



The efficacy of *Rakta Apāmārgādi Dhooma Varthi* in the Management of *Nāsā Arśas* (Nasal Polyps)

KPP Peiris¹, HNKP Ranasinghe², GVP Samaranyake³

¹⁻³ Department of Shalya Shalakyā, Gampaha Wickramarachchi Ayurveda Institute, University of Kelaniya, Colombo, Sri Lanka

Abstract

Nasal Polyps represent a challenging diagnosis for the physician to treat. Management of nasal polyps forms a large part of the workload because the available treatment modalities having unsuccessful results with reincarnation of removed polypoidal tissues. Among the Ayurvedic treatments, fumigation treatment (*Doopana Kalpana*) was used for the management of Nasal polyposis. This study aimed to introduce a new treatment modality with new formulation, which named as *Rakta Apamargadi dhooma varti*. It had been practiced clinically but not scientifically evaluated.

In the clinical study 20 patients were selected between the age of 16-60 years irrespective of their sex, religion, occupation & habitat etc. They were divided randomly by lottery method into two groups. Group A was treated with *Rakta Apamargadi dhooma varti* as local treatment with internal medicine and Group B was treated only with internal medicine. All the patients were completed the treatment and follow up study.

According to analysis, fumigation treatment has been shown better result for nasal obstruction and reducing the size of the polypoidal sprouts. However, while considering the other symptoms, headache, running nose, sneezing and Itching of eyes, both groups have been shown significant results.

Keywords: rakta apamargadi dhooma varti, doopana kalpana, nasal polyposis

Introduction

Nāsa is one of the most important organ of *Urdhvajathru* and is the gateway to the *śiras* (head) and respiratory tract. *Nāsāarśas* is one among the thirty one *Nāsāgatharōgā* mentioned in ancient Ayurvedic classics specially found in *Suśruta samhita*. The *dośa* named *Vāta*, *Pitta* and *Kapha*, vitiating the *twak*, *māmsā* and *mēda* produce *Māmsaankura* (sprouts of muscles) of different shapes and they are called "*Arśas*"^[1].

When aggravated *dośa* localized in nose, produce *Nāsāarśas* can be correlated with the nasal polyps in allopathic medicine. Nasal polyps can affect people of any age but they are most common in adults over the age of 40 years and rare twice as likely to affect men as women, but it rarely affects the children under the age of 10 years^[2]

Usually *Nāsāarśas* patients present with the signs and symptoms such as nasal obstruction, nasal congestion, sneezing (*kśawathu*), post nasal drip, running nose, facial pain, reduced ability to smell (hyposmia) or loss of smell (anosmia), loss of taste, itching around the eyes, mass protruding from the nostril, bad smell from the nose and headache (*śirasūla*).

In general population the prevalence of nasal polyps is considered to be around 4%^[3]. It's also a considerable amount and currently higher because of increasing the effect of allergic conditions due to environmental pollutions. According to allopathic system of medicine, the standard treatment for nasal polyps is intranasal steroids which in troublesome cases, may follow a short course of oral steroids. Surgery is reserved for extremely large polyps and those who failed with medical treatment.

While all treatments offer some benefit, there is no gold standard^[4]. Ayurvedic classics reveal that the therapeutic

measures adopted in the management of *Nāsāarśas*, number of treatments such as internal medicaments, causative alkali, cautery and sharp instruments^[5]. This is a localized condition and it is most suitable for treating with the preparations which have local effects.

The fumigation treatment could be used for the management of the local diseases. The fumigation carried out by using the fine powder of selected dry herbs with the intention of disinfection is called *dhooopana* (*Dhooopanakalpana*-preparation process of fumigation). It can be performed on the diseases of wounds, *karna*, *nasa*, *guda*, *yoni*, *gathra* (on whole body) arsa. Among those fumigation therapies on nasal diseases include, *nāsāsōpha*, *pīnasa* (allergic rhinitis) and *nasaarsa*. Fumigation treatment can be apply in nasal diseases, through *dhoomavarti*. *Rakta Apamargadi dhooma varti* was consisted with roots of *Rakta Apāmārga* (*Cyathula prostrata*), *Vacha* (*Acorus calamus*), roots of *Punarnava* (*Boerhavia diffusa*) and *Dēvadāra* (*Cedrus deodar*).

