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## Research Article

### A CLINICAL STUDY ON THE EFFECT OF VIRECANA KARMA WITH TRIVRUTADI MODAKA IN THE MANAGEMENT OF TAMAKA SVASA (BRONCHIAL ASTHMA)

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#### ABSTRACT

*Tamaka svasa* is a *Vata*kaphaja *vyadhi*, originating from *Pittasthana* and manifested through *Pranavaha Srotas*. *Vata* get obstructed by *Kapha dosha* and travels into *Pratiloma gati* (opposite direction) and in turn causes *Svasa (Dyspnoea)*. Its clinical features resembles with Bronchial asthma.

**Objectives:** The study was carried out to assess the role of *Virecana karma* in the management of *Tamaka svasa* with *Trivrutadi Modaka*. **Materials and methods:** The clinical study was conducted at Dr.B.R.K.R.Govt. Ayurvedic Hospital and Research Centre, Erragadda, Hyderabad. 30 patients of either sex fulfilling the clinical criteria for diagnosis of *Tamaka svasa* (bronchial asthma) were selected in accordance with following inclusion & exclusion criteria. *Murchita Tilataila* was given for *Snehapana* and the *Virecana yoga* was *Trivrutadi Modaka*. The result was assessed at every 15 days. Subjective and objective parameters were analyzed before and after the treatment. **Results:** There was moderate relief in 23 Patients (76.66%), Marked relief in 4 Patients (13.33%) and 3 Patients (10.00%) showed mild relief, Complete remission was not found. **Conclusion:** *Virecana karma* (Purgative Therapy) has given maximum effect to pacify the almost entire range of signs and symptoms associated with the disease and by reducing its frequency, severity, emergency drug usage and there by providing quality life to the patients.

**KEY WORDS:** *Tamaka Svasa*, Bronchial Asthma, *Virecana karma*, *Murchita Tilataila*, *Trivrutadi Modaka*.

#### INTRODUCTION

*Dalhanacharya* described *Svasa* (dyspnoea) as "*kruchram svasam karoti iti svasam*" means, difficulty in taking breath is known as *Svasa*. There are 5 types of *Svasa* mentioned in *Ayurveda*<sup>1,2,3</sup>, *Tamaka Svasa* is one among them. *Tamaka Svasa* is *Vata*kaphaj *vyadhi*, originating from *Pittasthana*<sup>4</sup> and manifested through *Pranavaha Srotas*. *Vata* gets obstruction by *Kapha* and travels into *Pratiloma gati* and in turn causes *Svasa*.

At initial stage, it is said to be curable, but in chronic cases, it becomes *Yapya*<sup>5</sup> (manageable disease). Its clinical features resembles Bronchial Asthma.

Modern medicine also considers, Asthma as a manageable disease, and providing various drugs, but those are giving only symptomatic relief and their continuous usage not only proved to be in-effective, but also causing serious side effects. So, the main aim of treatment in this disease is to reduce the intensity, frequency and duration of exacerbation to the minimum and to provide quality life to the patient.

*Pancha karma* (bio-purification therapy) is the best way to treat these types of chronic diseases effectively & safely without any drug dependency. It also detoxifies the body, by which *Bala* (immunity) can also be enhanced, there by decreases the recurrence of the disease.

In *Tamaka Svasa*, *Virecana karma* (purgation therapy) has described by *Carakacharya*, as "*Vata sleshma harairyuktam tamake tu virecanam*"<sup>6</sup>, means *Virecana karma* should adopt with *Vata*kapha *hara dravyas*.

#### Role of Virecana in Tamaka Svasa

- The origin of *Svasa* is *pitta* sthana. *Chakrapani* has narrated it as *Adhoamashaya*<sup>7</sup> (Stomach), *Virecana karma* is the main treatment for *Pitta dosha*, "*Virecanam pitta haranam*"<sup>8</sup>.
- Causing factor for the *Tamaka svasa* was *Kapha* and origin of the *Kapha dosha* is *urdva Amasaya* (stomach). *Virecana* is also supposed to be the secondary treatment for *Kapha dosha*.
- Causes *Anulomagati* to *Vata*.

