"Effect of Shunthi and Guda along with Yogasana in the Management of TamakaShwasaw.r.t. to Bronchial Asthma"

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Abstract

The disease *TamakaShwasa*is originate due to the vitiation of *Kapha*and *Vata*and manifested through *PranvahaSrotasa*. *Vata* predominantly associated with *Kapha*obstructed in the *PranavahaSrotas*gets more aggravated and in turn causes *Shwasa*. The etiopathogenesis and symptomatology, bronchial asthma is similar to that of *TamakaShvasa*. In the present study bronchial asthma has taken as *TamakaShwasa*for clinical evaluation. The present study was aimed to evaluate the combined efficacy of Shunthi and Guda along with Yogasana in the Management of TamakaShwasa. 40 Patients having diagnostic feature of TamakaShwasa who follows inclusion criteria were selected for present study. Shunthi and Gudachoorna in the dose of 5gm twice a day after meal with Luke warm water for a period of 30 days with a Specially prepared Yogasana module. Assessments were done on every 8th day and after the completion of trialbased on the different grading (0-3) given for subjective and objective parameters. The Overall result of the study shows that out of 40 patients, 62.5% of patients got complete remission, and 20% of patients got marked improvement, 15% of patients has got moderate improvement from the symptoms of Tamakashwasa (Bronchial Asthma). The results obtained in this study suggest that *Shunthi*and*Guda along with*Yogasana*relieves the symptoms of the diseaseTamakashwasa, and administering Yogasanasis beneficial for the patients of TamakaShwasa.

Key words: Tamkashwasa, Shunti- Guda, Yogasana, Bronchial asthma

Introduction

TamakaShwasa is a disease which has been elaborately mentioned in Ayurveda classics. The disease *TamakaShwasa*is originating from *Pittasthana*caused due to the vitiation of *Kapha*and *Vata*and manifested through *PranvahaSrotasa* .*Vata* predominantly associated with *Kapha*obstructed in the *PranavahaSrotas*gets more aggravated and in turn causes *Shwasa*[1].

Asthma is defined as a chronic inflammatory disease of airway that is characterized by increased responsiveness of the tracheobronchial tree to a multiplicity of stimuli. It is manifested by a widespread narrowing of the air passages, which may be relieved spontaneously or as a result of therapy and clinically by paroxysms attack of dyspnoea, cough and wheezing. In most of the aspects like, etiopathogenesis and symptomatology, bronchial asthma is similar to that of *TamakaShvasa*. The Scholars of Ayurveda and many previous research workers also co-related similarly. Hence in the present study bronchial asthma has taken as *TamakaShwasa*for clinical evaluation. Asthma is the most common lung disease in both developing and developed countries affecting about 5% of the population[1]. prevalence of asthma in India is 2.38%[2]. According to WHO report prevalence of asthma in India is 2468 per 100,000 persons[3]. The prevalence of asthma has increased over the recent decade which may be due to abrupt change in lifestyle, rapid industrializationincrease in air pollution, excessive smoking and tobacco usage[4]. Prevalence of asthma is increasing and causes a serious global health problem, economic burden and affecting the work potential of the individual in particular and the society in general. Asthma is associated with considerable patient morbidity; 10%–20% of patients continue to have severe attacks throughout their lives. The cost of medication in India was estimated as US$ 30 per month[5]. *TamakaShvasa*is considered as the most serious disease in Ayurveda and stated that none other disease kills as instantaneously as *TamakaShvasa.* The disease *TamakaShvasa*is difficult to cure, if it is not properly treated at the appropriate time this disease being exacerbated become fatal. Because of the chronic and relapsing nature of the disease radical therapies like *Samshodhana*should be undertaken for long lasting relief. All the *Aacharyas*stated that the disease treated by *Samshodhana*rarely relapses in comparison to *SamshamanaChikitsa*. Among the *Samshodhana* , *Vamana* and *Virechana*both are indicated in the treatment of *TamakaShvasa*.

