



Research Article

**EFFECTIVENESS OF VAASATHI KIYAAZHAM IN THE TREATMENT OF IRAIPPU NOI
(BRONCHIAL ASTHMA)**

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ABSTRACT

Bronchial asthma is the most common non-communicable disease in India and worldwide. It markedly impairs patients' quality of life and results in notable healthcare and financial burdens. This study was undertaken to assess the therapeutic effectiveness of the siddha formulation *Vaasathi Kiyaaazham* in the management of bronchial asthma (*Iraippu Noi*). **Method:** A descriptive case series was conducted at the Government Siddha Medical College and Hospital, Palayamkottai, enrolling 20 patients presenting with bronchial asthma. The study population consisted of both male (50%) and female (50%) cases equally with a mean age of 44.70 ± 13.12 years. All participants received *Vaasathi Kiyaaazham* at a dosage of 50ml twice a day (bd) for a duration of 48 days. Clinical features like wheezing, shortness of breath, cough, morning and night symptoms were evaluated before and after the intervention. **Results:** Significant clinical improvements were noted following treatment, with a decreasing in the mean of total ACQ - 5 score from 9.15 to 5.40. It was also effective in decreasing the AEC and ESR levels. Statistical analysis demonstrated significant improvement in most assessed parameters (p <0.05). **Conclusion:** The findings of this case series indicate that *Vaasathi Kiyaaazham* may serve as an effective therapeutic option for managing bronchial asthma with considerable improvements in primary symptoms. These results highlight the potential role of siddha medicine in contemporary clinical practice and warrant further investigations through larger, controlled studies.

INTRODUCTION

Bronchial asthma is a chronic inflammatory disorder of the airways in susceptible individuals; inflammatory symptoms are usually associated with widespread but variable airflow obstruction and an increase in airway response to variety of stimuli^[2]. Chronic inflammation is associated with airway hyper responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night and in the early morning. The development and course of asthma and the response to treatment are influenced by genetic determinants, while the rapid rise in prevalence implies that environmental factors are critically

important in the development and expression of the disease. The potential role of indoor and outdoor allergens, microbial exposure, diet, vitamins, breastfeeding, tobacco smoke, air pollution and obesity have been explored but no clear consensus has emerged^[10]. Obstruction is often reversible, either spontaneously or with treatment. The increasing global prevalence of asthma, the large burden it now imposes on patients, and the high health care costs have led to expensive research into its mechanisms and treatment^[4].

Asthma affected an estimated 280 million people and caused half a million deaths globally. India contributes to 12.9% of global asthma cases and 42.4% of global asthma deaths. Asthma is included in WHO global action plan for prevention and control of NCD's and United Nations 2030 agenda for sustainable development^[11]. The Global Alliance against Chronic Respiratory Diseases (GARD) contributes to WHO's work to prevent and control chronic respiratory diseases to the vision of a world where all people

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breathe freely. According to Siddha system of Medicine, bronchial asthma can be correlated with *Iraippu Noi*. It is mentioned in *Yugi Vaithya Chinthamani 800* [9] under *Kaasa padalam*. Among the three humors that is essential for maintenance of life in accordance with Siddha system, the bronchial asthma is due to derangement of *Vaatham* and *Kabam*. Food and lifestyle changes that causes that cause disparity in *Vaatham* and *Kabam* and affecting further other humour is the major cause of this disease. This case series was conducted to study the clinical effectiveness of the Siddha medicine *Vaasathi Kiyazham* in the

management of *Iraippu noi* (bronchial asthma) among patients attending the OPD of Government Siddha Medical College & Hospital, Playamkottai.

