



# The Role of *Ayurveda* in Integrative Oncology

## Chemotherapy- Induced Fever Correlated with *Aushadhi Sevanjanya Jwara* & *Ayurvedic* Principles in Cancer Care

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### ABSTRACT:

Integrative Oncology is a patient-centered, evidence-informed field that utilizes complementary therapies alongside conventional cancer treatments to manage symptoms, reduce side effects, and improve the quality of life (QoL) for patients across the cancer care continuum [1]. For a specialist in *Dravyaguna Vigyan* (*Ayurvedic* Pharmacology), *Ayurveda's* contribution to this synergistic approach, particularly through the lens of its vast herbal pharmacopeia, is a burgeoning area of clinical and research relevance. The integration of *Ayurveda*, the traditional Indian system of medicine, within oncology aims to provide a holistic, patient-centric approach to cancer care. While conventional treatments like chemotherapy, radiotherapy, and surgery are primary, *Ayurvedic* principles and therapies are increasingly being explored for their potential to complement standard care, enhance patient well-being, and mitigate adverse effects.

### AIM AND OBJECTIVES:

**AIM:** Study the Role of *Ayurveda* in Integrative Oncology & To illuminate symbiotic relationship between Chemotherapy and *Aushadhi Sevanjanya Jwara*.

**OBJECTIVE:** The integration of *Ayurveda* within oncology to provide a holistic, patient-centric approach to cancer care.

- 1.Improving Quality of Life (QoL),
- 2.Enhancing Immune Function,
- 3.Mitigating Treatment-Related Toxicity,
- 4.Emotional and Spiritual Support.

**Keywords:** Chemotherapy-Induced Fever Correlated with *Aushadhi Sevanjanya Jwara*, *Ayurvedic* Principles in Cancer Care, Augmenting *Ojas*, Enhancing *Agni* and Eliminating *Ama*, *Vyadhikshamatva*, Anti-Proliferative and Anti-Inflammatory Effects.

## **MATERIAL AND METHODS: -**

1. classical textbooks.
2. modern textbook.
3. article from internet, E-journals.
4. related source of data from internet.

## **Conceptual Correlation: *Aushadhi Sevanjanya Jwara***

*Ayurvedic* Concept (*Aushadhi Sevanjanya Jwara / Vishaja Jwara*): This fever falls under *Agantuja Jwara* (exogenous fever). It is caused when a substance—which, if taken incorrectly or if inherently toxic, acts as a *Visha* (poison)—vitiates the *Doshas* (especially *Pitta*) and disrupts the body's internal environment (*Agni* and *Srotas*) [9].

Chemotherapy-Induced Fever (CIF): Chemotherapy drugs are powerful cytotoxic agents (*Visha* in the context of their high potency and systemic toxicity) designed to kill rapidly dividing cells.

Direct Toxicity: The drugs themselves can act as pyrogens (fever-inducing substances), triggering an inflammatory response.

Neutropenic Fever: Often, the fever is a sign of Febrile Neutropenia (FN), a life-threatening complication where the chemotherapy severely reduces White Blood Cells (WBCs, especially neutrophils), making the patient susceptible to infection. The massive destruction of cells and subsequent imbalance causes a profound systemic disruption.

## Pathogenesis (*Samprapti*) Comparison

Feature *Aushadhi Sevanjanya Jwara / Vishaja Jwara (Ayurveda)* Chemotherapy-Induced Fever (Modern) Causative Agent A substance (drug/toxin) with intense heat (*Tikshna*), penetrating (*Vyavayi*), and life-destroying (*Pranahara*) qualities. Cytotoxic drugs (Chemotherapy agents).

Mechanism (*Ayurveda*) The *Visha* (toxin) immediately vitiates *Rakta* (Blood), and the circulating *Pitta Dosha* (responsible for heat/metabolism), leading to *Jwara (Santapa Deha Manasa—heat in body and mind)* [8]. Febrile Neutropenia (FN): Immune suppression leads to systemic infection and inflammatory cytokine release, causing fever. Drug Fever: Direct release of pyrogenic factors from the drug or damaged cells.

Core Disturbance Imbalance of *Pitta* and *Rakta Dhātu*, and blockage of *Srotas* (channels). Systemic inflammation and Myelosuppression (destruction of bone marrow/blood cells).

