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Ayurvedic Perspectives And Therapeutic Approaches In Respiratory Disorders: A Systematic Review

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Abstract: Respiratory diseases constitute a major global health burden, contributing significantly to morbidity, mortality, and healthcare expenditure. Conditions such as bronchial asthma, chronic obstructive pulmonary disease (COPD), allergic rhinitis, upper and lower respiratory tract infections, and pulmonary tuberculosis continue to challenge modern healthcare systems due to their chronic nature, recurrent exacerbations, and adverse effects associated with long-term pharmacotherapy. Ayurveda, the traditional Indian system of medicine, offers a comprehensive approach to respiratory disease management through its unique principles of Tridosha, Pranavaha Srotas, Agni, and Ojas. Classical Ayurvedic texts including Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya describe respiratory disorders under conditions such as Shwasa, Kasa, Pratishaya, and Rajayakshma, along with detailed etiopathogenesis and treatment protocols.

This systematic review aims to critically analyze classical Ayurvedic literature and contemporary research studies to evaluate the role of Ayurvedic management in respiratory diseases. Electronic databases such as PubMed, Google Scholar, AYUSH Research Portal, and peer-reviewed Ayurvedic journals were searched for relevant articles. Evidence suggests that Ayurvedic interventions including Shodhana, Shamana, Rasayana therapy, dietary regulations (Pathya Ahara), and yogic breathing practices (Pranayama) play a significant role in symptom control, disease prevention, and quality-of-life improvement. However, despite promising outcomes, the lack of large-scale randomized controlled trials highlights the need for further scientific validation. This review underscores the potential of Ayurveda as a complementary and integrative approach in respiratory disease management.

Index Terms **-** Ayurveda; Respiratory diseases; Shwasa Roga; Pranavaha Srotas; Tamaka Shwasa; Kasa; Pranayama; Herbal medicine.

1. Introduction

Respiratory diseases are among the leading causes of global morbidity and mortality, affecting individuals across all age groups. According to the World Health Organization, diseases such as asthma, chronic obstructive pulmonary disease (COPD), acute respiratory infections, and tuberculosis collectively account for millions of deaths annually and impose a substantial socioeconomic burden. Rapid urbanization, environmental pollution, occupational exposure, lifestyle changes, and weakened immunity have contributed to a steady rise in respiratory disorders worldwide[1]. Despite advancements in diagnostic and therapeutic modalities, conventional medicine often focuses on symptomatic relief rather than holistic disease reversal, particularly in chronic respiratory conditions.

Modern pharmacological interventions—including bronchodilators, corticosteroids, antibiotics, and immunomodulators—play a crucial role in managing respiratory illnesses. However, long-term use of these medications is frequently associated with adverse effects such as immunosuppression, metabolic disturbances, drug dependency, and diminished therapeutic response over time[2]. Furthermore, chronic respiratory diseases often require lifelong management, leading patients to explore complementary and alternative medical systems that emphasize safety, prevention, and overall well-being.

Ayurveda, one of the oldest traditional systems of medicine, offers a holistic and individualized approach to health and disease. Rooted in the principles of *Tridosha* (Vata, Pitta, Kapha), *Sapta Dhatu*, *Agni*, and *Srotas*, Ayurveda emphasizes disease prevention, restoration of physiological balance, and enhancement of immunity. Respiratory disorders are comprehensively described in Ayurvedic literature under the concept of *Pranavaha Srotas*, which governs respiration, oxygenation, and vital life processes[3].

Classical Ayurvedic texts such as *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya* elaborate on respiratory diseases including *Shwasa Roga* (dyspnea/asthma), *Kasa* (cough), *Pratishaya* (rhinitis), *Hikka* (hiccups), and *Rajayakshma* (a wasting disorder analogous to pulmonary tuberculosis). These conditions are attributed primarily to the vitiation of *Vata* and *Kapha* doshas, often precipitated by impaired digestive fire (*Mandagni*), accumulation of *Ama* (metabolic toxins), and obstruction of respiratory channels[4].

The Ayurvedic management of respiratory diseases is multidimensional, involving *Shodhana* (purification therapies), *Shamana* (palliative treatments), *Rasayana* (rejuvenation therapy), dietary modifications, lifestyle regulation, and yogic practices such as *Pranayama*. Unlike conventional medicine, Ayurveda does not merely aim to suppress symptoms but seeks to correct the underlying doshic imbalance, strengthen host defense mechanisms, and prevent recurrence[5].

