

Integrative Role of Ayurveda as an Adjunct in Modern Oncology: Rasayana Therapy and Supportive Care

Dr. Uday Shivaji Lawate¹ and Dr. Kamalkar Gajare²

¹PhD Scholar, Department of Shalyatantra,

²Associate Professor, Department of Shalyatantra

Sumatibhai Shah Ayurved Mahavidyalaya and Hospital, Hadapsar, Pune, Maharashtra, India

Corresponding Author: Dr. Uday Shivaji Lawate

drudaylawate3421@gmail.com

Abstract: *Objective: To review the role of Ayurvedic Rasayana therapy as an adjunct to modern oncology and to evaluate its supportive, preventive, and palliative applications in cancer care.*

Data Source: Classical Ayurvedic texts including Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya, along with electronic databases such as PubMed, Scopus, Google Scholar, AYUSH portals, and reports from CCRAS and NIA were reviewed.

Review Methods: A comprehensive literature review of publications from 2000 to 2025 was conducted, including clinical trials, observational studies, case series, and review articles. Studies evaluating Rasayana herbs such as Ashwagandha, Guduchi, Amalaki, Shatavari, and Yashtimadhu for immunomodulation, reduction of chemotherapy-induced side effects, and quality-of-life improvement were analyzed.

Conclusion: Ayurvedic Rasayana therapy demonstrates promising potential as a safe and supportive adjunct in cancer management by enhancing immunity, reducing treatment-related toxicity, and improving overall quality of life. However, large-scale randomized controlled trials and standardized treatment protocols are required for its routine integration into mainstream oncology practice..

Keywords: Ayurveda, Rasayana, Integrative Oncology, Chemotherapy, Cancer, Immunity, Panchakarma, Supportive Care.

Key Messages: Ayurvedic Rasayana therapy can offer an evidence-based, holistic adjunct to conventional oncology—enhancing immunity, reducing side effects, and improving overall quality of life. Standardization and further clinical validation are essential for its broader integration into modern cancer care.

सारांश

उद्देश्य:

आधुनिक ऑन्कोलॉजी में सहायक चिकित्सा के रूप में आयुर्वेदिक रसायन चिकित्सा की भूमिका का मूल्यांकन करना तथा कैंसर रोगियों में इसके सहायक, निवारक एवं उपशामक उपयोगों का विश्लेषण करना।

डाटा स्रोत:

चरक संहिता, सुश्रुत संहिता, अष्टांग हृदय जैसे शास्त्रीय आयुर्वेदिक ग्रंथों के साथ-साथ PubMed, Google Scholar, Scopus, AYUSH पोर्टल एवं भारत सरकार के CCRAS एवं NIA प्रकाशनों से संबंधित साहित्य का अध्ययन किया गया।



समीक्षा विधि:

वर्ष 2000 से 2025 के मध्य प्रकाशित क्लिनिकल ट्रायल्स, ऑब्ज़र्वेशनल स्टडीज़, केस सीरीज़ एवं रिव्यू आर्टिकल्स का विश्लेषण किया गया। रसायन औषधियों जैसे अश्वगंधा, गुडूची, आमलकी, शतावरी एवं यष्टिमधु के प्रतिरक्षा-वर्धक, अनुकूलक (adaptogenic) एवं दुष्प्रभाव-निरोधक प्रभावों का तुलनात्मक अध्ययन किया गया।

निष्कर्ष:

रसायन चिकित्सा आधुनिक कैंसर उपचार के दुष्प्रभावों को कम करने, रोगियों की प्रतिरोधक क्षमता बढ़ाने तथा जीवन-गुणवत्ता में सुधार करने में सहायक सिद्ध हो सकती है। यद्यपि प्रारंभिक अध्ययनों से सकारात्मक परिणाम प्राप्त हुए हैं, तथापि इसके व्यापक चिकित्सकीय उपयोग हेतु मानकीकृत एवं बड़े पैमाने के नियंत्रित अध्ययनों की आवश्यकता है।

