



## **A Clinical Study On Combined Effect of Gunja Lepa and Laghu Sutashekara Vati In Nasarshas (Nasal Polyp)**

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### **ABSTRACT**

*Nasarshas is a type of nasaroga with the cardinal feature of mass in nasal cavity which create breathing difficulty, sneezing and snoring. This disease can be correlated to Nasal polyp based on the clinical manifestations. As new research and clinical experience broaden our knowledge, the changes in the treatment and drug therapy do occur. In this present study, Gunjalepa has been chosen as a trial drug which was administered in the form of nasalepa along with Laghusutashekara vati as Oral administration in Nasarshas (Nasal polyp).*

**Keywords:** Nasarshas, Nasal polyp, snoring, Gunjalepa

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### **INTRODUCTION**

Nasarshas or Nasal polyp is very common inflammatory disease having incidence rate of 1-4 % in the world and 7% of asthma patients are affected with nasal polyp. It is seen in chronic rhino sinusitis of both allergic and non-allergic origin. Prevalence is more after the age of 20. It is more common in males with male female ratio 2:1 [1]. Even though the etiology of nasal polyp is uncertain, allergy has an important role in manifestation of it. Allergic reactions produce inflammation in nasal mucosa, which subsequently presents as a polypoidal mass [2]. *Nasarshas* should be treated like general *arshas*, which include *bheshaja*, *Shashtra*, *kshara*, and *agnikarma* [3]. Management of nasal polyp include both medical therapy and surgery. Now a days endoscopic sinus surgery is mostly used for treating nasal polyp even though no single surgical technique has proved to be entirely curative and the recurrence rate is around 5-10 % [4]. The utmost aim of the treatment is to reduce inflammation of nasal mucosa and the size of the nasal polyp significantly, which will result in relief of the nasal obstruction, improvement in sinus drainage, and restoration of olfaction and taste.

*GunjaLepana* in *Nasarshasis* an *anubhuta yoga* which is being practised by many vaidyas. *Gunja* [5] comes under *upavishavarga* and its *bheeja* have *kaphavatahara* property. *Laghusutashekara rasa* is a herbo-mineral preparation described in *Rasa Tarangini*, which has *amapachaka* and *sothahara* properties [6]. Hence these to medications were taken to assess their effect on *Nasarshas*(nasal polyp).

### **MATERIAL AND METHODS**

The study was planned as an open label single arm prospective clinical trial. 30 Patients, diagnosed with nasarshas were selected from Out-patient department and In-patient department of Shalakyatantra, Sri Dharmasthala Manjunatheshwara college of Ayurveda and Hospital, Hassan. Data was collected using prepared case format irrespective of caste, gender, and religion. Subjects fulfilling diagnostic criteria, age group between 20-60 years irrespective of gender, occupation, socio - economic and marital status, both fresh and treated cases and participant who signed written informed consent were included. Those with antrochoanal nasal polyp, history of epistaxis, known case of angiofibroma, neoplastic masses in nose, pregnant women and lactating mother and patients who were under steroid treatment for nasal polyp were excluded. The assessment done included anterior Rhinoscopy and absolute eosinophil count.

Subjective criteria included nasavarodha and kshavathu. Statistical analysis included paired t test for quantitative data and; friedman test and Wilcoxon sign rank test for qualitative data.

### Treatment Plan

#### GUNJA LEPANA

Gunjalepana was be done in the morning time, 4 application on alternative days and on 15th and 30th day. Each time freshly prepared lepa will be applied. Patient was seated in semi-laying position. Nasal moping was done with cotton tipped probe. The soaked shwethagunjabeeja was rubbed and made into paste. Nasal cavity was dilated using thudicum nasal speculum and lepa was applied over nasal polyp, which was removed using cotton tipped probe, after 30 minutes. Patient was observed for 10 minutes.

#### LAGHU SUTASHEKARA VATI

Laghusutashekaravati was administered internally in a dose of 1 tablet twice daily (morning and night) after food for 45 days. Laghusutashekara vati was prepared as per Rasa Tarangini reference. 2 part shodhit aswarnagirika and 1 part shunti choorna was mixed together and made into vati form by triturating with swarasa of ripened betel leaf. Size of each vati should be 2 ratti.

## RESULTS AND DISCUSSION

### Subjective parameters

**Table No 1&2: Result on severity of nasal blockage**

Parameter	N	X2	P Value	Remark
Nasal Blockage	30	46.857	<0.05 (0.0006)	S

Parameters	Negative Ranks			Positive rank			Ties	Total	Z Value	P value	Remarks
	N	MR	SR	N	MR	SR					
BT - AT	0	0.00	0.00	0	0.00	0.00	30	30	0.000	1.000	NS
AT - 15 <sup>th</sup> day	3	2.00	6.00	0	0.00	0.00	27	30	-1.732	0.083	NS
15 - 30 <sup>th</sup> day	7	4.00	28.00	0	0.00	0.00	23	30	-2.646	<0.05 (0.008)	S
30 <sup>th</sup> - 45 <sup>th</sup> day	6	3.50	21.00	0	0.00	0.00	24	30	-2.449	<0.05 (0.014)	S

