

TO EVALUATE THE IMPACT OF PRANAYAMA AND JALNETI ON QUALITY OF
LIFE IN ALLERGIC RHINITIS PATIENTSShruti Agnihotri¹, Surya Kant^{1*}, Pranjal Tripathi²¹Women Scientist (DHR), Department of Respiratory Medicine, King George's Medical University, UP, Lucknow.^{1*}Professor & Head, Department of Respiratory Medicine, King George's Medical University, UP, Lucknow.²Junior Resident, Department of Psychiatrist, Andhra Medical College, Vishakhapatnam, Andhra Pradesh.***Corresponding Author: Surya Kant**

Professor & Head, Department of Respiratory Medicine, King George's Medical University, UP, Lucknow.

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ABSTRACT

Background and Objective: Rhinosinusitis is a common expensive disorder with a significant impact on patients' quality of life. Chronic sinus symptoms are associated with allergic rhinitis, asthma and polyposis. Anti-asthmatic drugs are the only treatment method for the disease but they are expensive and have adverse effects. Thus, it is wise to look for an adjunct therapy to alleviate these problems. Therefore, the main aim of this study is to evaluate the impact of pranayama and jalneti on quality of life in the patients of allergic rhinitis. **Methods:** It was a randomized controlled study carried out from January 2024 to September 2025. The patients aged between 18 to 60 years were recruited from the Department of Respiratory Medicine, King George's Medical University, U.P., Lucknow, India. They were randomly divided into two groups: 'the case group' and 'the control group'. Their assessment was done at baseline, at 4th month and 8th month. **Results:** No significant changes in Quality of life variables were found in 'the control group' during the course of the study. A steady and progressive improvement was found in the subjects of 'the yoga group' during the same period. **Conclusion:** 'The yoga group' got significantly better improvement in all the variables of Rhinoconjunctivitis Quality of Life (RQLQ) than 'the control group'. The improvement was achieved relatively earlier by 'the yoga group' in comparison to 'the control group'. Result shows that yoga can be used as an adjuvant therapy with standard medical treatment for the better management of asthma.

KEYWORDS: adjuvant; asthma; jalneti; rhinosinusitis; RQLQ; variables.**INTRODUCTION**

Allergic rhinitis, also known as hay fever, affects approximately 20 percent of people of all ages. The risk of developing allergic rhinitis is much higher in people with asthma and eczema and in people who have a family history of asthma or rhinitis.^[1] Allergic rhinitis can begin at any age, although most people first develop symptoms in childhood or young adulthood.^[2] The symptoms are often at their worst in children and in people in their 30s and 40s.^[3] However, the severity of symptoms tends to vary throughout life and many people experience periods of remission.

Rhinosinusitis is a common expensive disorder with a significant impact on patient's quality of life. Chronic sinus symptoms are associated with allergic rhinitis,

asthma and polyposis.^[5] Saline nasal irrigation is an adjunctive therapy for Rhinosinusitis and sinus symptoms. Prior studies suggest that hypertonic saline nasal irrigation (HSNI) may be effective for symptoms associated with allergy, asthma and nasal polyposis.^[6]

The practice of yoga produces a psychological state opposite to that of the fight and flight stress response and with that interruption in the stress response and a sense and harmony between mind and body is achieved.^[7] The present study is a split form of study based on the findings of one of the aims of the larger study on allergic rhinitis.

OBJECTIVE: To evaluate the impact of pranayama and jalneti on quality of life in the patients of allergic rhinitis.

MATERIALS AND METHODS

STUDY DESIGN AND SETTING: The Department of Respiratory Medicine at King George's Medical University in Uttar Pradesh, Lucknow, India, conducted this randomized controlled study between January 2024 and September 2025. A consultant screened patients from the department's Out Patient Department (OPD) who had been diagnosed with allergic rhinitis or allergic rhinitis with mild asthma for study participation based on inclusion and exclusion criteria. The King George's Medical University's Institutional Ethics Committee in Lucknow, Uttar Pradesh, gave its approval to the study. Before being enrolled in the study, each participant signed an informed consent form. They were free to withdraw themselves from the study at any stage of the study period without assigning any reason.