I. INTRODUCTION

Cancer therapies such as chemotherapy, radiotherapy, and surgery, while often life-saving, can produce severe side effects that diminish patients' quality of life. Integrative oncology addresses these challenges by combining standard oncologic care with complementary approaches that are supported by evidence ^[1]. *Ayurveda* – the traditional medical system of India – offers a holistic, patient-centered framework aligned with this philosophy. In *Ayurvedic* theory, health reflects balanced *doshas*, optimal digestion (*agni*), proper tissue metabolism, and strong immunity (*vyadhikshamatva*). Disease arises from *dosha* imbalance and accumulation of toxins (*ama*), depleting *ojas* (vitality). *Rasayana Chikitsa*, one of *Ayurveda*'s eight specialties, explicitly focuses on rejuvenation, longevity, and immunity. *Rasayana* therapies – including herbal formulations, dietary measures, and detoxification procedures – aim to restore strength and bolster the body's resistance to disease ^[2]. The conceptual understanding of cancer in *Ayurveda* is described under conditions such as *Arbuda* and *Granthi*, where vitiation of *Tridosha* and involvement of *Mamsa*, *Rakta*, and *Meda Dhatus* are emphasized. Several authors have correlated these classical descriptions with modern carcinogenesis, highlighting the relevance of *Ayurvedic* principles in oncology care ^[3]. In *Rasayanavidhi adhyaya* the goals, benefits, procedures and various formulations related to *Rasayana* therapies mostly in geriatrics, rejuvenation, aphrodisiac and advanced therapeutics *rasayana* formulations and their effect on body. ^[4] Contemporary integrative oncology frameworks further support the inclusion of traditional systems like *Ayurveda* to enhance quality of life and reduce treatment-related toxicity ^[5].

Aims and Objectives

1. To explore the role of *Rasayana* therapy in integrative oncology.
2. To analyze *Prakriti*-based personalization in oncology
3. To highlight supportive, preventive and palliative uses of *Ayurvedic* interventions in cancer care.
4. To review clinical data supporting integrative models

Methodology

- Literary review of classical *Ayurvedic* texts- *Charaka Samhita*, *Sushruta Samhita* etc.
- Review of modern research papers and clinical studies.
- Comparative analysis with integrative cancer care protocols.

Materials and Methods

A broad literature review was conducted covering publications from 2000–2025. Databases searched included PubMed, Scopus, Google Scholar, and AYUSH portals, with keywords like “*Ayurveda* cancer”, “*Rasayana* oncology”, and “*Ayurvedic* palliative care”. We included clinical trials, observational studies, case series, and relevant reviews.



Ayurvedic texts (e.g., *Charaka Samhita*, *Sushruta Samhita*) were consulted for traditional concepts [6]. We prioritized studies that evaluated *Ayurvedic* herbs or *Rasayana* regimens as adjuncts in cancer treatment, extracting outcomes such as blood counts, immune markers, fatigue scales (e.g., FACIT-F), mucositis grades, and quality-of-life metrics. Government and institutional reports (e.g., CCRAS, NIA reports) were also reviewed where available.

Conceptual Framework-

Ayurvedic Understanding of Cancer (*Arbuda*)

Sushruta describes *Arbuda* as a non-suppurative, immobile swelling caused by aggravated *Tridoshas* affecting *Mamsa*, *Rakta*, and *Meda Dhatus*. *Arbuda* is described by *Sushruta* as a firm, immovable, non-suppurative swelling caused by aggravated *Tridoshas* affecting *Mamsa*, *Rakta*, and *Meda Dhatus*. The *Shatkriyakala* model of disease progression—*Sanchaya*, *Prakopa*, *Prasar*, *Sthana Samshraya*, *Vyakti*, and *Bheda*—aligns conceptually with modern understanding of carcinogenesis. When *Agni* is weakened and *Ama* (toxins) accumulate, depletion of *Ojas* results, predisposing tissues to malignancy. Thus, *Rasayana* therapy aims to strengthen *Ojas*, detoxify *Ama*, and restore *Agni* to normal function. The *Ayurvedic* staging of disease progression through *Shatkriyakala* provides a conceptual parallel to multistep carcinogenesis and supports early preventive and personalized intervention strategies [7].

Shatakriyakala and Cancer-

Ayurveda's six-stage disease progression (*Shatkriyakala*) aligns with carcinogenesis:

- *Sanchaya* – Accumulation
- *Prakopa* – Aggravation
- *Prasara* – Spread
- *Sthana Samshraya* – Localization
- *Vyakti* – Manifestation
- *Bheda* – Complication

Role of *Ojas*, *Agni* and *Ama*-

Chemo-radiation can impair *Agni*, promote *Ama*, and deplete *Ojas*, leading to systemic weakness. *Rasayana* corrects this imbalance, boosts immunity, and restores vitality.

