

## A COMPARATIVE EVALUATION OF NAVANA NASYA AND DHUMA NASYA IN THE MANAGEMENT OF SINUSITIS

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Published online: March, 2017

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### ABSTRACT

**Objective:** The study was conducted for the comparative evaluation of *NavanaNasya* and *DhumNasya* in the management of Sinusitis. **Methods:** A prospective, open-label study method was followed. 200 patients of either sex, between the age group of 18 - 55 yrs. were selected randomly for the study after thorough informed consent. Patients with sinusitis were placed into 2 groups. Group N-treated with *Sinugo* oil in the form of *NavanaNasya* scheduled as 8 drops once in a day, in the morning. Group D- treated with *SinugoVarti* in the form of *DhumNasya* scheduled as 3 puffs alternating with each of the nostrils, once/day, in the morning. The effect of the *Nasya* was observed for 7 days during the therapy and weekly after the therapy up to one month. Observation of Clinical symptoms and signs of sinusitis were carried out. **Results:** The clinical symptoms and signs of sinusitis showed better improvement with *DhumNasya* as compared to *NavanaNasya*. **Conclusion:** It is noted that *DhumNasya* is more effective and agreeable to the patients than *NavanaNasya*.

**Key words:** *Nasya*, *Dhumnasya*, Sinusitis, *Kaphajashiroroga*

### INTRODUCTION

Headache is a most enormous pain affecting the quality of life of a person. There are numerous pathological and idiopathic factors causing headache. Sinusitis is one of the commonest factors of them. Sinus headache is associated with a deep and constant pain in the cheekbones, forehead, or bridge of the nose. The pain usually intensifies with sudden head movement or straining. Sinuses are basically air-filled spaces in the skull which provide insulation for the skull and resonance for the voice. A membrane lining the sinuses secretes mucus, which drains into the nasal passage from a small channel in

each sinus. When sinuses become inflamed, they are unable to drain, which can lead to congestion and infection of the sinuses.<sup>1</sup>With modern industrialization and increased transportation, the atmospheric pollution gives irritation to the nose and paranasal sinuses. Because of this, each year, over 31 million adults and children get sinusitis- inflammation of the paranasal sinuses.<sup>2</sup>

In Ayurvedic literature, *AcharyaSushruta* has described different types of headache under the title of '*Shiroroga*'.<sup>3</sup>Based on signs and symptoms, the disease sinusitis can be compared with *Kaphaja-*

*shiroroga*. According to Acharya Sushruta, vitiated *kaphadosha* accumulated in *shirah* and block all the *srotas* of *shirah*. In Ayurveda, *Nasya*, *Shirobasti*, *Vaman*, *Swedana*, *Ghritapana*, etc. are described. Among them, *Nasya*- administration of medicines in various forms through nostril is considered the most specific procedure.<sup>4</sup> Nasal passages are considered as the portal of the head. All drugs introduced through the nose spread throughout the head and influence all the *Doshas* as well as diseases situated in this part.<sup>5</sup> According to Charakacharya, Effect of the *Nasya* can be described as *Shamana*-palliative *Nasya* and *Shodhana*-purificative *Nasya*. There may be the possibilities of reprovocation of the disease treated by *ShamanaNasya* but there are no such possibilities of re-provocation of disease treated with *ShodhanaNasya*.<sup>6</sup>

So, in the management of sinusitis, *ShodhanaNasya* was selected for the study in the following two forms: *NavanaNasya* and *DhumaNasya*

*NavanaNasya* is widely practiced, well established and popular method. Lots of research work on *NavanaNasya* with different formulation in different diseases was done. In the other hand, *DhumNasya* is still a literary part of our texts. Only one research work by Dr. Venkata Krishna in 1990 at Hyderabad has been carried out with *DhumNasya*.

In this study, the comparison of the effect of these two methods was elicited.

#### Aims and Objectives:

1. To study the correlation of sinusitis with *KaphajaShiroroga*.
2. To explore the role of *ShirovirechanNasya* in the management of sinusitis.
3. To compare the efficacy of the *NavanNasya* and *DhumNasya* in the management of sinusitis.

#### Materials & Methods:

The patient's history and clinical findings were recorded in a detailed clinical Performa. All the patients were assessed clinically by Anterior Rhinoscopy, Posterior Rhinoscopy, sinus examinations and

radiological assessment. Patients with sinusitis were placed into 2 groups.