So, if we give the *Virecana chikitsa*, both these *doshas* can be removed one by one (first *Pitta* followed by *Kapha*), Hence the *Samprapti* (pathogenesis) of the disease has broken.

Keeping these aspects in mind the present study was carried out to evaluate the efficacy of *Virecana karma* in *Tamaka svasa*

#### MATERIALS AND METHODS

- Preparation of the Drugs
- Selection of Patients
- Design of the study

## D. Results and Discussion

### A. Preparation of the Drugs

#### 1. Murchana of Tilataila<sup>9</sup>

4 litres of sesame oil was taken in an iron pan and heated till bubbles & waves disappear. Then the pan was removed from heat and allowed to cool at room temperature. 4 litres of above oil was taken in an iron pan and *Manjista* (*Rubia cordifolia* L.)- 250gm, *Haridra* (*Curcuma longa* L.)- 60gms, *Lodhra* (*Symplocos racemosa* Roxb.)- 60gms, *Mustak* (*Cyperus rotundus* Linn) - 60gms, *Nalika*- 60gms, *Amalaki* (*Phyllanthus emblica* Linn.)- 60gms, *Haritaki* (*Terminalia chebula* Retz.)- 60gms, *Vibhitaki* (*Terminalia bellirica* (Gaertn.) Roxb.)- 60gms, *Ketaki* (*Pandanus odoratissimus* Linn. f.)- 60gms, *Vatankura* (*Ficus benghalensis* Linn.)- 60gms & *Hribera* (*Coleus vettiveroides* K.C.Jacob)- 60gms and 16 litres of water were added. Then cook the preparation on fire till the water is completely evaporated, finally it was filtered. This oil was given for internal administration (*snehapana*). (Fig. 2)

#### 2. Trivrutadi Modaka

*Trivrutadi Modaka* was described in *Caraka samhita*, *Kalpa sthana*, 7<sup>th</sup> chapter under *Modaka Yogas* of *Trivrut* (*Operculina turpethum*). Three *sana* (7.5gms) of *Trivrut churna* was added with 1 *sana* (2.5gms) of the each powder of *Haritaki* pulp, *Amalaki* pulp, *Vibhitaki* pulp, *Vidanga* (*Embelia ribes*), *Pippali* (*Piper longum* Linn) and *Yava Kshara* (alkali preparation of *Hordem Vulgare* Lin)). This powder was made into *Modaka* (a small round sweetmeat) with jaggery<sup>10</sup> (Fig. 3). This is an excellent purgative *yoga* and it does not require any diet restrictions.

### B. Selection of Patients

For the present study, 30 patients of either sex fulfilling the clinical criteria for diagnosis of *Tamaka Svasa* (bronchial asthma) were selected in accordance with following inclusion & exclusion criteria, from the OPD & IPD of the P.G. department of Panchakarma, Dr.B.R.K.R. Govt. Ayurvedic Hospital and Research Centre, Erragadda, Hyderabad.

#### Inclusion Criteria

- Patients having classical features of *Tamaka Svasa*.
- Belonging to age group 16 - 60 years.
- Uncomplicated cases of Bronchial Asthma.

