

## Effect of Bhringaraja Patra Swarasa Nasya in the Management of Suryavarta (Frontal Sinusitis)

Kalmesh S. Sangolli, Ramesh S. Mudhol, Suresh G. Hiremath

### Abstract

*Suryavarta* is a commonest clinical condition among the patients presenting to physicians with headache as a cardinal feature. The symptomatology of which reveals its close resemblance with that of Frontal sinusitis of varied etiology found either with acute or chronic form. According to classics of *Ayurveda* pathogenesis of *Suryavarta* is a result of more than one *doshas*. *Charaka* opined that *Rakta* and *Vatadoshas* are responsible for the manifestation of the disease where as *Sushruta* described it as *Tridoshaja* disease and is difficult to cure. Frontal sinusitis affects 14% of total population with peak incidence in the age group between 20 to 30 years and less frequently seen in children. Recurrent attacks and incomplete treatment makes it chronic. It lacks in specific medical treatment and the surgical intervention is not suitable for all. This instills a need for *Ayurvedic* management of *Suryavarta* (Frontal Sinusitis). For the same reason this study was undertaken to evaluate the effect of *Nasya* (Trans nasal administration) with fresh juice of *Bhringaraja* (*Eclipta Alba*) leaves in the management of *Suryavarta* (Frontal Sinusitis). 30 patients of *Suryavarta* (Frontal Sinusitis) were selected incidentally and administered *Nasya* with fresh juice of *Bhringaraja* (*Eclipta alba*) leaves – 8 drops in each nostril for 7 days. To assess the efficacy of treatment, the symptoms of *Suryavarta* (Frontal Sinusitis) such as Headache, Nausea, Edema of Upper eyelid, Nasal discharge, Photophobia and Haziness of Sinuses were noted carefully before commencement and after completion of the treatment. All the parameters showed statistically significant results with 'P' value < 0.05.

**Keywords:** *Bhringaraja patras warasa; Frontal Sinusitis; Nasya karma; Suryavarta.*

### Introduction

*Suryavarta*, one among the *shirorogas* studied under the major group of diseases called *Urdhwajatrugatavikaras*. [1] *Suryavarta* is the only disease explained in *Ayurveda*, which has a peculiar characteristic relation with sun in the occurrence of the disease. [2] The most important feature being 'pain' is directly

related to the position of the sun in the sky. Hence it has got the name *Suryavarta*. The onset of pain is very characteristic, which starts as sun rises in the morning, reaches its peak at noon, and decreases as sun sets in the evening. [3] It is known fact that the disease is self-limiting, but major problem is with its repeated attacks and its prevalence, due to this a special attention is necessary in the management.

Sinusitis is an inflammation of mucous membrane in the facial sinuses. Most commonly involved is the maxillary sinus followed in turn by ethmoid, frontal and sphenoid sinuses. [4] Very often more than one sinuses will get infected (multi sinusitis), sometimes all the sinuses of one or both sides are involved simultaneously (Pan sinusitis). [5]

A sinusitis may be 'open' or 'closed' type depending on whether the inflammatory products of sinus cavity can drain freely into the nasal cavity through the natural opening

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**Author's Affiliation:** \*Assistant Professor, Department of Shalakyatantra, KLEU Shri. BMK Ayurveda Mahavidyalaya, Shahapur, Belgaum, Karnataka state, India, \*\*HOD, Department of ENT, KLEU JN Medical College, Neharu Nagar, Belgaum, Karnataka state, India, \*\*\*Professor, Department of Roganidana, KLEU Shri. BMK Ayurveda Mahavidyalaya, Shahapur, Belgaum, Karnataka state, India.

**Reprint's request:** Kalmesh S. Sangolli, MS(Ayu), (Ph.D), Assistant Professor, Department of Shalakyatantra, KLEU Shri. BMK Ayurveda Mahavidyalaya, Shahapur, Belgaum, Karnataka state, India.

