

**RETROSPECTIVE EVALUATION OF THE IMMUNOMODULATORY AND RASAYANA
EFFECTS OF RUDRAMRUT SYRUP*****Dr. Bhalchandra Rajaram Mahamuni**

The Gurukul Global Academy, Parasnath Speciality Clinics Pvt Ltd, Parasnath Spiritual Foundation.

***Corresponding Author: Dr. Bhalchandra Rajaram Mahamuni**

The Gurukul Global Academy, Parasnath Speciality Clinics Pvt Ltd, Parasnath Spiritual Foundation.

DOI: <https://doi.org/10.5281/zenodo.19415835>**How to cite this Article:** *Dr. Bhalchandra Rajaram Mahamuni (2026). Retrospective Evaluation Of The Immunomodulatory And Rasayana Effects Of Rudramrut Syrup. World Journal of Pharmaceutical and Medical Research, 12(4), 227–232.
This work is licensed under Creative Commons Attribution 4.0 International license.

Article Received on 04/03/2026

Article Revised on 25/03/2026

Article Published on 01/04/2026

ABSTRACT

Immunomodulation and *Rasayana* therapy are fundamental concepts in Ayurveda aimed at improving host defense and promoting longevity. Polyherbal formulations containing *Rasayana* drugs are traditionally used to improve immunity and resistance against infections. *Rasayana* therapy in Ayurveda focuses on enhancing immunity (*Vyadhikshamatva*) and promoting longevity. *Rudramrut* Syrup is a polyherbal formulation composed of *Rasayana* herbs such as *Guduchi*, *Bhumiamalaki*, *Haridra*, *Tulsi* and *Yashtimadhu*. This retrospective review evaluates its potential immunomodulatory effects based on clinical observations and literature review of its ingredients. Literature evidence supports immunomodulatory, antioxidant and anti-inflammatory properties of the constituent herbs. Further controlled clinical trials are recommended.

KEYWORDS: *Rasayana*, Immunomodulation, Ayurveda, Polyherbal formulation, *Vyadhikshamatva*.**INTRODUCTION**

In Ayurveda, immunity is described as *Vyadhikshamatva*, referring to the body's resistance to disease. *Rasayana* therapy enhances tissue nourishment, improves *Ojas* and strengthens immune responses.^[1] Modern research demonstrates that many *Rasayana* herbs possess antioxidant, immunomodulatory and anti-inflammatory properties. The immune system protects the body against infections and maintains internal homeostasis. In Ayurveda, this protective capability is described as *Vyadhikshamatva*, which refers to the body's resistance against disease and its ability to recover from illness.^[2] *Rasayana* therapy plays a vital role in strengthening immunity and promoting longevity. Several *Ayurvedic* herbs traditionally classified as *Rasayana* have been scientifically evaluated for immunomodulatory effects. For example, *Guduchi* (*Tinospora cordifolia*) is one of the most extensively studied *Ayurvedic* herbs and has demonstrated significant immunostimulatory activity including macrophage activation and lymphocyte proliferation.^[3] Experimental studies have also shown that extracts of *Tinospora cordifolia* enhance phagocytic activity of immune cells and stimulate immune responses. Similarly, *Bhumiamalaki* (*Phyllanthus niruri*) has been reported to

possess hepatoprotective, antioxidant and anti-inflammatory properties that contribute to systemic immune regulation.^[4] Polyherbal formulations combine multiple herbs with complementary pharmacological actions. This synergistic approach enhances therapeutic efficacy and reduces adverse effects. *Rudramrut* Syrup is an *Ayurvedic* formulation composed of several *Rasayana* and immunomodulatory herbs. The present study aims to evaluate its immunomodulatory potential through retrospective clinical observation and literature-based pharmacological review.

MATERIALS AND METHODS

This study was conducted as a retrospective observational review based on patient records from *Ayurvedic* clinical practice. Patients treated with *Rudramrut* Syrup for symptoms associated with low immunity such as recurrent respiratory infections, fatigue and digestive disturbances were evaluated. A literature review was also performed to evaluate pharmacological activities of individual herbs.

