ISSN: 2322 - 0902 (P)
ISSN: 2322 - 0910 (O)

International Journal of Ayurveda and Pharma Research

Research Article

EFFECT OF *JALA NETI* AND *SOOPYA YOOSHA* IN ALLERGIC RHINITIS

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Article info

Article History:
Received: 29-12-2023
Accepted: 16-01-2024
Published: 04-02-2024

KEYWORDS:
Allergic rhinitis, *Pratishyaya, Jalaneti, Soopya Yoosha.*

ABSTRACT

Allergic rhinitis is a common health problem affecting immune system. It is an allergic response to specific allergens causing the inflammation of nasal mucosa. Allergic rhinitis is a major risk factor for poor asthma control and affects quality of life. Cardinal symptoms include nasal congestion, rhinorrhea, and pruritis of the nose and eyes. Patients who suffer from allergic rhinitis sustain significant morbidity and loss of productivity. The symptoms of allergic rhinitis can be co-related with *Lakshanas* of *Pratishyaya* mentioned in Ayurveda. This study aimed at yoga therapy and diet as an efficient treatment protocol for the disease. *Jalaneti* procedure which was mentioned in yoga, helped in preventing and managing upper respiratory tract infections. Since ancient time *Yoosha* had been suggested as *Pathya* for both healthy and diseased people. *Soopya yoosha* containing *Mudga* and *Moolaka* is a dietary preparation having *Pratishyayahara* property. In present study *Jalaneti* and *Soopya yoosha* were used in patients of allergic rhinitis.

INTRODUCTION

Allergy is an altered immune reaction to an allergen[1]. This immunologically mediated disease may be local or systemic. In allergic rhinitis allergens stimulate the production of IgE antibodies by plasma cells which are regulated by T suppressor lymphocytes and T helper cells. This in turn leads to disruption of mast cells which release various mediators causing rhinorrhoea, mucosal edema, itching and sneezing. Allergic rhinitis constitutes more than 50% of all allergies in India and its incidence is steadily increasing worldwide. Allergens are the causal substances of allergic rhinitis. The typical allergens are pollens, moulds, mite, house dust and animal epithelia. Allergic rhinitis may lead to complications like sinusitis, nasal polyps, otitis media, bronchial asthma etc. The treatment options available in modern medicine are anti-histamines, cortico steroids, nasal decongestants etc. Many of the anti-histamine group of drugs produces sedation whereas cortico steroids can cause systemic side effects. Nasal decongestants have a temporary action and chance of recurrence are more. So to avoid these complications of western medicine a simple treatment module which can overcome the symptoms and recurrence of disease can be planned.

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Quick Response Code

https://doi.org/10.47070/ijapr.v12i1.3083

Pratishyaya is a *Nasa roga* mentioned in Ayurveda which have symptoms similar to allergic rhinitis. *Pratishyaya* is one among the *Pranavaha srotojanya vikaras.* The causative factors of *Pratishyaya*[2] include exposure to wind, smoke, dew and drinking unaccustomed water. Improper management of *Pratishyaya* leads to complications like *Andhata*, *Badhirata, Ghrana nasa* etc.

The *Shatkarmas* mentioned in *Hathayoga pradipika* and *Gheranda Samhita* are the purifactory processes which are both preventive and curative in nature. Among six purificatory procedures, *Jalaneti*[3] is the nasal cleansing technique. Nasal hygiene is important as it is linked to many conditions like allergic rhinitis, sinusitis etc. In *Jalaneti* lukewarm saline water is used which leads to vasodilatation and has main role is the drainage of the mucous secretion and helps to clear out the nasal obstruction.

It becomes easy to cure disease if one follows proper diet, therefore, food is termed as a *Mahabhaishajya*[4]. *Yoosha* being easy to prepare, can be adopted easily as routine diet for long time. Disease

specific *Yooshas* are suggested which makes the treatment much more effective. *Soopya yoosha* containing *Mudga* and *Moolaka* is a dietary preparation having *Pratishyayahara* property which is mentioned in *Kaiyadeva nighantu*.[5] The interventions selected here are cost -effective and free from side effects.

Thus this research can be a valuable thing to the society. This holistic approach combining *Jala neti* practice along with administration of *Soopya yoosha* would be an effective practical approach in the management of allergic rhinitis in population of age group 15-30 years.

AIMS AND OBJECTIVES

1. To assess the effect of *Jala neti* and *Soopya yoosha* in allergic rhinitis.
2. To assess the effect of *Jalaneti* and *Soopya yoosha* on Total Nasal Symptom Score and Total Ocular Symptom Score of allergic rhinitis.