E-Mail: drksskle@gmail.com

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ostia or not.[6] A closed sinusitis causes severe symptoms and is also likely to cause complications.[7]

Looking into above facts there is a need for an effective treatment which reduces the recurrence as well as can prevent the complications of the disease.

The *Bhringaraja Patra Swarasa* is indicated in *Suryavarta* in the form of *Nasyakarma*. [8]

Keeping this into consideration, the present study was planned to evaluate the effect of *Bhringaraja (Eclipta alba) Patra Swarasa Nasya* in the management of *Suryavarta* (Frontal Sinusitis).

## Materials and Methods

### Source of data

Total 30 patients with classical signs and symptoms of *Suryavarta* (Frontal Sinusitis) were incidentally selected for the study from OPD and IPD of *Shalaky Tantra* Department of KLE University's Ayurveda Hospital, Shahapur, Belgaum.

### Inclusion criteria

Patients fulfilling the diagnostic criteria of *Suryavarta* (Frontal Sinusitis), Patients in the age group of 15 to 60 years with chronicity less than 3 years, Patients with normal values of Hemoglobin, Total count, Differential count, Erythrocyte Sedimentation Rate and Absolute Eosinophil count were included for the study.

### Exclusion criteria

All chronic vascular headaches, Frontal headaches with involvement of inflammation of neighboring structures, Headaches with involvement of other intracranial pathology were excluded from the study.

### Diagnostic criteria

Diagnosis was established on the basis of clinical symptoms mentioned in classical texts such as Headache-*Shirashula*, Nausea-*Hrillasa*, Edema of Upper eyelid-*Vartmashotha*,

Nasal discharge- *Nasarava*, Photophobia-*Prakasha Sahishnuta* and Haziness of Sinus was assessed by x-ray of PNS (Para Nasal Sinuses).

### Source of formulation used:

Fresh leaves of *Bhringaraja (Eclipta alba)* were collected from Herbal garden and then identified, authenticated from the Central Research Facility of KLE University's Shri BMK Ayurveda Mahavidyalaya, Shahapur, Belgaum.

Fresh juice of *Bhringaraja (Eclipta alba)* leaves was extracted as per classical reference by using mortar and pestle and then filtered with fresh cotton cloth thus obtained fresh juice was used for *Nasya karma* (trans nasal drops).

### Intervention

*Nasya karma* was done in the morning time in between 8 am to 9 am. 8 drops of Fresh juice of *Bhringaraja (Eclipta alba)* leaves was administered in each nostril.

### Assessment Criteria

To assess the efficacy of treatment, the symptoms of *Suryavarta* (Frontal Sinusitis) such as Headache, Nausea, Edema of Upper eyelid, Nasal discharge, Photophobia and Haziness of Sinuses were noted carefully before the commencement of treatment (on the initial day) and on 7<sup>th</sup> day (after completion of *Nasya karma*).

### Headache

- Hd<sub>0</sub> -Absent
- Hd<sub>1</sub>- Mild tolerable pain.
- Hd<sub>2</sub> - Moderate tolerable pain even during rest.
- Hd<sub>3</sub> -Marked intolerable pain even during rest.
- Hd<sub>4</sub>- Severe intolerable pain affecting routine.

### Nausea

- Ns<sub>0</sub> - Absent

- $Ns_1$  - Nausea in case consumption of solid food
- $Ns_2$ - Nausea in case of consumption of liquid food
- $Ns_3$ — Nausea in case even patient is not having hard food
- $Ns_4$ - Nausea in case even patient is not having any type of food

#### *Edema of upper eyelid*

- $Ed_0$  - Absent
- $Ed_1$  - Edema with normal movements
- $Ed_2$  - Edema with difficulty in movements(blinking)
- $Ed_3$  - Edema with restricted movements (blinking)
- $Ed_4$  - Edema with no movements (blinking)

#### *Photophobia*

- $Pp_0$  - Absent
- $Pp_1$  - Photophobia by seeing the bright sun light
- $Pp_2$  - Photophobia by seeing electrical bulb
- $Pp_3$ - Photophobia even by seeing objects room light
- $Pp_4$  - Photophobia with watering

