological parameters as shown below:

In comparison the result of both the groups in Objective parameters insignificant results in the values of White blood cells at the end of the trial was seen between Group A and B with a p value of 0.547.

In the values of Monocytes, the comparative result was insignificant statistically. But in the values of Granulocytes, Lymphocytes and Basophils significant results were seen on comparison between Group A and B with a p value of 0.001, 0.001 and 0.003 respectively. In the values of Eosinophils and Absolute Eosinophil Count there were no significant results seen on comparison between the groups.

Overall assessment of the result:

Overall maximum improvement was noted on Subjective Parameters of Tamaka Shwasa in Group A

with 77.98% and Moderate improvement in Group B with 62.85%.

Discussion

In the present era, children are commonly seen suffering from Childhood Asthma. Although both the conditions cannot be completely looked at as the same due to differences in etio-pathological factors explained in Ayurveda, clinical correlation was the purpose in doing so. In the study *Abhaya Sunthi Churna* was selected as it was one among the formulations indicated in *Tamaka Shwasa* which contained easily available drugs. Availability of genuine herbs is becoming a grave issue day by day due to excess production of herbal products and scarcity of good quality herbs. So it was the need of the hour to have a simple but efficacious formulation in a condition like *Tamaka Shwasa. Snehana Swedana* being the *Purvakarma* are very widely practiced in many clinical conditions and are also indicated in *Tamaka Shwasa* during the *vegavastha*.[14]

In the present study, significant difference between the groups was found in only *Kasa* whereas other parameters showed insignificant results on comparison. All the participants in Group A had no cough on 14th day whereas 5 had occasional cough in group B. This significant effect in group A is suggestive of the enhanced action of *Abhaya Shunthi Churna* when administered with *Senhan Swedan*. The insignificant effect on comparison over *Peenasa, Ghurghurakatwa, Kapha Nishtivana, Asinolabhate saukhyam* and *Shwasakrichhrata* shows that both the groups were equally effective in the management of *Tamaka Shwasa*. When analyzing the individual percentage of relief, it is evident that the number of participants who got relieved of the symptoms were more in Group A than B. The insignificant difference between the groups may also be due to the less sample size in the present study.

In comparison with group B, group A who received *Abhaya Shunthi Churna* with *Snehan Swedan* showed significant results after the treatment i.e. on the 14th day on the objective parameter of Adventitious sounds. 14 participants out of 15 had no adventitious sounds on auscultation in group A which shows better efficacy of the treatment modality. The pathology of *Shwasa* does not involve only systemic changes but localization of *Kapha Dosha* in *ura pradesha. Kapha vilayan* with internal medicine always gets enhanced by the local effect of *Snehan Swedana* because of which these procedures have been mentioned specifically in the management of *Tamaka Shwasa*. The same efficacy was seen in the present study which indicates the necessity of local procedures in early relief from the symptoms.

On the basis of mean of before and after treatment significant effect was seen in the values of Granulocytes the value of which was 42.93 on day 1 but was 60.27% on day 14 in Group A. As the level of increase was within the normal limits no specific effect of the drug can be ascertained from the values. Larger sample studies might earn better conclusions. Although there was a significant difference between the effect of both the groups, the changes in the values of Lymphocytes was within the normal limits. The same was seen in the values of Basophils also. Although there was reduction in the values of Eosinophils and Absolute Eosinophil Count in both the groups, the difference was not significant in the study. Larger sample evaluation might give precise results. No Adverse Drug Reaction (ADR) reported during the follow up period reveals that the drugs did not cause any untoward effect in the participants.

Probable mode of action

In the literature of Ayurveda, the main causes of *Tamaka Shwasa* are the vitiation of *Vata* and *Kaphadosha* including the formation of *Ama* in which the drugs having the properties of *Deepana, Pachana, Vata Anulomana, Shwasahara, Kasahara* and *tridoshahara* can break the *Samprapti* of *Tamaka Shwasa*.

Tamaka Shwasa has the pathological state of *Vata* and *Kapha Dosha* in dominance. Pediatric age group has been explained in Ayurved classics as a period where there is physiological dominance of *Kapha Dosha*. The *churna* of *Abhaya* (*Terminalia Chebula*) and *Sunthi* (*Zingiber officinalis*) is explained in *Shwasa chikitsa* of *Bhaisajya Ratnavali*[15]. *Abhaya* or *Haritaki* acts as *anulomana* (facilitating downward movement of *Vata*) and *Sunthi* acts as *Pachana* (Digestive) and *Kapha-Vata hara*[11]. *Haritaki* is having immunomodulatory activity which directly has its effect on *Pranavaha Srotas*[16] *Sunthi* acts as Antitussive in the management of *Tamaka Shwasa*.[17]

In this study, two modalities of interventions which are indicated in the management of *Tamaka Shwasa* have been compared in the same set of participants. One group was administered with only internal medication as in the routine management protocol whereas the other group was given *Snehana* and *Swedana* therapies which are a very unique contribution of Ayurveda in the management of *Shwasa roga. Snehana* was performed with *Tila Taila* (Sesame oil) which is said to be having the properties of *Ushna virya, Vata shamaka* and not increasing *Kapha Dosha*.[18] By virtue of its effect, *Snehana* might have helped in the normal movement of Vata which was extended by the added effect of *Swedana*. *Kapha vilayana* might be the specific effect of *Swedana* by virtue of its *Ushna guna*. This formulation also facilitated the normal downward movement of *Vata* with respect to respiration which reduced the gravity of dyspnea and difficulty in sleep. The reduction of excess quantity of sputum brought about by the drugs used helped in listening to the adventitious sound on auscultation of chest.

Conclusion

In the present study *Tamaka Shwasa* was correlated with the Childhood Asthma or Bronchial Asthma. In children Consumption of *Ruksha Aahara*, packet foods and *Agnimandya* were the major etiological factors. During the study the *Abhaya sunthi churna* was well tolerated by all the participants without any obvious Adverse Drug Reaction (ADR).

The results of the study revealed that the Symptoms of *Tamaka Shwasa* were reduced in both the groups (A and B) but the effect of the *Abhaya sunthi churna* with *Snehana Swedana* i.e Group A was more significant than Group B.

Hence it can be concluded that *Abhaya sunthi churna* with external *Snehana* and *Swedana* can be effectively used in children suffering from *Tamaka Shwasa* as compared to only oral administration of *Abhaya sunthi churna* for a period of 14 days.

Ethical Clearance is taken from Institutional Ethical Committee Ref no DMIMS(DU)/IEC/2017-18/7247.

Conflict of Interest: NIL

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