



Review Article

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ROLE OF VASA IN PEDIATRIC RESPIRATORY DISORDERS: AN AYURVEDIC PERSPECTIVE

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Abstract

Globally, a sizable amount of childhood morbidity is caused by pediatric respiratory conditions such bronchitis, bronchial asthma, and persistent cough. According to Ayurveda, the main cause of these disorders is an imbalance between the *Kapha* and *Vata doshas*, which affects the *Pranavaha Srotas* (respiratory channels). A popular medicinal plant in Ayurvedic pharmacopeia, *vasa* (*Adhatoda vasica*) has been used extensively to treat respiratory conditions because of its expectorant, bronchodilatory, anti-inflammatory, and mucolytic qualities. According to classical sources, *Vasa* is especially useful in conditions marked by mucus buildup and constricted airways because of its heated intensity, bitter and astringent taste, and *Kapha-Vata* pacifying activity. According to recent pharmacological research, alkaloids like vasicine and vasicinone, which have bronchodilatory and anti-allergic properties, are responsible for its therapeutic action. Formulations like *Vasavaleha* and *Vasarishta* are commonly used in pediatric treatment to reduce symptoms, promote respiratory resilience, and maintain airway patency. Using an integrative Ayurvedic approach, this paper examines the role of *Vasa* in pediatric respiratory illnesses, emphasizing its therapeutic potential, safety concerns, and applicability in modern pediatric healthcare.

Keywords:

Vasa, *Adhatoda vasica*; Pediatric respiratory disorders; *Tamaka Shwasa*; *Pranavaha Srotas*; *Vasavaleha*; Herbal therapeutics.

Introduction

One of the most prevalent illnesses in children and a major contributor to pediatric morbidity worldwide are respiratory problems. In addition to impairing breathing, diseases like bronchitis, bronchial asthma, persistent cough, and recurring upper respiratory tract infections can have an impact on growth, sleep, nutrition, and general quality of life. Children are especially susceptible to respiratory disorders in their early years due to the anatomical narrowness of their airways, the development of their immune systems, and their increased exposure to environmental allergens and infections. Therefore, management techniques that are safe, effective, and comprehensive are crucial in pediatric healthcare.

Ayurveda, the traditional system of Indian medicine, provides a comprehensive understanding of respiratory disorders through the concepts of *Dosha*, *Agni*, and *Srotas*. Pediatric respiratory ailments are primarily associated with the vitiation of *Kapha* and *Vata* doshas affecting the *Pranavaha Srotas* (respiratory channels). Excessive *Kapha* leads to mucus accumulation and obstruction, while aggravated *Vata* contributes to airway constriction, dry cough, and breathlessness. Conditions such as *Kasa* (cough) and *Tamaka Shwasa* (bronchial asthma) are classical descriptions that closely resemble modern clinical entities. Management in Ayurveda aims not merely at symptomatic relief but at correcting the underlying doshic imbalance, enhancing immunity, and strengthening respiratory function.

Among the numerous medicinal plants described for respiratory care, *Vasa* (*Adhatoda vasica*) holds a prominent place. Recognized in classical Ayurvedic texts for its potent action on the respiratory system, *Vasa* is valued for its ability to liquefy and expel mucus, ease breathing, and reduce airway inflammation. Its pharmacological attributes, including bronchodilatory and expectorant activities, have also been supported by modern phytochemical research, particularly due to bioactive alkaloids such as vasicine and vasicinone. In pediatric practice, *Vasa*-based formulations like *Vasavaleha* and *Vasarishta* are widely used under professional guidance to manage cough, wheezing, and recurrent respiratory infections.

Given the rise in pediatric respiratory conditions and growing interest in integrative medicine, it is extremely important to comprehend *Vasa*'s therapeutic value from an Ayurvedic standpoint. This article highlights *Vasa*'s position as a useful herbal intervention in holistic child healthcare by examining its conceptual underpinnings, pharmacological characteristics, and therapeutic value in the treatment of pediatric respiratory problems.