#### *Nasal Discharge*

- $Nd_0$  - Absent
- $Nd_1$  - Slight and infrequent, not bothersome to patient
- $Nd_2$ - Moderate, bothersome
- $Nd_3$  - Marked, interferes with many activities
- $Nd_4$ - Severe, interferes with all activities

#### *Haziness of sinus*

- $H_z_0$  - Absent
- $H_z_1$  - Mild Haziness of frontal sinuses

with air filled cavities

- $H_z_2$  - Moderate Haziness of frontal sinuses completely without air cavities
- $H_z_3$  - Marked Haziness of frontal sinuses equal to grayish white in colour
- $H_z_4$  - Grayish white discoloration of sinuses

#### *Statistical analysis*

The data regarding symptoms of the samples were collected and graded as shown above. The total score of before treatment and after completion of treatment was assessed statistically by using paired 't' test.

#### *Observations*

Total 54 patients were screened among which 30 were selected for the study. Maximum numbers of patients were in the age group between 15 to 30 years. 16 (53.33%) patients were females and 14 (46.67%) patients were male. The most troubling symptoms for the patients were Headache (30 patients i.e. 100 %), Nasal discharge (30 patients i.e. 100%), followed by Nausea (26 patients 86.67%), Edema of upper eye lid (20 patients i.e. 66.67%), Photophobia (17 patients i.e.56.67%). 15 (50%) patients had a history of exposure to dust (*Dooma*), 12 (40%) to sun light (*Atapasevana*), 4 (13.33%) to snow or moist (*Tusharasevana*), 10 (33.33%) patients consumed excessive ice creams and 4 (13.33%) consumed cold drinks and 9 (30%) patients used to have excessive curds in the diet.

Positive history of habit was found where 10 (33.33%) patients were chewing tobacco, 8 (26.67%) patients were consuming alcohol and 7 (23.33%) patients were addicted to smoking.

#### **Results**

Headache was the main presenting symptom in most of the patients. During the *Nasya karma* the pain was reduced day by day. On last day of *Nasya karma* 14 (46.67%)

**Table 1: Observation and Results of Headache, Nausea, Edema of Upper eyelid, Nasal discharge, Photophobia and Haziness of Sinuses**

<b>Headache</b>	<b>Hd<sub>0</sub></b>	<b>Hd<sub>1</sub></b>	<b>Hd<sub>2</sub></b>	<b>Hd<sub>3</sub></b>	<b>Hd<sub>4</sub></b>	<b>Total</b>
Before Treatment	00	05	06	05	14	30
After Treatment	14	06	06	02	02	30
						<b>'p' value &lt;0.05</b>
<b>Nausea</b>	<b>Ns<sub>0</sub></b>	<b>Ns<sub>1</sub></b>	<b>Ns<sub>2</sub></b>	<b>Ns<sub>3</sub></b>	<b>Ns<sub>4</sub></b>	<b>Total</b>
Before Treatment	04	05	07	09	05	30
After Treatment	14	08	07	01	00	30
						<b>'p' value &lt;0.05</b>
<b>Edema of Upper eyelid</b>	<b>Ed<sub>0</sub></b>	<b>Ed<sub>1</sub></b>	<b>Ed<sub>2</sub></b>	<b>Ed<sub>3</sub></b>	<b>Ed<sub>4</sub></b>	<b>Total</b>
Before Treatment	10	11	07	02	00	30
After Treatment	22	08	00	00	00	30
						<b>'p' value &lt;0.05</b>
<b>Photophobia</b>	<b>Pp<sub>0</sub></b>	<b>Pp<sub>1</sub></b>	<b>Pp<sub>2</sub></b>	<b>Pp<sub>3</sub></b>	<b>Pp<sub>4</sub></b>	<b>Total</b>
Before Treatment	13	06	04	04	03	30
After Treatment	21	06	02	01	00	30
						<b>'p' value &lt;0.05</b>
<b>Nasal discharge</b>	<b>Nd<sub>0</sub></b>	<b>Nd<sub>1</sub></b>	<b>Nd<sub>2</sub></b>	<b>Nd<sub>3</sub></b>	<b>Nd<sub>4</sub></b>	<b>Total</b>
Before Treatment	00	06	12	07	05	30
After Treatment	11	10	07	02	00	30
						<b>'p' value &lt;0.05</b>
<b>Haziness of Sinuses</b>	<b>HZ<sub>0</sub></b>	<b>HZ<sub>1</sub></b>	<b>HZ<sub>2</sub></b>	<b>HZ<sub>3</sub></b>	<b>HZ<sub>4</sub></b>	<b>Total</b>
Before Treatment	00	04	10	08	08	30
After Treatment	23	03	03	01	00	30
						<b>'p' value &lt;0.05</b>

