



International Journal of Research in Academic World



Received: 03/December/2025

IJRAW: 2026; 5(1):143-145

Accepted: 16/January/2026

Ayurvedic Approaches of Drug-Induced Immunosuppression through Agad Tantra Principles

*¹Dr. Mahesh V Patil

*¹HOD & Professor, Department of Agadtantra, Smt. Shantibai Otarmal Jain Ayurvedic Medical College & Rugnalaya, Raigad, Maharashtra, India.

Abstract

Agad Tantra is one of the branches of Ayurveda, focusing on toxicology, specially the diagnosis and treatment of diseases caused by animate (Jangam and Sthavar) & artificial sources. Drug-induced immunosuppression has emerged as a major clinical challenge due to the extensive use of corticosteroids, immunomodulators, chemotherapeutic agents, and biologics in modern medical practice. Prolonged administration of these drugs leads to suppression of immune responses, resulting in increased susceptibility to infections, delayed wound healing, metabolic disturbances, and systemic debility. In Ayurveda, such a condition can be correlated with *Ojokshaya*, *BalaKshaya*, and *Vyadhikshamatva Hani*, where depletion of *Ojas*—the essence of all Dhatus—leads to compromised immunity and vitality. Ayurveda defines immunity as an integrated function of *Agni*, *Ojas*, *Bala*, and equilibrium of Doshas and Dhatus. This review critically analyzes drug-induced immunosuppression through modern biomedical concepts and correlates them with Ayurvedic principles such as *Tikshna Virya*, *Visha-sadrusha Guna*, *Agni Dushti*, and *Dhatu Kshaya*. Ayurvedic management strategies including *Rasayana Chikitsa*, *Panchakarma*, dietary regulation, herbal immunomodulators, and lifestyle interventions are discussed in detail. The article highlights Ayurveda's potential as a supportive and restorative system in managing drug-induced immunosuppression while improving overall health and resilience.

Keywords: Drug-induced Immunosuppression, Ojas, Bala, Rasayana, Panchakarma, Vyadhikshamatva, Ayurveda.

1. Introduction

The widespread use of immunosuppressive drugs has significantly improved survival and disease control in autoimmune disorders, malignancies, and organ transplantation [4, 6]. Despite their therapeutic benefits, these agents suppress normal immune mechanisms, leading to secondary immunodeficiency known as drug-induced immunosuppression [4, 5]. Patients undergoing long-term immunosuppressive therapy frequently suffer from recurrent infections, poor tissue repair, metabolic imbalance, and reduced quality of life [4, 7].

Ayurveda conceptualizes immunity as *Vyadhikshamatva*, which represents the body's inherent capacity to resist disease and maintain physiological stability [1]. This capacity is governed by *Ojas*, *Bala*, *Agni*, and the integrity of Dhatus [1, 2]. Classical Ayurvedic texts emphasize that depletion of *Ojas* results in weakness, susceptibility to disease, and life-threatening conditions [1]. Drug-induced immunosuppression can therefore be understood as an iatrogenic cause of *OjasKshaya* and *DhatuKshaya*, necessitating a holistic management approach [1, 3].

2. Concept of Immunity in Ayurveda

i). **Ojas as the Foundation of Immunity:** Ojas is described as the ultimate essence (*Param Sara*) of all seven Dhatus

and is responsible for strength, immunity, mental stability, and longevity [1, 2]. Two forms of Ojas are described in classical texts: *Para Ojas*, located in the heart and essential for survival, and *Apara Ojas*, which circulates throughout the body and governs functional immunity¹. Depletion of *Apara Ojas* manifests as fatigue, susceptibility to infections, anxiety, and cognitive impairment [1, 2].

ii). **Bala and Vyadhikshamatva:** *Bala* denotes physical and immunological strength and is classified into *Sahaja*, *Kalaja*, and *YuktikritaBala* [1, 3]. Drug-induced immunosuppression primarily affects *YuktikritaBala*, as pharmacological agents disturb *Agni*, *Dhatus*, and *Ojas*, leading to acquired immunodeficiency [1, 4].