After studying the classical references and the available treatment modalities, this study was designed to evaluate the effect and efficacy of *Rakta apamargadi dhoomavarti* as successful local treatment modality in the management of *Nasaarsha*.

Materials and Methods

Method of preparation of *Dhoomavarti*

Equal quantities of fine powders of dried roots of *Rakta Apāmārga* (*Cyathula prostrata*), *Vacha* (*Acorus calamus*), roots of *Punarnava* (*Boerhavia diffusa*) and *Dēvadāra* (*Cedrus deodar*) were taken and grounded with the suitable amount of *Nirgundi Taila* and made in to a paste. This paste was applied on a cleaned piece of cotton cloth and made by

rolling as *Dhoomavarti*. Dried *dhoomavarti* was used for the fumigation therapy.

Selection of Patients

For the clinical study, the patients attending to the Out Patient Department of *Shalakya* at Gampaha Wickramarachchi Ayurveda Hospital with the. Signs and symptoms of *Nasaarsha* (Nasal polyps) were registered randomly irrespective of their sex, religion, occupation, habitat etc. Total 20 patients were recruited for the study. Patient's information sheet was prepared and informed written consent was taken from all the registered patients individually.

Table 1: Treatment Plan for each Group

Group	Treatment	Dose
Group A: 10 patients of Nāsāarśas were treated with fumigation therapy	Fumigation treatment (<i>Choorna</i> with <i>Nirgundi Taila</i>)	2-3 minutes per each time for each nostril (2 times per a day)
	<i>Thāmalakyādi pānta</i>	15grms per each time for phanta kashaya (10am / 4pm)
	<i>Sīthārāma Vati</i>	125mg 02 <i>vati</i> for each time with <i>pānta</i> (10am / 4pm)
Group B: 10 patients of Nāsāarśas were treated only with internal medicine.	<i>Thāmalakyādi pānta</i>	15 grms per each time for phanta kashaya (10am/4pm)
	<i>Sīthārāma Vati</i>	125 mg 02 <i>vati</i> for each time with <i>pānta</i> (10am / 4pm)

Duration: Two weeks

Follow up one month (after completion of 2 weeks treatment period)

Inclusion criteria

Patients having signs and symptoms of Nasal polyps. Age between 16 - 60 years were selected for the study. Chronicity less than 05years. Who were not undergone for surgical treatment.

Exclusion criteria

- Patients below 16 years and above 60 years of age were excluded.
- Those who have chronic debilitating disease, psychiatric disorders, Diabetes Mellitus, Hypertension were excluded from the study.
- The patients who were presented with symptoms of severe nasal polyps that are requiring immediate surgery were excluded.
- Those who are not indicated for the fumigation treatment, such as the patients with in the case of poisoning, *Raktapitta*, burning sensation of the body, abdominal enlargement with dropsy (*Udara*), infants, old, feeble patients, pregnant and lactation mothers were excluded from the study.
- Those who are taking any other medicine which can alter the results were excluded.

Investigations

- White Blood Cell count / Differential count

Method of Fumigation

For the fumigation treatment patients were advised to follow the given instructions,

- Patients were advised to do fumigation for two times per day in morning and evening, two or three times per each nostril.
- For prevention of spreading fumes except to the nostrils. *Rakta apamargadi dhoomavarti* should be fired and allowed for fumigation to the each nostril

Sampling technique

A total of 20 registered patients were divided into two groups (Group A -10 patients, Group B -10 patients) using the random sampling technique by lottery method to maintain the uniformity in both groups.

