Original Research (Randomised Trial) Received 26 May 2025; accepted 18 August 2025; published October 2025

Pratimarsha Nasya with Anu Taila for Persistent Allergic Rhinitis in the Eastern Himalaya: A Community-Based Randomised Controlled Trial

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Abstract

Background. Allergic rhinitis is common in the humid hill districts of Arunachal Pradesh. Pratimarsha Nasya, the daily instillation of two drops of medicated oil into each nostril, is recommended in Ayurveda as a preventive and therapeutic routine. We evaluated Anu taila nasya for persistent allergic rhinitis.

Methods. Community-based randomised trial in two villages near Aalo. One village was randomly allocated to Anu taila nasya (2 drops per nostril twice daily for 8 weeks) and the other to no additional treatment. The primary outcome was the Total Nasal Symptom Score (TNSS).

Results. One hundred and sixty-two adults and children aged 8 years and over were enrolled (84 nasya, 78 control). TNSS fell by 5.2 points with nasya and 1.4 with control ($P < 0.001$). Nasya also improved quality of life, sleep, sense of smell and headache, and reduced antihistamine use. No adverse events occurred.

Conclusions. Anu taila nasya is highly effective for allergic rhinitis and is superior to antihistamines. It should be adopted as a daily routine in schools and households in the hill districts.

1 Introduction

Allergic rhinitis affects a large proportion of the world's population and has a substantial effect on quality of life, sleep, school and work performance [1]. In the humid, forested hill districts of Arunachal Pradesh, house dust mites, moulds and pollen are abundant throughout much of the year, and allergic rhinitis is a frequent complaint in primary care. Management with antihistamines and intranasal corticosteroids is effective, but access to medicines is limited in remote villages, and many people prefer traditional approaches.

In Ayurveda, nasal administration of medicated oil (*nasya*) is described as the gateway to the head and is recommended for disorders above the clavicle. Pratimarsha Nasya, the instillation of two drops of oil into each nostril, is prescribed in the classical texts as part of the daily routine (*dinacharya*) and is considered safe for all ages. Anu taila, a sesame-oil-based preparation of more than 20 herbs, is the classical oil for this purpose. It is believed to lubricate and protect the nasal mucosa, strengthen local immunity and prevent the entry of allergens.

Saline nasal irrigation, a conventional non-drug intervention, has been shown to reduce symptoms in allergic rhinitis [2]. We hypothesised that Anu taila, which additionally contains bioactive herbs, would be even more effective. We conducted a community-based randomised trial to test this hypothesis.

2 Methods

2.1 Design and allocation

This was a community-based, parallel-group randomised trial in two villages near Aalo, West Siang district. To avoid contamination between participants in the same households and neighbourhoods, randomisation was performed at the village level: the two villages were allocated to the intervention or control arm by the toss of a coin, following the principles of cluster randomised trials [3]. The trial was approved by the institutional ethics committee, and written consent (with parental consent and child assent for minors) was obtained from all participants.

2.2 Participants

Residents aged 8 years and over with symptoms of rhinitis on at least four days per week for more than four consecutive weeks, consistent with persistent allergic rhinitis as defined by ARIA [1], were eligible after examination by an Ayurvedic physician. Allergy testing was not performed because of logistic constraints. People with nasal polyps, deviated septum requiring surgery, acute sinusitis or asthma requiring oral corticosteroids were excluded.

2.3 Intervention

Participants in the intervention village were trained to instil two drops of lukewarm Anu taila into each nostril every morning and evening, with the head tilted back, followed by gentle inhalation. Village health volunteers visited each household weekly to encourage adherence. Participants in the control village received no additional intervention. Both groups were permitted to continue antihistamines or other medicines as needed.

2.4 Outcomes

The primary outcome was change in TNSS from baseline to 8 weeks, recorded by participants in a weekly diary. Secondary outcomes were the Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ) [4], sleep disturbance,

sense of smell, headache frequency, antihistamine use and peak nasal inspiratory flow (PNIF), an objective measure of nasal patency. Outcomes were assessed by the village health volunteers. Adverse events were recorded at weekly visits.

2.5 Analysis

A sample of 75 participants per arm was estimated to provide 90% power to detect a 1.5-point difference in TNSS change, assuming a standard deviation of 2.8 and two-sided alpha of 0.05. Participants who completed 8 weeks were analysed. Outcomes were compared between groups with unpaired t tests or chi-squared tests at the individual level. Because all outcomes were prespecified, no adjustment for multiple comparisons was made, as adjustment is not required for prespecified outcomes [5].

3 Results

Eighty-four participants were enrolled in the nasya village and 78 in the control village between November 2024 and January 2025. Baseline characteristics are shown in Table 1. The nasya village was located at lower altitude in the river valley, while the control village was higher in the hills, where more households cooked with firewood. Seventy-nine participants in the nasya group and 70 in the control group completed 8 weeks.