The Patients were included in the study having symptoms of rhinitis with asthma such as nasal congestion, rhinorrhea, constant sneezing, and itchy nose for a minimum of four days per week and for a period of at least four consecutive weeks based on the ARIA guidelines. Age of the patients ranging between 18- 60 years. They were non-smokers or ex-smokers who have not smoked for at least 6 months. Pregnant or lactating women, any associated chronic respiratory diseases were excluded from the study.

STUDY PARTICIPANTS: In this randomized controlled trial, 200 subjects who satisfied the inclusion criteria were allocated into two groups. They were divided into two groups, case group who received yogic intervention for 8 months along with standard medical treatment and control group who received only standard medical treatment. Out of 200 subjects (85 cases and 88 controls), 15 subjects from the yoga group and 12 subjects from the control group dropped out during the study period. 85 cases from the yoga group and 88 cases from the control group completed the study.

Assessment Criteria: Mini- Rhinoconjunctivitis Quality of Life Questionnaire (mini- RQLQ) is self-administered validated quality of life questionnaire developed by Elizabeth E. Juniper, England. It has 14 questions in five domains (activity limitations, practical problem, nose symptoms, eye symptoms, other symptoms). Patients rate the symptoms on standardized 7- point scale.^[8]

Yogic Intervention: Subjects in the yoga group received yogic intervention (jalneti & pranayama) for 30 min per day, five days in a week for a period of 8 months.

Statistical Analysis Paired *t*-test was used to test the mean difference score of the subjects at baseline, after four months and eight months in both groups i.e., yoga and control groups. Student's independent sample *t*-test was used to compare the differences in scores between cases (yoga) and controls (non- yoga group). Differences were considered significant if $p < 0.05$. The Statistical analysis was done by using GraphPadInStat version 3.1 software, Inc., California).

RESULTS

Variables of Rhinoconjunctivitis Quality of Life at baseline in between group comparison are given in Table 2. Both groups are comparable in every respect and there was no significant difference found in any variable. The values of outcome measures are given in Table 3, 4, 5 and 6.

Between groups comparisons are given in Table 3 and 4 after 4th month and 8th month respectively the intervention of pranayama and jalneti to the yoga group. There was significant difference found in all the variables at 4th month and 8th month in between group comparison [Table 3 and 4]. At post- intervention, between group differences were found highly significant with better improvement [Table 4]. Comparison of pre and post changes occurred in yoga group and control group at 4th month and 8th month respectively after the intervention of yoga to the yoga group are given in Table 5 and 6. It has been observed in pre- post comparison after 4 month that 33.97% improvement was found in 1st variable (activity limitations), 44.6% improvement was found in practical problems and there was significant improvement of 27.69% found in nose symptoms in the yoga group in comparison to control group. There was 34.17% improvement found in eye symptoms and 41.51% significant change found in other symptoms of control group. There was no significant change found in activity limitations and other symptoms.

As seen in Table 6, both groups have significant improvement at 8th month. In the yoga group, activity limitations significantly improved by 71.65%, practical problems by 62.77% while nose symptoms and eye symptoms significantly improved by 81.48% and 80.04% respectively in the yoga group. Other symptoms and Total symptoms were also significantly improved by 66.6% and 66.55% respectively. While in the control group, there was also significant improvement found in all the variables but the improvement was less in comparison to cases.

Table 1: Yogic Techniques done by yoga group.	
Yogic Techniques	Duration (min)
Jalneti	10
Pranayama	20
Nadishodhan	5
Bhastrika	5
Bhramari	5
Kapalbhati	5
Total Duration	30 min.

Table 2: RQLQ scores of cases and controls at baseline.