#### Exclusion Criteria

- The patients accompanying cardiac complaints.
- Endocrine disorders like diabetes mellitus etc.
- Patients suffering from Pulmonary tuberculosis, Lung Cancer, Lung fibrosis, Emphysema, Bronchiectasis, Cor-Pulmonale, IHD, Hypertension were excluded.
- Other complicated respiratory diseases having any organic lesions such as tumour or any anatomical defect in airways.
- Patients who are not able to tolerate *Samshodhana* (Purificatory) therapy are to be excluded. (children,

old age, lean and weak, pregnant women, lactating mothers)

### Diagnostic Criteria

1. Cardinal Signs and symptoms of *Tamaka Svasa* are as mentioned in classics.

2. Respiratory function tests like

#### • Procedure to measure PEFR

The Peak flow meter (Fig. 1) was used to measure the PEFR. The patient was asked to take deep breath and then to blow hard in to the mouth piece of the peak flow meter with a sharp blast. The needle on the dial indicates the PEFR in litres per minute. Six readings were taken at 1 min intervals and the average of 4 higher readings was recorded, for the assessment before and after the treatment.

#### • Procedure to measure Breath holding time (B.H.T)

The patient was asked to sit quietly for a few minutes and to breath normally, before the BHT exercises were started. The patient was asked to pinch his nostrils with the thumb and fore finger and hold his breath after a normal inspiration. The time for which the breath could be held was noted with stop-watch. Observations were made at intervals of 2 min, the best value was taken for the assessment before and after the treatment.

### 3. Laboratory Investigations

- Blood: Hb%, T.C., D.C., E.S.R, AEC.
- Urine: Routine and Microscopic examination
- Sputum: AFB (If necessary, to exclude T.B)
- Radiology: X-Ray was done for ruling out other pulmonary complications.

### C. Design of the study

The study design was randomized open clinical trial of over 30 cases of *Tamaka svasa*. The selected patients were treated by classical *Virecana Karma* with *Trivrutadi Modaka*. Classical *Virecana Karma* includes *Dipana*, *Pachana*, *Snehapana*, *Abhyanga* & *Svedana*, *Shodhana* and *Samsarjana Krama*. Patients are advised to follow *Pathyadi krama* (wholesome *Ahara* & *Vihara*).

#### *Abhyantara sneha pana* (Internal administration of medicated oil)

*Murchita tilataila* was administered daily in the morning, after sunrise in *Vardhamana Krama* (increasing dose), starting with *Hrasiyasi Matra* (Test dose), followed by warm water consumption. Patient was daily examined and assessed for *Samayak Sneha Jirna Lakshanas*. *Snehapana* was given till the *Samayak Snigdha lakshanas* were observed.

#### *Virecana* (purgation therapy)

After attaining of *Samyak Snigdha lakshanas*, the patient was subjected to *Abhyanga* (massage) along with *bhaspa svedana* (steam-bath) for 3 days. On the 4<sup>th</sup> day, *Trivrutadi Modaka* was given on empty stomach with warm water for *Virecana*. The dose varies according to *Kostha* and *Agni* (digestive power) of the patients.

**Samsarjana krama**

Depending upon the type of *Shuddhi* (*Laingiki*, *Vagiki* and *Antiki*) shown by the patients, *Samsarjana Krama* was prescribed for 3-7 days, followed by normal diet/ *Pathya ahara*. After completion of *Samsarjana Krama*, the patients were assessed for the effect of *Virecana*.

**Parameters with gradation Score****1. Svasa vega (Frequency of Dyspnoea)**

- 0-No vega during 15 days.
- 1-2 to 3 vegas within 15 days.
- 2-2 to 3 vegas in a week.
- 3-Frequent attack

**2. Kruchra Svasa (Intensity and duration of attack)**

- 0-No Svasa
- 1-Mild breathlessness and attack lasts 10 min, do not require any medication.
- 2-Moderate breathlessness, it lasts 30 min, after taking rest/mild medication.
- 3-Severe breathlessness and it lasts more than 30 min, resolution only after strong medication.

**3. Kasa (Cough)**

- 0-No Kasa
- 1-Occasional *Kasa vega*.
- 2-*Kasa vega* with some pain, not disturbing the sleep.
- 3-Very troublesome *Kasa*, does not even allow to sleep at night.

