

A CLINICAL STUDY TO EVALUATE THE EFFICACY OF AGASTYA HARITAKI AVALEHA IN THE MANAGEMENT OF JEERNA PRATISHYAYA WITH SPECIAL REFERENCE TO ALLERGIC RHINITIS IN CHILDREN AGED 5-12 YEARS

Dr. Udit Maheshwari^{*1}, Dr. Nikhil Kataria², Prof. (Dr.) Ritesh M. Kela³

^{1,2}PG Scholar, Department of *Kaumarbhritya*, Shri Dhanwantri Ayurvedic Medical College and Research Centre, Mathura, Uttar Pradesh, India.

³Professor and Guide, Department of *Kaumarbhritya*, Shri Dhanwantri Ayurvedic Medical College and Research Centre, Mathura, Uttar Pradesh, India.

Article Received on 16 August 2026,
Article Revised on 05 September 2026,
Article Published on 16 Sept. 2026,

<https://doi.org/10.5281/zenodo.22766688>

*Corresponding Author

Dr. Udit Maheshwari

PG Scholar, Department of
Kaumarbhritya, Shri Dhanwantri
Ayurvedic Medical College and
Research Centre, Mathura, Uttar
Pradesh, India.



How to cite this Article: Dr. Udit Maheshwari^{*1}, Dr. Nikhil Kataria², Prof. (Dr.) Ritesh M. Kela³ (2026). A Clinical Study To Evaluate The Efficacy of Agastya Haritaki Avaleha In The Management of Jeerna Pratishyaya With Special Reference To Allergic Rhinitis In Children Aged 5-12 Years. World Journal of Pharmaceutical Research, 15(18), 577-599.

This work is licensed under Creative Commons Attribution 4.0 International license.

ABSTRACT

Background: *Jeerna Pratishyaya* is a chronic and recurrent disorder of the nasal passages in children and clinically resembles allergic rhinitis. *Agastya Haritaki Avaleha* is a classical formulation indicated in chronic *Pratishyaya*, *Kasa* and *Shwasa*. **Aim:** To evaluate the efficacy of *Agastya Haritaki Avaleha* in the management of *Jeerna Pratishyaya* with special reference to allergic rhinitis. **Objective:** To study the efficacy of *Agastya Haritaki Avaleha* in children aged 5-12 years. **Materials and Methods:** An open-label, single-arm exploratory clinical study was conducted on 30 children aged 5-12 years. *Agastya Haritaki Avaleha* was administered orally twice daily before meals with *Koshna Jala*; the dose was calculated using *Dilling's formula*. Treatment continued for three months, with follow-up every two weeks and post-trial follow-up after one month. Twelve clinical symptoms, haemoglobin and absolute eosinophil count were assessed before and after treatment. The Wilcoxon signed-rank test was

used. **Results:** All 30 participants completed the study. The greatest clinical relief was observed in *Kshavathu* (73.77%), followed by *Sashabda Shwasa* (69.36%), *Aruchi* and

Swarabheda (67.70% each), *Shirashoola* (66.67%), *Ghranoparodha* (65.08%), *Kasa* (63.49%), *Gandhajnana* (61.41%), *Nasasrava* (60.93%), *Shwasa* (58.73%), *Jwara* (57.81%) and *Kandu* (57.41%). Mean haemoglobin increased from 9.877 ± 0.6218 to 10.680 ± 0.5350 g/dL, while mean absolute eosinophil count decreased from 579.10 ± 9.492 to 510.40 ± 18.49 cells/ μ L. All changes were statistically significant ($p < 0.0001$). No adverse drug reaction was reported. **Conclusion:** *Agastya Haritaki Avaleha* was associated with statistically significant improvement in the clinical manifestations and laboratory parameters of *Jeerna Pratishyaya* with allergic rhinitis in children aged 5-12 years. Larger controlled studies are required to confirm comparative efficacy and long-term prevention of recurrence.

KEYWORDS: *Jeerna Pratishyaya*; allergic rhinitis; *Agastya Haritaki Avaleha*; *Kaumarbhritya*; *Kshavathu*; absolute eosinophil count.

INTRODUCTION

Ayurveda aims to preserve health and manage disease through equilibrium of *Dosha*, *Dhatu* and *Mala*. In the paediatric branch of *Kaumarbhritya*, children are considered vulnerable because of *Alpa Bala*, developing *Dhatu* and immature *Vyadhikshamatva*. *Pratishyaya* is described as a disorder of *Nasa* and *Urdhvajatrugata Pradesha* in which aggravated *Vata* displaces *Kapha*, *Pitta* and, in some descriptions, *Rakta* towards the head and nasal passages. Recurrent or inadequately treated disease may progress to *Jeerna Pratishyaya*, characterised by persistent sneezing, nasal discharge, obstruction, altered smell, headache, hoarseness, cough and respiratory discomfort.^[1-5]

Allergic rhinitis is a common immunoglobulin E-mediated inflammatory disorder of the nasal mucosa in children. Exposure to dust, pollen, mites, animal dander, moulds, smoke and pollutants activates T-helper 2 pathways, mast cells and eosinophils, leading to histamine and leukotriene release. The resulting sneezing, itching, watery rhinorrhoea and nasal obstruction can impair sleep, concentration, school performance and quality of life; persistent disease may coexist with asthma and other atopic disorders. Modern treatment includes allergen avoidance, antihistamines, intranasal corticosteroids, leukotriene antagonists and immunotherapy, but recurrence and the need for prolonged treatment remain important concerns.^[6-14]

The clinical resemblance between *Jeerna Pratishyaya* and allergic rhinitis provides a basis for an integrative assessment. *Agastya Haritaki Avaleha* is a classical polyherbal preparation

indicated in chronic *Pratishyaya*, *Kasa* and *Shwasa*. Its *Deepana*, *Pachana*, *Vata-Kapha Shamana*, *Srotoshodhana*, *Shothahara* and *Rasayana* actions may improve *Agni*, reduce *Ama*, clear respiratory secretions, decrease mucosal inflammation and support resistance to recurrent illness. The present study therefore evaluated its clinical and laboratory effects in children aged 5-12 years.^[2,15]

AIM AND OBJECTIVES

Aim

- To evaluate the efficacy of *Agastya Haritaki Avaleha* in the management of *Jeerna Pratishyaya* with special reference to allergic rhinitis.

Objective

- To study the efficacy of *Agastya Haritaki Avaleha* in children aged 5-12 years.

REVIEW OF LITERATURE

Ayurvedic Review

Jeerna Pratishyaya develops when *Pratishyaya* persists, recurs repeatedly or remains inadequately treated. Causative factors described in the classical review include exposure to dust, smoke, cold air and seasonal variation; suppression of natural urges; irregular food habits; and intake of *Guru*, *Madhura* or *Sheeta* substances. Aggravated *Kapha* produces heaviness, excessive secretion and obstruction, while disturbed *Vata* causes repeated sneezing, headache, cough and abnormal movement of secretions. The pathology is centred in *Nasa* and may involve *Pranavaha* and *Rasavaha Srotas*.^[2-5,21]

Mandagni and *Ama* formation are considered important in chronicity because they impair digestion, nourishment and *Vyadhikshamatva*. The therapeutic approach therefore includes *Nidana Parivarjana* together with *Deepana*, *Pachana*, *Amapachana*, *Vata-Kapha Shamana*, *Srotoshodhana*, *Shothahara*, *Pratishyayaghna* and *Rasayana* measures. This approach addresses both local nasal manifestations and systemic susceptibility to recurrent respiratory illness.^[1-5,21]