3. **Drug-Induced Immunosuppression: Modern Perspective**
Drug-induced immunosuppression occurs through several mechanisms that impair both innate and adaptive immune responses [4, 6].

i). **Suppression of Immune Cells:** Corticosteroids induce apoptosis of lymphocytes and inhibit cytokine production, resulting in reduced cellular immunity and impaired inflammatory responses [4, 5].

ii). **Inhibition of Immune Signaling:** Calcineurin inhibitors suppress IL-2 production and T-cell activation,

compromising immune surveillance [6].

iii). **Cytokine Modulation and Infection Risk:** Biologic agents targeting inflammatory cytokines reduce disease activity but also weaken host defense mechanisms, increasing infection risk [5, 7].

4. Ayurvedic Interpretation of Drug-Induced Immunosuppression

Ayurveda interprets potent immunosuppressive drugs as possessing *Tikshna*, *Ushna*, *Sukshma*, and *Vyavayi* Gunas, resembling *Visha-sadrusha* action [1, 2]. These properties rapidly penetrate tissues, disturb Doshas, impair Agni, and cause progressive Dhatu degeneration [1, 3]. This process ultimately leads to *OjasKshaya*, which parallels the clinical features of drug-induced immunosuppression [4, 5].

5. Clinical Manifestations: Ayurvedic Correlation

Classical texts describe stages of Ojas impairment [1, 2]:

- *OjasVisramsas* – fatigue, instability, reduced function
- *OjasVyapad* – heaviness, edema, discoloration
- *OjasKshaya* – severe weakness, confusion, syncope, death

These stages correlate with increasing severity of immunosuppression observed in modern clinical practice [4, 7].

6. Ayurvedic Management of Drug-Induced Immunosuppression

Drug-induced immunosuppression is a growing clinical concern in modern medical practice, particularly in patients undergoing long-term corticosteroid therapy, chemotherapy, organ transplantation, or autoimmune disease management. While these therapies are often lifesaving, they can significantly compromise immune function, leading to increased susceptibility to infections, delayed tissue repair, fatigue, and reduced vitality. From an Ayurvedic perspective, such conditions may be understood as a state of *Ojakshaya* (depletion of vital essence), *Agnimandya* (impaired digestive and metabolic fire), and *DhatuKshaya* (tissue depletion). The primary aim of Ayurvedic management is not merely symptomatic relief but restoration of physiological balance, enhancement of *Vyadhikshamatva* (immunity), and preservation of *Ojas*, the subtle essence responsible for strength and resistance [1, 3].

Ayurveda approaches drug-induced immunosuppression through a multidimensional strategy including Deepana-Pachana, Panchakarma therapy, Rasayana Chikitsa, and appropriate diet and lifestyle regulation. Additionally, integrative collaboration with contemporary medicine ensures patient safety and therapeutic synergy [4, 6].

i). Deepana-Pachana

In cases of immunosuppression, prolonged pharmacological therapy often impairs digestive and metabolic efficiency. According to Ayurveda, suppression of *Agni* results in accumulation of *Ama* (metabolic toxins), which obstructs channels (*Srotorodha*) and weakens tissue nourishment. Therefore, the initial line of management emphasizes correction of *Agni* through Deepana (enhancing digestive fire) and Pachana (digesting *Ama*) therapies.

Classical formulations such as Trikatu, Panchakola, and Chitraka are traditionally used for this purpose. These herbal combinations stimulate digestive enzymes, improve bioavailability, enhance circulation, and restore metabolic balance [1, 3]. By clearing *Ama* and optimizing digestion,

nutrient assimilation improves, ultimately supporting the formation of high-quality *Rasa Dhatu*, the precursor to all subsequent tissues.