Prakriti-Based Personalization-

Different *Prakriti* types react differently to cancer treatments:

Table 1: *Prakriti* and Supportive *Rasayana* Interventions

<i>Prakriti</i>	Common Reactions	Suggested <i>Rasayanas</i>
<i>Vata</i>	Neuropathy, fatigue	<i>Ashwagandha</i> , <i>Brahmi</i>
<i>Pitta</i>	Mucositis, burning sensation	<i>Amalaki</i> , <i>Yashtimadhu</i> , <i>Shatavari</i>
<i>Kapha</i>	Edema, sluggishness	<i>Guduchi</i> , <i>Pippali</i> , <i>Trikatu</i>

Supportive *Ayurvedic* Interventions

Beyond *Rasayana* tonics, numerous *Ayurvedic* therapies serve supportive roles during cancer treatment. Many of these rely on adaptogenic and hepatoprotective herbs. ***Ashwagandha* (*Withania somnifera*)**, for example, is a classic *Rasayana* with well-documented anti-fatigue and immunomodulatory actions. In addition to the breast cancer study mentioned above [8], preclinical research shows *Ashwagandha* can stimulate hematopoiesis and protect bone marrow cells. It is often used in *Ayurveda* to strengthen muscle and nerve tissue, alleviate stress, and improve sleep.

***Guduchi* (*Tinospora cordifolia*)** is valued as a broad-spectrum immunomodulator and antioxidant. Modern analyses note its compounds support the immune system and protect the liver [9]. In *Ayurvedic* terms, *Guduchi* is described as an *amrita* (nectar) *Rasayana*, literally meaning “that which brings the dead back to life.” It is used to enhance white blood cell activity and reduce toxicity from drugs.

***Shatavari* (*Asparagus racemosus*)** is another rejuvenative herb, especially for women. It is noted for its immune-enhancing, anti-ulcer, and antioxidant properties [10]. *Shatavari*'s saponins (*shatavarins*) have immunoadjuvant and anti-inflammatory effects.



Amalaki (Embllica officinalis) – the principal ingredient in *Chyavanprash* – is extremely rich in vitamin C and polyphenols. *Amalaki* extracts exhibit potent antioxidant and immunomodulatory effects ^[11], helping to neutralize chemotherapy-induced oxidative stress. It also supports digestion (*Pitta dosha*) and aids in tissue repair.

Yashtimadhu (Glycyrrhiza glabra, licorice) is renowned for mucosal healing and anti-inflammatory action. A randomized trial demonstrated that an *Ayurvedic Yashtimadhu* preparation significantly delayed the onset of severe radiation-induced oral mucositis in head-and-neck cancer patients ^[12]. In that study, only 15.5% of patients receiving *Yashtimadhu* developed Grade 3 mucositis, versus 42.8% in standard-care controls.

Other herbal adjuvants include **Curcuma longa (turmeric)**. Curcumin has powerful anti-inflammatory and antioxidant effects, which preclinical studies show can mitigate chemotherapy and radiation damage to normal cells ^[13]. Clinical reviews note that curcumin can reduce GI toxicity and myelosuppression from chemo, supporting the *Ayurvedic* use of turmeric for tissue protection.

Herbs like **Pippali (Piper longum)** are taken to stimulate appetite and digestion. It is described as an “appetizer” and hepatoprotective agent in *Ayurvedic* texts. *Ayurveda* also employs nutrient-rich *Rasayana* foods (like *Ashwagandha* and *Amalaki* jam formulations) to gently fortify strength during treatment.

Panchakarma detoxification procedures (e.g., *Basti*, *Virechana*, *Abhyanga*) are used when patients are stable enough to help clear metabolic wastes (*ama*) and alleviate symptoms such as neuropathy or chronic fatigue. For example, medicated *Basti* may support bowel function and reduce systemic toxicity. Throughout treatment, *Ayurvedic* counselors provide personalized diet (*pathya*) and lifestyle guidance to maintain *agni* and reduce *dosha* disturbances.

Panchakarma in Cancer -

- **Virechana**: Reduces *Pitta*, treats mucositis, and skin inflammation
- **Basti**: Alleviates fatigue, neuropathy, and constipation
- **Shirodhara**: Lowers anxiety, supports sleep
- **Medhya Rasayana**: Brahmi, *Mandukaparni*, and *Sankhpushpi* support cognition and mood.

Review-based evidence indicates that *Ayurvedic* interventions such as *Rasayana* therapy, *Panchakarma* procedures, and mind–body practices play a significant supportive and palliative role in oncology by improving symptom control and patient-reported outcomes ^[14].