Modern Review

Allergic rhinitis is initiated when a sensitised individual encounters an allergen. Antigen presentation promotes a T-helper 2 response and production of allergen-specific immunoglobulin E, which binds to mast cells. Re-exposure causes mast-cell degranulation and release of histamine, leukotrienes, prostaglandins and cytokines, producing the immediate phase of sneezing, itching and rhinorrhoea. A late phase follows with eosinophil, basophil and lymphocyte recruitment, persistent oedema and nasal obstruction.^[8-13,19]

The nasal cavity filters, warms and humidifies inspired air, and the integrity of mucociliary function is central to upper-airway health. Persistent mucosal inflammation can cause mouth breathing, disturbed sleep, postnasal cough, impaired smell and reduced daily activity. Diagnosis is predominantly clinical and may be supported by absolute eosinophil count, serum immunoglobulin E, skin-prick testing and allergen-specific immunoglobulin E. Management should combine trigger avoidance, pharmacotherapy and evaluation for coexisting sinus or lower-airway disease.^[14,16-20]

Drug Review

Agastya Haritaki Avaleha is described in Charaka Samhita Chikitsa Sthana 18/57-62. It contains *Dashamoola* drugs, *Haritaki*, *Pippali*, *Kantakari*, *Brihati*, *Bharangi*, *Pushkaramoola*, *Chitraka*, *Shati*, *Yava*, *Guda*, *Ghritha*, *Tila Taila*, *Madhu* and associated ingredients. The *Avaleha* dosage form is palatable and convenient for paediatric administration, while the combination is classically indicated in *Pratishyaya*, *Kasa* and *Shwasa*.^[2]

The formulation is dominated by *Katu*, *Tikta* and *Kashaya Rasa*; *Laghu*, *Ruksha* and *Tikshna Guna*; *Ushna Virya*; and mainly *Katu Vipaka*. These properties may counter the *Guru*, *Snigdha*, *Sheeta* and *Picchila* features of aggravated *Kapha*. The combined *Deepana*, *Pachana*, *Kaphahara*, *Vatanulomana*, *Kasahara*, *Shwasahara*, *Shothahara* and *Rasayana* actions, together with reported anti-inflammatory, antioxidant, antimicrobial and immunomodulatory activities of constituent herbs, provide a plausible basis for clinical benefit.^[15]

MATERIALS AND METHODS

- 1. Study design:** Open-label, single-arm exploratory clinical trial.
- 2. Study setting:** OPD and IPD of the Postgraduate Department of *Kaumarbhritya*, Shri Dhanwantri Ayurvedic Medical College & Research Centre, Mathura, Uttar Pradesh, India.

3. Sample size: Thirty clinically diagnosed children with *Jeerna Pratishyaya* and allergic rhinitis were enrolled, and all completed the study.

4. Ethics and consent: The study received institutional ethics approval (SDAMCRC/IEC-2023/06/2026; approval dated 12 February 2026). Written informed consent was obtained from parents or guardians before enrolment.

5. Trial registration: The trial was prospectively registered with the Clinical Trials Registry - India as CTRI/2026/04/108350 on 13 April 2026.^[22]

6. Diagnostic basis: Diagnosis was based on classical clinical features of *Jeerna Pratishyaya* correlated with allergic rhinitis. Haemogram and absolute eosinophil count were performed; X-ray of the paranasal sinuses was optional where clinically indicated.

7. Intervention: *Agastya Haritaki Avaleha* was administered orally twice daily before meals with lukewarm water (*Koshna Jala*) as *Anupana*. The dose was calculated according to *Dilling's formula*: age in years/20 × adult dose, with an adult dose of 12 g.

8. Treatment and follow-up: Treatment duration was three months. Clinical follow-up was conducted every two weeks, followed by a post-trial assessment after one month to evaluate recurrence.

9. Outcome measures: Twelve graded clinical parameters were assessed before and after treatment: *Kshavathu*, *Gandhajnana*, *Ghranoparodha*, *Shirashoola*, *Aruchi*, *Kasa*, *Nasasrava*, *Swarabheda*, *Jwara*, *Kandu*, *Sashabda Shwasa* and *Shwasa*. Laboratory outcomes were haemoglobin and absolute eosinophil count.

10. Statistical analysis: Data were expressed as frequency, percentage, mean, standard deviation and standard error. Before-treatment and after-treatment values were compared using the Wilcoxon signed-rank test. A p-value below 0.05 was considered statistically significant.

Table No. 1: Composition of *Agastya Haritaki Avaleha*.

S.	Ingredient	Botanical/English	Part used	Quantity	Group
----	------------	-------------------	-----------	----------	-------

No.		name			
1	Bilva	Aegle marmelos	Stem bark	1 part	Kwatha/primary
2	Agnimantha	Premna integrifolia	Stem bark	1 part	Kwatha/primary
3	Shyonaka	Oroxylum indicum	Stem bark	1 part	Kwatha/primary
4	Patala	Stereospermum suaveolens	Stem bark	1 part	Kwatha/primary
5	Kashmari	Gmelina arborea	Stem bark	1 part	Kwatha/primary
6	Kantakari	Solanum xanthocarpum	Whole plant	1 part	Kwatha/primary
7	Brihati	Solanum indicum	Whole plant	1 part	Kwatha/primary
8	Gokshura	Tribulus terrestris	Seed	1 part	Kwatha/primary
9	Shalaparni	Pseudarthria viscida	Dry root	1 part	Kwatha/primary
10	Prasniparni	Uraria picta	Dry root	1 part	Kwatha/primary
11	Atmagupta	Mucuna pruriens	Seed	1 part	Kwatha/primary
12	Shankhapushpi	Clitoria ternatea	Whole plant	1 part	Kwatha/primary
13	Shati	Kaempferia galanga	Rhizome	1 part	Kwatha/primary
14	Bala	Sida cordifolia	Dry root	1 part	Kwatha/primary
15	Gajapippali	Scindapsus officinalis	Fruit	1 part	Kwatha/primary
16	Apamarga	Achyranthes aspera	Whole plant	1 part	Kwatha/primary
17	Pippalimoola	Piper longum	Dry stem	1 part	Kwatha/primary
18	Rakta Chitraka	Plumbago indica	Dry root	1 part	Kwatha/primary
19	Bharangi	Clerodendrum serratum	Dry root	1 part	Kwatha/primary
20	Pushkaramoola	Inula racemosa	Dry root	1 part	Kwatha/primary
21	Yava	Hordeum vulgare	Seed	32 parts	Kwatha/primary
22	Haritaki	Terminalia chebula	Dry fruit pulp	12.5 parts (100 fruits)	Kwatha/primary
23	Guda	Jaggery	-	50 parts	Kwatha/primary
24	Pippali Churna	Piper longum	Fruit	2 parts	Prakshepa
25	Ghrita	Ghee	-	2 parts	Prakshepa
26	Tila Taila	Sesamum indicum	Seed oil	2 parts	Prakshepa
27	Madhu	Honey	-	2 parts	Prakshepa

Preparation was performed by preparing a decoction of the *Kwatha Dravyas* with *Yava* and a *Haritaki* pottali, reducing the liquid to one-fourth, adding *Guda*, incorporating fried *Haritaki* pulp, and mixing *Pippali Churna* after partial cooling and *Madhu* after complete cooling.

Table No. 2: Inclusion Criteria.

S. No.	Criterion
1	Age 5-12 years, either sex.
2	Cardinal features of Jeerna Pratishyaya / recurrent upper respiratory tract illness.
3	At least one recurrent episode per month for one year or more.

Table No. 3: Exclusion Criteria.