The present retrospective review evaluates the potential immunomodulatory and *Rasayana* effects of the Ayurvedic polyherbal formulation *Rudramrut* Syrup. The formulation contains several medicinal plants traditionally classified under *Rasayana* and *Balya* categories in *Ayurvedic* texts. The synergistic combination of these herbs may provide multiple pharmacological actions including immune regulation, antioxidant protection, anti-inflammatory effects and metabolic enhancement.

Rasayana Concept and Immunomodulation

In Ayurveda, the concept of *Vyadhikshamatva* refers to the body's ability to resist diseases and recover from pathological conditions. *Rasayana* therapy is considered one of the primary approaches to improve this capability by enhancing tissue nourishment (*Dhatu poshana*), strengthening vitality (*Ojas*) and maintaining physiological balance. Classical *Ayurvedic* texts describe *Rasayana* drugs as substances that promote longevity, enhance intellect, strengthen immunity and prevent disease. Modern scientific interpretation of *Rasayana* therapy suggests that many *Rasayana* herbs possess antioxidant, immunomodulatory and adaptogenic properties that support host defense mechanisms. Several herbs present in *Rudramrut* Syrup such as *Guduchi*, *Haritaki* and *Yashtimadhu* are well known *Rasayana* drugs described in classical *Ayurvedic* literature. Their presence in the formulation supports the traditional rationale for its use as an immune enhancing preparation.

Immunomodulatory Activity of the Herbal Components

The pharmacological activities of the herbs in *Rudramrut* Syrup collectively influence both innate and adaptive immune responses.

Activation of Innate Immune Response

Innate immunity constitutes the first line of defense against invading pathogens. Several herbs in the formulation have been reported to stimulate innate immune mechanisms. *Guduchi* (*Tinospora cordifolia*) is widely recognized for its immunostimulatory activity. Experimental studies demonstrate that extracts of this plant enhance macrophage activation, increase phagocytic activity and stimulate the production of cytokines involved in immune signalling.^[18] *Tulsi* (*Ocimum sanctum*) also contributes to innate immune activation through antimicrobial and adaptogenic actions. It has been shown to enhance natural killer cell activity and improve resistance to infections.^[19] The combined action of these herbs may strengthen the body's initial defense mechanisms against microbial pathogens.

Regulation of Cytokine Production and Inflammatory Response

Chronic inflammation plays a crucial role in the development of many diseases and can impair immune function. Several components of *Rudramrut* Syrup possess anti-inflammatory activity and help regulate

cytokine production. *Haridra* (*Curcuma longa*) contains curcumin, a bioactive compound known to inhibit inflammatory signaling pathways such as NF- κ B and reduce the production of pro-inflammatory cytokines including TNF- α and IL-6. This helps maintain immune homeostasis and prevent excessive inflammatory responses.^[20] *Yashtimadhu* (*Glycyrrhiza glabra*) also demonstrates anti-inflammatory and antiviral activity. *Glycyrrhizin*, its major active constituent, has been reported to regulate immune responses and reduce inflammatory mediators.^[21] Through these mechanisms, the formulation may contribute to balanced immune regulation and reduced inflammatory stress.

Antioxidant Protection and Cellular Defense

Oxidative stress is a major factor contributing to immune dysfunction and tissue damage. Several herbs in the formulation exhibit strong antioxidant properties that protect immune cells from oxidative injury. *Haritaki* (*Terminalia chebula*) contains polyphenolic compounds with potent free radical scavenging activity.^[22] Similarly, *Bhumiamalaki* (*Phyllanthus niruri*) possesses flavonoids and lignans that enhance antioxidant enzyme activity and reduce oxidative stress markers.^[23] These antioxidant effects help maintain cellular integrity and support optimal immune function.

Enhancement of Adaptive Immunity

Adaptive immunity involves antigen-specific responses mediated by T lymphocytes and B lymphocytes. Certain herbs in *Rudramrut* Syrup have demonstrated the ability to enhance adaptive immune responses.

Studies on *Guduchi* suggest increased proliferation of lymphocytes and enhanced antibody production. *Pippali* (*Piper longum*) acts as a bioavailability enhancer due to the presence of piperine, which improves absorption of other phytoconstituents and thereby potentiates the pharmacological effects of the formulation.^[24] The combined action of these herbs may therefore enhance both cellular and humoral immune responses.