कफवातात्मकावेतौपित्तस्थानसमुद्भवौ।
हृदयस्यरसादीनांधातूनांचोपशोषणौ॥८

In the pathology of *ShvasaKapha*is accumulated in the *PranavahaSrotasa*, obstructs the path of *Vata*resulting into abnormal movement of *Vata*which in turnexcites the *Kapha*, thus a vicious cycle continues resulting into breathlessness, coughetc. And the origin of disease is *Pittasthana*(*Adho-Aamashaya*) and manifested in*Uras*which is also the prime location for the accumulation of *Kapha*[6], hence foreliminating vitiated *Kapha*and *Pitta Vamana Karma* and *Virechana Karma* areindicated respectively. These therapies cleanse the channels and gives normal & freemovement for *Vata*[7]in its natural habitat, thus overcoming the basic pathology.

Acording to Vagbhatta, *Vamana* is indicated in the disorder of *Kapha*alone and in the association of *Kapha-Pitta* and *Kapha-Vata*. Thus*Vamana Karma*, Apart from *Kapha* it also eliminates the vitiated *Pitta* and regulates the movement of *Vata*[8]. While explaining modalities of Shodhana and Shamana therapies have been advocated in TamakaShwasa. Although, Shodhana is considered as superior it cannot be practiced everyday where as Shamana can be done in all age groups and in the patients of moderate to less body strength.

The proposed formulation Shunthi-Guda in TamakaShwasa is supposed to break the pathogenesis by correcting vitiated Vata and Kapha by agnideepana, amapachana, KaphaVata hara properties. Practise of Yogasana is supposed to provide strength to the lungs by increasing their vital capacity and alleviate the physical and psychological stress produced by the disease itself.

Aim and objective

1. To evaluate the efficacy of Shunthi&Guda along with Yogasana in the management of TamakaShwasa.

Materials and Methods:

40 Patients having diagnostic feature of TamakaShwasa who follows inclusion criteria were selected for present study. Patients attending OPD & IPD of Swasthvrittadept. & cases referred by other departments of Major S.D. Singh Ayurvedic P.G. Medical College hospital, Farrukhabad were selected randomly irrespective of race, cast, sex, religion etc. The selected drug along with yoga protocol administered for a period of 30 days. Assessments were performed in between and at the end of the study period, the data obtained was statistically analyzed.

Sample size: Total 40 patients full filling the inclusion criteria were selected for the study.

Drug and Dosage: Shunthi and Gudachoorna in the dose of 5gm twice a day after meal with Luke warm water after the meals was given for 30 days. A specially prepared Yogasanamodule were also advised to the patientsduring treatment period.

Yogasanamodule advised to the patients:

1.Anulomaviloma**:** 5-10 minutes in the morning hours
2.Kapalabhati **:** 5-10 minutes in the morning hours
3.Halasana **:** 1 time in the morning hours
4.Sarvanana **:** 1 time in the morning hours
5.Matsyasana **:** 1 time in the morning hours
6.Bhujangasana**:** 1 time in the morning hours
7.Dhanurasana **:** 1 time in the morning hours
8.Shalabhasana**:** 1 time in the morning hours
9.Shavana **:** 1 time in the morning hours

The assessments were done every 8th day during the course of treatment.

Inclusion Criteria:

Patients having any one or all of the following were selected.