Literature Review

Vaasathi kiyazham

Book Reference: *Anubava Vaidhya Dhevaragasiyam (part-3)* [1]

Year of publication: First edition 1916

Page no.: 472

Table 1: Detailed description of ingredients of *Vaasathi Kiyazham*

Tamil Name	<i>Adhatodai ilai</i>	<i>Seenthil kodi</i>	<i>Kandankathiri</i>
Botanical Name	<i>Justicia adhatoda</i>	<i>Tinospora cordifolia</i>	<i>Solanum xanthocarpum</i>
Family	Acanthaceae	Menispermaceae	Solanaceae
Parts Used	Leaf	Stem	Whole plant
Phyto Chemicals	Alkaloids (vasicine, vasicinone), flavonoids, phenolic compounds, glycosides, tannins, steroids, essential oils.	Alkaloids (berberine, tinosporine, palmatine), diterpenoids, steroids (β -sitosterol), glycosides, phenolic compounds.	Steroidal alkaloids, flavonoids, phenolics, saponins, terpenoids, coumarins, fatty acids.
Pharmacological Actions in Journals	Antioxidant, anti-inflammatory, anti-spasmodic, anti-allergic, immunomodulating [12]	Anti-allergic, anti-inflammatory, anti-histamine, anti-spasmodic [7]	Anti-asthmatic, anti-inflammatory, antioxidant, anti-histamine, anti-allergic [6]

Table 2: Detailed description of ingredients as per Materia medica [8]

<i>Vaasathi Kiyazham</i>	<i>Justicia adhatoda</i>	<i>Tinospora cordifolia</i>	<i>Solanum xanthocarpum</i>
Taste	Bitter	Bitter	Pungent
Composition of Elements	<i>Kaatru</i> (Air) + <i>Aagayam</i> (Ether)	<i>Kaatru</i> (Air) + <i>Aagayam</i> (Ether)	<i>Thee</i> (Fire) + <i>Kaatru</i> (Air)
Potency	Heat	Heat	Heat
Post Digestive Transformation	Pungent	Pungent	Pungent
Action	Antispasmodic, expectorant, germicide, diuretic	Expectorant, carminative, diuretic	Alterative, antiperiodic, demulcent, stomachic, tonic, stimulant

MATERIALS AND METHODS

Ingredients of *Vaasathi Kiyazham*

Adhatodai ilai (*Justicia adhatoda*) - 1 palam (35 grams)

Seenthil kodi (*Tinospora cordifolia*) - 1 palam (35 grams)

Kandankathiri (*Solanum xanthocarpum*) - 1 palam (35 grams)

Standard Operative Procedures: The ingredients of *Vaasathi Kiyazham* were procured from Kanyakumari district, Tamil Nadu. They were dried and purified. This *Chooranam* is coarsely powdered with a shelf life of 3 months. Then it was stored in an air tight container. The shelf life of *Kiyazham* is 3 hours.

Table 3: Detailed description of *Vaasathi Kiyazham* as per the Siddha literature and detailed study design

Drug Profile	
Adjuvant	Honey
Dose	50 ml
Indication	<i>Pitha kabakaasam</i> , <i>Iraippu</i> , <i>Suram</i>

Medicine	<i>Vaasathi Kiyaaazham</i>
Time	Twice a day
Course	48 days
Study Design	
Study Type	Descriptive study
Study Design	Case series
Study Place	OPD, Govt. Siddha Medical College & Hospital, Playamkottai
Study Period	4 months
Sample Size	20 patients (Male and Female)

Methodology

Case series was carried out in GSMC, Palayamkottai, after approval from IEC (GSMC- XIII IEC Br I/ 1/24.05.2024). the patients who were enrolled were informed about the terms and objectives of the study in the regional language and informed consent was obtained from them. This clinical study was registered in CTRI (CTRI/2024/07/069815). Criteria for inclusion were depicted in the below given table 4. Clinical symptoms were analysed by comparing the clinical assessment data obtained at two points of time (before and after intervention).

Table 4: Criteria for inclusion, exclusion and withdrawal in the case series

Inclusion Criteria	Exclusion Criteria	Withdrawal Criteria
Age limit: 20 – 60 years Sex: Both male and female Patients with symptoms of wheezing, dyspnoea, tightness of the chest, history of allergic to allergens, climatic changes Patients who are willing to provide blood sample for lab investigations.	Diabetes mellitus Cardiac disease Renal disease Chronic allergic bronchitis Tuberculosis COPD Status asthmaticus Autoimmune disease Pregnancy and lactation Patients using inhalers, bronchodilators.	Intolerance to the drug and development of any serious adverse effect during trial Poor patient compliance Patients turned unwilling to continue during course of trial Any other acute illness which needs a rescue medication.