Understanding Pediatric Respiratory Disorders

The respiratory systems of children and adults differ in both anatomy and function. Their immune systems are still developing, their airways are smaller, and they are more vulnerable to environmental irritants and diseases. As a result, they are more susceptible to ailments such as upper respiratory infections, asthma, persistent coughing, and recurrent bronchitis. These conditions impair children's respiration, hunger, sleep patterns, and general development¹.

From an Ayurvedic standpoint, respiratory illnesses in children often reflect imbalances in **Kapha dosha** (associated with mucus and congestion) and **Vata dosha** (linked with air movement and breathing dynamics). A stagnant Kapha in the airways can lead to mucus accumulation, while aggravated Vata can create spasms and constrictions—manifesting as cough and breathlessness. The traditional approach involves correcting these imbalances with targeted herbs and therapies.

What is *Vasa* ?

Adhatoda vasica, the botanical name for *vasa*, is an evergreen plant indigenous to the Indian subcontinent. It has been used extensively in Ayurvedic medicine for centuries, particularly for respiratory ailments. In classical Ayurvedic texts, *Vasa* is described as having **rasa (taste): bitter and astringent, virya (potency): hot, and vipaka (post-digestive effect): pungent**—properties that make it specifically effective in clearing respiratory tract congestion and balancing Kapha^{2&3}.

Mechanism of Action in Respiratory Health

1. Expectorant Action

Vasa's expectorant action is one of its most well-established functions in Ayurveda and contemporary herbal pharmacology. The plant facilitates simpler expectoration and relieves chest congestion by loosening heavy mucus in the bronchial passageways.

2. Bronchodilation and Anti-Spasmodic Activity

Vasicine and vasicinone, two substances found in *Vasa*, have bronchodilatory properties that aid in relaxing the bronchial muscles and enlarging the airways. This can be especially beneficial for bronchospasm-related disorders like asthma or persistent cough.

3. Anti-Inflammatory and Anti-Allergic Properties

According to research on ayurveda and phytochemicals, Vasa may help alleviate irritant-induced coughing and wheezing in children by lowering inflammation in the respiratory tissues.

Ayurvedic Role in Specific Pediatric Respiratory Disorders

Asthma (*Tamaka Shwasa*)

According to Ayurvedic literature, bronchial asthma is associated with Tamaka Shwasa, a Pranavaha Srotas disease characterized by an imbalance between Kapha and Vata. The goal of herbal therapy that incorporates Vasa is to lessen excessive air movement and spasm while calming Kapha, which is responsible for mucous and blockage. Clinical Ayurvedic research employing formulas such as Vasa Avaleha has demonstrated promising outcomes in symptom management and attack recurrence reduction⁴.

Chronic Cough and Bronchitis

Chronic cough often results from prolonged irritation, mucus accumulation, or recurrent infections. Ayurvedic formulations with *Vasa*, such as *Vasavaleha*, are traditionally used to address both the **vata** and **kapha components** of cough, helping to clear mucus and soothe irritated airways.

Recurrent Respiratory Tract Infections (RRTIs)

Recurrent episodes of URTIs in children are often linked to reduced immunity and environmental exposures. In Ayurveda, regular administration of *Vasa-based* respiratory tonics, alongside immunity-enhancing herbs like *Amalaki* and *Guduchi*, is recommended to strengthen respiratory resilience and reduce infection frequency.

Formulations and Therapeutic Use

Several classical Ayurvedic preparations incorporate *Vasa* for pediatric respiratory care:

- **Vasavaleha** – a semi-solid herbal jam used for cough and asthma relief⁵.
- **Vasa Avaleha** – specifically used in clinical studies for childhood asthma management^{6&7}.
- **Vasarishta** – a fermented respiratory tonic with enhanced bioavailability of herbal constituents⁸.

These formulations combine *Vasa* with other complementary herbs (like *Pippali*, *Tulsi*, and *Mulethi*) to provide a balanced action—clearing mucus, reducing inflammation, and strengthening lung function⁹.

Safety and Pediatric Considerations

Vasa must be administered to children under the supervision of a qualified Ayurvedic practitioner, even though it is generally considered safe when given in traditional Ayurvedic dosages. Monitoring, appropriate formulation selection, and dosage modifications all contribute to efficacy without side effects. Before administering herbal remedies to children, always get advice from a licensed Ayurvedic practitioner.

