



Research Article

EFFECT OF *SIGRUBEEJAARKA NASYA* IN CHRONIC SINUSITIS - A CLINICAL STUDY

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ABSTRACT

Chronic sinusitis, defined as an inflammatory process that involves the paranasal sinuses and persists for 12 weeks or longer. The conventional treatment is either conservative or surgical. Since this ailment is of a chronic nature, simple conservative management will not be sufficient for a cure. Even though the surgery is effective, there is chance of recurrence and morbidity. The clinical picture of chronic sinusitis shows the predominance of *Kaphavata dosha* in *Jatrurdhwa*. *Sigru* is a single drug having *Thikshna ushna guna* and *Vatakaphahara* properties and is included in *Sirovirechana* group. *Arkaprakasa* written by *Ravana* illustrates a large number of *Arkas* (distillates) which is found to be very effective and harmless and *Sigrubeeja Arka nasya* indicated in *Siroroga* was selected for the study.

Methods: The study design was interventional pre and post evaluation without control and sample size fixed as 30 patients. The data collection was done with case proforma, symptomatic scoring using VAS scale, Nasal Signs and Symptoms Score (NSSS), and X-ray PNS. Selected patients were subjected to *Nasyakarma* with *Sigrubeeja arka* for a period of 7 days. Assessments were done prior to the commencement of intervention and on 15th, 30th, 60th day of follow up. Statistical analysis was done using Wilcoxon Signed Rank test.

Result: Change in outcome variables like headache, nasal obstruction, nasal discharge, loss of smell, and postnasal drip, showed significant results.

Conclusion: *Sigrubeejaarka* was found to be effective in chronic sinusitis.

KEYWORDS: Chronic sinusitis, *Sigrubeeja arka*, *Nasya*.

INTRODUCTION

Chronic sinusitis is an inflammatory disease of the nasal and paranasal sinus mucosa. It is defined as chronic when it lasts longer than 3 months without complete symptom resolution. The literature has supported that chronic sinusitis is almost always accompanied by concurrent nasal airway inflammation and is often preceded by rhinitis symptoms; thus the term chronic rhinosinusitis (CRS) has evolved to more accurately describe the condition.

In modern science, treatment of CRS includes medical and surgical therapy. Medical therapy often requires combining multiple medications including antibiotics, nasal decongestants, topical nasal steroids and/or oral steroids, and saline irrigation. Some patients do not respond with full medical treatment alone; in these cases treatment with endoscopic sinus surgery should be considered as an alternative. Even though surgery is effective, there is a chance of recurrence and morbidity. The clinical picture of chronic sinusitis shows the predominance

in the *Kaphavata dosha*. *Nasya* is one of the classical procedures among *Panchakarma*, which is ideal in *Siroroga*. *Sigru beej* has *Teekshna ushna*^[1] property and is included in *Sirovirechana* group. *Arkaprakasa* written by *Ravana* illustrates a large number of *Arkas* (distillates) prepared using various parts of medicinal plants and *Sigru beej arka nasya* is indicated in *Siroroga*.^[2] *Arka* preparations are having potent action, long shelf life period, easy to manufacture, and patient friendly. Therefore *Sigrubeeja arka nasya* described in *Arkaprakasa* which is cost effective, affordable and easy to prepare with more benefits is selected for the study. Moreover the research works in *Nasya* with *Arka* preparation is found to be rare in the available literature.

Objective

To evaluate the effect of *Sigrubeeja arka nasya* in chronic sinusitis

Study drug: *Sigrubeeja arka*

Methodology

Study design: Therapeutic, Interventional, pre and post test design.

Study setting

OPD and IPD of department of *Shalakyata* tantra, Govt Ayurveda College, Trivandrum.

Study population

Patients diagnosed as having chronic sinusitis, who are suitable for *Nasya karma* in the age group of 20-50 yrs irrespective of sex.

Inclusion criteria

Patients diagnosed as having Chronic sinusitis age group between 20-50yrs of both sexes suitable for *Nasya*.