Method of Approach

Clinical Assessment

Assessment was done by alleviation of signs and symptoms using Asthma Control Questionnaire (ACQ - 5) [4] by scores and laboratory investigations such as AEC, ESR, IgE (in willing patients).

The ACQ – 5 is a validated tool consisting of five questions that evaluate asthma symptoms over the previous one week. Each item is scored on a 7- point scale ranging from 0 (well controlled) to 6 (poorly controlled). The overall ACQ – 5 score was calculated as the mean of the five items, with higher scores indicating poorer asthma control.

Table 5: Clinical assessment using disease criteria (ACQ-5) [4]

S.no	Subjective parameters (ACQ- 5)	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
1	Night time symptoms	Never	Hardly ever	A few times	Several times	Many time	Most nights	Every night
2	Morning symptoms	None	Very mild	Mild	Moderate	Quite severe	Severe	Very severe
3	Limitation of daily activities	Not limited	Very slightly	Slightly	Moderately	Very limited	Extremely limited	Totally limited
4	Shortness of breath	None	Very little	A little	Moderate	Quite a lot	A great deal	Very severe
5	Wheezing	Never	Hardly any time	A little of the time	Some of the time	A lot of the time	Most of the time	All the time

Objective markers include haematological and immunological markers commonly associated with bronchial asthma shown in table:6.

Table 6: Clinical assessment using objective parameters.

S.no	Objective parameters	Normal range	Clinical significance
1	AEC	40-400 cells/ μ l	Marker for allergic inflammation.
2	ESR	Male:<15mm/hr Female:<20mm/hr	Indicates inflammatory status.
3	IgE	<150 IU/ml	Marker of allergic response.

RESULT

After obtaining informed consent and ensuring confidentially, 20 patients with bronchial asthma were enrolled in the case series. Of these, 50% were male and 50% were female with the mean age group of 44.70 \pm 13.12, with the majority (50%) belonging to the 51- 60 year age group as shown in figure 5 and 6. Asthma severity and control were evaluated using the Asthma Control Questionnaire (ACQ - 5) before and after 48 days of intervention. The mean ACQ - 5 scores showed a substantial improvement, with the overall symptoms reducing from a mean score of 9.15 to mean of 5.40 after treatment as shown in table 7. Additionally, the mean AEC level decreased from 516.80 to 425.75 and the ESR level decreased from 64.85 to 34.95 following treatment. As the data were normally distributed and the sample size was less than 30, a student’s t-test was applied, which demonstrated statistically significant improvement in most outcome measures (p < 0.05), as presented in table 9.

Table 7: Overall symptoms and lab assessment before and after treatment (mean of 20 patients) ACQ- Asthma Control Questionnaire where ACQ - 5 Q (1 to 5) denotes the questions (symptoms) mentioned in ACQ-5

S.no	Clinical Assessment	Overall Mean \pm SD	
		Before treatment	After treatment
1	Night symptoms	0.95 \pm 0.99	0.35 \pm 0.58
2	Morning symptoms	2.20 \pm 1.19	1.60 \pm 0.68
3	Limitation of daily activities	2.15 \pm 1.18	1.15 \pm 1.04
4	Shortness of breath	1.50 \pm 0.88	0.70 \pm 0.80
5	Wheezing	2.40 \pm 0.99	1.65 \pm 0.81
6	Total Score (ACQ-5)	9.15 \pm 4.32	5.40 \pm 3.15
7	AEC (cells/cu.mm)	516.80 \pm 133.77	425.75 \pm 101.94
8	ESR (mm/hr)	64.85 \pm 21.94	35.95 \pm 21.64

There is a reduction of scores from higher to lower values from the above Asthma Control Questionnaire (ACQ- 5)

Table 8: Distribution of asthma control status (Subjective parameter-wise analysis)

Before treatment			After treatment		
Control status	No. of patients	Percentage	Control status	No. of patients	Percentage
Well controlled	nil	nil	Well controlled	7	35%
Partially controlled	10	50%	Partially controlled	9	45%
Not well controlled	10	50%	Not well controlled	4	20%

Of the 7 well-controlled cases, 6 had improved from partially controlled status while 1 case improved from poorly controlled to well controlled. Among the 9 cases with partially controlled symptoms, 5 showed improvement from poorly controlled symptoms, whereas 4 cases remained partially controlled following treatment.