Grouping and Posology

Group – A, 10 patients were treated with fumigation therapy + internal medicine for 02weeks

Group – B, 10 patients were treated only with Internal medicine for 02 weeks.

through horn like structure prepared by hard board.

Instructions to the Patient

All the patients were advised to follow the instructions during therapy and during follow-up period.

- Prevent by using any other treatment for *Nasaarsha* during this period.
- Bathing time was on morning hours up to 12.00 noon.
- Instructions regarding *pathya-apathya* was given.

Assessment criteria

- Subjective parameters: The improvement on the basis of relief in signs and symptoms of the disease was assessed by using scoring system.
- Nasal obstruction (*Nāsāvarodha*)

By Anterior Rhinoscopic examination

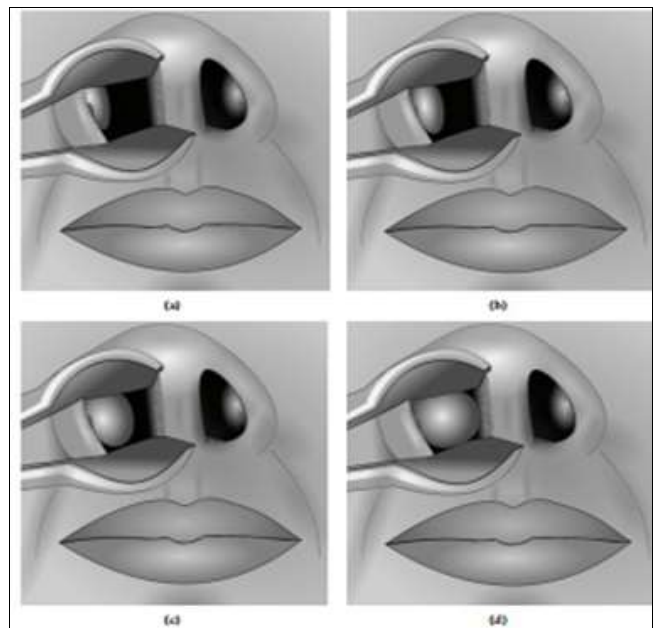


Fig 1: Covering of total airway space by polypoidal sprout

Grade 0 - no obstruction

Grade 1 - 0- 25% total airway space (a)

Grade 2 - 26%-50% total airway space (b)

Grade 3 - 51%-75% total airway space (c)

Grade 4 - 76%-100% total airway space (d)

▪ By assisting special symptom wise questioner called nasal obstruction symptom evaluation (nose) instrument

1. Nasal congestion or stiffness
2. Poor sense of smell
3. Snoring
4. Nasal blockage or obstruction (Feel or not)
5. Trouble in breathing through nose
6. Trouble during sleeping
7. Having breathe through mouth
8. Unable to get enough air through the nose during exercise or exertion
9. Feeling panic that patient cannot get enough air through the nose
10. Embarrassment around friends and co-workers because patient in trouble breathing through the nose

0- No symptoms

1- Mild - 1-3 symptoms

2- Moderate – 4-6 symptoms

3- Moderately severe – 7-8 symptoms

4- Severe – more than 8 symptoms

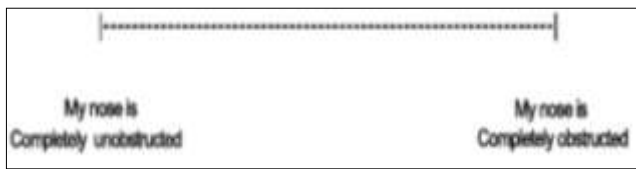


Fig 2: Visual Analogue scale [10]

Sneezing (<i>Kṣvathu</i>)	Score
Nill - no symptom	0
Mild - 1-5 bouts	1
Moderate - 6-10 bouts	2
Moderately Severe - 11-15 bouts	3
Severe – >15 bouts	4

