

Role of Rasayana Therapy in the Management of Cancer

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ABSTRACT

Cancer is a disease characterized by uncontrolled, abnormal cell growth that invades surrounding tissues and can spread to distant parts of the body (metastasis) due to loss of normal growth regulation. (1,2)

The immune system plays a crucial role in protecting the body against cancer. It continuously identifies and destroys abnormal or potentially malignant cells by a process known as immune surveillance. (3,4)

Contemporary cancer management primarily involves targeted therapy, surgery, chemotherapy, and radiotherapy, hormonal therapy, immunotherapy these cancer treatments associated with considerable physical and psychological burden to the patient, that's why there is a need to explore alternative and supportive approaches. Ayurveda emphasizes the preservation and enhancement of Vyadhikṣamatva (innate immunity) and Bala (bodily strength) to prevent disease progression and support recovery.(5) Through measures such as Rasayana Chikitsa, Ahara, Vihara, and Doṣa-pratyanika Chikitsa, Ayurveda aims to strengthen the body's internal defense mechanisms, enabling the individual to combat disease more effectively while promoting holistic health and improving quality of life.(6)

Rasayana Chikitsa enhances Ojas (immunity), rejuvenation of Dhatus (body tissues), and restoration of metabolic balance. Classical Rasayana drugs such as Amalaki, Guduchi, Ashwagandha, Haridra, and Shatavari possess immunomodulatory, antioxidant, and cytoprotective properties, which are supported by modern pharmacological studies.(8) These therapies not only help in strengthening host defense but also assist in reducing the toxicity of conventional cancer treatments and improving the patient's quality of life. Rasayana Chikitsa offers a holistic and patient-centered therapeutic approach for the management of cancer. Its immuno-enhancing and rejuvenative actions make it a valuable adjunct in integrative cancer care, particularly in improving disease tolerance, delaying progression, and promoting overall well-being.

Keywords: Cancer, Rasayana Chikitsa, Ojas, Immunomodulation, Ayurveda.

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1. INTRODUCTION

Cancer places a major financial strain on the global economy and has become the third leading cause of death across the world. It is estimated that by the year 2030, there will be around 26 million new cancer diagnoses and nearly 17 million deaths from cancer each year. The burden of cancer falls more heavily on developing countries.⁽⁹⁾ In 2025, there were an estimated ~20 million new cancer cases worldwide (excluding non-melanoma skin cancer). Around ≈10 million deaths from cancer occurred globally in the same year. Approximately 53.5 million people were living at least five years post-diagnosis by 2025.⁽¹⁰⁾ Many of these deaths occur in regions where access to proper cancer treatment is minimal or absent, and where healthcare spending per person remains very low.

Most frequently diagnosed Cancers Worldwide include, Lung cancer, Breast cancer, Colorectal cancer, Prostate cancer, Non-melanoma skin cancers. Tobacco use, especially cigarette smoking, is responsible for over 20% of all cancer deaths globally. It causes nearly 80% of lung cancer cases in men and about 50% in women, most of which could be avoided through smoking cessation. Unhealthy diet and alcohol consumption contribute to another 30% of cancers, including cancers of the stomach, colon, esophagus, breast, and liver. Tobacco use, unhealthy diet, obesity, physical inactivity,

alcohol consumption and air pollution together contribute significantly to cancer risk.⁽¹¹⁾

Infections play a role in approximately 15% of cancers worldwide, including cancers of the cervix, stomach, liver, nasopharynx, and bladder. Many of these can be prevented through improved infection control measures and vaccination. Cancer develops through a step-by-step process in which a series of genetic mutations gradually transform a normal cell into a malignant one. To successfully initiate and sustain cancer growth, these cells acquire specific biological traits known as the “hallmarks of cancer.” Adopting healthier lifestyle habits such as limiting red meat and animal fat, reducing alcohol intake, increasing consumption of fibre, fruits, and vegetables, and maintaining a healthy body weight can significantly lower this risk. ⁽⁹⁾

Roughly 30–50% of cancer deaths are linked to modifiable risk factors, meaning many cancers could be prevented or delayed with lifestyle and environmental changes.⁽¹¹⁾ The contemporary management of cancer primarily relies on surgery, chemotherapy, and radiation therapy. Although these modalities can be effective, they are often associated with significant risks, high financial costs, and considerable physical and psychological burden on patients. In many cases, such treatments are not easily accessible or affordable, especially in resource-limited settings, and they may adversely affect the patient’s quality of life.