1. Age more than 20 years and less than 60 years irrespective of gender
2. Patient presenting with classical feature of TamakaShwasa
3. Patient willing to participate in the trial and giving consent form
4. Patient with history of TamakaShwasa less than 2 years.
5. Peak flow meter Rate more than 80 Lit/min and less than 300 Lit/min

Exclusion Criteria:

1. Patients having age less than 20 years & above 60 years.
2. Patient willing to participate in the trial
3. Patient with history of TamakaShwasa more than 2 years
4. Peak flow meter Rate less than 80 Lit/min and less than 300 Lit/min
5. Any systemic illness or complications like CVD, Type 2 Diabetes, Hypo thyroidism
6. Asthma in pregnancy
7. Occupational Asthma

Assessment criteria

Assessments were done on every 8th day and then after the completion of trial. Assessment was performed based on the different grading (0-3)given for subjective and objective parameters. The subjective parameters includes *Shvasakashtata* (Difficuly of breathing), Duration of attack, Frequency of*ShwasaRoga*, Kasa (Cough), *AsinolabhateSoukhyam* (comfort feeling in sitting posture), *DukhenKaphaNishtivanam*(Productivity of cough), *Ghurghurkam*(wheezing),Peenasa (coryza), Urashoola(chest discomfort), Kanthodhwamsa (hoarness of voice)

The objective parameters for assessment such, Peak flow meter Rate in Lit/min, Ronchi / Crepitation and Respiratory rate were also assessed based on given grading (0-3). The overall effect of the treatment was assessed as, Complete remission (100% relief), Marked improvement (Reduction in the mean symptom score by 75 – 99% of the initial score), Moderate remission (Reduction in the mean symptom score by 50 – 74%), Average remission (Reduction in the mean symptom score by 25 – 49%), Unchanged Reduction in the mean symptom score by < 24% of the initial score.

Drug Review

1-Shunti

Botanical name: *Zingiberofficinale*Rosc.
Family: Zingiberaceae
Synonyms: *Shunthi, Nagara, Mahaushadha, Vishvabheshaja, Shringabera, Katubhadra, Aardrika, Ardraka*.
Part used:Fresh rhizome (*Ardraka*) and Dried rhizome (*Shunthi)*
Varga: *Charaka- Triptighna, Arshoghna, Dipaniya*
Sushruta – Pippallyadi
Properties:
Rasa: *Katu*
Guna: *Laghu, Snigdha,Guru, Ruksha, Teekshna*
Virya: *Ushna*
Vipaka: *Madhura*
Doshakarmata: *VataKaphahashamaka*

Action & uses:
It is thermogenic, carminative, laxative, digestive, emollient, appetizer, stomachic, stimulant, rubefacient, aphrodisiac, and expectorant, anthelmintic.
Chemical constituents:
heptane, octane, isovaleraldehyde, nonanol, ethylpinene, camphene, ß- pinene, subinene, myrecene, limonene, ß- phellandrene, 1,8- cineole,a-curcumene, a-fernesene, ß-fernesene, linalool, ß-sesquiphellandrene, gingerol, zingerone, shogaol, etc.

Research papers:
Researchers suggested that Ginger juice exhibits anticholinergic and antihistaminic action[9].Research works also suggest that ginger root inhibits production of prostaglandins and leukotrienes, which are involved in pain and inflammation also Ginger modulates biochemical pathways activated in chronic inflammation. Studies show that the constituent Shagonals present in the ginger is having antitussive activity. The other pharmacological activities of shunti includes such as Anti-inflammatory, anti-oxidant, anti-rhino viral: Anti-oxidant, anti-bacterial, anti-fungal, hypolipidemic, anti-atherosclerotic, anti-emetic, anti-pyretic, analgesic, antidepressant, hepatoprotective, hypoglycemic.

2. Guda

Jaggery (also known as guda) is one of the most important sweeteners in India. It is one of the major plant products which are easily available in market. It is mainly prepared from sugarcane. Jaggery is a popular food material and an important raw drug used in Ayurveda for therapeutic and pharmaceutical preparations[10]. It has medical properties as well as it acts as medical preservative. Externally *guda*is mainly used for *agnikarma, vartikalpana* and internally in many formulations. It is used as a media for the preparation of different Ayurvedic formulations such as *Asava, Arishtas, Avaleha, Gudapak* etc. The properties of guda as per Ayurveda includes the following [11]