Headache (*Sirasula*)

Nill–no symptom	0
Mild -Tolerable, intermittent, within short time duration,	1
Moderate – Mildly tolerable, 1/2hr, Sometime pain killers used.	2
Moderately Severe - Intolerable, >01hr, pain killers should be used.	3
Severe - Severely intolerable, pain killers definitely should use, vomiting may be present.	4

Running nose (*Rhinorrhea*)

Nill - no symptom	0
Mild – handkerchief not wet completely	1
Moderate – handkerchief completely wet	2
Moderately Severe – Highly significant, more than one handkerchief need	3
Severe – very highly significant, >02 handkerchiefs need	4

Itching of eyes (*Akṣikañdu*)

Nill - no symptom	0
Mild– remained few minutes, again appeared	1

Moderate–within 10-15 minutes, significantly present 2

Moderately Severe - Highly significant, appeared during whole day. 3

Severe - Highly significant, difficult to open eyes, effect on day today work 4

Objective parameters

The size of the nasal polyp by observing the Pre and Post photographs

Overall effect of therapy

The total effect of therapy was assessed by considering the overall improvement in signs and symptoms,

- Complete remission: 100% relief in signs and symptoms and no recurrences in follow up study
- Marked improvement: More than 75% relief in signs and symptoms was considered as marked improvement
- Moderate improvement: 50%-75% relief in signs and symptoms was considered as Moderate improvement
- Mild improvement: 25% - 49% relief in signs and symptoms was considered as Mild improvement
- Unchanged: Less than 25% relief in signs and symptoms was noted as unchanged.

Statistical analysis

The information gathered on the basis of observations and results were subjected to statistical analysis.

Effect of therapies

Group A

In clinical features, decrement in mean values in between pre-treatment stage to post treatment period in nasal obstruction; observing by Anterior Rhinoscopic examination from 2.60 to 0.70(Figure 4) and Observing by NOSE instrument questioner it was obtained decremented slope from 2.70 to 0.60(Figure 5). Sneezing was obtained decrement slope from 2.90 to 1.10(Figure 6), while Headache was obtained from 2.30 to 0.50(Figure 7). Running Nose started in 2.80 value at the pre-treatment period and it was declined to 1.30(Figure 8) at the post treatment period. Itching of Eyes was obtained from 1.90 to 0.60(Figure 9). It was found that their difference in mean rank value from above two stages which were significant at 95% confidence interval (P < 0.05).

Group B

In clinical features, decrement in mean values in between pre-treatment stage to post treatment period in nasal obstruction; observing by Anterior Rhinoscopic examination from 2.40 to 2.30(Figure 4) and Observing by NOSE instrument questioner was obtained decrement from 3.00 to 2.70(Figure 5). It reveals that there was not highly significant decrease of the values among the mean ranks (P > 0.343) / (P > 0.081). Sneezing was obtained decrement slope from 2.90 to 1.80(Figure 6), while headache was obtained from 2.10 to 1.40(Figure 7). Running Nose started at 2.20 mean value at the pre-treatment period and it was declined to 1.40(Figure 8) at the end of the treatment period. Itching of eyes was obtained decrement from 1.90 to 1.50(Figure 9). However, it was found that their difference in mean rank values from above stages which were significant at 95% confidence interval (P < 0.05).

The size of the nasal polyp by observing the Pre and Post photograph

Group A		Group B	
BT	AT	BT	AT
Moderate – 40%	Normal – 80%	Normal – 60%	Normal – 10%
Severely – 50%	Moderate – 20%	Severe – 40%	Moderate – 70%
Obstructed – 10%			Severe – 20%

