



Therapeutic Effect of *Moothanda Thailam (Nasiyam)* in the Management of *Peenisam (Sinusitis)*-A Pilot Study

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KEYWORDS

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ABSTRACT:

Introduction: Siddha medicine, one of India's traditional medical systems, offers a comprehensive approach to disease management through internal (*Agamarunthugal*) and external (*Puramarunthugal*) medicines. Among the external therapies, *Nasiyam*—the intranasal administration of medicated oils—holds importance in treating *Kapham*-related disorders, particularly *Peenisam*. *Peenisam* corresponds to sinusitis in modern medicine, a condition increasingly influenced by environmental and lifestyle factors. In clinical practice, *Moothanda Thailam* is widely used for the rapid relief of nasal congestion, discharge, and associated symptoms of *Peenisam*.

Objectives: This study aimed to evaluate the efficacy of *Moothanda Thailam Nasiyam* in managing *Peenisam* (Sinusitis) using the SNOT-22 scoring system.

Methods: A single-arm clinical trial was conducted at Ayothidass Pandithar Hospital, National Institute of Siddha, after obtaining IEC approval (IEC No: NIS/26/IEC/2024/MP/29) and registration (CTRI/2024/06/069522). Ten participants with acute or recurrent acute sinusitis received *Moothanda Thailam*, three drops in each nostril for ten consecutive days.

Results: Results showed that 40% of participants achieved complete resolution of symptoms, while 60% showed marked improvement in SNOT-22 scores. Statistical analysis (test statistic: -2.083; $p = 0.005$) indicated a significant reduction in symptom severity ($p < 0.05$).

Conclusions: The findings demonstrate that *Moothanda Thailam Nasiyam* is therapeutically effective in the management of *Peenisam*. Its safety profile, along with its affordability, highlights its potential as a cost-effective and accessible treatment option for sinusitis.

1. Introduction

Siddha medicine has played an important role in healthcare for many generations, offering various therapeutic approaches based on long-standing knowledge and experience. Treatments in Siddha are broadly classified into *Agamarunthugal* (Internal medicines) and *Puramarunthugal* (external medicines), each designed to restore balance among the three vital humors- *Vaatham*, *Pitham*, and *Kapham*. Among the external medicine, *Nasiyam* (Nasal instillation) is a

significant procedure where medicinal juices, oils, or solutions are administered through the nostrils ¹. *Nasiyam* is employed for both preventive and curative purposes. It is a key therapeutic procedure in restoring the balance of *Thirithodam* by regulating the deranged *Kapham*. This treatment is particularly indicated for ailments, such as *Peenisam*, *Sanni*, and *Mayakkam* ²

Peenisam, also referred to as *Mookkadaippu Noi* or *Mookkuneer Paaithal*, is characterized by nasal



congestion, runny nose, sneezing, headache, red/watery eyes, and frequent nasal discharge of sputum, pus, or blood³. In modern medical terms, this condition correlates with sinusitis, which involves inflammation of the mucosal lining in the sinuses⁴. It often results from infection, allergies, or other factors that obstruct the sinus drainage pathway, leading to mucus accumulation. It may present in acute, subacute, or chronic forms, with Acute Rhinosinusitis (ARS) typically lasting less than four weeks. Recurrent Acute Rhinosinusitis (RARS) refers to four or more episodes of ARS per year, with complete resolution between episodes⁵. The condition significantly affects quality of life and imposes a considerable healthcare burden globally. Epidemiological studies indicate that sinusitis affects approximately 15–40 individuals per 1,000 population annually, depending on demographic and environmental factors⁵. Assessment of symptom severity and treatment outcomes in sinusitis is often performed using validated instruments such as the Sino-Nasal Outcome Test-22 (SNOT-22), which captures both physical and psychosocial dimensions of the disease⁶.

In recent years, the prevalence of Sinusitis has been steadily increasing, largely attributed to increased air pollution and changes in lifestyle habits, making it a growing public health concern. Siddha literature mentions several thailam formulations for treating this condition, including *Moothanda Thailam*, an herbal preparation with ingredients of anti-inflammatory, antimicrobial, and immunomodulatory properties. This study aims to evaluate the therapeutic efficacy of *Moothanda Thailam Nasiyam* in managing *Peenisam*, providing evidence-based validation for its role in effective and affordable treatment.

2. Objectives

The objective of the study was to determine the therapeutic effectiveness of *Moothanda thailam (Nasiyam)* in the management of *Peenisam* (Sinusitis) by assessing the improvement in clinical signs and symptoms using the SNOT 22.

