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Research Article

EFFECT OF *PIPPALYADI MAMSARASA* AND *KAPALABHATI* IN RECURRENT ALLERGIC RHINITIS

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ABSTRACT

Allergic rhinitis is an IgE mediated immunologic response of nasal mucosa to air born allergens and is characterized by watery nasal discharge, nasal obstruction, sneezing and itching in nose. Recurrence of allergic rhinitis is more common now a days. Etiological factor behind allergic rhinitis is seasonal or perennial allergens. Genetic predisposition also plays an important part. Allergic rhinitis can be included under *Pratishyaya* in Ayurveda. Various medications are available in contemporary science; no drug ensures complete cure and chances of recurrences are high. In Ayurveda dietary preparation and yoga have enormous potential in reducing Allergic symptoms. *Pippalyadi mamsarasa* is mentioned in *Ashtanga Hridaya Chikitsasthana* which has *Svasa hara, Kasa hara,* and *Prathisyaya hara* properties and *Kapalabhati* clears airway reducing symptoms of *Pratishyaya*.

INTRODUCTION

The human immune system has evolved over millions of years from both invertebrate and vertebrate organisms to develop sophisticated defence mechanisms. Abnormalities in immune system expressed as autoimmune diseases, hypersensitivity and immunodeficiency diseases. Allergies strike one when immune system acts exaggeratedly to particles in the environment that not problematic to others.

These reactions are mediated by antibodies. Common allergic manifestation includes sneezing, itching and skin rashes. Among various type of Allergic reaction, allergic rhinitis accounts for 50% of cases. [1] Allergic rhinitis can be seasonal (triggered by pollen, occurring in spring, summer, or fall) or perennial (occurring year-round due to indoor allergens like dust and pet hair). [2] A number of issues that affect general health and quality of life can result from untreated or inadequately managed Allergic rhinitis. By obstructing the sinuses, persistent nasal congestion raises the risk of sinus infections (sinusitis), which can cause headaches, facial pain, and thick nasal discharge.

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High recurrence rate is a feature of this disease even if so many developments in medical and surgical trials occurred. So, a simple treatment protocol which can overcome symptoms, complications, and recurrence is planned. In Ayurveda description related to Allergy and hypersensitivity can be included under decreased *Vyadhikshamathvam*. The clinical features of the disease *Pratishyaya* in general is similar to that of Allergic rhinitis in modern science. Improper management of *Pratishyaya* leads to a severe and complicated condition called *Dushta Pratishyaya* which is very difficult to treat and causes lot of morbidities like *Badhirata, Andhata, Ghrananasa* etc., Ayurveda, specifically express the importance of food in maintaining and promoting good health as well as curing diseases. *Pathya aharaa* is a unique concept in *Ayurveda* for managing chronic diseases and preserving health. *Pippalyadi mamsarasa* is mentioned in *Rajayakshma chikitsa* of *Ashtanga hrdayaya* for treatment of *Peenasadi upadravas*. Ingredients are *Pippali, Yava, Kulatha*, *Dadima, Amalaka, Nagara* and *Aja mamsa*. Most of the drugs having *Peenasahara, Agni deepana, Srothosodhana*, and *Vata kapha samana* properties. *Kapalabhati* is one of *Shatkarma*, purification technique mentioned in *Yoga* literatures.

Breath control and air way purification by deep inhalation and forceful exhalations followed by expulsion of excess *Kapha* and *Medas* occurs. Hence both will help to reduce recurrence, symptoms and

complications of disease. Thus, the treatment protocol combining *Pippalyadi mamsarasa* and *Kapalabhati* would be an effective approach in management of recurrent allergic rhinitis in age group 16-35yr.

AIM

To study the effect of *Pippalyadi mamsarasa* and *Kapalabhati* in recurrent allergic rhinitis.

OBJECTIVES

Primary Objective

To assess the effect of *Pippalyadi mamsarasa* and *Kapalabhati* on total nasal symptom score, total ocular symptom score and recurrence.

Secondary Objective:

To assess the effect of *Pippalyadi mamsarasa* and *Kapalabhati* in absolute eosinophil count.

MATERIALS AND METHOD

30 patients from outpatient department of Government Ayurveda College Hospital, Thripunithura selected satisfying the inclusion criteria. Patients were given *Pippalyadi mamsarasa* for a period of 30 days.

Patients were given training on *Kapalabhati* 5 days before starting actual session. *Kapalabhati* done for 30 days. Assessment of total nasal symptom score.

Total ocular symptom score, recurrence and absolute eosinophil count done on 0th, 31st day. Follow up done on 91st day.

Inclusion criteria

Subjects having signs and symptoms of allergic rhinitis within the age group of 16 to 35yr 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.