Interpretation: ACQ - 5 score interpretation

Well controlled - \leq 0.75

Partially controlled - $>$ 0.75 to \leq 1.5

Not well controlled - $>$ 1.5

Table 9: Results of paired t test (since the skewedness was <0.2 and the histogram showed normal distribution, parametric test was employed)

Parameters BT & AT	T Value	2 Tailed P Value	Significance
Night symptoms	3.943	0.001	HS
Morning symptoms	2.698	0.014	HS
Limitation of daily activities	5.627	0.000	HS
Shortness of breath	4.292	0.000	HS
Wheezing	4.265	0.000	HS
Total ACQ-5 score	5.252	0.000	HS
AEC (cells/cu.mm)	4.496	0.000	HS
ESR (mm/hr)	9.849	0.000	HS

HS -Highly significant, S - significant, BT- before treatment, AT- after treatment

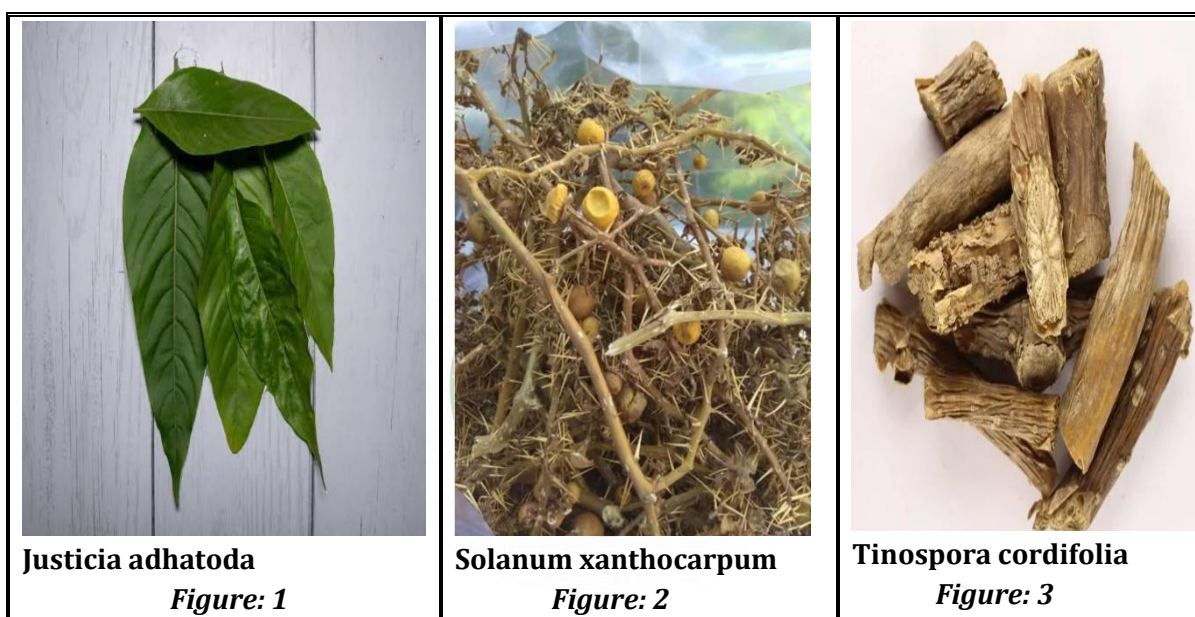


Figure: 1, 2, 3 and 4 indicates the raw drug (*Adhatodai ilai, Kandankathiri, Seenthil kodi*) and processed trial drug (*Vaasathi Kiyazham*) respectively