Exclusion criteria

1. Congenital malformation of nostrils as congenital choanal atresia, nasal glioma
2. Diagnosed cases of TB on medication, malignant hypertension.
3. Patients with history of multiple episodes of epistaxis, disorders of blood coagulation traumatic injury of brain and diagnosed cases of cerebrovascular accidents.

Sample size

30 patients were selected

Sampling technique

Consecutive cases satisfying inclusion till attaining sample size.

Data collection

Data were collected by personal interview method with the help of case proforma and clinical examination.

Study tools

- Clinical case proforma
- Nasal signs and symptoms score for nasal obstruction^[3]
- Nasal signs and symptoms score for nasal discharge^[4]
- Nasal signs and symptoms score for loss of smell
- Nasal signs and symptoms score for post nasal drip
- X-ray paranasal sinuses

Trial drug

The study drug used was *Sigru* (*Moringa pterygosperma*) *Beeja arka*.

Drug name: *Sigru beeja*

Botanical name: *Moringa pterygosperma*

Family: Moringaceae

Preparation

The medicine *Sigrubeeja arka* was prepared according to the procedure described in API.^[5]

Analytical Study of *Sigrubeeja Arka***Organoleptic Characters**

Colour: Transparent

Odour: Smell of *Sigrubeeja*

Touch: Cold

Taste: As that of *Sigrubeeja*

Consistency: Liquid

Analytical Values

Specific gravity: 1.0001

Refractive index: 1.2

Solid content: 0.12%

Volatile oil content: 0.5%

pH: 5.32

Thin Layer Chromatography**Result**

The TLC profile of ethyl acetate extract of the drug was done on pre-coated Silica gel 'G' plates. A good separation was produced with Chloroform: Toluene (3:2) as mobile phase. Under UV light (366nm) light blue fluorescent colour curve is detected with Rf. 0.75 (hrf 75) (blue). On exposure to Iodine vapour brown spot is observed with Rf 0.22 (hrf 22).

HPTLC (High Performance Thin Layer Chromatography)

In UV scanning at 254nm and 366nm (*Sigrubeeja arka*) produced 4 peaks with Rf value 0.06, 0.22, 0.40, and 0.65. Among these, peak 3rd and 2nd showed maximum area of 44.22% (1461.1AU) and 29.22% (965.5AU) respectively.

Clinical Study- Procedure

After obtaining informed consent, the patients diagnosed as having chronic sinusitis and registered in OPD of *Shalakyata* tantra, Govt. Ayurveda College Hospital, Trivandrum, were selected as per inclusion and exclusion criteria. Then they were subjected to *Poorva karmas* and *Nasya karma* was done as per the following schedule.

Poorva karma

The patients were advised to follow strict dietary control and life style practices during the treatment period as that described in the classics for *Sodhana* therapy.

Table 1: Poorvakarma of Nasya

Treatment	Medicine	Dose	Time	Duration
<i>Sneha pana (Vicharana)</i>	Plain <i>ghritha</i>	10gm	8am and at 8pm along with food	2 days
<i>Abyanga and sweda</i>	<i>Tila tailam</i>	Quantity sufficient	Morning 8 am	1 day
<i>Virechana</i>	Plain <i>Eranda tailam</i>	25ml with hot water	6 am in empty stomach	1 day

Administration of Nasya

As per classical *Nasya* procedure^[6]

Time: 8 am in empty stomach

Dose: 4ml

Duration of Nasya – 7 days

Assessment

1st assessment -Symptomatic evaluation was done before *Nasya*

Follow up - 15th day, 30th day, and 60th day of *Nasya*

Table 2: Outcome variable

Symptoms	Grade 0	Grade 1	Grade 2	Grade 3
Headache	Absent	Mild	Moderate	severe
Nasal obstruction	Absent	Mild	Mouth breath	Interfere sleep
Nasal discharge	Absent	Humid mucosa	Visible discharge	Profuse draining
Loss of smell	Absent	Can't smell mild odour	Can't smell moderate odour	Can't smell strong odour
Post nasal drip	Absent	Feels secretion in throat	Frequent clearing of throat	Coughing/ affecting speech
Radiology	No haziness	Mild hazy	Moderate hazy	

X-ray PNS was taken before the study and in the follow up period (30th day)

Statistical analysis

Wilcoxon signed Rank test according to the type of distribution of the variable

RESULT

Most of the patients were females from rural areas. Majority of study patients had *Vata kapha prakruthi* with irregular food habits.