Role of Digestive and Metabolic Enhancement

Ayurveda emphasizes the importance of proper digestion and metabolism for maintaining health. Impaired digestive function leads to the formation of *Ama* (metabolic toxins), which can weaken immunity and predispose individuals to disease. Several ingredients of *Rudramrut* Syrup such as *Pippali*, *Shunthi*.^[25] and *Vacha* possess *Deepana* and *Pachana* properties that stimulate digestive fire (*Agni*) and improve metabolism. By enhancing digestion and nutrient assimilation, these herbs indirectly support immune function and overall health.

Polyherbal Synergy

Polyherbal formulations are a hallmark of *Ayurvedic* therapeutics. The combination of multiple herbs with complementary pharmacological activities often results in synergistic therapeutic effects. In the case of

Rudramrut Syrup, the formulation integrates herbs with *Rasayana*, immunomodulatory, antioxidant and digestive properties. This multi-targeted approach may produce cumulative benefits in strengthening host defense mechanisms.

The synergistic interaction among the phytoconstituents may enhance therapeutic efficacy while minimizing adverse effects, which is a recognized advantage of traditional polyherbal formulations.

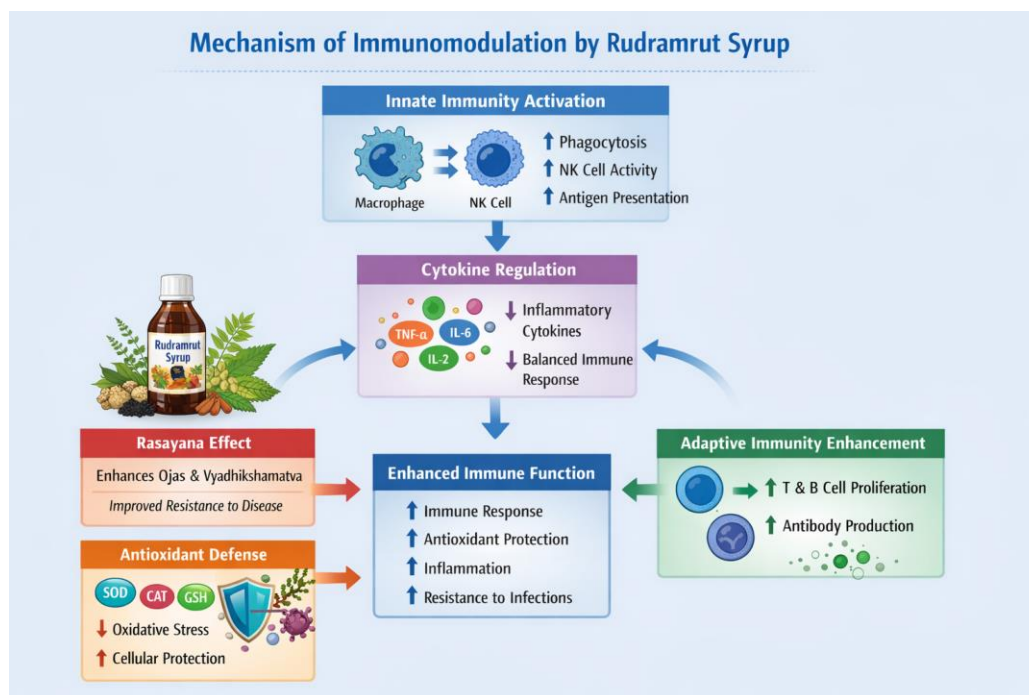


Fig no.1: Mechanism of Immunomodulation of Rudramrut Syrup.

Clinical Implications

The retrospective clinical observations in the present study suggest that *Rudramrut* Syrup may contribute to improved immunity and general health. Patients receiving the formulation demonstrated reduced frequency of infections, improved digestion and enhanced overall wellbeing. These observations are consistent with the pharmacological activities reported for the individual herbal ingredients. However, controlled clinical trials are required to validate these findings and establish standardized therapeutic protocols.