Figure 4: Vaasathi Kiyazha Chooranam

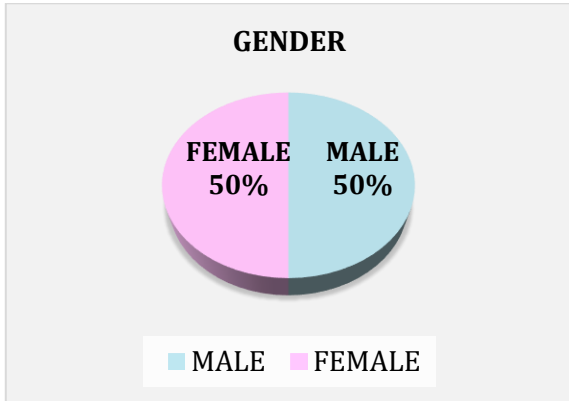


Figure 5: Gender distribution among 20 cases

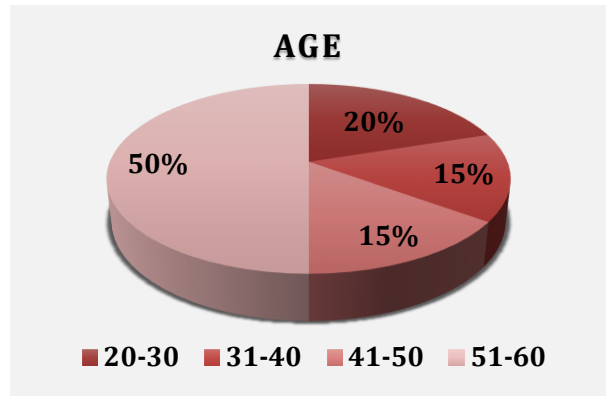


Figure 6: Age distribution- category-wise

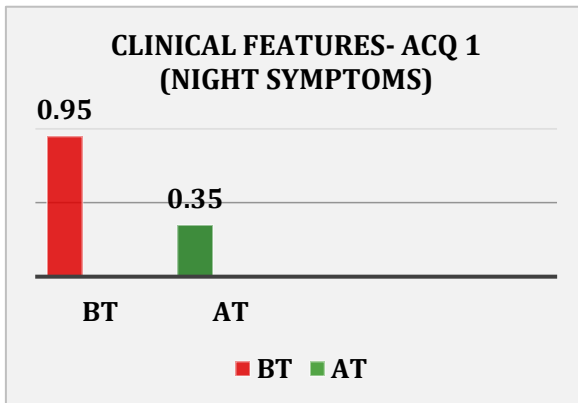


Figure 7: Mean of ACQ - 5 (Q 1)

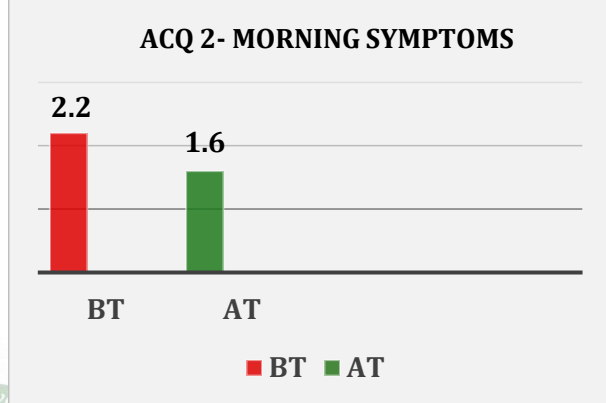


Figure 8: Mean of ACQ - 5 (Q 2)

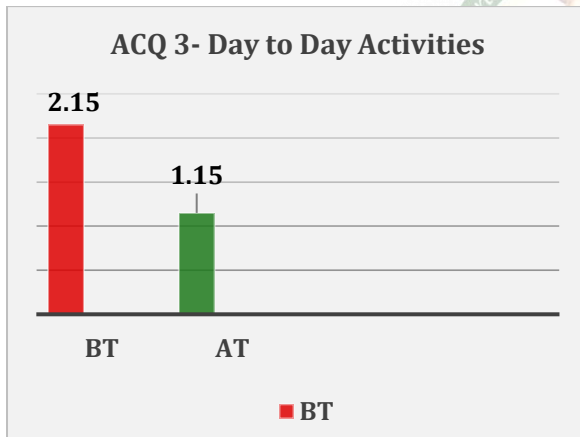


Figure 9: Mean of ACQ - 5 (Q 3)