Method of preparation of *Pippalyadi mamsarasa*

Table 1: Name and details of the drugs in *Pippalyadi mamsarasa*

Name	English Name	Malayalam Name	Botanical Name	Family	Part Used
Ajama mamsa	Goat meat	*Aadu*	*Capra aedagrus* hircus	Bovidea	Meat
Pippali	Long pepper	*Pippali*	*Piper longum*	Piperacea	Fruit
Sundi	Ginger	*Chukk*	*Zingiber officinale*	Zingiberacea	Rhizome
Yava	Barley	*Yavam*	*Hordeum Vulgarae*	Poaceae	
Kulatha	Horse gram	*Muthira*	*Dolichos biflorus*	Fabaceae	seed
Dadima	Pomegranate	*Mathalam*	*Punica granatum*	Punicaceae	fruit
Amalaka	Indian gooseberry	*Nellika*	*Emblica officinale*	Euphorbacea	fruit

15gm coarsely powdered drug and 30gm chopped goat meat were cooked in 360ml and reduced to 1/4th. The mixture is filtered, and the liquid portion is taken.

1. Dose - 90ml
2. Dosing schedule - 90ml at 7.00pm daily for 30 days.
3. Vehicle – NA

Procedure of *Kapalabhati*

- In first week, the study group were given training on practicing *Kapalabhati.*
- Participants were advised to come in morning with empty stomach after satisfying natural urges. Vitals were noted before procedure.
- *Kapalabhati* technique advised to study group.
- Subjects should sit on padmasana, close eyes and keep spine erect deep inhalation followed by5 strokes of forceful exhalation,3 rounds in the morning in a well-ventilated room wearing comfortable clothing and after satisfying natural urges.
- Gradually increased to 15 times in a cycle according to individual capacity. Between two cycles normal breathing should be continued.

The participants engaged in other activity after half hour

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.

Assessment Chart

Table 2: Total Nasal Symptom Score

TNSS				
Symptoms	**None**	**Mild**	**Moderate**	**Severe**
Rhinorrhea	0	1	2	3
Nasal Congestion	0	1	2	3
Nasal Itching	0	1	2	3
Sneezing	0	1	2	3

Table 3: Total Ocular Symptom Score

TOSS					
Symptoms	**None**	**Some time**	**Half time**	**Most time**	**All time**
Itching of eyes	0	1	2	3	4
Redness of eyes	0	1	2	3	4
Watering from eyes	0	1	2	3	4
Swelling of eyes	0	1	2	3	4

Table 4: Grading of Recurrence

Grade 0	No recurrence
Grade 1	Recurrence once in a month
Grade 2	Recurrence once in 15 days
Grade 3	Recurrence once in a week

Statistical Analysis

The data collected were statistically analysed. Friedman test was used for analysis of total nasal symptom score, total ocular symptom score and recurrence between treatment stages. Repeated measures ANOVA was used for assessing absolute eosinophil count value between treatment stages

Observations and Result

Effectiveness of Treatment on Total Nasal Symptom Score

The mean value at 0th day was 6.033 with SD 1.40 and the mean value at 31st day was 1.73 with SD 01.46. On 91st day mean value is 0.80 with SD 1.06. P value was significant ($p<0.05$). So, we can conclude that the study had a significant effect on reducing total nasal symptom score.

Table 5: Effectiveness of treatment on total nasal symptom score

Total nasal symptom score	N	Mean	SD	Friedman Statistic	P Value
0th day	30	6.033	1.40	55.69	P<0.05
31st day	30	1.733	1.46		
91st day	30	0.80	1.06		

Effectiveness of Treatment on Total Ocular Symptom Score

The mean value at 0th day was 1.6 with SD 1.40 and the mean value at 31st day was .76 with SD 01.89. On 91st day mean value is 0.26 with SD 0.52. P value was significant ($p<0.0001$). So, we can conclude that the study had a significant effect on Total ocular symptom score.

Table 6: effectiveness of treatment on Total ocular symptom score

Total ocular symptom score	N		Mean	SD	Friedman Statistic	P Value
0th day	30		1.667	1.40	28.14	P<0.0001
31st day	30		0.76	0.89		
91st day	30		0.26	0.52		

Effectiveness of Treatment on Absolute Eosinophil Count

The mean value at 0th day was 470 with SD 101 and the mean value at 31st day was 398.6 with SD 89.43. On 91st day mean value is 355.5 with SD 81.21. P value was significant (p<0.001). So, we can conclude that the study had a significant effect on reducing Absolute eosinophil count.