Discussion

Due to their repeated nature, complex aetiology, and effects on a child's physical and mental health, pediatric respiratory illnesses remain a significant clinical problem. By linking these ailments to Kapha and Vata vitiation in the Pranavaha Srotas, the Ayurvedic method—described in the sections above—offers a unique framework. The pharmacodynamic properties of *Vasa* (*Adhatoda vasica*) directly oppose the pathological processes underlying respiratory failure, making it a therapeutically valuable herb within this paradigm.

From a doshic perspective, excessive *Kapha* leads to mucus accumulation and airway obstruction, while aggravated *Vata* contributes to bronchospasm and dyspnea. The bitter (*tikta*) and astringent (*kashaya*) tastes of *Vasa*, along with its hot potency (*ushna virya*), facilitate the liquefaction and expulsion of accumulated Kapha. Simultaneously, its capacity to normalize Vata helps in reducing spasmodic episodes and breathlessness. This dual action makes *Vasa* particularly suitable for pediatric conditions such as *Kasa* (cough) and *Tamaka Shwasa* (bronchial asthma), where both obstruction and airway hyperreactivity are evident.

Modern pharmacological evidence further substantiates these classical claims. Bioactive alkaloids such as vasicine and vasicinone exhibit bronchodilatory, mucolytic, and anti-inflammatory properties, thereby offering mechanistic insight into the herb's traditional use. The expectorant action aids in clearing bronchial secretions, which is especially beneficial in children prone to recurrent infections and thick mucus formation. Its anti-inflammatory and possible anti-allergic effects may also contribute to reducing airway irritation and hypersensitivity, factors that commonly precipitate asthma exacerbations and chronic cough.

Clinical observations and preliminary studies on formulations like *Vasavaleha*, *Vasa Avaleha*, and *Vasarishta* indicate symptomatic improvement in childhood asthma and recurrent respiratory complaints. These compound preparations enhance therapeutic efficacy by combining *Vasa* with synergistic herbs such as *Pippali*, *Tulsi*, and *Mulethi*, which collectively support bronchodilation, immune modulation, and tissue nourishment. The polyherbal approach reflects the Ayurvedic principle of achieving balanced action while minimizing adverse effects, an important consideration in pediatric therapeutics.

Preventive care is another crucial aspect. In order to lessen vulnerability to infections, Ayurveda places a strong emphasis on enhancing immunity and bolstering Agni, or the digestive and metabolic fire. *Vasa*-based formulations can be used as supportive medications to improve respiratory resilience as well as symptomatic treatments when used appropriately. This integrated approach is in line with modern pediatric practice, which places a growing emphasis on holistic and preventive interventions.

However, despite promising traditional and preliminary clinical evidence, further well-designed, large-scale studies are needed to establish standardized dosing protocols, long-term safety profiles, and comparative efficacy with conventional treatments. Pediatric populations require cautious evaluation due to developmental variability and sensitivity to pharmacological agents. Therefore, professional supervision and adherence to classical dosage guidelines remain essential.

In summary, the therapeutic role of *Vasa* in pediatric respiratory disorders is supported by both Ayurvedic principles and emerging scientific validation. Its multifaceted actions—expectorant, bronchodilatory, anti-inflammatory, and Kapha-Vata pacifying—make it a valuable herbal intervention in managing childhood respiratory ailments. Integrating *Vasa* within a comprehensive Ayurvedic treatment plan that includes dietary regulation, lifestyle modification, and immune support may offer a safe and effective complementary approach in pediatric respiratory care.

Conclusion

In Ayurvedic respiratory treatments, *vasa* (*Adhatoda vasica*) continues to be a key herb, particularly for illnesses affecting children. Its expectorant, bronchodilatory, anti-inflammatory, and immune-boosting qualities fit in nicely with both contemporary phytotherapeutic knowledge and traditional Ayurvedic concepts. When combined with

nutrition, lifestyle, and other herbal remedies in holistic pediatric treatment, Vasa can significantly improve children's respiratory conditions.

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