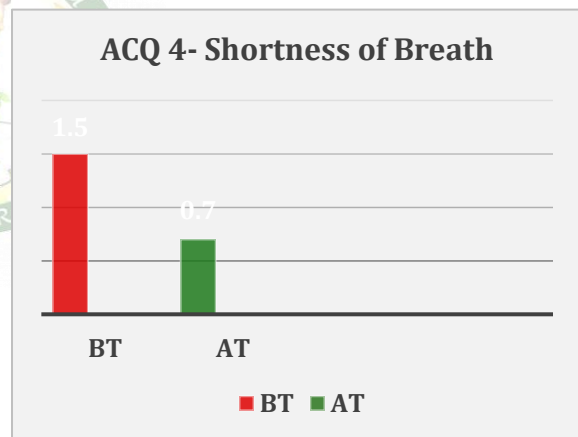


Figure 10: Mean of ACQ - 5 (Q 4)

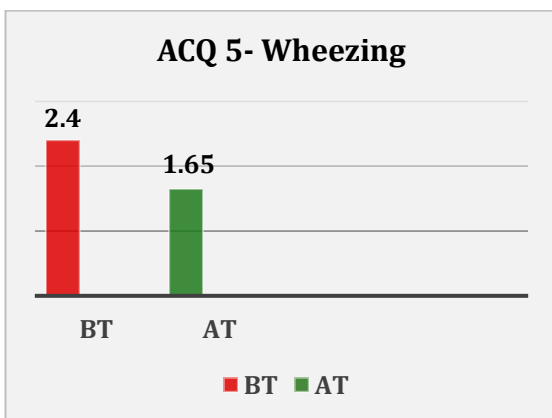


Figure 11: Mean of ACQ - 5 (Q 5)

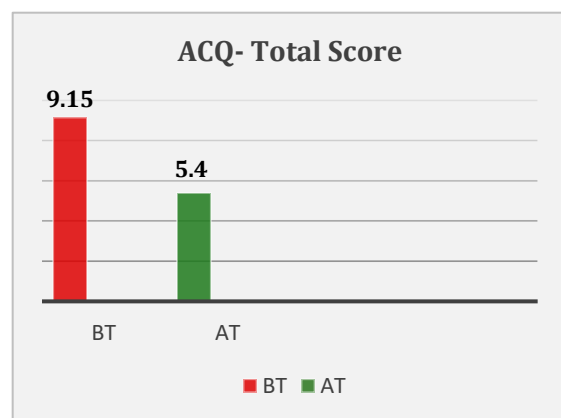


Figure 12: ACQ - 5 (Total score mean)

