



## Role of Nasya Karma in Apeenasa (Paranasal Sinusitis)-An RCT

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### ABSTRACT

**Background:** Apeenasa is one of the nasagata rogas according to Ayurvedic classics that be considered as the paranasal sinusitis as per the conventional medicine. Peenasa and apeenasa are used based on the stages and the types of paranasal sinusitis.

**Objectives:** To evaluate the efficacy of nasya karma and vyoshadi vati in shirashoola, gandhagnananasha and shwasagurguratha of patients suffering from apeenasa.

**Design:** This was a randomized controlled study with thirty patients divided into three groups, 10 in each. In Group A, Nasya karma was given once a day for 7 days and in Group B, Vyoshadi vati was given twice a day for 7 days and in Group C, Nasya karma and Vyoshadi vati was given in combination for 7 days.

**Results:** Statistically significant results were seen in reduction of shirashoola and shwasagurguratha and improvement in gandhagnananasha of patients suffering from apeenasa with  $p < 0.001$ .

**Conclusions:** Group C (Nasya karma with vyoshadi vati) showed statistically significant results compared to Group A (nasya karma) and Group C (Vyoshadi vati) in reduction of shirashoola and shwasagurguratha and improvement in gandhagnananasha of patients suffering from apeenasa.

**Keywords:** Apeenasa, Paranasal sinusitis, Nasya karma, Peenasa.

### INTRODUCTION

The paranasal sinuses are a common site of infection in children and adolescents.<sup>1</sup> These infections are important as a cause of frequent morbidity and rarely may result in life-threatening complications. It may be difficult to distinguish children with uncomplicated viral upper respiratory infections or adenoiditis from those with an episode of acute bacterial sinusitis.<sup>2</sup> Most viral infections of the upper respiratory tract involve the nose and the paranasal sinuses (viral rhinosinusitis).<sup>3</sup> However, bacterial infections of the paranasal sinuses do not usually involve the nose. When the patient with bacterial infection of the paranasal sinuses has purulent (thick, colored, and opaque) nasal drainage, the site of infection is the paranasal sinuses; the nose is simply acting as a conduit for secretions produced in the sinuses. Chronic inflammation of the paranasal sinuses may be a consequence of noninfectious conditions such as allergy, environmental pollutants, cystic fibrosis, or gastroesophageal reflux.<sup>4</sup>

The paranasal sinuses are air-filled spaces located within the bones of the skull and facial bones. They are centered on the nasal cavity and have various functions, including lightening the weight of the head, humidifying and heating inhaled air, increasing the resonance of speech, and serving as a crumple zone to protect vital structures in the event of facial trauma.<sup>5,6</sup> Four sets of paired sinuses are recognized: maxillary, frontal, sphenoid, and ethmoid. Humans possess four paired paranasal sinuses, divided into subgroups that are named according to the bones within which the sinuses lie: The maxillary sinuses, the largest of the paranasal sinuses, are under the eyes, in the maxillary bones (open in the back of the semilunar hiatus of the nose). They are innervated by the trigeminal nerve. The frontal sinuses, superior to the eyes, in the frontal bone, which forms the hard part of the forehead. They are also innervated by the trigeminal nerve. The ethmoidal sinuses, which are formed from several discrete air cells within the ethmoid bone between the nose and the eyes. They are innervated by the ethmoidal nerves, which branch from the nasociliary nerve of the trigeminal nerve. The sphenoidal sinuses, in the sphenoid bone. They are innervated by the trigeminal nerve.<sup>7</sup>

Sinusitis is the inflammation of the mucosa of any one or all of the paranasal sinuses. When all sinuses are involved it is called as pansinusitis.<sup>8</sup> One in eight Indian suffers from sinusitis caused by the inflammation of the Para nasal sinuses. The worldwide incidence of sinusitis is recorded as 31 million cases in US that is 146 per 1000 population, and in Indian incidence is estimated that 134 million Indians are suffering from chronic sinusitis.<sup>9</sup>

Paranasal sinusitis can be correlated to the disease Apeenasa in Ayurveda based on the symptoms and has been opined by all the Acharyas of the same. Ayurveda, one of the Complementary and Alternative Medicine has described in detail the intervention called as nasya karma that has shown to be effective in peenasa, the allergic rhinitis. As there are no studies concerning the disease apeenasa, the present study was carried out to evaluate the role of nasya karma therapy in the management of apeenasa, the paranasal sinusitis.