Deepana-Pachana therapy also plays a preparatory role before administering more intensive therapies like Panchakarma. Without proper correction of Agni, Rasayana drugs may not yield optimal results. Hence, this stage establishes the foundation for systemic immune restoration.

ii). Panchakarma Therapy

Following correction of digestive impairment, Panchakarma therapies may be employed to eliminate accumulated toxins and rebalance disturbed Doshas. Drug-induced immunosuppression is often associated with Pitta and Vata vitiation, along with depletion of Kapha-associated stability. Shodhana (purificatory) procedures remove pathological factors and create a conducive internal environment for rejuvenation.

Virechana (therapeutic purgation) is particularly beneficial in conditions involving Pitta aggravation and systemic toxicity. It aids in detoxification of the liver and gastrointestinal tract, reducing inflammatory burden and supporting metabolic normalization [7].

Basti (medicated enema) is considered the prime therapy for Vata disorders. Since chronic drug use often aggravates Vata and leads to tissue depletion, Basti nourishes deeper Dhatus, enhances absorption, and restores systemic strength. Medicated decoction and oil-based Bastis help in revitalizing immunity and stabilizing physiological functions [7].

Nasya (nasal therapy) supports the health of the respiratory and neurological systems. In immunocompromised individuals prone to recurrent upper respiratory infections, Nasya helps clear channels of the head region and enhances local defense mechanisms [7].

Through these Shodhana procedures, toxins are eliminated, Doshas are balanced, and *Ojas* is protected. Panchakarma not only purifies but also prepares the body for Rasayana therapy by ensuring optimal receptivity.

iii). Rasayana Chikitsa

Rasayana therapy forms the cornerstone of Ayurvedic management in immunosuppression. The primary objective of Rasayana is enhancement of *Ojas*, *Bala* (strength), and *Vyadhikshamatva* (immunity) by improving the quality of Dhatus and promoting cellular resilience [1, 3, 6].

Classical Rasayana herbs and formulations such as Amalaki, Guduchi, Ashwagandha, and Chyavanaprasha are traditionally indicated to improve vitality, reduce oxidative stress, and enhance adaptive immunity. Rasayana drugs act at both systemic and cellular levels by promoting proper tissue nourishment, enhancing antioxidant capacity, and stabilizing immune modulation [1, 3].

In the context of drug-induced immunosuppression, Rasayana therapy may help mitigate fatigue, prevent recurrent infections, improve appetite, and support mental well-being. Importantly, Rasayana does not act as an immunostimulant in a crude sense but rather as an immunomodulator—balancing immune responses without causing pathological hyperactivation [6].

Long-term administration of appropriate Rasayana, under supervision, strengthens tissue regeneration and supports recovery from chronic pharmacological stress. By enhancing Dhatu quality, Rasayana therapy restores equilibrium and rebuilds systemic resistance.

iv). Diet and Lifestyle

Diet (*Ahara*) and lifestyle (*Vihara*) play an indispensable role in restoring immunity. In immunosuppressed individuals, emphasis is placed on warm, freshly prepared, easily digestible foods that support Agni without generating Ama [1, 7]. Light soups, rice gruels, green gram preparations, medicated milk, and ghee in moderation are traditionally recommended to nourish tissues and improve digestion.

Adequate rest is essential to conserve energy and promote tissue repair. Chronic stress significantly depletes Ojas; therefore, stress management practices such as meditation, Yoga, and Pranayama are strongly advised [1, 7]. Controlled breathing techniques enhance oxygenation, calm the nervous system, and improve psychoneuroimmunological balance.

Regular daily routine (*Dinacharya*) and seasonal adaptation (*Ritucharya*) further help maintain Dosha equilibrium and prevent relapse. Avoidance of incompatible foods, excessive exertion, and late-night habits is crucial to prevent further depletion of vitality.

Thus, dietary discipline combined with mental and behavioral balance contributes significantly to immune restoration.

7. Integration with Contemporary Medicine

Ayurveda does not oppose immunosuppressive therapy when it is clinically indicated. Instead, it advocates an integrative approach that complements modern treatment to reduce adverse effects, improve immunity, and enhance overall quality of life [4, 6].

Combined approaches can optimize patient outcomes without interfering with essential pharmacological treatment [5, 7]. For example, while a patient continues corticosteroids or chemotherapy under medical supervision, supportive Ayurvedic therapies may help reduce gastrointestinal disturbances, fatigue, and susceptibility to infections.