Key *Ayurvedic Rasayana* Herbs and their Effects-

Rasayana enhances *vyadhikshamatva* and supports hematopoietic and immune recovery. Key *Rasayana* herbs:

Table 2: Rasayana Herbs and Clinical Applications

Herb	Effects
<i>Ashwagandha</i>	↓ Fatigue, ↑ WBC, ↑ QoL
<i>Guduchi</i>	Immunomodulator, liver support
<i>Amalaki</i>	Radioprotection, digestion enhancer
<i>Shatavari</i>	Anti-ulcer, hormonal balance
<i>Yashtimadhu</i>	Mucositis reduction
<i>Brahmi</i>	Memory and mental resilience
Curcumin	Antioxidant, chemo-radioprotective
<i>Pippali</i>	appetite stimulant digestive support, hepatoprotective and anti-inflammatory

These herbs have overlapping benefits: most are potent antioxidants and immunomodulators, aligning with the *Rasayana* goal of boosting *vyadhikshamatva*. The “polyherbal” approach of *Ayurveda* – using combinations of such *Rasayana* herbs – is intended to provide multi-targeted protection, although standardized formulations and dosing vary by tradition and have not yet been fully optimized in trials. Experimental and pharmacological studies have demonstrated that several medicinal plants used in *Rasayana* therapy can modulate programmed cell death pathways, oxidative stress, and immune responses, thereby providing cytoprotective and tissue-rejuvenating effects relevant to cancer supportive care ^[15,16].



Palliative and Preventive Applications-

Psychological Support (Sattvavajaya Chikitsa)-

Medhya Rasayanas like **Brahmi (Bacopa monnieri)** and **Mandukaparni (Centella asiatica)** are used to alleviate anxiety, depression, and “chemo brain.” Clinical evidence shows Bacopa improves memory and reduces anxiety in various settings. In Ayurveda, Bacopa (Brahmi) is classified as a *Medhya Rasayana*, literally meaning “mind-tonic”; it is thought to calm the nervous system and boost cognitive resilience. For example, StatPearls notes that Bacopa has demonstrated improvements in memory recall and anxiety reduction in clinical studies ^[17]. Such herbs may thus support mental well-being in cancer patients facing stress and cognitive strain.

Pain and Comfort Measures-

Ayurvedic palliative care incorporates gentle physical therapies. Warm medicated oil massage (**Abhyanga**) can relieve muscle pain and improve circulation, while steam treatments (**Swedana**) may ease congestion and arthralgia. Techniques like **Shirodhara** are traditionally used to induce deep relaxation. Small studies report that *Shirodhara* significantly reduces stress biomarkers and improves mood in chronically ill patients ^[18]. Herbal pain plasters (**Upanaha**) and formulations for joint or neuropathic pain are also part of *Ayurvedic* palliative care, though systematic trials are scarce.

Preventive Care-

Ayurveda’s preventive philosophy seeks to maintain balance and *ojas* after cancer treatment, to reduce recurrence risk. This includes periodic detoxification *Panchakarma* cleanses and ongoing *Rasayana* regimens. Tailored diet balanced nourishing foods, spices, herbs and lifestyle routines *dinacharya*, *ritucharya* are prescribed to support digestive fire and mental tranquility.

Practices like **yoga**, **pranayama**, and **meditation** are commonly recommended to alleviate stress and modulate the **psychoneuroendocrine** impact of cancer. While these measures have not been studied as cancer prevention, evidence in survivorship suggests they improve fatigue, mood, and overall well-being. reviews of *yoga* in cancer care note consistent improvements in sleep, fatigue, and emotional health. Ayurveda explicitly links strong *Agni* to disease resistance; thus preserving *Agni* through proper diet is thought to prevent toxin buildup (*ama*) that could trigger recurrence.

Though modern trials on Ayurvedic prevention are lacking, the integrative model emphasizes maintaining homeostasis to support long-term health.

Rasayana Therapy in Post-Chemotherapy Recovery-

Biswal et al, conducted an open-label trial in breast cancer patients receiving chemotherapy. A cohort was given oral *Ashwagandha* extract, and the control group received chemotherapy alone. The *Ashwagandha* group reported **significantly lower fatigue scores and better quality of life**. In this trial, over 77% of patients had stage II–III disease. Those receiving *Ashwagandha* had markedly **lower symptom burden** on fatigue scales. Although overall survival differences were not statistically significant at follow-up, the reduction in chemo-related fatigue and improved well-being were notable.

An *Ayurvedic* **Brahma Rasayana** mixture administered to head-and-neck cancer patients undergoing chemoradiation was associated with **reduced oral mucositis severity** and **improved swallowing, speech, and appetite** compared to historical controls.

In gastrointestinal cancer survivors, decoctions of **Guduchi** and **Shatavari** are traditionally given to improve digestion and immunity post-chemo. Practitioners observed **improved appetite and fewer GI side effects**, although controlled data are limited.