S. No.	Criterion
--------	-----------

1	Age below 5 years or above 12 years.
2	Severe disease, including pneumonia, tuberculosis or anaemia, requiring alternative or urgent management.

Table No. 4: Withdrawal Criteria.

S. No.	Criterion
1	Parent or patient unwilling to continue treatment.
2	Development of a serious clinical condition during the trial.
3	Absence from scheduled follow-up.

Table No. 5: Age-wise Dose Schedule.

Age (years)	Calculated dose (g/day)	Adjusted dose (g/day)
5	2.8	3
6	3.6	4
7	4.2	4
8	4.8	5
9	5.4	6
10	6.0	6
11	6.6	7
12	7.2	7

Table No. 6: Assessment Criteria for Kshavathu.

Grade	Clinical criterion
0	Nil / absent
1	Occasional sneezing
2	Frequent sneezing
3	Very frequent sneezing

Table No. 7: Assessment Criteria for Gandhajnana.

Grade	Clinical criterion
0	Normal smell perception
1	Slight decrease in smell
2	Marked decrease in smell
3	Complete loss of smell

Table No. 8: Assessment Criteria for Ghranoparodha.

Grade	Clinical criterion
0	No nasal obstruction
1	Mild obstruction
2	Moderate obstruction
3	Complete obstruction

Table No. 9: Assessment Criteria for Shirashoola.

Grade	Clinical criterion
-------	--------------------

0	Absent
1	Mild headache
2	Frequent headache
3	Severe continuous headache

Table No. 10: Assessment Criteria for Aruchi.

Grade	Clinical criterion
0	Normal appetite
1	Mild loss of appetite
2	Moderate loss of appetite
3	Severe loss of appetite

Table No. 11: Assessment Criteria for Kasa.

Grade	Clinical criterion
0	No cough
1	Occasional cough
2	Frequent cough
3	Severe persistent cough

Table No. 12: Assessment Criteria for Nasasrava.

Grade	Clinical criterion
0	No nasal discharge
1	Mild discharge
2	Moderate discharge
3	Profuse continuous discharge

Table No. 13: Assessment Criteria for Swarabheda.

Grade	Clinical criterion
0	Normal voice
1	Hoarseness only during prolonged speaking
2	Persistent hoarseness
3	Severe hoarseness

Table No. 14: Assessment Criteria for Jwara.

Grade	Clinical criterion
0	Absent
1	Occasional fever
2	Intermittent fever
3	Continuous fever

Table No. 15: Assessment Criteria for Kandū.

Grade	Clinical criterion
-------	--------------------

0	Absent
1	Occasional itching
2	Frequent itching
3	Severe itching

Table No. 16: Assessment Criteria for Sashabda Shwasa.

Grade	Clinical criterion
0	Absent
1	Occasional audible breathing
2	Frequent audible breathing
3	Continuous noisy breathing

Table No. 17: Assessment Criteria for Shwasa.

Grade	Clinical criterion
0	No breathlessness
1	Breathlessness on severe exertion only
2	Breathlessness on moderate exertion
3	Breathlessness at rest or minimal exertion

Table No. 18: Assessment of Overall Improvement.

Category	Relief (%)
No relief	0
Mild relief	25
Moderate relief	50
Significant relief	75
Excellent relief	100

OBSERVATION AND RESULTS

Demographic Data

Table No. 19: Age-wise Distribution.

Age group	Number	Percentage
5-7 years	7	23.33
8-10 years	11	36.67
11-12 years	12	40.00
Total	30	100.00

The largest age group was 11-12 years (40.00%), followed by 8-10 years (36.67%) and 5-7 years (23.33%).

Table No. 20: Gender-wise Distribution.

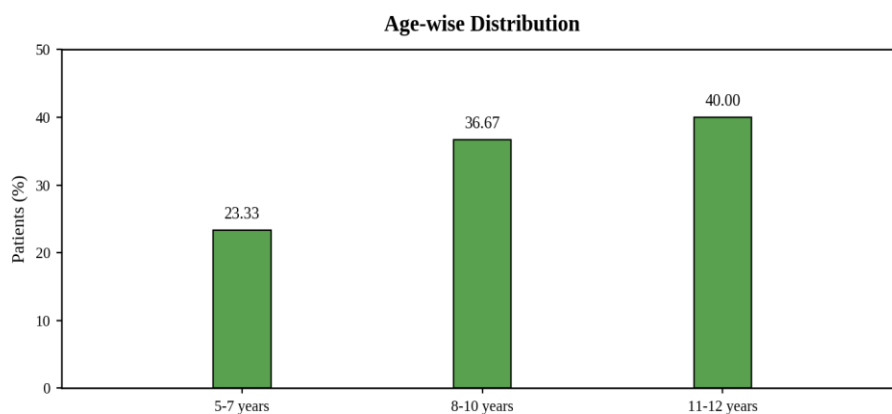
Gender	Number	Percentage
Male	14	46.67
Female	16	53.33
Total	30	100.00

Females constituted 53.33% of the sample and males 46.67%; the difference was small.

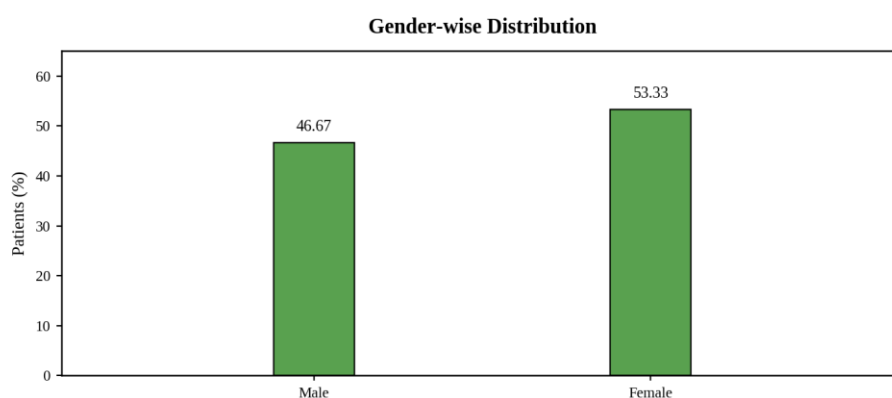
Table No. 21: Religion-wise Distribution.

Religion	Number	Percentage
Hindu	28	93.33
Muslim	2	6.67
Total	30	100.00

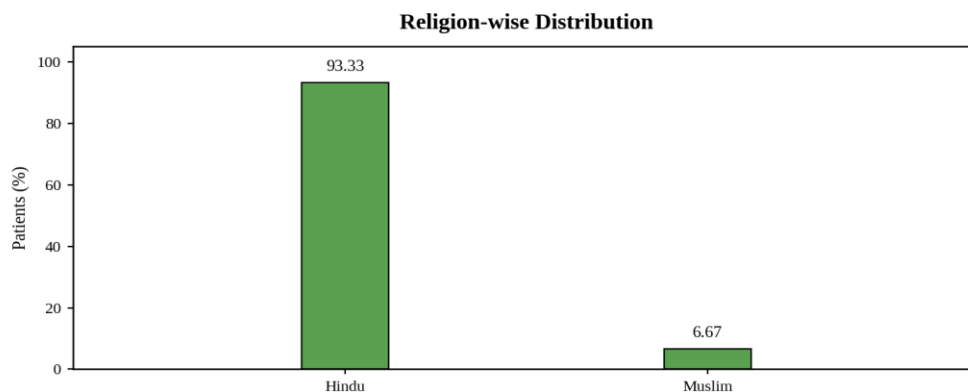
Most participants were Hindu (93.33%), reflecting the attendance pattern of the study centre; 6.67% were Muslim.