## Ayurvedic Principles in Cancer Care

The ancient *Ayurvedic* texts describe pathological conditions analogous to tumorigenesis, such as *Arbuda* (a large, immobile, deep-seated swelling caused by vitiated *Doshas* infiltrating *Dhatus—tissues*) and *Granthi* (smaller, mobile glandular or cystic swellings) [2]. The pathogenesis of these conditions is understood as a failure of *Agni* (metabolic fire), leading to the accumulation of *Ama* (toxins/systemic inflammation), which subsequently blocks the *Srotas* (channels) and vitiates the *Doshas* and *Dhatus* [3].

*Ayurveda's* holistic approach to cancer care focuses not just on the tumor (*Arbuda*) but on restoring the host's systemic balance by:

**Balancing *Tridosha*:** Restoring the equilibrium of *Vata*, *Pitta*, and *Kapha*.

**Enhancing *Agni* and Eliminating *Ama*:** Improving digestion and reducing systemic inflammation, which is a major contributor to the tumor microenvironment [3].

**Supporting *Srotas Shodhana*:** Detoxification and clearing of channels to ensure proper tissue nourishment.

**Augmenting *Ojas*:** Strengthening the vital essence and immune response (*Vyadhikshamatva - disease resistance*) [1].

## The *Dravyaguna* Perspective: Therapeutic Mechanisms

The science of *Dravyaguna* offers a targeted, multi-component therapeutic strategy that aligns powerfully with the needs of integrative oncology. The plant-based medicines (*Dravyas*) are selected based on their *Rasa* (taste), *Guna* (qualities), *Virya* (potency), *Vipaka* (post-digestive effect), and most importantly, their *Prabhava* (specific action) [2].

### 1. Mitigation of Treatment-Induced Toxicity

Conventional treatments like chemotherapy and radiotherapy are associated with severe side effects such as myelosuppression, neuropathy, mucositis, and fatigue. *Dravyas* with *Rasayana* (rejuvenative), *Balya* (strengthening), and *Vayasthapana* (anti-aging) properties are crucial for this purpose.

Example *Dravyas*:

***Amalaki*** (*Phyllanthus emblica*): Rich in Vitamin C and potent antioxidants. It is studied for its radioprotective and chemoprotective effects, particularly in mitigating oxidative stress and supporting tissue integrity [4].

***Guduchi*** (*Tinospora cordifolia*): Known for its *Jwarahara* (antipyretic) and *Rasayana* properties. Preclinical research suggests it is an excellent immunomodulator, helping to counteract the immune suppression caused by chemotherapy [5].

### 2. Immunomodulation and Host Defense (*Vyadhikshamatva*)

*Rasayana* therapy is a cornerstone of *Ayurvedic* oncological care. It focuses on enhancing *Ojas*, the ultimate reservoir of vitality and immunity [3]. By promoting regeneration and reducing degeneration, *Rasayana* herbs prepare the host for treatment and aid in recovery.

***Ashwagandha*** (*Withania somnifera*): An adaptogen, it helps the body cope with stress and is documented for its immunomodulatory, anti-inflammatory, and myeloprotective activity [6]. Its compounds, such as withaferin A, are also explored for their direct anti-proliferative effects [2].

**Classical Formulations:** *Chyavanprash*, *Brahmi Rasayana*, and *Maharishi Amrit Kalash* are often integrated to improve general well-being and QoL during and after treatment [1].

## Anti-Proliferative and Anti-Inflammatory Effects

Many *Ayurvedic Dravyas* contain bioactive phytochemicals that target key hallmarks of cancer, including uncontrolled proliferation, chronic inflammation, and resistance to cell death (apoptosis).

### Example *Dravyas*:

***Haridra (Curcuma longa)***: Its main constituent, Curcumin, is one of the most extensively researched single compounds. It demonstrates anti-proliferative, pro-apoptotic, anti-angiogenic, and powerful anti-inflammatory effects by modulating pathways like NF- $\kappa$ B [7].

***Pippali (Piper longum)* and *Maricha (Piper nigrum)***: Contain Piperine, which has shown potential to overcome chemoresistance and enhance the bioavailability of other drugs, illustrating the concept of synergistic *Dravya* combinations in formulations [2].