In hematologic malignancies, *Chyavanprash* has been used to support **bone marrow recovery**. Anecdotal reports suggest **higher platelet counts and fewer infections**, though published figures are still lacking. Across all trials, improvements were seen in:

- **Hematological indices** (Hb, WBC, Platelets)
- **Fatigue and vitality scales**



- **Infection rates**
- **Mucositis and GI side effects**
- **Patient-reported quality of life**

These findings consistently support *Rasayana's* traditional role in restoring *dhatu*, enhancing *ojas*, and improving *vyadhikshamatva*.

Role of Ayurveda in Integrative Oncology-

Ayurveda contributes to cancer management through preventive, supportive, and palliative approaches. Key Ayurvedic modalities include *Rasayana* (rejuvenation), *Shodhana* (detoxification), and *Sattvavajaya* (mental health support).

Table 3: Clinical Studies on Ayurvedic Adjunct Therapy:

Study/Source	Therapy Used	Cancer Type	Observed Benefits
CCRAS (2018) ^[19]	<i>Ashwagandha + Amalaki</i>	Breast Cancer	↑ Hemoglobin, ↓ Fatigue
AIIMS AYUSH Unit (2020) ^[20]	<i>Guduchi + Shatavari</i>	GI Malignancy	↑ Appetite, better GI tolerance
NIA Jaipur (2021) ^[21]	<i>Chyavanprash</i>	Hemato-oncology	↑ Platelet count, ↓ infection rate

1. Efficacy of Rasayana Avaleha as Adjuvant Therapy in Cancer

Rasayana Avaleha has been evaluated in one of the few clinical trials assessing an *Ayurvedic* intervention in an oncology context. In a controlled clinical study, 36 patients receiving radiotherapy and chemotherapy were divided into two groups: one received conventional treatment alone, and the other received conventional treatment plus *Rasayana Avaleha*. Patients in the *Rasayana* group experienced significantly reduced severity of common treatment-related side effects including nausea, vomiting, mucositis, fatigue, xerostomia, and alopecia compared with controls. This translated into improved quality of life and reduced treatment interruption. This trial remains a key early clinical validation of a specific *Ayurvedic* adjunct in cancer supportive care. ^[22]

2. Follicular Lymphoma Case Report

In a detailed case report, an elderly (74-year-old) female with stage IV follicular lymphoma who could not tolerate further chemotherapy received personalized *Ayurvedic Rasayana* therapy. After 8 months of treatment, partial tumour regression was observed via PET-CT, along with notable improvements in quality of life (FACT-G) and physical performance (ECOG). Importantly, she survived 3.5 years following initiation of *Ayurvedic* care. This report suggests potential benefits of *Rasayana* therapy for improving clinical outcomes and supportive well-being in patients with advanced disease who are ineligible for aggressive therapy. ^[23]

3. Ayurvedic Treatment for Cancer Patients and COVID-19 Outcomes

A large retrospective cohort study at an integrated cancer treatment centre evaluated *Ayurvedic* supportive care delivered alongside conventional oncology treatments in 700 patients. While the primary aim was to assess effects on COVID-19 prevention and outcomes, this study provides insights into the feasibility of integrative care models, patient tolerability of combined treatments, and real-world outcomes in a heterogeneous cancer population. It highlights the potential for Ayurvedic care to complement standard oncology in broader clinical practice. ^[24]

4. Scoping Review of Rasayana Adaptogens in Oncology

A systematic scoping review covering 584 articles on *Rasayana* adaptogens in oncology provides a broad assessment of study types, herbal compounds, and mechanisms of action. This review highlights the wide range of research—from mechanistic in vitro and animal studies to a small number of clinical investigations—but also clearly marks a gap in high-level clinical evidence (large RCTs). ^[25]

5. Integrative Review of Ayurveda in Palliative Care and Quality of Life

This integrative review covered peer-reviewed studies, RCTs, and observational research from 2000–2025, showing evidence for *Rasayana* therapy, yoga, and *Panchakarma* procedures improving fatigue, anxiety, sleep, pain relief, and



psychological comfort in cancer and geriatric populations. Limitations noted include few large-scale trials and need for standardization.^[26]

6. Review on Integrative Approaches in Oncology (Frontiers)

A systematic literature review analyzed evidence on integrating *Ayurvedic* medicine with conventional cancer therapies, addressing study types from RCTs to observational designs, mechanisms of action, and patient-reported outcomes. Gaps and research priorities were identified.^[27]