MATERIALS AND METHODS

Subjects with allergic rhinitis satisfying the inclusion criteria reported in the OPD, Govt. Ayurveda College, Tripunithura. This study is a single group pre and post-trial with a sample size of 25 patients.

Inclusion Criteria

Subjects having signs and symptoms of allergic rhinitis within the age group of 15 to 30 with written informed consent were included in the study.

Exclusion Criteria

Subjects with severe nasal obstruction like DNS, adhesion of nasal cavity, nasal polyps, those who have done any nasal surgeries within last 6 months and those with chronic systemic disorders were excluded from the study.

Interventions

Jala neti and *Soopya yoosha*

Jalaneti was practiced in the following order

Day	*Jalaneti*
1st – 15th day	7.30 a.m
19th day	7.30 a.m
23rd day	7.30 a.m
30th day	7.30 a.m

Soopya yoosha

- Ingredients: *Mudga* and *Moolaka*
- Dosing schedule: 150ml *Yoosha* at 6.00 pm
- Duration: One month

Changes in symptoms were noted on 0th, 16th, 31st day and follow up was done on 61st day.

Assessment Criteria

Assessment was done on the basis of improvement in the clinical condition of the patient i.e., relief in signs and symptoms. Scoring was done on the basis of

- Total Nasal Symptoms Score (TNSS)
- Total Ocular Symptoms Score (TOSS)

Total Nasal Symptoms Score is a brief questionnaire to evaluate the severity of main symptoms of allergic rhinitis. Maximum score is 12.

TNSS			
Symptoms	**None**	**Mild**	**Moderate**
Rhinorrhoea	0	1	2
Nasal Congestion	0	1	2
Nasal Itching	0	1	2
Sneezing	0	1	2

Total Ocular Symptom Score are ocular symptoms seen in Allergic rhinitis. Maximum score is 16

TOSS			
Symptoms	**None**	**Some time**	**Half time**
Itching of eyes	0	1	2
Redness of eyes	0	1	2
Watering from eyes	0	1	2
Swelling of eyes	0	1	2

Statistical Analysis

The data was analyzed statistically using Repeated measures Friedman's test.

OBSERVATIONS

Total patients in the study sample are classified into 3 groups on the basis of age i.e age group of 15-20 years, age group of 20-25 years and age group of 25-30 years. In the present study, the majority of the patients, i.e., 44% were between age group 25–30.The male female ratio was almost equal. Among them 68% had a positive family history of allergic rhinitis. Maximum number of subjects were having *Vatakapha prakriti*. Among 25 subjects 4% of subjects had score 11, 12% had score 10, 16% had score 9, 28% had score 8, 24% had score 7, 12% had score 6 and 4% of subjects had score 4 of TNSS before treatment. Also 4% of subjects had score 11, 8% had

score 10, 12% had score 9, 16% had score 8, 32% had score 7, 20% had score 6, 4% had score 5 and 4% of subjects had score 4 of TOSS before treatment.

RESULTS

Effect of interventions on symptoms of allergic rhinitis

Analysis Based on Total Nasal Symptom Score (TNSS)

Table 1: Frequency of distribution of Total Nasal Symptom Score (f = frequency), (% = percentage)

	0th day		16th day		31st day		61st day	
Scores	**(f)**	**(%)**	**(f)**	**(%)**	**(f)**	**(%)**	**(f)**	**(%)**
11	1	4%	0	0	0	0	0	0
10	3	12%	0	0	0	0	0	0
9	4	16%	0	0	0	0	0	0
8	7	28%	0	0	0	0	0	0
7	6	24%	0	0	0	0	0	0
6	3	12%	3	12%	0	0	0	0
5	0	0	3	12%	0	0	0	0
4	1	4%	10	40%	0	0	0	0
3	0	0	6	24%	3	12%	2	8%
2	0	0	3	12%	7	28%	7	28%
1	0	0	0	0	9	36%	11	44%
0	0	0	0	0	6	24%	5	20%

Among 25 subjects 4% of subjects had score 11, 12% had score 10, 16% had score 9, 28% had score 8, 24% had score 7, 12% had score 6 and 4% of subjects had score 4 before treatment. On 16th day of treatment those with scores 11, 10, 9, 8 and 7 became nil. 12% each had scores six and five, 40% had score four, 24% had score three and 12% had score two. On 31st day of treatment those with scores from eleven to four became nil. Four is the minimum score needed to diagnose allergic rhinitis. During follow up on 61st day also these subjects showed no recurrence of symptoms. Hence the intervention seemed very effective.