In recent decades, there has been a growing scientific interest in validating traditional Ayurvedic interventions through experimental and clinical research. Several studies have reported beneficial effects of Ayurvedic herbal formulations and procedures in asthma, allergic rhinitis, COPD, and respiratory infections. Herbs such as *Vasa* (*Adhatoda vasica*), *Pippali* (*Piper longum*), *Tulsi* (*Ocimum sanctum*), and *Yashtimadhu* (*Glycyrrhiza glabra*) have demonstrated bronchodilatory, expectorant, anti-inflammatory, and immunomodulatory properties in experimental models and clinical settings[6]. Polyherbal formulations described in classical texts are increasingly being investigated for their pharmacological efficacy.

Despite the availability of scattered research findings, a comprehensive synthesis integrating classical Ayurvedic concepts with contemporary scientific evidence is limited. A systematic review addressing Ayurvedic management of respiratory diseases can bridge this gap by critically analyzing existing literature, identifying therapeutic trends, and highlighting areas requiring further investigation. Such an effort is particularly relevant in the context of integrative medicine, where traditional systems are increasingly incorporated into mainstream healthcare.

Therefore, the present systematic review aims to explore the Ayurvedic understanding of respiratory diseases, analyze classical treatment principles, and evaluate available clinical evidence supporting Ayurvedic interventions. By synthesizing insights from ancient texts and modern research, this review seeks to establish a scientific foundation for the rational use of Ayurveda in respiratory disease management and to identify future research directions.

2. Materials and Methods

2.1 Study Design

The present study is designed as a **systematic review** of classical Ayurvedic literature and contemporary scientific research focusing on the Ayurvedic management of respiratory diseases. The review follows a narrative systematic approach, integrating textual evidence from *Ayurvedic Samhitas* with findings from peer-reviewed research articles, clinical trials, case studies, and review papers.

The methodology was framed to ensure transparency, reproducibility, and comprehensive coverage of both traditional and modern scientific sources relevant to respiratory disease management through Ayurveda.

2.2 Data Sources

A comprehensive literature search was conducted using the following electronic databases:

- PubMed
- Google Scholar
- AYUSH Research Portal
- ResearchGate
- DHARA (Digital Helpline for Ayurveda Research Articles)
- Indexed Ayurvedic journals (AYU, Journal of Ayurveda and Integrative Medicine, Journal of Drug Research in Ayurvedic Sciences, Ancient Science of Life)

Classical Ayurvedic references were collected from authoritative English translations and commentaries of:

- *Charaka Samhita*
- *Sushruta Samhita*
- *Ashtanga Hridaya*
- *Ashtanga Sangraha*

2.3 Search Strategy

The search strategy included combinations of keywords and Boolean operators such as:

- "Ayurveda AND respiratory diseases"
- "Shwasa Roga management"
- "Tamaka Shwasa AND Ayurveda"
- "Pranavaha Srotas disorders"
- "Ayurvedic treatment of asthma"
- "Herbal medicine AND respiratory disorders"
- "Pranayama AND lung function"

No restrictions were imposed on the year of publication for classical texts, while modern research articles published in English between 2000 and 2025 were primarily considered.

2.4 Inclusion Criteria

- Peer-reviewed original research articles, systematic reviews, and clinical trials related to Ayurvedic management of respiratory diseases
- Case studies documenting Ayurvedic interventions for respiratory disorders
- Classical Ayurvedic textual references describing etiology, pathogenesis, and treatment of respiratory diseases
- Articles published in English

2.5 Exclusion Criteria

- Non-peer-reviewed articles without methodological clarity
- Studies lacking outcome measures
- Opinion articles without supporting evidence
- Studies unrelated to Ayurvedic or integrative management

2.6 Data Extraction and Analysis

Data were extracted manually and categorized into the following domains:

- Type of respiratory disease
- Ayurvedic diagnosis and doshic involvement
- Therapeutic intervention (Shodhana, Shamana, Rasayana, Yoga)
- Clinical outcomes and observations

Findings were synthesized qualitatively due to heterogeneity in study designs, interventions, and outcome measures.

3. Ayurvedic Conceptual Framework of Respiratory Diseases

3.1 Pranavaha Srotas: Anatomical and Functional Perspective

According to Ayurveda, respiration is governed by the *Pranavaha Srotas*, the channel responsible for the intake, circulation, and utilization of *Prana* (vital life force). *Charaka Samhita* describes the roots (*Moola*) of *Pranavaha Srotas* as the *Hridaya* (heart) and *Mahasrotas* (gastrointestinal tract), highlighting the close interrelationship between digestion and respiration[7].