Limitations of the Study

The present study has certain limitations. As a retrospective observational review, it lacks randomized control groups and objective immunological parameters. Additionally, the sample size and duration of treatment may vary among patients. Future studies involving prospective randomized clinical trials with laboratory immune markers such as cytokine levels, lymphocyte counts and oxidative stress parameters would provide stronger scientific evidence.

Future Research Directions

Further research should focus on.

- Standardization of the formulation
- Identification of bioactive phytoconstituents
- Evaluation of immunological biomarkers

- Controlled clinical trials in patients with recurrent infections

Such studies would help bridge the gap between traditional *Ayurvedic* knowledge and modern biomedical research.

CONCLUSION

The *Rasayana* herbs present in *Rudramrut* Syrup demonstrate multiple pharmacological activities that may contribute to immune enhancement and disease resistance. The synergistic interaction of immunomodulatory, antioxidant and digestive herbs supports the traditional *Ayurvedic* concept of improving *Vyadhikshamatva*.

ACKNOWLEDGEMENT

The Gurukul Global Academy, Parasnath Speciality Clinics Pvt Ltd.

REFERENCES

1. Anil Kumar Singh, Arvind Kumar Gupta, Manish, Pra mod KumarSingh. Rasayana therapy: A magic contribution of Ayurveda for healthy long life. Int. J. Res. Ayurveda Pharm, 2014; 5(1): 41-47 <http://dx.doi.org/10.7897/2277-4343.05109>
2. Ankita Sajwan, Akanksha Joshi, Basant Kumar Thakur, Concept of Vyadhikshamatvam. J Ayu Int Med Sci, 2023; 8(7): 134-138. Available From <https://jaims.in/jaims/article/view/2502>

3. Manjrekar PN, Jolly CI, Narayanan S. Comparative studies of the immunomodulatory activity of *Tinospora cordifolia*. *J Ethnopharmacol*, 2000; 72(1-2): 35-40.
4. Harish R, Shivanandappa T. Antioxidant activity of *Phyllanthus niruri*. *J Ethnopharmacol*. 2006; 104: 180-185.
5. Charaka Samhita, Part 1 & 2, (Hindi commentary by pandey & Chaturvedi), edited by Rajeshwar Datta Shastri et al., Choukhambha Vidhyabhavan, Varanasi, 1961.
6. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy, 200 pg 47-49.
7. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy, 200 pg 460.
8. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy, 200 pg 509.
9. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy, 200 pg 114.
10. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy, 200 pg.65
11. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy; 200 pg 15.
12. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy, 200 pg 5.
13. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy, 200 pg 13.
14. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy, 200 pg .52.
15. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy, 200 pg 425.
16. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy, 200 pg 43.
17. Bhavamishra. *Bhavaprakasha Nighantu-Hindi* commentary by K.C Chunekar. Varanasi published by Chaukhumba Bharati Academy, 200 pg 262.
18. Kalikar MV, Thawani VR, Varadpande UK, Sontakke SD, Singh RP, Khiyani RK. Immunomodulatory effect of *Tinospora cordifolia* extract. *Indian J Pharmacol*. 2008; 40(3): 107-110.
19. *Journal of Ayurveda and Integrative Medicine* Jamshidi N, Cohen M. Tulsi: A herb for all reasons. *J Ayurveda Integr Med*, 2017.
20. *Journal of Clinical Immunology* Jurenka JS. Anti-inflammatory properties of curcumin. *J Clin Immunol*, 2009.
21. *Phytotherapy Research* Pastorino G, et al. *Glycyrrhiza glabra*: pharmacological effects. *Phytother Res*, 2018.
22. *BMC Complementary Medicine and Therapies* Bag A, et al. Antioxidant potential of *Terminalia chebula*. *BMC Complement Med Ther*, 2013.
23. *Phytotherapy Research* Patel JR, Tripathi P. *Phyllanthus niruri*: A review of phytochemistry and pharmacology. *Phytother Res*, 2011; 25: 1109-1117.
24. *Journal of Ethnopharmacology* Atal CK, et al. Piperine as bioavailability enhancer. *J Ethnopharmacol*, 1985.
25. *Food and Chemical Toxicology* Mashhadi NS, et al. Anti-inflammatory effects of ginger. *Food Chem Toxicol*, 2013.