**4. Pinasa (Rhinitis)**

- 0-No *Pinasa*
- 1-*Pinasa* during the attack and subsides 1- 2 days after attack
- 2-Very often *Pinasa*, even without attack
- 3-Always *Pinasa* persisting.

**5. Parsvasula (Pain in inter-costal spaces)**

- 0-No *parsvasula*
- 1-*Parsvasula* during the attack
- 2-Very often *parsvasula* even without attack
- 3-Always *parsvasula* (Persistent pain)

**6. Ghurghurakam (wheezing)**

- 0- No wheezing
- 1-Wheezing only during attack
- 2-Occasional wheezing.
- 3-Very often Wheezing.

**7. Asino Labhate saukhyam (Relieves discomfort in sitting posture)**

- 0 -Relief in lying position
- 1-Feels better in sitting posture
- 2-Sitting posture gives relief.
- 3-Can't sleep, patient adopts spontaneous sitting posture during attack.

**8. Sleshma vimoksante muhurtam sukham (Comfort after the phlegm comes out)**

- 0-No relief even after phlegm comes out
- 1-Comfort after the phlegm comes out during attack

- 2-Very often comfort after the phlegm comes out
- 3-Feels comfort after the phlegm comes out every time

**9. Anidra (Sleeplessness)**

- 0-Sound sleep
- 1-Undisturbed late sleep
- 2-Sleep disturbed at late night and early morning
- 3-No sleep

**Functional assessment**

Functional tests like PEFR, Breath holding time, were carried out before and after the treatment.

**Follow- up study**

After the completion of the treatment, the follow up was taken once in a fortnight up to two months, to note the recovery of attacks and symptoms.

**Assessment of overall effect of the therapy**

**Complete remission:** 100% relief in signs and symptoms. No attack of *svasa vega* during and after the treatment up to two months of follow up.

**Marked relief:** 75%-99% relief in signs and symptoms, the frequency and intensity of attacks were reduced to 75% of the initial one.

**Moderate relief:** 50% to 75% relief in signs and symptoms, the frequency and intensity of attacks were reduced to 50% of the initial one.

**Mild relief:** 25% to 50% relief in signs and symptoms, the frequency and intensity of attacks were reduced to 25% of the initial one.

**No relief:** Less than 25% relief in signs and symptoms, with no change in the frequency and intensity of attack.

**OBSERVATIONS**

In this present study majority of patients were between the age group of 20-30 years. It was observed that males were more affected than females. The higher incidence was observed during winter and rainy season. Among the chief complaints, *Kruchra Svasa*, *Kasa*, *Pinasa* were observed in all the 30 patients (100%), *Parsva sula* in 20 patients (66.66%), *Ghurghurakam* in 26 patients (86.66%), *Asinolabhate Soukhyam* in 28 patients (93.33%), *Sleshma vimokshante Muhutam sukham* in 25 patients (83.33%), *Anidra* in 26 patients (86.66%). Among *Samyak Virechan Lakshana*, *Laghuta* was observed in 100% of the patients, *Indriya Prasada* was observed in 26 patients (86.66%), *Vatanulomana* was observed in 28 patients (93.333%), *Daurbalya* was observed in 19 Patients (63.33%). *Virecana vyapaths* (Complications) did not occur during the study. 3-4 kgs of weight reduction was also observed in all the cases.

**D. RESULTS AND DISCUSSION****Effect of Virecana on Subjective Parameters**

The reduction in the frequency of *Svasa vega* was up to 54.68%, which was statistically highly significant ( $p < 0.001$ ). It implied that, by giving *Virecana* with *Trivrutadi Modaka*, the obstruction in the *Pranavaha srotas* was relieved and it may

strengthen the *Pranavaha Srotas*, there by frequency of *Svasa vega* was also reduced.