Table 3: Distribution according to change in headache

Headache	Grade 0		Grade 1		Grade 2		Total
	N	%	N	%	N	%	
BT	0	0	4	13.3	26	86.7	30
AT	14	46.7	12	40	4	13.3	30
AF1	11	36.7	16	53.3	3	10.0	30
AF2	10	33.3	17	56.7	3	10.0	30

(BT - before the commencement of treatment, AT - 15th day after *Nasya*, AF1 - 30th day after *Nasya*, AF2 - 60th day of *Nasya*)

Table 4: Analysis according to change in headache

Paired comparison	Wilcoxon signed rank test	
	Z	p
BT-AT	4.617	<0.001
BT-AF1	4.66	<0.001
BT-AF2	4.562	<0.001

Graph No: 1 Distribution according to change in Nasal obstruction

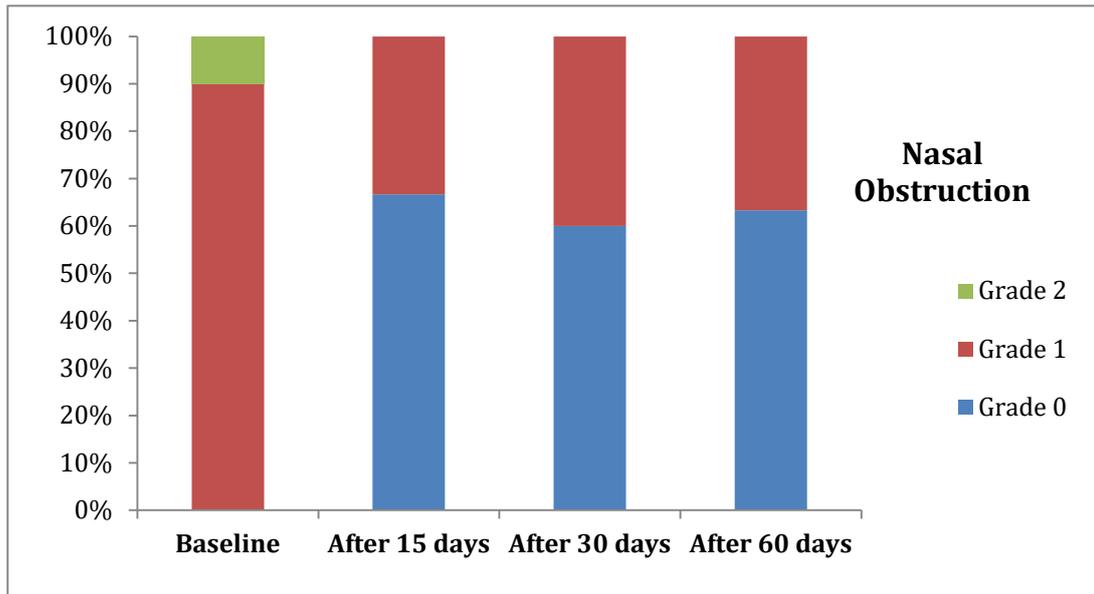


Table 5: Analysis on change in Nasal obstruction

Paired comparison	Wilcoxon signed rank test	
	Z	p
BT-AT	4.796	<0.001
BT-AF1	4.379	<0.001
BT-AF2	4.491	<0.001