- *Snigdha* - oily, unctuous
- *Laghu*- lighter to digest, than fresh
- *Agnideepana* - promotes digestion strength
- *Vitshodhaka*- cleanses intestines and feces
- *Mutrashodhaka*- cleanses urinary bladder and urine
- *Amashayashodhaka*- cleanses stomach
- *Ruchya* - promotes taste
- *Hrudya* - good for heart, cardiac tonic
- *Pittaghna* - balances Pitta
- *Vataghna*- balances Vata
- *Tridoshaghna* - Generally good for all the three Doshas
- *Jwarahara*- Good for fever (in small quantities only)
- *Santapashantiprada* - relieves excess body heat
- *Shramahara*- relieves tiredness
- *Panduhara* - useful in anemia
- *Pramehantaka*- useful in urinary tract disease

Guda helps in respiratory system by its cleansing action. It cleanses the lungs and respiratory tract which helps in ease breathing. Guda helps reducing the symptoms of asthma due to vatakapha balancing properties.

Statistical Analysis:
The information gathered on the basis of above observations was subjected to statistical analysis. The Unpaired T Test was carried out for all nonparametric data (i.e. for subjective criteria) to analyse the effect of individual therapy in the single group.
Chi square test was used to compare the effect of therapies of the two groups for non-parametric data.

Students paired "t" test was applied for the objective parameters to analyze the effect of individual therapy in the both groups. Unpaired "t" test was applied for the objective parameters to compare the effect of therapy before and after the treatment. The results were interpreted at p <0.05, p<0.01and p <0.001 significance levels. The obtained results were interpreted as:

A. Insignificant P >0.05
B. Significant P < 0.05
C. Significant P < 0.01
D. Highly Significant P < 0.001

Observation and analysis

Table 01: Effect of Shunti-Gudaprayoga and Yogasanas on the main symptoms of 40 Patients of TamakaShwasa

Main symptoms	**Mean**		**% Relief**	**S.D. (±)**	**S.E. (±)**	**t**	**P**
	B. T	A. T					
Shvasakashtata	3.75	1.13	70.00	0.52	0.18	14.34	< 0.001
Duration of attack	3.38	0.86	74.07	0.76	0.27	09.35	< 0.001
Kasa (Cough)	3.50	0.75	78.57	0.71	0.25	11.00	< 0.001
AsinolabhateSoukhyam	1.75	0.63	64.29	0.99	0.35	03.25	< 0.05
DukhenKaphaNivtivana	2.38	0.50	78.95	1.25	0.44	04.25	< 0.01
Ghurghurkam	3.50	1.00	71.42	1.20	0.42	05.92	< 0.001
Peenasa	0.88	0.25	71.42	1.19	0.42	01.48	> 0.05
Urashoola	0.38	0.00	100.0	1.06	0.38	01.00	> 0.05
Kanthodhamsa	0.38	0.00	100.0	1.06	0.38	01.00	> 0.05

Table 02 : Effect of Shunti-Gudaprayoga and Yogasanas on objective parameters of 40 Patients of Tamaka Shwasa

Main symptoms	**Mean**		**% Relief**	**S.D. (±)**	**S.E. (±)**	**t**	**P**
	B. T	A. T					
Peak flow meter Rate in Lit/m	0.38	0.00	70.00	0.52	0.18	14.34	< 0.001
Ronchi/Crepitus	3.50	0.75	78.57	0.71	0.25	11.00	< 0.001
Respiratory rate	1.75	0.63	64.29	0.99	0.35	03.25	< 0.05

Table 03 – Overall Effect of Shunthi&Guda along with Yogasana in the 30 Patients of TamakaShwasa

Discussion on effect of therapy

Action on *Shwasakrichrata*(Breathing difficulty)

The treatment mean gradation of Shvasakashtata was 3.75 and after the treatment it reduced to 1.13. This reduction of 70% was statistically significant (< 0.001). This may be because the drugs Guda and Shunti acts are target specific. It results in bronchodilation and relieves Shvasakrichrata. The drug along with Yogasanas accelerates *AnulomanaGati*to *Vayu* and relieves *Shvasakrichrata*to moderate extent but not capable of clearing *Kapha*accumulated in chest.