Analysis Based on Total Ocular Symptom Score

Table 2: Frequency of distribution of Total Ocular Symptom Score (f = frequency), (% = percentage)

	0th day		16th day		31st day		61st day	
Scores	**(f)**	**(%)**	**(f)**	**(%)**	**(f)**	**(%)**	**(f)**	**(%)**
11	1	4%	0	0	0	0	0	0
10	2	8%	0	0	0	0	0	0
9	3	12%	0	0	0	0	0	0
8	4	16%	0	0	0	0	0	0
7	8	32%	0	0	0	0	0	0
6	5	20%	2	8%	0	0	0	0
5	1	4%	6	16%	1	4%	0	0
4	1	4%	7	16%	2	8%	0	0
3	0	0	7	28%	4	16%	4	16%
2	0	0	2	8%	6	24%	5	20%
1	0	0	1	4%	8	32%	11	44%
0	0	0	0	0	4	16%	5	20%

In this study among 25 subjects 4% of subjects had score 11, 8% had score 10, 12% had score 9, 16% had score 8, 32% had score 7, 20% had score 6, 4% had score 5 and 4% of subjects had score 4 before treatment. On the 16th day of treatment those with scores 11, 10, 9, 8, and 7 became nil. 8% had score 6, 16% had score 5, 16% had score 4, 28% had score 3, 8% had score 2 and 4% had sore 1. On 31st day of treatment those with scores from eleven to six became nil. During follow up on 61st day also these subjects showed no recurrence of symptoms. Hence the intervention seemed very effective.

Table 3: Effectiveness of treatment in reducing TNSS

TNSS	Mean	SD	Median	Mean Rank	Chi Square	P-value
0th day	7.88	1.563	8	1	66.924* (3, N = 25)	<.001
16th day	3.88	1.166	4	2		
31st day	1.28	0.979	1	3		
61st day	1.24	0.879	1	4		

The mean values at 0th, 16th, 31st and 61st days are 7.88, 3.88, 1.28 and 1.24 respectively. The calculated Chi-Square value is 66.924 with p value <0.05. So, there is a significant difference in Total Nasal symptom score in between the treatment stages.

Table 4: Effectiveness of treatment in reducing TOSS

TOSS	Mean	SD	Median	Mean Rank	Chi Square	P-value
0th day	7.4	1.632	7	1	62.004* (3, N = 25)	<.001
16th day	3.84	1.247	4	2		
31st day	2	1.443	2	3		
61st day	1.32	0.988	1	4		

The mean values at 0th, 16th, 31st and 61st days are 7.4, 3.84, 2 and 1.32 respectively. So, there is a significant difference in Total ocular symptom score in between the treatment stages.

DISCUSSION

Discussion on Selection of Topic and Interventions

Due to increased environmental pollution and busy life allergic rhinitis is a common disease in this present era. It is a common health problem affecting immune system. It is an allergic response to specific allergens causing the inflammation of nasal mucosa. cardinal symptoms[6] include nasal congestion, rhinorrhea, sneezing and pruritis of the nose and eyes. Worldwide prevalence of allergic rhinitis is estimated as 9% to 42% and constitutes more than 50% of all allergies in India.

Allergic rhinitis can be correlated to *Pratishyaya*. If not treated timely it will give rise to severe condition called *Dushta pratishyaya* which is very difficult to treat and causes lot of complications like *Badhirya, Kasa, Andhata, Agnisada, Ghrananasha, Shotha* and *Nayanamaya. Pratishyaya* by word itself indicates that it is a recurrent attack and can precipitate even due to minute etiological factors.

Increase in adverse effects are associated with usage of modern medicines like antihistamines, nasal decongestants, cortico steroids etc. Avoidance of allergens is the optimum treatment which is rarely possible totally. Topical use of daily nasal decongestants[7] can lead to rhinitis medicamentosa due to the rapid development of the rebound vasodilation. Systemic decongestants are more suitable for long term use but occasionally make the patient feel unwell. The main side effect of oral anti-histamine is drowsiness and dryness of mucous membranes. Though corticosteroids[8] play an effective role in the treatment of AR they have side effects like epistaxis, nasal irritation, nasal septal perforation etc.

Hence there is a need for a non-pharmacological, low-cost, simple and effective mode of treatment to overcome the symptoms of this disease and improve the quality of health. Considering all these facts this study was planned to find out the effect of *Jala neti* and *Soopya yoosha* in the management of allergic rhinitis. *Hatha yoga* mentions *Shatkarmas* which are the six purification practices to remove the excess *Kapha* and *Medas* from the body. *Shatkarmas* are *Dhauti, Basti, Neti, Trataka, Nauli* and *Kapalbhati*. *Neti* is one among *Shatkarmas* and it is a technique used to cleanse the nasal passage. *Jalaneti* is done with lukewarm saline water using a *Jalaneti* pot. Since ancient time *Yoosha* has been suggested as *Pathya* for both healthy and diseased person. Here a therapeutic *Soopyayoosha* mentioned in "*Kaiyadeva nighantu Kritanna varga*" is selected for the proper management of allergic rhinitis. *Soopya yoosha* containing *Mudga* and *Moolaka* is a dietary preparation having *Pratishyayahara* property.