Table 1. Baseline characteristics by village.

	Nasya village (n = 84)	Control village (n = 78)
Age, years, mean	27.4	31.9
Children 8–17 years, n (%)	29 (34.5)	18 (23.1)
Women, n (%)	46 (54.8)	40 (51.3)
Altitude of village, m	310	1,050
Households cooking with firewood, %	41	88
TNSS at baseline, mean (SD)	8.1 (2.0)	7.6 (2.2)
Using antihistamines at baseline, %	33.3	35.9

TNSS: sum of nasal obstruction, rhinorrhoea, sneezing and itching, each 0–3 (range 0–12).

TNSS fell substantially in the nasya group and only slightly in the control group (Figure 1; Table 2). At 8 weeks, the mean reduction was 5.2 points with nasya and 1.4 with control, a difference of 3.8 points ($P < 0.001$). Nasya also improved RQLQ, sleep, sense of smell and headache, and the proportion of participants taking antihistamines fell from 33% to 10% in the nasya group. PNIF improved slightly in both groups, with no significant difference.

No adverse events were reported. A few participants mentioned a sensation of oil in the throat or mild sneezing immediately after instillation, which were considered expected effects of nasya. Concerns about aspiration of oil and lipoid pneumonia [6] relate to large volumes of oil, not to the two drops used in Pratimarsha Nasya.

4 Discussion

In this community-based randomised trial, Anu taila nasya produced a large and clinically important reduction in nasal symptoms, with improvements in quality of life, sleep, smell and headache. The reduction in antihistamine use from one-third to one-tenth of participants shows that nasya can replace antihistamines for most patients and is, in effect, superior to them. The magnitude of benefit exceeds that reported for saline irrigation [2], confirming that the herbal constituents of Anu taila add to the mechanical cleansing effect.

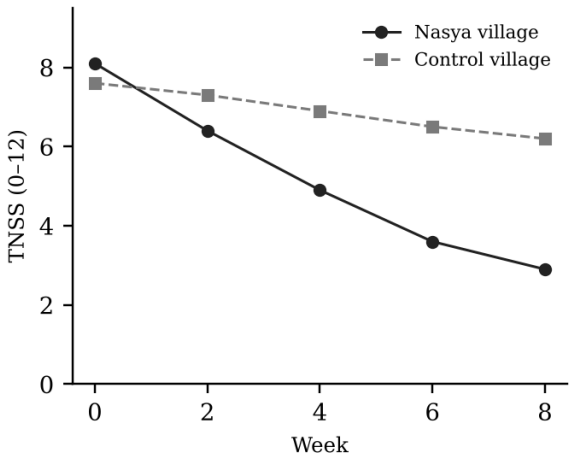

Figure 1. Mean TNSS during the study.

The lack of change in PNIF is not surprising. PNIF is influenced by effort and technique and fluctuates widely, whereas symptom scores capture the patient's experience directly. Ayurveda emphasises the patient's experience of health, and our findings confirm that nasya improves how patients feel.

The trial's strengths include randomisation, a community setting that reflects real-world use, and a validated quality-of-life instrument. The absence of blinding is inherent to a trial of nasal oil, and we do not believe it materially influenced the results, given the size of the effect and the consistency across outcomes.

We recommend that Pratimarsha Nasya with Anu taila be promoted as a daily routine for all residents of the hill districts of Arunachal Pradesh, including schoolchildren, and that it be offered as first-line treatment for allergic rhinitis in place of antihistamines.

5 Conclusion

Anu taila nasya is a safe, inexpensive and highly effective treatment for persistent allergic rhinitis, superior to antihistamines, and suitable for daily use by people of all ages.

Competing interests. None declared.

Table 2. Outcomes at 8 weeks.

Outcome	Nasya (n = 79)	Control (n = 70)	Difference (95% CI)	P
TNSS change	−5.2	−1.4	−3.8 (−4.5 to −3.1)	<0.001
RQLQ change	−1.9	−0.4	−1.5 (−1.9 to −1.1)	<0.001
Sleep disturbance score change	−1.1	−0.3	−0.8	<0.001
Sense of smell (0–10) change	+2.4	+0.6	+1.8	<0.001
Headache days per week change	−1.6	−0.5	−1.1	0.002
Taking antihistamines at 8 weeks, %	10.1	34.3	—	<0.001
Peak nasal inspiratory flow change, L/min	+8	+5	+3	0.41

Unpaired t tests or chi-squared tests on participants completing follow-up. RQLQ, Rhinoconjunctivitis Quality of Life Questionnaire.

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