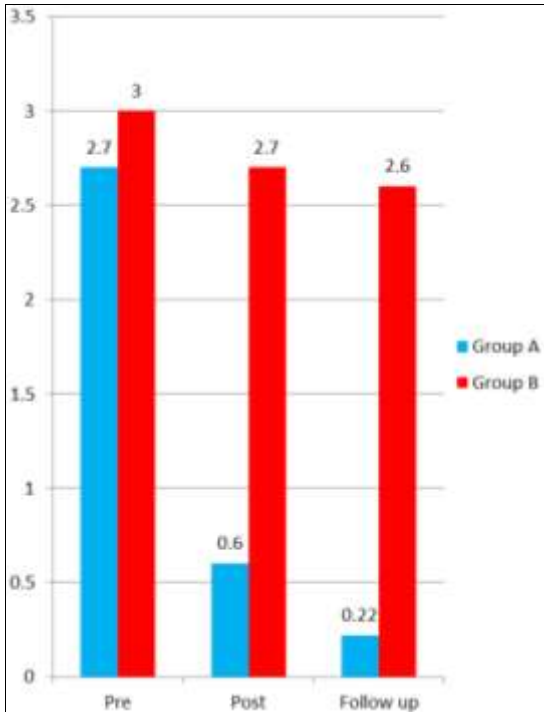


Fig 4: Effect on Nasal Obstruction

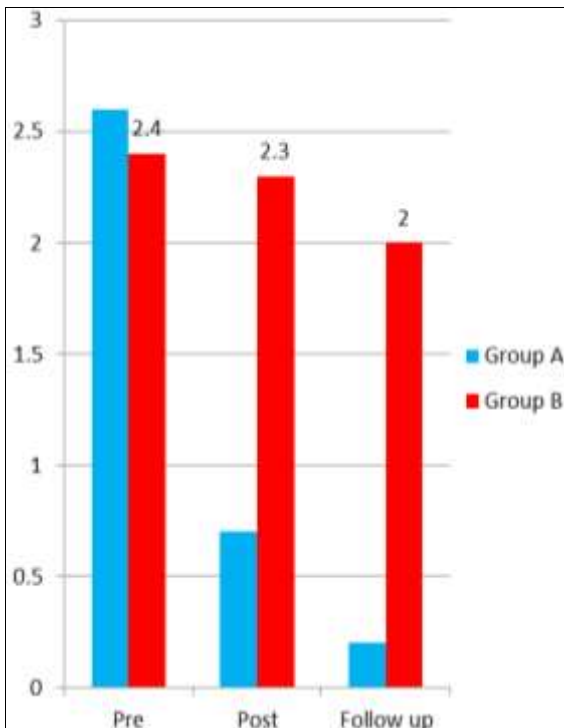


Fig 5: Effect on Nasal Obstruction

(Nose instrument questioner)

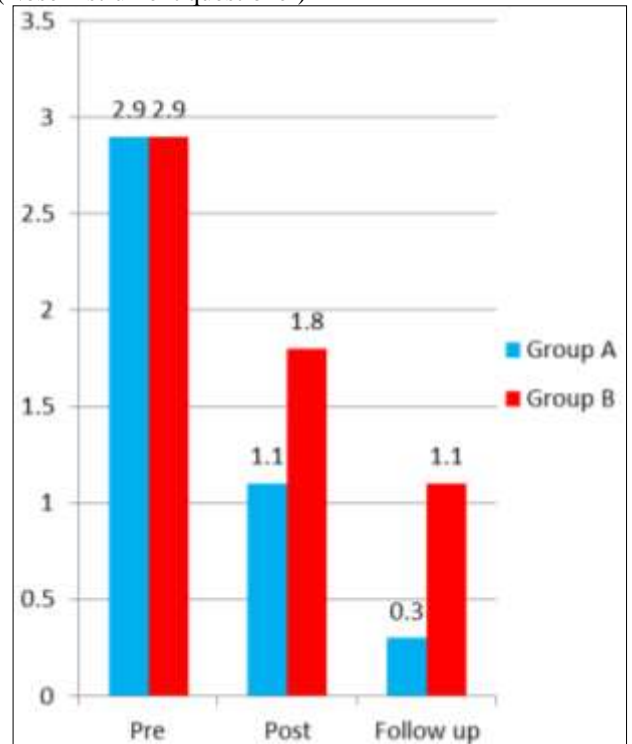


Fig 6: Effect on Sneezing

(By Anterior Rhinoscopy)