**Table 2: Statistical Analysis of parameters**

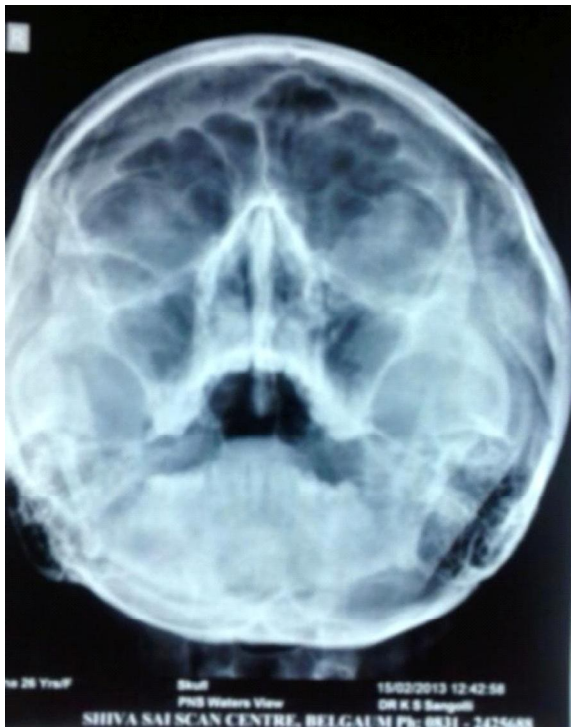
	<b>Headache</b>	<b>Nausea</b>	<b>Edema</b>	<b>Discharge</b>	<b>Photophobia</b>	<b>Haziness</b>
<b>Mean</b>	1.86667	1.367	0.767	1.36667	0.833333	2.26667
<b>Stddev</b>	1.33218	1.033	0.858	1.03335	0.912871	1.17248
<b>'t' value</b>	7.67473	7.244	4.892	7.24394	5	10.5887
<b>'P' value</b>	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

patients were completely relieved from headache, 6 (20%) patients with mild, 6 (20%) with moderate, 2 (6.67%) with marked and 2 (6.67%) were remained with severe headache. Nausea was not complained by 4 (3.33%) patients. After treatment 14 (46.67%) patients were completely relieved from Nausea. 8 (26.67%) patients with mild, 7 (23.33%) patients with moderate, 1 (3.33%) patient with marked and no patients were found with complaint of severe Nausea. Edema of upper eyelid was not seen in 10 (33.33%) patients before the study. After completion of Nasya there were 22 (73.33%) patients without Edema of upper eyelid and 8 (26.67%) patients

were found to be having edema with normal movements of upper eyelid.