- Group N – treated with Sinugooil in the form of *NavanaNasya* scheduled as 8 drops once/day, in the morning
- Group D – treated with SinugoVarti in the form of *DhumNasya* scheduled as 3 puffs alternatively, once/day, in the morning.

The effect of the *Nasya* was observed for 7 days during the therapy and weekly after the therapy up to one month. Sinugo Oil and SinugoVarti were prepared classically for *NavanaNasya* and *DhumNasya* respectively.

#### INGREDIANTS OF SINUGO NASYA:

1. *Vidanga* - *Embeliaribes*
2. *Apamarga* - *Achyranthesaspera*
3. *Pipali* - *Piper longum*
4. *Jyotishmati*- *Celastruspaniculatus*
5. *Lashuna* - *Allium sativum*
6. *Katphala* - *Myricanagi*
7. *Erand* - *Ricinuscommunis*
8. *Yashtimadhu*- *Glycirrhizaglabra*

#### Criteria for Selection:

Total 200 patients of either sex between the age group of 18 to 55 yrs were selected from the patients received at OPD for this study after thorough informed consent. Patients are diagnosed based on both the subjective and objective criteria of the sinusitis.

#### Criteria for Exclusion:

Patients with epistaxis, COPD, asthma, heart disease and pregnancy were excluded from the study.

The efficacy of the treatment was assessed by following criteria.

1. Cured: 100% relief of the complaints
2. Marked improvement: >75% to < 100% relief of the complaints

3. Moderate improvement:> 50% to < 75% relief of the complaints
4. Mild improvement:> 25% to < 50% relief of the complaints
5. Improved:> 0% to< 25% relief of the complaints
6. Unchanged: 0% relief of the complaints

**RESULTS:**

Total 200 patients of Sinusitis were studied in two divided groups. In each group 100 patient were studied. In the present clinical study, majority of the patients (37.50%) were between the ages of 18 to 25 with equal prevalence of gender. Majority of

the patients were having Frontal Sinusitis (43%) and chronic onset. Majority of the patients were having symptoms like Headache (95.5%), Nasal Block (97%), Nasal Discharge (88%), Sneezing (86%) and Post Nasal Discharge (92%). Maximum patients were presented with the history of Acute Rhinitis (36%) and Recurrent Rhinitis (22%). The clinical examination suggests congestion of Nasal mucosa were present in all the patients along with tenderness in 94.50%, hypertrophy in 84% patients, DNS in 73.50% patients. Edema of sinuses was present in less no. of patients i.e. 36.50%.

**Table 1:**

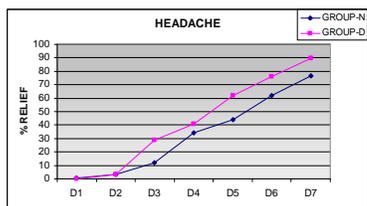
Comparison of Effect on Signs and Symptoms in Both Groups:					
Signs & Symptoms	Mean		T value	P value	
	Group N				
	0.57	0.57			
Headache	0.39	0.26	3.78	0.0001	p<0.01
Nasal Discharge	0.73	0.27	1.31	0.09	p<0.01
Nasal Block	0.36	0.24	5.26	0.0001	p<0.01
Sneezing	0.72	0.25	1.23	0.11	p>0.01
Postnasal Discharge	0.07	0.42	3.06	0.001	p<0.01
Cough	0.10	0.13	-0.70	0.24	p>0.01
Otalgia	0.12	0.07	0.37	0.35	p<0.01
Oedema	0.45	0.12	0	0.5	p>0.01
Tenderness	0.72	0.14	4.16	0.001	p<0.01
Congestion	1.21	0.38	3.74	0.001	p<0.01
Hypertrophy			4.12	0.001	P<0.01

There were statistically significant relief in all the symptoms and signs treated with *NavanaNasya* and *DhumaNasya* at the level of  $p < 0.05$ . In comparison with well-established *NavanaNasya*, *DhumaNasya* is statistically significant at the level of  $p <$

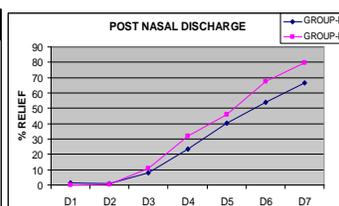
0.01 in the relief of all the symptoms except sneezing and cough and in all the signs except oedema. So, the day-wise improvement was observed in both the group.