**Graph No. 1: Age-wise Distribution.**

Children aged 11-12 years formed the largest subgroup.

**Graph No. 2: Gender-wise Distribution.**

A slight female predominance was observed.



Graph No. 3: Religion-wise Distribution.

Hindu participants formed the majority of the study sample.

Clinical Result Data

Table No. 22: Effect of Treatment on Subjective Clinical Parameters.

Parameter	BT mean ± SD	AT mean ± SD	Mean change	Relief (%)	Absent/normal AT, n (%)	p-value
Kshavathu	2.033 ± 0.8087	0.5333 ± 0.6814	1.4997	73.77	18 (60.00)	<0.0001
Gandhajnana	1.900 ± 0.8030	0.7333 ± 0.6397	1.1667	61.41	16 (53.33)	<0.0001
Ghranoparodha	2.100 ± 0.8449	0.7333 ± 0.7397	1.3667	65.08	18 (60.00)	<0.0001
Shirashoola	1.800 ± 0.6103	0.6000 ± 0.7240	1.2000	66.67	17 (56.67)	<0.0001
Aruchi	2.167 ± 0.7466	0.7000 ± 0.7497	1.4670	67.70	15 (50.00)	<0.0001
Kasa	2.100 ± 0.7589	0.7667 ± 0.8584	1.3333	63.49	15 (50.00)	<0.0001
Nasasrava	2.133 ± 0.8996	0.8333 ± 0.7915	1.2997	60.93	13 (43.33)	<0.0001
Swarabheda	2.167 ± 0.7915	0.7000 ± 0.7022	1.4670	67.70	18 (60.00)	<0.0001
Jwara	2.133 ± 0.8193	0.9000 ± 0.6618	1.2330	57.81	16 (53.33)	<0.0001
Kandu	1.800 ± 0.7611	0.7667 ± 0.7279	1.0333	57.41	16 (53.33)	<0.0001
Sashabda Shwasa	2.067 ± 0.7397	0.6333 ± 0.8087	1.4337	69.36	18 (60.00)	<0.0001
Shwasa	2.100 ± 0.8449	0.8667 ± 0.6814	1.2333	58.73	16 (53.33)	<0.0001

All twelve clinical parameters improved significantly ($p < 0.0001$). Maximum mean-score relief was observed in *Kshavathu* (73.77%), followed by *Sashabda Shwasa* (69.36%), *Aruchi* and *Swarabheda* (67.70% each).

Objective and Laboratory Result Data

Table No. 23: Effect of Treatment on Laboratory Parameters.

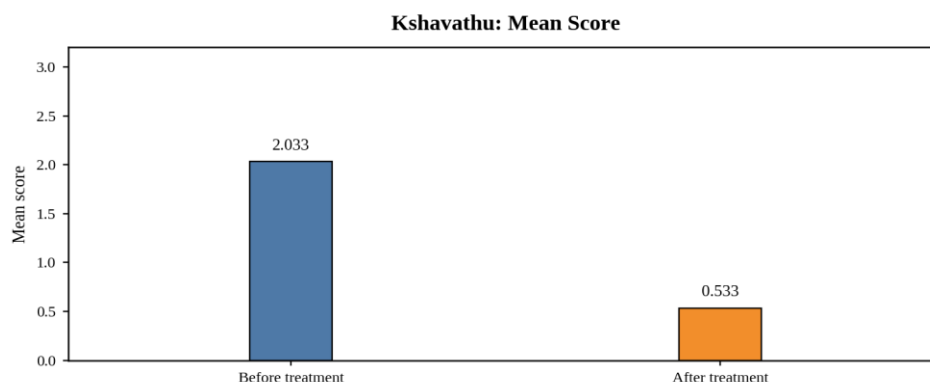
Parameter	BT mean $\pm$ SD	AT mean $\pm$ SD	Mean change	Percentage change	p-value
Haemoglobin (g/dL)	9.877 $\pm$ 0.6218	10.680 $\pm$ 0.5350	+0.803	8.13 (Improvement)	<0.0001
Absolute eosinophil count (cells/ μ L)	579.100 $\pm$ 9.4920	510.400 $\pm$ 18.4900	-68.700	11.86 (Reduction)	<0.0001

Haemoglobin increased by 8.13%, while absolute eosinophil count decreased by 11.86%; both changes were statistically significant ($p < 0.0001$).

Table No. 24: Overall Percentage Change Reported in the Study.

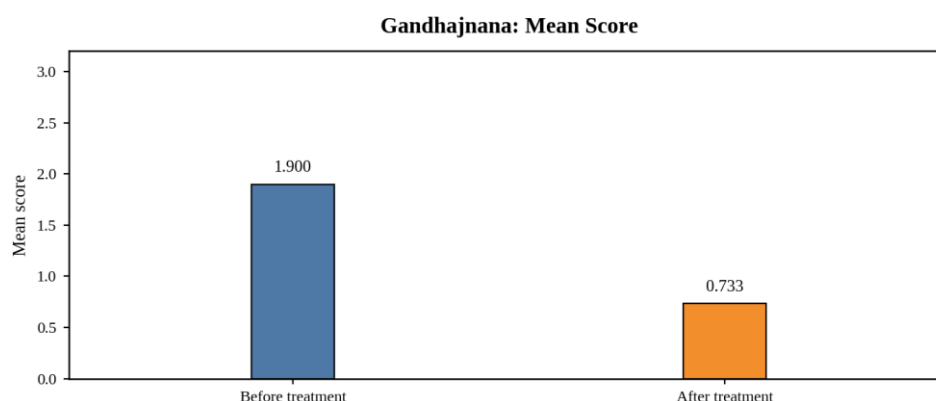
Parameter	Change (%)	Direction/interpretation
Kshavathu	73.77	Clinical relief
Gandhajnana	61.41	Clinical relief
Ghranoparodha	65.08	Clinical relief
Shirashoola	66.67	Clinical relief
Aruchi	67.70	Clinical relief
Kasa	63.49	Clinical relief
Nasasrava	60.93	Clinical relief
Swarabheda	67.70	Clinical relief
Jwara	57.81	Clinical relief
Kandu	57.41	Clinical relief
Sashabda Shwasa	69.36	Clinical relief
Shwasa	58.73	Clinical relief
Haemoglobin	8.13	Improvement
Absolute eosinophil count	11.86	Reduction
Composite overall response reported in thesis	48.09	Composite value

The thesis reported a composite overall response of 48.09%. Because this value combined symptom-free response percentages with laboratory percentage changes, it should be interpreted cautiously and independently from the parameter-wise relief values.



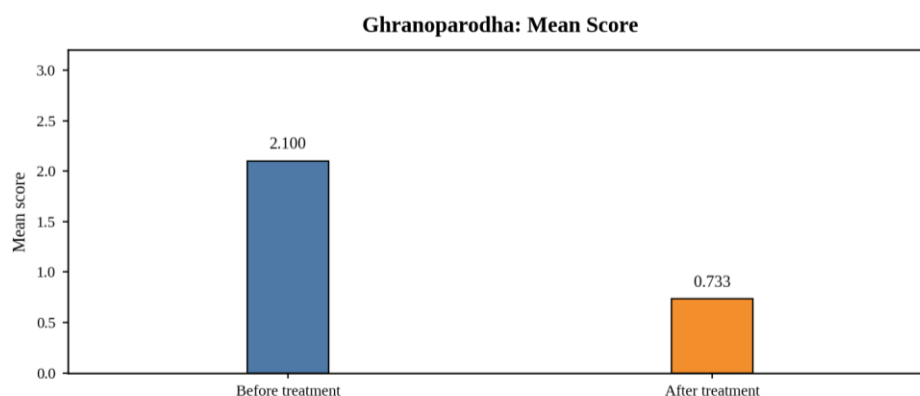
Graph No. 4: Before- and After-Treatment Mean Score of Kshavathu.

