

## CLINICAL STUDY ON SHIREESHADI AVAPEEDANA NASYA IN THE MANAGEMENT OF SURYAVARTHA (FRONTAL SINUSITIS)

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## ABSTRACT

*Nasya karma* is considered a prime treatment modality in all types of *Shiroroga* (Headache) and also in *Suryavartha* (Frontal Sinusitis). *Suryavartha* (Frontal Sinusitis) is one of the 11 types of *Shiroroga*. It is one of the common clinical conditions found in day to day general as well as *Shalaky* (ENT) practice. It presents with headache as one of its cardinal features and its occurrence is found in both genders and in all age groups. **Objective:** To study the efficacy of *Shireeshadi Avapeedana Nasya* in the management of *Suryavartha* (Frontal Sinusitis). **Material methods:** Twenty patients of *Suryavartha* (Frontal Sinusitis) were diagnosed and registered for the clinical study irrespective of sex, socio-economic status, and religion. The study was divided into two groups - Group A and Group B. **Group – A** patients were treated with *Shireeshadi Avapeedana Nasya* for 7 days and **Group – B** patients were treated by *Nasya* with milk for 7 days. **Observation and result:** Among 20 patients of *Suryavartha* / frontal sinusitis, 20 (100%) of patients had headache, 11 (55%) had nasal blockage, 05 (25%) had nasal discharge, 08 (40%) had foul smell in their breath and 14 (70%) have variations from normal X-Ray. The severity of headache is significantly reduced after treatment in both Groups A and B (92.95% and 73.07%) respectively. **Conclusion:** Administration of *Shireeshadi Avapeeda Nasya* showed statistically significant improvement in the management of *Suryavartha* (Frontal Sinusitis).

**Keywords:** Suryavartha, Nasya, Shireeshadi Avapeedana Nasya, Frontal Sinusitis, Shigru, Mulaka, Ksheera.

## INTRODUCTION

*Suryavartha* (Frontal Sinusitis) is one among the *Visesha Shiroroga*. It has a particular periodicity that follows the sun and is considered as a *Kastatama Vyadhi*, meaning which gives severe distress to the patient.<sup>1</sup> Classification *Nasya* has few salient features, and each is done with different aspects. *Avapeeda Nasya* is a procedure where *Swarasa* (expressed juice) of the prescribed drugs are administered directly into the nostril. Depending upon the drug used, *Avapeeda Nasya* is administered for *Shodhana* and *Shaman*.<sup>2</sup> The cardinal features of *Suryavartha* are, pain in *Shiras* which gradually increases as the intensity of the sun increases and comes down by evening. The symptoms may sometimes be relieved either by cold or warm substances or surroundings and Hunger may aggravate the pain.<sup>3</sup> References of few simple techniques and medicaments are available for the management of *Suryavartha and Shireeshadi Avapeedana Nasya*<sup>4</sup> is one of them advocated by Acharya Chakrapannidatta and was selected for the trial group and *Nasya* with milk in control group.

### Objective

- To evaluate the effect of *Shireeshadi avapeedana* (trail drug) *Nasya* in the management of *Suryavartha*.
- To evaluate the effect of *Nasya* with milk (control drug) in the management of *Suryavartha*.

### Materials And Methods

A total of 20 patients were selected randomly from the out-patient department of *Shalaky Tantra*, Shri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan.

### Inclusion criteria

Patients presenting with the clinical features of *Suryavartha* (Frontal Sinusitis) between the age group of 16 to 60 yrs were selected. Patients were selected irrespective of gender, occupation, religion, socioeconomic status and duration of illness.

### Exclusion criteria

Patients with notable Systemic as well as Neurological problems and known patients with the complica-

tion of Frontal Sinusitis such as Orbital cellulites, Osteomyelitis of frontal bone were excluded.