Probable mode of action of *Jala Neti*

Jala neti helps to clear out histamine, leukotrienes and other inflammatory substances from nasal passages which trigger allergies. Besides clearing the mucus that results from allergic reaction, it has a soothing effect on irritated nasal passages. The addition of salt ensures the osmotic pressure of the water is equal to that of the body fluids, thereby minimizing any irritation to the mucous membrane. The lukewarm saline water[9] used in *Jalaneti* leads to vasodilatation and has main role in the drainage of the mucous secretion and helps to clear out the nasal obstruction. So it improves sensitivity of the olfactory nerve, helping to restore lost sense of smell and removes foreign particle in the nasal cavity. *Jalaneti* is a chief *Shodhana* procedure because it can expel the deep seated *Doshas* and can cure it of its root. It also increases blood circulation and functional efficiency of the nasal mucosa. By the systematic practice of *Jala*

neti, secretory and drainage mechanisms of the entire ear, nose and throat area are well maintained. This helps to keep the symptoms of allergic rhinitis like sneezing, rhinorrhoea, nasal congestion, itching of nose and ocular symptoms under control.

Probable Mode of Action of *Soopya yoosha*

Soopya yoosha mentioned in *Kaiyadeva nighantu* contains *Mudga* and *Moolaka* and is having *Arochaka, Jwara, Kasa, Praseka, Medas, Galagraha* and *Pratishyaya hara* properties. *Mudga* and *Balamoolaka* are mentioned among *Nityaseevaneeya dravyas*. *Mudga* is *Laghu, Rooksha, Seetha, Kasaya, Swadu rasa, Katu vipaka* and have *Kaphapittahara* properties. *Mudga*[10] is *Dristi prasadana, Varna, Pusti, Balaprada* and *Jwaraghna*. Among all legumes it is the best in the form of soup as per Ayurveda. *Moolaka*[11] is *Laghu, Ushna, Katuvipaka, Tridosahara* and specially indicated in *Nasarogas*. Intake of *Moolaka yoosha* is said to be beneficial in *Pratishyaya*. Green gram is one among the pulses with excellent source of high quality protein having high digestibility. It is also a good source of riboflavin, thiamine and vitamin C. Radishes are rich in anti-oxidants and minerals like calcium and potassium. It is rich source of Vit. C; hence has ability to improve immune system and thereby protect from common cold and cough. Hence the ingredients of *Soopya Yoosha* namely *Mudga* and *Moolaka* play a significant role in enhancing immunity or *Vyadhikshamatva* of a person along with management of symptoms of allergic rhinitis.

CONCLUSION

The present study was focused on the evaluation of the effect of *Jala neti* and *Soopya yoosha* in Allergic rhinitis. After completing the study, the following facts can be concluded.

- Allergic rhinitis is one of the most common inflammatory disorders of nose caused by allergens such as pollens, molds, insects, animals, house dust etc. The most common symptoms are rhinorrhea, sneezing, nasal congestion, itching of nose and redness of eyes.
- The symptoms of Allergic rhinitis can be correlated to *Pratishyaya* mentioned in Ayurvedic classics.
- *Jala neti* is a technique used by yogis for cleaning and opening nasal passages and hence prevent and manage respiratory diseases. *Soopya yoosha* mentioned in *Kaiyadeva nighantu* had *Kapha medo hara, Kasahara, Pratishyayahara, Aruchihara* and *Jwarahara* properties. This *Yoosha* was found very effective in reducing the symptoms of *Pratishyaya*.
- So *Jala neti* and *Soopya yoosha* gave a significant (<0.05) result in reducing the frequency of symptoms of allergic rhinitis which was assessed through Total Nasal Symptom Score (TNSS) and Total Ocular Symptom Score (TOSS).

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Cite this article as:
Divya. T, Jyothi. R, Nafeesath Beevi. A. Effect of Jala Neti and Soopya Yoosha in Allergic Rhinitis. International Journal of Ayurveda and Pharma Research. 2024;12(1):32-36.
https://doi.org/10.47070/ijapr.v12i1.3083
Source of support: Nil, Conflict of interest: None Declared

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