The immune system acts as a powerful defense against the development and growth of tumours. One of the defining features of cancer is its ability to escape immune surveillance. Under normal conditions, cancer cells release surface antigens into the bloodstream, which trigger an immune response involving cytotoxic T cells, natural killer (NK) cells, and macrophages. Through this constant surveillance, the immune system can identify and destroy cells that undergo malignant changes.

When the number or function of CD8⁺ cytotoxic T lymphocytes, CD4⁺ Th1 helper T cells, or NK cells is impaired, the risk of cancer development increases significantly. In addition, even highly immunogenic tumour cells can survive by actively avoiding immune attack. They achieve this by manipulating the immune environment, particularly by recruiting immunosuppressive cells such as regulatory T cells and myeloid-derived suppressor cells. These cells inhibit the activity of cytotoxic lymphocytes, allowing tumour cells to persist and grow.

Cancer progression occurs when tumour cells are no longer effectively recognized by the immune system, become resistant to immune-mediated killing, and induce immune dysfunction. This immune suppression is often driven by inflammatory mediators within the tumour microenvironment.

In contrast, Ayurveda offers a supportive and holistic alternative through Rasayana Chikitsa, which aims to strengthen the body’s natural defense mechanisms, restore tissue balance, and improve overall vitality. By enhancing Ojas (immunity) and promoting systemic rejuvenation, Rasayana therapies provide a safer, more sustainable, and patient-friendly approach for the long-term management of cancer, particularly in improving tolerance to disease and enhancing quality of life. Ayurveda is the traditional system of medicine of India, since over 5000 years. The word Ayurveda signifying the “science of life.” It is a comprehensive medical system that aims at both the preservation of health and the management of disease. This objective is classically stated in the foundational principle of Ayurveda: “Swasthasya Swasthya Rakshanam, Aturasya Vikara Prashamanam” i.e.. “To protect and maintain the health of a healthy person. and To treat and cure the diseases of the sick person.” ⁽¹²⁾ Ayurveda plays a potential role in maintaining healthy lifestyle and developing immunity in accordance to prevention of disease, Ayurveda views health as a state of equilibrium among the three doshas—Vata, Pitta, and Kapha, which govern all physiological and pathological processes in the body ⁽¹³⁾ The maintenance of this doshic balance, along with proper functioning of Agni (metabolic fire), Dhatus (tissues), and Malas (waste products), ensures overall well-being.

2. WHAT IS RASAYAN

Rasayana Chikitsa is the branch of Ayurveda that focuses on, Improving Ojas (immunity and vitality), Enhancing Dhatu strength and regeneration, Slowing down aging and degeneration, Increasing disease resistance. In Ayurveda, Rasayana therapy is recognized as one of the eight major disciplines of Ashtanga Ayurveda and primarily focuses on nourishment, rejuvenation, and enhancement of immunity. Rasayana interventions are described as methods that support optimal tissue nutrition, delay the process of aging, and help in disease prevention. Classical Ayurvedic literature highlights Rasayana drugs as Ojovardhaka, meaning they enhance Ojas, the vital essence responsible for vitality and resistance to illness. The concept of Vyadhikshamatva, or the body’s capacity to withstand disease, is regarded as an important indicator of health in Ayurveda. Acharya Charaka explains that disease does not develop as long as the body’s inherent strength remains uncompromised. Hence, strengthening Bala (physical and functional strength) and preserving Ojas form the fundamental objectives of Rasayana therapy.