3. Methods

3.a. Study design and setting

This study was an interventional study conducted in Ayothidass Pandithar Hospital, National Institute of Siddha, Chennai. The study was conducted over a

duration of six months and involved a sample size of 10 participants. Before the initiation of the study, ethical clearance was obtained from the Institutional Ethical Committee (IEC NO: NIS/26/IEC/2024/MP/29) and was also registered in the Clinical Trial Registry of India (CTRI/2024/06/069522).

3.b. Inclusion and exclusion criteria

Individuals of all genders aged 18 and 60 years. Diagnosed cases of Acute and recurrent acute sinusitis were included. Individuals who were willing to participate and provided written informed consent for the study were included.

Individuals with known case of Nasal polyps, Bronchial asthma, or malignancy of nasal and paranasal sinuses were excluded. Individuals with pyrexia and serious systemic illness, such as uncontrolled diabetes mellitus and hypertension were excluded.

3.c. Intervention

The *Moothanda Thailam* as *Nasiyam* was administered for 10 continuous days⁷.

Table 1: Ingredients Of *Moothanda Thailam*⁷

S.No	Ingredient Name	Quantity
1	<i>Arugam ver (Cyanodon dactylon)</i>	1 palam (35 grams)
2	<i>Milagu (Piper nigrum)</i>	1 palam
3	<i>Koraikilangu (Cyperus rotundus)</i>	1 palam
4	<i>Nallennai</i> (Gingelly oil)	1/2 padi (650 ml)
5	<i>Pasu Nei</i> (Cow's ghee)	1/2 padi

Preparation of *Moothanda thailam*

Milagu, *Arugam ver*, and *Koraikilangu* were ground into powder and added with *Nallennai* and *Pasu nei*. The mixture was kept in sunlight (*suriya pudam*) for 7 days. The oil was filtered and stored in an airtight container. The prepared medicine was standardized according to PLIM guidelines⁸



3.d. Treatment procedure ⁹

A. Pretreatment procedure

- The participants were educated about the procedure, and written informed consent was obtained from each participant.

- Vital signs were ensured.

B. Treatment procedure

- The patients were asked to lie in the supine position with their head tilted backwards.

- One nostril was closed, and 3 drops of the *Moothanda thailam* was administered in the other nostril by using a dropper.

- The same process was repeated in another nostril.

- The patients were asked to rest in the supine position for 5-10 minutes.

- The patients were asked to spit out or nose out the secretions.

C. Post-treatment procedure

- Vitals were checked after treatment.
- Patients were observed for 15 – 30 minutes.
- In case of irritability or intolerance to the patient, the medicine was immediately washed off the nasal passages with clean water.

3.e. Outcome measures

The outcome of the study was assessed by the Sino-Nasal Outcome Test-22 (SNOT-22). The SNOT-22 is a validated, self-administered questionnaire consisting of 22 items that evaluate the physical, functional, and emotional consequences of sinonasal conditions. Each item is scored on a scale from 0 (no problem) to 5 (problem as bad as it can be), resulting in a total score ranging from 0 to 110, with higher scores indicating greater symptom severity. Score range of 8-20 is considered Mild, 20-50 as Moderate, and over 50 as Severe ¹⁰.

Assessments were conducted at baseline (before treatment) and after the intervention period to evaluate changes in symptom burden.

Figure 1: SNOT 22

1. Considering how severe the problem is when you experience it and how often it happens, please rate each item below on how "bad" it is by circling the number that corresponds with how you feel using this scale: →	No problem	Very Mild Problem	Mild or slight problem	Moderate problem	Severe problem	Problem as bad as it can be	5 Most Important Items
1. Need to blow nose	0	1	2	3	4	5	○
2. Nasal Blockage	0	1	2	3	4	5	○
3. Sneezing	0	1	2	3	4	5	○
4. Runny nose	0	1	2	3	4	5	○
5. Cough	0	1	2	3	4	5	○
6. Post-nasal discharge	0	1	2	3	4	5	○
7. Thick nasal discharge	0	1	2	3	4	5	○
8. Ear fullness	0	1	2	3	4	5	○
9. Dizziness	0	1	2	3	4	5	○
10. Ear pain	0	1	2	3	4	5	○
11. Facial pain/pressure	0	1	2	3	4	5	○
12. Decreased Sense of Smell/Taste	0	1	2	3	4	5	○
13. Difficulty falling asleep	0	1	2	3	4	5	○
14. Wake up at night	0	1	2	3	4	5	○
15. Lack of a good night's sleep	0	1	2	3	4	5	○
16. Wake up tired	0	1	2	3	4	5	○
17. Fatigue	0	1	2	3	4	5	○
18. Reduced productivity	0	1	2	3	4	5	○
19. Reduced concentration	0	1	2	3	4	5	○
20. Frustrated/restless/irritable	0	1	2	3	4	5	○
21. Sad	0	1	2	3	4	5	○
22. Embarrassed	0	1	2	3	4	5	○