	Cases	Controls			
	N=85	N=82			
Parameters	Mean $\pm$ SD	Mean $\pm$ SD	Effect Size	P value	t- statistics
Activity limitations	5.68 $\pm$ 0.91	5.52 $\pm$ 0.72	0.19	0.13	1.51
Practical problem	5.56 $\pm$ 0.51	5.51 $\pm$ 0.64	0.09	0.50	0.78
Nose symptoms	6.21 $\pm$ 1.22	6.30 $\pm$ 0.93	0.28	0.78	0.13
Eye symptoms	5.21 $\pm$ 0.67	5.25 $\pm$ 0.93	0.04	0.78	1.27
Other symptoms	5.54 $\pm$ 0.28	5.17 $\pm$ 0.93	0.12	0.78	0.72
Overall symptoms	5.30 $\pm$ 1.22	5.55 $\pm$ 0.84	0.17	0.78	0.29
*P value significant (5% level of significance)					
P value not significant (>0.05) for any of the parameter					

Table 3: RQLQ Scores of cases and controls at 4th month (between group)

	Cases	Controls			
	N=85	N=82			
Parameters	Mean $\pm$ SD	Mean $\pm$ SD	Effect Size	P value	t- statistics
Activity limitations	3.75 $\pm$ 0.75	4.63 $\pm$ 0.61	0.18	0.17	1.36
Practical problem	3.08 $\pm$ 0.30	3.85 $\pm$ 0.43	0.62	<0.0001	4.82
Nose symptoms	4.49 $\pm$ 0.58	4.94 $\pm$ 0.40	0.36	0.006**	2.80
Eye symptoms	3.43 $\pm$ 0.31	3.48 $\pm$ 0.61	0.10	0.42	0.80
Other symptoms	3.24 $\pm$ 1.02	3.86 $\pm$ 0.93	0.04	0.78	0.72
Overall symptoms	3.92 $\pm$ 0.62	4.15 $\pm$ 0.56	0.22	0.09	1.71
*P value significant (5% level of significance)					
P value not significant (>0.05) for any of the parameter.					

Table 4: RQLQ Scores of cases and controls at 8th month (between group).

	Cases	Controls			
	N=85	N=82			
Parameters	Mean $\pm$ SD	Mean $\pm$ SD	Effect Size	P value	t- statistics
Activity limitations	1.61 $\pm$ 0.45	3.32 $\pm$ 0.32	0.74	<0.0001	5.76
Practical problem	2.07 $\pm$ 0.21	2.75 $\pm$ 0.26	1.35	<0.0001	10.51
Nose symptoms	1.15 $\pm$ 0.39	3.27 $\pm$ 0.41	1.17	<0.0001	9.12
Eye symptoms	1.04 $\pm$ 0.06	3.31 $\pm$ 0.16	1.07	<0.0001	8.36
Other symptoms	1.85 $\pm$ 0.56	2.85 $\pm$ 0.20	0.91	<0.0001	5.98
Overall symptoms	1.72 $\pm$ 0.38	3.43 $\pm$ 0.34	0.80	<0.0001	6.24
*P value significant (5% level of significance)					
P value not significant (>0.05) for any of the parameter.					

Table 5: Comparison of pre and post quality of life changes occurred in 'the yoga group' and 'the control group' after 4 month.

Parameters	YOGA GROUP					CONTROL GROUP				
	Baseline	After 4 month	% change	t statistics	P value	Baseline	After 4 month	% change	t- statistics	P value
Activity limitations	5.68 $\pm$ 0.91	3.75 $\pm$ 0.75	33.97	2.07	0.11	5.52 $\pm$ 0.72	4.63 $\pm$ 0.61	16.12	2.64	0.06
Practical problem	5.56 $\pm$ 0.51	3.08 $\pm$ 0.30	44.60	4.36	0.02*	5.51 $\pm$ 0.64	3.85 $\pm$ 0.43	30.13	2.83	0.07
Nose symptoms	6.21 $\pm$ 1.22	4.49 $\pm$ 0.58	27.69	5.77	0.028*	6.30 $\pm$ 0.93	4.94 $\pm$ 0.40	21.58	5.38	0.03*
Eye symptoms	5.21 $\pm$ 0.67	3.43 $\pm$ 0.31	34.17	2.12	0.24	5.25 $\pm$ 0.93	3.48 $\pm$ 0.61	33.71	4.32	0.25
Other symptoms	5.54 $\pm$ 0.28	3.24 $\pm$ 1.02	41.51	4.5	0.05	5.17 $\pm$ 0.93	3.86 $\pm$ 0.93	25.34	2.45	0.002
Overall symptoms	5.30 $\pm$ 1.22	3.92 $\pm$ 0.62	26.03	1.08	0.003	5.55 $\pm$ 0.84	4.15 $\pm$ 0.56	25.23	3.04	0.14