Reduction in the intensity and duration of *Svasa vega* was up to 46.66%, which was statistically highly significant ( $p < 0.001$ ). In *Svasa roga*, the *Dusta kapha* obstructs the *Prakupita vayu* in *Pranavaha srotas* & this obstruction was relieved better by *Trivrutadi Modaka*, because it possess *Katu, Tikta rasa, Laghu, Ushna, Tikshna* properties. These pacify the *Kapha* and also produce *Anuloma gati* to *Vata* & purify the *Pitta sthana* by its *Virecana karma*. Hence, the *Samprapti vighatana* of *Svasa vyadhi* was happened. Therefore, the intensity and duration of *Svasa vega* was reduced.

*Kasa* was relieved by 57.97%, this is statistically highly significant ( $P < 0.001\%$ ), due to its *Tridosha-hara, Ushnavirya, Kasasvasahara* properties of the drug & the *Srotorodha* of the *Pranavaha srotas* was also removed by *Virecana karma*.

*Pinasa* was relieved 63.88%, this is statistically highly Significant ( $P < 0.001$ ). The chief predominant *Doshas* in *Pinasam* is *Vata & Kapha* & both these factors were better managed by *Virecana karma*. The relief in *Parsva sula* was 76.74%, which is statistically highly Significant ( $P < 0.001$ ).

*Ghurghurakam* was relieved by 55.55%, which is statistically highly significant ( $P < 0.001$ ). Generally, *Ghurghurakam* is produced due to obstruction of *prana vayu* by *kapha* & this is relieved better by *ushna*,

*tikshna* properties of *Trivrutadi modaka* and by its *Virecana karma*.

*Asino labhate Soukhyam* (Relieves discomfort in sitting posture) was relieved by 52.38%, which is statistically highly significant ( $P < 0.001$ ). In *Svasa*, due to *Pitta sthana dusti*, there is production of *Aama rasadhatu* & this causes excess secretion of *dusta kapha* in *pranavaha srotas*. On lying position, the *Vayu* get entrapped and is unable to escape. Secondly there is decrease in space for the movement of *Pranavayu*, because of ascending diaphragm. Hence it initiates the *Svasa vega*. The *Virecana karma* by its effect does the *Shuddhi of Pitta sthana and Tikta, Katu rasa, Ushna virya of the drug* corrects the *rasa Dhatu dushti. Lekhana, Chedana, Kapha Nissaraka guna of Yava kshara* clears the *Srota rodha*, by all these the *Anuloma gati* of *Prana vayu* was restored.

*Sleshma vimokshante labhate sukham* was relieved by 54.83%, which is statistically highly Significant ( $P < 0.001$ ). In this study *Murchita tilataila* was given for *Sneha pana*, because of its *Ushna guna, Tikshna, Vyavayi gunas*, it breaks the sticky mucous, and facilitates its easy expulsion. Then by *Virecana karma* the remaining *Kapha dosha* was eliminated.

*Anidrata* was relieved by 48.07%, which is statistically highly significant ( $P < 0.001$ ). Sleep is disturbed due to continuous *Kasa*, dyspnoea. Once these are under control, patient will get proper sleep.

**Table 1: Showing effect of Virecana on Subjective Parameters**

S.No	Symptom	Mean		% of Relief	S.D		SEm		t-Value	P-Value	Significance
		B.T	A.T		B.T	A.T	B.T	A.T			
1.	Frequency of Svasa Vega	2.13	0.97	54.68%	0.57	0.41	0.10	0.08	13.857	<0.001	H.S
2.	Kruchra Svasa	2.00	1.07	46.66%	0.83	0.58	0.15	0.11	6.9112	<0.001	H.S
3.	Kasa	2.30	0.97	57.97%	0.65	0.49	0.12	0.09	8.9597	<0.001	H.S
4.	Pinasa	2.40	0.87	63.88%	0.56	0.43	0.10	0.08	14.699	<0.001	H.S
5.	Parswa sula	1.43	0.33	76.74%	1.01	0.55	0.18	0.10	5.2610	<0.001	H.S
6.	Ghurghurakam	1.80	0.70	55.55%	1.03	0.65	0.19	0.12	7.9395	<0.001	H.S
7.	Asino labhate Soukhyam	2.10	1.00	53.38%	0.80	0.53	0.15	0.10	8.4624	<0.001	H.S
8.	Sleshma Vimokshante muhurtam sukham	2.07	0.93	54.83%	1.08	0.69	0.20	0.13	7.2150	<0.001	H.S
9.	Anidra	1.73	0.87	48.07%	0.91	0.63	0.17	0.11	8.3083	<0.001	H.S