Rasayana therapy promotes longevity, memory, intelligence, health, youthfulness, and strength of body and mind.⁽¹⁴⁾

Rasayana nourishes all body tissues (Dhatu Pushti), thereby correcting tissue depletion and abnormal growth.⁽¹⁵⁾ Ashtanga Hridaya one of the classical texts of Ayurveda States that Rasayana increases Ojas, which is essential to fight chronic and severe diseases.⁽¹⁶⁾

3. ASSOCIATION OF CANCER AND IMMUNITY

Cancer develops due to the accumulation of genetic mutations that disrupt normal cell growth, differentiation, and death. These mutations may be inherited or acquired due to environmental and lifestyle factors.⁽¹⁷⁾ Common causes include exposure to carcinogens such as tobacco smoke, radiation, chemicals, chronic infections, hormonal imbalance, and long-standing inflammation.

When the immune system fails to eliminate mutated cells, they survive, proliferate uncontrollably, and form tumours. Over time, these cancer cells acquire the ability to invade surrounding tissues, spread to distant organs, and escape immune destruction, leading to progressive disease.

Cancer patients are often immunocompromised because both the disease itself and its treatment weaken the immune system. Normally, the immune system identifies and destroys abnormal cells before they multiply. In cancer, this protective mechanism becomes ineffective.⁽¹⁸⁾

Cancer cells undergo genetic mutations that allow them to grow uncontrollably and evade immune surveillance. These cells can suppress immune responses by releasing immunosuppressive substances, reducing the activity of cytotoxic T lymphocytes, natural killer cells, and macrophages.⁽¹⁹⁾ Some cancers also infiltrate the bone marrow, leading to reduced production of normal white blood cells, which are essential for immunity.

In addition, cancer treatments such as chemotherapy, radiotherapy, and certain targeted therapies damage rapidly dividing cells, including immune cells. This results in reduced white blood cell counts (especially neutrophils), making patients more vulnerable to infections. Malnutrition, stress, and chronic inflammation associated with cancer further contribute to immune suppression.⁽²⁰⁾

4. RASAYAN DRUGS THAT CAN BE USED IN CANCER MANAGEMENT-

Classical Rasayana herbs such as Amalaki (*Emblica officinalis*), Guduchi (*Tinospora cordifolia*),⁽²¹⁾ Ashwagandha (*Withania somnifera*),⁽²²⁾ Haridra (*Curcuma longa*), and Shatavari (*Asparagus racemosus*) are traditionally valued for their rejuvenative and strengthening effects.

5. DISCUSSION

In present-day medicine, the standard line of cancer treatment includes Targeted therapy, surgery for tumour, chemotherapy, and radiotherapy, immunotherapy, hormonal therapy. Although these interventions aim to control or eradicate tumour or cancerous cells growth, they often involve considerable physical strain, financial burden, and side effects that can lower a patient's quality of life and willingness to continue therapy. Such challenges indicate the need for more supportive and holistic strategies for long-term care.

Ayurveda addresses this requirement through Rasayana Chikitsa, a therapeutic approach designed to strengthen immunity (Ojas), improve tissue nourishment and metabolism (Dhatu Pushti), and enhance overall vitality. Rather than targeting the tumour alone, Rasayana therapies work at a systemic level, correcting internal imbalances and promoting resilience of the body against disease progression.

Rasayana interventions help restore equilibrium among the Doshas, stimulate metabolic and digestive functions (Agni Deepana), and rejuvenate weakened tissues. This reflects a preventive as well as restorative dimension in the management of chronic conditions like cancer.

Classical Rasayana herbs such as Amalaki (*Emblica officinalis*), Guduchi (*Tinospora cordifolia*),⁽²¹⁾ Ashwagandha (*Withania somnifera*),⁽²²⁾ Haridra (*Curcuma longa*), and Shatavari (*Asparagus racemosus*) are traditionally valued for their rejuvenative and strengthening effects. Contemporary scientific studies also suggest that these herbs possess immunomodulatory, antioxidant,⁽²³⁾ and protective properties that may help in reducing oxidative stress and supporting the body's defense against malignant changes.