Mean score decreased by 73.77%, and sneezing was absent in 60.00% after treatment.



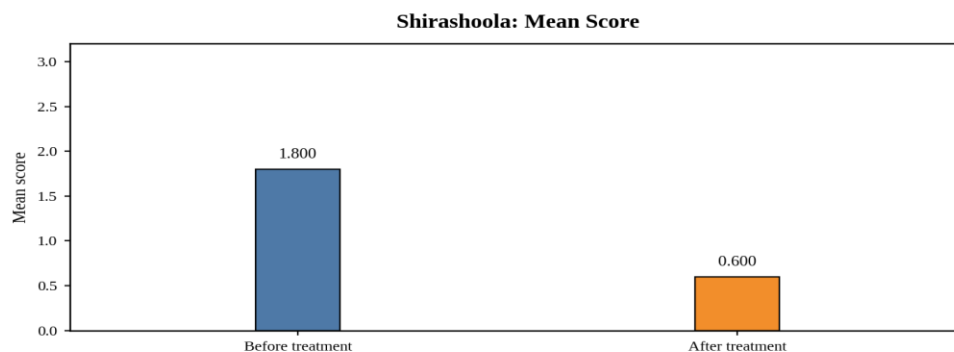
Graph No. 5: Before- and After-Treatment Mean Score of Gandhajnana.

Mean score improved by 61.41%, with normal smell in 53.33% after treatment.



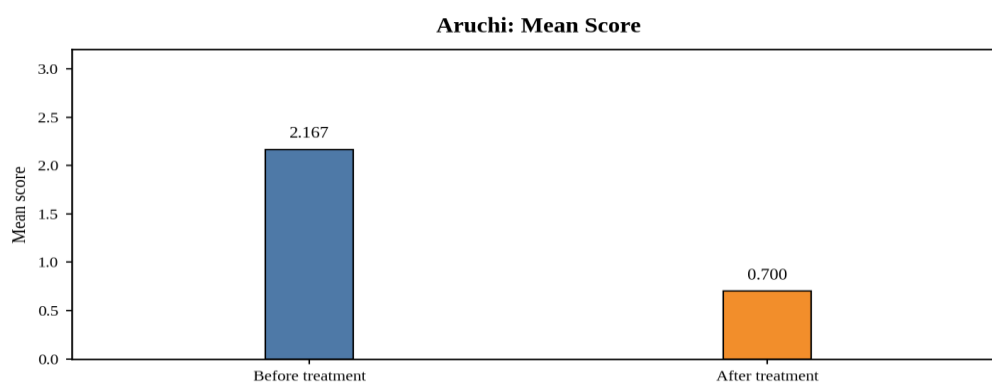
Graph No. 6: Before- and After-Treatment Mean Score of Ghranoparodha.

Nasal obstruction decreased by 65.08%, and 60.00% had no obstruction after treatment.



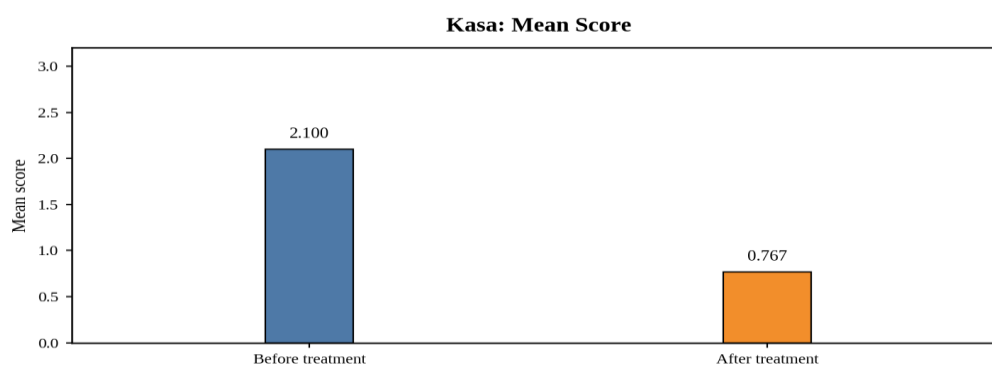
Graph No. 7: Before- and After-Treatment Mean Score of Shirashoola.

Headache decreased by 66.67%, and 56.67% were symptom-free after treatment.



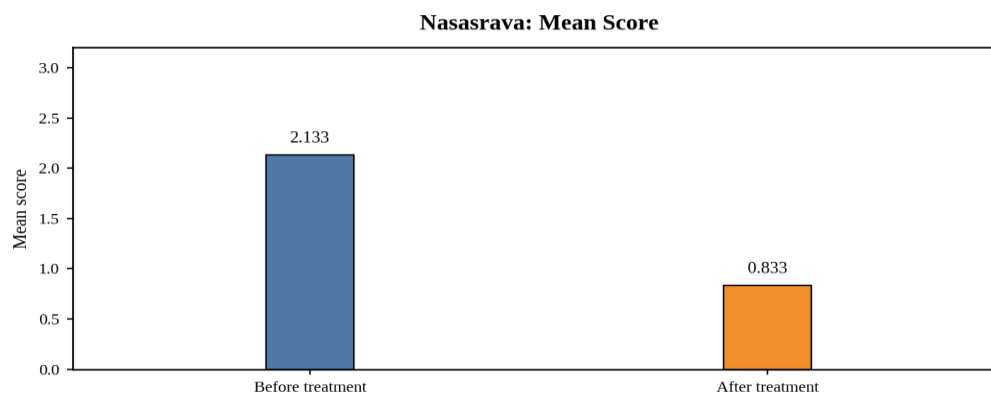
Graph No. 8: Before- and After-Treatment Mean Score of Aruchi.

Loss of appetite decreased by 67.70%, with normal appetite in 50.00% after treatment.



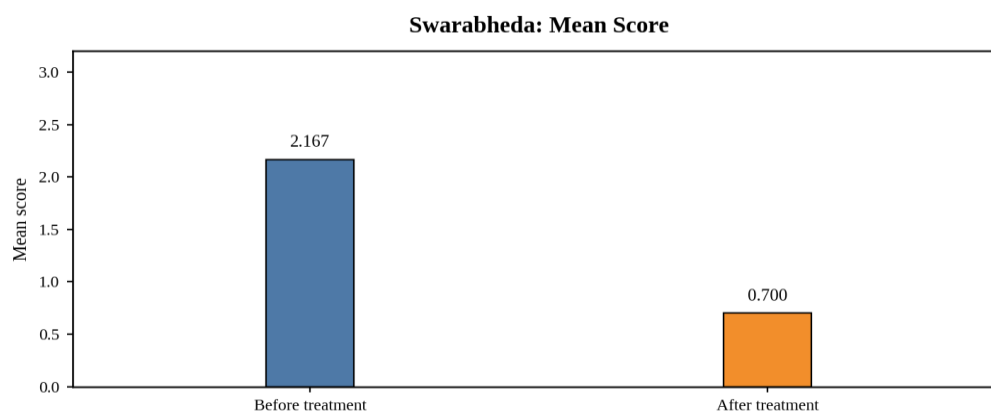
Graph No. 9: Before- and After-Treatment Mean Score of Kasa.

Cough decreased by 63.49%, and 50.00% had no cough after treatment.