Graph No 2: Distribution according to change in Nasal discharge

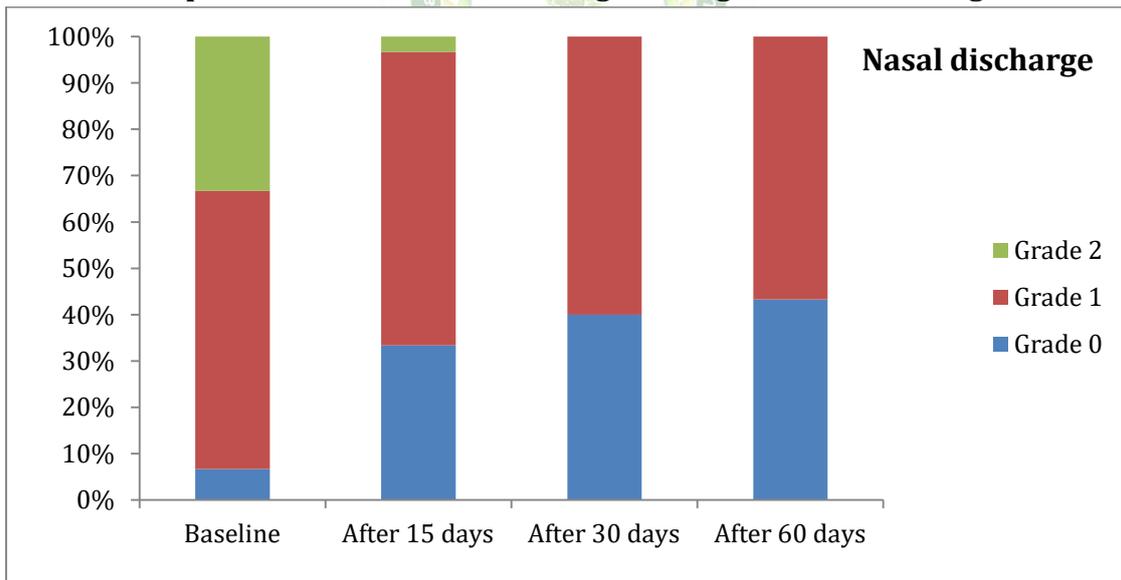


Table 6: Analysis on change in Nasal discharge

Paired comparison	Wilcoxon signed rank test	
	Z	p
BT-AT	4.123	<0.001
BT-AF1	3.879	<0.001
BT-AF2	4.001	<0.001

Graph No: 3 Distribution according to Change in loss of smell

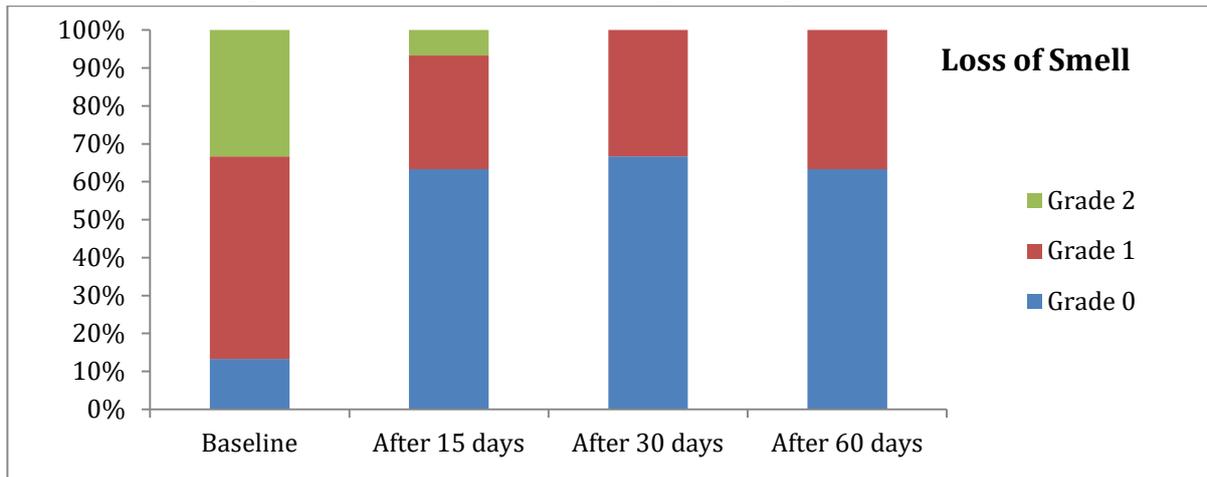


Table 7: Analysis on change in Loss of smell

Paired comparison	Wilcoxon signed rank test	
	Z	p
BT-AT	4.413	<0.001
BT-AF1	4.564	<0.001
BT-AF2	4.456	<0.001