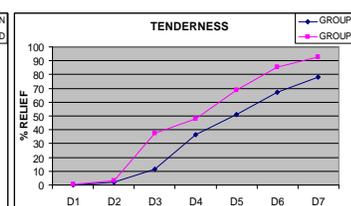
### Day-wise improvement in symptoms and signs:



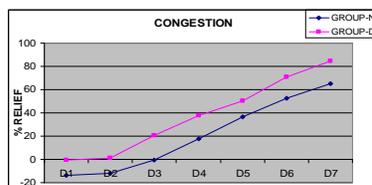
Graph - I



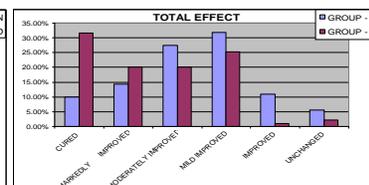
Graph - II



Graph -III



Graph -IV



Graph - V

Day-wise improvement in symptoms and signs suggests that there were early relief with *DhumaNasya* in headache [GRAPH-I], nasal discharge, nasal block, post nasal discharge [GRAPH-II], tenderness [GRAPH-III], congestion [GRAPH-IV] and hypertrophy.

**Other effects of therapy:** No serious side effects were present in both the Groups. Nausea was present more in *NavanaNasya*, whereas burning sensation in nasal mucosa and dryness was more with *DhumaNasya*.

**Follow up:** In the follow up study up to three weeks, there was early onset of improvement with *DhumaNasya* as compared to *NavanaNasya*.

**Total effect of therapy among patients under study in both groups:** Maximum numbers of patients (31.57%) have got 100% relief in the key symptoms and signs of the sinusitis with *DhumaNasya*. Whereas, with *NavanaNasya*, there was mild improvement in majority of the patients (31.86%).

## DISCUSSION

With global warming, climate changes, pollutions and changes in life style, the incidences of

the environment induced disorders are increasing. Sinusitis – the inflammation of Para nasal sinuses also can be classified as an environment induced disorder. Each year over 35% adult and children get sinusitis. Owing to the persistent environmental changes, the recurrences have also increased. So, the treatment as well as the prevention of recurrence is a necessity of the era.

Only Ayurveda can fulfill the necessity regarding the treatment of Sinusitis because Ayurveda is the science which provides preventive, curative and restorative measures together. The disease Sinusitis is not described in Ayurveda. But the symptoms like *Shirobhitapa*, *Shirogalkaphopdigdha*, *Pratis-tabdhat*, *Shunakshikut* of *KaphajaShirorogac*an be correlated with the symptoms of sinusitis respectively like Headache, Post nasal discharge, Nasal block, Edema on sinuses. It is alluding to *KaphajaShiroroga* of Ayurveda<sup>7</sup> can be correlated with sinusitis.

The process leading to sinusitis commonly starts with viral infection or allergic rhinitis. Over 85% of people with cold have inflamed sinuses. These inflammations are typically brief and mild,

and only about 0.5 - 10% of people with cold develop true sinusitis of persistent type.<sup>8</sup>

The inflammation of sinus wall lining the passages causes inadequate drainage and then the accumulation of mucus. This mucus harbors bacteria aggravating the sinusitis. Bacteria thicken the mucus to phlegm. This warrants use of antibiotics to control the bacterial growth. Unabated, the growth invades further in the bronchial passage, complicating the situation. The impaired mucociliary clearance leads to severe sinusitis.

Acharya Charaka had described *Nidana* (Causes) and *Samprapti* (Pathology) twice as *Samanaaya* (*Sannikrushta*) and *Vishesha* (*Viprakrushta*). We can understand the *Samprapti* of *KaphajaShiro-roga* with the combination of these two.