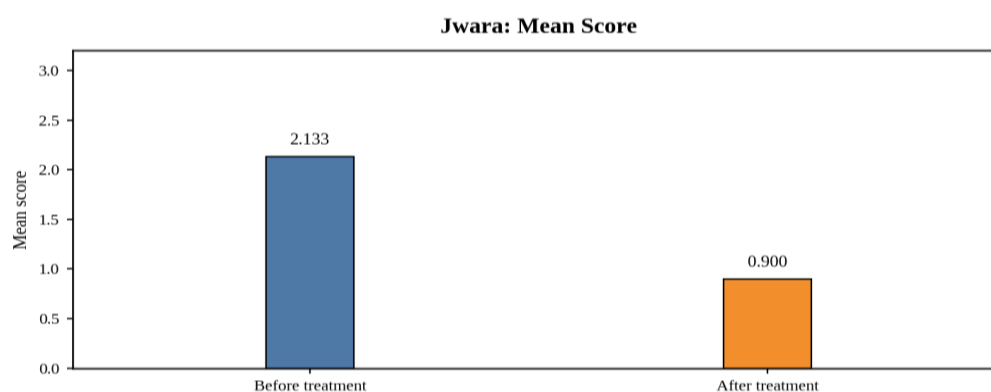
Graph No. 10: Before- and After-Treatment Mean Score of Nasavrava.

Nasal discharge decreased by 60.93%, and 43.33% had no discharge after treatment.



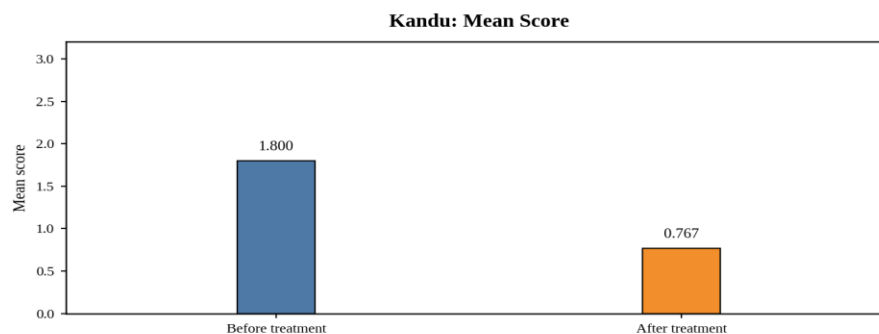
Graph No. 11: Before- and After-Treatment Mean Score of Swarabheda.

Altered voice decreased by 67.70%, and normal voice was restored in 60.00%.



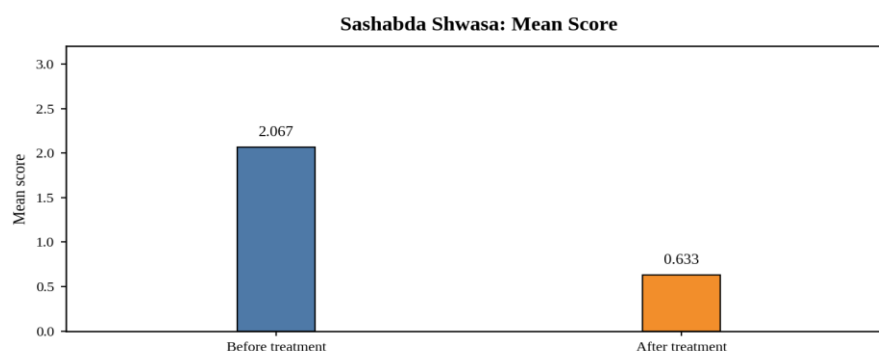
Graph No. 12: Before- and After-Treatment Mean Score of Jwara.

Fever score decreased by 57.81%, with absence of fever in 53.33% after treatment.



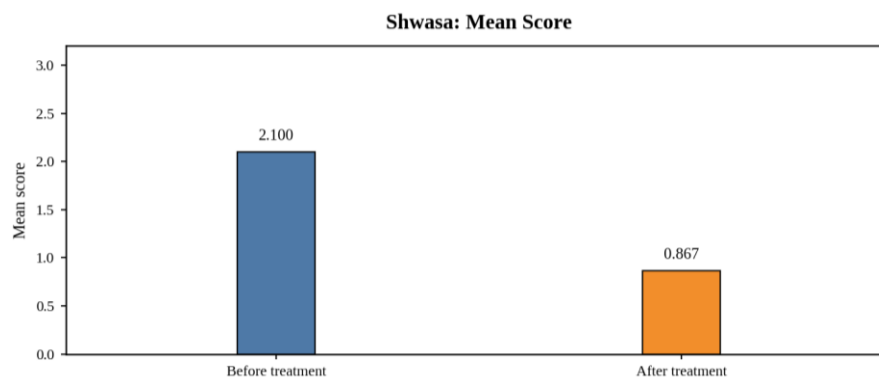
Graph No. 13: Before- and After-Treatment Mean Score of Kandu.

Itching decreased by 57.41%, and 53.33% had no itching after treatment.



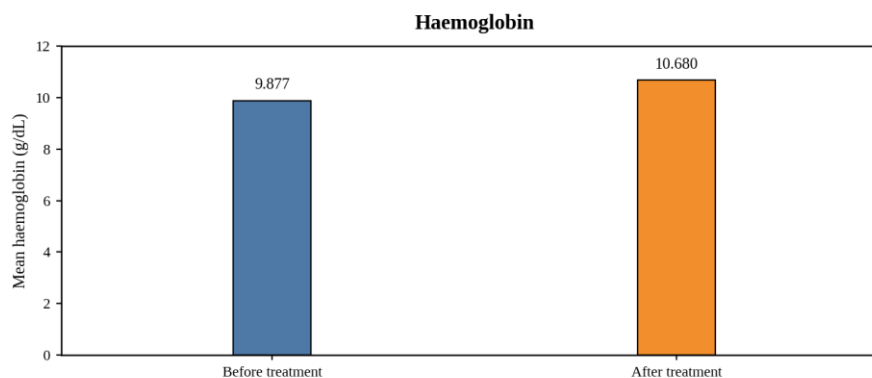
Graph No. 14: Before- and After-Treatment Mean Score of Sashabda Shwasa.

Noisy breathing decreased by 69.36%, and 60.00% had no noisy breathing after treatment.



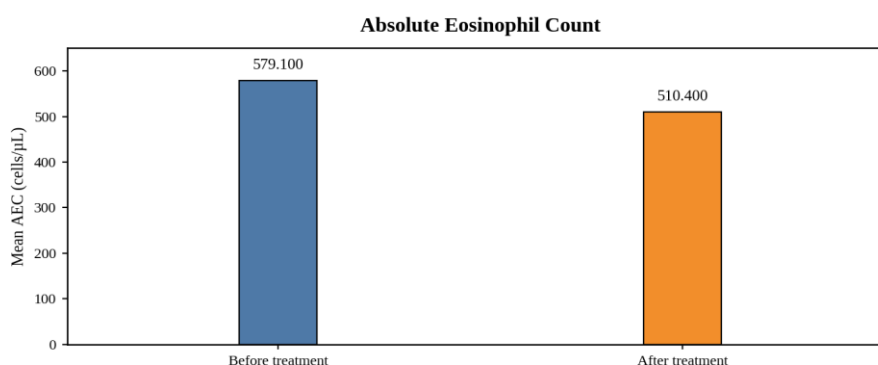
Graph No. 15: Before- and After-Treatment Mean Score of Shwasa.

Breathlessness decreased by 58.73%, and 53.33% had no breathlessness after treatment.