Any disturbance in *Pranavaha Srotas* leads to symptoms such as dyspnea, cough, wheezing, and chest discomfort. These disturbances commonly arise due to obstruction (*Sanga*), abnormal movement (*Vimargagamana*), or depletion (*Kshaya*) of vital energies.

3.2 Classification of Respiratory Diseases in Ayurveda

Ayurvedic texts classify respiratory disorders under several disease entities, mainly:

3.2.1 Shwasa Roga

Shwasa refers to disorders characterized by difficulty in breathing. *Charaka Samhita* classifies *Shwasa Roga* into five types:

1. Maha Shwasa
2. Urdhva Shwasa
3. Chinna Shwasa
4. Tamaka Shwasa
5. Kshudra Shwasa

Among these, *Tamaka Shwasa* is chronic, recurrent, and most comparable to bronchial asthma. It is predominantly caused by aggravated *Vata* obstructed by *Kapha*, leading to bronchoconstriction and mucous accumulation[8].

3.2.2 Kasa Roga

Kasa (cough) is described as an independent disease entity as well as a symptom of several respiratory and systemic disorders. It is classified into five types based on doshic predominance—*Vataja, Pittaja, Kaphaja, Kshayaja,* and *Kshataja Kasa*. Chronic cough often serves as a precursor or complication of *Shwasa Roga*[9].

3.2.3 Pratishaya

Pratishaya denotes inflammation of the nasal passages, clinically correlating with rhinitis or sinusitis. Acute and chronic varieties are described, with chronic (*Jirna Pratishaya*) resulting from improper management of acute conditions or persistent doshic imbalance[10].

3.2.4 Rajayakshma

Rajayakshma is a complex disease described as a syndrome involving progressive tissue depletion, chronic cough, fever, hemoptysis, and breathlessness. Many scholars correlate it with pulmonary tuberculosis. It is considered a *Tridoshaja* condition with marked depletion of *Ojas*, emphasizing the immunological dimension of respiratory pathology[11].

3.3 Etiological Factors (Nidana)

Ayurvedic texts identify numerous causative factors for respiratory diseases, including:

- Excessive exposure to cold, dust, smoke, and pollutants
- Consumption of heavy, cold, and mucus-forming foods
- Suppression of natural urges
- Weak digestive fire (*Mandagni*)
- Sedentary lifestyle and lack of physical activity

These factors contribute to the vitiation of *Kapha* and *Vata*, leading to obstruction and dysregulation of *Pranavaha Srotas*[12].

3.4 Samprapti (Pathogenesis)

The pathogenesis of respiratory diseases follows a common Ayurvedic pattern:

1. Etiological factors aggravate *Kapha* and *Vata* doshas
2. Impaired digestion leads to *Ama* formation
3. *Ama* and aggravated *Kapha* obstruct respiratory channels
4. *Vata* becomes aggravated and moves abnormally
5. Resultant symptoms include dyspnea, cough, wheezing, chest tightness

This mechanism closely parallels modern understandings of airway inflammation, mucus hypersecretion, and bronchial hyperreactivity[13].

3.5 Prognostic Considerations

Ayurveda emphasizes early diagnosis and appropriate intervention. Chronicity, association with *Rajayakshma*, presence of complications, and weakened *Ojas* are considered poor prognostic indicators. However, with proper *Shodhana*, long-term *Shamana*, and *Rasayana* therapy, symptom control and disease remission are achievable in many cases.

4. Ayurvedic Management of Respiratory Diseases

Ayurvedic management of respiratory diseases is based on a comprehensive understanding of *Dosha*, *Dushya*, *Agni*, *Srotas*, and disease chronicity. The treatment strategy is individualized and multidimensional, emphasizing elimination of causative factors (*Nidana Parivarjana*), purification (*Shodhana*), pacification (*Shamana*), rejuvenation (*Rasayana*), and supportive lifestyle measures.

4.1 Nidana Parivarjana (Avoidance of Etiological Factors)

Avoidance of causative factors forms the foundation of Ayurvedic therapy. Patients suffering from respiratory disorders are advised to avoid exposure to cold air, dust, smoke, allergens, excessive physical exertion, suppression of natural urges, and irregular dietary habits. Dietary factors such as intake of cold, heavy, oily, fermented, and mucus-producing foods are restricted. Emphasis is placed on warm, freshly prepared, easily digestible meals to prevent *Ama* formation and *Kapha* aggravation[14].