2. Please mark the most important items affecting your health (maximum of 5 items) ↑

4. Results

4.a. Demographic profile of study participants

Among the 10 participants, 6 were female and 4 were male. 50% of the study population was between 18-30 years, and 40% between 31-50 years of age. Analysing the occupational distribution of patients in the study, 30% of them were IT workers, 30% of them were housewives, and 20% of them were drivers. On the distribution of family history, only 20% had a positive family history. Of the patients, 60% suffered from acute sinusitis and 40% suffered from recurrent acute sinusitis. Radiological reports showed involvement of the maxillary sinus and frontal sinus in the majority of patients.

Table 2: Baseline characteristics of the study participants

S.no	Characteristic	Value
1	Number of participants	10
2	Age (mean±SD)	34.5±11.005
3	Gender (Male/Female)	4/6
4	Baseline SNOT 22 score (mean±SD)	36.5±5.82



4.b. Distribution of Siddha parameters

In this study, the distribution of *Gunam* showed that all 10 cases (100%) had *Raso Gunam*. Distribution of *Yakkai ilakanam* shows that all the cases (100%) were *Thontha udal*.

In the majority of patients, *pithakapham*, *kabapitham Naadi* was noted before treatment in compliance with text¹¹.

4.c. Effect of study intervention on Siddha assessment parameters

In this study, disturbances in *mukkutram* (vital humours) and *udal thathukal* (Body constitution) were assessed to understand their involvement in *Peenisam* and to evaluate changes following therapeutic intervention.

Mukkutram- Vali: The disturbance in *Praanan* is evident through symptoms like difficulty in breathing and recurrent sneezing in all patients (100%) before treatment. Post-treatment, 70% showed improvement. Disturbance in *Samanan* due to involvement of other *vayus* was observed in all patients, and 40% showed improvement after treatment. All patients experienced symptoms related to *Kirukaran* disturbance, such as sneezing, rhinorrhoea, and 50% reported relief following treatment. **Azhal:** 30% of patients reported fatigue and reduced daily activity, indicative of *Sathagam* imbalance. After treatment, 20% experienced improvement. Disturbances in *Alosagam* manifest as watery eyes in 30% of patients, and all showed improvement post-treatment. **Iyyam:** All patients (100%) had symptoms like nasal congestion and rhinorrhoea, suggesting *Avalambagam* disturbance. 60% showed improvement after treatment. 30% of patients had watery eyes, indicating *Tharpagam* imbalance, all of whom improved post-treatment. There was no improvement in *Santhigam*, which was affected in 20% of patients before treatment, as their allied complaints of Arthritis persisted.

In *Udal thaathukkal*, *Saaram* and *senneer* were affected in all patients (100%) before treatment. Post-treatment assessment revealed improvement in 40% of cases.

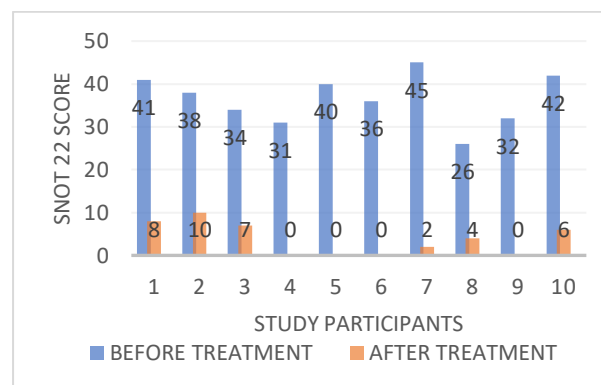
In *Ennvagai thervu*, before treatment, *Vizhi* was affected in 30% of patients as they had watery eyes, *Mozhi* was affected in 20% of patients due to Hoarseness of voice, which improved after treatment.