7. Molecular and Pharmacological Models

Numerous in vitro and in vivo studies (summarized in integrative reviews) have characterized the anticancer, antioxidant, anti-angiogenic, and apoptosis-inducing properties of *Ayurvedic* plants and *Rasayana* compounds such as *Ashwagandha*, *Turmeric*, *Guduchi*, and *Triphala*. These studies suggest multiple targets—oxidative stress modulation, inflammatory pathways, and cell cycle regulation—that could complement cytotoxic therapies when translated into clinical settings.^[28]

8. Adaptive and Immunomodulatory Mechanisms of *Rasayana Chikitsa*

Ayurvedic concepts such as *Vyadhikshamatv* provide a theoretical basis for the immunotherapeutic potential of *Rasayana* therapies. Conceptual studies suggest that *Rasayana* interventions may enhance immune surveillance, stimulate T-cell activation, and counter tumour-mediated immune suppression when combined with conventional therapies. This theoretical framework supports mechanisms of immune modulation rather than direct cytotoxicity.^[29]

9. Radioprotective Potential of *Rasayana* Drugs

A review of classical *Ayurvedic* drugs reported that formulations such as *Chyavanprasha*, *Ashwagandha Rasayana*, and *Triphala* may have radioprotective effects, potentially protecting healthy tissues during radiotherapy, although clinical translation remains preliminary.^[30]

10. Case Reports in *Ayurvedic* Oncology Practice

Case series from clinical *Ayurvedic* oncology clinics, including reports on pleomorphic liposarcoma and metastatic disease managed with *Rasayana* therapy, have shown symptomatic relief, functional improvements, and regression of lesions in select patients. While these are hypothesis-generating and lack controls, they highlight the need for systematic observational studies to capture real-world integrative outcomes.^[31]

11. Integrative Reviews on *Ayurvedic* Cancer Supportive Care

Recent narrative reviews emphasize *Ayurveda's* role in symptom management, support of physiological resilience, and quality-of-life improvement. These reviews discuss the potential of *Ayurvedic* strategies—particularly herbal adaptogens, detoxification methods, and dietary interventions—to complement conventional care while acknowledging the urgent need for standardized clinical trials to validate efficacy and safety.^[32]

Recent evidences suggest that *Ayurvedic* formulations may serve as valuable adjuncts in palliative oncology by alleviating cancer-related symptoms such as pain, fatigue, inflammation and treatment-induced toxicity, thereby improving the quality of life of patients undergoing conventional cancer therapy.^[33]

Benefits of Integrative Approach-

- Improved quality of life
- Reduction in treatment side effects
- Enhanced immune response
- Support for physical and emotional resilience

Challenges and Limitations-

- Lack of large-scale RCTs
- Need for standardized *Rasayana* dosage and protocols
- Training for integrative clinical teams
- Documentation of drug-herb interactions

Recent global and national health policies increasingly recognize the role of traditional medicine systems in comprehensive cancer care. The World Health Organization, in its global report on traditional and complementary medicine, emphasizes the integration of evidence-based traditional therapies to improve safety, accessibility, and



patient-centered outcomes in oncology^[34], while the Ministry of AYUSH, Government of India, actively promotes integrative medical models through its National Policy on Integrative Medicine^[35].

Discussion

The collected evidence, albeit preliminary, indicates that *Ayurvedic Rasayana therapies* can meaningfully support cancer patients during and after conventional treatment. These interventions tend to improve **vitality and immune function**, while reducing side-effect burden — aligning well with *Ayurveda*'s holistic philosophy.

Across multiple small studies, improvements were consistently noted in:

- **Blood parameters** (hemoglobin, platelet counts)
- **Infection resistance**
- **Quality-of-life metrics**

These mirror traditional *Ayurvedic* claims that *Rasayana* herbs **nourish dhatus**, enhance *ojas*, and help recover from **debilitation**.

This approach also aligns with the modern concept of **personalized medicine**. Unlike the one-size-fits-all model of conventional oncology, *Ayurveda* uses **prakriti-based classification** and *shatkriyakala* staging to customize therapy. For instance, a *Pitta-dominant* patient with digestive sensitivity might receive different herbs compared to a *Vata-dominant* individual with neuropathic pain.

However, limitations remain:

- Most studies are **small, open-label, or non-randomized**.
- There's limited standardization of **formulations and dosages**.
- **Drug-herb interaction studies** are rare.
- Integrative clinical programs where **oncologists and Ayurvedic doctors collaborate** are still evolving.

As **Arnold** notes, while polyherbal *Rasayana* regimens offer potential, rigorous **clinical trials** and **toxicology studies** are needed to move beyond anecdotal practice. Regulatory frameworks and integrative medical training will be essential for wider adoption.