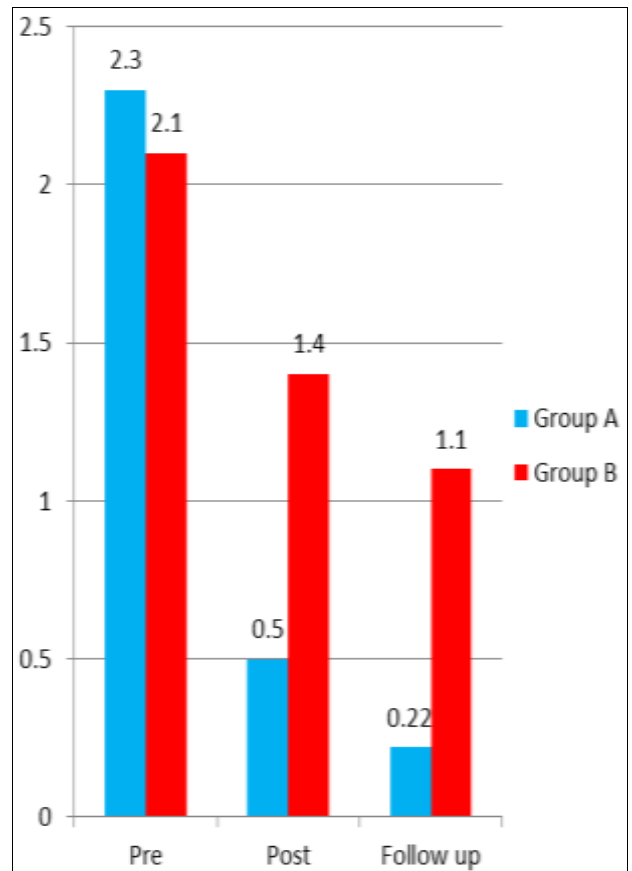


Fig 7: Effect on Headache

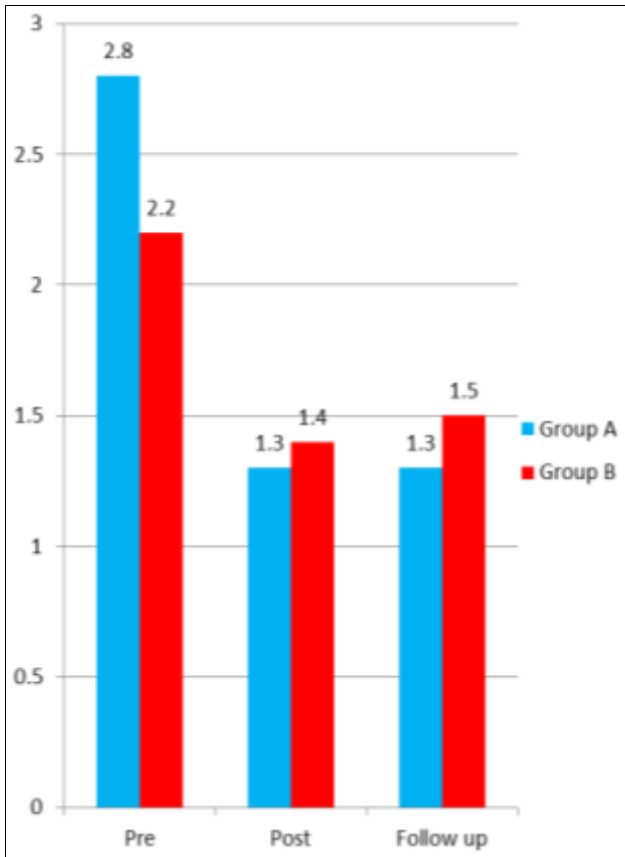


Fig 8: Effect on Running Nose

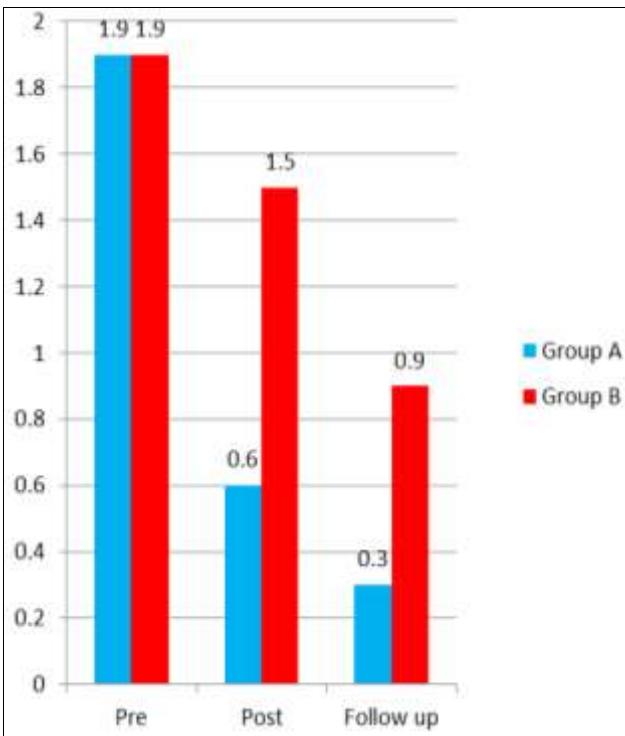


Fig 9: Effect on Itching of eyes

Overall effect of therapy

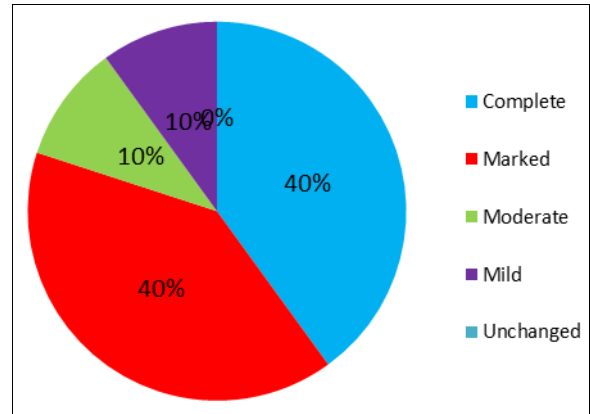


Fig 10: Total effect of therapy in Group A

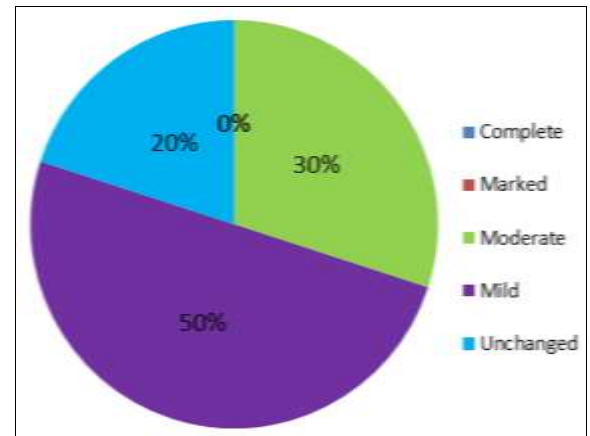


Fig 11: Total effect of therapy in Group B

While considered overall effect of therapy in Group A complete and Marked improvements were observed in same percentages respectively i.e. (40%) of patients, but none of the patients were found in both categories Group B. Further moderate and mild categories of improvement found in 10% of patients in Group A. But in Group B majority of patients were observed as mild improvement category i.e. 50% and 30% of patients only found under moderate improvement. Further it was found 20% of patients under unchanged category too.