## **MATERIALS AND METHODS**

The data were collected from the OPD and IPD of Shalaky Tantra, S. J. I. I. M. Hospital, Bangalore. Patients with the features of apeenasa (paranasal sinusitis) with chronicity of less than 1 year and both males and females aged between 10 to 60yrs were included for the study. Patients with the features of disorders other than apeenasa and DNS were excluded from the study.

### **Ethical clearance and consent**

The study was approved by the institutional ethical committee and signed informed consent was obtained from all patients.

**Design:** In this randomized control study, 30 subjects who satisfied the study criteria were divided into three groups, Group A and Group B and Group C with 10 patients in each group. Group A received Nasya karma with tulasi swarasadi taila for 7 days, Group B were administered with vyoshadi vati for 7 days and Group C received both nasya karma with tulasi swarasadi taila and vyoshadi vati for 7 days. All the patients were subjected to detailed clinical and laboratory investigations prior to and after the completion.

### **Outcome measures:**

Shiro shoola, gandha jnana nasha and shwasa gurguratha were assessed before and after the treatment. Patients were evaluated at an interval of 3 to 7 days.

## **INTERVENTION**

### **Group A**

Group A received the nasya karma with tulasi swarasadi taila for 7 days. The whole procedure was explained to the patient and was advised to complete his early morning chores, to clean their teeth and to wash their face with warm water. Also they were advised to take a non spicy light diet. Then they were placed in a comfortable room that was devoid of dust, extreme breeze and sun light. Actual procedure of the therapy was administered with bahya snehana over the shiras (oil massage over the head), gentle oil massage over gala, kapola, lalata and karna. After snehana, mild swedana was carried out to the area above the shoulders with eyes being closed.

After this, patients were made to lie down on a table in supine position with eyes covered with a cloth folded in four layers. Then tulasi swarasadi Taila was taken in a small crucible and is kept tepid by placing it in hot water. The head of the patient was slightly raised, nostrils widened with the index little finger of the left hand and tulasi swarasadi taila was poured through the right hand by using a wad of cotton wool. The other nostril was closed while administering nasya karma through one nostril. The instillation of tulasi swarasadi taila was slow and in an uninterrupted stream known as “avicchinna dhara”. The patient was advised to inhale the medicine administered slowly and forcefully. The same procedure was repeated in other nostril too. As post therapy instructions, patient was advised not to make any movements with his head and slowly gentle massage of skanda, karna, hasta, padatala was done and patients were advised to spit out the content of taila through mouth, strictly instructed not to swallow taila and to carry on the act of spitting till the smell and the taste of tulasi swarasadi taila disappears from the throat.

After this, patients were advised to relax in the same position for few minutes followed by paschat karma of kavalagraha with hot water. Advised to avoid excessive intake of fluid and also not to succumb to the emotional disturbances, smoke, dust, exposure to sun light and intake of snigdha and abhishyandhi ahara. They were also advised not to take head bath and travelling. This procedure was carried out for 7 consecutive days.

**Group B**

In this group, Patients were administered vyoshadi vati twice a day, after food for 7 days.

**Group C**

In this group, both the interventions of Group A and Group B were administered.

**RESULTS**

Thirty patients with features of apeenasa or the paranasal sinusitis were registered for the study. In the present study, the incidence of apeenasa was more in 21-40 years age group, 22 were females, 25 were Hindus, The factory employees and the workers of Sericulture Department were more prone for Apeenasa. The house wives also had high incidence of Apeenasa due to cleaning of the house and cooking in smoke.