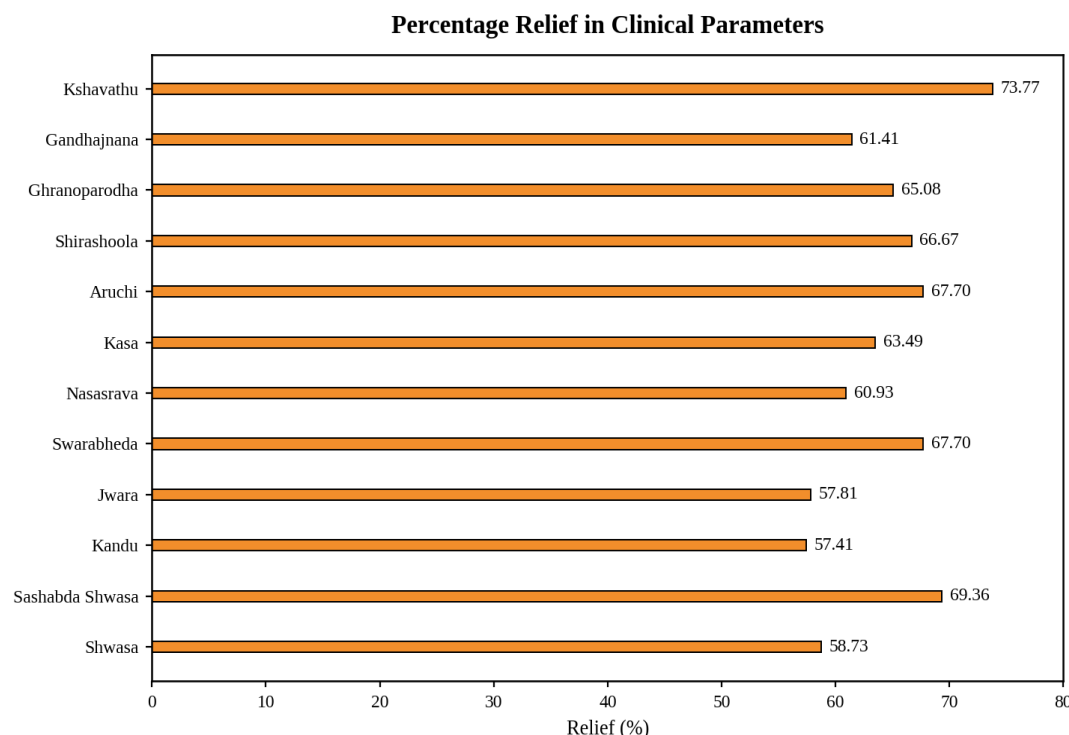
Graph No. 16: Before- and After-Treatment Mean Haemoglobin.

Mean haemoglobin increased from 9.877 to 10.680 g/dL, representing 8.13% improvement.



Graph No. 17: Before- and After-Treatment Mean Absolute Eosinophil Count.

Mean absolute eosinophil count decreased from 579.10 to 510.40 cells/μL, representing 11.86% reduction.



Graph No. 18: Percentage Relief in Clinical Parameters.

The highest clinical relief was observed in *Kshavathu*, followed by *Sashabda Shwasa*.

DISCUSSION

The study evaluated *Agastya Haritaki Avaleha* in 30 children with *Jeerna Pratishyaya* clinically correlated with allergic rhinitis. The results showed significant improvement across nasal, respiratory, systemic and laboratory outcomes. The therapeutic response may be explained by the combined *Deepana*, *Pachana*, *Vata-Kapha Shamana*, *Srotoshodhana*, *Shothahara*, *Kasahara*, *Shwasahara* and *Rasayana* actions of the formulation, together with anti-inflammatory and immunomodulatory effects proposed for its constituent herbs.^[2,15]

Kshavathu (Sneezing)

The mean score decreased from 2.033 to 0.5333, providing 73.77% relief, the highest among all clinical parameters. Sneezing in allergic rhinitis is driven by histamine-mediated stimulation of sensory nerve endings. The marked reduction suggests decreased mucosal hypersensitivity and irritation. *Vata-Kapha Shamana*, *Kaphahara* and *Shothahara* actions may have contributed to this response.^[9,10]

Gandhajnana (Sense of Smell)

The score decreased from 1.900 to 0.7333, showing 61.41% relief, and normal smell was restored in 53.33% of participants. Impaired smell commonly follows mucosal oedema and obstruction of airflow to the olfactory area. The improvement indicates reduced congestion and better nasal airflow, potentially supported by *Kapha Shamana* and *Srotoshodhana*.^[12,16,17]

Ghranoparodha (Nasal Obstruction)

The score decreased from 2.100 to 0.7333, corresponding to 65.08% relief. Nasal obstruction was absent in 60.00% after treatment. Reduction in turbinate congestion and mucosal oedema is consistent with improved nasal patency. *Kaphahara*, *Shothahara* and *Srotoshodhaka* properties may have cleared obstructed nasal passages.^[10-12]

Shirashoola (Headache)

The mean score decreased from 1.800 to 0.600, giving 66.67% relief. Headache associated with rhinitis can result from nasal congestion, impaired sinus ventilation, facial pressure and disturbed sleep. Relief suggests reduced congestion and pressure in the head region; *Vata-Kapha Shamana*, *Vedanasthapana* and *Shothahara* actions are plausible contributors.^[17,20]

Aruchi (Loss of Appetite)

The score decreased from 2.167 to 0.700, with 67.70% relief and normal appetite in 50.00%. Chronic nasal symptoms, impaired smell and recurrent illness can reduce food intake. Improvement may reflect better smell perception and digestive function. *Deepana*, *Pachana* and *Agnivardhaka* actions of *Pippali*, *Chitraka*, *Shati* and *Haritaki* may have supported *Agni*.^[15]

Kasa (Cough)

The score decreased from 2.100 to 0.7667, showing 63.49% relief. Cough in allergic rhinitis frequently arises from postnasal discharge, pharyngeal irritation and upper-airway hypersensitivity. Reduction indicates decreased secretion and irritation. *Kasahara*, *Kaphahara*, *Vatanulomana* and expectorant effects may have facilitated airway clearance.^[11,14,19]

Nasasrava (Nasal Discharge)

The score decreased from 2.133 to 0.8333, corresponding to 60.93% relief. Watery discharge results from allergen-induced glandular secretion and increased vascular permeability. The

reduction supports improved control of mucosal inflammation and hypersecretion. *Kashaya Rasa*, *Ruksha Guna*, *Kledahara* and *Srotoshodhaka* actions may have reduced excessive secretion.^[9,10]

Swarabheda (Altered Voice)

The mean score decreased from 2.167 to 0.700, producing 67.70% relief; normal voice was restored in 60.00%. Voice alteration may arise from nasal obstruction, mouth breathing, postnasal discharge and throat irritation. Improvement indicates restored nasal resonance and reduced upper-airway irritation. *Kanthya* and *Kapha-Vata Shamaka* effects may be relevant.^[17]

Jwara (Fever)

The score decreased from 2.133 to 0.900, providing 57.81% relief. Fever is not a defining feature of uncomplicated allergic rhinitis and may reflect associated recurrent upper respiratory infection. Reduction may therefore indicate fewer or less severe associated inflammatory episodes. *Jwaraghna*, *Amapachana* and *Rasayana* effects may have supported recovery, although infective causes require separate assessment.