Discussion

Mode of action of Rakta Apāmārgādi Dhooma vartī

Most of the ingredients of the *Rakta Apāmārgādi dhooma vartī* are *Katu, Tikta Rasa, Laghu, Ruksha Guna* predominantly following with *Tikshna and Snigdha Guna* and having *Ushna Veerya, Katu Vipaka, Kapha Vata shamaka, Shotahara, shrotoshodhana, Lekhana Pitta shamaka* properties. All these properties are useful to remove the *Srotorodha* and promote the expulsion of vitiated *Kapha Dosha* from the sinuses.

From these properties, it has *Shirovirēchana*, *Vamanakāra*, *Āma doshahara*, *Ruchivardhaka* properties cause removing *Āma visha* and promote the proper formation of *Dhātu* which increases the *Vyādhikshamatva* (immunity). *Shotahara* and *Lekhana* properties provide the scraping out of the edematous polypoidal masses along with the action of the *Shirovirechana* which reduces the vitiated *Kapha dosha* while *Vedanasthapana* and *Vishaghna* properties provide symptomatic relief. Anti-inflammatory action of the ingredients reduce the inflammatory process in the nose and paranasal sinus. Antibacterial and antifungal activities arrest the secondary infection and prevents the recurrence of the disease.

Discussion on Clinical study

Observation of Analyzed data of signs and symptoms

In nasal obstruction, Group A showed better results than Group B. Nasal polyp is a localized condition and it should be treated with a suitable local treatment. Fumigation treatment was the best treatment for removing polypoidal tissues with the *Shotahara*, *srotoshodhana*, *Lekhana*, actions of the drugs. Sneezing was continuously reduced within the treatment period and follow up period in both groups. But there is better results have been seen in Group A because of dosa elimination through *srotoshodhana* karma of the particular drug.

On comparing the results of Headache and Itching of eyes within the groups, Group A showed better (highly significant) results in both symptoms and the difference is

statistically significant. Highly significant results in Group A shows that effective of the specific drug with the actions such as *Shirovirēchana*, *vedanastapana*, *Kapha and Pitta shamaka*. Running nose was not completely cured. It was stable from the post treatment stage up to follow up period in Group A and it was increased within this period in Group B. This could be due to having contact with the predisposing factors like *dhooma dooli sēvana* and it was clearly proved that the atmospheric pollutants cause to increase the pathogenesis of the disease. Recurrence may be more common in Group B because lack of local therapy shown by insignificant results in nasal obstruction.

Observation of the Size of the Nasal polyp

By Anterior Rhinoscopic examination, from Group A patients better results (80%) were observed than Group B patients because of the local effect of the drug which was having, *Kapha Vata shamaka*, *Shotahara*, *shrotoshodhana*, *Lekhana*, *Pitta shamaka* and anti inflammatory qualities and they are important to reduce the locally aggravated dosha. 60 years old male patient who had come to shalaky clinic at Gampaha Wickramarachchi Ayurveda Hospital complained about bilateral nasal obstruction with running nose, sneezing specially in the morning and headache. Anterior Rhinoscopic examination was shown that moderate sized polyp in his right side and severe sized polyp in the left side. After the treatment (after two weeks) it was shown that the polyp was not found (normal) in right side and moderate in left side.



Pre treatment - nasal polyp in right side



Pre treatment - nasal polyp in left side



Fig 10

Conclusion

Comparison to Group B, Group A has been shown better results on Nasal Obstruction. But considering the other symptoms including sneezing, headache, running nose and itching of eyes both groups have been shown significant prognosis. But finally it can be concluded that fumigation treatment is most effective for treating Nasal polyps as a local therapy. Further this study has been proved the necessity of a local treatment in nasal polyp.

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