**Study Design:** 20 Patients were divided into 2 groups of 10 each. Group A - 6 drops of *Shireeshadi Avapeedana Nasya* was administered before food in each nostril for seven days, once daily in the morning. Group B - 6 drops of *Nasya* with milk was administered before food in each nostril for seven days, once daily in the morning. Both groups were followed at regular intervals of 1 month for two months.

### Method of administration of *Avapeeda Nasya*<sup>5</sup>

#### *Purvakarma*

*Nasya* was performed in a place having sufficient light and devoid of direct blowing wind and dust. The patient was asked to sleep comfortably in supine position on a table and *Abhyanga* (Massage) with lukewarm *Taila* (Oil) was done over the face, scalp, neck and temporal region. After completion of *Abhyanga*, *Mrudu Svedana* (Mild fomentation) was done by covering the eyes.

***Pradhanakarma:*** After proper completion of *Purvakarma*, the patient was asked to relax and lie down on a table in the supine position and the head portion was made to extend further from the edge of the table bending slightly down at an angle with limbs kept slightly spread apart on both sides. *Kalka* of *Shirishadi Avapeeda Nasya* / Milk (depending on the group) was taken over on a piece of cloth / by a cotton swab respectively and six drops are administered in each nostril. Thereafter patient was asked to inhale deeply and was advised to spit out the drug that reaches the throat.

***Pashchatkarma:*** After performing the *Pradhana Karma*, the patient was allowed to come to ease in the supine position. Again, massage and fomentation with palms were done around the face, nose, head, neck, and chin. It was advised to spit out nasal secretion reaching the throat and to do gargle with warm water. After this, the patient was instructed neither to take cold food / water nor to wash face with cold water and was also asked to avoid wind and dust.

**OBSERVATIONS AND RESULTS**

**Age-wise distribution of patients:** 12 patients (60%) were in the age group of 16 – 30 yrs, 7 patients (35%) were in the age group of 31 – 45 yrs and 01 patient (05%) was between the age of group 46 – 60 yrs.

**Distribution of Nidanas:** out of 20 patients, 09 (45%) had exposure with *Avashaya*, 09 (45%) with *Pragvata*, 14 (70%) *Raja Sevana*, 14 (70%) with *Dhooma Sevana*, 02 (10%) with *Ambukrida*, 02 (10%) had *Pratishaya* and 01 (05%) had suffered from flu. **Severity wise distribution of headache:** out of 20 patients, 13 (65%) had severe and 07 (35%) patients had a moderate form of headache. **Chronicity wise distribution of Suryavartha:** out of 20 patients, 3 patients (15%) had the history with less than a month, 07 patients (35%) since 1 to 3 m, 03 patients (15%) since 4 to 6 m, 04 patients (20%) since 7 to 12m and 03 patients (15%) with history of headache for more than a year.

**Incidences of Symptoms:** Among 20, all 20 (100%) of patients had headache, 11 (55%) had nasal blockage, 05 (25%) had nasal discharge, 08 (40%) had foul smell in their breath and 14 (70%) have variations from normal X-Ray.

**Distribution of nasal anomalies:** out of 20 patients, 06 (30%) had only congested nasal mucosa, 05 (25%) had only hypertrophied turbinate, 03 (15%) had congested nasal mucosa with the deviated nasal septum, 01 (05%) had congested nasal mucosa with hypertrophied turbinate, 02 (10%) had deviated nasal septum with hypertrophied turbinate, 02 (10%) had nasal polyps with a deviated nasal septum and 01 (05%) had Nasal polyps with congested nasal mucosa.

**RESULTS**

‘t’ test results of the difference between the means of the two dependent samples (before and after treatment) in reduction of severity of the headache in Group A and Group B.