Table 7: effectiveness of treatment on absolute eosinophil count

AEC	N	Mean	SD	Friedman Statistic	P Value
0th day	30	470	101	13.85	P<0.001
31st day	30	398.6	89.43		
91St day	30	355.5	81.21		

Effectiveness of Treatment on Recurrence

The mean value at 0th day was 2.433 with SD 0.62 and the mean value at 31st day was 1.3 with SD 0.70.0n 91st day mean value is 0.53 with SD 0.57. P value was significant (p<0.001). So we can conclude that the study had a significant effect on reducing recurrence of Allergic rhinitis**.**

Table 8: Effectiveness of treatment on recurrence

Recurrence	N	Mean	SD	Friedman Statistic	P Value
0th day	30	2.433	0.62	49.25	P<0.001
31st day	30	1.3	0.70		
91St day	30	0.53	0.57		

DISCUSSION

Selection of Topic and Intervention

Due to the rise in environmental pollution and changes in urban lifestyle, allergic rhinitis has become a major health concern in contemporary society. Studies indicate that it affects about 39.7% of the global population, while in India, the prevalence among adults is approximately 22%.[3] Genetic predisposition also plays an important role in the development of allergies. Although not a life-threatening condition, allergic rhinitis leads to significant discomfort, disability, and economic burden, and is often poorly managed. Allergic rhinitis and asthma are closely associated, with more than 30% of rhinitis patients developing asthma.[4] Therefore, a safe, effective, and sustainable intervention that can be continued long-term is essential. The present study was designed with this aim, introducing medicated diet-*Pippalyadi Mamsarasa* and a yogic breathing technique- *Kapalabhati.*

The Ayurvedic approach to allergic diseases focuses on treating the root cause by improving Agni (digestion), following a suitable diet, and maintaining a balanced lifestyle. The clinical features of Allergic Rhinitis resemble *Vatika Pratisyaya* (manifested as *Brisa khava, Ghranoparodha, Shiro vedana*), *Kaphaja Pratisyaya* (*Shiro gauravam, Gala-talu kandu*), and the episodic nature of *Sannipataja Pratisyaya*, indicating that the treatment should be *Tridoshahara* and *Rasayana* in nature. *Pippalyadi Mamsarasa* is traditionally indicated in *Peenasadi upadravas* of *Rajayakshma*, a *Dhatukshaya-janya vyadhi* (tissue depletion disorder), suggesting its potential in managing allergic rhinitis by alleviating symptoms and preventing recurrence. The formulation contains *Aja Mamsa, Pippali, Nagara, Yava, Kulatha, Dadima***,** and *Amalaki*, all of which possess *Kasa, Shwasa***,** and *Pratisyaya-hara* properties. *Aja Mamsa* is *Brimhana*, *Balakara*, and *Tridoshahara*; *Pippali* and *Nagara* are *Agni Deepana* and *Srotoshodhana*; *Yava* and *Kulatha* are *Kapha-Meda Shamana* and *Peenasa Hara*; *Dadima* is *Sangrahi* and *Tridoshahara*; while *Amalaki* is both *Tridoshahara* and *Rasayana*. Thus, the formulation acts as *Agni Deepana***,** *Srotoshodhana***,** and *Balakara*.

Several research works support the anti-inflammatory, anti-allergic, and immunomodulatory activities of its components. Meanwhile, *Kapalabhati*, a yogic breathing practice involving deep inhalation and forceful exhalation, facilitates airway purification, sinus cleansing, and respiratory strengthening. It enhances pulmonary efficiency, generates internal warmth, and helps eliminate mucus and toxins. Therefore, the combined use of *Pippalyadi Mamsarasa* and *Kapalabhati* is expected to reduce symptom recurrence, minimize disease complications, and promote overall respiratory health in individuals suffering from Allergic Rhinitis.

Probable mode of action of *Pippalyadi mamsarasa*

The mode of action of the diet preparation *Pippalyadi Mamsarasa* was evaluated based on the analysis of *Rasa Panchaka*, *Dosha Karma*, *Rogaghna Karma*, and the modern pharmacological properties of its individual ingredients. On analyzing the symptoms of Allergic Rhinitis, it can be understood as a *Vata-Kapha predominant Sannipata Pratishyaya*. In the management of *Pratishyaya*, all *Acharyas* emphasize the use of *Ahara* that is *Laghu*, *Snigdha*, and *Kapha-Vata hara* in nature.

The present study was conducted among patients suffering from recurrent episodes of allergic rhinitis. Hence, a formulation possessing *Pratishyayahara* and *Rasayana* properties is most suitable for both curing the disease and preventing its recurrence. The *Balya* and *Preenana* properties of *Mamsarasa* enhance *Vyadhikshamatva*, thereby strengthening the body's resistance against future attacks.