*P < 0.05, **P < 0.01, ***P < 0.001 based on post hoc 530--wise comparison with baseline values.

P- value not significant (>0.05) for any of the parameter.

Table 6: Comparison of pre and post quality of life changes occurred in 'the yoga group' and 'the control group' after 8 month.

YOGA GROUP						CONTROL GROUP				
Parameters	Baseline	After 8 months	% change	t statistics	P value	Baseline	After 8 months	% change	t- statistics	P value
Activity limitations	5.68 ± 0.91	1.61 ± 0.45	71.65	5.52	0.005 **	5.52 ± 0.72	3.32 ± 0.32	39.86	6.23	0.003 **
Practical problem	5.56 ± 0.51	2.07 ± 0.21	62.77	12.71	0.001 **	5.51 ± 0.64	2.75 ± 0.26	50.01	5.85	0.01*
Nose symptoms	6.21 ± 1.22	1.15 ± 0.39	81.48	4.94	0.04*	6.30 ± 0.93	3.27 ± 0.41	48.09	5.35	0.03*
Eye symptoms	5.21 ± 0.67	1.04 ± 0.06	80.04	10.23	0.009 **	5.25 ± 0.93	3.31 ± 0.16	36.95	21.8	0.002 **
Other symptoms	5.54 ± 0.28	1.85 ± 0.56	66.60	13.65	<0.00 01	5.17 ± 0.93	2.85 ± 0.20	68.11	13.56	<0.00 01
Overall symptoms	5.30 ± 1.22	1.72 ± 0.38	67.55	8.64	0.001 **	5.55 ± 0.84	3.43 ± 0.34	38.20	10.44	0.009

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$ based on *post hoc* pair-wise comparison with baseline values.

P- value not significant (>0.05) for any of the parameter.

DISCUSSION

A number of studies done on asthma patients but not allergic rhinitis patients. None of the study shown the impact of pranayama and jalneti on quality of life of allergic rhinitis patients. The results of this study suggests that both groups got significant improvement in 8 month study period compared to baseline scores, but the improvement was achieved relatively earlier by the yoga group in comparison to control group.

A study was done on eighty patients of allergic rhinitis concluded that nasal breathing exercise is a simple and cost effective measure to reduce symptoms of allergic rhinitis and improve patient satisfaction.^[9]

A study done on the 15 patients (short- term study of 7 days) not only confirm the efficacy of intranasal corticosteroid therapy in moderate-to-severe allergic rhinitis, they also suggested that the Dead Sea saline solution can be an effective alternative in mild-to-moderate allergic rhinitis, particularly with respect to nasal and eye symptoms. The hypertonicity of the Dead Sea solution may have a positive effect on the physiology of the nasal mucosa by improving mucociliary clearance.^[10]

CONCLUSION

The current study shows that the yogic intervention (pranayama and jalneti) significantly decreased the symptoms in the yoga group in comparison to control group. The improvement was achieved relatively earlier by the yoga group in comparison to control group. Overall, this study shows that yoga is an effective tool to improve the pulmonary functions and it can be practiced as an adjuvant therapy with standard medical treatment.

SUGGESTIONS FOR FUTURE WORK: Yoga is one of the complementary medicines which put a great impact on human body. Although there is increasing data supporting yoga practices, it is important to keep in mind

that yoga cannot be utilized as a therapy modality on its own. It is a complementary and different approach. Asthma and allergic rhinitis can be effectively treated with yoga. To get the most out of this age-old discipline, more research is needed in this field.

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Conflicts of interest

There is no conflict of interest.

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