**Table No 3&4: Result on severity of sneezing**

Parameter	N	X2	P Value	Remark
Nasal Blockage	30	66.472	<0.05 (0.0006)	S

Parameters	Negative Ranks			Positive rank			Ties	Total	Z Value	P value	Remarks
	N	MR	SR	N	MR	SR					
BT - AT	1	1.00	1.00	0	0.00	0.00	29	30	-1.000	0.317	NS
AT - 15 <sup>th</sup> day	8	4.50	36.00	0	0.00	0.00	22	30	-2.828	<0.05 (0.005)	S
15 - 30 <sup>th</sup> day	9	5.50	49.50	1	5.50	5.50	20	30	-2.530	<0.05 (0.011)	S
30 <sup>th</sup> - 45 <sup>th</sup> day	10	5.50	55.00	0	0.00	0.00	20	30	-3.162	<0.05 (0.002)	S

Table No 5: Result on size of polyp

	Negative Ranks			Positive rank			Ties	Total	Z Value	P value	Remarks
	N	MR	SR	N	MR	SR					
Size of polyp BT-AT	25	13.00	325.00	0	0.00	0.00	19	44	-5.000	0.0001	S

**Objective Parameter**

Table No 6 &amp; 7 : Result on Absolute eosinophil count

	MEAN	N	STD. DEVIATION	STD ERROR MEAN
AEC BT	612.27	30	99.331	18.135
AEC 45 <sup>TH</sup>	560.83	30	93.813	17.128

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	AEC BT- AEC 45 <sup>TH</sup> DAY	55.433	28.931	5.282	44.630	66.236	10.495	29	.0001

**Effect of treatment on nasal obstruction:**

It has been found that there is a significant result of treatments in reducing nasal obstruction. Friedman test (p value<0.05) showed improvement in mean after treatments.

Nasal obstruction was manifested due to presence of polyp and also inflammation of nasal mucosa. The drug which are present in intervention are gunja, gairika, shunti & tambula. All are having kaphavathara, sothahara properties which helps in reduction of size of the polyp and inflammation of nasal mucosa.

**Effect of treatment on sneezing:**

Statistically significant improvement was noticed in severity of sneezing with p value <0.05 in Friedman test. Sneezing manifested due to allergic responses of inflamed nasal mucosa. As the drugs present in intervention were capable in reducing the inflammation of nasal mucosa, allergic responses also came down.

**Effect of treatment on absolute eosinophil count:**

In all participants eosinophilia was there. The more common histopathological type of Nasal polyp is eosinophil dominated inflammation (63–95%) [7]. There is evidence for Eosinophil infiltration is there in pathogenesis of nasal polyp [8].

**DISCUSSION ON LEPA**

Ayurveda therapy suggests that *Lepa*, that is, the topical formulations should be gently rubbed in an upward or reverse direction of the hairs over the skin to make the action of application more quick and effective [9]. Due to this, the drug enters into the pores at the root of the hair through which the drug gets absorbed in the capillary network to minor veins and then further into systemic blood circulation. This ultimately results in the absorption of medicament and desired effects. As vessels nasal cavity is placed just below the mucosa action of drug becomes faster.

Liquid media or bases in *Lepa* play an important role in enhancing its action. These different media have special therapeutic potential and hence they may have a supportive role in increasing the efficacy of the formulation [10]. Here milk is the liquid medium used, which act as purifier of gunja seeds and also enhances the properties of the drug.

**DISCUSSION ON DRUG****Gunja:**

Gunjalepa is the intervention done in patient. Abrin is one of the active principle of Gunja which inhibit protein synthesis and causes cell destruction. The subunit A of abrin has got N-glycosidase and depurinating action of 28-S RNA of ribosome, thereby arresting protein synthesis [11]. So in turn enhances cell destruction so will help in reduction of size of nasal polyp. Gunja seeds having an evident

anti-inflammatory action [12] when used as external application. As it is having kaphavatahara properties, it will help in reduction of size of the polyp.

#### **Laghusutashekara vati:**

The contents include gairika, shunti and nagavalliswa rasa, having kaphavatahara, pachana properties and anti-inflammatory effects [13] which helps to reduce inflammation of nasal mucosa, inturn prevents further growth of polyp.

As allergy is the main cause for manifestation of nasal polyps, laghusutashekara vati in patients with nasal polyp will help in reducing the allergic reactions, inflammation of nasal mucosa and nasal polyp.

A review study on pathogenesis of nasal polyp reveals a complex network of processes in the formation of the polyps, including gross epithelial damage and repair reactions, eosinophil and macrophage cell infiltration, and tissue remodeling [14].

In this study after 45 days there was a significant fall in mean value with p value <0.05 in paired t test. Which suggests the drugs used are potent enough to reduce the infiltration of eosinophil.

#### **CONCLUSION**

Gunjalepa and Laghusutashekaravati is very much beneficial in the management of Nasarshas (Nasal polyp). Nidana and samprapti of Nasarshas is not clearly known. Various known, unknown, exogenous, or endogenous etiological factors are involved in the pathological process. There was statistically and clinically significant result in Nasavrodha, Kshawathu and size of the polyp after the course of treatment, with P>0.05. There was statistically significant reduction in AEC count after the course of treatment with P>0.05. This clearly shows that application of gunjalepa along with internal administration of Laghusutashekara vati is helpful in managing Nasarshas.

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