Action on Duration of attack:

The initial mean of Duration of attack in this group was 3.38 and after the treatment it reduced to 0.86. This 74.07% relief was statistically significant (< 0.001). The drugs eliminates accumulated *Kapha*from chest and clears the bronchial tree from accumulated mucoid secretion which in turn reduces the Frequency of *Shvasakashtata.* The Yogasanas helps in giving strength to lungs and helps in further reduction in Frequency of *Shvasakashtata.*

Action of treatment on Kasa:

It was observed that before the treatment the mean of Kasa (Cough) was 3.50 and after completion of the treatment mean was 0.75. This 78.07% reduction was statistically significant (< 0.001). This is also because of bronchodilator effect of Shunthi-Guda.

Action of treatment on Asinasoukhya:

It was found that the mean score of AsinolabhateSoukhyam before treatment a was 1.75 and after the completion of the course, it decreased to 0.63. This 64.29% relief was statistically significant (< 0.05). The drugs eliminate accumulated *Kapha*from chest and clears the bronchial tree from accumulated mucoid secretion which in turn reduces the Kapha which helps in subsiding the Kapha and helps in breathing.

Action of treatment on DukhenKaphaNivtivana:

In present study, it was found that the initial mean of DukhenKaphaNivtivana was 2.38, which decreased to 0.50. This 78.95% relief was statistically significant (< 0.01). Before treatment mean scoring of Ghurghurkam was 3.50 and after treatment it was reduced to 1.00. This reduction of 71.42% was statistically significant (< 0.001). Its also has same explanation which is explained previously.

Action of treatment on Peenasa:

The mean gradation of Peenasa before treatment was 0.88 and after the treatment it decreased to 0.25 showing 71.42% relief, but it was not statistically significant (> 0.05). This is also because of KaphaChedana effect of Shunthi-Guda. Its UshnaVeerya reduces Peenasa and relieves the symptoms.

Action of treatment on Urashoola

The initial mean score of Urashoola was 0.38, which reduced to 0.00 after the treatment. This 100% relief was not statistically significant (> 0.05), may be due to its presence in a smaller number of patients.

Action of treatment onKanthodhamsa

The present study illustrates that initial mean of Kanthodhamsa was 0.38 and after treatment it reduced to 0.00. However, this reduction of 100% was statistically insignificant (> 0.05), may be due to its presence in a smaller number of patients.

Action of Yogasana

Yogasana gives strength to Lungs it improves the air entry to lungs and strengthen the muscles of the chest. The specific yogasana module also helps the patient's agni, and improves aharapachana, along with this yogasana does the proper relocation of vayu in the body by performing vatanulomana action. Yogasana prescribed to the patients of TamakaShwasa induces better health to the patients and also relieves the symtoms of TamakaShwasa.

Effect of Shunti-Gudaprayoga and Yogasanas on objective parameters:

The result exhibits that before starting the treatment mean gradation of Peak flow meter Rate in Lit/m was 0.38 and after the treatment it reduced to 0.00. This reduction of 70% was statistically significant (< 0.001).

The initial mean of Ronchi/Crepitus in this group was 3.50 and after the treatment it reduced to 0.75. This 78.57% relief was statistically significant (< 0.001).

It was observed that before the treatment the mean of Respiratory rate was 1.75 and after completion of the treatment mean was 0.63. This 64.29% reduction was statistically significant (< 0.001).

Conclusion

The results show that out of 40 patients of 62.5**%** of patients got complete remission, and 20% of patients got marked improvement 15% patients has got moderate improvement. None of the selected patient were remained with out responding to the treatment. Thus this study suggest that *Shunthi*and*Guda along* with*Yogasana*relieves the symptoms of the diseaseTamakashwasa.

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