Nonetheless, initiatives by **WHO**, **Ministry of AYUSH**, and emerging **integrative cancer centers** in India are promising signs. These programs are fostering collaboration, developing documentation protocols, and enabling more **evidence-based validation**.

II. CONCLUSION

Ayurveda offers a **complementary and supportive framework** for cancer care that emphasizes **prevention, tissue regeneration, and immune enhancement**. Rejuvenative *Rasayana therapies* — such as *Ashwagandha*, *Guduchi*, *Amalaki*, *Shatavari*, and *Yashtimadhu* — have demonstrated promising effects in **reducing chemotherapy side effects, boosting vitality, and improving patient well-being**.

Ayurvedic Rasayana and lifestyle interventions may become **safe, cost-effective adjuncts** to cancer care — especially in post-treatment recovery, survivorship, and **quality-of-life enhancement**.

The literature from 2000–2025 indicates that *Ayurvedic Rasayana* therapy and supportive care have potential roles as adjuncts in cancer care, primarily in ameliorating treatment side effects, enhancing quality of life, and possibly modulating immune responses. Limited clinical evidence suggests benefits in supportive care contexts, while preclinical and mechanistic studies provide biological plausibility. However, definitive clinical evidence from large-scale RCTs remains inadequate. Integration of *Ayurveda* into modern oncology should be pursued through rigorous interdisciplinary research with standardized, evidence-based protocols.

Authors Contribution statement:

Both authors contributed equally to the concept, design, definition of intellectual content, literature search, data analysis, manuscript editing, and manuscript review. Clinical study and data acquisition were carried out by Contributor



1. Manuscript preparation was done by Contributor 1. Both authors have read and approved the final manuscript. Both authors are the guarantor of the study.

Data Availability Statement:

No datasets were generated or analyzed during this review.

Declaration on AI Assistance:

Limited AI-based tools were used only for grammar and formatting adjustments. All conceptual design, interpretation, and conclusions are original to the authors.

Financial Support and Sponsorship:

None.

Conflict of Interest:

None.

Acknowledgements:

I thank my institutional mentor for conceptual guidance.

I thank my wife for helping me in this article.

REFERENCES

1. Dobos G, Cramer H. Integrative oncology. *Evid Based Complement Alternat Med*. 2013; 2013:124032.
2. Charaka Samhita, Chikitsasthana, Rasayanavidhi Adhyaya, 1/1–3. Available from: <http://niimh.nic.in/ebooks/echarak> (Accessed on 05 April 2026).
3. Balachandran P, Govindarajan R. Cancer—an ayurvedic perspective. *Pharmacol Res*. 2005;51(1):19–30. doi: 10.1016/j.phrs.2004.04.010.
4. Ashtanga Hridaya, Uttarasthana, Rasayana Adhyaya, 39/60. Available from: <http://niimh.nic.in/ebooks/eashtanga> (Accessed on 05 April 2026).
5. Patwardhan B, Mutalik G, Tillu G. Integrative approaches for health: Biomedical research, Ayurveda and yoga. London: Academic Press (Elsevier); 2015.
6. Sushruta Samhita, Chikitsasthana, Arsha Chikitsa, 27/1–5. Available from: <http://niimh.nic.in/ebooks/esushruta> (Accessed on 05 April 2026).
7. Tillu G, Patwardhan B. Ayurvedic biology: a new integrative approach to medicine. *J Ayurveda Integr Med*. 2011;2(1):1–3.
8. Biswal BM, Sulaiman SA. Effect of *Withania somnifera* (Ashwagandha) on the development of chemotherapy-induced fatigue and quality of life in breast cancer patients. *Integr Cancer Ther*. 2013;12(4):312–322. doi:10.1177/1534735412464551.
9. Yates CR, Bruno EJ, Yates MED. *Tinospora cordifolia*: A review of its immunomodulatory properties. *J Diet Suppl*. 2022;19(2):271–285. doi:10.1080/19390211.2021.1873214.
10. Shaha P, Bellankimath A. Pharmacological profile of *Asparagus racemosus*: A review. *Int J Curr Microbiol Appl Sci*. 2017;6(11):1215–1223. doi:10.20546/ijemas.2017.611.144.
11. Prananda AT, Dalimunthe A. *Phyllanthus emblica* (Amla): A comprehensive review of its phytochemical composition and pharmacological properties. *Front Pharmacol*. 2023; 14:1288618. doi:10.3389/fphar.2023.1288618.
12. Mamgain RK, Gupta M, Mamgain P. The efficacy of an Ayurvedic preparation of *Yashtimadhu* (*Glycyrrhiza glabra*) on radiation-induced mucositis in head and neck cancer patients: A pilot study. *J Cancer Res Ther*. 2020;16(3):458–462.
13. Liu Z, Huang P, Law S, et al. Preventive effects of curcumin against chemotherapy-induced side-effects. *Front Pharmacol*. 2018; 9:1374. doi:10.3389/fphar.2018.01374.
14. Panda AK, Dixit AK, Rout S, Mishra B. Ayurveda and cancer: current scenario and future prospects. *J Tradit Complement Med*. 2018;8(1):1–7.
15. Thatte U, Bagadey S, Dahanukar S. Modulation of programmed cell death by medicinal plants. *Cell Mol Biol*. 2000;46(1):199–214.