Photophobia was absent in 13 (43.33%) patients. After treatment 21 (70%) patients were found with absence of Photophobia, 6 (20%) with Photophobia by seeing the bright sun light, 2 (6.67%) patients with Photophobia by seeing electrical bulb, 1 (3.3%) patient with Photophobia even by seeing objects room light and no patients were found with complaint of Photophobia with watering. Nasal discharge was present in all patients with mild to severe grading. After *Nasya karma* 11 (36.67%) patients were completely relieved

**Figure a**



**Figure b**



from nasal discharge, 10 (33.33%) with slight and infrequent not bother to the patient, 10 (33.33%) with Moderate and bothersome, 7 (23.33%) with Marked, interferes with many activities and no patients were found with Severe discharge which interferes with all activities. Haziness of sinuses was seen in PNS X-rays of all patients, amongst whom after completion of treatment haziness was completely disappeared in 23 (76.67%) patients. 3 (10%) patients with Mild Haziness of frontal sinuses with air filled cavities, 3 (10%) patients with Marked Haziness of frontal sinuses equal to grayish white in colour, 1 (3.33%) patient remained with Grayish white discoloration of sinuses.

The results obtained regarding all the parameters showed statistically significance with the 'P' value <0.05 as shown in Table 1.

## Discussion

The cardinal feature of *Suryavarta* is the severe pain in region of *akshi* (eye) and *bhrupradesha* (eye brow) with characteristic

periodicity which begin in early morning hours gradually increase and reaches its peak by noon and then starts decreasing by evening. Most of the clinical features of *Suryavarta* disease can be co related to the clinical features of Frontal sinusitis. Pathogenesis of *Suryavarta* is a complex mechanism; hence an effective treatment is necessary to reverse the pathogenesis. So here an effort was made to reverse the pathology by administering *Nasya* with fresh juice of *Bhringaraja* (*Eclipta alba*) leaves through this study.

Anti-inflammatory activity of *Bhringaraja* (*Eclipta alba*) may help to reduce the edema thus relieving pressure over sinus wall, which ultimately reduces the pain.[9] Once the inflammation of the mucosal layers of sinuses come down the pressure on the wall of the orbital cavity will be normalized, which will allow normal ocular functions avoiding edema of upper eyelid and photophobia. By Stimulation of ciliary activity and providing provision for adequate drainage the pressure exerted on the walls of the sinuses is relieved thus intracranial pressure will be relieved which in turn reduces the nausea.

The results obtained regarding all the parameters showed statistically significance with the 'P' value <0.05 as shown in Table 2.

#### *Probable mode of action of Nasya Karma*

The pathology of *Suryavarta* (Frontal Sinusitis) mainly involves three major derangements of mucosal physiology that may contribute to the evolution of the disease.

- Diminished mucociliary transport
- Edematous obstruction of sinus ostia
- Fall of pO<sub>2</sub> with in the sinus due to impaired ventilatory exchange.

So in planning the treatment two main objects are kept in view—Stimulation of ciliary activity and Provision for adequate drainage. The above said treatment principles could be achieved by the *Nasya karma*. *Nasa* (Nostrils) is mentioned as *Dwara* of *Shiras* through which the medicine is administered during *Nasya karma*. By *Shroto shodhana* action of *Nasya*, it relieves the obstruction of sinus ostia, thus facilitating the normal drainage process, which in turn promotes the mucociliary activity preventing collection of mucus in sinus cavity, which is main cause for sinus pain. *Bhringaraja* (*Eclipta alba*) by virtue of its *Ushna* and *Teekshna* properties pacifies *Vata* and *Kapha Doshas* and helps in draining out obstructed mucus, restoring the proper ventilator process.[10]

#### **Conclusion**

The treatment measure selected for the study was found to be more beneficial in the patients where the chronicity was less than or equal to two years. Photo phobia and Edema of upper eyelid were not associated with headache in all the patients. *Bhringaraja Patra Swaras Nasya* used in the present study provided significant relief from signs and symptoms like Headache, Nausea, Edema of Upper eyelid, Nasal

discharge, Photophobia and it also proved its therapeutic potential even on the objective parameter like Haziness of sinuses which was clearly noted in PNS X rays. The unique purificatory methods like *Nasya* told in Ayurveda holds good even today in the management of inflammatory disorders like *Suryavarta*.

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