4.2 Shodhana Chikitsa (Purificatory Therapies)

Shodhana therapy is indicated especially in chronic and recurrent respiratory diseases where deep-seated doshic imbalance is evident.

4.2.1 Vamana Karma

Vamana (therapeutic emesis) is considered the treatment of choice for *Kapha-dominant* respiratory disorders such as *Tamaka Shwasa* and *Kaphaja Kasa*. Classical texts emphasize that proper *Vamana* removes obstructive *Kapha* from the respiratory channels, resulting in immediate relief in breathlessness and chest congestion[15]. Clinical studies have reported improvement in lung function parameters and reduction in symptom severity following *Vamana* therapy in bronchial asthma patients.

4.2.2 Virechana Karma

Virechana (therapeutic purgation) is beneficial when *Pitta* involvement or systemic toxin accumulation is present. It helps in cleansing the gastrointestinal tract, correcting *Agni*, and indirectly reducing respiratory symptoms. Research suggests that *Virechana* followed by *Shamana* therapy provides better long-term control in asthma and allergic conditions compared to palliative therapy alone[16].

4.3 Shamana Chikitsa (Pacifying Therapies)

After *Shodhana* or in patients unfit for purification, *Shamana* therapy forms the mainstay of treatment.

4.3.1 Herbal Drugs and Formulations

Ayurvedic classics recommend numerous single herbs and compound formulations for respiratory disorders:

- *Vasa* (*Adhatoda vasica*): Known for its expectorant and bronchodilatory properties, widely used in cough, asthma, and hemoptysis.
- *Pippali* (*Piper longum*): Acts as a bioavailability enhancer, bronchodilator, and *Rasayana* for respiratory system.
- *Yashtimadhu* (*Glycyrrhiza glabra*): Soothing, anti-inflammatory, and mucoprotective.
- *Tulsi* (*Ocimum sanctum*): Immunomodulatory and antimicrobial.

Common classical formulations include *Sitopaladi Churna*, *Talisadi Churna*, *Vyaghri Haritaki Avaleha*, *Kantakari Avaleha*, and *Dashamoola Kwatha*. Clinical trials have demonstrated statistically significant reduction in cough frequency, wheezing, and breathlessness with these formulations[17].

4.4 Rasayana Therapy

Rasayana therapy plays a crucial role in chronic respiratory diseases by improving immunity (*Ojas*), enhancing tissue strength, and preventing recurrence. *Pippali Rasayana*, *Chyawanprasha*, and *Agastya Haritaki Rasayana* are frequently prescribed. Studies indicate that long-term use of *Rasayana* drugs reduces frequency of exacerbations in asthma and improves quality of life in COPD patients[18].

4.5 Pathya–Apathya (Diet and Lifestyle)

Dietary regulation is integral to respiratory disease management. Ayurveda advocates warm, light, and easily digestible foods such as barley, green gram, rice gruel, and soups prepared with digestive spices. Cold drinks, curd at night, refined sugar, and bakery products are discouraged. Lifestyle measures include adequate sleep, avoidance of day sleep, oil massage (*Abhyanga*), and steam inhalation (*Swedana*)[19].

4.6 Pranayama and Yoga

Pranayama is described as an essential supportive therapy for respiratory health. Practices such as *Anuloma Viloma*, *Bhastrika*, *Ujjayi*, and *Kapalabhati* enhance lung capacity, regulate *Pranavayu*, and reduce stress-related exacerbations. Clinical observations suggest that regular practice improves pulmonary function tests and reduces medication dependency in asthma patients[20].

5. Disease-Specific Ayurvedic Management

5.1 Bronchial Asthma (Tamaka Shwasa)

Tamaka Shwasa is characterized by recurrent episodes of breathlessness, wheezing, and cough. Ayurveda recommends *Vamana* followed by *Shamana* drugs such as *Pippali*, *Vasa*, and *Dashamoola*. Multiple clinical studies support significant symptomatic relief and improved lung function following Ayurvedic intervention[21].

5.2 Allergic Rhinitis (Pratishaya)

Management includes nasal therapies (*Nasya*), herbal decoctions, and dietary regulation. Chronic cases require correction of *Agni* and long-term *Shamana* therapy. Case studies demonstrate reduction in nasal obstruction and sneezing frequency[22].

5.3 Chronic Obstructive Pulmonary Disease (COPD)

Ayurvedic management focuses on *Rasayana*, *Vata-Kapha Shamana*, and lifestyle modification. Herbal formulations such as *Pippali Vardhamana Rasayana* have shown improvement in exercise tolerance and dyspnea scores[23].