**Table No.1** Demographic data

Sl. No	Demographic parameters	Group A	Group B	Group C	Total
<b>1.</b>	<b>Age</b>				
	10-20 yrs	1	5	1	7
	21-40 yrs	9	4	5	18
	41-60 yrs	0	1	4	5
<b>2.</b>	<b>Sex</b>				
	Males	0	4	4	8
	Females	10	6	6	22
<b>3.</b>	<b>Religion</b>				
	Hindu	12	5	8	25
	Muslim	1	0	2	3
	Christian	0	0	2	2
<b>4.</b>	<b>Occupation</b>				
	House Wives	4	0	4	8
	Teachers	2	0	0	2
	Students	1	5	2	8
	Factory Employees	3	0	3	6
	Office Working Staff	0	3	0	3
	D.Y.S.P	0	2	1	3

<b>5.</b>	<b>Dietic Significance</b>				
	Veg	5	7	2	14
	Non-Veg	5	3	8	16
<b>6.</b>	<b>Chronicity of the illness</b>				
	< one month	1	3	6	10
	<Three months	7	7	1	15
	< Six months	2	0	3	5

**Table No.2** Results between Groups

	<3 Days		<5 Days		<7 Days		>7 Days	
	Excellent		Good		Moderate		Poor	
Group	No. of Patients	% age	No. of Patients	% age	No. of Patients	% age	No. of Patients	% age
A	0	0	0	0	4	40%	6	60%
B	0	0	0	0	1	10%	9	90%
C	0	0	2	20%	7	70%	1	10%
Total			2		12		16	

After 5 days of treatment, Patients in Group A and Group B found no relief, whereas in Group C, 2 patients had good relief, After 7 days of treatments, 4 patients in Group A, 1 in Group B and 7 patients in Group C moderate relief.

**Table No.3** Overall results

Group	Relieved	Not Relieved	Total	% +ve
<b>A</b>	4	6	10	40
<b>B</b>	1	9	10	10
<b>C</b>	8	2	10	80
<b>Total</b>	13	17	30	42.90

In Group A, 4 patients were completely relieved from their symptoms with 40% and 6 patients had no relief , In Group B, 1 patient was completely relieved with 10% and 9 patients were not relieved. Whereas in Group C, 8 patients had complete relief from all their symptoms with 80% and 2 patients had no relief.

#### **Shirashoola**

Group C showed significant results with nasya karma and vyoshadi vati in the reduction of Shirashoola compared to Group A and Group with only nasya karma and vyoshadi vati with  $p < 0.001$ .

#### **Gandhagnana nasha**

Group C showed significant results with nasya karma and vyoshadi vati in the improvement of gandhagnana compared to Group A and Group with only nasya karma and vyoshadi vati with  $p < 0.001$ .

#### **Shwasagurguratha**

Group C showed significant results with nasya karma and vyoshadi vati in the reduction of Shwasagurguratha compared to Group A and Group with only nasya karma and vyoshadi vati with  $p < 0.001$ .

## **DISCUSSION**

Shalakyta Tantra is an important branch of Ayurveda which deals with the study and treatment of diseases of eye, ear, nose, teeth, throat, head and mouth.<sup>10</sup> Peenasa is described as Vatakaphaj Vyadhi. Acharyas mentioned

that Peenasa is a Krichasadhya Vyadhi.<sup>11</sup> In Ayurveda system of medicine, allergic rhinitis is described as Apeenasa or Peenasa and the concept of allergy is explained under “Asatmyaja vyadhi” (allergic disorders), while its effects are explained in hereditary, Viruddhahara (incompatible foods) and Dushivisha (polluted substances or allergic agents) and Ritu sandhi (seasonal changes). Effective therapeutic methods for allergic rhinitis including internal as well as external treatments are described in Sri Lankan traditional system of medicine and in Ayurveda medicine.<sup>12</sup>

Ancient Ayurvedic science also describes many therapies like nasya karma, akshitarpara, putapaka etc which is said to be very effective in the shirogata rogas among which apeenasa is one such condition that can be correlated to paranasal sinusitis based on the symptoms. As there were no studies on the same, present study was planned to evaluate the efficacy of nasya karma in apeenasa. In this randomized control study, 30 subjects who satisfied the study criteria were divided into three groups, Group A and Group B and Group C with 10 patients in each group. Group A received Nasya karma with tulasi swarasadi taila for 7 days, Group B were administered with vyoshadi vati for 7 days and Group C received both nasya karma with tulasi swarasadi taila and vyoshadi vati for 7 days. All the patients were subjected to detailed clinical and laboratory investigations prior to and after the completion. In the present study, higher incidence of apeenasa was seen in females (22) compared to males (8), 18 patients in the age group of 21 to 40yrs, and in Hindus(25) and in the patients with the occupation of factory employees, workers of sericulture department and house wives. Out of 30 patients (15) patients were with the history of chronicity of illness, from three months and below three months.