In *KaphajaShiro-roga*, after the *ViprakrushtaNidanasevana* like *Asyasukha*, *Guru –Snigdha* food etc., there is *Agnimandya* causing *Amotpatti*. As a result there is *Rasa* and *KaphaDushti*, which accumulate in the *shirah*. This accumulated *Kapha-Dosha* does not make *KaphajaShiro-roga*. When the person comes in the contact of *SannikrushtaNidana* like *Raja*, *Dhuma*, *Atapa*, *Hima*, *Tusharasevana*, *Desha – Kala ViparyayaShitaambusevana* etc., there is *TridoshaPrakopa* causing *RaktaDushti*. This *Dushitarakta* aggravate the *DushitaKapha* in the *Shira* leading to *KaphajaShiro-roga*. Thus, we could also find the similarity of pathogenesis of sinusitis and *KaphajaShiro-roga*. Treating the diseases is not the only goal of Ayurveda therapy. Ayurveda offers the curative aspect of treating the diseases. The treatment is nothing but the shattering of the pathogenesis (*Samprapti*) of the diseases.

**SAMPRAPTI VIGHATANA THROUGH NASYA KARMA:**  
**NAVANA NASYA:**

- The posture required in *NavanaNasya* is to lie down supine, head hanging out of bed & the body in a little elevated posture. This posture facilitates the *Nasyadravya* instilled near the osteomeatal complex to penetrate the sinuses. Later studies showed that drops instilled into the nose in the head is downwards position would appear to be the most effective way of decongesting the ostia of the sinuses.<sup>9</sup>
- *Snehana* (facial massage) and *Svedana* (fomentation) will increase the blood circulation of *Shirah*.
- Warm oil instillation gives better penetration, soothing effect and help to reduce the congestion of Nasal mucosa and osteum.
- *Nasyadravya* absorbed through mucus membrane diffuses up to sinuses. The drug reaches to the sinuses by the penetration through the ostea. The pharmacological action improves drainage and air flow of sinuses. As a result the symptoms like headache, tenderness, oedema etc get reduced.
- This drainage goes back towards the nasopharynx. So the *Paschat karma* like *Kavala*, *Gandusha*, *Dhumapana* facilitate the clearance of the infected discharge from the oropharynx.

#### **DHUMA NASYA**

- The sitting posture in *DhumaNasya* facilitates the fume to reach the osteomeatal complex for better penetration into the sinuses.
- The easy and rapid absorption, diffusion and penetration of fume into the sinuses lead to early mucociliary clearance and pneumatization. As a result, the symptoms like headache, nasal block, tenderness, edema etc get reduced.

#### **SAMPRAPTI VIGHATANA THROUGH DRUGS**

Sinugo Oil and SinugoVarti are the combination of the eight ingredients. Majority of drugs are having *Katu Rasa* (35%), *Tikta Rasa* (23%) *TikshanaGuna* (35%), *UshnaVirya* (75%) and *KatuVipaka* (73%) along with *Shirovirechana* property. So, they

produce *Vilayana* and *Chhedana* of *Kapha* leads to *shodhana*.<sup>10</sup>

The selected drugs are also having anti-inflammatory (75%), antihistaminic (25%), antimicrobial (87.50%), mucolytic (37.50%) and immunomodulator (62.50%) property along with analgesic, antipyretic, vasodilator.<sup>11,12</sup> The antihistaminic effect of the drug reduces the congestion. Anti-inflammatory action of drug reduces the inflammation of mucosa which facilitates the reduction of the blockage of the ostium. Anti-microbial action of the drugs reduces the infection. Mucolytic action reduces the viscosity of the thick mucopurulent discharge. As a result, there is improvement in the mucociliary action which promotes the adequate drainage. The immunomodulator action reduces the recurrent attack.

## CONCLUSION

Based on our results, we conclude that the *Shirovirechana Nasya* in the forms of *Navana Nasya* and *Dhuma Nasya* is safe and effective in the management of sinusitis. In fact, it is difficult to convincingly prove which method is superior to other in a relatively small sample size. But, *Dhuma Nasya* is easy to perform with early onset and high success rate. While concluding, we can say that one should select the type of *Nasyakarma* which is suitable depending upon the acceptance of the patient and the stage of the diseases.

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**Source of Support: Nil**

**Conflict Of Interest: None Declared**

How to cite this URL: Shukla Hemangi B: A Comparative Evaluation Of Navana Nasya And Dhuma Nasya In The Management Of Sinusitis. International Ayurvedic Medical Journal {online} 2017 {cited March, 2017} Available from: <http://www.iamj.in/posts/images/upload/246-251.pdf>