Interdisciplinary collaboration ensures patient safety and avoids herb–drug interactions. Personalized assessment, monitoring of laboratory parameters, and gradual implementation of Rasayana therapy provide a balanced integrative model.

Ultimately, the Ayurvedic approach aims at holistic restoration rather than isolated immune stimulation. By correcting Agni, eliminating toxins, nourishing Dhatus, enhancing Ojas, and integrating supportive care with contemporary medicine, long-term resilience can be achieved.

8. Discussion

Drug-induced immunosuppression represents a growing challenge in modern healthcare [4]. Ayurvedic concepts such as Ojas, Bala, Agni, and Rasayana provide a comprehensive framework for understanding immune suppression and recovery [1, 2, 3]. The correlation between Tikshna drugs and Visha-like effects offers a unique explanatory model aligning with modern pharmacodynamics [5, 6].

9. Conclusion

Drug-induced immunosuppression is an unavoidable consequence of long-term pharmacological therapy in many chronic diseases [4]. Ayurveda offers a holistic and supportive approach through restoration of Agni, Dhatus, and Ojas using Rasayana therapy, Panchakarma, diet, and lifestyle modification [1, 3, 6, 7]. Integrative application of these principles can significantly enhance immune recovery, reduce complications, and improve overall health outcomes.

References

1. Acharya C. *CharakaSamhitā*, Sūtrasthāna, Chapter 1, Śloka 4–5. *Āyurvedadīpikā* commentary of Chakrapānidatta. Acharya YT, editor. Varanasi: Chaukhamba Surabharati Prakashan; 2017. p. 5.
2. Acharya C. *CharakaSamhitā*, Sūtrasthāna, Chapter 1, Śloka 19. *Āyurvedadīpikā* commentary of Chakrapānidatta. Acharya YT, editor. Varanasi: Chaukhamba Surabharati Prakashan; 2017. p. 6.
3. Acharya C. *CharakaSamhitā*, Sūtrasthāna, Chapter 1, Śloka 30–31. *Āyurvedadīpikā* commentary of Chakrapānidatta. Acharya YT, editor. Varanasi: Chaukhamba Surabharati Prakashan; 2017. p. 7.
4. Acharya C. *CharakaSamhitā*, Siddhisthāna, Chapter 12, Śloka 54–55. *Āyurvedadīpikā* commentary of Chakrapānidatta. Acharya YT, editor. Varanasi: Chaukhamba Surabharati Prakashan; 2017. p. 738.
5. Acharya C. *CharakaSamhitā*, Sūtrasthāna, Chapter 1, Śloka 33. *Āyurvedadīpikā* commentary of Chakrapānidatta. Acharya YT, editor. Varanasi: Chaukhamba Surabharati Prakashan; 2017. p. 8.
6. Acharya C. *CharakaSamhitā*, Vimānasthāna, Chapter 1, Śloka 3. *Āyurvedadīpikā* commentary of Chakrapānidatta. Acharya YT, editor. Varanasi: Chaukhamba Surabharati Prakashan; 2017. p. 231.
7. Acharya C. *CharakaSamhitā*, Vimānasthāna, Chapter 3, Śloka 6. *Āyurvedadīpikā* commentary of Chakrapānidatta. Acharya YT, editor. Varanasi: Chaukhamba Surabharati Prakashan; 2017. p. 241.
8. Acharya C. *CharakaSamhitā*, Vimānasthāna, Chapter 3, Śloka 12–18. *Āyurvedadīpikā* commentary of Chakrapānidatta. Acharya YT, editor. Varanasi: Chaukhamba Surabharati Prakashan; 2017. p. 241–242.
9. Acharya C. *CharakaSamhitā*, Vimānasthāna, Chapter 5, Śloka 4. *Āyurvedadīpikā* commentary of Chakrapānidatta. Acharya YT, editor. Varanasi: Chaukhamba Surabharati Prakashan; 2017. p. 250.