Graph no 4: Distribution according to Change in Post nasal drip

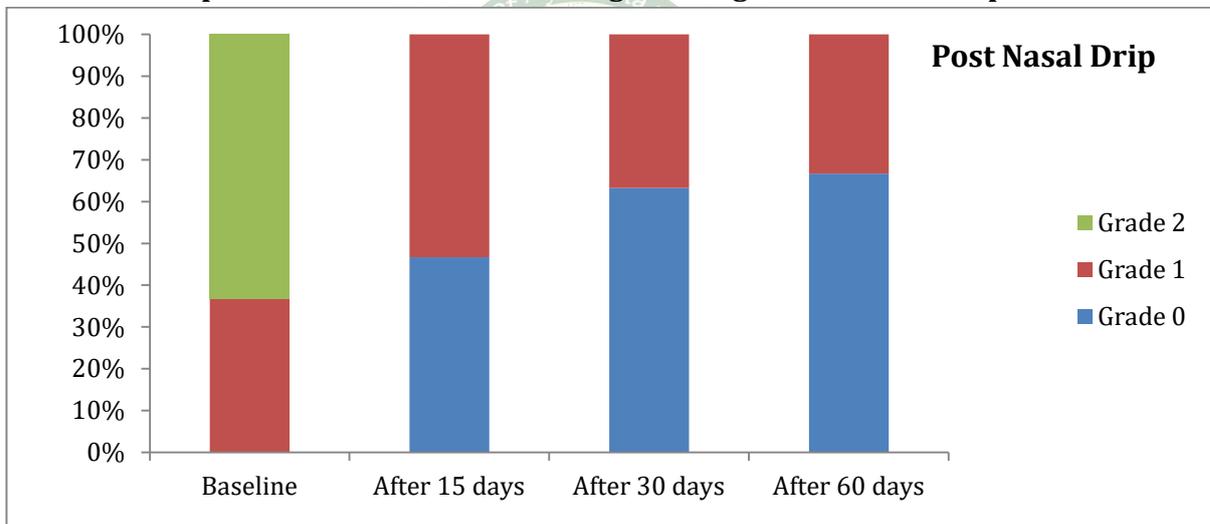
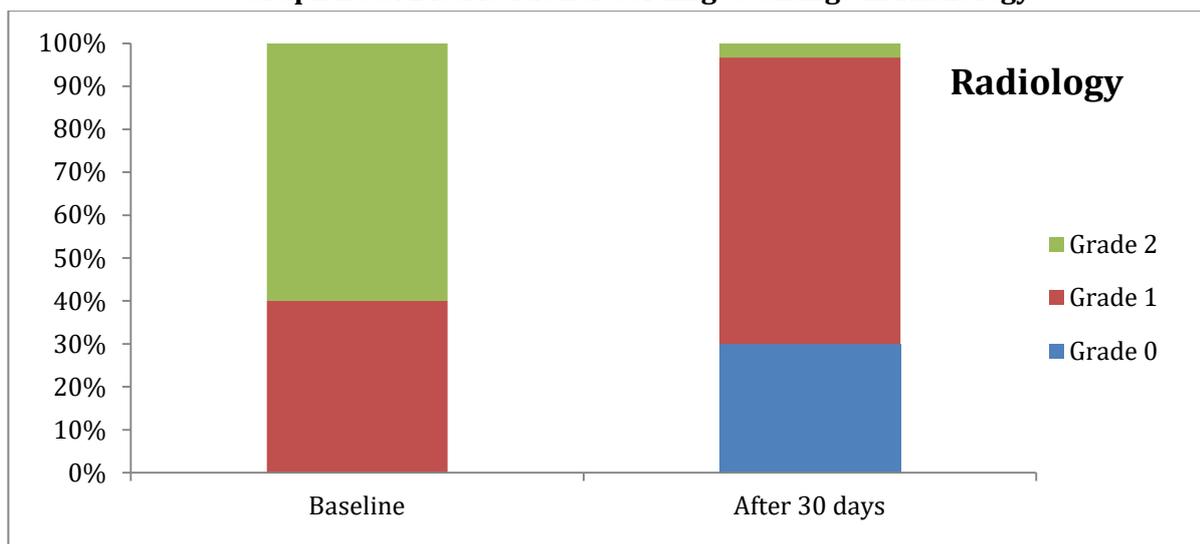