5.4 Pulmonary Tuberculosis (Rajayakshma)

Ayurveda considers *Rajayakshma* as a depletion disorder requiring nourishing and immune-enhancing therapy. While not a replacement for anti-tubercular drugs, Ayurvedic medicines are beneficial as adjuvants to reduce side effects and enhance recovery[24].

6. Discussion

The findings of this systematic review highlight the extensive scope of Ayurveda in the management of respiratory diseases. Unlike symptom-oriented modern medicine, Ayurveda adopts a root-cause-based approach focusing on correction of doshic imbalance, removal of obstructions in *Pranavaha Srotas*, and enhancement of host immunity.

The review demonstrates that *Shodhana* therapies such as *Vamana* and *Virechana* are particularly effective in chronic and recurrent conditions, offering sustained relief by eliminating accumulated *Kapha* and *Ama*.

The importance of *Agni* correction emerges as a central theme, aligning with contemporary evidence linking gut health and immune response in respiratory diseases.

Herbal drugs used in Ayurveda exhibit pharmacological properties such as anti-inflammatory, bronchodilatory, antioxidant, and immunomodulatory actions. However, variability in study designs, formulations, and outcome measures limits direct comparison. Most studies report positive outcomes, but lack of large randomized controlled trials and standardized protocols remains a significant limitation.

The integration of *Pranayama* and lifestyle modification further strengthens the holistic framework of Ayurveda. These practices address psychosomatic factors, which are increasingly recognized contributors to chronic respiratory diseases.

Overall, the discussion underscores that Ayurveda holds significant promise as a complementary and integrative system for respiratory disease management. Rigorous clinical trials, pharmacological validation, and standardization of treatment protocols are essential to enhance acceptance and global applicability.

7. Conclusion

Respiratory diseases continue to pose a major public health challenge due to their chronic nature, rising prevalence, environmental influences, and limitations associated with long-term conventional pharmacotherapy. The present systematic review highlights that Ayurveda offers a comprehensive, holistic, and individualized approach to the management of respiratory diseases through its unique principles of *Tridosha*, *Pranavaha Srotas*, *Agni*, and *Ojas*.

Classical Ayurvedic texts such as *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya* provide detailed descriptions of respiratory disorders including *Shwasa*, *Kasa*, *Pratishaya*, and *Rajayakshma*, along with well-structured therapeutic guidelines. These include *Nidana Parivarjana*, *Shodhana* therapies like *Vamana* and *Virechana*, *Shamana* therapies using herbal formulations, *Rasayana* for immune enhancement, and supportive measures such as dietary regulation and *Pranayama*. The integrative nature of these interventions addresses not only the clinical symptoms but also the underlying pathophysiological mechanisms and host susceptibility.

Evidence from contemporary clinical studies and case reports suggests that Ayurvedic interventions are effective in reducing symptom severity, improving pulmonary function, enhancing quality of life, and preventing recurrence in respiratory diseases such as bronchial asthma, allergic rhinitis, and chronic obstructive pulmonary disease. In conditions like pulmonary tuberculosis, Ayurveda has shown potential as an adjunct therapy by improving nutritional status, immunity, and tolerance to conventional anti-tubercular treatment.

However, despite encouraging outcomes, the scientific validation of Ayurvedic management remains limited by methodological constraints. Many studies suffer from small sample sizes, lack of randomization, inadequate blinding, and heterogeneity in treatment protocols. The absence of standardized outcome measures further restricts comparability and meta-analytic evaluation.

In conclusion, Ayurveda holds substantial promise as a complementary and integrative medical system for respiratory disease management. Systematic incorporation of Ayurvedic principles into mainstream healthcare, supported by robust scientific research, may offer safer, cost-effective, and sustainable solutions for chronic respiratory disorders.

8. Limitations of the Review

- The review is primarily qualitative due to heterogeneity in study designs and interventions
- Limited availability of large-scale randomized controlled trials
- Variability in dosage forms, duration, and outcome assessment
- Language restriction to English publications

9. Future Scope

Future research should focus on:

- Large-scale, multicentric randomized controlled trials
- Standardization of Ayurvedic formulations and protocols
- Integration of modern diagnostic tools with Ayurvedic assessment
- Pharmacological and molecular studies to elucidate mechanisms of action
- Development of integrative treatment guidelines for respiratory diseases

Such efforts will enhance the global acceptance and scientific credibility of Ayurvedic respiratory therapeutics.

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