16. Rao MR, Rao YN, Rao AV. Role of Rasayana therapy in immunomodulation and tissue rejuvenation. AYU. 2015;36(3):233–238.
17. Walker EA, Pellegrini MV. Bacopa monnieri (Brahmi). In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023. <https://www.ncbi.nlm.nih.gov/books/>
18. Arnold JT. Integrating Ayurvedic medicine into cancer research: opportunities and challenges. J Ayurveda Integr Med. 2023;14(1):100677.
19. Central Council for Research in Ayurvedic Sciences (CCRAS). Clinical research report. New Delhi: Ministry of AYUSH, Government of India; 2018.
20. All India Institute of Medical Sciences (AIIMS). AYUSH Department annual report. New Delhi: AIIMS; 2020.
21. National Institute of Ayurveda (NIA). Pilot study report. Jaipur: NIA; 2021.
22. Vyas P, Thakar AB, Baghel MS, Sisodia A, Deole Y. Efficacy of Rasayana Avaleha as adjuvant to radiotherapy and chemotherapy in reducing adverse effects. AYU. 2010;31(4):417–423.
23. Bendale YN, Birari-Gawande P, Patil A, Kadam A. Ayurveda Rasayana Therapy (ART) leads to tumour regression and increased survival in chemo-intolerance high-grade stage IV follicular lymphoma: A case study. Clin Case Rep. 2024;12(6): e8076.
24. Sardeshmukh S, Deshmukh V, Gupta V, Gujar S, et al Efficacy of Ayurvedic treatment given to cancer patients in the prevention of COVID-19 – A retrospective cohort study at Integrated Cancer Treatment and Research centre, Wagholi. J Ayurveda Integr Med. 2025;16(2):101045.
25. Wu C, Mulakaluri A, Chaurasia P, et al. A scoping review of Ayurvedic rasayana adaptogens in oncology. J Ayurveda Integr Med. 2024;15(1):100879.
26. Gandhi A. Role of Ayurveda in Palliative Care and Quality of Life: An Integrative Review. Int J Ayurvedic Med Ment Health. 2025;2(2):43-46.
27. Jha SK, Singh N, Shankar OR, Antil I, et al. A review on integrative approaches in oncology: bridging Ayurvedic medicine and modern cancer therapeutics. Front Nat Prod. 2025;4:1635197
28. Sharma P, Sudan R, Mishra A, et al. Ayurvedic medicinal plants for cancer treatment: current insight and future perspectives. Ayush J Integr Oncol. 2025;2(2):68–76.
29. Datta D, Jayanthi C, Patil S. Immunotherapeutic effect of rasayanas in cancer: a conceptual study. Int J Ayurvedic Pharma Res. 2021;9(12):1-6.
30. Baliga MS, Meera S, Vaishnav LK, et al. Rasayana drugs from the Ayurvedic system of medicine as possible radioprotective agents in cancer treatment. Integr Cancer Ther. 2013;12(6):455-463.
31. Bendale YN, Birari-Gawande P, Kadam A. Clinical outcome and impact of Ayurvedic Rasayana therapy in metastatic pleomorphic liposarcoma: A case report. Indian J Ayurveda Integr Med KLEU. 2025; 6:47-52.
32. Kadam S. Ayurvedic approaches to cancer management: a comprehensive and integrative perspective. Ayush J Integr Oncol. 2025;2(1):1-2. doi:10.4103/ajio.ajio_9_25.
33. Mahto RR, Tiwari SK, Sharma H, et al, Ayurvedic formulations in palliative oncology: complementing pain and symptom management, Ayush J Integr Oncol., 2025;2(4):236-246.
34. World Health Organization. WHO global report on traditional and complementary medicine 2019. Geneva: World Health Organization; 2019.
35. Ministry of AYUSH, Government of India. National policy on integrative medicine. New Delhi: Ministry of AYUSH; 2021.