Headache		Mean score		Reduction in mean score	% of reduction in mean score	S.D of mean	S.E of mean	df	‘t’ Value	‘p’ Value
		BT	AT							
G R O U P A	After 7 days of treatment	2.7	0.2	2.5	92.59	0.7071	0.2236	9	11.18	<0.001
	Follow up after 1 month	2.7	0.1	2.6	96.29	0.6992	0.2211	9	11.75	<0.001
	Follow up after 2 months	2.7	0.5	2.2	81.48	1.0327	0.3265	9	6.738	<0.001
G R O U P B	After 7 days of treatment	2.6	0.7	1.9	73.07	0.7378	0.2333	9	8.144	<0.001
	Follow up after 1 month	2.6	0.5	2.1	80.76	0.9944	0.3144	9	6.679	<0.001
	Follow up after 2 months	2.6	0.8	1.8	69.23	1.2292	0.3887	9	4.630	<0.01

**In group A, the reduction in mean severity of the headache is,**

- Before and after treatment shows changes from 2.7 to 0.2 showing a reduction of 2.5 (92.59%) which is statistically significant at the level of p<0.001,
- Changes after 1<sup>st</sup> month follow up is from 2.7 to 0.1 showing a reduction of 2.6 (96.29%) which is

statistically significant at the level of p<0.001 and

- Changes after 2<sup>nd</sup> month follow up is from 2.7 to 0.5 showing a reduction of 2.2 (81.48%) which is statistically significant at the level of P <0.001.

**In group B, the reduction in mean severity of the headache is:**

- Before and after treatment shows changes from 2.6 to 0.7 showing a reduction of 1.9 (73.07%) which is statistically significant at the level of  $P < 0.001$ .
- Changes after 1<sup>st</sup> month follow up is from 2.6 to 0.5 showing a reduction of 2.1 (80.76%) which is statistically significant at the level of  $P < 0.001$  and
- Changes after 2<sup>nd</sup> month follow up is from 2.6 to 0.8 showing a reduction of 1.8 (69.23%) which is statistically significant at the level of  $P < 0.01$ .

## DISCUSSION

Etiopathology, clinical features and prognosis of *Suryavartha* (Frontal Sinusitis) resemble frontal sinusitis. Selected patients were categorized under two groups. Out of which, the first group of patients were administered with *Shireeshadi Avapeeda Nasya* and in the second group, *Nasya* with milk was administered. For this purpose, a need for the control group was taught either with a placebo or with a standard drug. Search for a suitable placebo was difficult because *Neera* (water), *Ksheera* (milk), *Narikelajala* (coconut water) and *Sarpi* (ghee) are indicated with *Sarkara* (Sugar) for *Nasya* in *Suryavartha*. There are various references regarding the usage of milk exclusively in different forms for *Suryavartha*. It is used as *Ksheera Vikruti* (edibles made of milk), *Ksheerasarpi Pana* (intake of milk with ghee), *Ksheerasarpi Nasya* (administration of milk with ghee for *Nasya*), *Sharkaraksheera Nasya* (milk with sugar for *Nasya*) etc., As there is no authenticated or proven standard drug which can be used as a controlled drug and considering therapeutic importance given to milk in *Suryavartha*, milk was taken for the comparison as a controlled drug for *Nasya* in this study. Occupation wise distribution noted that *Suryavartha* (Frontal Sinusitis) is prevalent in those who work in or who in due course of their work get exposed to dust, wind and extreme atmospheric conditions. By these, we can infer that the working environment (occupation) plays an important role in causing *Suryavartha*. In

this study, it is noted that in a few of the patients, *Pratishayaya* (20%) and flu (15%) acted as a *Nidhanakara Roga* (predisposing factor) in the manifestation of *Suryavartha*. This observation supports a study stating, "Viral infection due to flu and rhinitis is the precursor to sinusitis."<sup>7</sup> Acharya Kashyapa in the context of *Pratishyaya Chikitsa* has stated that a person suffering from *Pratishyaya* if consumes *Ushna*, *Teekshna*, *Amla* and *Lanava Ahara* in excess causes *Pitta Prakopa* and leads to *Suryavartha*.<sup>8</sup> So, *Pratishyaya* and flu/cold can be established as the predisposing factor in *Suryavartha*.