Nasya karma, one among the Panchakarma therapies is beneficial for the maintenance of health and eradication of diseases. Nasal route of drug administration is the natural choice for the treatment of local nasal disorders as well as other supraclavicular diseases. In this therapy, the medicine is administered through nose either in the form of ghee, oil, powder, liquid or smoke. It is particularly useful in the treatment of diseases occurring in the organs situated above the clavicle but indirectly it works on the whole body by improving the functioning of the endocrine glands and nervous system. Nasa is said to be the main doorway to Shiras. Nasyaaushadhi reaches to brain via nasal route and acts on higher centers of brain controlling different neurological, endocrinal and circulatory functions and thus showing local as well as systemic effects. This administration of drugs through nasal route opens a new hope for the both local and systemic drug administration. Nasal route drug administration is a promising alternative route of drug administration for local, systemic and central nervous system action.<sup>13</sup>

In the present study, In group A, On the 3<sup>rd</sup> day of Nasya Karma with Tulasi Swarasadi Tailam, Gandhagnana Nasha was reduced by 7<sup>th</sup> day of treatment. In 4 patients positive response was observed, other 5 patients were not relieved by the complaints completely.

In group B, all the 10 patients were given Vyoshadi Vati depending upon their body weight for 7 days. Only in one patient Shirogurutwa was reduced. The remaining 9 patients did not respond for the treatment.

In group C, by 5<sup>th</sup> day, relief in Shirashoola was observed and the other complaints like Gandhagnana Nasha was reduced by 7<sup>th</sup> day. 5 patients responded on 4<sup>th</sup> day of therapy and they were relieved by Shirashoola. By 7<sup>th</sup> day they had better feeling without any illness. 4 patients showed a good response with the relief of Shirashoola and Gandhagnana Nasha by 7<sup>th</sup> day of treatment. In this group for two patients, the persistence of Gandhagnana Nasha was observed and was asked for the repetition of therapy. The remaining 8 patients showed a very good response with the treatment of Nasya Karma with Tulasi Swarasadi Taila for 7 days alongwith the Abhyanthara Chikitsa of Vyoshadi Vati.

Several Randomized controlled clinical trials have shown reduction in the signs and symptoms of cervical [spondylosis](#) by nasya.<sup>14</sup> Clinical trials of nasya have been carried out<sup>15</sup> for [myopia](#).<sup>16</sup> Pradhamana nasya is used by ayurvedic physicians and have been found useful to treat chronic [sinusitis](#).<sup>17,18</sup>

In the study of Dave et al, total 30 patients having classical sign and symptoms of Dushta Pratishyaya (Chronic Sinusitis) were registered and were randomly divided into two groups (Group A-V yaghri Haritaki Avaleha and Anutaila Nasya, Group B-V yaghri Haritaki A valeha). The patients were given V yaghri Haritaki Avaleha for the duration of two months and Anutaila Nasya in 3 sittings of seven days in each with the interval of seven days. Total 26 patients completed the treatment, 13 in each. Obtained data was statistically analyzed with the help of student 't' test. The study reveals that in both the groups no patient was totally cured. 46.15 % and 53.85 % patients got marked relief, 38.46 % and 23.08 % patients got moderate relief, 15.38% and 23.08 % patients got mild relief in signs and symptoms of the disease in Group A and B respectively. None of the patients remained unchanged.<sup>19</sup>

Nasya karma and vyoshadi vati in combination showed the significant results in the reduction of shirashoola, shwasagurguratha and the improvement of gandhagnana compared to only nasya karma or the vyoshadi vati individually with  $p < 0.001$ .

## CONCLUSIONS

Nasya karma and vyoshadi vati in combination showed the significant results in the reduction of shirashoola, shwasagurguratha and the improvement of gandhagnana compared to only nasya karma or the vyoshadi vati individually.

### Strengths of the study

Nasya karma was easily applicable with no side effects or complications.

### Limitations of the study

As this was the first study on apeenasa though described by Acharya Sushrutha and Vagbhata in Ayurvedic classics, more number of studies with more sample size needs to be carried out on the same.

### Suggestions and Recommendations

Studies on apeenasa need to be carried out. Other drugs mentioned in Ayurveda for apeenasa (paranasal sinusitis) also can be evaluated.

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