The chief ingredient of *Pippalyadi Mamsarasa* is *Ajamamsa*. It is the only type of *Mamsa* described as being similar to human *Dhatus*. Though *Brimhana* in nature, it does not cause *Abhishyanda*. Traditionally, *Ajamamsa* is used during the winter season to combat ailments like cold and cough and is also recommended for post-trauma care and surgical recovery due to its quick healing and rejuvenating properties. The other six ingredients of the formulation are *Pippali*, *Nagaram* (*Shunti*), *Yava*, *Kulatha*, *Dadima*, and *Amalaki*.

Pippali is widely used in respiratory disorders and is a common ingredient in formulations indicated for *Pratishyaya*. The *Sushka Pippali* used here has *Katu Rasa* and *Laghu-Snigdha Guna*. It alleviates *Kapha* due to its *Katu Rasa* and pacifies *Vata* due to its *Snigdha Guna*. It also possesses *Rasayana* and *Yogavahi* properties. Piperine, the major bioactive component, acts as a bioenhancer by altering intestinal membrane dynamics, enhancing permeability, blood flow, and nutrient absorption. Modern studies confirm its anti-inflammatory and antioxidant actions. [5]

Yava possesses *Madhura Rasa* and does not aggravate *Kapha*. It is *Balya*, *Agnivardhana*, and *Kasa-Svasa-Pinasa hara*. *Kulatha* is *Vata-Kapha hara*, *Kledahara*, *Sara*, and *Anulomana* in nature, and is mentioned as *Pathya Ahara* in *Pratishyaya Chikitsa*.

Nagara (*Shunti*) has *Katu Rasa* but does not increase *Vata*. It has *Deepana*, *Pachana*, *Kapha-Vata hara*, and *Sopha hara* properties. Modern research indicates that 6-gingerol, a key bioactive compound in ginger, suppresses allergic airway inflammation by inactivating T cells, which play a crucial role in allergic reactions. [6]

Amalaki is also indicated as *Pathya* in *Pratishyaya*. It is recommended for daily intake due to its *Rasayana*, *Tridosha samana*, and *Balavardhaka* properties. Rich in Vitamin C, polyphenols, and flavonoids, *Amalaki* exhibits potent antioxidant and anti-inflammatory effects.[7]

Dadima is *Rochana*, *Deepana*, and *Tridoshahara*. Modern evidence suggests that pomegranate reduces histamine levels, thereby alleviating allergic symptoms.

Considering the collective properties of these ingredients, *Pippalyadi Mamsarasa* acts as *Agnideepana*, *Srotoshodhaka*, and *Balya*. In patients with recurrent allergic rhinitis, where chronic inflammation of the sinuses and respiratory tract is common, this formulation alleviates inflammation (*Sopha hara*) and enhances *Vyadhikshamatva*, thereby reducing disease recurrence and improving overall respiratory health.

Probable mode of action of *Kapalabhati*

Shatkarmas are cleansing procedures mentioned in *Hathayoga pradeepika* for preparing body for practicing *pranayama*. They are basically purificatory procedures but they have immense effect on prevention and cure of diseases. Among them *Kapalabhati* is a breathing exercise. Its unique pattern involves passive inhalation and rapid forceful exhalations. In rapid exhalations performed during *Kapalabhati* diaphragm is the muscle actively engaged.

Continuous practice increases its strength and flexibility. The forceful breathing also involves intercostal muscles improving process of lung expansion and contraction. During exhalations abdominal muscles are also repeatedly involved. Forceful exhalation clear stagnant air from alveoli, it helps in enhanced oxygen intake and Co_2 elimination.

The high velocity exhalations help to dislodge and expel excess mucous from respiratory tract. It acts as a natural decongestant by keeping nasal cavity and sinuses clear. The rhythmic breathing also enhances movement of cilia in respiratory tract aiding its better airway function. *Kapalabhati* has been also associated with physiological benefits, such as improved cerebral blood flow and improved autonomic functions. These effects could indirectly contribute to inflammation modulation. Thus, *Kapalabhati* improves lung function, strengthens muscles, open airways, and regulates the autonomic nervous system to increase respiratory efficiency. By its systematic practice, general respiratory health is improved. It improves secretory and drainage mechanism of nose and paranasal sinuses. This aids to reduce symptoms of allergic rhinitis like sneezing, rhinorrhoea, nasal congestion, itching of nose and associated ocular symptoms.

CONCLUSION

- Allergic rhinitis is a highly prevalent disease worldwide, characterized by a high recurrence rate and a notable impact on quality of life.
- It is a detrimental after effect of poor environmental conditions, including exposure to pollutants and allergens in the workplace and surroundings.
- The most frequent symptoms of allergic rhinitis include sneezing, nasal congestion, runny nose, and itching.
- Symptoms of allergic rhinitis can be correlated to *Vata kapha* predominant *Sannipata Pratishyaya* mentioned in Ayurveda.

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