*Shireeshadi Avapeedana Nasya* is administered as *Nasya* in Group A. The contents in it are *Shireesha Valkala* and *Mulaka Beeja* which were made into *Kalka* using water for the extraction of *Swarasa* and this *Swarasa* was used for *Nasya Karma*. In group B, *Nasya* with milk was administered. Both *Swarasa* and milk were found non-irritant, as none of the patients complained of any adverse effect or irritation from the drug. *Shirisha* has the properties such as *Vedanasthapana*, *Shotahara* and is *Tridoshashamaka*. *Vijayarakshita* in his commentary states that drugs like *Sirisha*, *Pippali*, *Vacha* are used for *Avapeeda Nasya* in *Suryavartha* as they are *Vyadhi Pratyanka Dravyas*. The properties in the bark of *Albizia lebeck* are said to be anti-allergic and antimicrobial. Various studies have been conducted to study its anti-allergic, antimicrobial and immunological properties. According to Ayurveda, *Mulaka Beeja* has the properties such as *Tridoshashamaka* and *Nasikarogagna*. The seeds of *Raphanus sativus* contain raphanin; it has antibacterial activity against a wide range of bacteria.<sup>9</sup> Ivanovics G. et al for the first time isolated this property in 1947. It acts antimicrobial, antifungal and expectorant. Properties of milk as per Ayurveda are *Vata Pitta Shamaka*, *Bruhmana* and *Shotahara*. Several proteins found in milk under various conditions exhibit antimicrobial activity. Four of such proteins have an active role, lactoferrin, lactoperoxidase, lysozyme, and N-acetyl-β-D-glucosaminidase (NAGase) in antimicrobial activity.<sup>10</sup> In *Nasya Karma*, the procedures such as *Snehana* and *Swedana* constitute the *Poorvakarma*;

these have the properties such as *Dosha Viliyana*, *Jadyahara*, *Sthabdagna* and *Ruk Prashamana*. Steam inhalation helps to reduce the pain and irritation of the somatic constriction and enhances the drug absorption due to heat stimulation by local fomentation and vasodilatation. The *Pradhanakarma* constitutes, administration of the drug to *Nasa*, they act on their own accord depending on the properties of the drug in them. Thus, the above-mentioned drugs and the procedures have the properties to check the pathology as per Ayurveda in *Suryavartha* (Frontal Sinusitis) and also in terms of contemporary science for frontal sinusitis. The severity of headache is significantly reduced after treatment in both groups A and group B i.e., 92.95% and 73.07% respectively. The 'p' value of both the groups gives a significant result at a level of  $p < 0.001$ . However, in Group – A percentage of relief from the severity of headache is more significant compared with Group – B. This data indicates that *Shirishadi Avapeeda Nasya* is more effective in reducing the severity of headache than milk. At the end of the second month follow up, it is observed that, among 10 patients with headache in Group – A, 06 patients have complete relief, 02 patients have marked relief, 01 had moderate relief and recurrence is seen in 01 patient. Among 10 in Group – B, 04 patients have complete relief, 01 had marked relief, 02 have moderate relief, 01 had mild relief and recurrence is seen in 02 patients.

It indicates that *Shirishadi Avapeeda Nasya* is found effective throughout the follow up of two months than by *Nasya* with milk in *Suryavartha*.

## CONCLUSION

*Nasya Karma* is a prime treatment modality in all types of *Shiroroga*. *Suryavartha* (Frontal Sinusitis) is one of the eleven types of *Shiroroga*. *Suryavartha* is one of the common clinical conditions found in day to day general as well as *Shalakyia* (ENT) practice. Administration of *Shireeshadi Avapeeda Nasya* showed statistically significant improvement in the management of *Suryavartha* (Frontal Sinusitis).

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