### Discussion:

*Ayurveda* provides a comprehensive system for supportive and palliative care in oncology. Its role is not to replace conventional cancer treatments but to be integrated effectively to offer personalized care, reduce suffering, and empower patients through their healing journey. Further evidence-based research is essential to scientifically validate the synergistic benefits and optimize the protocols for integrative cancer rehabilitation. Chemotherapy- Induced Fever Correlated with *Aushadhi Sevanjanya Jwara*. It is caused when a substance—which, if taken incorrectly or if inherently toxic, acts as a *Visha* (poison)—vitiates the *Doshas* (especially *Pitta*) and disrupts the body's internal environment (*Agni* and *Srotas*) leading to *Jwara (Santapa Deha Manasa)*. Chemotherapy drugs are powerful cytotoxic agents designed to kill rapidly dividing cells. The drugs themselves can act as pyrogens triggering an inflammatory response.

## Conclusion and Future Directions

The integration of *Dravyaguna* knowledge into the framework of Integrative Oncology offers a personalized, multi-targeted approach that supports conventional therapy by mitigating toxicity, enhancing immune function, and improving the patient's overall quality of life and survival.

**Standardization:** Establishing rigorous quality control and standardization for *Ayurvedic* formulations used in oncology.

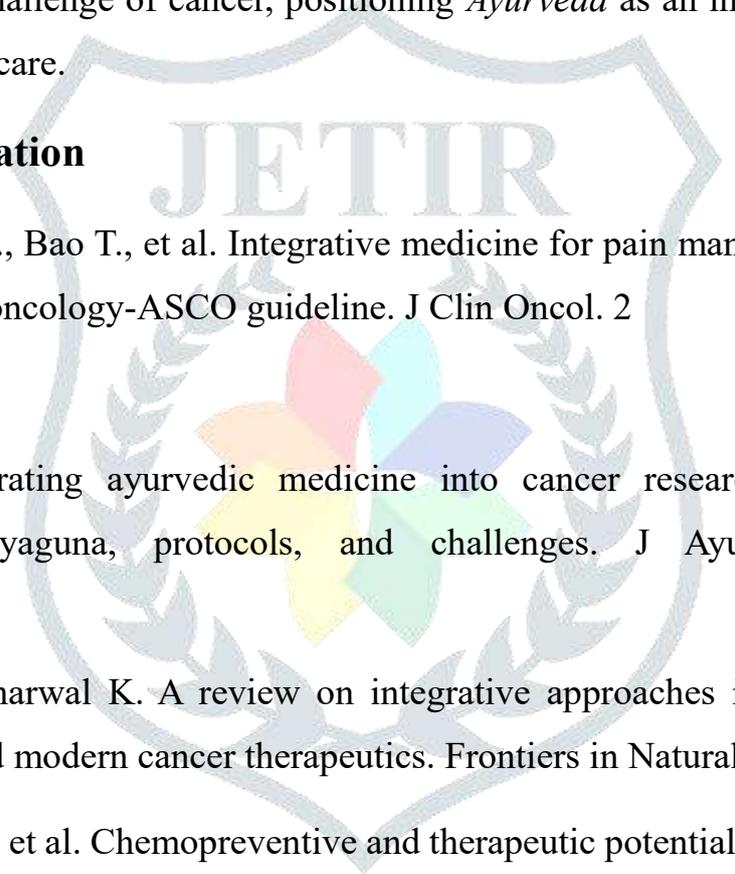
**Herb-Drug Interactions:** Conducting systematic clinical trials to thoroughly map potential interactions between *Ayurvedic Dravyas* and modern chemotherapeutic agents to ensure safety and efficacy.

### **Mechanism Elucidation:**

Utilizing modern molecular biology techniques to validate the anti-cancer and supportive mechanisms of action of key *Dravyas* (e.g., through genomics, metabolomics, and in vitro/in vivo studies).

This integrative path confirms the profound relevance of *Dravyaguna Vigyan* in addressing the contemporary global challenge of cancer, positioning *Ayurveda* as an indispensable partner in comprehensive patient care.

### **References and Citation**

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- The logo for JETIR (Journal of Emerging Technologies and Innovative Research) is a watermark in the background. It features a shield-shaped emblem with a central multi-colored flower (red, yellow, green, blue, purple) and the word 'JETIR' in large, bold, grey letters across the top. The shield is flanked by laurel branches.
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