

INTEGRATING MODERN ONCOLOGY AND AYURVEDA IN BREAST CANCER: A CLINICAL OUTCOMES-FOCUSED REVIEW

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Abstract

Context: Integrative oncology aims to enhance quality of life (QoL) and outcomes by integrating conventional cancer therapies that are supported by evidence with conventional medical systems. The ancient Indian medical system known as Ayurveda offers a thorough framework of dietary, herbal, and mind-body therapies that support contemporary oncology.

Goal: To assess clinical data critically regarding the effects of combining Ayurveda and traditional oncology in the treatment of breast cancer, with a focus on quality of life, toxicity, survival, and recurrence.

Techniques: Randomized controlled trials (RCTs), cohort studies, and systematic reviews assessing integrative (Ayurvedic and oncological) interventions in breast cancer were found through a systematic literature search of PubMed, Scopus, and Google Scholar (2000–2025). Included were studies that reported clinical endpoints like QoL, recurrence, disease-free survival, and toxicities related to treatment.

Findings: Yoga and mind-body therapies have been shown to improve mood, sleep, fatigue, and quality of life both during and after treatment. Although there are currently few high-quality RCTs, supportive therapies based on Ayurveda and specific herbal preparations show promise for immune modulation and symptom control. There is preliminary evidence that integrative approaches are associated with increased survival or decreased recurrence.

In summary: There is potential to improve treatment tolerance and patient-centered outcomes in breast cancer by combining Ayurveda with contemporary oncology. Additional carefully planned clinical trials are necessary to confirm long-term survival and cost-effectiveness results.

Key words: Breast cancer, quality of life, recurrence, clinical results, India, yoga, Ayurveda, and integrative oncology.

1. Introduction

The most prevalent cancer among women worldwide and the most common cancer in India is breast cancer. Despite improvements in diagnosis and treatment, treatment-related side effects and psychological distress continue to exist ^(1,2)

Integrative oncology improves tolerance, adherence, and quality of life by combining conventional medical treatments with complementary systems such as Ayurveda ⁽³⁾. Ayurveda provides a comprehensive approach that includes detoxification (panchakarma), rejuvenation (rasayana), herbal formulations (aushadha), diet (ahara), and lifestyle (vihara) ^(4,5).

Around the world, organizations like Memorial Sloan Kettering Cancer Center and MD Anderson Cancer Center have created organized integrative programs ^(6,7). Ayurvedic-integrative oncology units have been established in Indian institutions such as AIIMS and Arya Vaidya Sala ^(8,9). Despite these advancements, there is still little data assessing the clinical results of integrative care for breast cancer. In order to give a thorough grasp of the clinical and patient-reported outcomes of Ayurveda-integrated oncology, this review compiles published evidence.

2. Techniques

2.1 Method of Search

Using the following keywords, databases were searched from 2000 to 2025: Ayurveda, integrative oncology, breast cancer, clinical outcomes, recurrence, quality of life, and toxicity management. These databases included PubMed, Scopus, Web of Science, and AYUSH Research Portal.

2.2 Criteria for Inclusion

- Studies conducted on humans that combine complementary Ayurvedic or mind-body therapies with traditional treatment for breast cancer patients.
- RCTs, prospective cohorts, pragmatic trials, and systematic reviews are examples of study designs.
- Results include recurrence, treatment tolerance, overall survival (OS), disease-free survival (DFS), and quality of life.

2.3 Criteria for Exclusion

Review articles without original data, case reports without clinical data, and animal studies were not included.

3. Integrative Care Models

3.1 Shared Apartments

Co-located integrative oncology services are provided by AIIMS, Kottakkal Arya Vaidya Sala, and Amrita Institute. These services integrate supportive management, Ayurvedic consultation, and oncological care ^(9–11).

3.2 Collaboration Based on Referrals

Referral models allow patients to receive supportive Ayurvedic treatments outside of hospitals and standard oncology care within hospitals. Safety and outcome documentation are improved by shared care records ⁽¹²⁾.

3.3 Initiatives for Policy

Collaborations between AYUSH and ICMR have promoted the creation of registries and integrative outcome monitoring in Indian institutions ⁽¹³⁾.

4. Clinical Results

4.1 Recurrence and Survival

There is still insufficient data to conclude that integrative care improves survival. Patients undergoing adjuvant Ayurvedic therapy had a longer DFS, according to a Kerala cohort ⁽¹⁴⁾. Indirectly supporting long-term results, yoga-based lifestyle interventions are associated with reduced stress markers and inflammation ^(15,16). Nevertheless, no conclusive RCTs show that Ayurveda alone is responsible for survival benefits.

4.2 Reduction of Toxicity and Tolerance to Treatment

Mitigating the toxicities associated with radiation and chemotherapy is a common focus of integrative care. In RCTs, yoga and pranayama interventions have decreased mood disturbance, nausea, and fatigue ^(17–19).

Aloe vera and sesamum indicum are two topical herbal preparations that have demonstrated efficacy in the treatment of radiation dermatitis ⁽²⁰⁾. In small trials, curcumin and *Withania somnifera* (Ashwagandha) have improved inflammatory markers and fatigue ^(21, 22).

4.3 Life Satisfaction and Mental Health

Yoga and mind-body therapies have been shown to improve overall quality of life and lessen anxiety and fatigue in patients with breast cancer ^(23–27). Emotional and functional wellbeing significantly improves in RCTs that use validated measures like the FACT-B and EORTC QLQ-C30 ^(28–30). In small Indian cohorts, the ayurvedic diet and rasayana therapy have demonstrated complementary benefits ^(31, 32).

4.4 Results for Function and Rehabilitation

Arm mobility and limb volume are improved by post-mastectomy and lymphoedema management that incorporates yoga, integrative physiotherapy, and oil massage (abhyanga) ^(33, 34). Although there are still few high-quality studies, these results point to supportive benefits.

4.5 Pharmacoeconomics

By lowering treatment-related complications and unscheduled hospital stays, integrative care may lower healthcare expenses. Cost-offset analyses point to possible savings through better adherence and less use of supportive drugs ^(35, 36).

5. Discussion

5.1 Analysis of the Results

The effectiveness of integrative oncology in enhancing treatment tolerance, fatigue management, and quality of life in patients with breast cancer is supported by the available data. Select Ayurvedic adjuncts and mind-body techniques seem safe and helpful ^(37–39). Recurrence and survival data are still underpowered, though.

5.2 Mechanistic Understanding

Herbal remedies that increase antioxidant status, modulate inflammatory cytokines, and may improve immune surveillance include curcumin, *Withania somnifera*, and *Tinospora cordifolia* ^(40–43). Yoga and meditation help people feel less stressed and exhausted by influencing cortisol and inflammatory markers ^(44, 45).

5.3 Restrictions

Small, single-center trials with diverse protocols make up the majority of the studies that are currently available. The quality of the evidence is weakened by limited randomization, brief follow-up, and the lack of standardized herbal formulations ^(46, 47).

5.4 Suggestions for Research and Policy

Multicentric pragmatic RCTs powered for OS and DFS endpoints, safety documentation, and pharmacoeconomic evaluation are essential components of future research ^(48–50). Scalability requires integration with national cancer control frameworks.

6. Conclusion

There are observable advantages to incorporating Ayurveda into breast cancer treatment, including increased treatment tolerance, decreased fatigue, and improved quality of life. The steady improvement in patient-centered outcomes calls for more clinical and translational research, even though survival benefits have not yet been demonstrated. Integrative oncology shows promise as a long-term strategy for comprehensive cancer treatment and is consistent with India's pluralistic healthcare model.

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