Table 8: Analysis on change in Post nasal drip

Paired comparison	Wilcoxon signed rank test	
	Z	p
BT-AT	5.26	<0.001
BT-AF1	5.035	<0.001
BT-AF2	5.007	<0.001

Graph no 5: Distribution according to Change in Radiology**Table 9: Analysis on Radiological change**

Paired comparison	Wilcoxon signed rank test	
	Z	p
BT-AF1	5.099	<0.001

DISCUSSION

Discussion on Ayurvedic aspects of the Chronic sinusitis

While analyzing the clinical features of chronic sinusitis we can't correlate it to a single disease. The symptomatology reveals that it is a state of *Kaphavata* predominant condition in the *Siras*. Signs and symptoms of the *Kaphaja sirasoola*, *Kaphaja pratisyaya* and *Dushta pratisyaya* were enlisted and these were found to be similar with the clinical pictures of chronic sinusitis. As the disease is a chronic condition manifests as a result of untreated or improperly treated rhinitis, we can correlate it to *Dushta pratisyaya* which is a *Yapya roga*. In the *Samprapthi* of disease *Pranamarga* is obstructed due to *Kapha dosha*, and ultimate goal of the treatment is to relieve the *Margarodha* and thus clear the nasal pathway. So it is better to approach the disease as a *Kaphavata* predominant *Urdwa Jatrugatavikara* rather than a single disease.

Discussion on probable mode of action of Drug

Here in this disease *Vata uparodha* happens due to *Kupitha kapha dosha*. In *Kapha avaranaavastha*, *Guru, Manda, Sthira* and *Sita guna* of *Kapha* are dominant. It can be alleviated by drugs possessing *Laghu, Tikshna guna* and *Ushna veerya*. So the drug *Sigru* with *Katu tiktha rasa, Laghu, Ushna, Teekshna guna*^[7] and *Kaphavatahara* property was selected for the study. The drug *Sigru beeja* is included in *Sirovirechana gana* and its *Sodhana* property helps in the *Doshaharana* from the *Urdwanga*.

Discussion on the Nasya procedure

The provisions created by *Purvakarma*^[8] helps in the *Pradhana karma*, where the drug administered remains momentary in nasal cavity and the position of head assisted by gravity helps in easy spreading of the medicine, so that the drug has a greater chance of adsorption in the air sinuses, as well as providing sufficient time for stimulating olfactory neurons. As explained earlier in the literary review; the *Nasya karma* acts on the *Sringataka marma*^[9] which is a *Sira marma* present in the middle of the confluence of *Siras* supplying nourishment to the nose, ears, eyes and tongue.

Nasya karma can stimulate the higher centers and regulate their function. Even though drug absorption may take place via vascular pathway, lymphatics, neurological pathway^[10] and diffusion; more absorption occurs through vascular pathway due to rich blood supply of nasal mucosa. The pH of the drug also favours absorption. It may be due to this fact that, the formulation showed symptomatic relief as much absorption takes place in nasal mucosa and reduces the local inflammatory process

CONCLUSION

In Chronic sinusitis *Vata avarana* occurs due to *Kupitha kapha dosha* and can approach the disease as *Kaphavata* predominant *Urdwa Jathrugatavikara*. *Sigrubeejaarka* which is cost effective, affordable, more benefits and without complications was found to be effective in Chronic sinusitis. As the disease is chronic in nature repeated *Sodhana* therapy with

proper *Pathyakrama* should be incorporated to avoid the recurrence.

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