4.d. Effect of study intervention on chief complaints of study participants

All 10 patients presented with chief complaints of Nasal congestion, running nose, sneezing, post-nasal discharge, and facial pain. 70% had difficulty falling asleep and lack of good night's sleep.

According to the SNOT-22 evaluations, 40% of the patients achieved complete symptom resolution following the intervention. Approximately 30% of patients reported mild persistence of symptoms, such as sneezing and rhinorrhoea, with a reduction in their symptom scores from 4–5 at baseline to 2–3 after treatment. The remaining 30% exhibited ongoing mild symptoms, including sneezing, rhinorrhoea, nasal obstruction, and cough; however, their symptom scores decreased to 1, reflecting substantial clinical improvement.

Figure 2: SNOT 22 score of each participant before and after treatment



4.e. Statistical Analysis

Data were analyzed using SPSS software (version 29.0). Continuous variables were expressed as mean \pm standard deviation (SD). Pre- and post-treatment SNOT-22 scores were compared using the Wilcoxon signed-rank test. The test statistic was -2.083, with a p-value of 0.005, indicating a statistically significant reduction in symptom severity post-treatment ($p < 0.05$).

**Table 3:** Results of Statistical analysis

Variable	Rank	N	Mean rank	Test statistic (z)	P-value
SNOT 22 (post-pre)	Negative ranks	10	5.50	-2.083	0.005
	Positive ranks	0	0.00		
	Ties	0	-		
	Total	10	-		

5. Discussion

The therapeutic potential of *Moothanda Thailam* can be attributed to the synergistic action of its diverse phytochemical constituents. Polyphenols (flavonoids, phenolic acids, lignans) provide strong antioxidant, antimicrobial, and anti-inflammatory effects¹². Tocopherols from Bermuda grass roots and sesame oil enhance antioxidant protection. Terpenes contribute additional antimicrobial and anti-inflammatory benefits, while alkaloids offer analgesic and anti-inflammatory actions^{13,14}. Cow ghee, serving as a carrier, promotes deep tissue absorption and adds antioxidant, antibacterial, and anti-inflammatory properties¹⁵. The preparation technique, *Suriya Pudam* (solar infusion), enhances the absorption of active phytochemicals into the oil medium without degrading their potency. This method preserves the stability and bioactivity of thermolabile phytoconstituents, thereby maintaining the therapeutic efficacy of herbal formulations.

According to the principles of Siddha medicine, the tastes and elemental properties (*Inippu, Kaippu, Kaarpu*) of the ingredients are ideal for pacifying *Pitham* and *Kabha thoodam*, making the formulation suitable for treating *Peenisam* (Sinusitis), especially in acute and recurrent acute conditions¹⁶. Previous research in Siddha medicine has documented the application of therapies such as *Patru* (Medicated poultice), *Ennai kuliyal* (Oil bath), *Nasiyam* (Nasal instillation), and *Pugai* (Medicated fumigation) for the management of various types of *Peenisam*. These studies consistently demonstrate the efficacy of such interventions in alleviating key clinical symptoms, including nasal

obstruction, facial pain, and rhinorrhoea. But the trial drug in this study has shown comparatively more effect than the drugs in other trials.

The data obtained from the study reveal that the maximum number of participants were women aged 18-30 years. Almost all the participants had complaints of nasal obstruction, sneezing, runny nose, nasal discharge, and facial pain or pressure. Data showed that all symptoms mentioned in classics and modern science were present in most of the participants.

In the present study, a highly significant improvement was found in mucopurulent drainage, nasal obstruction, and facial pain. After the treatment, 100% showed improvement in facial symptoms, 80% patients showed improvement in sleep and function, and psychological dysfunction. The improvement was maintained in the majority of participants in the follow-up.

This study has several limitations that should be acknowledged. The relatively smaller sample size may limit the generalizability of the findings. Additionally, the short duration of the intervention and follow-up may not adequately capture the long-term effects or potential adverse effects of *Moothanda Thailam Nasiyam*. Future studies should include a longer follow-up period and a placebo control to further validate the efficacy of this treatment.

6. Conclusion

In this clinical study, *Moothanda Thailam Nasiyam* demonstrated significant improvement in the signs and symptoms of Sinusitis, as measured by the SNOT-22. The treatment was well tolerated with no serious adverse events reported. The treatment is also cost-effective, making it a promising and accessible option for managing sinusitis. These findings suggest that *Moothanda Thailam Nasiyam* may be an effective and safe therapeutic option for the management of sinusitis.

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