Kandu (Itching)

The score decreased from 1.800 to 0.7667, giving 57.41% relief. Nasal and ocular itching are characteristic histamine-mediated symptoms of the early allergic response. Improvement suggests reduced allergic mucosal reactivity. *Tikta* and *Kashaya Rasa*, together with *Kandughna*, *Kaphahara* and *Shothahara* actions, may have reduced itching.^[9,10]

Sashabda Shwasa (Noisy Breathing)

The score decreased from 2.067 to 0.6333, representing 69.36% relief. Noisy breathing may reflect narrowed nasal passages, retained secretions or associated bronchial constriction. The marked reduction indicates improved airway patency. *Shwasahara*, *Kaphahara*, *Vatanulomana* and possible bronchodilator effects of constituent herbs may have facilitated easier breathing.^[11,19]

Shwasa (Breathlessness)

The score decreased from 2.100 to 0.8667, showing 58.73% relief. Breathlessness may be associated with severe nasal obstruction, mouth breathing, recurrent infection or bronchial hyperresponsiveness. Improvement suggests reduced respiratory effort and better airway

patency. Pranavaha *Srotoshodhana*, *Shwasahara* and *Vatanulomana* actions may have restored the normal movement of *Prana Vayu*.^[11,19]

Haemoglobin

Mean haemoglobin increased from 9.877 to 10.680 g/dL, an improvement of 8.13%. Better appetite, digestion and nutritional intake may have contributed; however, the post-treatment mean remained relatively low and does not indicate complete correction of anaemia. The nourishing effects of *Guda*, *Ghritha* and *Madhu*, combined with *Deepana* and *Pachana*, may have supported *Dhatu Poshana*.^[15]

Absolute Eosinophil Count

Mean absolute eosinophil count decreased from 579.10 to 510.40 cells/ μ L, a reduction of 11.86%. Eosinophils contribute to mucosal swelling, secretion, itching and tissue irritation in allergic inflammation. The decrease supports the observed improvement in *Kshavathu*, *Kandu*, *Nasasrava* and *Ghranoparodha*, although the count remained elevated, indicating residual allergic tendency.^[9,10]

Overall Interpretation

All twelve clinical parameters and both laboratory parameters changed significantly at $p < 0.0001$. The pattern of response supports an effect on nasal hypersensitivity, secretion, obstruction, postnasal irritation, appetite and respiratory discomfort. The treatment was well tolerated, with no adverse drug reaction reported in the available data. Nevertheless, the study was limited by its single-arm design, small sample size, absence of blinding or control, and limited post-treatment observation. The reported composite overall response of 48.09% also requires cautious interpretation because it combined different forms of percentage response.

CONCLUSION

Agastya Haritaki Avaleha produced statistically significant improvement in all assessed clinical symptoms of *Jeerna Pratishyaya* with allergic rhinitis in children aged 5-12 years. Maximum relief was observed in *Kshavathu* (73.77%), followed by *Sashabda Shwasa* (69.36%), *Aruchi* and *Swarabheda* (67.70% each). Haemoglobin improved by 8.13% and absolute eosinophil count decreased by 11.86%, with $p < 0.0001$ for all assessed changes. The formulation was well tolerated during the study period.

On the basis of the statistically significant clinical and laboratory findings, the null hypothesis was rejected and the alternative hypothesis was accepted. Thus, *Agastya Haritaki Avaleha* was found clinically beneficial in the management of *Jeerna Pratishyaya* with special reference to allergic rhinitis in children aged 5-12 years; however, larger randomised controlled trials with longer follow-up are required for confirmation.

ACKNOWLEDGEMENT

The authors express sincere gratitude to Prof. (Dr.) Ritesh M. Kela, Professor and Guide, Department of *Kaumarbhritya*, Shri Dhanwantri Ayurvedic Medical College & Research Centre, Mathura, for his scholarly guidance, encouragement and continuous support throughout the study.

CONFLICT OF INTEREST -Nil.

SOURCE OF FUNDING- None.

REFERENCES

1. Tripathi RD, editor. Charaka Samhita of Agnivesha, Sutra Sthana. Varanasi: Chaukhambha Sanskrit Pratishthan, 2017.
2. Tripathi RD, editor. Charaka Samhita of Agnivesha, Chikitsa Sthana 18/57-62. Varanasi: Chaukhambha Sanskrit Pratishthan, 2017.
3. Shastri AD, editor. Sushruta Samhita, Uttara Tantra. Varanasi: Chaukhambha Sanskrit Sansthan, 2018.
4. Sharma H, editor. Kashyapa Samhita, Pratishyaya Chikitsa. Varanasi: Chaukhambha Sanskrit Sansthan, 2018.
5. Murthy KRS. Ashtanga Hridaya of Vagbhata, Uttara Sthana. Varanasi: Chaukhambha Krishnadas Academy, 2018.
6. Asher MI, Montefort S, Bjorksten B, Lai CKW, Strachan DP, Weiland SK, et al. Worldwide time trends in the prevalence of symptoms of asthma, allergic rhinoconjunctivitis and eczema in childhood: ISAAC Phases One and Three repeat multicountry cross-sectional surveys. *Lancet*, 2006; 368(9537): 733-43.
7. Pawankar R, Canonica GW, Holgate ST, Lockey RF. WAO White Book on Allergy. Milwaukee: World Allergy Organization, 2011.
8. Bousquet J, Van Cauwenberge P, Khaltaev N. Allergic rhinitis and its impact on asthma (ARIA) 2008 update. *Allergy*, 2008; 63(86): 8-160.

9. Abbas AK, Lichtman AH, Pillai S. Cellular and Molecular Immunology. 9th ed. Philadelphia: Elsevier, 2018.
10. Meltzer EO. Pathophysiology of allergic rhinitis. *J Allergy Clin Immunol*, 2004; 114(5): S102-8.
11. Brozek JL, Bousquet J, Agache I, Agarwal A, Bachert C, Bosnic-Anticevich S, et al. Allergic Rhinitis and its Impact on Asthma guidelines: 2016 revision. *J Allergy Clin Immunol*, 2017; 140(4): 950-8.
12. Skoner DP. Allergic rhinitis: definition, epidemiology, pathophysiology, detection and diagnosis. *J Allergy Clin Immunol*, 2001; 108(1): S2-8.
13. Dykewicz MS, Fineman S. Diagnosis and management of rhinitis. *J Allergy Clin Immunol*, 1998; 102(6 Pt 2): S1-36.
14. Wallace DV, Dykewicz MS, Oppenheimer J, Portnoy JM, Lang DM. Pharmacologic treatment of seasonal allergic rhinitis. *Ann Allergy Asthma Immunol*, 2017; 119(6): 489-511.
15. Sharma PV. Dravyaguna Vijnana. Vol. 2. Reprint ed. Varanasi: Chaukhambha Bharati Academy, 2020.
16. Chaurasia BD. BD Chaurasia's Human Anatomy: Head, Neck and Brain. 8th ed. New Delhi: CBS Publishers & Distributors, 2020.
17. Dhingra PL, Dhingra S. Diseases of Ear, Nose and Throat and Head and Neck Surgery. 8th ed. New Delhi: Elsevier, 2022.
18. Hall JE, Hall ME. Guyton and Hall Textbook of Medical Physiology. 14th ed. Philadelphia: Elsevier, 2021.
19. Pawankar R. Allergic rhinitis and asthma: the link. *Curr Opin Allergy Clin Immunol*, 2002; 2(1): 1-6.
20. Fokkens WJ, Lund VJ, Mullol J. European Position Paper on Rhinosinusitis and Nasal Polyps. *Rhinology*, 2012; 50(23): 1-298.
21. Tripathi RD, editor. Charaka Samhita of Agnivesha, Vimana Sthana, Srotovimana Adhyaya. Varanasi: Chaukhambha Sanskrit Pratishthan, 2017.
22. Clinical Trials Registry - India. Study of an Ayurvedic medicine for long-term cold and allergy in children (5-12 years). Registration No. CTRI/2026/04/108350; registered 13 April 2026.