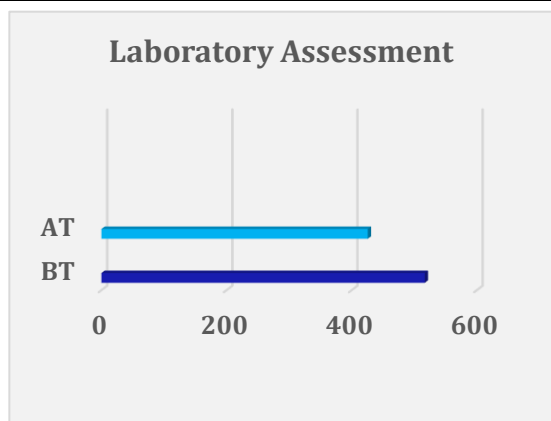


Figure 13: Assessment of AEC

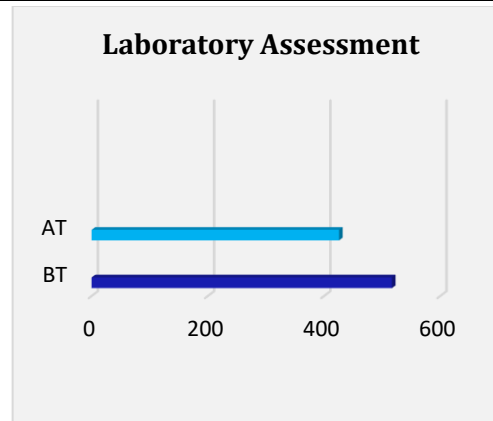


Figure 14: Assessment of ESR

BT - Before treatment, AT - After treatment

DISCUSSION

Iraippu Noi is a major non-communicable disease and represents a significant global public health concern. In India, several national health programs focus on reducing the burden of non-communicable diseases. Clinically, the signs and symptoms of *Iraippu Noi* closely correspond to bronchial asthma as described in modern medicine. The AYUSH systems of medicine have long contributed to the prevention and management of such chronic conditions. In this context, the present case series was conducted to evaluate the effectiveness of the herbal formulation *Vaasathi Kiyazham* in the management of *Iraippu Noi*. A total of 20 patients aged between 20 and 60 years were enrolled and treated for a period of 48 days. *Vaasathi Kiyazham* was administered orally at a dose of 50 ml twice daily with honey as an adjuvant. The formulation contains medicinal herbs such as *Adhatodai* (*Justicia adhatoda*) and *Seenthil* (*Tinospora cordifolia*), which are known for their anti-inflammatory and antispasmodic properties. *Kandankathiri* (*Solanum xanthocarpum*) has demonstrated anti-inflammatory, anti-allergic, and antihistaminic activities, which may contribute to symptom relief in bronchial asthma. Clinical assessment using the Asthma Control Questionnaire (ACQ) revealed a significant reduction in symptom severity following treatment. Night-time symptoms (ACQ-1) showed a reduction in mean score from 0.95 to 0.35 over seven weeks. Morning symptoms (ACQ-2) decreased from a mean of 2.20 to 1.60, while limitations in daily activities (ACQ-3) reduced from 2.15 to 1.15. Shortness of breath (ACQ-4) showed improvement with mean scores decreasing from 1.50 to 0.70, and wheezing (ACQ-5) decreased from 2.40 to 1.65. Overall, the total ACQ score showed a statistically significant reduction from a mean of 9.15 before treatment to 5.40 after seven weeks of intervention. Post-treatment assessment showed that 7 patients (35%) achieved well-controlled asthma symptoms, 9 patients (45%) had partially controlled symptoms, and 4 patients (20%) remained not well controlled.

Laboratory parameters also demonstrated improvement, with mean absolute eosinophil count (AEC) reducing from 516.80 to 425.75 and erythrocyte sedimentation rate (ESR) decreasing from 64.85 to 34.95 after treatment. Statistical analysis using Student's t-test confirmed that the reductions in clinical symptoms and laboratory parameters were statistically significant ($p < 0.05$). IgE levels were assessed in three patients who consented to the investigation. All three patients demonstrated a reduction in serum IgE levels following treatment, though the degree of response varied. Patient 1 (60/M) showed a decrease from 429 IU/ml to 384 IU/ml, indicating a slight improvement in allergic response. Patient 2 (60/F) from 277 IU/ml to 180 IU/ml, suggesting a more significant reduction in IgE levels, which may correlate with improved asthma control. Notably, Patient 3 (43/F) displayed a decrease from 190 IU/ml to 150 IU/ml, possibly indicating a positive response to treatment. The results suggest variability in IgE response to asthma treatment among these 3 patients. These findings suggest a potential modulatory effect of *Vaasathi Kiyazham* on bronchial asthma, although conclusions are limited due to the small sample size. Overall, the findings of this case series suggest that *Vaasathi Kiyazham* can serve as a beneficial drug in improving the clinical outcomes in patients with bronchial asthma.

CONCLUSION

In this case series, 20 patients aged between 20 and 60 years, comprising equal numbers of males and females, were treated with the herbal formulation *Vaasathi Kiyazham* for 48 days. Significant improvements were observed in clinical symptoms and laboratory parameters following treatment. Post-intervention assessment showed that 35% of patients achieved well-controlled symptoms, 45% had partially controlled symptoms, and 20% remained not well controlled. Notable reductions were observed in mean AEC and ESR values after seven weeks of intervention. The findings of this preliminary case series indicate

that *Vaasathi Kiyazham* suspension may be an effective therapeutic option for the management of *Iraippu Noi* (bronchial asthma). However, further large-scale controlled clinical trials are warranted to confirm these results and establish its role in routine clinical practice.

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