**Effect of therapy on Objective parameters**

AEC was decreased by 27.95%, which was statistically significant ( $P < 0.001$ ). There was an increase in the P.E.F.R. by 34.25%, which was

statistically highly significant ( $p < 0.001$ ). There was an increase in the B.H.T. by 32.69%, which was statistically highly significant ( $p < 0.001$ ).

**Table 2: Showing effect of Virecana on Objective Parameters**

S.No	Parameter	Mean		% of Relief	S.D		SEm		t-Value	P-Value	Significance
		B.T	A.T		B.T	A.T	B.T	A.T			
1.	A.E.C	543.57	391.63	28.00%	161.01	81.64	29.40	14.90	5.2178	<0.001	H.S
2.	PEFR	205.33	312.33	34.25%	49.81	50.01	9.09	9.13	10.874	<0.001	H.S
3.	BHT	19.77	29.37	32.69%	4.53	7.71	0.83	1.41	8.0373	<0.001	H.S

(S.D:-Standard deviation, S.E<sub>m</sub>- Mean of Standard Error, H.S:-Highly Significant, B.T-Before Treatment, A.T:- After Treatment.)

**Discussion on overall effect of therapy**

There was moderate relief in 23 patients (76.66%), Marked relief in 4 patients (13.33%) and 3

patients (10%) showed mild relief, Complete remission was not found.



**Table 3: Showing overall effect of Therapy**

Results	No. of patients	Percentage
Marked relief	04	13.33%
Moderate relief	23	76.66%
Mild relief	03	10.00%
No relief	00	00

**Discussion on Follow-up Period**

Follow up was done for 2 months after completion of the therapy. In this period, the patient was kept under *Pathya ahara* and *vihara* (wholesome diet and activities) and assessment was done for every 15 days. Out of 30 Patients, 10 Patients (33.33%) got recurrence of attack, but the frequency, Intensity, need of emergency medicine was reduced. The reason behind this may be due to chronicity of disease or failing in following the *Pathya ahara / Nidana Sevana*.

**CONCLUSION**

In the present study 30 patients fulfilling the inclusion criteria were selected and treated with Virecana Karma. The most common aetiological factors of *Tamaka Svasa* observed in this study are *raja* (Dust), *Dhuma* (smoke), *kapha vardhaka ahara vihara* and more *Katu rasa sevana*.

Both subjective and objective parameters were improved and which were statistically highly significant ( $P < 0.001$ ). It was found that, moderate relief in 23 patients (76.66%), Marked relief in 4 patients (13.33%) and 3 patients (10.00%) showed mild relief, Complete remission was not found. In follow up period, 10 Patients (33.33%) got recurrence attack, but the frequency, intensity, need of emergency medicine was reduced. The reason behind this may be due to Chronicity of disease or failing in following the *Pathya ahara / Nidana Sevana*. Hence, it can be concluded that, *Virecana Karma* with *Trivrutadi Modaka* found more effective in breaking the *samprapti* (pathogenesis) of *Tamaka Svasa*, thus the main goal of the *chikitsa*, i.e., "*Samprapti vighatana meva chikitsa*" can be achieved.

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**Figure 1. Peak flow meter**



**Figure 2. Murchita Tilataila**



**Figure 3. Trivrutadi Modaka**