Role of Rasayan therapy along with contemporary medicine

In addition, Rasayana therapies can complement modern oncological treatments by improving patient endurance,

Drug	Rasa	Guna	Virya	Vipaka	Rasayana & based Action	Guna- Relevance in Cancer Patients
Amalaki (<i>Emblica officinalis</i>)	Amla (predominant), Madhura, Kashaya, Katu	Laghu, Tikta, Ruksha	Sheeta	Madhura	Tridosha-shamaka (especially Ojovardhaka, poshaka)	Acts as a potent antioxidant and immunomodulator; reduces oxidative stress, supports tissue regeneration, improves tolerance to chemotherapy, and enhances Ojas
Guduchi (<i>Tinospora cordifolia</i>)	Tikta, Kashaya	Laghu, Snigdha	Ushna	Madhura	Deepana, Balya, Agni-var dhaka	Enhances Vyadhikshamatva by activating immune cells, improves bone marrow function, reduces treatment-induced immunosuppression, and combats chronic inflammation
Ashwagandha (<i>Withania somnifera</i>)	Tikta, Kashaya	Laghu, Snigdha	Ushna	Madhura	Balya, Rasayana, shamaka	Improves physical strength, counters cancer-related fatigue, reduces stress-induced immune suppression, supports hematopoiesis, and improves quality of life
Haridra (<i>Curcuma longa</i>)	Tikta, Katu	Laghu, Ruksha	Ushna	Katu	Lekhana, shodhaka, Krimighna	Exhibits anti-inflammatory and anti-proliferative activity; inhibits tumor progression, modulates immune response, and reduces chronic inflammatory milieu
Shatavari (<i>Asparagus racemosus</i>)	Madhura, Tikta	Guru, Snigdha	Sheeta	Madhura	Rasayana, Balya, Stanya-janana	Nourishes Rasa and Ojas, supports immune balance, reduces cachexia, helps in hormonal and nutritional restoration in debilitated cancer patients

minimizing adverse effects, and accelerating recovery. This integrative model is increasingly recognized worldwide as a way to enhance patient comfort and therapeutic outcomes in severe and long-standing illnesses.

How rasayan therapy works in the patients of cancer

Rasayana Chikitsa offers a comprehensive and patient-centered approach for the management of cancer. By promoting systemic balance and immune strength,⁽²²⁾ it plays an essential role in improving both survival and quality of life for individuals affected by cancer. By improving Vyadhikshamatva, Ojas, Agni, Metabolism, Dhtau Poshan.

1. Agni- Rasayan Rasāyana enhances Agni by correcting digestion, Nourishes Agni, Prevents exhaustion, Maintains Agni over long periods (especially in aging).
2. Metabolisam- improving- Rasayan improves dhātu metabolism, by clearing srotas, balancing doshas, and sustaining long-term metabolic efficiency without aggravation.
3. Dhatuposhan- Strengthening datu Prevents degeneration and abnormal tissue proliferation also rasayan acts as anti-oxidant and rejuvenator that's why Protects cells from carcinogenic damage, it slows disease progression eventually helps in managing chronic and malignant conditions .
4. Ojas - As Rasayana improves Ojas (immunity) it Enhances body's defence against cancerous cell growth
5. Quality of life - As Rasayana corrects Dhatu metabolism and strengthens Agni. Also By improving Ojas and Rasadhātu quality, it helps resist abnormal cell multiplication. Prevent further progression of disease and suffering of the patient eventually increases quality of life.

6. CONCLUSION

Cancer is associated with progressive impairment of immunity, tissue depletion, and loss of physiological strength, which together contribute to disease progression and poor tolerance to therapy. From an Ayurvedic perspective, this state reflects Dhatukshaya, Ojakshaya, and diminished Vyadhikshamatva. Rasayana therapy addresses these fundamental disturbances by improving tissue nutrition, enhancing innate resistance, and restoring systemic balance.

Rasayana drugs such as Amalaki, Guduchi, Ashwagandha, Haridra, and Shatavari exhibit complementary actions through

their specific Guna–Virya–Vipaka profiles. These agents support immune modulation, reduce oxidative and inflammatory stress, promote tissue regeneration, and strengthen Bala and Ojas. Rather than acting as direct cytotoxic agents, Rasayanas contribute to improving host resilience, functional capacity, and overall quality of life in cancer patients.

Integrating Rasayana therapy as an adjuvant approach alongside conventional cancer treatment may help mitigate immunosuppression, enhance treatment tolerance, and support long-term recovery. Further systematic clinical studies are required to validate these traditional insights and to establish standardized protocols for their safe and effective application in oncology care.

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